DICKINSON WRIGHT PLLC

150 E. GAY STREET, 24TH FLOOR
COLUMBUS, OH 43215-3192
TELEPHONE: (614) 591-5461
FACSIMILE: (844) 670-6009
http://www.dickinsonwright.com

CHRISTINE M.T. PIRIK
CPirik@dickinsonwright.com

September 12, 2019

Ms. Tanowa Troupe, Secretary
Ohio Power Siting Board
Docketing Division
180 East Broad Street, 11th Floor
Columbus, Ohio 43215-3797

Re: **Case No. 18-1607-EL-BGN -** In the Matter of the Application of Firelands Wind, LLC for a Certificate of Environmental Compatibility and Public Need to Construct a Wind-Powered Electric Generation Facility in Huron and Erie Counties, Ohio.

Fourth Supplement to Application – Updated Wind Turbine Models and Maps

Dear Ms. Troupe:

On January 31, 2019, as supplemented on March 18, 2019, April 11, 2019, and July 10, 2019, Firelands Wind, LLC ("Applicant") filed an application with the Ohio Power Siting Board ("Board") for a Certificate of Environmental Compatibility and Public Need to Construct a Wind-Powered Electric Generation Facility in Huron and Erie Counties, Ohio ("Application").

As stated in the Application, as supplemented, the facility will consist of up to 87 wind turbines, each with a nameplate capacity of between 4.2 and 5.7 megawatts ("MW"), depending on the final turbine model selected. The total generating capacity of the facility will not exceed 297.66 MW.

As discussed below, the purpose of this Fourth Supplement to the Application is to update the list of turbine models that may be used for this Project to include an additional hub height for the Vestas turbine model, which was included in the Application, as supplemented, and the addition of two General Electric ("GE") turbine models, GE158 5.5 MW and GE140 3.0 MW. In addition, through this supplement, the Applicant is noticing that it has decide to eliminate the Nordex N149 4.5 MW turbine model from consideration as a model to be used for this Project.

This Fourth Amendment does not change other documentation provided as part of the Application, including, but not limited to: the general purpose of the facility; the facility description; the site selection process; the location of the turbines; the principal environmental, cultural, and socioeconomic considerations and surveys; the transportation and road use plans; and the Project schedule.

A. Turbine Model List Update

The chart set forth in Attachment 1 to this supplement provides a comparison of the turbine models that were listed in the Application, as supplemented, as models under consideration for the

Project, as well as the additional turbine models provided in this Fourth Supplement that are also under consideration.

The Applicant affirms that the Project will not exceed the 297.66 MW total generating capacity requested in the Application. However, by adding the additional turbine models proposed in this supplement to the list of possible turbines that could be utilized for the Project, there is an opportunity to increase the capacity of the turbine models, which would reduce the number of turbines needed for the facility. In addition, by uprating the capacity, the turbine may prove more efficient and cost effective.

B. Ice Throw Analysis Update

The Applicant submitted the Ice Throw Analysis conducted by its consultant, Environmental Design & Research ("EDR"), as Exhibit L to the Application. In light of the inclusion of the additional turbine models, EDR reran the ice throw model. The results of EDR's analysis are set forth in Attachment 2 to this supplement and reflects that the ice throw results found in Exhibit L to the Application have not changed.

C. Sound Analysis Update (to include V150 5.6 MW at 125 meter hub height, GE140 3.0 MW turbine model, and GE158 5.5 MW turbine model)

The Applicant's consultant, RSG, conducted a sound assessment for the turbine models listed in the Application, which was included as Exhibit G to the Application. Attached to this Fourth Supplement, as Attachment 3, is an update to Exhibit G to the Application, which supersedes and replaces that exhibit. Attachment 3 includes an analysis of the Vestas V150 5.6 MW turbine at a 125 meter hub height that is now under consideration for this Project. Attachment 3 also includes an analysis of the GE140 3.0 MW and GE158 5.5 MW turbines. Additionally, Attachment 3 contemplates the removal of the Nordex N149 4.5 MW turbine from consideration at the Emerson Creek Project, and includes the following turbine models that were added to the Application in the Third Supplement filed on July 10, 2019: the Nordex N149 4.8 MW; the Nordex N149 5.5 MW; and the Nordex N149 5.7 MW. Beyond the additions of these turbine models, in all other respects the document is identical to Exhibit G.

As shown in Attachment 3, RSG amended the original sound assessment to include the Vestas V150 5.6 MW at a 125 meter hub height. This assessment shows that the modeled results for the Vestas V150 5.6 MW turbine model at a 125 meter hub height, the GE140 3.0 MW turbine model, and the GE158 5.5 MW turbine model are equal to or lower than the required maximum level for all nonparticipating receptors. The maximum sound pressure level at a nonparticipating receptor from the Vestas V150 5.6 at 125 meter hub height is 45 A-weighted decibels ("dBA"). The maximum sound pressure level at a nonparticipating receptor from the Vestas GE140 3.0 MW is 46 dBA. The maximum sound pressure level at a nonparticipating receptor from the combination GE158 5.5 MW and GE140-3.0MW turbine model layout is 47 dBA.

As stated in the Application, this assessment shows that, in compliance with Ohio Administrative Code ("O.A.C.") Rule 4906-4-09(F), in no event will the facility sound contribution at any nonparticipating sensitive receptor within one mile of the Project boundary

exceed the Project area ambient nighttime average sound level by 5 dBA.

D. Shadow Flicker Analysis Update

The Applicant's consultant, EDR, conducted a shadow flicker analysis for the turbine models listed in the Application, as supplemented. EDR's Shadow Flicker Report was included as Exhibit H to the Application. Attachment 4 to this Fourth Supplement provides information that supplements Exhibit H to the Application regarding shadow flicker and the Vestas V150 5.6 MW turbine model using the 125 meter hub height, as well as the additional GE158 5.5 MW and GE140 3.0 MW turbine models.

In addition, Attachment 4 contains the following figures that supplement the information provided in the Application, as supplemented:

1. Figure 1, Sheet 1: Proposed Turbine Layout for the V150 turbine model at the 105 and 125 meter hub heights.
2. Figure 1, Sheet 2: Proposed Turbine Layout for the GE158 turbine model at the 107.5 hub height and the GE140 turbine model at the 110 meter hub height.
3. Figure 2, Sheet 1: Projected Shadow Flicker for the V150 turbine model at the 105 and 125 meter hub heights.
4. Figure 2, Sheet 2: Projected Shadow Flicker for the GE158 turbine model at the 107.5 hub height and the GE140 turbine model at the 110 meter hub height.
5. Figure 3, Sheet 1: Cumulative Impact Area for the V150 turbine model at the 105 and 125 meter hub heights.
6. Figure 3, Sheet 2: Cumulative Impact Area for the GE158 turbine model at the 107.5 hub height and the GE140 turbine model at the 110 meter hub height.

The Applicant further notes that, as stated in the Application and the July 10, 2019 Third Supplement, the facility will comply with O.A.C. Rule 4906-4-09(H) such that it will be operated so that shadow flicker levels do not exceed 30 hours per year at any nonparticipating sensitive receptor within 1,000 meters of any turbine without the necessary waivers/participation agreements.

E. Setback Analysis Update

Throughout the Application, as supplement, the Applicant provided information regarding the analyses done by its consultant, EDR, regarding compliance with the OPSB's setback requirements. In light of the inclusion of the additional turbine models proposed in this Fourth Supplement, EDR reran the setback analyses taking into consideration these additional models. The results of EDR's analysis are set forth in Attachment 5 to this supplement.

In addition, Figure 08-6 included with the Application sets forth the Wind Turbine State Setbacks associated with the Project. Attachment 5 to this Fourth Supplement includes a supplement to Figure 08-6 that reflects the setbacks for the GE140 and GE158 turbine models.

The Applicant notes that it has committed to comply with the rules and regulations for

setbacks.

E. Visual Impact Assessment Update

The Applicant submitted the Visual Impact Assessment conducted by its consultant, EDR, as an attachment to the First Supplement to the Application that was filed in this case on March 18, 2019. In light of the inclusion of the additional turbine models set forth in this supplement, EDR reran the Visual Impact Assessment. The results of EDR's analysis are set forth in Attachment 6 to this Fourth Supplement.

F. Manufacturer Manuals

The manufacturer manuals for the Vestas V150-5.6 MW turbine was attached to the July 10, 2019 Third Supplement filed in this matter. Included with the attachments to this Fourth Supplement are Attachments 7 and 8 the manufacturer's manuals for the GE140 and GE158 models. Attachments 7 and 8 are being filed under seal and are accompanied by a Motion for Protective Order that is being filed this same day.

G. Conclusion

The original of this Fourth Supplement to the Application was filed electronically. In addition, 5 complete paper copies and 10 USBs have been provided to the Docketing Division.

We are available, at your convenience, to answer any questions you may have.

Respectfully submitted,

/s/ *Christine M.T. Pirik*
Christine M.T. Pirik (0029759)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
DICKINSON WRIGHT PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
(614) 591-5461
cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
(Counsel is willing to accept service via email.)

Attorneys for Firelands Wind, LLC

Cc: Tamara Turkenton
Jonathan Pawley

CERTIFICATE OF SERVICE

The Ohio Power Siting Board's e-filing system will electronically serve notice of the filing of this document on the parties referenced in the service list of the docket card who have electronically subscribed to these cases. In addition, the undersigned certifies that a copy of the foregoing document is also being served upon the persons below this 12th day of September, 2019.

/s/ Christine M.T. Pirik
Christine M.T. Pirik (0029759)

Counsel/Intervenors:

werner.margard@ohioattorneygeneral.gov
jstock@beneschlaw.com
mgurbach@beneschlaw.com
norwichtwp1339@gmail.com
richardwiles@willard-oh.com

Administrative Law Judge:

jay.agranoff@puco.ohio.gov

COLUMBUS 59714-18 122375v1

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 1

Turbine Model Comparison Chart

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

	Listed in Application 1/31/19			Third Supplement Update 7/10/19				Fourth Supplement Update 9/12/19		
TURBINE MODEL	**Vestas V150 4.2 MW**	**Siemens Gamesa SG 145 4.5 MW**	**~~Nordex N149 4.5 MW~~***	**Nordex N149 4.8 MW**	**Nordex N149 5.5 MW**	**Nordex N149 5.7 MW**	**Vestas V150 5.6 MW**	**Vestas V150 5.6 MW**	**GE158 5.5 MW**	**GE140 3.0 MW**
Rotor Diameter	150 meters (492 feet)	145 meters (476 feet)	~~149 meters (489 feet)~~	149 meters (489 feet)	149 meters (489 feet)	149 meters (489 feet)	150 meters (492 feet)	150 meters (492 feet)	158 meters (518 feet)	140 meters (459 feet)
Hub Height	105 meters (344 feet)	107.5 meters (353 feet)	~~109 meters (358 feet) or 125 meters (410 feet)~~	109 meters (358 feet) or 125 meters (410 feet)	109 meters (358 feet) or 125 meters (410 feet)	109 meters (358 feet) or 125 meters (410 feet)	105 meters (344 feet)	125 meters (410 feet)	107.5 meters (353 feet)	110 meters (361 feet)
Maximum Total Height	180 meters (591 feet)	180 meters (591 feet)	~~183.5 meters (602 feet) or 199.5 meters (655 feet)~~	183.5 meters (602 feet) or 199.5 meters (655 feet)	183.5 meters (602 feet) or 199.5 meters (655 feet)	183.5 meters (602 feet) or 199.5 meters (655 feet)	180 meters (591 feet)	200 meters (656 feet)	186.5 meters (612 feet)	180 meters (591 feet)
Maximum Generation	4.2 MW	4.5 MW	~~4.5 MW~~	4.8 MW	5.5 MW	5.7 MW	5.6 MW	5.6 MW	5.5 MW	3.0 MW
Wind Speed at Cut-In	3 m/s	3 m/s	~~3 m/s~~	3 m/s	3 m/s	3 m/s	3 m/s	3 m/s	3m/s	3 m/s
Maximum Sound Power Level	104.9 dB	107.8 dB	~~106.1 dB~~	106.1 dB	104.8 dB	105.6 dB	104.9 dB	104.9 dB	107.5 dB	108 dB
Number of Turbines Needed	71	66	~~66~~	62	54	52	53	53	54**	87**

*The Applicant is no longer proposing to consider using this this turbine model for the project; thus, per this Fourth Supplement this model is being deleted from the Application.

**The Applicant expects that if a GE turbine model is used, the layout would be a combination of GE158s and GE140s, likely resulting in somewhere between 55-70 turbine locations being utilized to result in a nameplate capacity up to 297.66 MW with the GE158s only used in locations where state setback requirements are met.

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 2

Ice Throw Analysis Update
By Environmental Design & Research
September 6, 2019

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000, Syracuse, New York 13202
P. 315.471.0688 • F. 315.471.1061 • www.edrdpc.com

memorandum

To:	Apex Clean Energy	EDR Project No:	17119
From:	Lindsay Donahoe		
Date:	September 6, 2019		
Reference:	Ice Throw Update		

Comments:

The Ice Throw Analysis included as Exhibit L to the Emerson Creek Wind Farm (the Facility) Certificate Application submitted to the Ohio Power Siting Board (OPSB) on January 31, 2019 (Case No. 18-1607-EL-BGN) evaluated impacts based on the turbine models with the largest tip height. At the time of the Application submittal, that turbine model was the Nordex N149 with a hub height of 125 meters (410 feet) and rotor diameter of 149 meters (489 feet) for a total height of 199.5 meters (655 feet). Since the submittal of the Certificate Application to the OPSB, the Applicant has decided to consider additional turbine models and dimensions (Table 1).

Table 1. Approximate Turbine Dimensions by Model

Turbine Model	Hub Height	Rotor Diameter	Maximum Total Height
Vestas V150[1]	125 meters (410 feet)	150 meters (492 feet)	200 meters (656 feet)
GE158	107.5 meters (353 feet)	158 meters (518 feet)	186.5 meters (612 feet)
GE140	110 meters (361 feet)	140 meters (459 feet)	180 meters (591 feet)

[1] The Vestas V150 was evaluated in the original Certificate Application with a hub height of 105 meters (344 feet) resulting in a total height of 180 meters (591 feet).

Based on the new turbines under consideration, the Vestas V150 model is now the tallest turbine under consideration, with a total tip height of 656 feet. EDR re-ran the ice throw model using the Vestas V150 on a 125 meter hub height to determine if this small increase in tip height (approximately 1 foot) would result in a change to the conclusions presented in the original Ice Throw Analysis. The results from the model indicated that the conclusions reached in the original Ice Throw Analysis have not changed as a result of the slightly larger turbine model. The probability of 1 kilogram of ice being thrown a distance to reach the nearest non-participating property boundary and nearest public road is less than 0.01% and 0.1%, respectively.

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 3

Sound Analysis
By RSG
September 11, 2019

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

RSG
the science of insight

Apex Clean Energy

EMERSON CREEK WIND

Noise Assessment | September 11, 2019

55 Railroad Row
White River Junction, VT 05001
802.295.4999
www.rsginc.com

PREPARED FOR:
APEX CLEAN ENERGY

SUBMITTED BY:
RSG

CONTENTS

1.0 INTRODUCTION 1
2.0 PROJECT DESCRIPTION 2
3.0 SOUND LEVEL LIMITS AND REGULATIONS 4
4.0 BACKGROUND SOUND LEVEL MONITORING PROCEDURES 5
4.1 EQUIPMENT 5
4.2 LOCATION DESCRIPTIONS 6
MONITOR 1 6
MONITOR 2 8
MONITOR 3 10
MONITOR 4 11
MONITOR 5 13
MONITOR 6 14
MONITOR 7 16
MONITOR 8 17
MONITOR 9 19
4.3 DATA PROCESSING 20
5.0 MONITORING RESULTS 21
5.1 RESULTS SUMMARY 21
METEOROLOGY 21
BACKGROUND SOUND LEVEL SUMMARY 21
5.2 MONITORING RESULTS BY LOCATION 22
MONITOR 1 23
MONITOR 2 25

MONITOR 3 27
MONITOR 4 29
MONITOR 5 31
MONITOR 6 33
MONITOR 7 35
MONITOR 8 37
MONITOR 9 39
6.0 SOUND PROPAGATION MODELING PROCEDURES 41
6.1 MODELING PROCEDURES 41
6.2 MODEL RESULTS 42
7.0 CONSTRUCTION NOISE 47
8.0 SUMMARY & CONCLUSIONS 48
APPENDIX A. ACOUSTICS PRIMER 50
EXPRESSING SOUND IN DECIBEL LEVELS 50
HUMAN RESPONSE TO SOUND LEVELS: APPARENT LOUDNESS 50
FREQUENCY SPECTRUM OF SOUND 52
HUMAN RESPONSE TO FREQUENCY: WEIGHTING OF SOUND LEVELS 52
TIME RESPONSE OF SOUND LEVEL METERS 53
ACCOUNTING FOR CHANGES IN SOUND OVER TIME 53
EQUIVALENT CONTINUOUS SOUND LEVEL - LEQ 54
PERCENTILE SOUND LEVELS – LN 55
APPENDIX B. WIND TURBINE ACOUSTICS 57
SOURCES OF SOUND GENERATION BY WIND TURBINES 57
AMPLITUDE MODULATION 58
METEOROLOGY 59
MASKING 60
INFRASOUND AND LOW-FREQUENCY SOUND 61
WIND TURBINE NOISE ABATEMENT MEASURES 63
APPENDIX C. MODEL INPUT DATA 66
APPENDIX D. DETAILED MODEL RESULTS 162

LIST OF FIGURES

FIGURE 1: PROJECT OVERVIEW MAP 3
FIGURE 2: MAP OF BACKGROUND SOUND MONITOR LOCATIONS 6
FIGURE 3: PHOTOGRAPH OF MONITOR 1 LOOKING TO THE NORTHWEST (3-14-18) 7
FIGURE 4: MAP OF MONITOR 1 8
FIGURE 5: PHOTOGRAPH OF MONITOR 2 LOOKING TO THE SOUTHWEST (3-14-18) 9
FIGURE 6: MAP OF MONITOR 2 9
FIGURE 7: PHOTOGRAPH OF MONITOR 3 LOOKING TO THE NORTH (3-14-18) 10
FIGURE 8: MAP OF MONITOR 3 11
FIGURE 9: PHOTOGRAPH OF MONITOR 4 LOOKING TO THE WEST (3-14-18) 12
FIGURE 10: MAP OF MONITOR 4 12
FIGURE 11: PHOTOGRAPH OF MONITOR 5 LOOKING TO THE NORTHEAST (3-14-18) 13
FIGURE 12: MAP OF MONITOR 5 14
FIGURE 13: PHOTOGRAPH OF MONITOR 6 LOOKING TO THE SOUTHEAST (9-13-18) 15
FIGURE 14: MAP OF MONITOR 6 15
FIGURE 15: PHOTOGRAPH OF MONITOR 7 LOOKING TO THE SOUTH (9-13-18) 16
FIGURE 16: MAP OF MONITOR 7 17
FIGURE 17: PHOTOGRAPH OF MONITOR 8 LOOKING TO THE NORTHWEST (9-13-18) 18
FIGURE 18: MAP OF MONITOR 8 18
FIGURE 19: PHOTOGRAPH OF MONITOR 9 LOOKING TO THE NORTHEAST (9-13-18) 19
FIGURE 20: MAP OF MONITOR 9 20
FIGURE 21: SOUND PRESSURE LEVELS OVER TIME - MONITOR 1, MARCH 13 TO MARCH 18 23
FIGURE 22: SOUND PRESSURE LEVELS OVER TIME - MONITOR 1, MARCH 18 TO MARCH 25 24
FIGURE 23: SOUND PRESSURE LEVELS OVER TIME - MONITOR 1, MARCH 25 TO MARCH 28 24
FIGURE 24: SOUND PRESSURE LEVELS OVER TIME - MONITOR 2, MARCH 13 TO MARCH 18 25
FIGURE 25: SOUND PRESSURE LEVELS OVER TIME - MONITOR 2, MARCH 18 TO MARCH 25 26
FIGURE 26: SOUND PRESSURE LEVELS OVER TIME - MONITOR 2, MARCH 25 TO MARCH 28 26
FIGURE 27: SOUND PRESSURE LEVELS OVER TIME - MONITOR 3, MARCH 13 TO MARCH 18 27
FIGURE 28: SOUND PRESSURE LEVELS OVER TIME - MONITOR 3, MARCH 18 TO MARCH 25 28
FIGURE 29: SOUND PRESSURE LEVELS OVER TIME - MONITOR 3, MARCH 25 TO MARCH 28 28
FIGURE 30: SOUND PRESSURE LEVELS OVER TIME - MONITOR 4, MARCH 13 TO MARCH 18 29
FIGURE 31: SOUND PRESSURE LEVELS OVER TIME - MONITOR 4, MARCH 18 TO MARCH 25 30
FIGURE 32: SOUND PRESSURE LEVELS OVER TIME - MONITOR 4, MARCH 25 TO MARCH 28 30
FIGURE 33: SOUND PRESSURE LEVELS OVER TIME - MONITOR 5, MARCH 13 TO MARCH 18 31
FIGURE 34: SOUND PRESSURE LEVELS OVER TIME - MONITOR 5, MARCH 18 TO MARCH 25 32
FIGURE 35: SOUND PRESSURE LEVELS OVER TIME - MONITOR 5, MARCH 25 TO MARCH 28 32
FIGURE 36: SOUND PRESSURE LEVELS OVER TIME - MONITOR 6, SEPT. 13 TO SEPT. 17 33
FIGURE 37: SOUND PRESSURE LEVELS OVER TIME - MONITOR 6, SEPT. 17 TO SEPT. 24 34
FIGURE 38: SOUND PRESSURE LEVELS OVER TIME - MONITOR 6, SEPT. 24 TO SEPT. 27 34
FIGURE 39: SOUND PRESSURE LEVELS OVER TIME - MONITOR 7, SEPT. 13 TO SEPT. 17 35

FIGURE 40: SOUND PRESSURE LEVELS OVER TIME - MONITOR 7, SEPT. 17 TO SEPT. 24 36
FIGURE 41: SOUND PRESSURE LEVELS OVER TIME - MONITOR 7, SEPT. 24 TO SEPT. 27 36
FIGURE 42: SOUND PRESSURE LEVELS OVER TIME - MONITOR 8, SEPT. 13 TO SEPT. 17 37
FIGURE 43: SOUND PRESSURE LEVELS OVER TIME - MONITOR 8, SEPT. 17 TO SEPT. 24 38
FIGURE 44: SOUND PRESSURE LEVELS OVER TIME - MONITOR 8, SEPT. 24 TO SEPT. 27 38
FIGURE 45: SOUND PRESSURE LEVELS OVER TIME - MONITOR 9, SEPT. 13 TO SEPT. 17 39
FIGURE 46: SOUND PRESSURE LEVELS OVER TIME - MONITOR 9, SEPT. 17 TO SEPT. 24 40
FIGURE 47: SOUND PRESSURE LEVELS OVER TIME - MONITOR 9, SEPT. 24 TO SEPT. 27 40
FIGURE 48: SOUND PROPAGATION MODEL RESULTS – SG 4.5-145, EMERSON TURBINES ONLY 45
FIGURE 49: SOUND PROPAGATION MODEL RESULTS – CUMULATIVE MODEL RUN, EMERSON CREEK (SG 4.5-145) AND REPUBLIC WIND 46
FIGURE 50: A SCALE OF SOUND PRESSURE LEVELS FOR TYPICAL SOUND SOURCES 51
FIGURE 51: EXAMPLE OF DESCRIPTIVE TERMS OF SOUND MEASUREMENT OVER TIME 55
FIGURE 52: AIRFLOW AROUND A ROTOR BLADE 58
FIGURE 53: SCHEMATIC OF THE REFRACTION OF SOUND DUE TO VERTICAL WIND GRADIENT (WIND SHEAR) 60
FIGURE 54: COMPARISON OF NORMALIZED FREQUENCY SPECTRA MEASURED FROM A 5 M/S WIND EVENT AND THE SOUND POWER SPECTRA FROM VESTAS V150, SIEMENS SG4.5-145, AND NORDEX N149 WIND TURBINES 61
FIGURE 55: INFRASOUND FROM A WIND TURBINE AT 350 METERS COMPARED WITH PERCEPTION THESHOLDS 62
FIGURE 56: COMPARISON OF MEASURED BACKGROUND INFRASOUND AT A REMOTE SITE IN CHERRY CREEK NY WITH THOSE FROM MEASURED 350 METERS FROM AN OPERATING WIND TURBINE AND THE 90 DBG PERCEPTION THRESHOLD. 63
FIGURE 57: MAP OF MODELED SOURCES (NORTHERN AREA) 66
FIGURE 58: MAP OF MODELED SOURCES (MIDDLE AREA) 67
FIGURE 59: MAP OF MODELED SOURCES (SOUTHERN AREA) 68
FIGURE 60: MODELED RECEPTOR MAP (NORTHERN AREA) 255
FIGURE 61: MODELED RECEPTOR MAP (MIDDLE AREA) 256
FIGURE 62: MODELED RECEPTOR MAP (SOUTHERN AREA) 257
FIGURE 63: MODELED RECEPTOR MAP (BELLEVUE AREA) 258
FIGURE 64: MODELED RECEPTOR MAP (FLAT ROCK AREA) 259
FIGURE 65: MODELED RECEPTOR MAP (HOLIDAY LAKE AREA) 260

LIST OF TABLES

TABLE 1: TURBINE MODELS UNDER CONSIDERATION FOR EMERSON CREEK WIND 2
TABLE 2: SUMMARY OF WIND SPEED DATA COLLECTED AT EACH MONITOR AT MICROPHONE HEIGHT 21
TABLE 3: SUMMARY OF BACKGROUND SOUND LEVELS BY LOCATION AND AVERAGED ACROSS THE PROJECT SITE 22
TABLE 4: SUMMARY OF MODELED SOUND PRESSURE LEVELS (DBA) FOR EACH MODEL RUN 43
TABLE 5: MAXIMUM SOUND LEVELS FROM VARIOUS TYPES OF CONSTRUCTION EQUIPMENT ASSUMING NO ATTENUATION FROM TREES OR TERRAIN 47
TABLE 6: SOUND PROPGATION MODELING PARAMETERS 68
TABLE 7: RECEIVER COORDINATES FOR ALL SENSITIVE RECEPTORS 69
TABLE 8: MODEL RESULTS FOR ALL SENSITIVE RECEPTORS 162

1.0 INTRODUCTION

Apex Clean Energy, Inc. is submitting a permit application to Ohio Power Siting Board ("OPSB") to build the Emerson Creek Wind Farm ("Emerson Creek") in Erie and Huron Counties. The facility will involve the construction of up to 71 wind turbines for a project rating of up to 297.66 MW. The turbines would be installed in an area south of Interstate 80 ("I-80"), mostly west of Ohio Route 99 ("OH-99"), north of US Route 224 ("US-224"), and east of Seneca and Sandusky Counties. For the application, RSG has performed a sound level assessment of the project based on the current turbine layout. Included in this report are:

- A description of the project;
- A discussion of sound level standards;
- Background sound level monitoring procedure and results;
- Sound propagation modeling procedure and results;
- A discussion on construction noise; and
- Conclusions.

Appendix A includes a primer on the science of sound, including descriptions of some of the acoustical terms used in this report. Appendix B provides a discussion on several topics related to wind turbine acoustics in general.

The information presented in this report leads us to conclude that the proposed Emerson Creek Wind Farm can be constructed and operated in such a way as to comply with the OPSB requirements and noise limits for wind energy projects at all non-participating sensitive receptors.

2.0 PROJECT DESCRIPTION

Emerson Creek Wind Farm is proposed to be located in Erie and Huron Counties. The project area is generally south of I-80, west of OH-99, north of US-224, and east of the Seneca and Sandusky Counties. There are however eight turbines east of OH-99 in the northeast corner of the project area.

The wind project is designed to include up to 71 turbines with hub heights between 105 meters (344 feet) and 125 meters (410 feet), depending on the final turbine selection. The turbine models currently under consideration are shown in Table 1. The project will also include two 100-133-167 MVA transformers at a collector substation to be located on Sand Hill Road approximately 1 kilometer (3,280 feet) north of US-20.

TABLE 1: TURBINE MODELS UNDER CONSIDERATION FOR EMERSON CREEK WIND

TURBINE MAKE/MODEL	TURBINE OUTPUT (MW)	HUB HEIGHT (m)
Vestas V150	4.2	105
Vestas V150	5.6	105 or 125
Siemens Gamesa SG 4.5-145	4.5	107.5
Nordex N149	4.8	109 or 125
Nordex N149	5.5	109 or 125
Nordex N149	5.7	109 or 125
GE 3.0-140	3.0	110
GE 5.5-158	5.5	107.5

The area around the project is composed primarily of agricultural land uses with rural residences. Terrain in the area is mostly flat. There are several rail lines running through the area, an interstate at the northern end of the project area, US-20 transecting the northern third of the project area, and US-224 at the southern end of the project area. There is another proposed wind farm near the proposed Emerson Creek Wind Farm, Republic Wind Farm to the west in Sandusky and Seneca Counties.

A map of the proposed project showing the proposed turbine layout is provided in Figure 1.

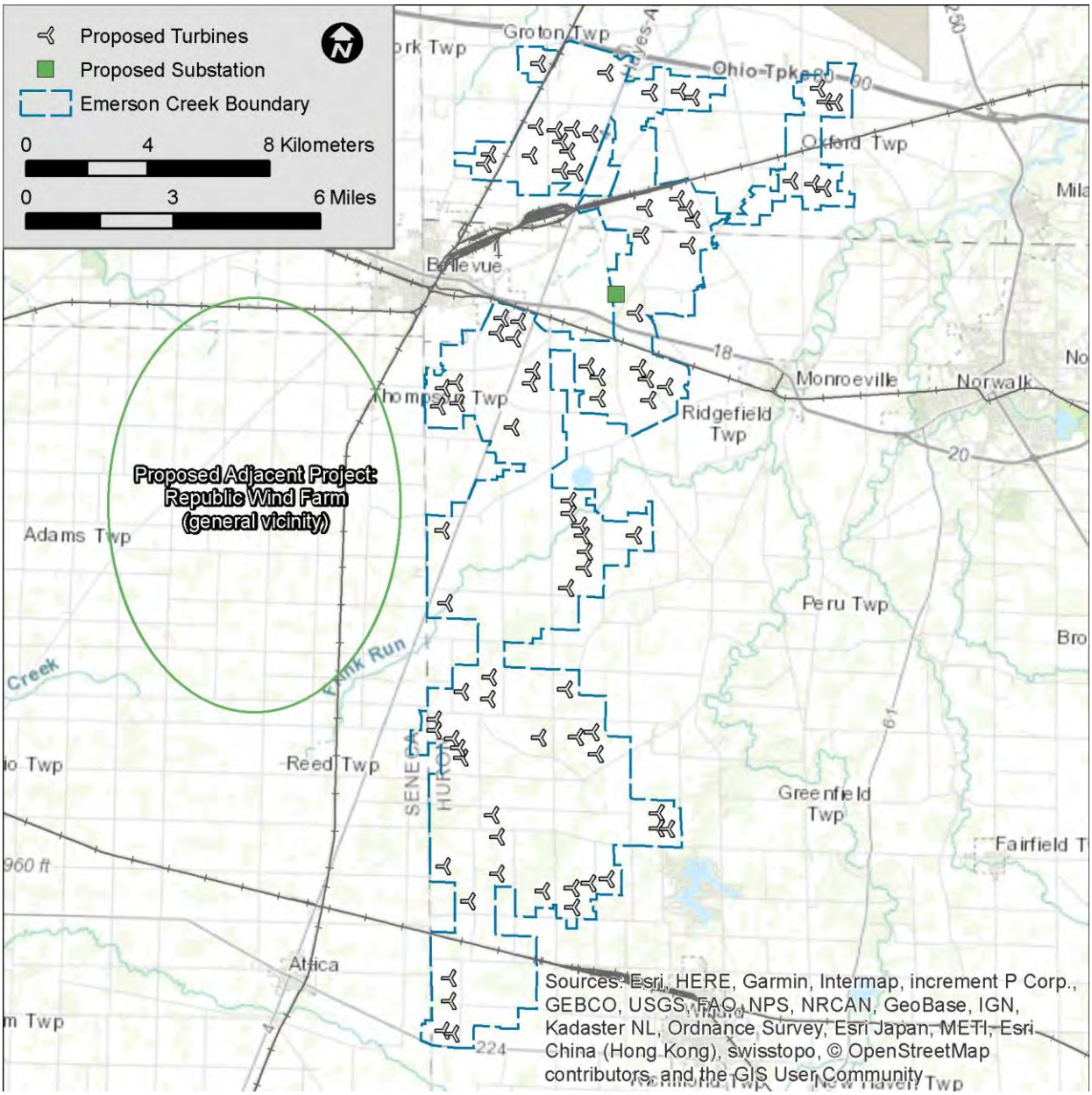


FIGURE 1: PROJECT OVERVIEW MAP

3.0 SOUND LEVEL LIMITS AND REGULATIONS

Sound levels from wind power projects are regulated under Section 4906-4-09(F) of the Ohio Administrative Code ("OAC") which states:

> (2) The facility shall be operated so that the facility noise contribution does not result in noise levels at any non-participating sensitive receptor within one mile of the project boundary that exceed the project area ambient nighttime average sound level (Leq) by five A-weighted decibels (dBA). During daytime operation only (seven a.m. to ten p.m.), the facility may operate at the greater of: the project area ambient nighttime Leq plus five dBA; or the validly measured ambient Leq plus five dBA at the location of the sensitive receptor. After measured ambient Leq plus five dBA at the location of the sensitive receptor. After commencement of commercial operation, the applicant shall conduct further review of the impact and possible mitigation of all project-related noise complaints through its complaint resolution process. Non-participating, as used in this context, refers to a property for which the owner has not signed a waiver or otherwise agreed to be subject to a higher noise level.

Based on ambient sound monitoring conducted at nine locations throughout the Emerson Creek project area (see Sections 4 & 5), the average existing nighttime background L_{eq} in the area is 44 dBA. Applying the OPSB sound level limit results in a nighttime sound level limit of 49 dBA. As discussed in Section 4, the daytime sound levels are generally higher than the nighttime sound levels throughout the project area, so a higher daytime limit may be possible at some sensitive receptors, but for the purposes of this assessment, the nighttime sound level limit of 49 dBA is applied.

Section 4906-4-09(F) also limits the hours of construction activities that increase sound above ambient levels at sensitive receptors to the hours of 7 AM to 7 PM or dusk, whichever is later. Pile driving, blasting, and rock hammering are further restricted to the hours of 10 AM to 5 PM. There are also requirements regarding notification of property owners and tenants related to construction activities.

4.0 BACKGROUND SOUND LEVEL MONITORING PROCEDURES

Section 4906-4-08(A)(3)(e) of the OAC requires a preconstruction background noise study which includes daytime and nighttime sound level monitoring be provided with the project application. This Section provides a description of the procedures and results of background sound level monitoring that was conducted for this project.

Background sound levels were measured at nine locations around the project area. A map showing all nine locations is provided in Figure 2. Monitoring was conducted over two periods. The sound levels in the northern half of the project area (Monitors 1 through 5) were measured from March 14 to March 28, 2018, and sound levels in the southern half of the project area (Monitors 6 through 9) were measured from September 13 to September 27, 2018.

4.1 EQUIPMENT

Sound levels at each location were measured using either a Cesva SC-310 or a Svantek SV979 sound level meter, which are both ANSI/IEC Type 1 instruments. All meters logged A-weighted and 1/3 octave band equivalent continuous sound levels once each second. The Cesva meters were attached to external audio recorders (Roland R-05), while the Svantek recorded audio internally to aid in source identification and soundscape characterization.

Each sound level meter's microphone was mounted on a wooden stake at a height of approximately 1.5 meters (5 feet) and covered with a weather-resistant windscreen. The windscreen acts to reduce the influence of wind-induced self-noise on the measurements. The sound level meters were calibrated before and after each measurement period.

Wind data was logged at each site using an ONSET anemometer. This recorded average wind speed and wind gust speed data once per minute and was installed at microphone height (1.5 meters). Other meteorological data was taken from the National Weather Service ASOS station in Mansfield, Ohio (MFD).

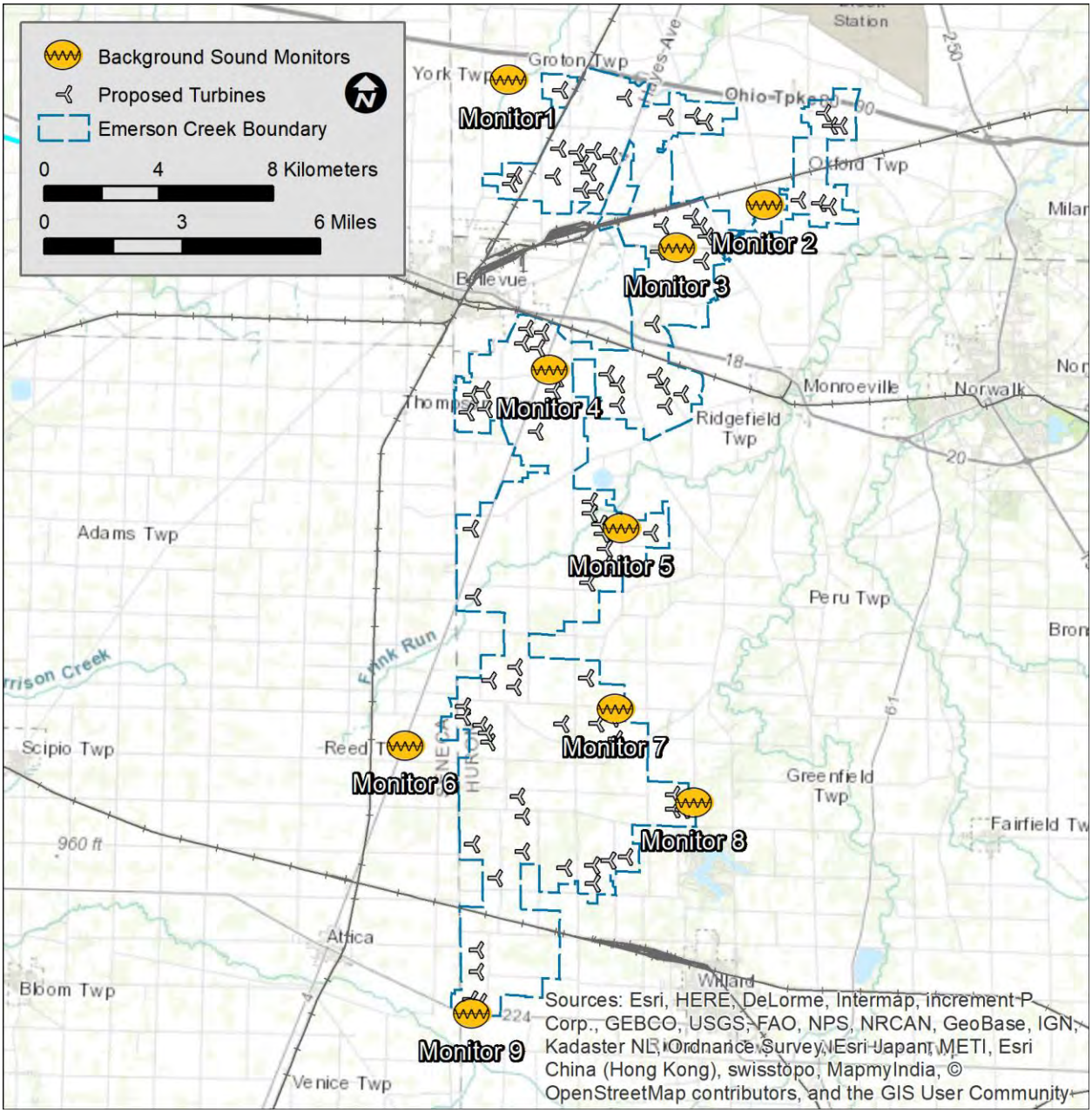


FIGURE 2: MAP OF BACKGROUND SOUND MONITOR LOCATIONS

4.2 LOCATION DESCRIPTIONS

Monitor 1

Monitor 1 was located next to a dormant agricultural field just northwest of the project area. The monitor was situated approximately 240 meters (787 feet) south of Portland Road, 910 meters

(2,985 feet) south of I-80, and 2.5 kilometers (1.5 miles) west of Hanson Aggregates' Sandusky Quarry. The nearest proposed turbine to this monitor location is T1 approximately 1.9 kilometers (1.2 miles) to the east-southeast. The area surrounding the monitor is primarily agricultural with a small patch of forest adjacent to the monitor. I-80 was clearly audible at this site.

A picture of the monitoring setup is shown in Figure 3, and a map of the monitoring location is provided in Figure 4.

FIGURE 3: PHOTOGRAPH OF MONITOR 1 LOOKING TO THE NORTHWEST (3-14-18)

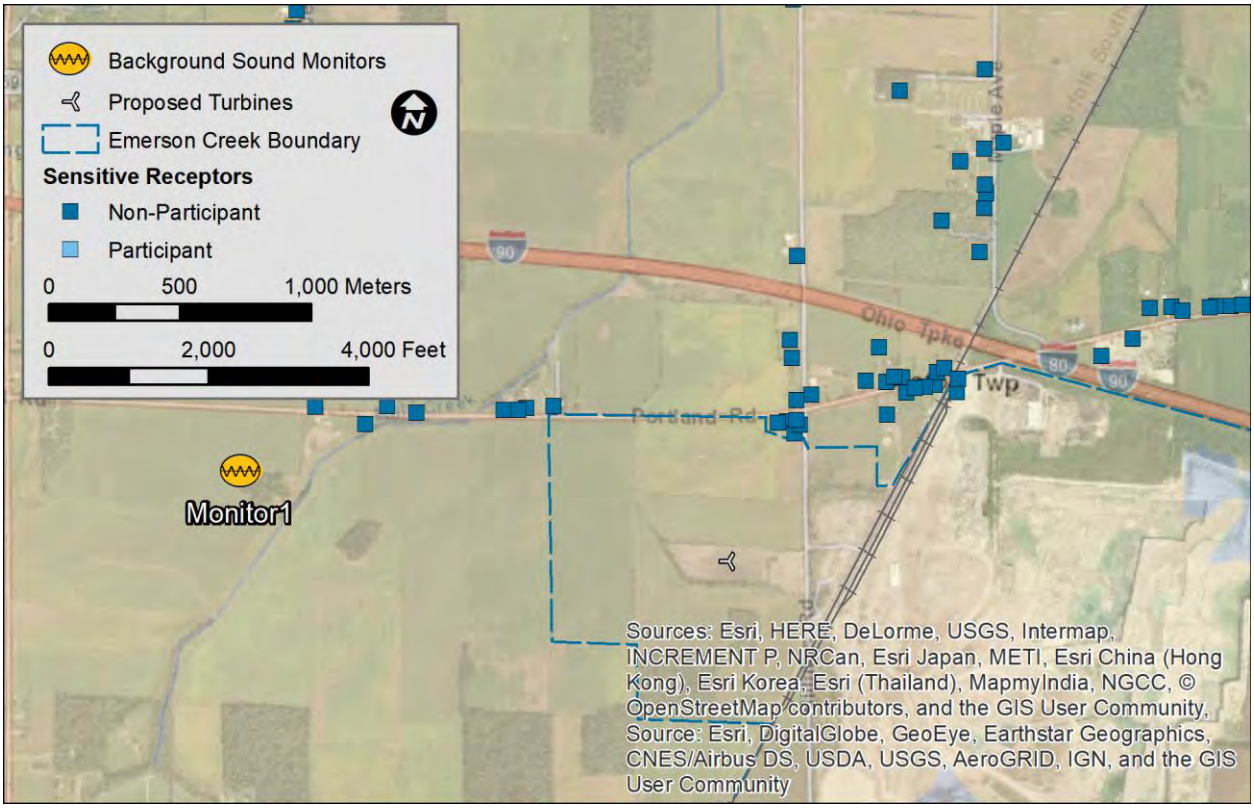


FIGURE 4: MAP OF MONITOR 1

Monitor 2

Monitor 2 was located in the northeast corner of the project area at a residence on Patten Tract Road. The monitor was situated approximately 62 meters (203 feet) east of Patten Tract Road, 725 meters (2,379 feet) south of a rail line, and 75 meters (246 feet) north of the residence that is located at the property. The nearest proposed turbine to this monitor location is T14 approximately 1.2 kilometers (0.75 miles) to the east. The area surrounding the monitor is primarily agricultural and rural residential with a small patch of forest to the east and south.

A picture of the monitoring setup is shown in Figure 5, and a map of the monitoring location is provided in Figure 6.

FIGURE 5: PHOTOGRAPH OF MONITOR 2 LOOKING TO THE SOUTHWEST (3-14-18)

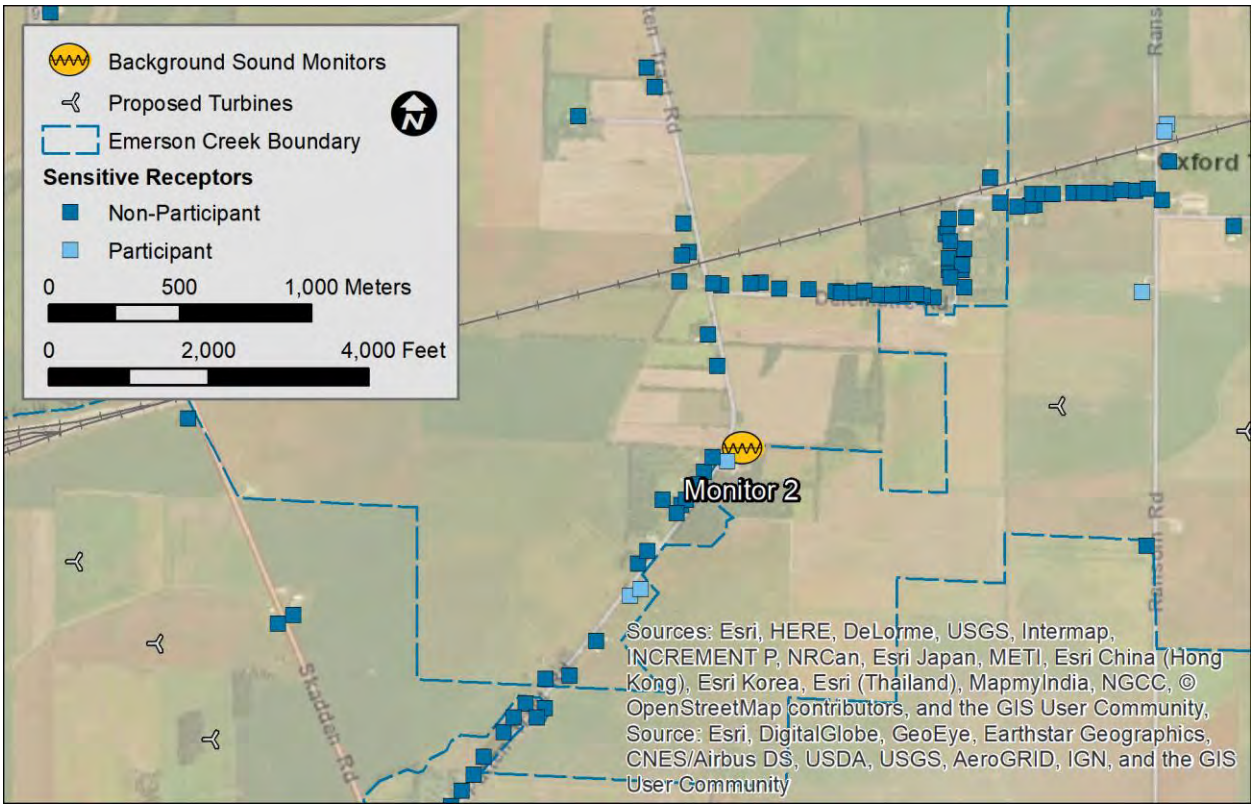


FIGURE 6: MAP OF MONITOR 2

Monitor 3

Monitor 3 was located in the north-central part of the project area on the Erie/Huron County Line. It was on a private property across from a residence on Yingling Road. The monitor was situated approximately 100 meters (328 feet) west of Yingling Road, 160 meters (525 feet) south of Edison Highway, and 1,430 meters (4,691 feet) south of a rail line. The nearest proposed turbine to this monitor location is T21 approximately 960 meters (2,165 feet) to the west. The area surrounding the monitor is primarily agricultural and rural residential.

A picture of the monitoring setup is shown in Figure 7, and a map of the monitoring location is provided in Figure 8.

FIGURE 7: PHOTOGRAPH OF MONITOR 3 LOOKING TO THE NORTH (3-14-18)

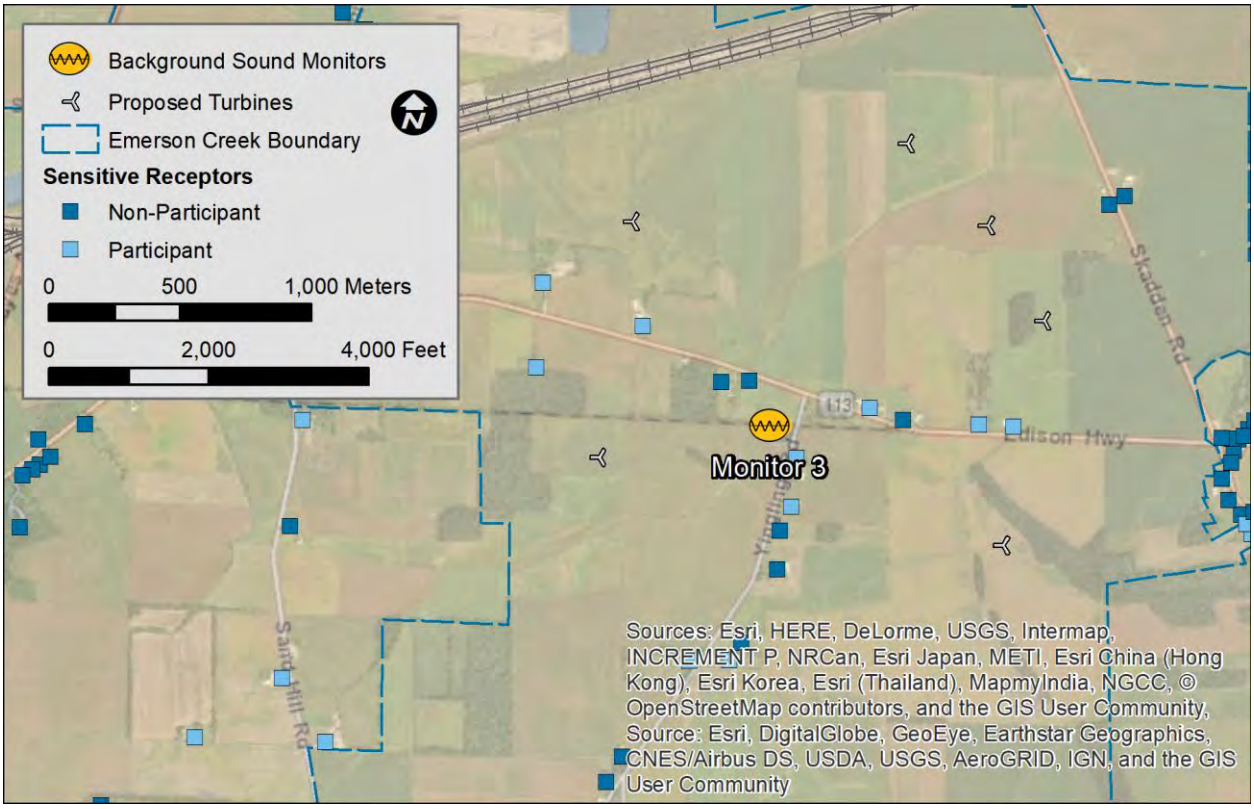


FIGURE 8: MAP OF MONITOR 3

Monitor 4

Monitor 4 was located in the central part of the project area adjacent to an agricultural field near the corner of OH-4 and Young Road. The monitor was situated approximately 225 meters (738 feet) east of OH-4 and 75 meters (246 feet) southeast of Young Road. The nearest proposed turbine to this monitor location is T29 approximately 385 meters (1,263 feet) to the southeast. The area surrounding the monitor is primarily agricultural and rural residential with a small patch of forest next to the nearby residences on Young Road.

A picture of the monitoring setup is shown in Figure 9, and a map of the monitoring location is provided in Figure 10.

FIGURE 9: PHOTOGRAPH OF MONITOR 4 LOOKING TO THE WEST (3-14-18)

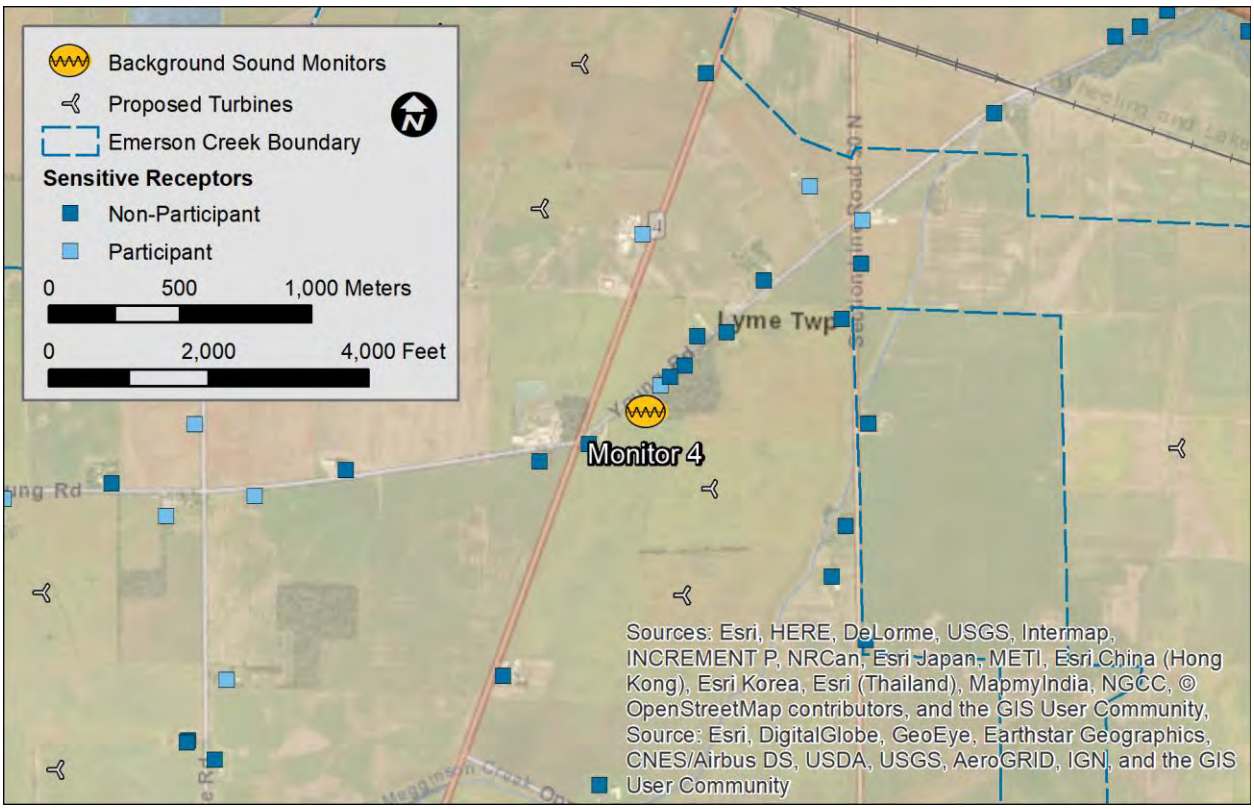


FIGURE 10: MAP OF MONITOR 4

Monitor 5

Monitor 5 was located in the central part of the project area adjacent to a forested area on Dogtown Road. The monitor was situated approximately 23 meters (75 feet) west of Dogtown Road and 1.5 kilometers (0.9 miles) south-southeast of Bellevue Reservoir. The nearest proposed turbine to this monitor location is T77 approximately 670 meters (2,198 feet) to the west. The area surrounding the monitor is primarily agricultural and rural residential with a forested area immediately adjacent to and west of the monitor.

A picture of the monitoring setup is shown in Figure 11, and a map of the monitoring location is provided in Figure 12.

FIGURE 11: PHOTOGRAPH OF MONITOR 5 LOOKING TO THE NORTHEAST (3-14-18)

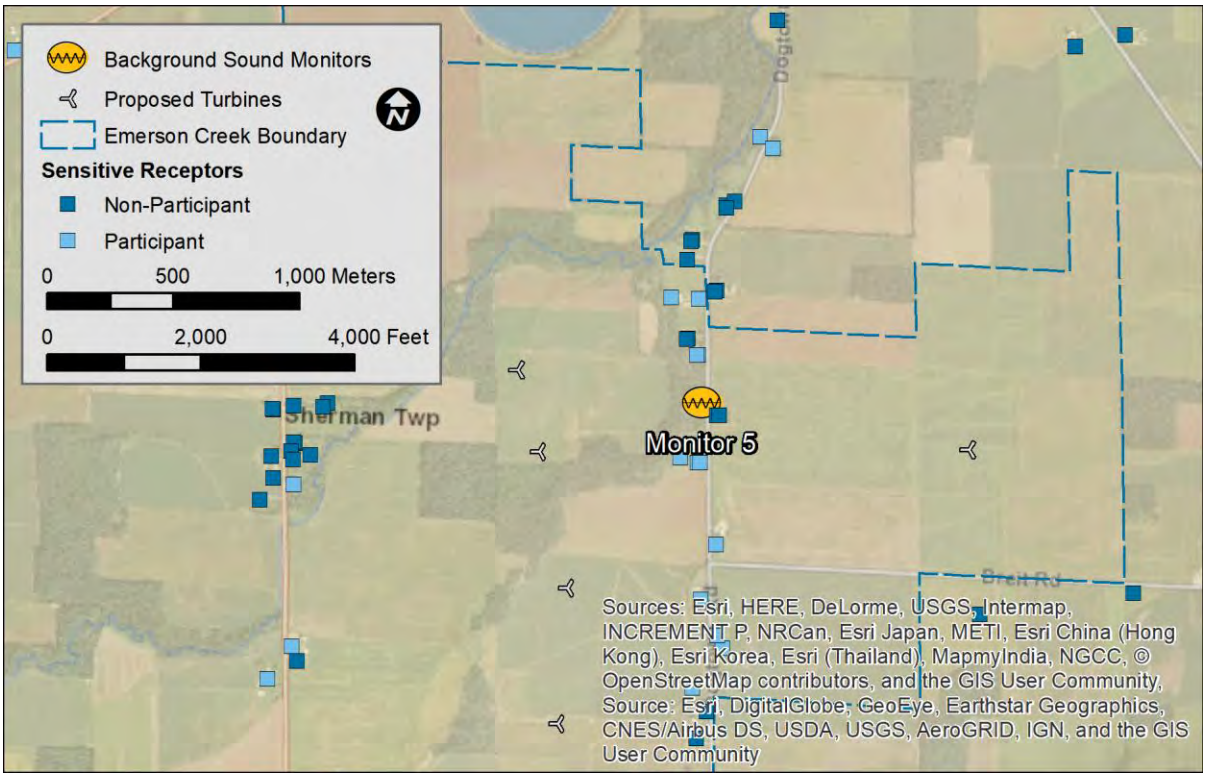


FIGURE 12: MAP OF MONITOR 5

Monitor 6

Monitor 6 was located near a residence and agricultural operation on OH-4 southwest of the project area. It was situated 600 meters (1,970 feet) north of OH-162 in Attica. The monitor was placed approximately 47 meters (154 feet) east of Ohio State Route 4, and 20 meters (66 feet) south of the residence. The location was 1,190 meters (3,905 feet) east of a rail line. The nearest proposed turbine to this monitor location is T53 approximately 2.3 kilometers (1.4 miles) to the northeast. The area surrounding the monitor is primarily agricultural with several large agricultural buildings on the property where the monitor was installed. The closest was located approximately 36 meters (120 feet) from the monitor.

A picture of the monitoring setup is shown in Figure 13, and a map of the monitoring location is provided in Figure 14.

FIGURE 13: PHOTOGRAPH OF MONITOR 6 LOOKING TO THE SOUTHEAST (9-13-18)

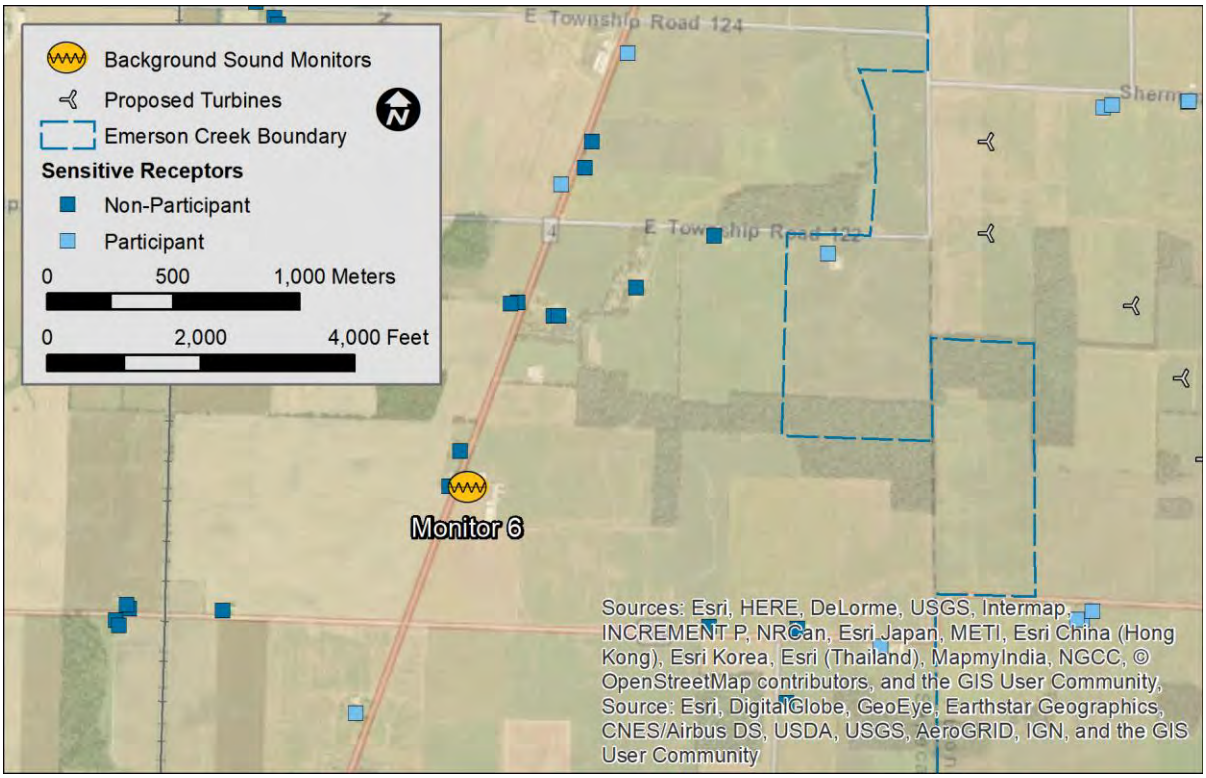


FIGURE 14: MAP OF MONITOR 6

Monitor 7

Monitor 7 was located at a residence on Sherman-Norwich Road in the town of Willard in the south-central part of the project area. It was situated 1,390 meters (4,560 feet) east of Section Line Road 30 S and 37 meters (121 feet) south of Sherman-Norwich Road. The property featured a house and several outbuildings. The house was the closest and situated 20 meters (66 feet) west-northwest of the monitor. The remaining outbuildings were at least 45 meters (148 feet) away, generally to the west and southwest. The broader area surrounding the monitor was agricultural, with residences scattered along Sherman-Norwich Road. The nearest proposed turbine to this monitor location is T54 approximately 370 meters (1,214 feet) to the south-southwest.

A picture of the monitoring setup is shown in Figure 15, and a map of the monitoring location is provided in Figure 16.

FIGURE 15: PHOTOGRAPH OF MONITOR 7 LOOKING TO THE SOUTH (9-13-18)

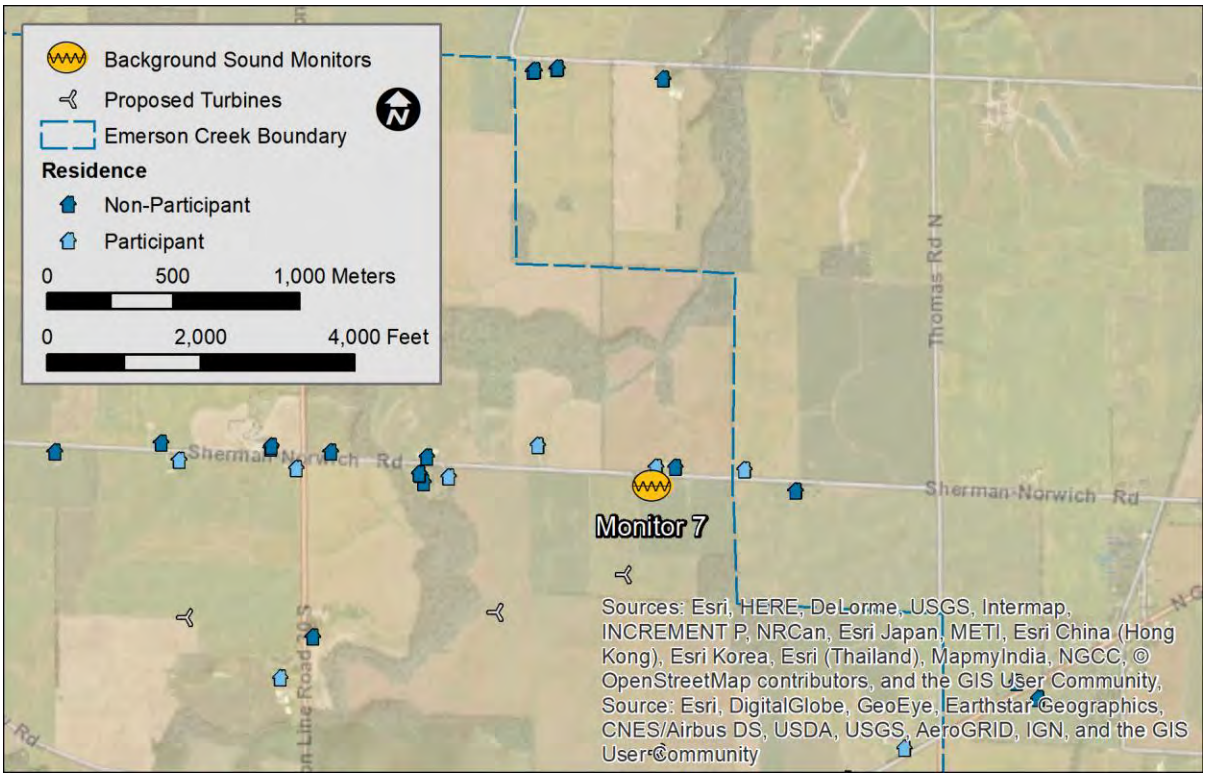


FIGURE 16: MAP OF MONITOR 7

Monitor 8

Monitor 8 was located at a residence on Town Line Rd 26 in Willard, Ohio in the southeastern portion of the project area. It was positioned 40 meters (131 feet) west of Town Line Rd 26, and 21 meters (69 feet) north of the residence on the property. The area surrounding the residence was largely agricultural. Additionally, a golf course was positioned 330 meters (108 feet) to the south, and Holiday Lake and associated residences were located approximately 1,308 meters (4,292 feet) to the south. The nearest proposed turbine to this monitor location is T79 approximately 435 meters (1,427 feet) to the southwest.

A picture of the monitoring setup is shown in Figure 17, and a map of the monitoring location is provided in Figure 18.

FIGURE 17: PHOTOGRAPH OF MONITOR 8 LOOKING TO THE NORTHWEST (9-13-18)

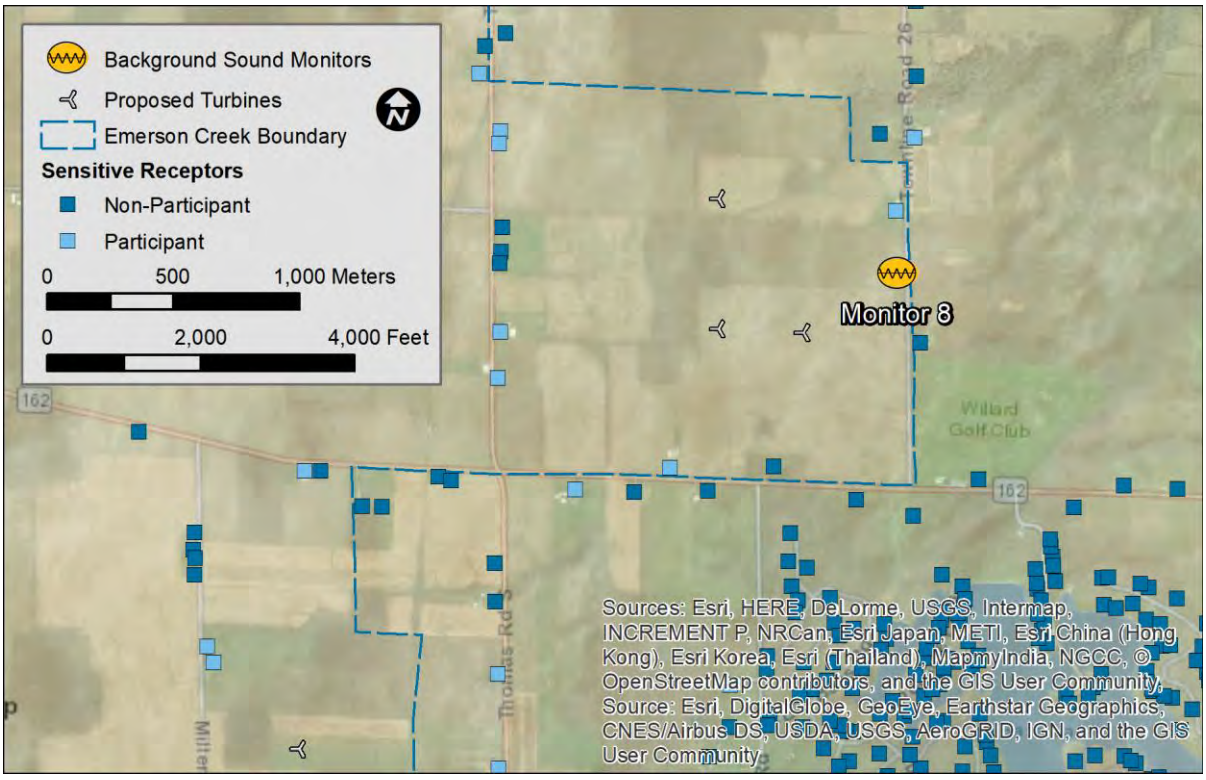


FIGURE 18: MAP OF MONITOR 8

Monitor 9

Monitor 9 was east of Attica, approximately 60 meters (197 feet) north of US-224, along the southern border of the project boundary, and 390 meters (1,280 feet) west of the Huron-Seneca county line. The site was located at a farm and house, with agricultural buildings and infrastructure, the closest located approximately 30 meters (164 feet) north of the monitor location. The broader area near the monitoring location is predominately farmland, with other residences and farming operations dispersed along US-224. The nearest proposed turbines to this monitor location are T82 approximately 480 meters (1,575 feet) to the north, and T83 approximately 500 meters (1640 feet) to the northeast.

A picture of the monitoring setup is shown in Figure 19, and a map of the monitoring location is provided in Figure 20.

FIGURE 19: PHOTOGRAPH OF MONITOR 9 LOOKING TO THE NORTHEAST (9-13-18)

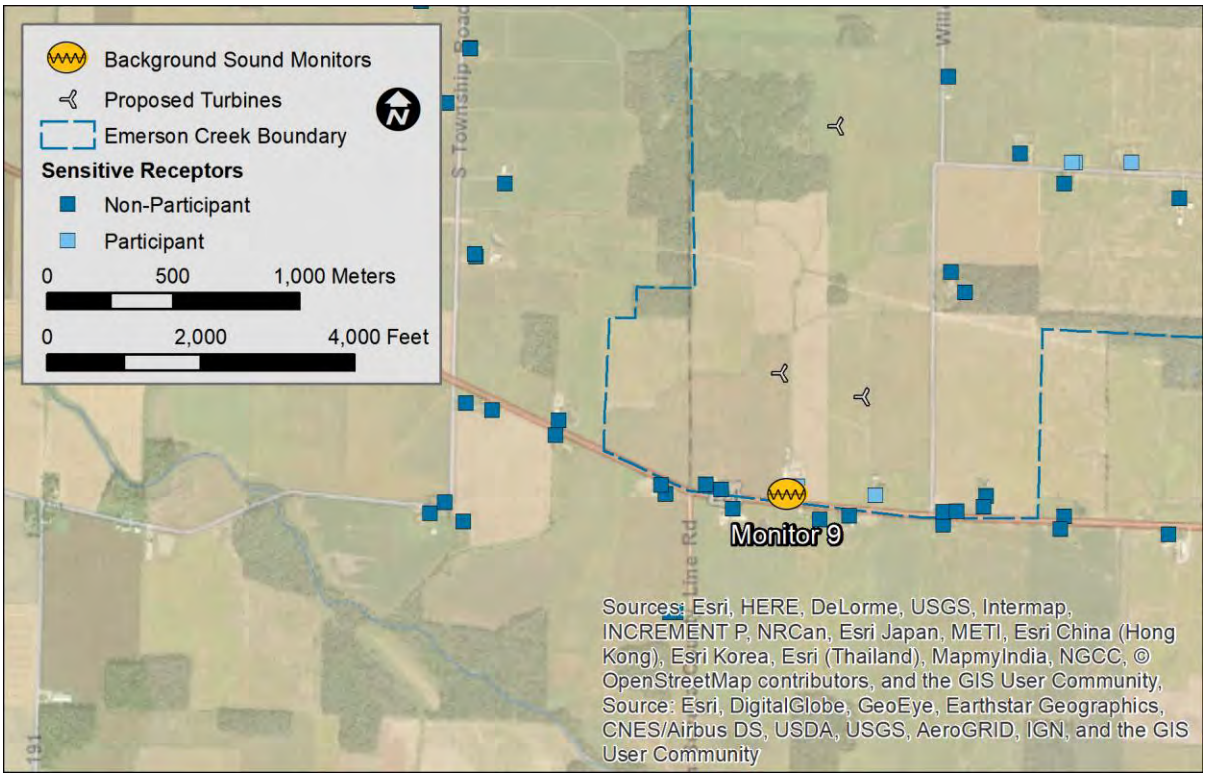


FIGURE 20: MAP OF MONITOR 9

4.3 DATA PROCESSING

Following the collection of the meters, data was downloaded, processed, and summarized into 10-minute, overall day, overall night, and full monitoring-period length durations. For each 10-minute period, equivalent average (L_{eq}), upper 10th percentile(L_{10}), median (L_{50}), and lower 10th percentile (L_{90}) sound levels were also calculated.

During analysis, sound level data was removed from the dataset to maintain the integrity of the background sound levels during periods that would cause false sound level readings or artificially high levels. These periods included:

- Wind speeds above 11 mph (5 m/s);
- Temperatures below 14°F;
- Precipitation and thunderstorm events;
- Anomalous events; or
- Equipment interactions by RSG staff, other people, or animals.

Monitors located near railway crossings also had train crossing horns removed from the data.

5.0 MONITORING RESULTS

5.1 RESULTS SUMMARY

Meteorology

Wind speed and gust speed varied by location. A summary of the maximum wind speeds and gusts recorded at microphone height at all sites is presented in Table 2. Monitor 5 and Monitor 8 saw the least amount of wind, while Monitors 1, 2, and 3 in the northern portion of the project area saw the most wind. Generally, the locations that were monitored in March experienced more wind over the monitoring period than the locations that were monitored in September.

TABLE 2: SUMMARY OF WIND SPEED DATA COLLECTED AT EACH MONITOR AT MICROPHONE HEIGHT

Location	Max Gust Speed		Average Wind Speed	
	m/s	mph	m/s	mph
Monitor 1	12.6	28.1	2.1	4.6
Monitor 2	12.3	27.6	1.8	4.1
Monitor 3	13.4	29.9	2.6	5.7
Monitor 4	10.6	23.6	1.1	2.5
Monitor 5	9.1	20.3	0.8	1.8
Monitor 6	10.1	22.5	0.8	1.8
Monitor 7	11.1	24.8	1.0	2.2
Monitor 8	7.6	16.9	0.4	0.9
Monitor 9	11.1	24.8	0.9	2.1

Precipitation events were obtained from nearby airport data and were corroborated through both analysis of the sound level spectrograms and from the audio recordings. During the March monitoring period there was precipitation for a portion of the day on March 17, during the night on March 21, and during the day on March 27 through the night of March 28. During the September monitoring period there was a short period of rain on September 19, and during the nights of September 25 and 26.

Temperature is only a concern if it drops below 14°F, which was not an issue during either the March or September monitoring period.

Background Sound Level Summary

Daytime, nighttime, and overall summaries are provided in this Section, followed by time-history graphs for each monitor in Section 5.2.

Sound levels for each location are summarized as daytime, nighttime, and entire period levels in Table 3. They include equivalent continuous average (L_{eq}), the 10th-percentile (L_{90}), the 50th-percentile (L_{50}), and 90th-percentile (L_{10}) levels. The nighttime L_{eq} across the project area ranged from 35 dBA at Monitor 7 to 52 dBA at Monitors 6 and 9. The average nighttime L_{eq} across the project area was 44 dBA. As discussed in Section 3.0, this sets the nighttime sound level limit for Emerson Creek at 49 dBA. The daytime L_{eq} across the project area ranged from 41 dBA at Monitor 8 to 56 dBA at Monitors 6 and 9. The average daytime L_{eq} across the project area was 48 dBA.

TABLE 3: SUMMARY OF BACKGROUND SOUND LEVELS BY LOCATION AND AVERAGED ACROSS THE PROJECT SITE[1]

Location	Sound Pressure Level (dBA)											
	Overall				Day				Night			
	L_{eq}	L_{90}	L_{50}	L_{10}	L_{eq}	L_{90}	L_{50}	L_{10}	L_{eq}	L_{90}	L_{50}	L_{10}
Monitor 1	51	42	49	54	51	42	50	54	50	42	48	54
Monitor 2	46	33	40	49	47	35	42	50	44	31	38	46
Monitor 3	46	35	42	49	47	37	43	50	45	33	41	48
Monitor 4	45	34	41	48	45	35	41	49	43	32	39	46
Monitor 5	43	28	34	45	44	29	36	47	40	27	32	41
Monitor 6	55	29	43	58	56	34	46	59	52	25	38	54
Monitor 7	40	21	29	39	42	24	31	41	35	20	25	35
Monitor 8	40	24	34	40	41	27	34	41	36	22	31	37
Monitor 9	55	30	51	58	56	34	51	59	52	25	47	53
Average					**48**				**44**			

5.2 MONITORING RESULTS BY LOCATION

For display purposes, the one second data that was collected is displayed in 10-minute summarized values in the time history-graphs to show overall trends. Sound levels are plotted along with ambient temperature for the data collected in March, and wind speed to show relating trends. Time periods during which data was removed for the sound level summary presented in Section 5.1 are indicated with color-coded markers. Sound level data during periods when the entire 10-minute interval was excluded for wind, rain, temperature, or anomalies are still present in these graphs as lighter colors, with the darker colors representing 10-minute intervals where

[1] There was some high frequency biogenic sound during the September monitoring period (Monitors 6 through 9). This type of sound is not a strong component of wind turbine noise and can have a strong influence one the overall background Leq. It was therefore filtered out of the data during periods where it was present using an ANS weighting (defined in ANSI S12.100, “Methods to Define and Measure the Residual Sound in Protected Natural and Quiet Residential Areas”) which simply discounts sound levels above the 1 kHz 1/1 octave band, the frequency range in which the biogenic sounds occur.

there were no data exclusions or only partial data exclusions.[2] The duration of each time history graph in Section 5.2 is one week, and each graph exhibits day/night shading where night is defined as 22:00 to 7:00 and shaded grey.

Monitor 1

Background sound level monitoring results for Monitor 1 are shown in Figure 21 through Figure 23. Being at the edge of a field and in the open, it was one of the windier sites. Background sound levels were driven by geophonic sounds such as wind passing over foliage and distant traffic on I-80. The daytime and nighttime L_{eq} were 51 and 50 dBA, respectively. The small difference between daytime and nighttime sound levels is due primarily to the consistent source of traffic noise from I-80.

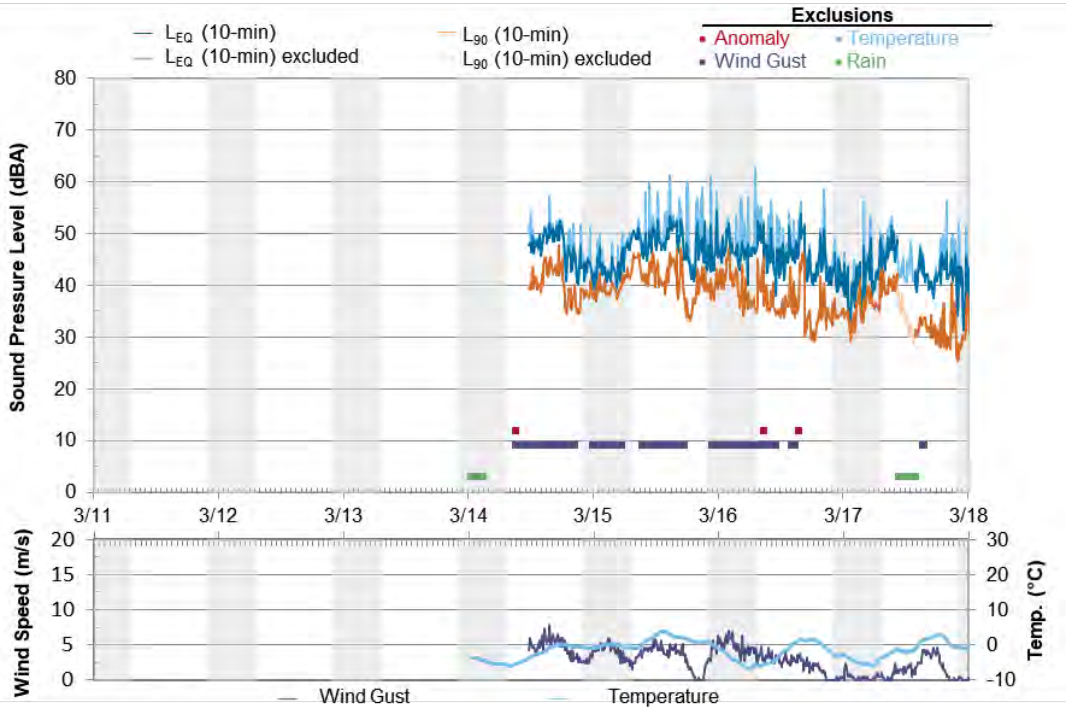


FIGURE 21: SOUND PRESSURE LEVELS OVER TIME - MONITOR 1, MARCH 13 TO MARCH 18

[2] For some 10-minute periods, shorter durations within the 10-minutes are excluded due to wind, rain, temperature, or anomalies, but the rest of the 10-minute interval is still used in the summary. These periods are shown in the darker colors (Leq and L90) as only some of the 10-minute period was excluded.

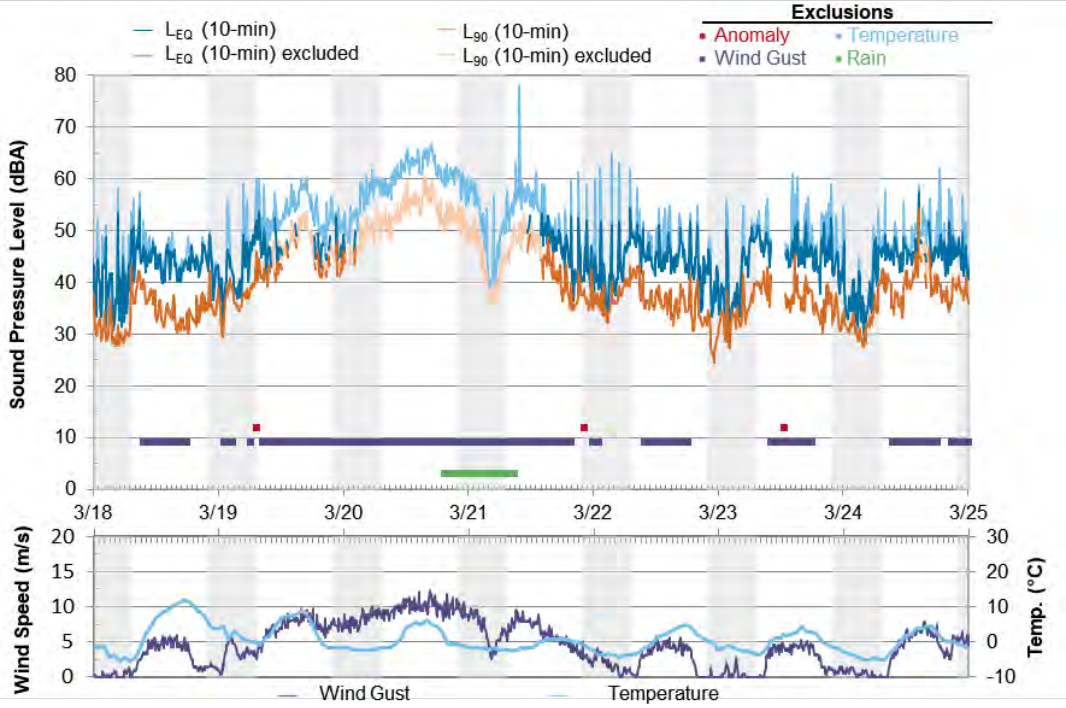


FIGURE 22: SOUND PRESSURE LEVELS OVER TIME - MONITOR 1, MARCH 18 TO MARCH 25

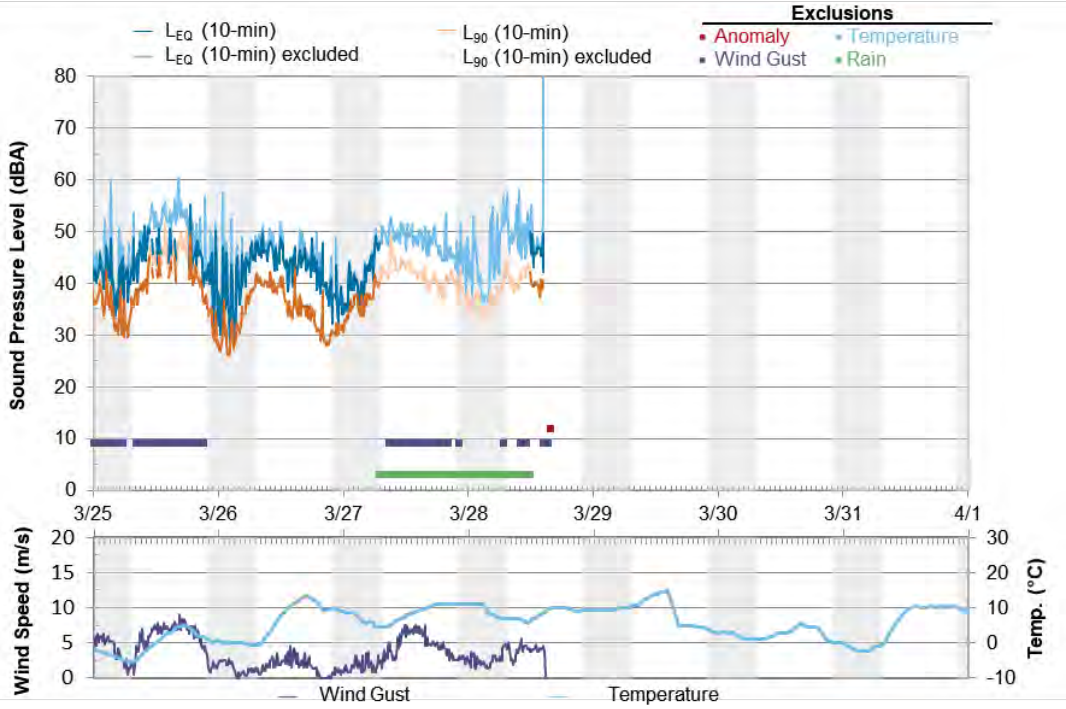


FIGURE 23: SOUND PRESSURE LEVELS OVER TIME - MONITOR 1, MARCH 25 TO MARCH 28

Monitor 2

Background sound level monitoring results for Monitor 2 are shown in Figure 24 through Figure 26. Monitor 2 was also one of the windier sites. Background sound levels were driven by geophonic sounds and local traffic on Patten Tract Road. There was also occasional sound from train passbys on the nearby rail line. The daytime and nighttime L_{eq} were 47 and 44 dBA, respectively.

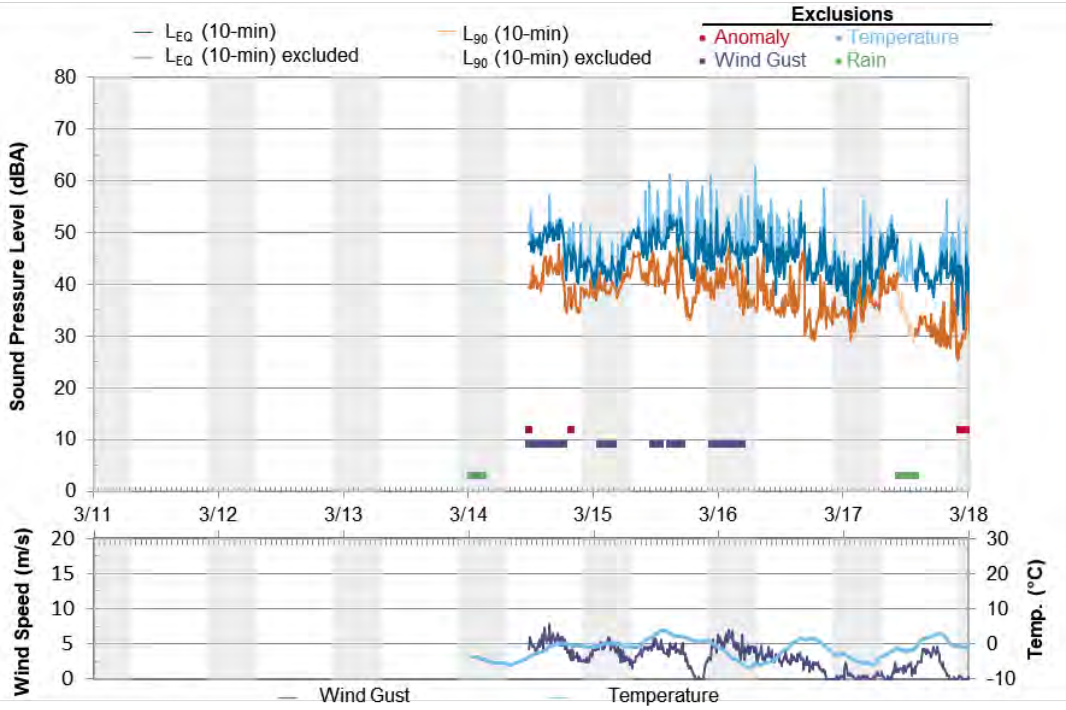


FIGURE 24: SOUND PRESSURE LEVELS OVER TIME - MONITOR 2, MARCH 13 TO MARCH 18

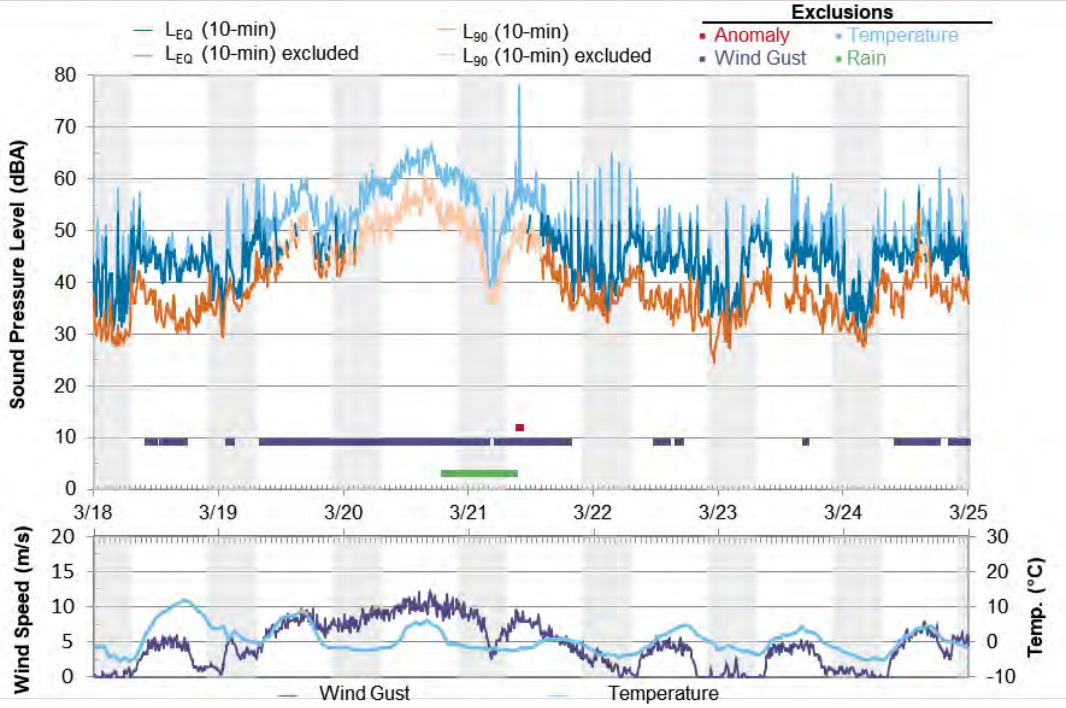


FIGURE 25: SOUND PRESSURE LEVELS OVER TIME - MONITOR 2, MARCH 18 TO MARCH 25

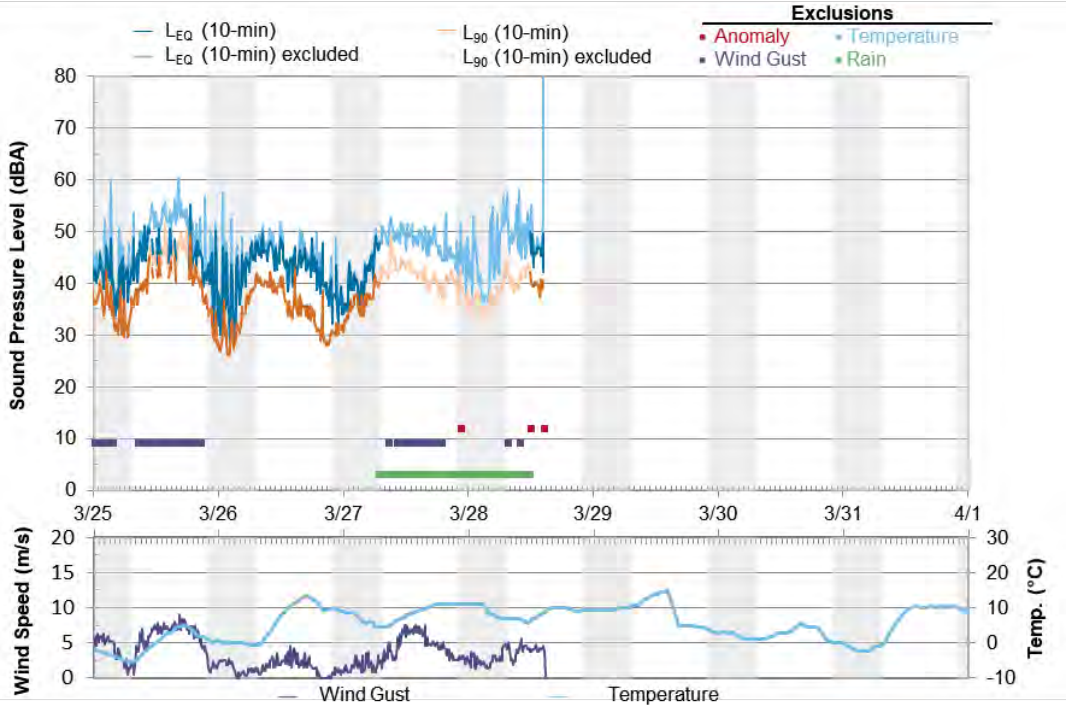


FIGURE 26: SOUND PRESSURE LEVELS OVER TIME - MONITOR 2, MARCH 25 TO MARCH 28

Monitor 3

Background sound level monitoring results for Monitor 3 are shown in Figure 27 through Figure 29. Monitor 3 was the windiest site monitored. Background sound levels were driven by geophonic sounds and local traffic on Yingling Road and Edison Highway. There was also occasional sound from train passbys on the nearby rail line. This site was very similar in soundscape character to that of Monitor 2. The daytime and nighttime L_{eq} were 47 and 45 dBA, respectively.

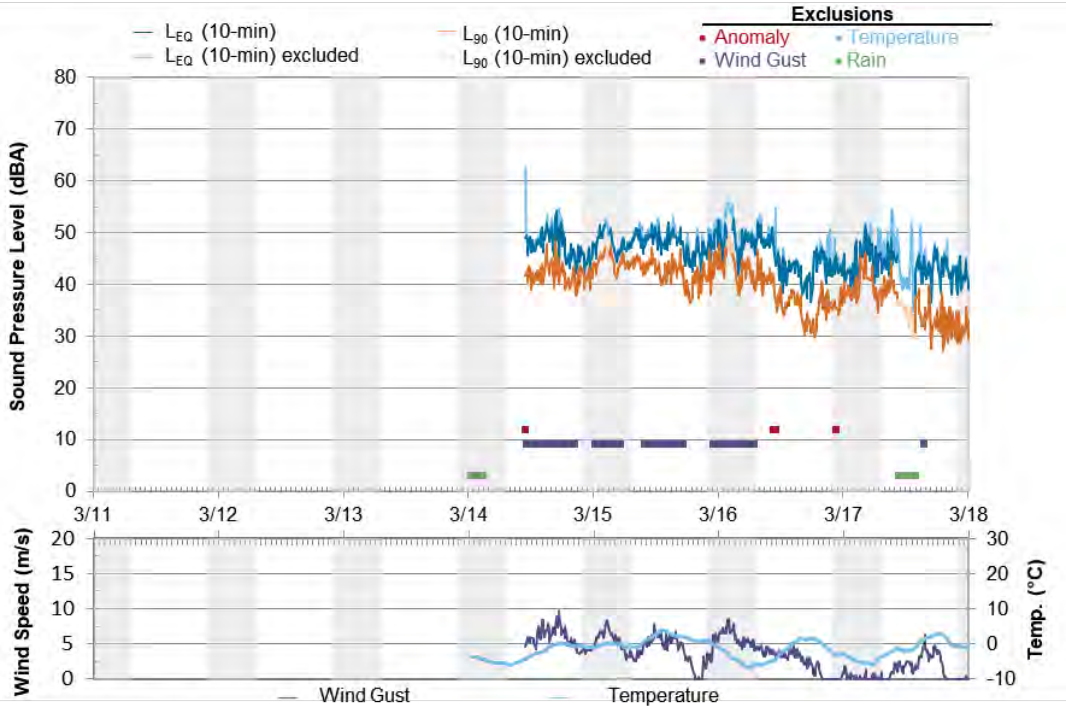


FIGURE 27: SOUND PRESSURE LEVELS OVER TIME - MONITOR 3, MARCH 13 TO MARCH 18

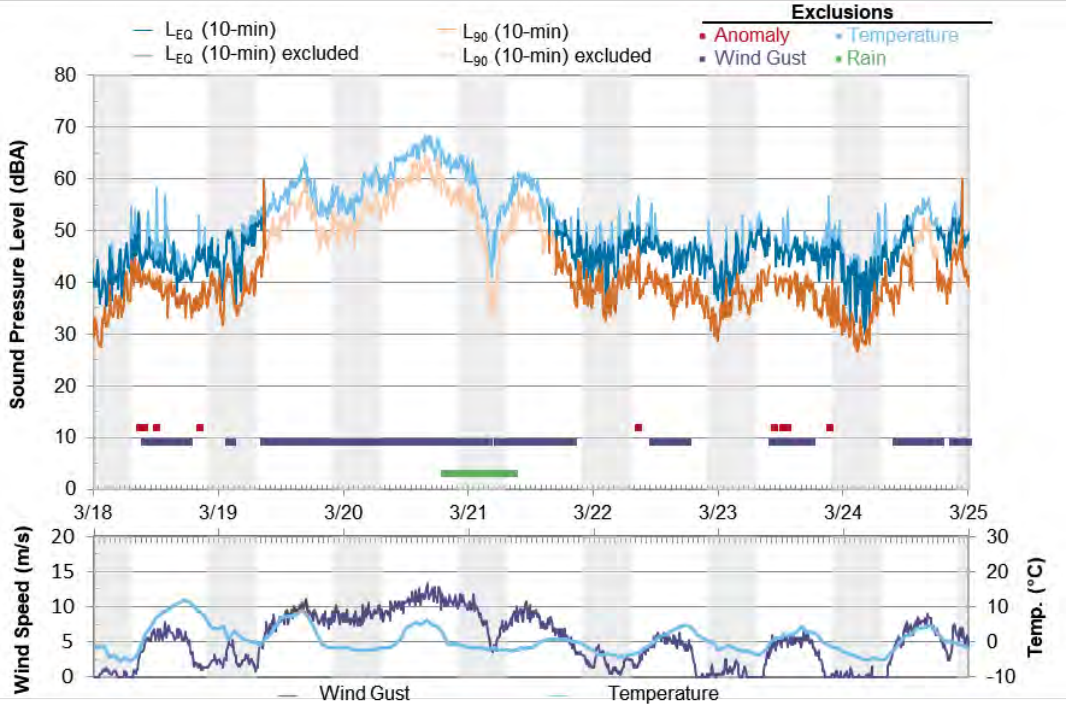


FIGURE 28: SOUND PRESSURE LEVELS OVER TIME - MONITOR 3, MARCH 18 TO MARCH 25

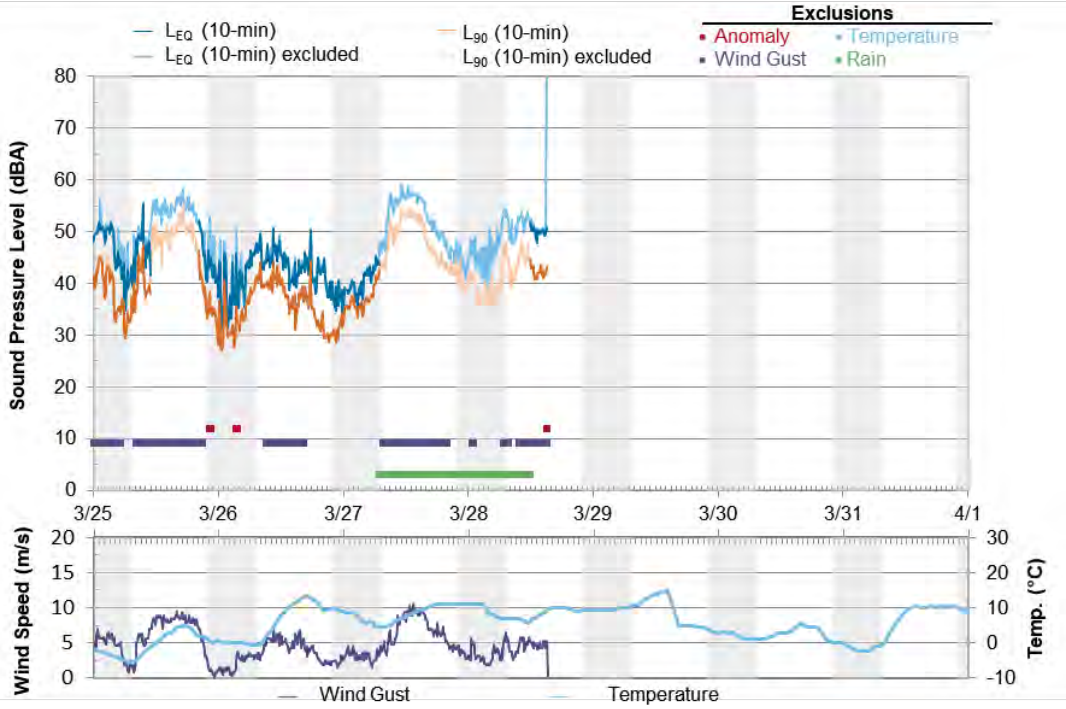


FIGURE 29: SOUND PRESSURE LEVELS OVER TIME - MONITOR 3, MARCH 25 TO MARCH 28

Monitor 4

Background sound level monitoring results for Monitor 4 are shown in Figure 30 through Figure 32. It was periodically windy at this site, but less so than some other sites. Background sound levels were driven by traffic on OH-4, local traffic on Young Road, and geophonic sounds. There was also occasional sound from train passbys on the nearby rail line. The daytime and nighttime L_{eq} were 45 and 43 dBA, respectively.

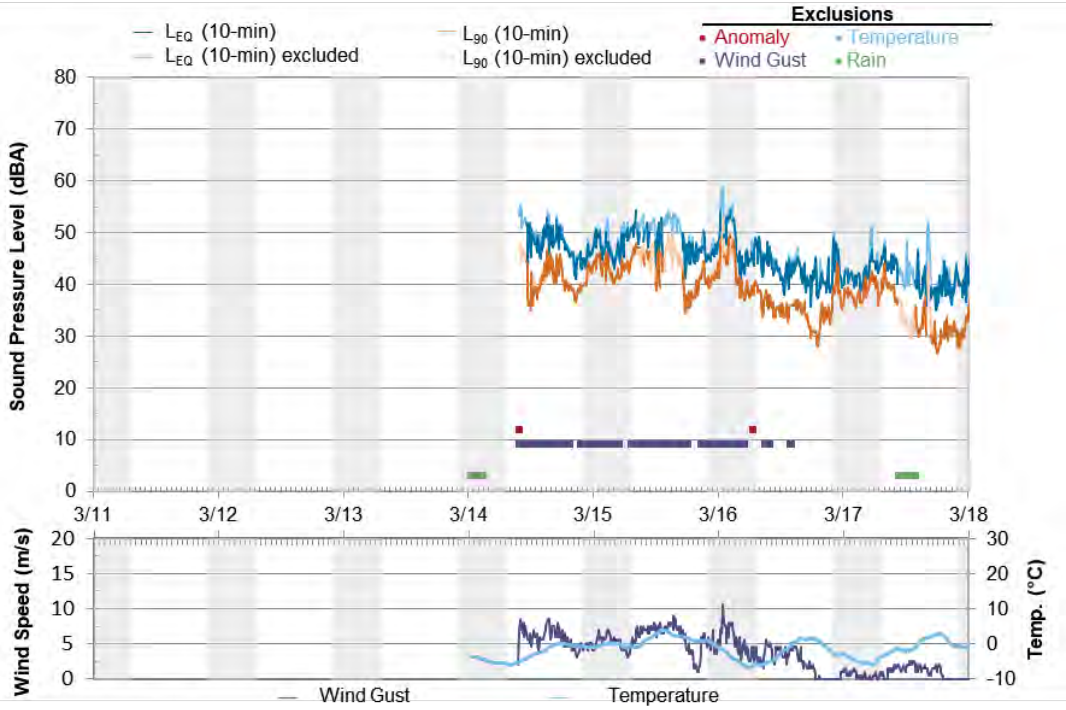


FIGURE 30: SOUND PRESSURE LEVELS OVER TIME - MONITOR 4, MARCH 13 TO MARCH 18

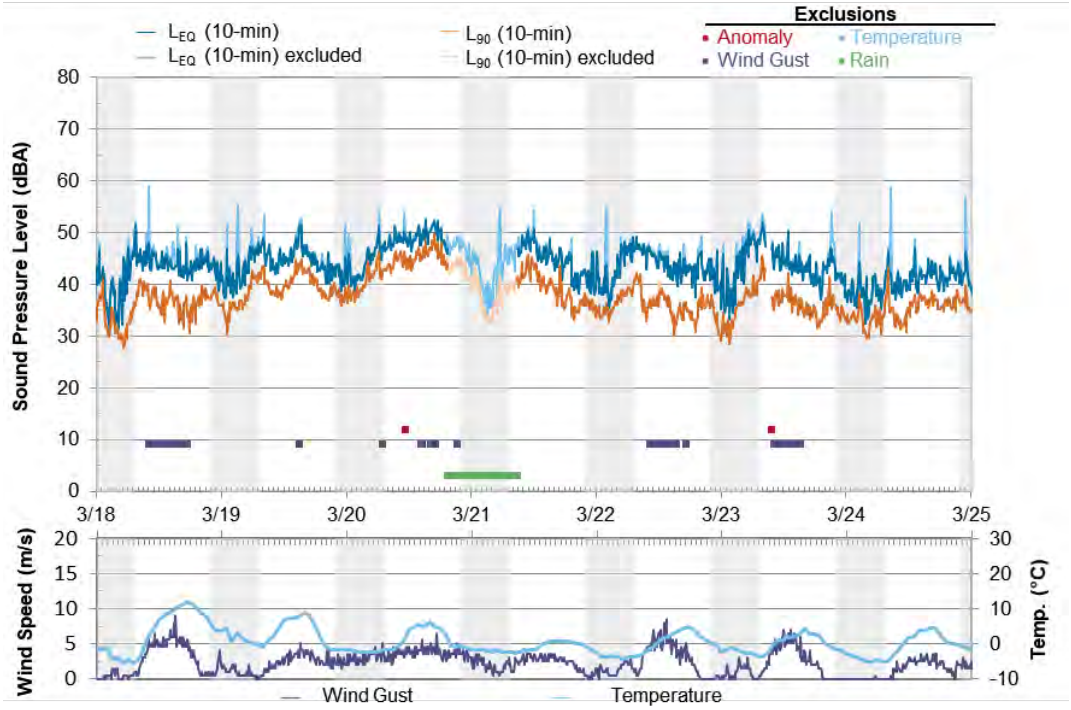


FIGURE 31: SOUND PRESSURE LEVELS OVER TIME - MONITOR 4, MARCH 18 TO MARCH 25

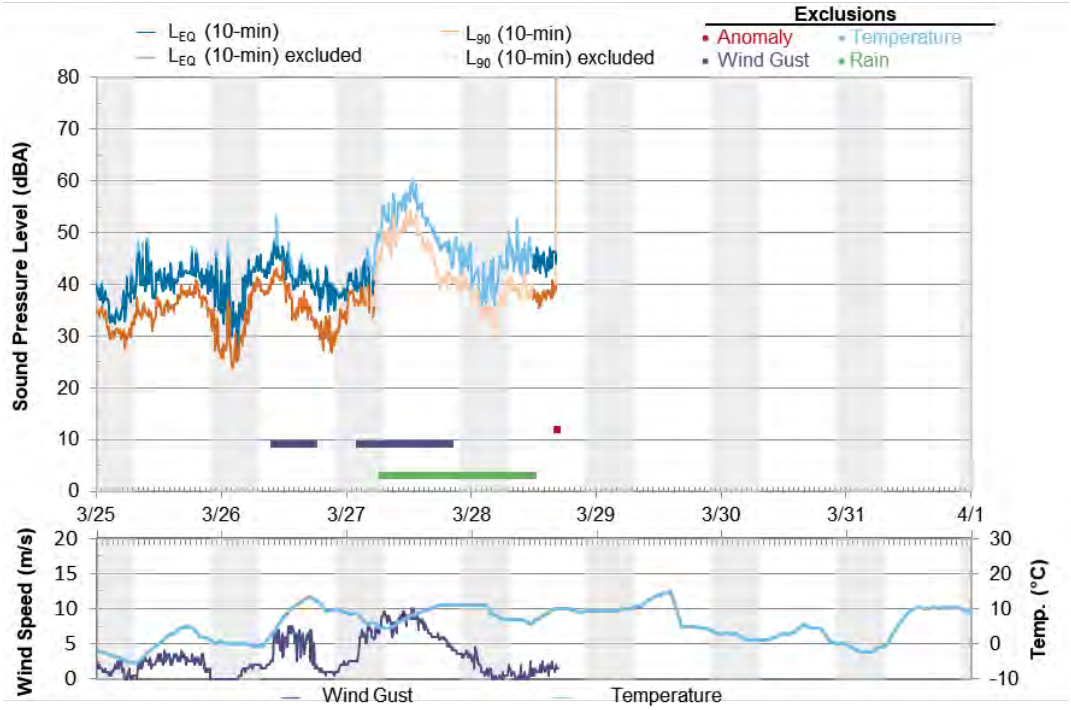


FIGURE 32: SOUND PRESSURE LEVELS OVER TIME - MONITOR 4, MARCH 25 TO MARCH 28

Monitor 5

Background sound level monitoring results for Monitor 5 are shown in Figure 33 through Figure 35. Monitor 5 was one of the less windy sites and was more rural than the other locations. Background sound levels were driven by geophonic sounds, occasional biogenic sounds (e.g. bird calls), and occasional local traffic on Dogtown Road. The daytime and nighttime L_{eq} were 44 and 40 dBA, respectively.

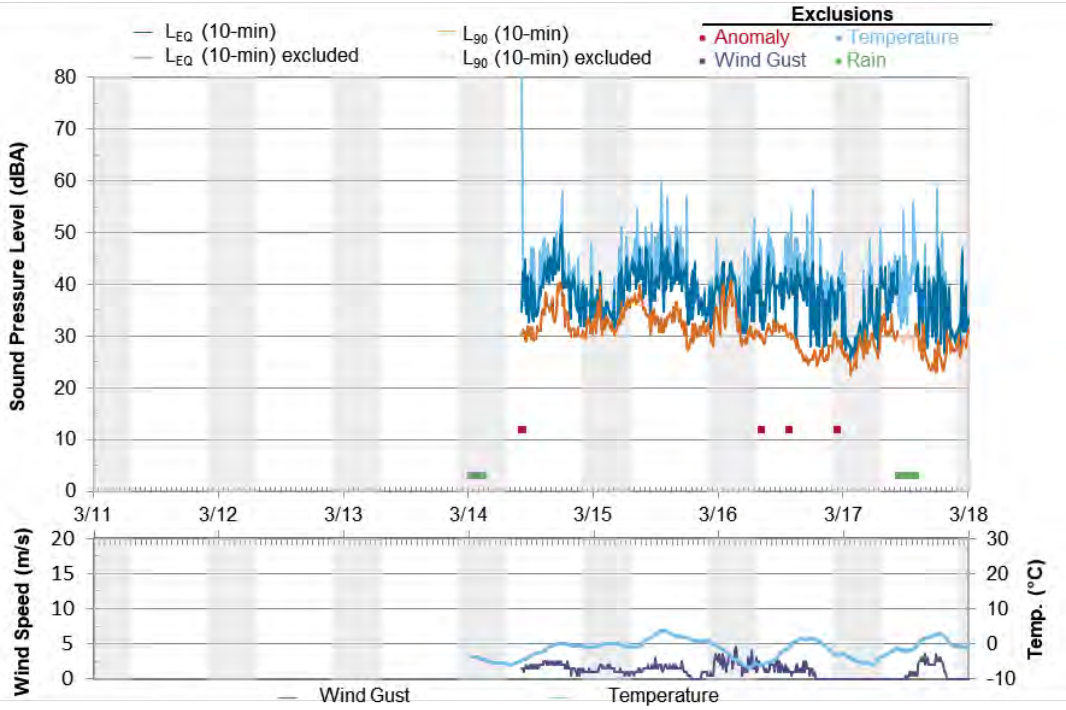


FIGURE 33: SOUND PRESSURE LEVELS OVER TIME - MONITOR 5, MARCH 13 TO MARCH 18

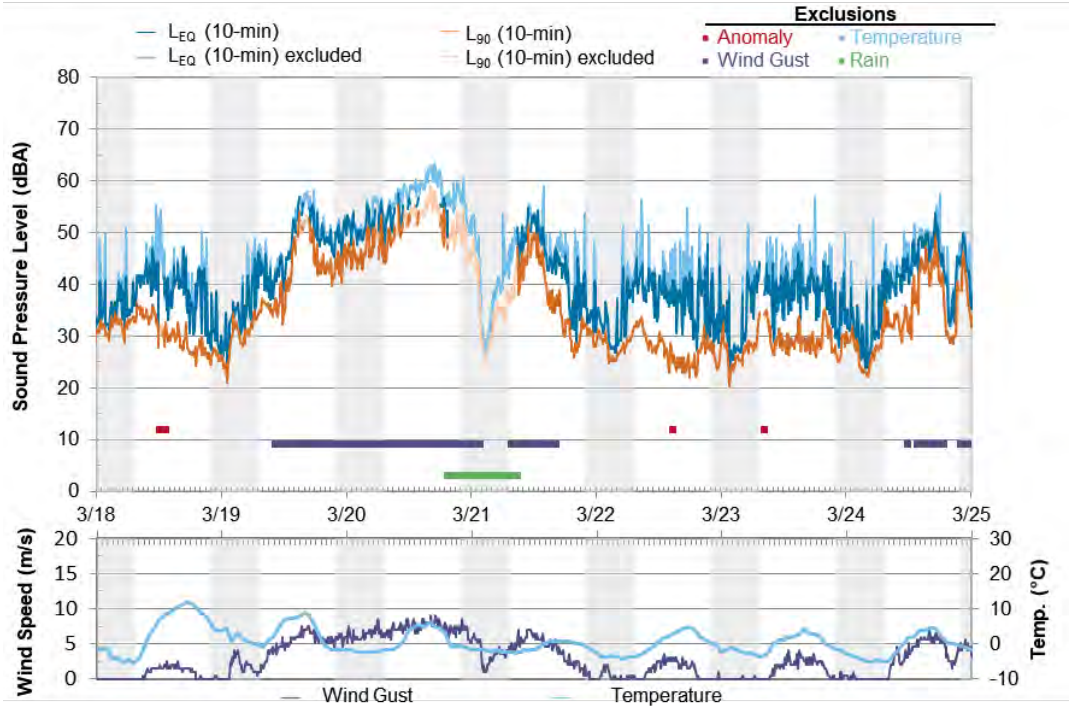


FIGURE 34: SOUND PRESSURE LEVELS OVER TIME - MONITOR 5, MARCH 18 TO MARCH 25

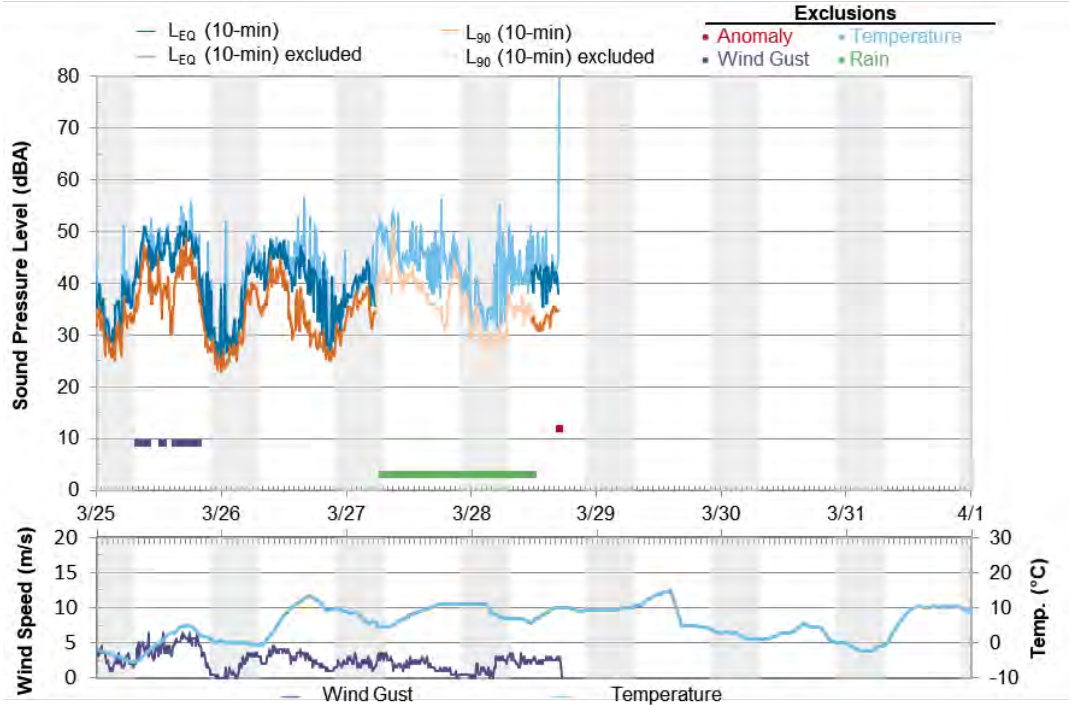


FIGURE 35: SOUND PRESSURE LEVELS OVER TIME - MONITOR 5, MARCH 25 TO MARCH 28

Monitor 6

Background sound level monitoring results for Monitor 6 are shown in Figure 36 through Figure 38. Monitor 6 was one of the less windy sites. Background sound levels were driven by geophonic sounds, the agricultural nature of the site, and passing traffic on OH-4. There was also occasional sound from train passbys on the nearby rail line. The strong diurnal pattern in sound levels at this site are indicative of daytime anthropogenic sound such as agricultural functions and traffic on OH-4. The large difference between the L_{eq}, and $L_{90,}$ particularly during the day, indicates that much of the sound is due to short duration events, such as vehicle passbys. The daytime and nighttime L_{eq} were 56 and 52 dBA, respectively.

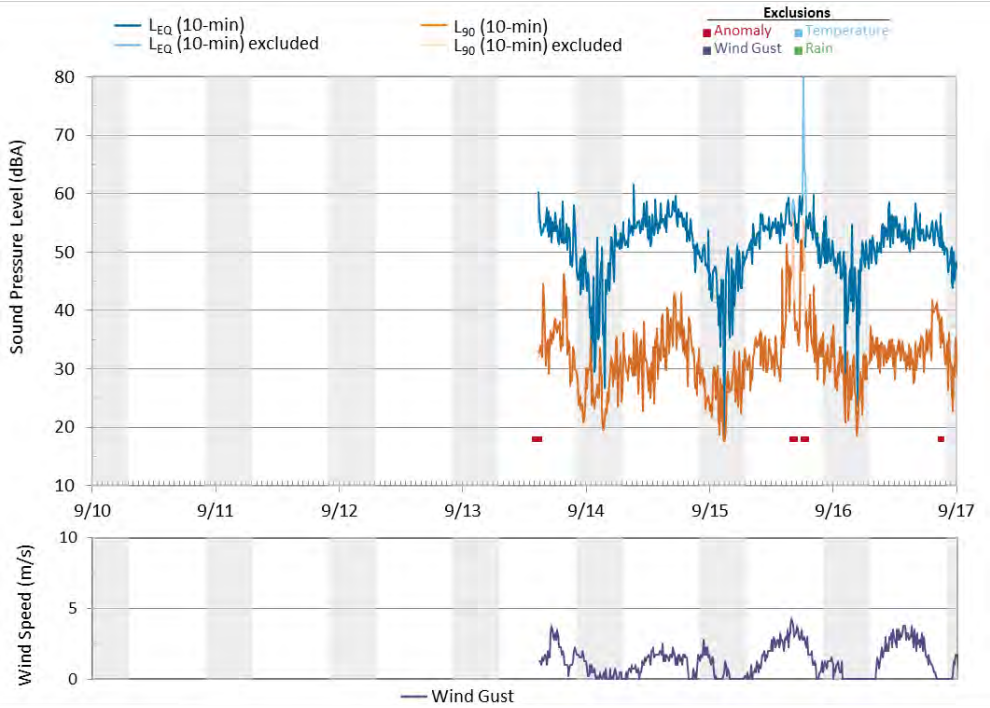


FIGURE 36: SOUND PRESSURE LEVELS OVER TIME - MONITOR 6, SEPT. 13 TO SEPT. 17

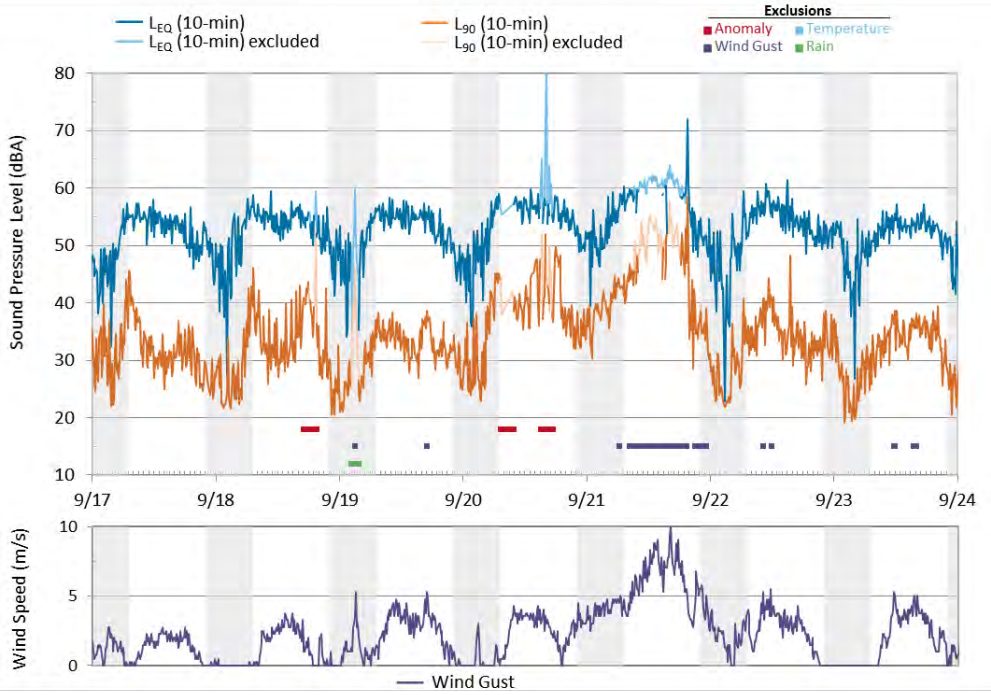


FIGURE 37: SOUND PRESSURE LEVELS OVER TIME - MONITOR 6, SEPT. 17 TO SEPT. 24

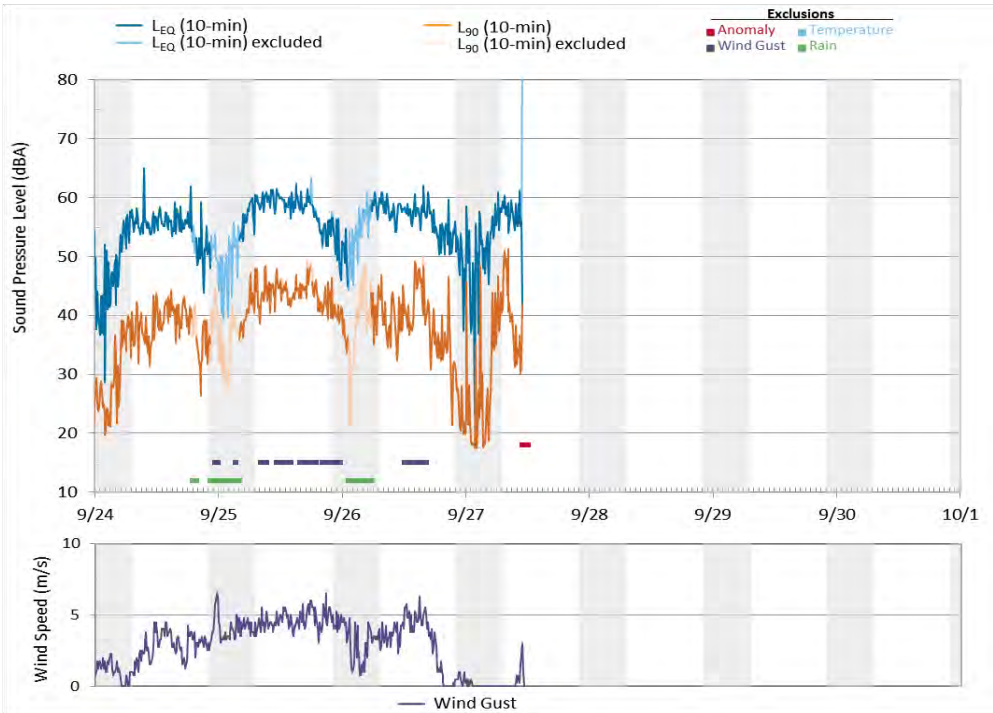


FIGURE 38: SOUND PRESSURE LEVELS OVER TIME - MONITOR 6, SEPT. 24 TO SEPT. 27

Monitor 7

Background sound level monitoring results for Monitor 7 are shown in Figure 39 through Figure 41. It was periodically windy at this site, but less so than some other sites. This was one of the most rural and quietest sites monitored. Background sound levels were driven by geophonic sounds, occasional agricultural sounds, and infrequent traffic on Sherman-Norwich Road. The daytime and nighttime L_{eq} were 42 and 35 dBA, respectively.

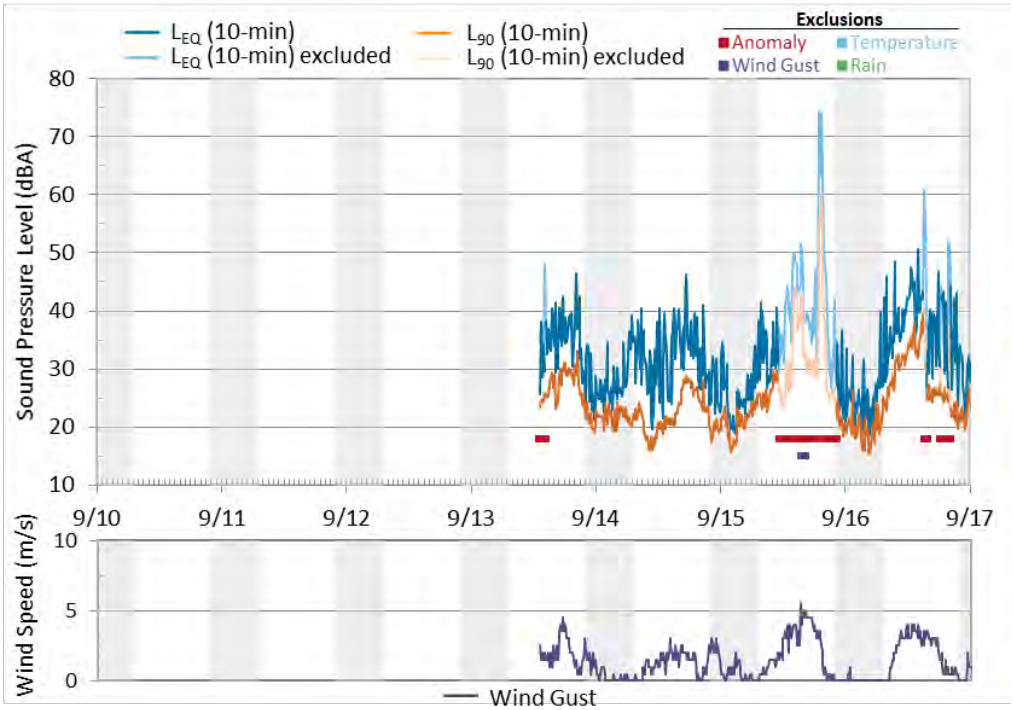


FIGURE 39: SOUND PRESSURE LEVELS OVER TIME - MONITOR 7, SEPT. 13 TO SEPT. 17

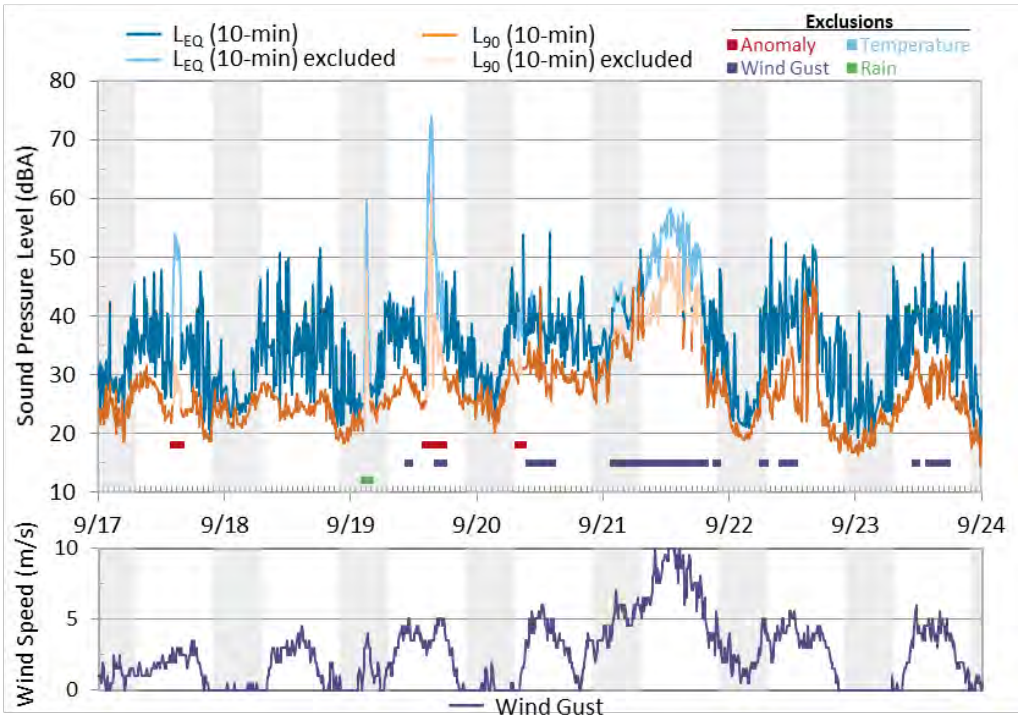


FIGURE 40: SOUND PRESSURE LEVELS OVER TIME - MONITOR 7, SEPT. 17 TO SEPT. 24

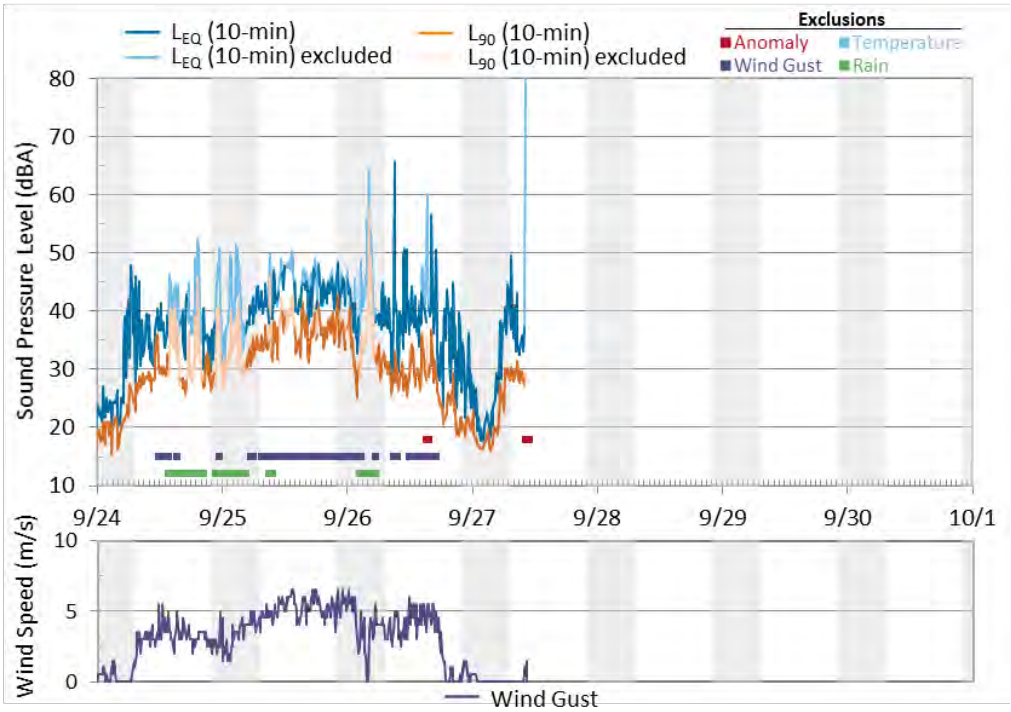


FIGURE 41: SOUND PRESSURE LEVELS OVER TIME - MONITOR 7, SEPT. 24 TO SEPT. 27

Monitor 8

Background sound level monitoring results for Monitor 8 are shown in Figure 42 through Figure 44. Monitor 8 was the least windy site and was one of the most rural and quiet sites monitored. This site was very similar in soundscape character to Monitor 7. Background sound levels were driven by geophonic sounds, occasional agricultural sounds, and infrequent local traffic. The daytime and nighttime L_{eq} were 41 and 36 dBA, respectively.

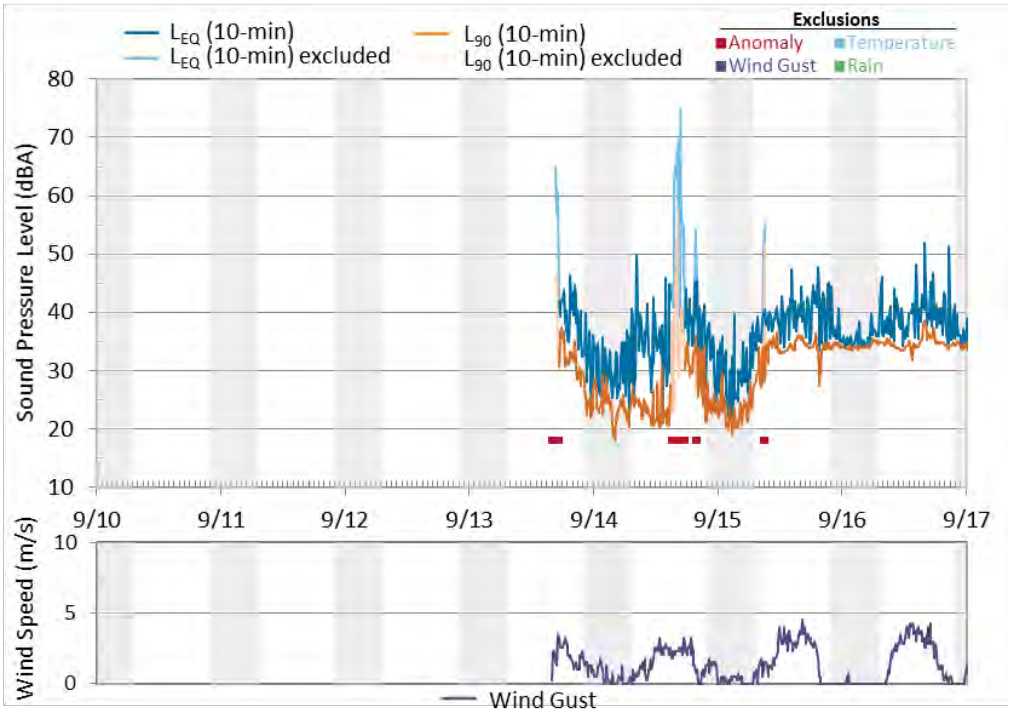


FIGURE 42: SOUND PRESSURE LEVELS OVER TIME - MONITOR 8, SEPT. 13 TO SEPT. 17

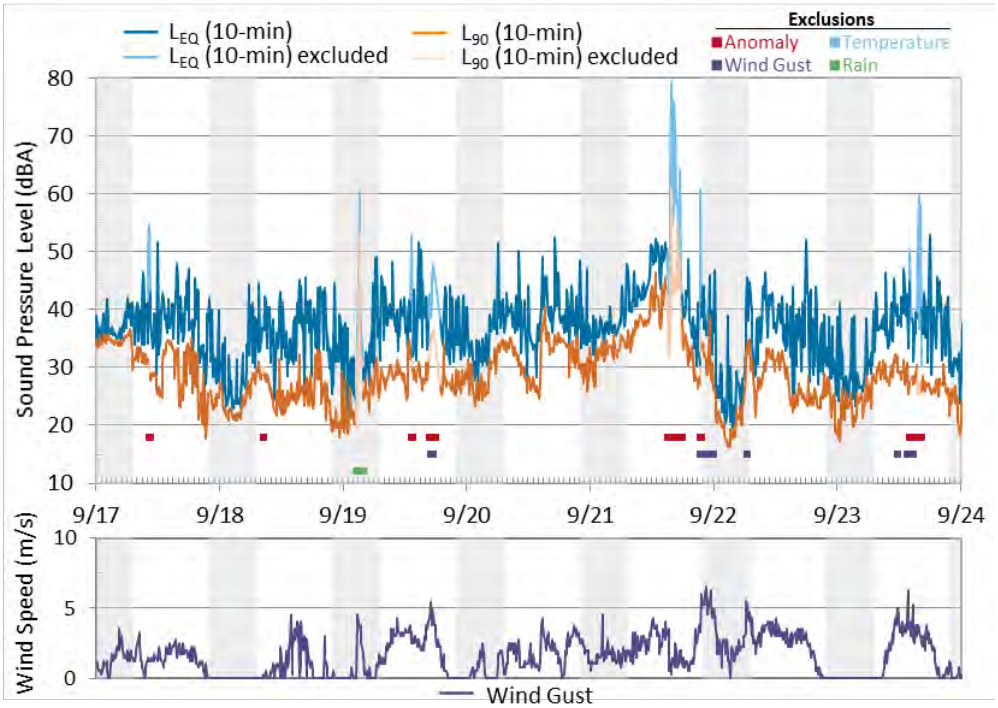


FIGURE 43: SOUND PRESSURE LEVELS OVER TIME - MONITOR 8, SEPT. 17 TO SEPT. 24

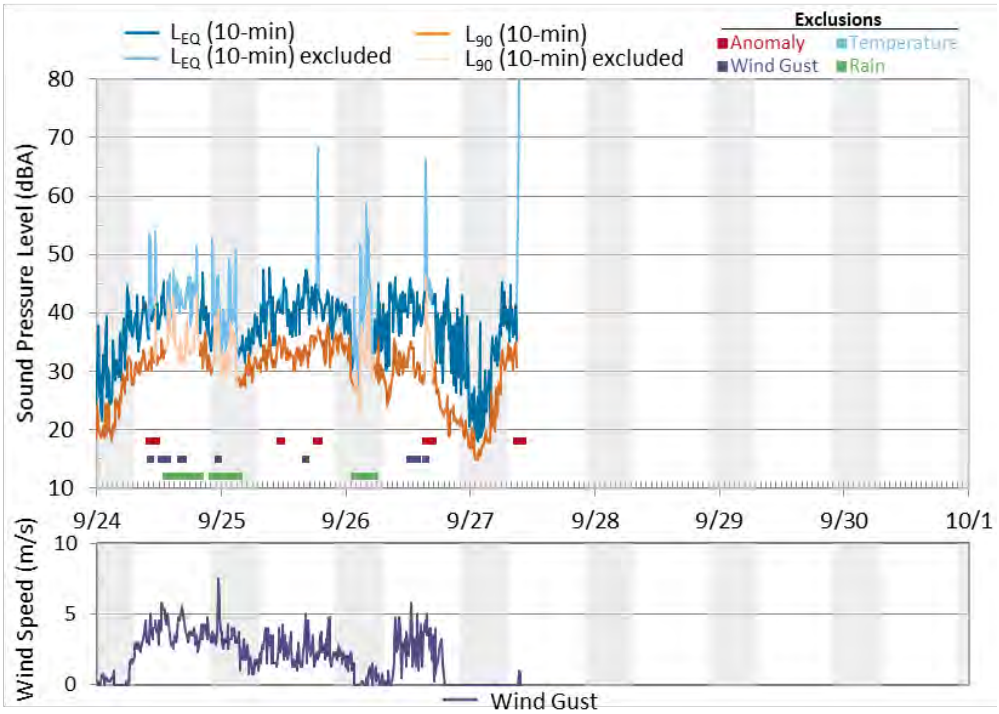


FIGURE 44: SOUND PRESSURE LEVELS OVER TIME - MONITOR 8, SEPT. 24 TO SEPT. 27

Monitor 9

Background sound level monitoring results for Monitor 9 are shown in Figure 45 through Figure 47. It was periodically windy at this site, but less so than some other sites. This site had notable agricultural activity which was the driver of background sound levels, particularly during the second week of monitoring, where there was a persistent mechanical sound during the day and night associated with the agricultural operation. This accounted for sound levels rarely dipping below 50 dBA during the second week. Additional sources included frequent passing traffic on US-224 and occasional train passbys on the distant rail line. The daytime and nighttime L_{eq} were 56 and 52 dBA, respectively.

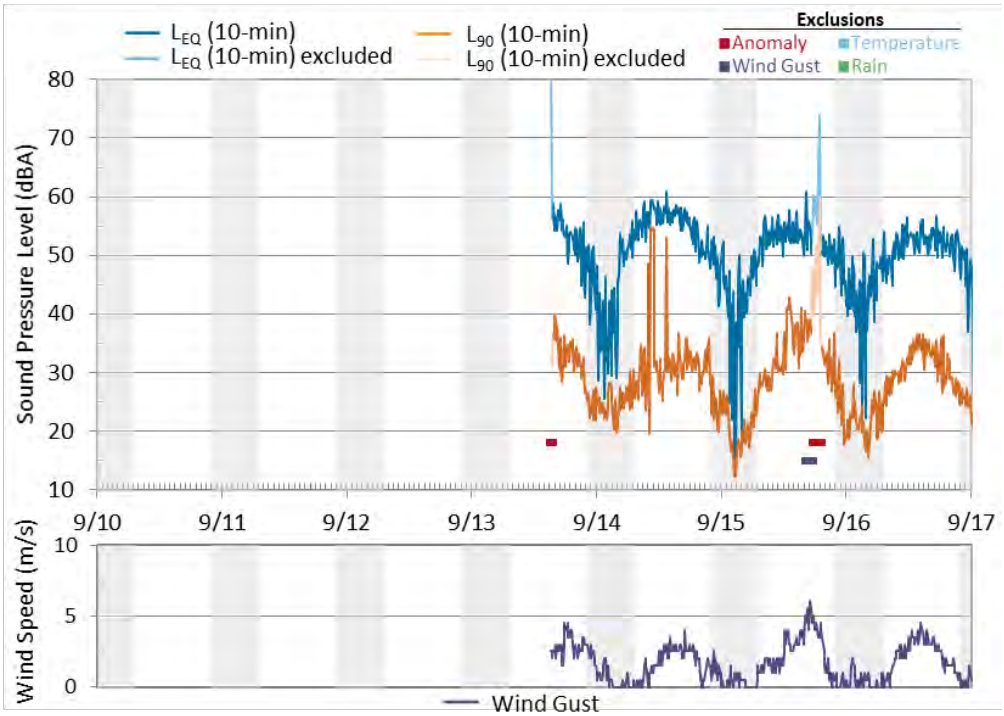


FIGURE 45: SOUND PRESSURE LEVELS OVER TIME - MONITOR 9, SEPT. 13 TO SEPT. 17

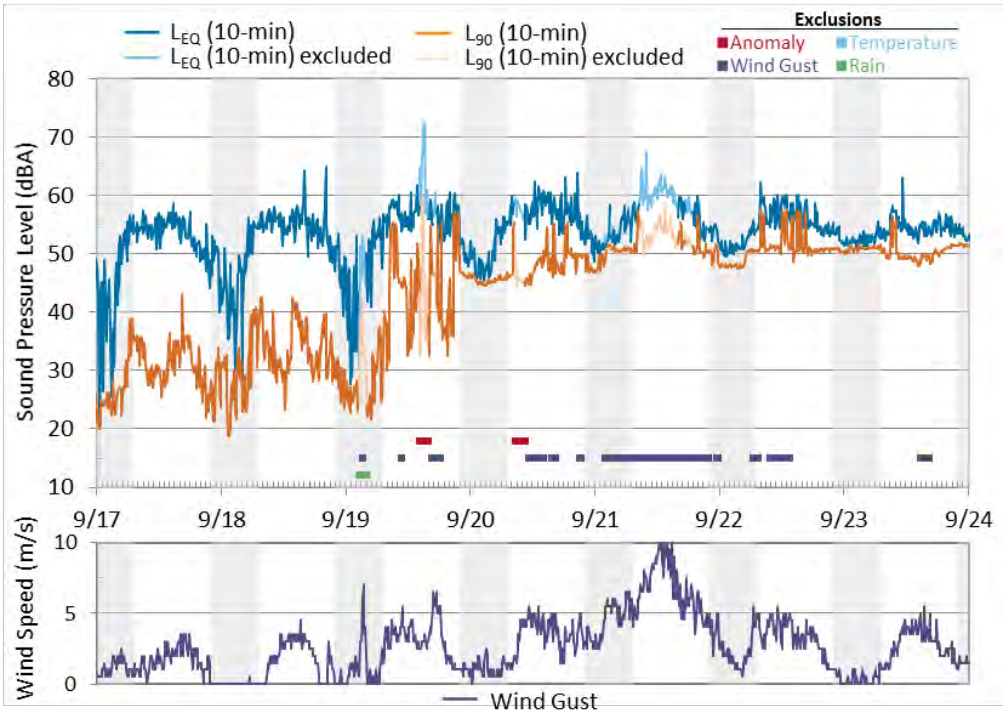


FIGURE 46: SOUND PRESSURE LEVELS OVER TIME - MONITOR 9, SEPT. 17 TO SEPT. 24

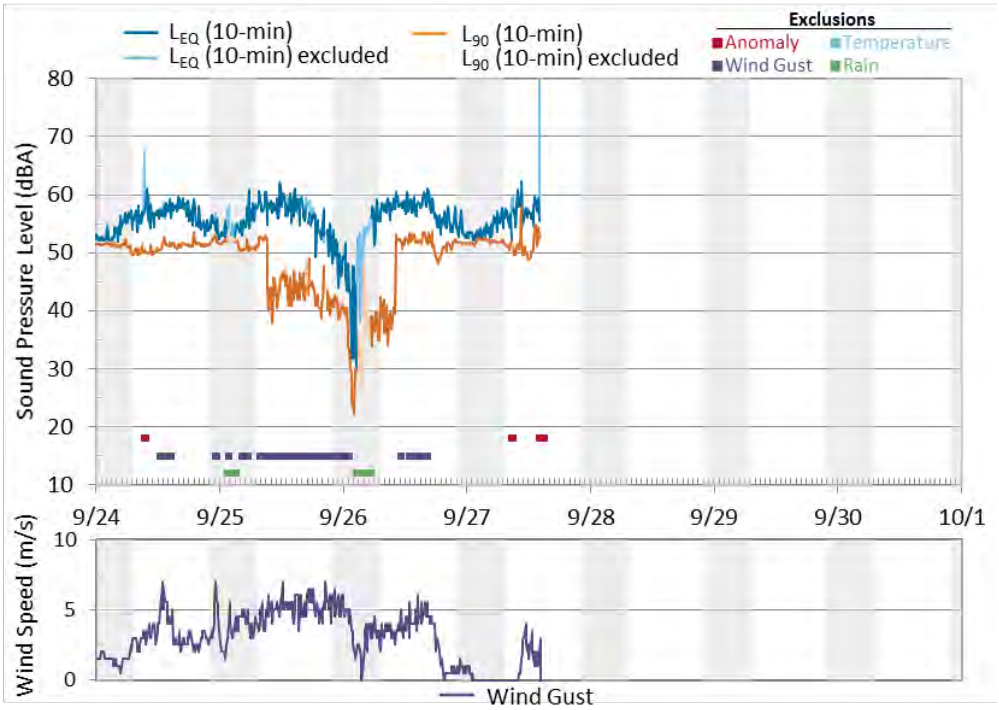


FIGURE 47: SOUND PRESSURE LEVELS OVER TIME - MONITOR 9, SEPT. 24 TO SEPT. 27

6.0 SOUND PROPAGATION MODELING PROCEDURES

6.1 MODELING PROCEDURES

Modeling for this project was in accordance with the standard ISO 9613-2, "Acoustics – Attenuation of sound during propagation outdoors, Part 2: General Method of Calculation." The ISO standard states,

> This part of ISO 9613 specifies an engineering method for calculating the attenuation of sound during propagation outdoors in order to predict the levels of environmental noise at a distance from a variety of sources. The method predicts the equivalent continuous A-weighted sound pressure level … under meteorological conditions favorable to propagation from sources of known sound emissions. These conditions are for downwind propagation … or, equivalently, propagation under a well-developed moderate ground-based temperature inversion, such as commonly occurs at night.

The model takes into account source sound power levels, surface reflection and absorption, atmospheric absorption, geometric divergence, meteorological conditions, walls, barriers, berms, and terrain. The acoustical modeling software used here was CadnaA, from Datakustik GmbH. CadnaA is a widely accepted acoustical propagation modeling tool, used by many noise control professionals in the United States and internationally.

ISO 9613-2 also assumes downwind sound propagation between every source and every receptor, consequently, all wind directions, including the prevailing wind directions, are taken into account.

Model input parameters are listed in Appendix. For this analysis we utilized a ground absorption factor of G=0.5. A 2 dB factor was added to the model results to account for uncertainty.

Over 3,200 discrete receivers placed at sensitive receptors[3] within 1 mile of the project were modeled at a height of 4 meters (13 feet) above ground level. In addition, a grid of receivers spaced 50 meters by 50 meters was setup at a height of 4 meters (13 feet) above ground, covering approximately 1,295 sq. km. (500 sq. mi.) around the project area.

While only up to 71 turbines are planned to be constructed, all 87 turbine locations under consideration were included in the model. A total of nine model runs are included in this report:

1. 87 Vestas V150, 4.2 MW with a hub height of 105 meters.

[3] Of the 3,236 sensitive receptors modeled, there are 3,032 residences, 6 churches, 197 businesses, and 1 school.

2. 87 Vestas V150, 5.6 MW with a hub height of 105 meters
3. 87 Vestas V150, 5.6 MW with a hub height of 125 meters
4. 87 Nordex N149, 4.8 MW[4] with a hub height of 109 meters
5. 87 Nordex N149, 4.8 MW[4] with a hub height of 125 meters
6. 87 Siemens Gamesa SG 4.5-145, 4.5 MW with a hub height of 107.5 meters
7. 87 GE 3.0-140 3.0 MW with a hub height of 110 meters
8. 22 GE 3.0-140 3.0 MW with a hub height of 110 meters and 65 GE 5.5-158 5.5 MW with a hub height of 107.5 meters
9. Cumulative Effect: 27 Republic Wind turbines (SG 4.5-145) within 3 miles of Emerson Creek, and 87 Emerson Creek turbines using Siemens Gamesa SG 4.5-145, 4.5 MW with a hub height of 107.5 meters

Each model run also included the sound emissions from two transformers at the project substation. The transformers have a NEMA TR-1 sound pressure level of 82 dBA with no cooling (ONAN), 84 dBA with stage 1 cooling, and 86 dBA with stage 2 cooling (ONAF), but it is our understanding that Apex intends to specify from the transformer manufacturer that the transformers meet a sound specification of at least a 5 dB less than the NEMA TR-1 sound level. As such, the transformers were modeled as a sound pressure level of 81 dBA with stage 2 cooling.

Modeling has not been completed yet for the Nordex N149 5.5 and 5.7 MW turbine models due to the spectral data not being available from the manufacturer, however, as discussed in the RSG memo[5], dated June 24, 2019, these turbines have published overall sound power data that is less than the Nordex N149 4.5 MW model. Due to this, it is expected that these turbines will result in lower sound levels than the Nordex N149 4.8 MW model.

6.2 MODEL RESULTS

A summary of the sound propagation model results for each turbine model is provided in Table 4, and Appendix D provides a list of the calculated overall sound pressure levels at each discrete receiver for all nine model runs and maps showing all receiver identification numbers for reference to the chart.

[4] The Project was initially considering the Nordex N149, 4.5 MW turbine. In a memorandum, “Nordex N149 4.8 MW turbine proposed for the Emerson Creek Wind Farm”, dated April 30, 2019, RSG discussed how switching to the 4.8 MW version from the 4.5 MW version would not influence the sound propagation model results.
[5] Eddie Duncan (RSG) to Nate Pedder (Apex), June 24, 2019, “Nordex N149 5.5 & 5.7 MW turbines proposed from the Emerson Creek Wind Farm”

As shown in Table 4, all non-participating sensitive receptors are projected at 49 dBA or less from all nine model runs that include only the Emerson Creek turbines. That is less than the 49 dBA OPSB limit that is applicable to this project.

The highest participating sensitive receptor is 54 dBA which is a participating receptor located adjacent to the project substation. The modeled sound level at that receptor is due to the two project transformers during stage two cooling (ONAF) which would involve cooling fans operating. The cooling fans typically operate periodically during the day when the ambient temperature is high (e.g. hot summer day). At night the transformers would typically operate with natural convection cooling (ONAN) which does not involve cooling fans. Under ONAN conditions the sound level at the closest participating receptor to the substation would be 49 dBA.

TABLE 4: SUMMARY OF MODELED SOUND PRESSURE LEVELS (dBA) FOR EACH MODEL RUN[6]

TURBINE MODEL		RECEPTOR CLASSIFICATION		
		All	Participating	Non-Participating
V150 4.2 MW	Mean	35	40	35
	Max	54	54	46
	Min	24	28	24
V150 5.6 MW at 105 m or 125 m Hub Height	Mean	35	39	34
	Max	54	54	45
	Min	23	27	23
N149 4.8 MW at 109m or 125m Hub Height	Mean	36	40	35
	Max	54	54	47
	Min	24	28	24
SG 4.5-145	Mean	37	42	37
	Max	54	54	48
	Min	26	30	26
GE 3.0-140	Mean	35	40	34
	Max	54	54	46
	Min	23	27	23
22 GE 3.0-140 and 65 GE 5.5-158	Mean	35	40	35
	Max	54	54	47
	Min	23	27	23
Cumulative (Emerson, Republic)	Mean	38	42	38
	Max	54	54	48
	Min	27	30	27

[6] Both hub height model runs of the N149 4.5 MW and V150-5.6 MW are shown in the same columns since the summary results are the same for both model runs.

If Emerson Creek and Republic Wind were both constructed the highest sound level due to wind turbines at a non-participating receptor within 1 mile of Emerson Creek would still be 48 dBA (see Table 4). Modeling of Republic turbines does result in increases in sound level of some receptors in the project area, but not to the extent that the OPSB limit for Emerson would be exceeded.

Table 4 shows that, of the current wind turbines under consideration for Emerson Creek, the SG 4.5-145 produces the highest sound level at the modeled receptors. As such, model results for the SG 4.5-145 are shown in Figure 48 in a contour line map format. Results are presented as contour lines representing 5-dB increments of calculated A-weighted sound pressure level from 25 to 55 dBA. In addition, a red dashed contour line is shown that represents 49 dBA, the applicable OPSB limit for Emerson Creek. At the full scale shown in Figure 48, it is difficult to visually discern, but there are no non-participating receptors within the 49 dBA sound level limit contour.

The results of the cumulative effect model run which takes into account turbines from the proposed Republic Wind project is provided in Figure 49.

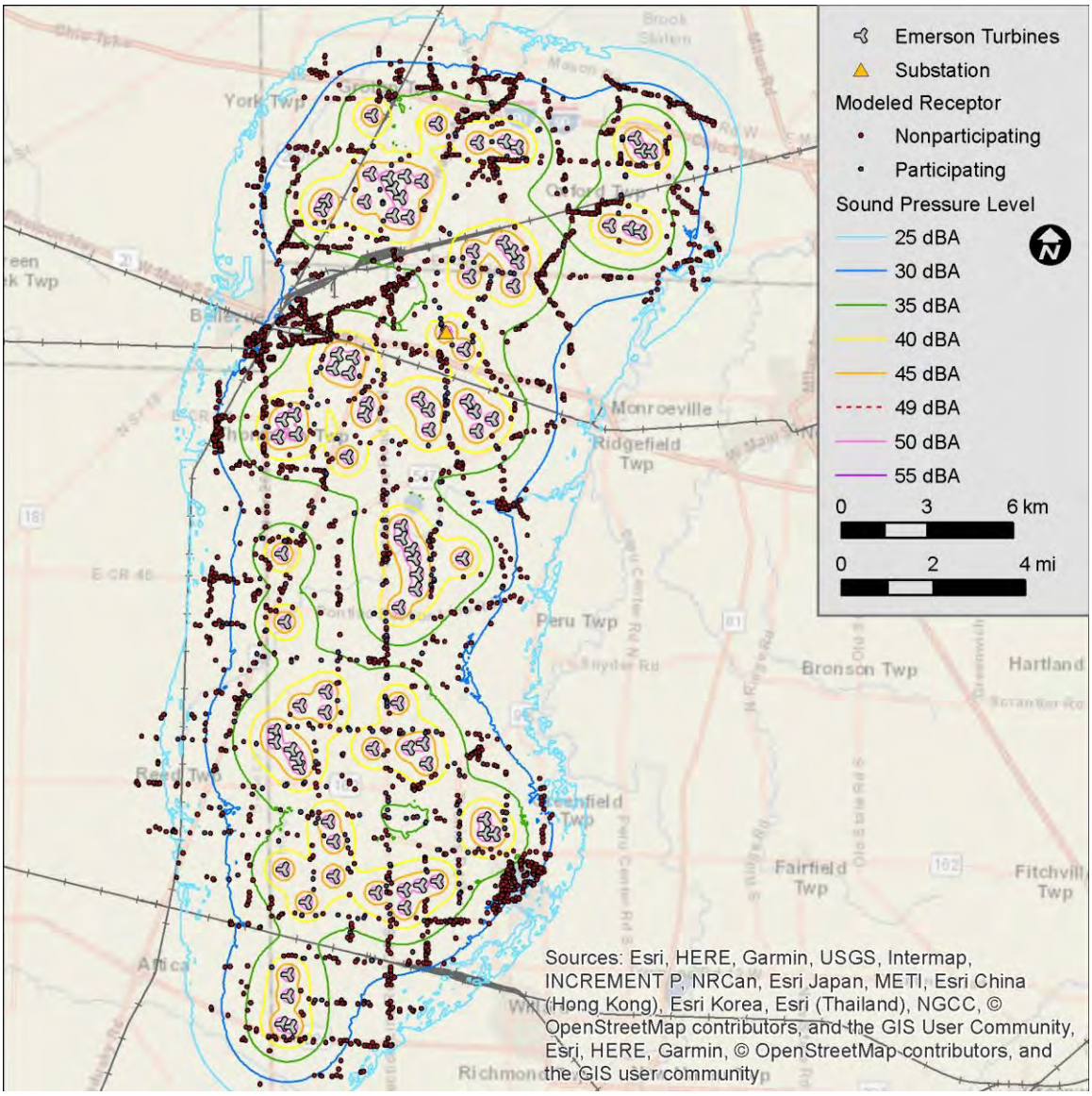


FIGURE 48: SOUND PROPAGATION MODEL RESULTS – SG 4.5-145, EMERSON TURBINES ONLY

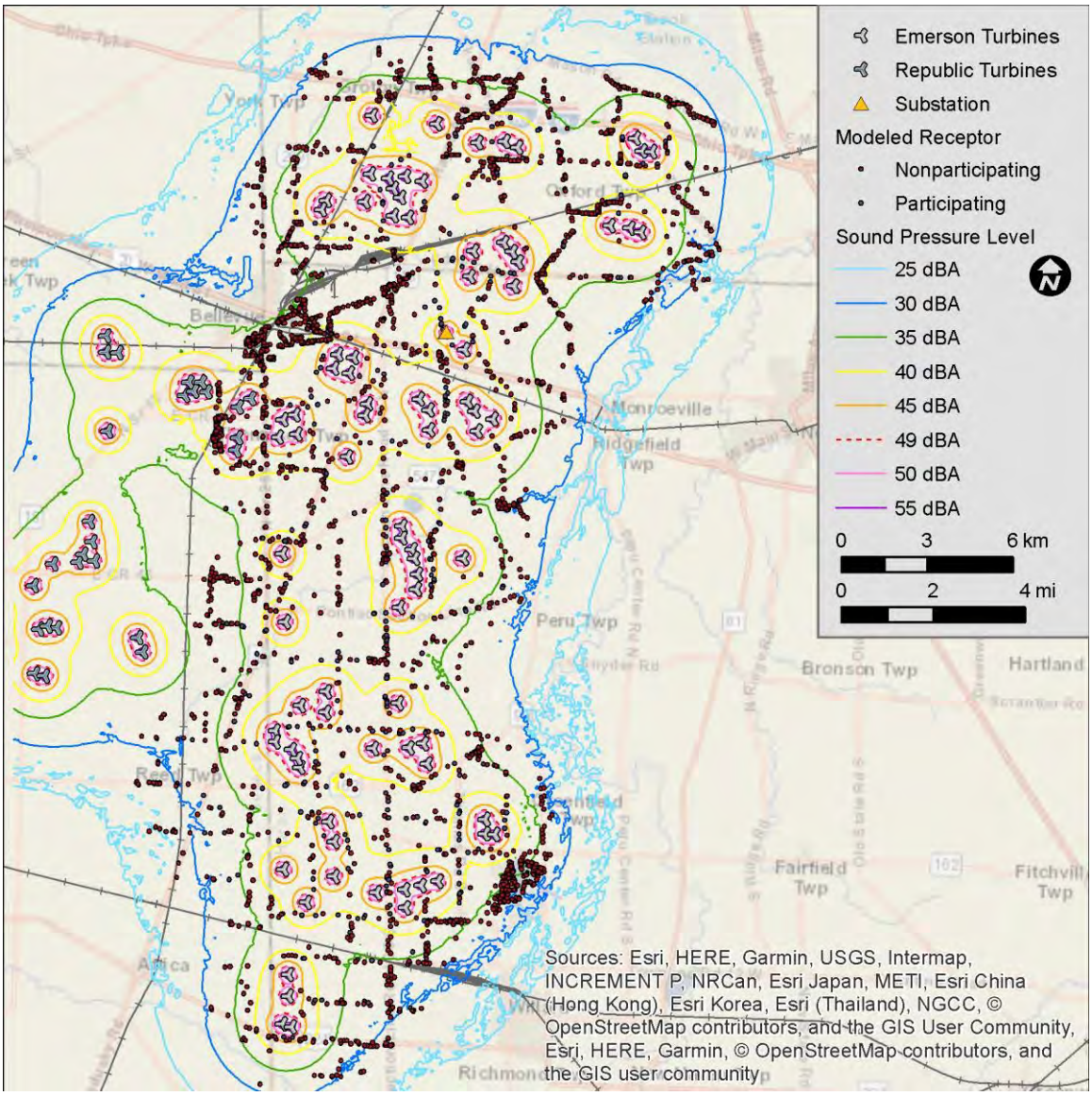


FIGURE 49: SOUND PROPAGATION MODEL RESULTS – CUMULATIVE MODEL RUN, EMERSON CREEK (SG 4.5-145) AND REPUBLIC WIND

7.0 CONSTRUCTION NOISE

Construction for the project will be primarily at the wind turbine sites. While there may be activity closer to residences for road construction and utility work, such work will be of a relatively short duration.

Equipment used for construction will vary. Some of the louder pieces of equipment are shown in Table 5 along with the approximate maximum sound pressure levels at 15 meters (50 feet) and 447 meters (1,468 feet), the closest distance between a turbine site and a non-participating receptor.

TABLE 5: MAXIMUM SOUND LEVELS FROM VARIOUS TYPES OF CONSTRUCTION EQUIPMENT ASSUMING NO ATTENUATION FROM TREES OR TERRAIN

Equipment	Maximum Sound Pressure Level at 447 meters (1,468 feet) (dBA)[7]	Maximum Sound Pressure Level at 15 meters (50 feet) (dBA)
M-250 Liftcrane	48	83
2250 S3 Liftcrane	43	78
Excavator	50	83
Dump truck being loaded	54	86
Dump truck at 25 mph accelerating	44	76
Tractor trailer at 25 mph accelerating	49	80
Concrete truck	46	81
Bulldozer	50	85
Rock drill	62	100
Loader	42	80
Backhoe	45	80
Wood chipper	64	96

Major construction work, such as clearing for the access roads and any drilling or blasting, will occur during the day. Per OPSB requirements, any construction activities that increase sound above ambient levels at sensitive receptors will be limited to the hours of 7 AM to 7 PM or dusk, whichever is later. Pile driving, blasting, and rock hammering will occur between the hours of 10 AM to 5 PM.

[7] Assumes hard ground around construction site, and ISO 9613-2 propagation with no vegetation reduction. Actual sound levels will likely be lower given the prevalence of vegetation and soft ground around the site.

8.0 SUMMARY & CONCLUSIONS

Emerson Creek is a proposed wind power project that would be located in Erie, Huron and Seneca Counties. The facility is permitting up to 87 wind turbine locations but is planning to construct up to 71 wind turbines for a project rating of up to 297.66 MW. In preparation for OPSB permitting, RSG conducted a sound level assessment of the project that included background sound level monitoring of the existing environment in and around the project area and sound propagation modeling to predict project-only sound levels at nearby residences.

Summary and conclusions are as follows:

1. Emerson Creek is currently considering eight turbine models: the Vestas V150 4.2 MW with a hub height of 105 meters, the Vestas V150 5.6 MW with hub heights of 105 or 125 meters, the Siemens Gamesa SG 4.5-145 4.5 MW with a hub height of 107.5 meters, the Nordex N149 4.8 MW with a hub height of 109 meters and 125 meters, the Nordex N149 5.5 MW with a hub height of 109 and 125 meters, the Nordex N149 5.7 MW with a hub height of 109 meters and 125 meters, the GE 5.5-158 with a hub height of 107.5 meters, and the GE 3.0-140 with a hub height of 110 meters.
2. Sound sources in the existing soundscape include agricultural activities, vehicle passbys and distant traffic, train passbys (near and far), airplane overflights, and biogenic and geophonic sounds.
    a. Background sound levels vary some around the project site. As reported in Section 5.0, sound levels were highest at Monitor 1, Monitor 6, and Monitor 9 with nighttime sound levels (L_{eq}) between 50 and 52 dBA due to distant traffic and agricultural activities. In contrast, Monitors 7 and 8 were the quietest with nighttime sound levels (L_{eq}) between 35 and 36 dBA.
    b. The average nighttime L_{eq} across the project area was 44 dBA.
3. The applicable sound level standard comes from Section 4906-4-09(F) of the OAC and sets a limit of “the project area ambient nighttime L_{eq} plus five dBA.” In this case, the measured nighttime L_{eq} was 44 dBA setting a sound level limit of 49 dBA for Emerson Creek.
4. Sound propagation modeling was performed in accordance with ISO 9613-2 at over 3,000 discrete receivers that represent sensitive receptors within 1 mile of the project. Modeling was performed assuming spectral ground attenuation, a ground factor of G=0.5, and 2 dB was added to the results to account for uncertainty.
5. Modeling was completed for nine scenarios:
    a. 87 Vestas V150, 4.2 MW with a hub height of 105 meters

b. 87 Vestas V150, 5.6 MW with a hub height of 105 meters
c. 87 Vestas V150, 5.6 MW with a hub height of 125 meters
d. 87 Nordex N149, 4.8 MW with a hub height of 109 meters
e. 87 Nordex N149, 4.8 MW with a hub height of 125 meters
f. 87 Siemens Gamesa SG 4.5-145, 4.5 MW with a hub height of 107.5 meters
g. 87 GE 3.0-140, 3.0 MW with a hub height of 110 meters
h. 22 GE 3.0-140, 3.0 MW with a hub height of 110 meters and 65 GE 5.5-158, 5.5 MW with a hub height of 107.5 meters
i. Cumulative Effect: 27 Republic Wind turbines (SG 4.5-145) within 3 miles of Emerson Creek and 87 Emerson Creek turbines using Siemens Gamesa SG 4.5-145, 4.5 MW with a hub height of 107.5 meters

6. As discussed in Section 6.1, modeling has not been completed yet for the Nordex N149 5.5 and 5.7 MW turbine models due to the spectral data not being available from the manufacturer, however, it is expected that these turbines will result in lower sound levels than the Nordex N149 4.8 MW model.
7. Model results are summarized in Section 6.2, and provided in tabular format for all model runs in Appendix D. For all eight Emerson Creek only model runs, all non-participating receptors were less than 49 dBA, meeting the applicable OPSB limit for the project.
8. For the Cumulative Effect model run, all nonparticipating receptors within 1-mile of Emerson turbines are still below 49 dBA, meeting the applicable OPSB limit for the project.
9. Construction activities that increase sound above ambient levels at sensitive receptors will be limited to the hours of 7 AM to 7 PM or dusk, whichever is later. Sound levels due to construction and summarized in Section 8.

APPENDIX A. ACOUSTICS PRIMER

Expressing Sound in Decibel Levels

The varying air pressure that constitutes sound can be characterized in many different ways. The human ear is the basis for the metrics that are used in acoustics. Normal human hearing is sensitive to sound fluctuations over an enormous range of pressures, from about 20 micropascals (the "threshold of audibility") to about 20 pascals (the "threshold of pain").[8] This factor of one million in sound pressure difference is challenging to convey in engineering units. Instead, sound pressure is converted to sound "levels" in units of "decibels" (dB, named after Alexander Graham Bell). Once a measured sound is converted to dB, it is denoted as a level with the letter "L".

The conversion from sound pressure in pascals to sound level in dB is a four-step process. First, the sound wave's measured amplitude is squared and the mean is taken. Second, a ratio is taken between the mean square sound pressure and the square of the threshold of audibility (20 micropascals). Third, using the logarithm function, the ratio is converted to factors of 10. The final result is multiplied by 10 to give the decibel level. By this decibel scale, sound levels range from 0 dB at the threshold of audibility to 120 dB at the threshold of pain.

Typical sound sources, and their sound pressure levels, are listed on the scale in Figure 50.

Human Response to Sound Levels: Apparent Loudness

For every 20 dB increase in sound level, the sound pressure increases by a *factor* of 10; the sound *level* range from 0 dB to 120 dB covers 6 factors of 10, or one million, in sound *pressure*. However, for an increase of 10 dB in sound *level* as measured by a meter, humans perceive an approximate doubling of apparent loudness: to the human ear, a sound level of 70 dB sounds about "twice as loud" as a sound level of 60 dB. Smaller changes in sound level, less than 3 dB up or down, are generally not perceptible.

[8] The pascal is a measure of pressure in the metric system. In Imperial units, they are themselves very small: one pascal is only 145 millionths of a pound per square inch (psi). The sound pressure at the threshold of audibility is only 3 one-billionths of one psi: at the threshold of pain, it is about 3 one-thousandths of one psi.

FIGURE 50: A SCALE OF SOUND PRESSURE LEVELS FOR TYPICAL SOUND SOURCES

Frequency Spectrum of Sound

The “frequency” of a sound is the rate at which it fluctuates in time, expressed in Hertz (Hz), or cycles per second. Very few sounds occur at only one frequency: most sound contains energy at many different frequencies, and it can be broken down into different frequency divisions, or bands. These bands are similar to musical pitches, from low tones to high tones. The most common division is the standard octave band. An octave is the range of frequencies whose upper frequency limit is twice its lower frequency limit, exactly like an octave in music. An octave band is identified by its center frequency: each successive band’s center frequency is twice as high (one octave) as the previous band. For example, the 500 Hz octave band includes all sound whose frequencies range between 354 Hz (Hertz, or cycles per second) and 707 Hz. The next band is centered at 1,000 Hz with a range between 707 Hz and 1,414 Hz. The range of human hearing is divided into 10 standard octave bands: 31.5 Hz, 63 Hz, 125 Hz, 250 Hz, 500 Hz, 1,000 Hz, 2,000 Hz, 4,000 Hz, 8,000 Hz, and 16,000 Hz. For analyses that require finer frequency detail, each octave-band can be subdivided. A commonly-used subdivision creates three smaller bands within each octave band, or so-called 1/3-octave bands.

Human Response to Frequency: Weighting of Sound Levels

The human ear is not equally sensitive to sounds of all frequencies. Sounds at some frequencies seem louder than others, despite having the same decibel level as measured by a sound level meter. In particular, human hearing is much more sensitive to medium pitches (from about 500 Hz to about 4,000 Hz) than to very low or very high pitches. For example, a tone measuring 80 dB at 500 Hz (a medium pitch) sounds quite a bit louder than a tone measuring 80 dB at 60 Hz (a very low pitch). The frequency response of normal human hearing ranges from 20 Hz to 20,000 Hz. Below 20 Hz, sound pressure fluctuations are not “heard”, but sometimes can be “felt”. This is known as “infrasound”. Likewise, above 20,000 Hz, sound can no longer be heard by humans; this is known as “ultrasound”. As humans age, they tend to lose the ability to hear higher frequencies first; many adults do not hear very well above about 16,000 Hz. Most natural and man-made sound occurs in the range from about 40 Hz to about 4,000 Hz. Some insects and birdsongs reach to about 8,000 Hz.

To adjust measured sound pressure levels so that they mimic human hearing response, sound level meters apply filters, known as “frequency weightings”, to the signals. There are several defined weighting scales, including “A”, “B”, “C”, “D”, “G”, and “Z”. The most common weighting scale used in environmental noise analysis and regulation is A-weighting. This weighting represents the sensitivity of the human ear to sounds of low to moderate level. It attenuates sounds with frequencies below 1000 Hz and above 4000 Hz; it amplifies very slightly sounds between 1000 Hz and 4000 Hz, where the human ear is particularly sensitive. The C-weighting scale is sometimes used to describe louder sounds. The B- and D- scales are seldom used. All of these frequency weighting scales are normalized to the average human hearing response at

1000 Hz: at this frequency, the filters neither attenuate nor amplify. When a reported sound level has been filtered using a frequency weighting, the letter is appended to “dB”. For example, sound with A-weighting is usually denoted “dBA”. When no filtering is applied, the level is denoted “dB” or “dBZ”. The letter is also appended as a subscript to the level indicator “L”, for example “L_A” for A-weighted levels.

Time Response of Sound Level Meters

Because sound levels can vary greatly from one moment to the next, the time over which sound is measured can influence the value of the levels reported. Often, sound is measured in real time, as it fluctuates. In this case, acousticians apply a so-called “time response” to the sound level meter, and this time response is often part of regulations for measuring sound. If the sound level is varying slowly, over a few seconds, “Slow” time response is applied, with a time constant of one second. If the sound level is varying quickly (for example, if brief events are mixed into the overall sound), “Fast” time response can be applied, with a time constant of one-eighth of a second.[9] The time response setting for a sound level measurement is indicated with the subscript “S” for Slow and “F” for Fast: L_S or L_F. A sound level meter set to Fast time response will indicate higher sound levels than one set to Slow time response when brief events are mixed into the overall sound, because it can respond more quickly.

In some cases, the maximum sound level that can be generated by a source is of concern. Likewise, the minimum sound level occurring during a monitoring period may be required. To measure these, the sound level meter can be set to capture and hold the highest and lowest levels measured during a given monitoring period. This is represented by the subscript “max”, denoted as “L_{max}”. One can define a “max” level with Fast response L_{Fmax} (1/8-second time constant), Slow time response L_{Smax} (1-second time constant), or Continuous Equivalent level over a specified time period L_{EQmax}.

Accounting for Changes in Sound Over Time

A sound level meter’s time response settings are useful for continuous monitoring. However, they are less useful in summarizing sound levels over longer periods. To do so, acousticians apply simple statistics to the measured sound levels, resulting in a set of defined types of sound level related to averages over time. An example is shown in Figure 51. The sound level at each instant of time is the grey trace going from left to right. Over the total time it was measured (1 hour in the figure), the sound energy spends certain fractions of time near various levels, ranging from the minimum (about 27 dB in the figure) to the maximum (about 65 dB in the figure). The simplest descriptor is the average sound level, known as the Equivalent Continuous

[9] There is a third-time response defined by standards, the “Impulse” response. This response was defined to enable use of older, analog meters when measuring very brief sounds; it is no longer in common use.

Sound Level. Statistical levels are used to determine for what percentage of time the sound is louder than any given level. These levels are described in the following sections.

Equivalent Continuous Sound Level - Leq

One straightforward, common way of describing sound levels is in terms of the Continuous Equivalent Sound Level, or L_{EQ}. The L_{EQ} is the average sound pressure level over a defined period of time, such as one hour or one day. L_{EQ} is the most commonly used descriptor in noise standards and regulations. L_{EQ} is representative of the overall sound to which a person is exposed. Because of the logarithmic calculation of decibels, L_{EQ} tends to favor higher sound levels: loud and infrequent sources have a larger impact on the resulting average sound level than quieter but more frequent sounds. For example, in Figure 51, even though the sound levels spends most of the time near about 34 dBA, the L_{EQ} is 41 dBA, having been “inflated” by the maximum level of 65 dBA and other occasional spikes over the course of the hour.

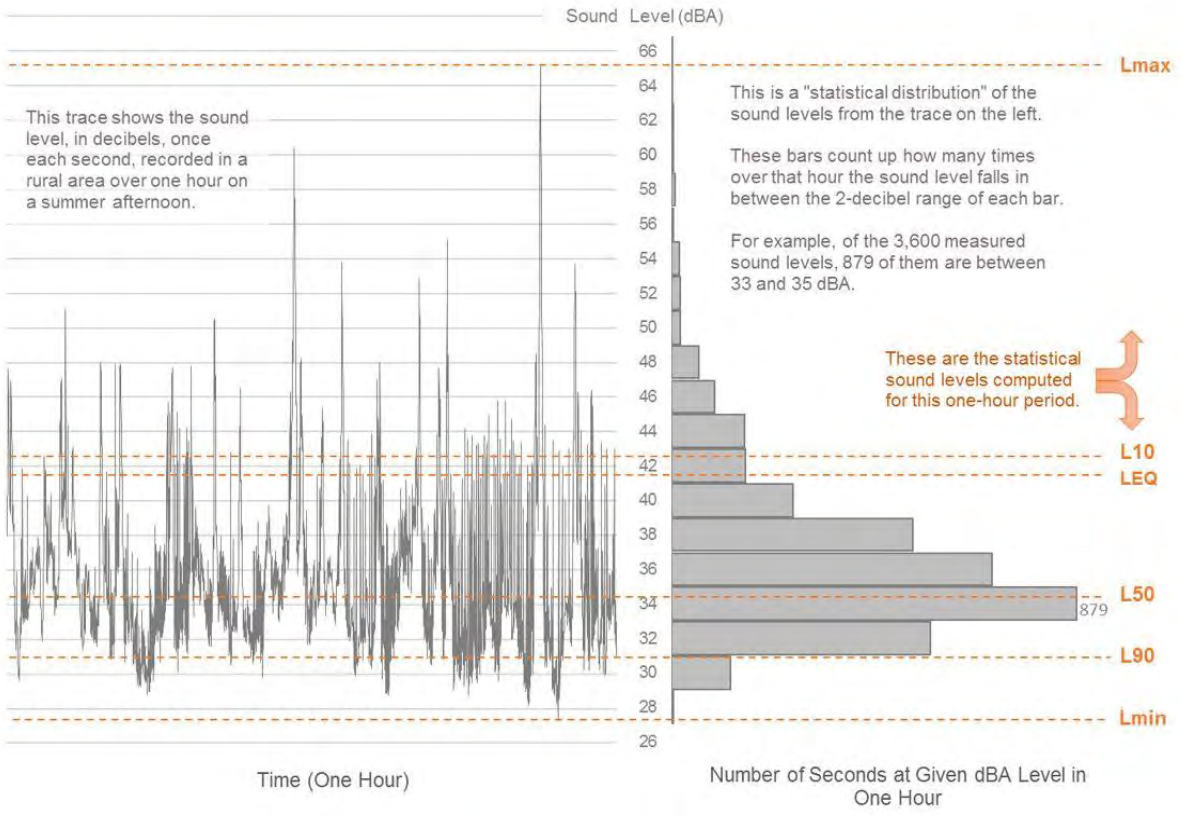


FIGURE 51: EXAMPLE OF DESCRIPTIVE TERMS OF SOUND MEASUREMENT OVER TIME

Percentile Sound Levels – Ln

Percentile sound levels describe the statistical distribution of sound levels over time. "L_N" is the level above which the sound spends "N" percent of the time. For example, L_{90} (sometimes called the "residual base level") is the sound level exceeded 90% of the time: the sound is louder than L_{90} most of the time. L_{10} is the sound level that is exceeded only 10% of the time. L_{50} (the "median level") is exceeded 50% of the time: half of the time the sound is louder than L_{50}, and half the time it is quieter than L_{50}. Note that L_{50} (median) and L_{EQ} (mean) are not always the same, for reasons described in the previous section.

L_{90} is often a good representation of the "ambient sound" in an area. This is the sound that persists for longer periods, and below which the overall sound level seldom falls. It tends to filter out other short-term environmental sounds that aren't part of the source being investigated. L_{10} represents the higher, but less frequent, sound levels. These could include such events as barking dogs, vehicles driving by and aircraft flying overhead, gusts of wind, and work operations. L_{90} represents the background sound that is present when these event sounds are excluded.

Note that if one sound source is very constant and dominates the soundscape in an area, all of the descriptive sound levels mentioned here tend toward the same value. It is when the sound is varying widely from one moment to the next that the statistical descriptors are useful.

APPENDIX B. WIND TURBINE ACOUSTICS

Sources of Sound Generation by Wind Turbines

Wind turbines generate two principal types of noise: aerodynamic noise, produced from the flow of air around the blades, and mechanical noise, produced from mechanical and electrical components within the nacelle.

Aerodynamic noise is the primary source of noise associated with wind turbines. These acoustic emissions can be either tonal or broad band. Tonal noise occurs at discrete frequencies, whereas broadband noise is distributed with little peaking across the frequency spectrum.

While unusual, tonal noise can also originate from unstable air flows over holes, slits, or blunt trailing edges on blades. Most modern wind turbines have upwind rotors designed to prevent blade impulsive noise. Therefore, the majority of audible aerodynamic noise from wind turbines is broadband at the middle frequencies, roughly between 200 Hz and 1,000 Hz.

Wind turbines emit aerodynamic broadband noise as the spinning blades interact with atmospheric turbulence and as air flows along their surfaces. This produces a characteristic “whooshing” sound through several mechanisms (Figure 52):

- Inflow turbulence noise occurs when the rotor blades encounter atmospheric turbulence as they pass through the air. Uneven pressure on a rotor blade causes variations in the local angle of attack, which affects the lift and drag forces, causing aerodynamic loading fluctuations. This generates noise that varies across a wide range of frequencies but is most significant at frequencies below 500 Hz.
- Trailing edge noise is produced as boundary-layer turbulence as the air passes into the wake, or trailing edge, of the blade. This noise is distributed across a wide frequency range but is most notable at high frequencies between 700 Hz and 2 kHz.
- Tip vortex noise occurs when tip turbulence interacts with the surface of the blade tip. While this is audible near the turbine, it tends to be a small component of the overall noise further away.
- Stall or separation noise occurs due to the interaction of turbulence with the blade surface.

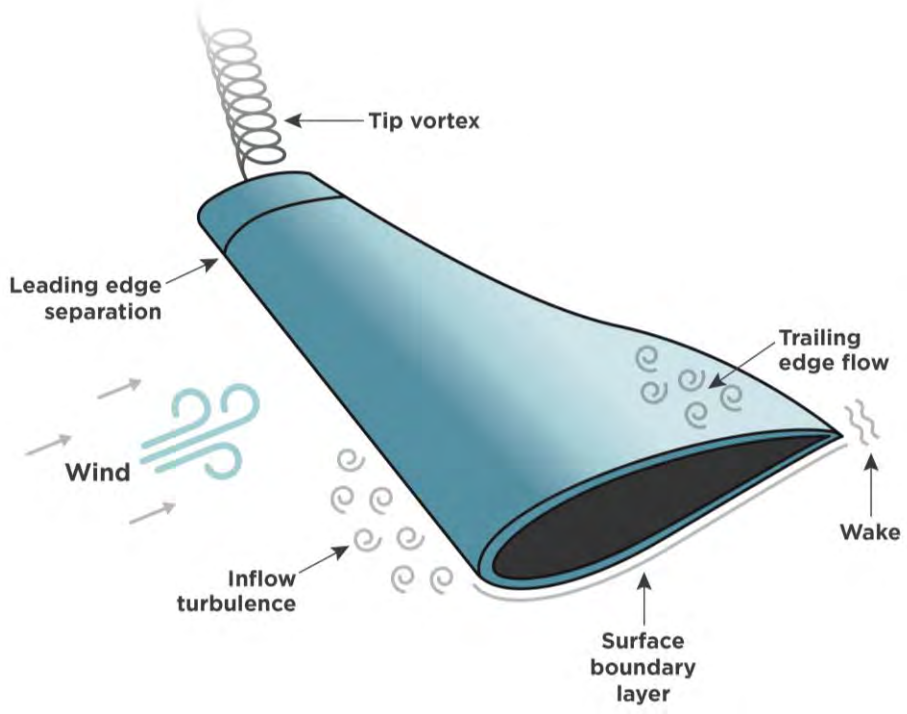


FIGURE 52: AIRFLOW AROUND A ROTOR BLADE

Mechanical sound from machinery inside the nacelle tends to be tonal in nature but can also have a broadband component. Potential sources of mechanical noise include the gearbox, generator, yaw drives, cooling fans, and auxiliary equipment. These components are housed within the nacelle, whose surfaces, if untreated, radiate the resulting noise. However modern wind turbines have nacelles that are designed to reduce internal noise, and rarely is the mechanical noise a significant portion of the total noise from a wind turbine.

Amplitude Modulation

Amplitude modulation (AM) is a fluctuation in sound level that occurs at the blade passage frequency. No consistent definition exists for how much of a sound level fluctuation is necessary for blade swish to be considered AM, however sound level fluctuations in A-weighted sound level can range up to 10 dB. Fluctuations in individual 1/3 octave bands are typically more and can exceed 15 dB. Fluctuations in individual 1/3 octave bands can sometimes synchronize and desynchronize over periods, leading to increases and decreases in magnitude of the A-weighted fluctuations. Similarly, in wind farms with multiple turbines, fluctuations can

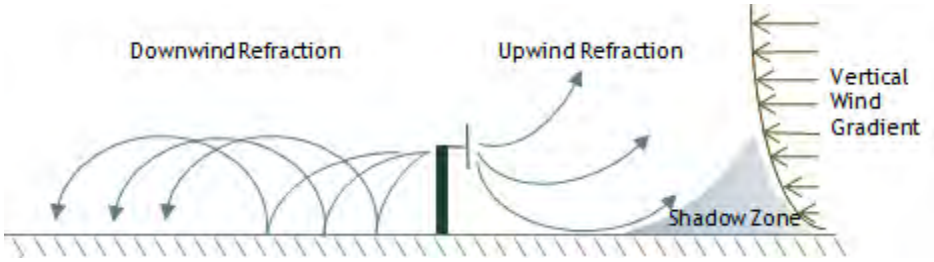
synchronize and desynchronize, leading to variations in AM depth.[10] Most amplitude modulation is in the mid frequencies and most overall A-weighted AM is less than 4.5 dB in depth.[11]

Many confirmed and hypothesized causes of AM exist, including: blade passage in front of the tower, blade tip sound emission directivity, wind shear, inflow turbulence, and turbine blade yaw error. It has recently been noted that although wind shear can contribute to the extent of AM, wind shear does not contribute to the existence of AM in and of itself. Instead, there needs to be detachment of airflow from the blades for wind shear to contribute to AM.[12] While factors like the blade passing in front of the tower are intrinsic to wind turbine design, other factors vary with turbine design, local meteorology, topography, and turbine layout. Mountainous areas, for example, are more likely to have turbulent airflow, less likely to have high wind shear, and less likely to have turbine layouts that allow for blade passage synchronization for multiple turbines. AM extent varies with the relative location of a receptor to the turbine. AM is usually experienced most when the receptor is between 45 and 60 degrees from the downwind or upwind position and is experienced least directly with the receptor directly upwind or downwind of the turbines.

Meteorology

Meteorological conditions can significantly affect sound propagation. The two most important conditions to consider are wind shear and temperature lapse. Wind shear is the difference in wind speeds by elevation and temperature lapse rate is the temperature gradient by elevation. In conditions with high wind shear (large wind speed gradient), sound levels upwind from the source tend to decrease and sound levels downwind tend to increase due to the refraction, or bending, of the sound (Figure 53).

[10] McCunney, Robert, et al. “Wind Turbines and Health: A Critical Review of the Scientific Literature.” *Journal of Occupational and Environmental Medicine.* 56(11) November 2014: pp. e108-e130.
[11] RSG, et al., “Massachusetts Study on Wind Turbine Acoustics,” Massachusetts Clean Energy Center and Massachusetts Department of Environmental Protection, 2016
[12] “Wind Turbine Amplitude Modulation: Research to Improve Understanding as to its Cause and Effect.” *RenewableUK.* December 2013.



Not to scale

FIGURE 53: SCHEMATIC OF THE REFRACTION OF SOUND DUE TO VERTICAL WIND GRADIENT (WIND SHEAR)

With temperature lapse, when ground surface temperatures are higher than those aloft, sound will tend to refract upwards, leading to lower sound levels near the ground. The opposite is true when ground temperatures are lower than those aloft (an inversion condition).

High winds and high solar radiation can create turbulence which tends to break up and dissipate sound energy. Highly stable atmospheres, which tend to occur on clear nights with low ground-level wind speeds, tend to minimize atmospheric turbulence and are generally more favorable to downwind propagation.

In general terms, sound propagates along the ground best under stable conditions with a strong temperature inversion. This tends to occur during the night and is characterized by low ground-level winds. As a result, worst-case conditions for wind turbines tend to occur downwind under moderate nighttime temperature inversions. Therefore, this is the default condition for modeling wind turbine sound.

Masking

As mentioned above, sound levels from wind turbines are a function of wind speed. Background sound is also a function of wind speed, i.e., the stronger the winds, the louder the resulting background sound. This effect is amplified in areas covered by trees and other vegetation.

The sound from a wind turbine can often be masked by wind noise at downwind receptors because the frequency spectrum from wind is similar to the frequency spectrum from a wind turbine. Figure 54 compares the shape of the sound spectrum measured during a 5 m/s wind event to that of a Vestas V150 STE 4.2 MW wind turbine. As shown, the shapes of the spectra are similar at lower frequencies. At higher frequencies, the sounds from the masking wind noise are higher than the wind turbine. As a result, the masking of turbine noise occurs at higher wind speeds for some meteorological conditions. Masking will occur most, when ground wind speeds are relatively high, creating wind-caused noise such as wind blowing through the trees and interaction of wind with structures.

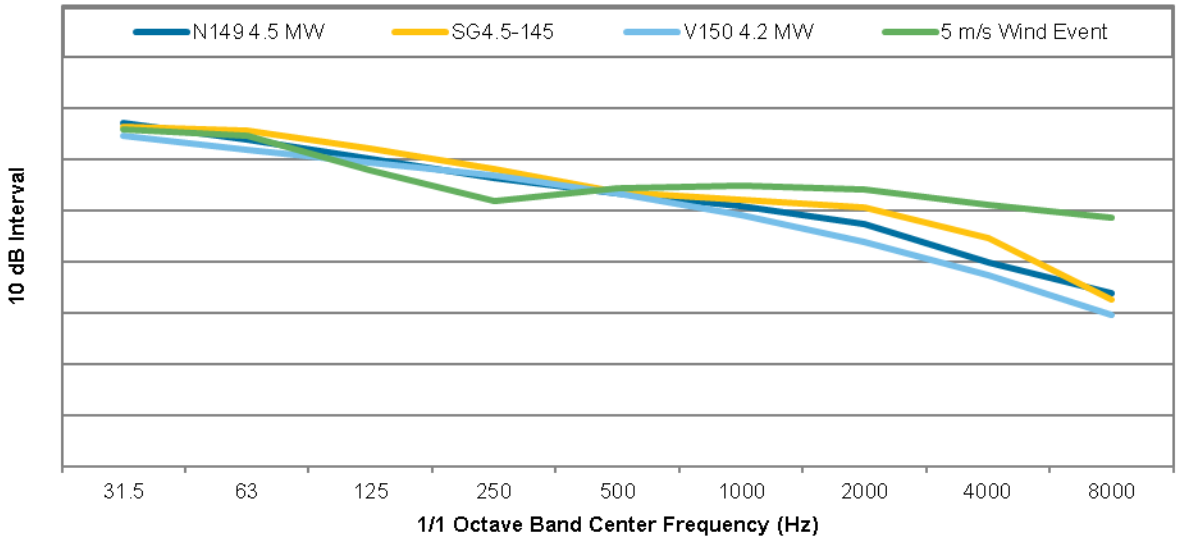


FIGURE 54: COMPARISON OF NORMALIZED FREQUENCY SPECTRA MEASURED FROM A 5 M/S WIND EVENT AND THE SOUND POWER SPECTRA FROM VESTAS V150, SIEMENS SG4.5-145, AND NORDEX N149 WIND TURBINES [13]

It is important to note that while winds may be blowing at turbine height, there may be little to no wind at ground level. This is especially true during strong wind gradients (high wind shear), which mostly occur at night. This can also occur on the leeward side of ridges where the ridge blocks the wind.

Infrasound and Low-Frequency Sound

Infrasound is sound pressure fluctuations at frequencies below about 20 Hz. Sound below this frequency is only audible at high magnitudes. Low-frequency sound is in the audible range of human hearing, that is, above 20 Hz, but below 100 to 200 Hz depending on the definition.

Low-frequency aerodynamic tonal noise is typically associated with downwind rotors on horizontal axis wind turbines. In this configuration, the rotor plane is behind the tower relative to the oncoming wind. As the turbine blades rotate, each blade crosses behind the tower's aerodynamic wake and experiences brief load fluctuations. This causes short, low-frequency pulses or thumping sounds called blade impulsive noise. Large modern wind turbines are "upwind", where the rotor plane is upwind of the tower. As a result, this type of low-frequency noise is at a much lower magnitude with upwind turbines than downwind turbines, well below established infrasonic hearing thresholds.

[13] The purpose of this Figure is to show the shapes to two spectra relative to one another and not the actual sound level of the two sources of sound. The level of each source was normalized independently.

Figure 55 shows the sound levels 350 meters from a wind turbine when the wind turbine was operating (T-on) and shut down (T-off) for wind speeds at hub height greater than 9 m/s. Measurements were made over approximately two weeks.[14] The red 90 dBG line is shown here as the ISO 7196:1995 perceptibility threshold. As shown, the wind turbines generated measurable infrasound, but at least 20 dB below audibility thresholds.

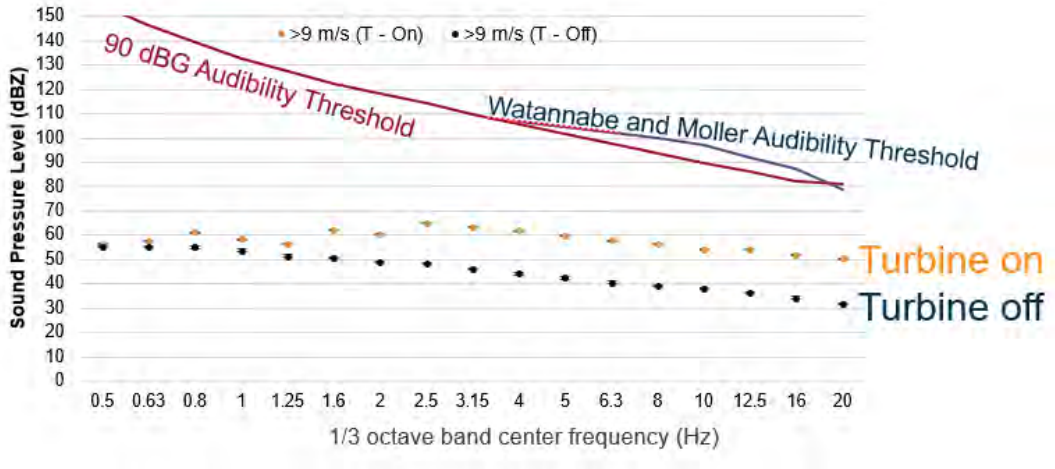


FIGURE 55: INFRASOUND FROM A WIND TURBINE AT 350 METERS COMPARED WITH PERCEPTION THESHOLDS

Existing background infrasound in rural areas are generally comparable to wind turbine infrasound at typical receptor distances. As an example, RSG measured background infrasound just east of the Boutwell Hill State Forest, a relatively remote area in the Town of Cherry Creek, NY.[15] We then compared these measured background levels to those measured 350 meters from an operating wind turbine in Massachusetts.[16] As shown in Figure 56, the background infrasound levels are generally within 10 dB of the wind turbine infrasound, even with the wind turbine operating with wind speeds greater than 9 m/s. In all cases, both background and wind turbine infrasound are over 30 dB below the 90 dBG infrasound perception threshold.

[14] RSG, et al., "Massachusetts Study on Wind Turbine Acoustics," Massachusetts Clean Energy Center and Massachusetts Department of Environmental Protection, 2016 – Graphic from RSG presentation to MassDEP WNTAG, March 2016
[15] RSG, "Cassadaga Wind Preconstruction Noise Impact Assessment," Prepared for Cassadaga Wind, LLC, May 2016.
[16] RSG, et al. "Massachusetts study on wind turbine acoustics." Prepared for MassCEC and MassDEP, February 2016

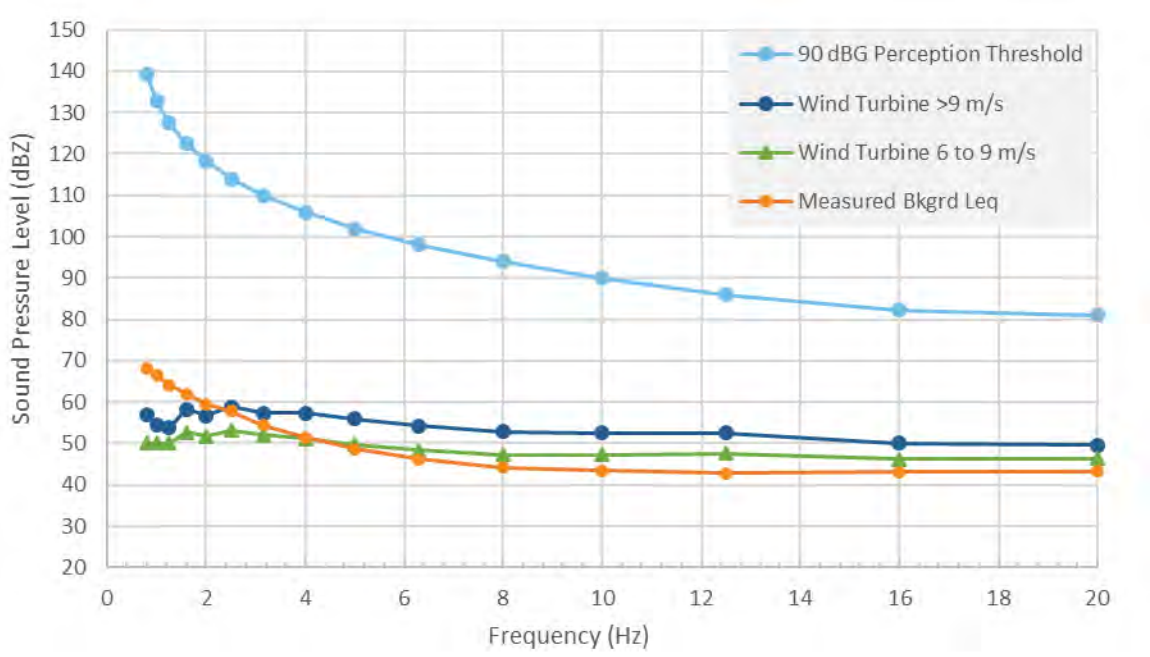


FIGURE 56: COMPARISON OF MEASURED BACKGROUND INFRASOUND AT A REMOTE SITE IN CHERRY CREEK NY WITH THOSE FROM MEASURED 350 METERS FROM AN OPERATING WIND TURBINE AND THE 90 dBG PERCEPTION THRESHOLD.

Low-frequency sound is produced, in part, by the generator and mechanical components. Much of this mechanical noise has been reduced in modern wind turbines through improved sound insulation at the hub. Low-frequency sound can also be generated by the blades at higher wind speeds when the inflow air is turbulent. At these wind speeds, low-frequency sound from the wind turbine blades is often masked by wind noise at the downwind receptors.

Finally, low-frequency sound is absorbed less by the atmosphere and ground than higher frequency sound. Our modeling takes into account frequency-specific ground attenuation and atmospheric absorption factors.

Wind Turbine Noise Abatement Measures

Wind turbine noise can be abated using either factory-installed measures, siting methods, or measures implemented after the project is constructed.

Wind Turbine Design

Horizontal axis wind turbines, with three blades, positioned upwind of the tower are the only type typically used for utility-scale wind power. Turbines with the blades positioned downwind of the tower are obsolete and cause more noise issues than upwind designs due to the blades passing through the wake of the tower. Vertical axis wind turbines are not available in megawatt scale.

The design of the blade can have a substantial impact on noise generation. Noise control is considered during the blade design process.

Some turbine models are available with serrated trailing edges, that reduce wind turbine aerodynamic noise by smoothing the flow of air behind the blade, reducing turbulence and therefore noise emissions. Depending on the turbine model selected for construction, serrated trailing edge technology may or may not be available. On some models, serrations can be installed after the project is constructed.

Project Siting

Changing of turbine setbacks from sensitive sound receptors can be used to decrease sound levels, however wind turbine layouts must also consider

- Energy production,
- Compliance with wind ordinance setback requirements,
- Compliance with setback requirements for other environmental conditions (water, flora, fauna, etc.),
- Spacing requirements for the turbines themselves,
- Access, and
- Landowner preferences.

As a result, modification of turbine arrangements to decrease sound pressure levels at receptors must be weighed against project performance and feasibility.

Noise Reduced Operations (NRO)

NROs are operations changes to the wind turbine to reduce noise generation. NROs are usually accomplished by adjusting turbine blade pitch, slowing the rotor speed of the turbines, which reduces aerodynamic noise produced by the blades. NROs are a readily available technology on most modern wind turbines and may be used to bring reduce turbine sound power to a level at or below the sound power of the turbine modeled in the Application. NROs can be implemented on as as-needed basis. For example, they can be programmed for selected wind speeds, wind directions, and times of day. The programs can be adjusted at any time after the wind turbines have commenced operations.

Physical Abatement

Due to the inherent size of wind turbines, many physical noise control measures, such as noise barriers, active noise control, and tree plantings, tend to be impractical and we are unaware of them being implemented at any operating wind projects. At receptors, white noise machines or air conditioning can be used to reduce the prominence of wind turbine noise inside buildings,

and the retrofits of residences, such as improved windows can be used to reduce interior sound levels.

APPENDIX C. MODEL INPUT DATA

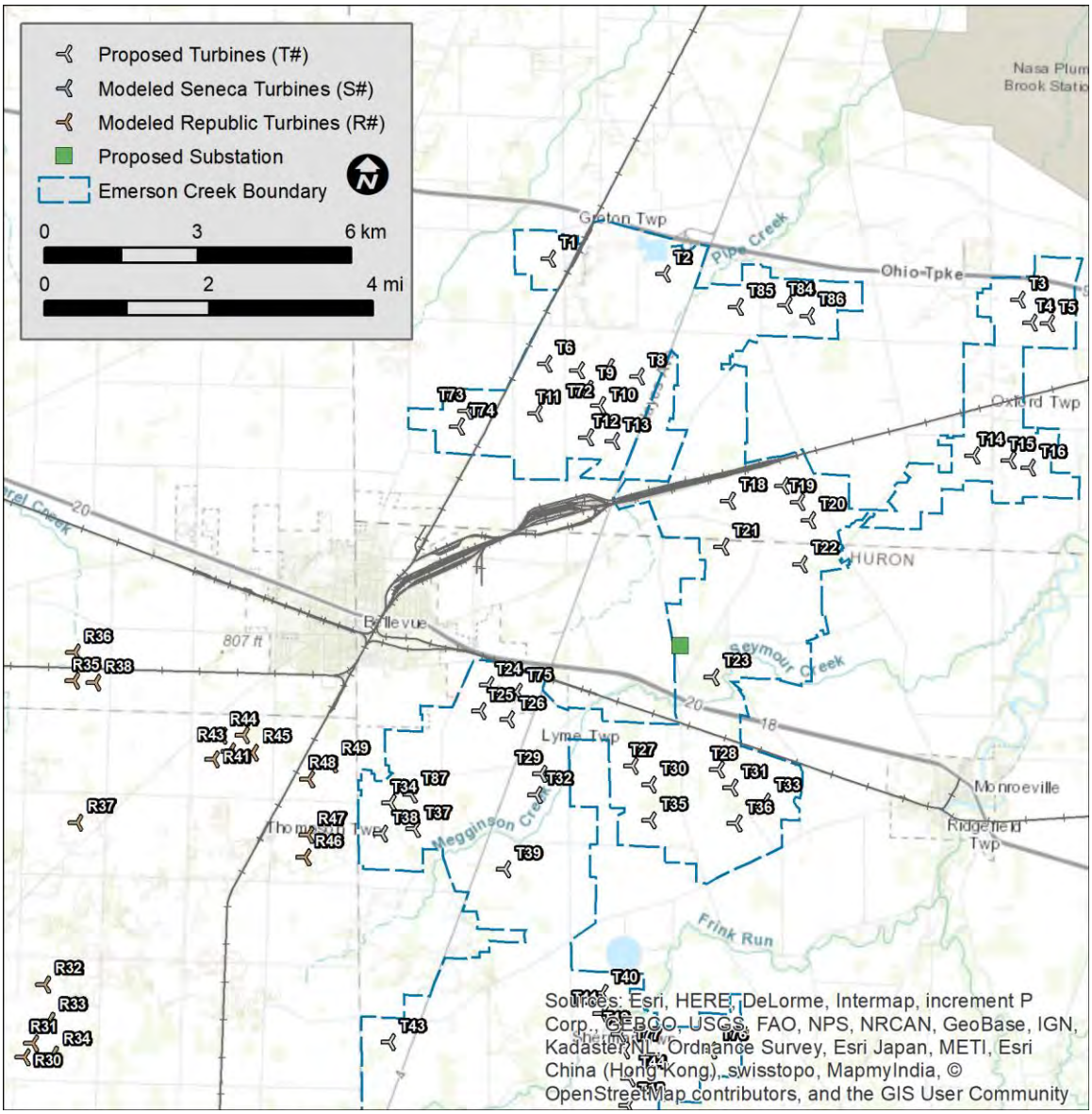


FIGURE 57: MAP OF MODELED SOURCES (NORTHERN AREA)

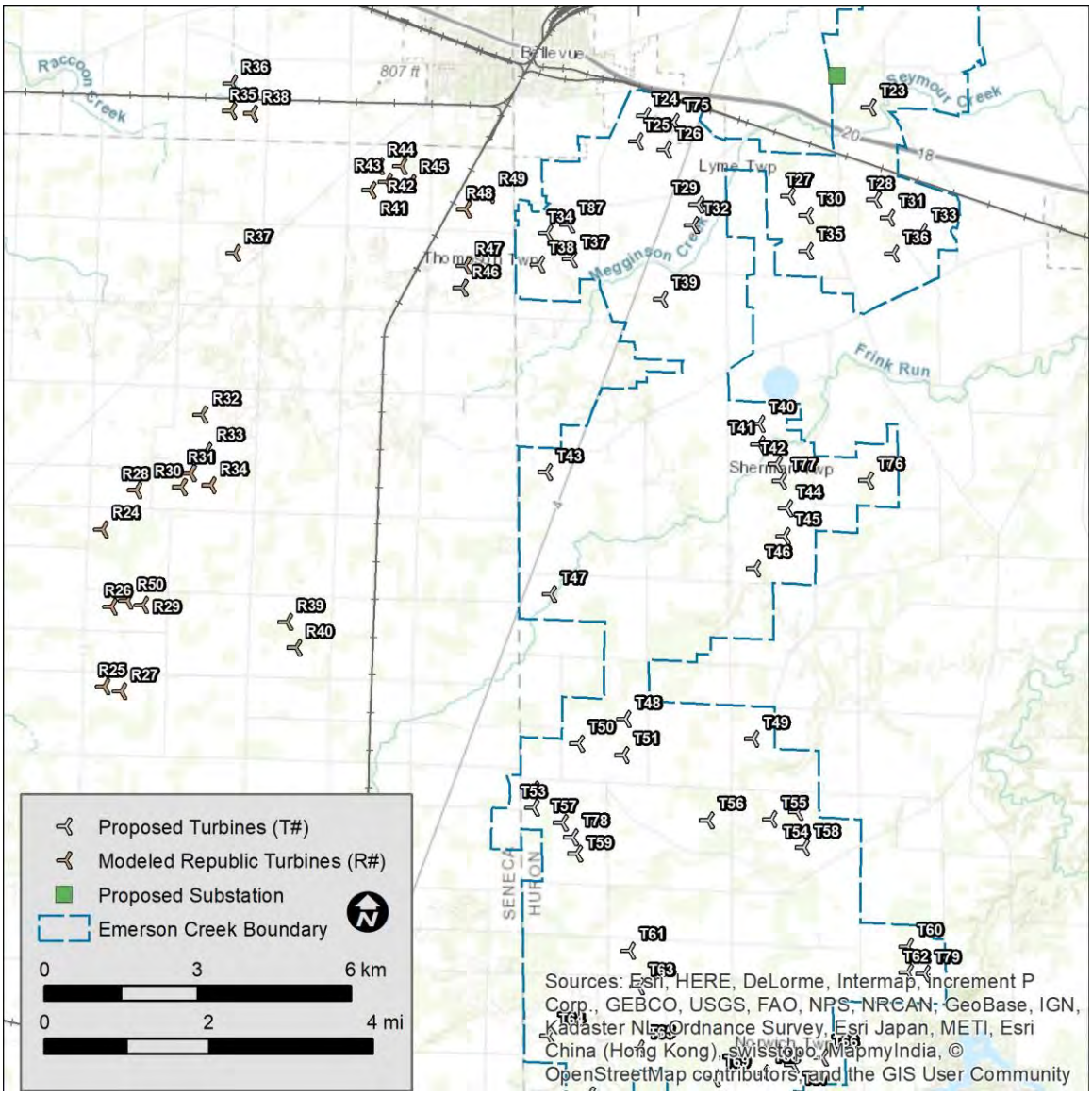


FIGURE 58: MAP OF MODELED SOURCES (MIDDLE AREA)

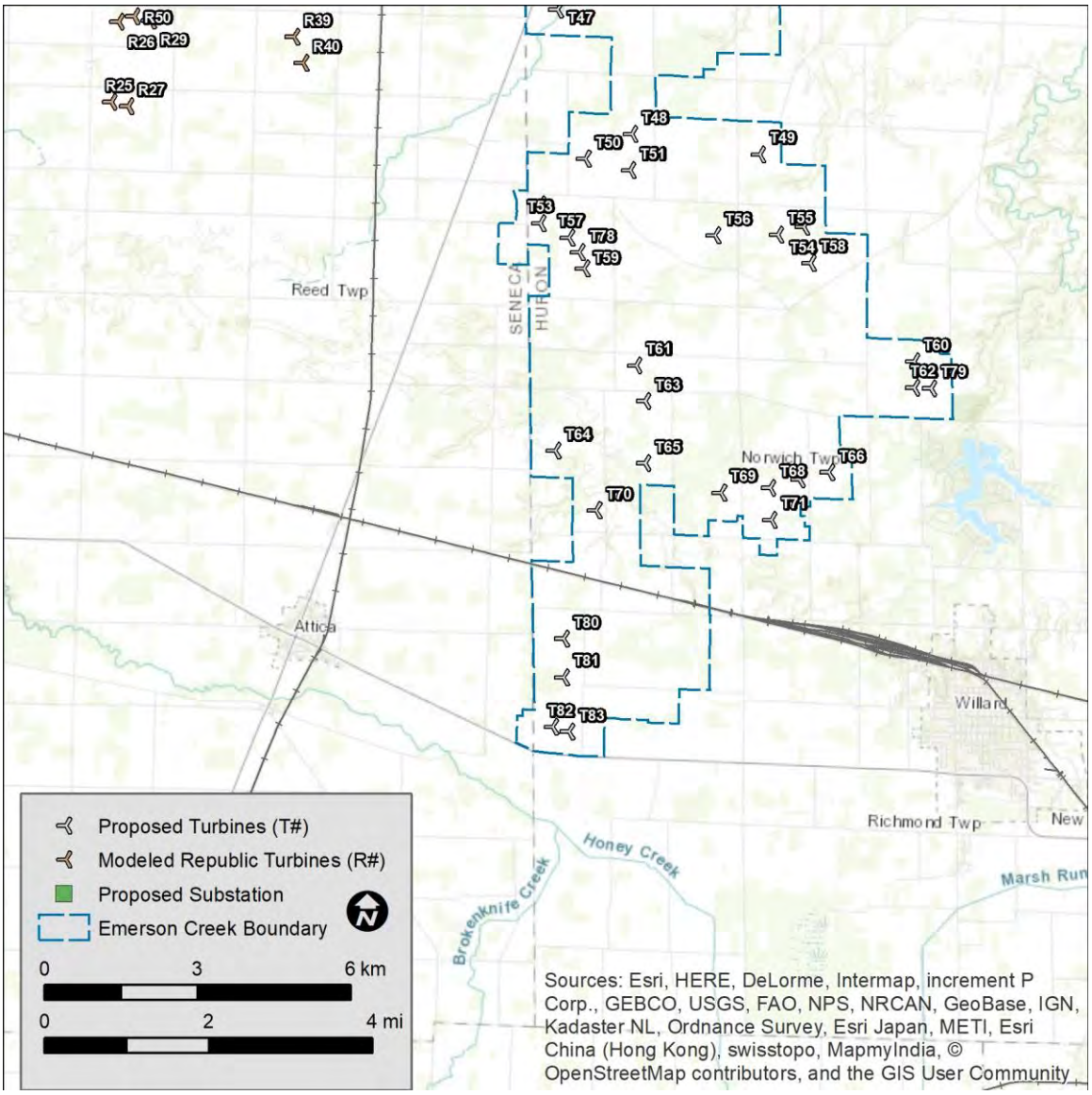


FIGURE 59: MAP OF MODELED SOURCES (SOUTHERN AREA)

TABLE 6: SOUND PROPGATION MODELING PARAMETERS

Parameter	Setting
Ground Absorption	Spectral for all sources, Mixed Ground (G=0.5)
Atmospheric Attenuation	Based on 10 Degrees Celsius, 70% Relative Humidity
Reflections	None
Receiver Height	4 meters for residences and grid
Search Distance	8,000 meters

TABLE 7: RECEIVER COORDINATES FOR ALL SENSITIVE RECEPTORS

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1	Non-participating	353229	4555368	258
2	Non-participating	351971	4551976	270
3	Non-participating	352230	4569172	239
4	Non-participating	348649	4546603	295
5	Non-participating	353658	4568766	234
6	Participating	351513	4556129	256
7	Non-participating	347724	4554982	265
8	Non-participating	354816	4551509	262
9	Non-participating	353048	4577587	222
10	Non-participating	347147	4569722	241
11	Participating	347408	4556393	263
12	Participating	347106	4553301	267
13	Non-participating	352114	4565265	240
14	Non-participating	350187	4548458	280
15	Non-participating	345797	4566154	248
16	Non-participating	353657	4569026	234
17	Non-participating	345291	4561441	258
18	Non-participating	353382	4555452	258
19	Participating	352856	4570343	237
20	Non-participating	352798	4565458	238
21	Non-participating	347892	4569862	242
22	Non-participating	345792	4568779	242
23	Non-participating	352606	4553875	264
24	Non-participating	350187	4547405	287
25	Non-participating	348655	4566909	244
26	Non-participating	350575	4556102	255
27	Participating	350270	4551427	269
28	Non-participating	346094	4550068	281
29	Non-participating	357524	4574391	220
30	Non-participating	357523	4574412	221
31	Non-participating	358610	4574557	217
32	Non-participating	359196	4575959	213
33	Participating	352420	4572652	233
34	Participating	353513	4571307	230

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
35	Non-participating	356876	4574320	221
36	Non-participating	356604	4574142	221
37	Non-participating	346674	4548267	291
38	Non-participating	354582	4551944	256
39	Non-participating	350352	4554193	264
40	Non-participating	351670	4549484	274
41	Non-participating	355503	4576077	221
42	Non-participating	359820	4572362	213
43	Non-participating	359948	4573474	213
44	Non-participating	352845	4577517	222
45	Non-participating	353876	4576036	225
46	Non-participating	352002	4569123	240
47	Non-participating	347527	4551727	279
48	Participating	348421	4558912	255
49	Non-participating	356218	4576260	220
50	Non-participating	357955	4577125	218
51	Non-participating	350566	4565854	244
52	Non-participating	347575	4545306	292
53	Non-participating	345869	4563307	250
54	Participating	347645	4555057	266
55	Non-participating	350267	4547660	283
56	Non-participating	350180	4548624	280
57	Non-participating	353835	4575824	223
58	Non-participating	350022	4568482	242
59	Non-participating	348436	4557851	257
60	Non-participating	348345	4548161	286
61	Non-participating	360307	4578181	211
62	Non-participating	354167	4578198	212
63	Non-participating	350113	4562562	245
64	Participating	350095	4562953	246
65	Non-participating	346363	4565208	248
66	Non-participating	347752	4570146	239
67	Non-participating	346716	4569681	241
68	Non-participating	350087	4554842	261
69	Non-participating	348530	4545212	291

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
70	Non-participating	347562	4570399	236
71	Non-participating	351992	4553073	264
72	Non-participating	352661	4551610	266
73	Non-participating	357098	4576124	220
74	Non-participating	357991	4577122	218
75	Participating	351886	4572221	234
76	Non-participating	350397	4572776	229
77	Participating	354598	4572195	225
78	Non-participating	348305	4573128	227
79	Non-participating	346838	4560484	254
80	Non-participating	348422	4578302	218
81	Non-participating	359428	4578463	213
82	Non-participating	356336	4573271	224
83	Non-participating	355544	4571708	225
84	Non-participating	348854	4548812	283
85	Non-participating	346043	4560379	256
86	Participating	349686	4560271	250
87	Participating	350142	4557205	256
88	Non-participating	349856	4578512	223
89	Non-participating	357466	4574287	220
90	Non-participating	360302	4574299	212
91	Participating	352181	4567715	240
92	Non-participating	351055	4572206	234
93	Non-participating	348569	4554584	261
94	Non-participating	345801	4567370	244
95	Non-participating	346311	4567623	242
96	Non-participating	354709	4576167	220
97	Non-participating	357759	4572090	219
98	Non-participating	351676	4563037	241
99	Non-participating	354114	4565428	234
100	Non-participating	350070	4564063	244
101	Participating	349601	4558664	250
102	Non-participating	348139	4556289	262
103	Non-participating	355457	4572148	224
104	Non-participating	352174	4567157	240

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
105	Participating	351193	4553147	262
106	Non-participating	347924	4564968	248
107	Non-participating	354055	4566057	235
108	Non-participating	353435	4555569	257
109	Non-participating	345322	4552965	275
110	Non-participating	356502	4573493	224
111	Non-participating	357296	4574297	221
112	Participating	345753	4562890	254
113	Participating	353826	4577333	220
114	Non-participating	345801	4567317	244
115	Non-participating	347685	4570183	238
116	Non-participating	351846	4578748	224
117	Non-participating	359272	4578486	213
118	Participating	351972	4570994	235
119	Non-participating	356431	4573515	223
120	Non-participating	351512	4569660	242
121	Non-participating	346173	4569216	241
122	Non-participating	347671	4570389	236
123	Non-participating	351043	4554129	264
124	Non-participating	353404	4577741	218
125	Non-participating	350972	4564942	242
126	Non-participating	350266	4546388	297
127	Non-participating	345817	4566194	248
128	Non-participating	348411	4562116	249
129	Non-participating	352674	4554779	261
130	Non-participating	352437	4551955	268
131	Non-participating	360024	4577342	214
132	Non-participating	351530	4578710	223
133	Non-participating	352046	4549462	272
134	Non-participating	352624	4553662	263
135	Non-participating	346967	4574989	225
136	Non-participating	346807	4569693	241
137	Participating	351700	4562581	242
138	Non-participating	349347	4546655	295
139	Non-participating	355024	4566656	230

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
140	Non-participating	348175	4570335	238
141	Non-participating	354876	4551637	261
142	Non-participating	354016	4575678	222
143	Participating	349258	4568017	246
144	Non-participating	347943	4573987	226
145	Non-participating	352318	4566469	240
146	Non-participating	348849	4569916	241
147	Non-participating	347596	4570141	238
148	Non-participating	349858	4558561	253
149	Non-participating	346701	4565405	249
150	Non-participating	347798	4573124	227
151	Non-participating	350383	4572986	229
152	Non-participating	353894	4577969	215
153	Participating	354049	4572266	226
154	Non-participating	345664	4561060	257
155	Non-participating	350006	4562178	245
156	Non-participating	351088	4558585	252
157	Non-participating	357719	4574646	220
158	Non-participating	357851	4574638	220
159	Non-participating	351996	4569421	240
160	Non-participating	356588	4573619	223
161	Non-participating	344808	4555561	269
162	Non-participating	354329	4568216	232
163	Non-participating	345306	4545729	289
164	Non-participating	348455	4562792	249
165	Non-participating	347693	4565281	248
166	Non-participating	345199	4561430	259
167	Non-participating	345464	4560913	258
168	Non-participating	354333	4551170	264
169	Participating	352673	4551172	270
170	Non-participating	346468	4549738	285
171	Non-participating	358318	4576290	216
172	Non-participating	351808	4578358	223
173	Non-participating	352713	4565517	238
174	Non-participating	349233	4576495	223

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
175	Non-participating	347401	4564043	248
176	Non-participating	347395	4569750	242
177	Non-participating	346121	4569209	241
178	Non-participating	346203	4558869	257
179	Non-participating	350401	4578410	222
180	Non-participating	355544	4572258	224
181	Non-participating	355665	4572405	224
182	Non-participating	346259	4545337	294
183	Non-participating	345964	4561199	256
184	Non-participating	353337	4555182	258
185	Non-participating	354436	4551418	265
186	Non-participating	353969	4576188	223
187	Participating	346571	4561321	254
188	Non-participating	345388	4553453	274
189	Non-participating	352257	4576347	223
190	Non-participating	350993	4569349	242
191	Non-participating	348169	4570098	240
192	Non-participating	347724	4570118	239
193	Non-participating	348855	4551861	272
194	Non-participating	349960	4552401	267
195	Non-participating	345622	4552512	276
196	Non-participating	354235	4578242	211
197	Participating	349904	4575140	223
198	Non-participating	345218	4567181	245
199	Non-participating	345881	4567518	243
200	Non-participating	350589	4556069	256
201	Non-participating	347989	4545233	288
202	Non-participating	348870	4576511	222
203	Non-participating	352717	4565375	238
204	Non-participating	346375	4560736	256
205	Non-participating	352943	4555276	259
206	Non-participating	354095	4551863	262
207	Participating	347145	4549677	283
208	Non-participating	354236	4574932	223
209	Non-participating	352520	4576339	224

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
210	Non-participating	347452	4569757	243
211	Non-participating	346262	4560367	256
212	Participating	350086	4561425	246
213	Non-participating	352869	4554555	262
214	Participating	350084	4556125	258
215	Non-participating	356654	4574331	220
216	Non-participating	357357	4574299	221
217	Non-participating	357572	4574389	220
218	Non-participating	358235	4574692	218
219	Non-participating	351476	4572625	233
220	Non-participating	346936	4548248	290
221	Non-participating	351732	4561166	243
222	Participating	351041	4556215	257
223	Non-participating	354169	4570124	231
224	Non-participating	351028	4557704	253
225	Non-participating	347418	4556330	263
226	Non-participating	356312	4576163	220
227	Non-participating	349910	4567290	243
228	Non-participating	350100	4562231	245
229	Non-participating	346647	4552551	277
230	Non-participating	352864	4577559	222
231	Non-participating	353959	4575917	223
232	Non-participating	350152	4555457	256
233	Non-participating	353769	4551995	265
234	Non-participating	351988	4569306	242
235	Non-participating	347681	4570145	238
236	Non-participating	353873	4568579	238
237	Non-participating	349858	4549572	276
238	Non-participating	350196	4546586	295
239	Non-participating	347980	4548181	286
240	Non-participating	345557	4545630	288
241	Participating	347959	4565262	247
242	Non-participating	345899	4560556	256
243	Non-participating	354541	4551300	263
244	Non-participating	348842	4578319	218

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
245	Non-participating	354001	4566061	235
246	Non-participating	345882	4568507	241
247	Non-participating	350201	4547321	288
248	Non-participating	347591	4565296	247
249	Non-participating	354445	4551153	262
250	Non-participating	357794	4577110	218
251	Non-participating	355981	4572718	223
252	Participating	350125	4573402	226
253	Participating	353814	4578116	216
254	Non-participating	345816	4565902	248
255	Non-participating	348095	4565598	246
256	Non-participating	348645	4545281	292
257	Non-participating	350206	4546296	298
258	Non-participating	345058	4545318	287
259	Participating	347256	4563342	248
260	Non-participating	347905	4564854	248
261	Non-participating	349127	4556190	260
262	Non-participating	345273	4551786	280
263	Non-participating	350188	4578550	223
264	Non-participating	352613	4577227	222
265	Non-participating	352044	4569134	240
266	Non-participating	347300	4569738	241
267	Non-participating	348403	4560972	251
268	Non-participating	352390	4560308	242
269	Non-participating	345720	4549278	283
270	Non-participating	354171	4574759	222
271	Non-participating	359876	4574368	212
272	Non-participating	349837	4578271	224
273	Non-participating	347060	4573920	224
274	Participating	347583	4563986	248
275	Participating	345961	4566804	245
276	Non-participating	346116	4569168	241
277	Participating	350140	4557015	258
278	Non-participating	347266	4545387	295
279	Participating	346614	4562783	253

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
280	Participating	352048	4570388	236
281	Non-participating	349773	4573347	227
282	Participating	356307	4573147	223
283	Non-participating	350133	4559428	250
284	Non-participating	355437	4572104	225
285	Non-participating	348957	4576500	222
286	Non-participating	357907	4577123	218
287	Non-participating	350430	4572693	228
288	Participating	350071	4557308	256
289	Non-participating	356127	4576785	220
290	Non-participating	350590	4579082	221
291	Non-participating	352144	4569061	239
292	Non-participating	357127	4572096	220
293	Non-participating	349992	4564270	244
294	Participating	348087	4570209	240
295	Non-participating	347576	4570429	235
296	Participating	349087	4548134	284
297	Non-participating	360015	4578249	213
298	Participating	352907	4568928	234
299	Non-participating	354483	4577656	217
300	Non-participating	354048	4578008	215
301	Non-participating	345895	4560480	257
302	Non-participating	353341	4555532	258
303	Non-participating	355639	4571586	225
304	Non-participating	345777	4566429	247
305	Participating	347708	4567596	246
306	Non-participating	345313	4553002	275
307	Non-participating	348760	4548911	282
308	Non-participating	350257	4547795	284
309	Non-participating	350045	4558666	252
310	Participating	348787	4556261	260
311	Non-participating	345326	4553206	273
312	Non-participating	351558	4549360	277
313	Non-participating	357884	4576036	218
314	Non-participating	348896	4549284	280

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
315	Non-participating	354609	4566484	231
316	Non-participating	348487	4560910	249
317	Non-participating	353167	4570701	234
318	Non-participating	349157	4545190	294
319	Non-participating	354350	4552485	267
320	Non-participating	352345	4576711	223
321	Non-participating	348092	4570309	238
322	Non-participating	347805	4570109	240
323	Non-participating	347673	4570121	238
324	Participating	352600	4553553	262
325	Participating	352676	4550799	266
326	Non-participating	350265	4546659	293
327	Non-participating	347192	4548158	290
328	Non-participating	345881	4562145	256
329	Non-participating	345780	4562224	256
330	Non-participating	353508	4551897	267
331	Non-participating	348807	4549619	278
332	Participating	359914	4576818	214
333	Non-participating	347552	4565759	246
334	Participating	347837	4558618	256
335	Non-participating	349549	4556225	259
336	Participating	347205	4554311	269
337	Non-participating	354012	4577983	215
338	Non-participating	345885	4568343	241
339	Non-participating	347559	4545255	291
340	Non-participating	347894	4564883	248
341	Non-participating	347556	4565765	246
342	Non-participating	354869	4551676	260
343	Non-participating	354878	4570381	228
344	Non-participating	358324	4576201	217
345	Non-participating	350761	4569585	243
346	Non-participating	350374	4564617	244
347	Non-participating	346924	4549759	284
348	Non-participating	346988	4565325	247
349	Non-participating	345596	4561006	258

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
350	Participating	347544	4550966	274
351	Non-participating	346663	4562849	252
352	Non-participating	353322	4577656	219
353	Non-participating	351983	4569366	241
354	Non-participating	347584	4565292	247
355	Non-participating	347723	4570179	238
356	Non-participating	353100	4560695	240
357	Non-participating	348847	4558644	251
358	Non-participating	350500	4579261	220
359	Non-participating	358247	4577901	218
360	Participating	353807	4576810	224
361	Non-participating	351211	4558529	251
362	Participating	352684	4552529	267
363	Non-participating	360646	4578091	210
364	Non-participating	350394	4572944	229
365	Participating	352339	4573592	225
366	Non-participating	349125	4576496	223
367	Non-participating	345301	4565438	250
368	Non-participating	347800	4569850	242
369	Non-participating	349018	4554113	267
370	Participating	346541	4562806	255
371	Non-participating	348720	4573901	225
372	Participating	349827	4568777	243
373	Non-participating	347630	4570191	237
374	Non-participating	350118	4552148	267
375	Non-participating	351818	4553328	264
376	Non-participating	353695	4571653	229
377	Participating	358358	4574946	218
378	Non-participating	348168	4570526	237
379	Non-participating	350165	4546608	294
380	Participating	348063	4570148	241
381	Non-participating	346386	4561128	254
382	Participating	351627	4562173	241
383	Non-participating	348565	4555317	264
384	Non-participating	352691	4552943	264

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
385	Non-participating	359920	4576696	213
386	Non-participating	353974	4562887	242
387	Participating	350248	4551465	267
388	Non-participating	347555	4569766	243
389	Non-participating	346202	4558849	257
390	Participating	358397	4576871	215
391	Non-participating	354018	4575635	222
392	Non-participating	345116	4545363	286
393	Non-participating	346855	4565400	247
394	Non-participating	350220	4578295	222
395	Non-participating	351856	4578925	224
396	Non-participating	349397	4568206	245
397	Non-participating	352789	4577937	222
398	Non-participating	347660	4570210	237
399	Participating	351771	4561830	243
400	Non-participating	351952	4569438	240
401	Non-participating	346036	4562819	258
402	Non-participating	350114	4559700	247
403	Non-participating	351996	4549454	273
404	Participating	350142	4550519	275
405	Non-participating	354192	4574827	223
406	Non-participating	353503	4575941	223
407	Non-participating	354282	4576189	221
408	Participating	350070	4557364	256
409	Non-participating	348177	4563393	249
410	Non-participating	347011	4552480	278
411	Non-participating	354832	4551345	261
412	Participating	351450	4549498	277
413	Non-participating	352008	4578698	224
414	Non-participating	360641	4572622	212
415	Non-participating	355829	4577665	222
416	Non-participating	354024	4575861	222
417	Non-participating	347565	4551197	277
418	Non-participating	345797	4567453	244
419	Non-participating	360021	4578306	212

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
420	Non-participating	352645	4577524	222
421	Non-participating	353437	4576097	224
422	Non-participating	350017	4563022	246
423	Non-participating	351657	4562647	242
424	Participating	349619	4556157	259
425	Non-participating	358284	4574699	218
426	Non-participating	351581	4572652	234
427	Participating	349978	4574706	223
428	Non-participating	357582	4574324	220
429	Non-participating	350093	4562379	245
430	Participating	352497	4555013	261
431	Participating	351490	4552901	264
432	Non-participating	350293	4578380	222
433	Non-participating	360323	4572529	213
434	Non-participating	355984	4572830	223
435	Non-participating	349987	4564393	244
436	Participating	350156	4553102	268
437	Participating	347510	4553283	267
438	Non-participating	350531	4569056	240
439	Non-participating	347651	4570131	238
440	Non-participating	354332	4553838	263
441	Non-participating	347401	4546746	298
442	Participating	353964	4566128	235
443	Non-participating	347472	4568103	243
444	Non-participating	355571	4571787	225
445	Non-participating	346062	4550304	281
446	Non-participating	350140	4547226	288
447	Non-participating	345885	4567227	243
448	Non-participating	350422	4572712	228
449	Non-participating	355749	4572534	223
450	Non-participating	356546	4572050	222
451	Non-participating	346278	4567619	242
452	Non-participating	353823	4568555	237
453	Non-participating	354508	4551383	264
454	Participating	349368	4549669	277

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
455	Participating	347581	4563973	248
456	Non-participating	348946	4578328	218
457	Non-participating	349849	4578580	222
458	Non-participating	355632	4572237	223
459	Non-participating	347334	4569736	242
460	Non-participating	353426	4561634	241
461	Non-participating	347380	4553095	270
462	Non-participating	353851	4578050	215
463	Non-participating	355870	4571208	226
464	Non-participating	356623	4574339	219
465	Non-participating	356468	4577278	219
466	Non-participating	346153	4545432	293
467	Non-participating	345810	4565930	249
468	Non-participating	347779	4565267	248
469	Non-participating	347714	4570152	239
470	Non-participating	348460	4546619	293
471	Non-participating	348657	4545285	292
472	Non-participating	350203	4546300	298
473	Non-participating	350598	4579138	221
474	Non-participating	352129	4569071	239
475	Non-participating	346741	4562791	252
476	Non-participating	345887	4567695	242
477	Non-participating	351774	4562837	242
478	Non-participating	346753	4561495	254
479	Participating	347562	4556232	262
480	Non-participating	354887	4551539	261
481	Non-participating	353057	4550640	264
482	Non-participating	350482	4549391	277
483	Non-participating	357511	4576100	219
484	Non-participating	349426	4573471	227
485	Non-participating	357997	4574685	219
486	Non-participating	353261	4577671	219
487	Participating	352803	4572744	229
488	Non-participating	345898	4560486	257
489	Non-participating	345814	4567816	242

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
490	Non-participating	349535	4566246	243
491	Non-participating	357902	4577210	219
492	Participating	352270	4567998	239
493	Non-participating	350880	4572051	236
494	Non-participating	355427	4572058	226
495	Non-participating	357092	4574309	221
496	Participating	346100	4547861	295
497	Non-participating	346170	4569165	241
498	Non-participating	350157	4554825	259
499	Non-participating	355679	4571604	225
500	Participating	352193	4567289	242
501	Non-participating	352253	4567621	244
502	Non-participating	347479	4570300	236
503	Participating	347480	4567871	244
504	Non-participating	345632	4560981	257
505	Participating	349492	4558680	251
506	Non-participating	349983	4558640	252
507	Non-participating	353932	4578049	214
508	Non-participating	349773	4569705	243
509	Non-participating	354625	4567394	232
510	Participating	354258	4552740	264
511	Non-participating	349153	4545195	294
512	Non-participating	356177	4572974	223
513	Non-participating	353169	4577735	221
514	Non-participating	349672	4572655	230
515	Non-participating	353042	4570841	236
516	Non-participating	348871	4573395	226
517	Participating	349922	4573377	227
518	Participating	350097	4560304	248
519	Participating	346998	4556297	264
520	Non-participating	348931	4553155	269
521	Non-participating	348820	4554397	266
522	Non-participating	360407	4578143	210
523	Non-participating	359180	4574345	214
524	Non-participating	352880	4577931	222

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
525	Non-participating	350076	4564911	244
526	Non-participating	345628	4561056	257
527	Participating	350189	4551977	267
528	Non-participating	351177	4549585	274
529	Non-participating	351459	4550162	273
530	Non-participating	349876	4578899	220
531	Non-participating	350411	4578458	222
532	Non-participating	360683	4576054	208
533	Non-participating	345465	4565556	250
534	Non-participating	348156	4569886	242
535	Participating	350129	4558088	255
536	Non-participating	351377	4548969	275
537	Non-participating	360537	4578144	209
538	Non-participating	350360	4572943	229
539	Non-participating	345241	4546338	297
540	Non-participating	348209	4570076	241
541	Non-participating	350217	4556764	257
542	Non-participating	354503	4551220	263
543	Non-participating	352674	4550401	270
544	Non-participating	345907	4565791	249
545	Non-participating	346793	4558645	258
546	Non-participating	351275	4554269	262
547	Non-participating	352590	4577641	222
548	Non-participating	345388	4565187	250
549	Non-participating	346730	4565814	251
550	Non-participating	347711	4570182	238
551	Non-participating	345695	4559201	257
552	Non-participating	357589	4574590	220
553	Non-participating	348963	4576139	221
554	Non-participating	358665	4576046	217
555	Non-participating	358247	4577626	218
556	Non-participating	354941	4570369	228
557	Non-participating	347670	4570347	236
558	Non-participating	345685	4561006	257
559	Non-participating	350106	4561367	246

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
560	Non-participating	351184	4554207	263
561	Non-participating	351222	4578701	223
562	Participating	354467	4572202	225
563	Participating	349640	4576668	224
564	Non-participating	352166	4568451	240
565	Non-participating	345986	4569177	241
566	Non-participating	345738	4562229	256
567	Non-participating	351790	4560113	246
568	Non-participating	359212	4578508	213
569	Non-participating	352313	4566468	239
570	Participating	347602	4566895	246
571	Participating	351039	4560143	247
572	Non-participating	350127	4558552	252
573	Non-participating	346646	4552558	277
574	Non-participating	353743	4576210	224
575	Non-participating	349349	4563858	246
576	Non-participating	351691	4561059	244
577	Non-participating	354146	4562143	240
578	Non-participating	354189	4561900	240
579	Non-participating	354323	4551800	254
580	Participating	347938	4552465	276
581	Participating	359611	4576021	214
582	Non-participating	352574	4565450	237
583	Non-participating	348983	4551490	274
584	Non-participating	345263	4551791	280
585	Non-participating	347648	4570158	238
586	Participating	352685	4553323	264
587	Participating	349468	4546621	296
588	Non-participating	357682	4574744	219
589	Non-participating	351191	4569448	241
590	Non-participating	346401	4565410	249
591	Participating	348074	4570160	241
592	Non-participating	348167	4570444	236
593	Participating	345851	4559631	257
594	Non-participating	353143	4569988	233

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
595	Non-participating	356183	4576161	220
596	Non-participating	351467	4574491	224
597	Non-participating	353699	4575477	224
598	Non-participating	354146	4576189	222
599	Non-participating	349349	4568095	246
600	Non-participating	353384	4555317	258
601	Non-participating	354621	4573824	221
602	Non-participating	351979	4569374	241
603	Non-participating	350306	4546386	297
604	Non-participating	345568	4545688	289
605	Participating	346550	4562812	255
606	Non-participating	347411	4569815	241
607	Non-participating	345468	4560743	257
608	Participating	348759	4552313	273
609	Non-participating	351597	4549496	275
610	Non-participating	351794	4578679	224
611	Non-participating	358321	4576229	217
612	Participating	347842	4546710	297
613	Non-participating	351116	4557711	253
614	Participating	347647	4555453	265
615	Non-participating	348752	4553216	270
616	Non-participating	345449	4554210	275
617	Participating	350625	4576196	225
618	Non-participating	346904	4573988	223
619	Non-participating	354364	4551235	264
620	Participating	352744	4550496	269
621	Non-participating	354141	4574854	223
622	Participating	358491	4575609	217
623	Non-participating	360674	4572622	212
624	Participating	351945	4563446	239
625	Non-participating	347256	4545343	295
626	Non-participating	345557	4566604	245
627	Non-participating	354352	4569796	232
628	Participating	351675	4561259	244
629	Non-participating	351796	4578897	224

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
630	Participating	350079	4563539	245
631	Participating	348032	4569818	242
632	Non-participating	350124	4559017	250
633	Non-participating	353328	4555474	258
634	Non-participating	355466	4571860	225
635	Non-participating	352223	4569064	237
636	Non-participating	350040	4567048	244
637	Non-participating	345804	4568847	242
638	Non-participating	348549	4546700	294
639	Non-participating	345728	4565326	249
640	Non-participating	345315	4553177	273
641	Non-participating	347115	4547050	299
642	Non-participating	348593	4546608	295
643	Non-participating	352046	4569307	241
644	Non-participating	352057	4565189	241
645	Non-participating	347659	4570157	238
646	Non-participating	345776	4568972	242
647	Non-participating	354357	4553863	263
648	Participating	348676	4552509	274
649	Non-participating	349630	4572641	230
650	Participating	352901	4570406	237
651	Non-participating	353300	4555378	258
652	Participating	351520	4551282	271
653	Participating	352439	4572720	233
654	Non-participating	348917	4549246	279
655	Non-participating	347961	4565210	247
656	Non-participating	354130	4568440	232
657	Participating	352549	4577023	222
658	Non-participating	353903	4575974	224
659	Participating	353749	4571891	228
660	Non-participating	347869	4573129	227
661	Non-participating	352003	4569150	241
662	Non-participating	345252	4551767	281
663	Non-participating	346961	4562776	252
664	Non-participating	347202	4563018	250

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
665	Participating	346372	4567707	242
666	Non-participating	348415	4560615	251
667	Non-participating	346407	4553366	271
668	Non-participating	356804	4574343	220
669	Non-participating	356639	4574023	222
670	Non-participating	357864	4577126	218
671	Non-participating	348124	4548220	286
672	Participating	349062	4545265	293
673	Non-participating	348733	4545287	292
674	Non-participating	350272	4547453	286
675	Non-participating	349039	4548053	283
676	Non-participating	356259	4576464	221
677	Non-participating	350216	4578420	222
678	Non-participating	351836	4571816	235
679	Non-participating	355494	4572185	224
680	Non-participating	349988	4564379	244
681	Non-participating	347228	4569729	242
682	Non-participating	350572	4556104	255
683	Participating	348790	4552039	270
684	Non-participating	357523	4574436	221
685	Non-participating	358134	4574682	218
686	Non-participating	353119	4577664	221
687	Non-participating	355907	4572735	223
688	Participating	351382	4574432	224
689	Non-participating	354486	4567965	233
690	Non-participating	354434	4551385	265
691	Non-participating	347450	4551641	279
692	Non-participating	345873	4563308	250
693	Non-participating	347455	4566665	246
694	Non-participating	350169	4553813	264
695	Non-participating	355574	4571691	225
696	Non-participating	358967	4575963	215
697	Non-participating	347588	4570390	236
698	Non-participating	347581	4570257	236
699	Non-participating	348796	4567729	247

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
700	Participating	350189	4553105	267
701	Non-participating	350255	4549296	277
702	Non-participating	352940	4577907	223
703	Non-participating	347736	4562612	251
704	Non-participating	348047	4565834	245
705	Non-participating	347747	4570178	239
706	Participating	348019	4554197	264
707	Non-participating	359641	4578430	212
708	Non-participating	348755	4578314	218
709	Non-participating	356373	4573318	224
710	Participating	352013	4570611	236
711	Non-participating	350046	4558631	252
712	Non-participating	351743	4559373	244
713	Non-participating	349986	4556214	258
714	Non-participating	352661	4551611	266
715	Non-participating	356977	4576132	219
716	Non-participating	353512	4570481	231
717	Non-participating	354102	4578129	213
718	Non-participating	351772	4562341	242
719	Non-participating	348244	4548169	286
720	Participating	345298	4557378	263
721	Non-participating	350572	4578916	222
722	Non-participating	351812	4563174	240
723	Non-participating	348823	4554301	267
724	Non-participating	351366	4554327	261
725	Non-participating	357423	4574294	220
726	Non-participating	360189	4574323	211
727	Participating	355489	4577244	221
728	Participating	352266	4567695	241
729	Non-participating	355432	4572149	224
730	Non-participating	346951	4573920	225
731	Non-participating	357180	4574303	221
732	Non-participating	350268	4547842	283
733	Participating	350097	4560005	249
734	Non-participating	352687	4552846	264

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
735	Non-participating	356521	4573514	224
736	Non-participating	348869	4545187	293
737	Non-participating	346035	4544924	287
738	Non-participating	351573	4549097	276
739	Non-participating	358324	4576393	216
740	Non-participating	352339	4566412	239
741	Non-participating	350877	4572146	234
742	Non-participating	353657	4577655	218
743	Non-participating	346219	4567625	242
744	Non-participating	354622	4567620	232
745	Non-participating	351916	4578753	224
746	Non-participating	346907	4575336	222
747	Non-participating	357511	4574526	220
748	Non-participating	358323	4576143	217
749	Non-participating	352680	4565496	238
750	Non-participating	354818	4566508	232
751	Non-participating	346174	4569245	241
752	Participating	351708	4561611	243
753	Participating	348394	4558597	254
754	Non-participating	353330	4555286	257
755	Non-participating	354014	4577451	218
756	Non-participating	352344	4576714	223
757	Non-participating	345192	4545287	286
758	Non-participating	347501	4563805	248
759	Non-participating	347644	4569840	242
760	Non-participating	350014	4562092	245
761	Participating	350112	4559235	250
762	Participating	352686	4550451	270
763	Non-participating	359332	4578475	213
764	Non-participating	359958	4577418	213
765	Non-participating	351858	4578988	224
766	Participating	351805	4571238	235
767	Non-participating	345595	4560990	257
768	Participating	350148	4553377	266
769	Non-participating	351240	4554240	263

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
770	Non-participating	350305	4550810	271
771	Non-participating	350976	4564946	242
772	Non-participating	345803	4567357	244
773	Non-participating	350269	4547880	283
774	Non-participating	345689	4561039	257
775	Non-participating	345658	4561062	257
776	Non-participating	349866	4578224	223
777	Non-participating	357834	4574637	220
778	Non-participating	347604	4570156	238
779	Participating	351702	4562804	243
780	Non-participating	351470	4551732	270
781	Participating	352675	4550109	272
782	Non-participating	354246	4578189	213
783	Non-participating	353943	4577980	215
784	Non-participating	352790	4565323	237
785	Participating	351697	4562153	242
786	Non-participating	348490	4559530	253
787	Non-participating	346742	4556724	264
788	Participating	350126	4558014	255
789	Non-participating	350409	4572991	229
790	Non-participating	360754	4578010	209
791	Non-participating	348167	4570415	237
792	Non-participating	350175	4546265	297
793	Participating	346580	4554244	273
794	Non-participating	350342	4549535	276
795	Non-participating	352204	4576277	223
796	Non-participating	358321	4576318	216
797	Non-participating	358304	4578085	217
798	Non-participating	349949	4568273	242
799	Non-participating	357840	4574680	220
800	Non-participating	346147	4569240	241
801	Participating	346788	4558585	259
802	Non-participating	353254	4556040	257
803	Non-participating	347732	4573126	227
804	Non-participating	347095	4545273	296

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
805	Non-participating	345200	4545754	289
806	Non-participating	347245	4562813	251
807	Non-participating	348127	4563335	249
808	Non-participating	350107	4559776	248
809	Non-participating	348596	4555286	264
810	Non-participating	347885	4549723	280
811	Non-participating	352500	4574832	224
812	Non-participating	360051	4573010	213
813	Non-participating	352633	4577746	222
814	Non-participating	347671	4573443	226
815	Non-participating	345355	4546628	296
816	Non-participating	347422	4569751	242
817	Non-participating	357784	4574631	220
818	Non-participating	347101	4573981	224
819	Non-participating	348151	4570106	240
820	Non-participating	348418	4561180	250
821	Non-participating	353214	4551893	270
822	Non-participating	349687	4552409	271
823	Participating	350203	4551016	270
824	Non-participating	359982	4576463	212
825	Non-participating	346359	4549648	282
826	Non-participating	345797	4567414	244
827	Non-participating	347844	4569157	242
828	Non-participating	348483	4558714	255
829	Non-participating	351792	4578780	224
830	Non-participating	346461	4565471	249
831	Non-participating	347707	4570121	239
832	Non-participating	348011	4569871	243
833	Non-participating	348476	4560720	250
834	Non-participating	350160	4562184	244
835	Non-participating	350115	4558492	253
836	Non-participating	355788	4577835	220
837	Non-participating	353220	4575704	225
838	Non-participating	354569	4576160	220
839	Non-participating	360581	4572616	212

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
840	Non-participating	349999	4565708	244
841	Non-participating	351578	4549458	276
842	Non-participating	353098	4555340	258
843	Non-participating	348796	4576511	222
844	Non-participating	352351	4576345	223
845	Non-participating	353144	4570004	233
846	Non-participating	347570	4566093	245
847	Non-participating	346990	4558715	256
848	Non-participating	347355	4553143	268
849	Non-participating	355951	4572682	223
850	Participating	349117	4549568	276
851	Non-participating	346438	4549702	284
852	Non-participating	345721	4565328	249
853	Non-participating	355477	4572161	224
854	Non-participating	355417	4571916	227
855	Non-participating	355022	4573074	223
856	Non-participating	356252	4576154	220
857	Non-participating	349431	4569208	242
858	Non-participating	349642	4572606	230
859	Non-participating	345813	4568883	242
860	Participating	353139	4569793	234
861	Non-participating	350095	4562235	245
862	Non-participating	352036	4572642	233
863	Non-participating	352909	4577564	222
864	Non-participating	345800	4567218	244
865	Non-participating	345996	4561840	256
866	Participating	352704	4554608	262
867	Non-participating	360061	4578221	213
868	Non-participating	357332	4574297	220
869	Non-participating	351656	4562959	241
870	Non-participating	349964	4567481	242
871	Participating	350129	4550974	271
872	Non-participating	345753	4568254	242
873	Participating	348818	4556197	261
874	Non-participating	354812	4551533	263

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
875	Non-participating	354426	4551131	262
876	Non-participating	349995	4573422	226
877	Non-participating	356530	4574459	220
878	Participating	353805	4578177	218
879	Participating	350101	4563273	246
880	Non-participating	351782	4562341	242
881	Non-participating	352663	4551458	265
882	Non-participating	346721	4545308	294
883	Non-participating	346809	4565397	248
884	Non-participating	353194	4555411	258
885	Non-participating	347510	4552119	277
886	Non-participating	346091	4549639	279
887	Non-participating	346965	4562776	252
888	Non-participating	352979	4556063	258
889	Participating	345780	4554139	276
890	Non-participating	352190	4549472	273
891	Non-participating	352515	4578738	227
892	Non-participating	356767	4574339	220
893	Non-participating	357575	4574410	220
894	Non-participating	358181	4574696	218
895	Non-participating	353149	4577675	220
896	Non-participating	347575	4546627	298
897	Non-participating	346214	4545413	293
898	Non-participating	347675	4570149	238
899	Non-participating	353957	4568099	236
900	Non-participating	350156	4558839	251
901	Non-participating	351464	4551664	271
902	Non-participating	347679	4548237	287
903	Participating	352520	4577112	222
904	Non-participating	350139	4578425	222
905	Non-participating	347938	4573106	227
906	Non-participating	349109	4545249	294
907	Non-participating	347277	4569738	241
908	Non-participating	346325	4567718	242
909	Non-participating	345809	4567858	242

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
910	Non-participating	349710	4558644	252
911	Participating	346620	4554278	272
912	Non-participating	349778	4569906	241
913	Non-participating	356928	4572044	221
914	Participating	354903	4576237	221
915	Non-participating	351969	4564265	236
916	Non-participating	354630	4567471	232
917	Non-participating	351808	4560091	246
918	Non-participating	345405	4553915	278
919	Non-participating	350381	4572964	229
920	Participating	356346	4573173	223
921	Non-participating	349801	4578266	224
922	Non-participating	355631	4571598	225
923	Participating	345895	4566816	244
924	Non-participating	347593	4570274	236
925	Non-participating	348055	4567696	244
926	Participating	349672	4560262	250
927	Non-participating	350163	4549957	275
928	Non-participating	357148	4574305	221
929	Non-participating	357881	4574678	219
930	Non-participating	354060	4578082	214
931	Non-participating	352252	4568752	238
932	Participating	351695	4562580	242
933	Non-participating	350487	4564709	244
934	Non-participating	345683	4561023	257
935	Non-participating	351045	4558290	253
936	Non-participating	350427	4579034	221
937	Non-participating	347123	4573906	224
938	Participating	351593	4562809	242
939	Non-participating	346775	4569685	241
940	Participating	346662	4556274	265
941	Participating	346699	4556285	266
942	Non-participating	345119	4555767	267
943	Participating	355419	4577211	222
944	Non-participating	358264	4576067	217

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
945	Non-participating	355392	4572153	224
946	Non-participating	351472	4551632	271
947	Non-participating	350093	4552649	269
948	Participating	347638	4552918	274
949	Non-participating	353368	4577748	218
950	Non-participating	354680	4566505	232
951	Non-participating	351682	4560860	246
952	Non-participating	345999	4549935	282
953	Non-participating	345665	4549252	284
954	Non-participating	360174	4573916	211
955	Non-participating	352895	4577886	222
956	Participating	352186	4567835	240
957	Participating	349615	4548101	285
958	Participating	347235	4548163	290
959	Non-participating	345203	4565546	249
960	Non-participating	346011	4544926	287
961	Participating	346802	4563189	250
962	Participating	351590	4566165	242
963	Non-participating	354867	4551706	259
964	Non-participating	347633	4554303	268
965	Non-participating	348961	4573771	226
966	Non-participating	350914	4576328	225
967	Non-participating	352685	4565427	237
968	Non-participating	345811	4566113	248
969	Non-participating	347751	4569838	242
970	Non-participating	354336	4553542	260
971	Participating	347619	4546710	298
972	Non-participating	357519	4574552	220
973	Non-participating	352326	4576558	223
974	Non-participating	360032	4576959	213
975	Non-participating	347161	4567645	243
976	Non-participating	347793	4570125	240
977	Non-participating	348093	4570528	236
978	Non-participating	346459	4560988	255
979	Non-participating	350253	4548933	281

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
980	Non-participating	347182	4546195	292
981	Non-participating	347687	4570125	238
982	Non-participating	346100	4550230	280
983	Non-participating	354673	4570223	229
984	Non-participating	359381	4578463	213
985	Non-participating	353836	4577882	219
986	Non-participating	358324	4576168	217
987	Non-participating	355624	4572345	224
988	Non-participating	350003	4565251	245
989	Non-participating	360681	4578051	209
990	Non-participating	345606	4561043	257
991	Non-participating	348486	4559535	253
992	Non-participating	350254	4554770	259
993	Non-participating	352037	4573772	226
994	Non-participating	348814	4550416	276
995	Non-participating	348477	4560775	250
996	Non-participating	350178	4546266	297
997	Non-participating	353860	4576204	224
998	Participating	349188	4568594	242
999	Non-participating	345898	4567282	243
1000	Non-participating	346353	4562940	257
1001	Non-participating	348520	4562825	249
1002	Non-participating	346842	4575344	222
1003	Non-participating	349887	4578256	223
1004	Non-participating	358897	4575970	215
1005	Non-participating	354501	4567102	232
1006	Non-participating	352816	4561551	243
1007	Non-participating	352167	4552998	266
1008	Non-participating	347527	4553226	269
1009	Non-participating	347050	4573981	224
1010	Non-participating	348894	4576687	223
1011	Non-participating	353865	4575707	223
1012	Non-participating	347547	4569819	242
1013	Participating	346750	4567586	242
1014	Non-participating	347558	4566094	245

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1015	Non-participating	350290	4547598	285
1016	Non-participating	356170	4576511	221
1017	Non-participating	358312	4577993	218
1018	Non-participating	353559	4571374	230
1019	Non-participating	352094	4576282	223
1020	Non-participating	353758	4576127	224
1021	Non-participating	352615	4565593	239
1022	Non-participating	350084	4562200	245
1023	Non-participating	351855	4578894	224
1024	Participating	348058	4570129	241
1025	Non-participating	351248	4552131	268
1026	Non-participating	349324	4546573	295
1027	Non-participating	349352	4548038	283
1028	Non-participating	347018	4575643	219
1029	Non-participating	353909	4575563	222
1030	Participating	358398	4576931	216
1031	Non-participating	347664	4570192	237
1032	Non-participating	352414	4566196	239
1033	Non-participating	352669	4576334	223
1034	Non-participating	351887	4578752	224
1035	Non-participating	350072	4564060	244
1036	Non-participating	351844	4563189	241
1037	Non-participating	348408	4561940	250
1038	Participating	350094	4562068	243
1039	Non-participating	352245	4549448	275
1040	Non-participating	359913	4576629	213
1041	Non-participating	352999	4575300	225
1042	Non-participating	354143	4562647	240
1043	Participating	350142	4550503	275
1044	Non-participating	350138	4551042	269
1045	Participating	350020	4555293	259
1046	Non-participating	351791	4578807	224
1047	Non-participating	351500	4569368	243
1048	Non-participating	348862	4551191	272
1049	Non-participating	348050	4569879	242

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1050	Non-participating	360543	4572597	212
1051	Non-participating	355804	4577739	220
1052	Non-participating	353392	4575782	224
1053	Non-participating	351953	4569336	242
1054	Participating	351997	4563400	239
1055	Non-participating	351589	4556129	256
1056	Participating	349990	4574656	223
1057	Non-participating	353196	4563805	242
1058	Non-participating	352618	4565404	236
1059	Non-participating	347742	4553279	272
1060	Non-participating	351470	4551566	271
1061	Non-participating	345713	4565364	249
1062	Non-participating	354877	4551600	262
1063	Non-participating	350278	4578437	222
1064	Non-participating	360038	4578064	211
1065	Non-participating	352773	4577533	222
1066	Non-participating	350575	4566210	242
1067	Participating	352148	4567052	240
1068	Non-participating	351670	4563033	241
1069	Non-participating	345342	4561445	259
1070	Non-participating	345820	4558760	259
1071	Non-participating	349120	4546580	294
1072	Non-participating	358335	4574658	218
1073	Non-participating	352044	4568916	239
1074	Non-participating	347642	4570135	238
1075	Non-participating	347914	4569868	243
1076	Non-participating	353763	4568752	234
1077	Non-participating	345885	4560119	258
1078	Non-participating	353288	4555449	258
1079	Non-participating	356077	4572844	223
1080	Participating	350092	4564453	244
1081	Non-participating	352770	4565542	238
1082	Participating	347370	4567520	245
1083	Non-participating	351284	4558502	251
1084	Non-participating	351539	4557672	252

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1085	Participating	354254	4553007	263
1086	Non-participating	355850	4571264	226
1087	Non-participating	355021	4576211	222
1088	Non-participating	350416	4572759	228
1089	Non-participating	355825	4572628	223
1090	Non-participating	355710	4572466	224
1091	Non-participating	346439	4567620	242
1092	Participating	348416	4558915	255
1093	Non-participating	349910	4548035	283
1094	Non-participating	346811	4548270	289
1095	Non-participating	360068	4572915	213
1096	Participating	359105	4576036	214
1097	Non-participating	358073	4577203	218
1098	Participating	350690	4556090	257
1099	Non-participating	354424	4551354	265
1100	Participating	356678	4573662	224
1101	Non-participating	358038	4574686	219
1102	Non-participating	353054	4577649	223
1103	Non-participating	350109	4562559	245
1104	Participating	346516	4545426	295
1105	Non-participating	345804	4567260	244
1106	Non-participating	347448	4566657	246
1107	Non-participating	347733	4570150	239
1108	Participating	348018	4554207	265
1109	Non-participating	351472	4549995	269
1110	Non-participating	355673	4572156	223
1111	Participating	355507	4571788	226
1112	Non-participating	356215	4576303	220
1113	Non-participating	347292	4565303	246
1114	Non-participating	350221	4556192	257
1115	Non-participating	357985	4577207	218
1116	Non-participating	350921	4572082	235
1117	Non-participating	349916	4573710	226
1118	Non-participating	350013	4562364	245
1119	Non-participating	345792	4566007	249

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1120	Non-participating	354437	4551564	264
1121	Non-participating	350591	4579172	220
1122	Non-participating	360220	4578117	212
1123	Non-participating	348415	4573104	227
1124	Participating	350315	4566303	244
1125	Non-participating	352429	4566126	238
1126	Non-participating	347162	4562920	250
1127	Non-participating	345882	4567698	242
1128	Non-participating	350169	4548801	281
1129	Non-participating	348218	4545360	289
1130	Non-participating	353192	4577651	220
1131	Participating	352776	4572423	230
1132	Non-participating	356988	4574315	221
1133	Non-participating	352893	4577905	222
1134	Non-participating	354181	4578116	213
1135	Non-participating	349998	4564598	245
1136	Non-participating	352183	4567587	242
1137	Non-participating	345804	4566473	247
1138	Non-participating	348312	4578329	219
1139	Non-participating	349930	4578372	224
1140	Non-participating	355532	4571761	225
1141	Non-participating	350624	4572696	227
1142	Non-participating	349681	4558648	251
1143	Non-participating	354660	4576156	220
1144	Non-participating	350034	4569643	242
1145	Non-participating	352083	4564893	237
1146	Non-participating	353375	4569349	233
1147	Non-participating	352501	4560283	243
1148	Non-participating	351705	4554548	259
1149	Non-participating	350089	4554841	261
1150	Non-participating	347591	4560908	253
1151	Participating	350135	4557137	257
1152	Participating	348836	4549074	279
1153	Non-participating	357250	4574297	221
1154	Non-participating	350479	4564704	244

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1155	Non-participating	352683	4552800	265
1156	Non-participating	350050	4567872	242
1157	Non-participating	349659	4572628	230
1158	Non-participating	353825	4566506	234
1159	Non-participating	360482	4578141	210
1160	Non-participating	356029	4577219	220
1161	Non-participating	347629	4570372	236
1162	Participating	352673	4552347	268
1163	Non-participating	350270	4546389	297
1164	Non-participating	346137	4562885	259
1165	Non-participating	359245	4578493	213
1166	Non-participating	353104	4570939	234
1167	Non-participating	347680	4570190	238
1168	Non-participating	345618	4560981	257
1169	Participating	347251	4554344	269
1170	Non-participating	351474	4578708	223
1171	Non-participating	358277	4573337	218
1172	Non-participating	352783	4577306	222
1173	Non-participating	348186	4570084	240
1174	Non-participating	347604	4554855	265
1175	Non-participating	351258	4554136	261
1176	Non-participating	356509	4574567	220
1177	Non-participating	345821	4566197	248
1178	Non-participating	352046	4549461	272
1179	Non-participating	350209	4550467	276
1180	Non-participating	348467	4561661	250
1181	Non-participating	351038	4554215	263
1182	Non-participating	351304	4578706	222
1183	Participating	347609	4573941	226
1184	Non-participating	347149	4573210	227
1185	Non-participating	349348	4576426	223
1186	Non-participating	349293	4576491	223
1187	Non-participating	356197	4576086	220
1188	Non-participating	348161	4570177	241
1189	Non-participating	347373	4569808	241

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1190	Non-participating	345804	4566058	248
1191	Non-participating	345520	4566585	246
1192	Non-participating	355306	4566664	230
1193	Non-participating	349201	4576494	223
1194	Non-participating	360020	4575590	213
1195	Non-participating	358322	4576063	217
1196	Non-participating	346947	4574899	224
1197	Non-participating	350779	4566294	243
1198	Participating	352668	4565517	238
1199	Non-participating	345595	4561016	258
1200	Non-participating	352022	4560145	243
1201	Non-participating	345969	4552596	275
1202	Non-participating	354195	4578214	212
1203	Non-participating	349510	4568221	246
1204	Non-participating	353482	4572366	227
1205	Non-participating	354808	4568470	230
1206	Non-participating	345235	4546346	296
1207	Non-participating	345674	4561056	257
1208	Non-participating	351773	4559441	244
1209	Non-participating	353249	4555420	258
1210	Non-participating	357581	4574470	220
1211	Participating	353769	4572075	228
1212	Non-participating	352705	4553713	265
1213	Non-participating	354842	4551381	262
1214	Non-participating	348493	4560883	249
1215	Non-participating	352458	4576342	224
1216	Non-participating	360780	4577756	210
1217	Non-participating	354376	4551272	264
1218	Non-participating	352005	4569424	240
1219	Non-participating	355517	4572218	224
1220	Non-participating	347709	4573124	228
1221	Non-participating	347627	4570134	238
1222	Non-participating	349543	4546532	295
1223	Non-participating	348317	4563513	249
1224	Non-participating	345826	4565981	249

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1225	Non-participating	347824	4565279	248
1226	Participating	345682	4561488	257
1227	Non-participating	345484	4560819	258
1228	Participating	351481	4556074	256
1229	Participating	354027	4576192	223
1230	Non-participating	351085	4569388	242
1231	Participating	351546	4551216	270
1232	Non-participating	354175	4561977	240
1233	Participating	350055	4559074	251
1234	Participating	345901	4559672	257
1235	Non-participating	350363	4578401	222
1236	Participating	358395	4576976	216
1237	Participating	351379	4574429	224
1238	Non-participating	352297	4576348	223
1239	Non-participating	359624	4575927	214
1240	Participating	352411	4569664	238
1241	Participating	349338	4549590	278
1242	Non-participating	347095	4545324	296
1243	Non-participating	345168	4561610	259
1244	Participating	349175	4553214	269
1245	Non-participating	352136	4551836	270
1246	Non-participating	346830	4573771	224
1247	Non-participating	348533	4545220	291
1248	Non-participating	347479	4569761	243
1249	Non-participating	346779	4565277	248
1250	Non-participating	351843	4578681	224
1251	Non-participating	355877	4577954	220
1252	Non-participating	353500	4575602	224
1253	Non-participating	358320	4576267	217
1254	Participating	358491	4575633	217
1255	Non-participating	353390	4555274	258
1256	Non-participating	351797	4578961	224
1257	Non-participating	353289	4577680	219
1258	Non-participating	351014	4569530	243
1259	Non-participating	347739	4570112	240

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1260	Non-participating	345979	4562021	256
1261	Participating	351359	4558869	248
1262	Non-participating	354960	4551831	259
1263	Non-participating	354259	4574893	223
1264	Non-participating	348206	4565701	245
1265	Participating	347565	4550586	281
1266	Non-participating	345992	4545396	291
1267	Non-participating	351022	4557701	253
1268	Non-participating	350248	4578439	222
1269	Participating	352276	4567250	240
1270	Non-participating	347931	4564830	248
1271	Non-participating	350227	4562388	245
1272	Non-participating	354246	4565729	233
1273	Non-participating	347644	4570172	238
1274	Non-participating	345485	4560725	257
1275	Non-participating	353268	4555385	258
1276	Non-participating	350555	4554570	261
1277	Non-participating	357398	4574300	220
1278	Non-participating	354143	4568427	232
1279	Non-participating	347098	4562757	252
1280	Non-participating	347942	4565220	247
1281	Participating	350116	4559347	250
1282	Non-participating	350262	4549509	276
1283	Non-participating	353762	4575943	224
1284	Participating	352679	4553274	264
1285	Participating	347633	4549675	279
1286	Participating	348424	4549694	281
1287	Non-participating	356203	4576380	221
1288	Non-participating	357823	4577115	218
1289	Non-participating	358092	4577540	218
1290	Non-participating	355541	4572159	224
1291	Non-participating	348515	4545295	292
1292	Participating	347989	4565118	247
1293	Non-participating	348417	4560564	251
1294	Participating	346798	4558584	259

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1295	Participating	350089	4553966	264
1296	Participating	350813	4553067	265
1297	Non-participating	348811	4578313	218
1298	Non-participating	354581	4551245	262
1299	Non-participating	346347	4549613	281
1300	Participating	353356	4551990	269
1301	Participating	350250	4550020	275
1302	Non-participating	346513	4548253	291
1303	Participating	355486	4571825	226
1304	Non-participating	347837	4573129	227
1305	Non-participating	352286	4576990	222
1306	Non-participating	359008	4575963	215
1307	Non-participating	352051	4565190	241
1308	Non-participating	351971	4569293	242
1309	Non-participating	346437	4567694	242
1310	Non-participating	348471	4556199	260
1311	Non-participating	354517	4551519	260
1312	Non-participating	353092	4577660	222
1313	Non-participating	355863	4572683	223
1314	Non-participating	351448	4574421	224
1315	Non-participating	358097	4574685	219
1316	Non-participating	353392	4563851	242
1317	Non-participating	352017	4569146	241
1318	Non-participating	345917	4565508	249
1319	Non-participating	345782	4567136	244
1320	Non-participating	351737	4559381	245
1321	Non-participating	348422	4558313	254
1322	Non-participating	351887	4553081	264
1323	Non-participating	348467	4573099	227
1324	Participating	348370	4566386	244
1325	Non-participating	354510	4566408	231
1326	Non-participating	353357	4555585	258
1327	Non-participating	359944	4578345	212
1328	Non-participating	352916	4577908	223
1329	Participating	352043	4570445	236

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1330	Non-participating	352583	4565914	239
1331	Participating	346827	4545389	295
1332	Non-participating	352478	4560286	243
1333	Non-participating	360184	4578138	211
1334	Non-participating	349875	4578351	224
1335	Non-participating	347020	4573915	224
1336	Non-participating	346046	4569172	241
1337	Non-participating	348278	4548168	286
1338	Non-participating	347734	4570178	239
1339	Non-participating	347578	4570226	237
1340	Non-participating	349924	4558633	253
1341	Non-participating	349982	4556205	258
1342	Non-participating	350268	4547708	284
1343	Non-participating	355017	4576152	222
1344	Non-participating	350010	4562367	245
1345	Non-participating	347601	4570413	235
1346	Non-participating	347912	4564258	249
1347	Non-participating	347999	4564656	249
1348	Non-participating	348160	4570227	240
1349	Participating	349066	4558615	253
1350	Non-participating	347815	4556316	261
1351	Non-participating	348895	4549403	277
1352	Non-participating	350610	4572677	227
1353	Non-participating	357202	4574311	221
1354	Participating	350137	4564494	244
1355	Non-participating	346242	4560350	257
1356	Non-participating	351403	4554329	260
1357	Non-participating	350567	4572365	228
1358	Non-participating	354165	4577470	218
1359	Non-participating	352015	4563908	238
1360	Non-participating	353587	4569084	234
1361	Non-participating	347104	4562688	253
1362	Non-participating	346362	4567630	242
1363	Non-participating	347494	4570326	236
1364	Non-participating	348982	4567795	247

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1365	Non-participating	348860	4545191	293
1366	Non-participating	354611	4576155	220
1367	Non-participating	345485	4560962	258
1368	Non-participating	349531	4558586	251
1369	Non-participating	351771	4559446	244
1370	Non-participating	351483	4559210	247
1371	Non-participating	353589	4572370	227
1372	Non-participating	345992	4545396	291
1373	Participating	347290	4563408	248
1374	Non-participating	345885	4568329	241
1375	Non-participating	350231	4550485	276
1376	Non-participating	353111	4555290	258
1377	Non-participating	348529	4556773	258
1378	Non-participating	355954	4577216	220
1379	Non-participating	350006	4565708	244
1380	Non-participating	354191	4553314	261
1381	Non-participating	345441	4550912	284
1382	Non-participating	350262	4546657	293
1383	Non-participating	357528	4574500	221
1384	Non-participating	358323	4576107	217
1385	Non-participating	350095	4562633	245
1386	Participating	345788	4562902	255
1387	Non-participating	347869	4570099	241
1388	Non-participating	345637	4560983	257
1389	Non-participating	347600	4555737	264
1390	Non-participating	351061	4554234	262
1391	Non-participating	351859	4578957	224
1392	Participating	351473	4571012	237
1393	Non-participating	360744	4573223	211
1394	Non-participating	352318	4565228	240
1395	Non-participating	345808	4566059	248
1396	Non-participating	347556	4566591	245
1397	Non-participating	347855	4564935	248
1398	Non-participating	346597	4565036	248
1399	Non-participating	354006	4578035	215

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1400	Non-participating	350415	4572952	229
1401	Non-participating	355990	4571079	226
1402	Non-participating	347808	4560287	253
1403	Participating	351506	4552946	264
1404	Non-participating	351906	4549468	273
1405	Non-participating	354270	4578207	212
1406	Participating	354351	4576296	221
1407	Non-participating	356260	4576428	220
1408	Non-participating	347569	4569824	242
1409	Participating	350123	4558015	255
1410	Non-participating	347726	4554730	265
1411	Non-participating	349873	4578274	223
1412	Non-participating	346676	4575067	226
1413	Participating	348987	4563790	247
1414	Non-participating	354785	4566560	231
1415	Non-participating	348094	4570357	237
1416	Non-participating	354831	4551465	263
1417	Non-participating	345548	4562856	257
1418	Non-participating	348233	4573842	226
1419	Non-participating	360728	4577857	209
1420	Participating	350027	4568647	242
1421	Non-participating	347616	4570171	237
1422	Non-participating	348378	4557828	256
1423	Non-participating	352688	4550290	271
1424	Participating	352566	4574894	225
1425	Non-participating	355568	4572190	224
1426	Non-participating	349996	4563528	245
1427	Non-participating	348240	4563338	248
1428	Non-participating	351562	4549433	276
1429	Non-participating	348034	4546569	297
1430	Non-participating	347148	4545327	296
1431	Participating	351708	4562154	242
1432	Non-participating	353029	4555212	259
1433	Non-participating	352391	4576346	223
1434	Non-participating	347529	4552120	277

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1435	Non-participating	351829	4549549	273
1436	Participating	358346	4574917	218
1437	Non-participating	352220	4576349	223
1438	Non-participating	353706	4571799	229
1439	Non-participating	347702	4565289	248
1440	Non-participating	345249	4561438	259
1441	Participating	346559	4554245	273
1442	Participating	348773	4551313	272
1443	Non-participating	352974	4578399	225
1444	Non-participating	350738	4569692	242
1445	Participating	350004	4574032	225
1446	Non-participating	349651	4568420	244
1447	Non-participating	350189	4547374	287
1448	Non-participating	348423	4548045	287
1449	Non-participating	353148	4575587	225
1450	Non-participating	355974	4571123	227
1451	Non-participating	346608	4561617	254
1452	Participating	352981	4551903	269
1453	Non-participating	350155	4552477	266
1454	Non-participating	351451	4578703	222
1455	Non-participating	358363	4574803	218
1456	Non-participating	354464	4576157	220
1457	Non-participating	347522	4569765	243
1458	Non-participating	347978	4569873	243
1459	Non-participating	349959	4562006	245
1460	Non-participating	351290	4554155	262
1461	Non-participating	359982	4576414	212
1462	Non-participating	352961	4576162	223
1463	Non-participating	351964	4569430	240
1464	Non-participating	350066	4547569	286
1465	Non-participating	350257	4548357	280
1466	Non-participating	346447	4565283	248
1467	Non-participating	352215	4551836	270
1468	Participating	350232	4549730	275
1469	Non-participating	351963	4578755	225

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1470	Non-participating	358325	4576345	216
1471	Participating	352098	4570229	237
1472	Participating	351796	4561416	243
1473	Non-participating	354963	4573041	223
1474	Non-participating	356239	4576212	221
1475	Non-participating	357658	4577146	218
1476	Non-participating	349677	4572620	230
1477	Non-participating	352714	4565528	238
1478	Participating	347145	4549691	283
1479	Non-participating	348732	4545284	292
1480	Non-participating	345513	4562343	256
1481	Non-participating	345336	4551451	281
1482	Non-participating	355563	4576291	222
1483	Non-participating	352961	4577593	222
1484	Non-participating	353535	4576082	224
1485	Non-participating	347517	4564217	247
1486	Non-participating	346029	4561917	256
1487	Non-participating	353381	4555354	258
1488	Participating	351862	4556118	255
1489	Non-participating	360085	4578266	212
1490	Non-participating	355515	4571870	225
1491	Non-participating	357308	4574297	221
1492	Non-participating	357529	4574363	220
1493	Non-participating	351652	4562645	241
1494	Participating	348015	4565192	247
1495	Participating	347920	4569295	242
1496	Non-participating	345809	4568267	242
1497	Non-participating	351823	4554627	263
1498	Non-participating	354806	4551589	262
1499	Non-participating	350117	4558516	252
1500	Non-participating	345766	4558760	259
1501	Participating	348400	4557206	258
1502	Non-participating	353342	4555145	258
1503	Non-participating	345305	4553044	274
1504	Non-participating	347839	4569856	242

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1505	Non-participating	351549	4550227	274
1506	Non-participating	350279	4547229	288
1507	Non-participating	346604	4545293	293
1508	Non-participating	350326	4578397	222
1509	Non-participating	349023	4566495	244
1510	Non-participating	350603	4556169	256
1511	Non-participating	354523	4551436	262
1512	Non-participating	345249	4551701	281
1513	Non-participating	360223	4572432	213
1514	Non-participating	356505	4574446	220
1515	Non-participating	350210	4562374	245
1516	Non-participating	353379	4555408	258
1517	Participating	351907	4551977	270
1518	Participating	350198	4550943	270
1519	Participating	353361	4571305	231
1520	Non-participating	348062	4573114	227
1521	Non-participating	356496	4574347	219
1522	Non-participating	348378	4546626	293
1523	Non-participating	347786	4565267	248
1524	Non-participating	347961	4570074	241
1525	Non-participating	351118	4554067	261
1526	Participating	347715	4553088	273
1527	Non-participating	349201	4566249	244
1528	Non-participating	355650	4571521	226
1529	Non-participating	345976	4545429	291
1530	Non-participating	347740	4562575	251
1531	Participating	347665	4568723	242
1532	Participating	347003	4556299	264
1533	Non-participating	355392	4571998	226
1534	Non-participating	350413	4572970	229
1535	Non-participating	353820	4577911	216
1536	Non-participating	357403	4576028	220
1537	Non-participating	349740	4558644	252
1538	Participating	353183	4572579	229
1539	Non-participating	357920	4574680	219

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1540	Non-participating	353237	4577669	219
1541	Non-participating	354750	4576152	220
1542	Non-participating	352101	4569081	240
1543	Non-participating	349717	4569993	241
1544	Non-participating	356660	4572138	222
1545	Non-participating	351812	4563164	240
1546	Non-participating	354625	4567434	232
1547	Non-participating	345688	4561023	257
1548	Non-participating	347745	4553886	263
1549	Participating	350111	4550708	271
1550	Non-participating	346950	4574335	223
1551	Non-participating	351766	4562830	242
1552	Participating	347796	4568881	243
1553	Non-participating	357113	4574303	221
1554	Participating	352205	4568182	240
1555	Non-participating	350853	4572034	236
1556	Non-participating	350089	4552650	269
1557	Non-participating	351072	4553128	262
1558	Non-participating	348818	4573125	227
1559	Non-participating	353257	4577760	219
1560	Non-participating	345770	4569014	242
1561	Non-participating	345647	4560978	257
1562	Non-participating	352265	4554891	260
1563	Non-participating	350265	4547744	284
1564	Non-participating	350683	4554438	260
1565	Non-participating	360351	4578144	211
1566	Non-participating	351236	4572336	233
1567	Participating	358259	4574305	218
1568	Participating	352194	4567903	238
1569	Non-participating	347564	4570235	236
1570	Participating	345571	4555696	266
1571	Non-participating	355714	4571570	225
1572	Non-participating	356484	4573462	224
1573	Non-participating	352895	4577936	222
1574	Non-participating	345179	4565533	249

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1575	Non-participating	351460	4549844	274
1576	Non-participating	347917	4564725	248
1577	Non-participating	347660	4554179	265
1578	Non-participating	353536	4577769	217
1579	Non-participating	350350	4572973	229
1580	Non-participating	353834	4551732	257
1581	Non-participating	354557	4551203	260
1582	Non-participating	348897	4548979	279
1583	Non-participating	349015	4575139	223
1584	Non-participating	356566	4573571	224
1585	Non-participating	347126	4546276	294
1586	Non-participating	345822	4567489	243
1587	Non-participating	348381	4570019	241
1588	Non-participating	352223	4576388	223
1589	Non-participating	352653	4565430	237
1590	Non-participating	348093	4570603	236
1591	Non-participating	351459	4550161	273
1592	Non-participating	346159	4567667	241
1593	Non-participating	347696	4570181	238
1594	Non-participating	352489	4551940	269
1595	Non-participating	345904	4565792	249
1596	Non-participating	351576	4578714	224
1597	Non-participating	352820	4565041	236
1598	Non-participating	350057	4559456	249
1599	Participating	350117	4559517	248
1600	Non-participating	359161	4578525	212
1601	Non-participating	355603	4572322	224
1602	Non-participating	354176	4572221	227
1603	Participating	351451	4574702	224
1604	Non-participating	345301	4550492	282
1605	Non-participating	354983	4570382	228
1606	Non-participating	352263	4568399	240
1607	Non-participating	349292	4568050	246
1608	Non-participating	346038	4569212	241
1609	Non-participating	347671	4570368	236

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1610	Non-participating	346481	4561034	255
1611	Participating	350170	4553687	262
1612	Non-participating	350438	4578472	222
1613	Non-participating	357522	4574586	220
1614	Non-participating	358587	4576053	217
1615	Non-participating	347004	4575457	222
1616	Non-participating	347798	4570143	240
1617	Non-participating	348166	4570376	237
1618	Non-participating	346143	4562882	259
1619	Non-participating	347129	4562958	250
1620	Non-participating	350090	4562167	245
1621	Non-participating	350110	4559140	250
1622	Non-participating	353821	4576206	224
1623	Participating	345586	4558867	260
1624	Non-participating	352066	4556035	257
1625	Non-participating	346637	4565406	250
1626	Non-participating	356176	4576461	220
1627	Non-participating	353593	4570299	231
1628	Non-participating	354094	4575373	222
1629	Non-participating	352365	4566198	238
1630	Non-participating	350058	4553188	268
1631	Non-participating	350223	4551183	268
1632	Non-participating	351853	4578865	224
1633	Non-participating	351347	4578692	222
1634	Non-participating	346986	4573983	224
1635	Participating	353984	4575723	222
1636	Non-participating	349977	4566054	244
1637	Non-participating	347547	4551757	278
1638	Non-participating	347364	4569745	242
1639	Participating	354328	4553297	262
1640	Participating	346345	4552287	273
1641	Non-participating	352125	4573708	226
1642	Non-participating	356623	4573677	224
1643	Non-participating	351986	4569424	240
1644	Participating	349468	4546621	296

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1645	Non-participating	348455	4562789	249
1646	Non-participating	348393	4562236	250
1647	Non-participating	346532	4561170	255
1648	Non-participating	354079	4576189	223
1649	Non-participating	354500	4551413	263
1650	Non-participating	347659	4570128	238
1651	Non-participating	347509	4569819	242
1652	Non-participating	351122	4557713	253
1653	Participating	350311	4575995	224
1654	Non-participating	347394	4548574	286
1655	Non-participating	348235	4545325	289
1656	Non-participating	347510	4565937	246
1657	Non-participating	350678	4558472	254
1658	Non-participating	347406	4564037	248
1659	Non-participating	351706	4578667	224
1660	Non-participating	352320	4565234	240
1661	Non-participating	345989	4561988	256
1662	Participating	349989	4561296	247
1663	Participating	347605	4546711	298
1664	Participating	360728	4575977	208
1665	Non-participating	351953	4569321	242
1666	Participating	351776	4561467	243
1667	Non-participating	348486	4558724	255
1668	Non-participating	348467	4578804	218
1669	Non-participating	351794	4578841	224
1670	Non-participating	354771	4570239	229
1671	Non-participating	352602	4576337	224
1672	Participating	350083	4563534	245
1673	Non-participating	348613	4555346	264
1674	Non-participating	348095	4569885	242
1675	Participating	344724	4561462	260
1676	Participating	353527	4554977	259
1677	Participating	354192	4561226	240
1678	Participating	343737	4552579	279
1679	Participating	351037	4548393	280

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1680	Participating	344614	4550951	285
1681	Participating	344535	4559911	261
1682	Participating	355602	4552498	264
1683	Participating	344384	4559931	261
1684	Participating	343318	4555839	270
1685	Participating	351999	4564869	240
1686	Participating	344733	4561456	260
1687	Participating	344511	4555969	270
1688	Participating	345110	4559813	260
1689	Participating	358332	4572043	217
1690	Participating	344263	4553454	274
1691	Participating	350957	4546431	293
1692	Participating	345150	4557462	263
1693	Participating	344776	4556490	268
1694	Participating	345062	4559825	259
1695	Participating	352887	4560425	242
1696	Participating	360906	4577647	208
1697	Participating	354181	4561174	240
1698	Participating	344152	4554784	272
1699	Participating	343697	4553874	275
1700	Participating	344523	4559910	261
1701	Participating	344434	4552574	279
1702	Participating	344911	4551098	283
1703	Participating	352908	4560367	241
1704	Participating	342811	4555847	270
1705	Participating	358238	4572047	217
1706	Non-participating	344136	4565266	249
1707	Non-participating	351753	4579100	224
1708	Non-participating	345636	4575233	221
1709	Non-participating	352364	4549521	274
1710	Non-participating	353806	4560630	241
1711	Non-participating	345209	4569780	239
1712	Non-participating	350157	4545152	297
1713	Non-participating	345291	4569298	239
1714	Non-participating	352243	4557669	251

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1715	Non-participating	354587	4551013	262
1716	Non-participating	345268	4549367	284
1717	Non-participating	345619	4569829	234
1718	Non-participating	347084	4571034	232
1719	Non-participating	361049	4577694	207
1720	Non-participating	357867	4579023	216
1721	Non-participating	353118	4564438	240
1722	Non-participating	354779	4564242	233
1723	Non-participating	355617	4568346	229
1724	Non-participating	355036	4551119	260
1725	Non-participating	344296	4565947	248
1726	Non-participating	347595	4579234	220
1727	Non-participating	347260	4571185	232
1728	Non-participating	347361	4570291	236
1729	Non-participating	351894	4559282	244
1730	Non-participating	341795	4552640	282
1731	Non-participating	361499	4572822	210
1732	Non-participating	344428	4558275	263
1733	Non-participating	345301	4550350	283
1734	Non-participating	349222	4544192	286
1735	Non-participating	350023	4571624	236
1736	Non-participating	345874	4569486	240
1737	Non-participating	345654	4569099	241
1738	Non-participating	345532	4569861	235
1739	Non-participating	354189	4550729	267
1740	Non-participating	361188	4575163	210
1741	Non-participating	344177	4566465	247
1742	Non-participating	348038	4578326	219
1743	Non-participating	347812	4579061	222
1744	Non-participating	353497	4578792	223
1745	Non-participating	346713	4576620	221
1746	Non-participating	350253	4570838	237
1747	Non-participating	356594	4569678	225
1748	Non-participating	355514	4568334	229
1749	Non-participating	355371	4551905	264

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1750	Non-participating	344047	4566507	247
1751	Non-participating	344280	4567110	245
1752	Non-participating	348523	4544023	287
1753	Non-participating	345814	4569704	235
1754	Non-participating	356308	4568945	226
1755	Non-participating	347107	4572396	228
1756	Non-participating	344104	4565900	247
1757	Non-participating	344493	4567171	245
1758	Non-participating	344299	4561543	259
1759	Non-participating	345750	4569503	238
1760	Non-participating	345379	4569810	238
1761	Non-participating	344908	4557028	264
1762	Non-participating	344237	4568057	238
1763	Non-participating	343869	4560191	260
1764	Non-participating	351115	4570752	237
1765	Non-participating	345725	4569870	234
1766	Non-participating	355256	4551514	264
1767	Non-participating	354162	4550495	269
1768	Non-participating	349359	4545119	295
1769	Non-participating	353914	4579031	214
1770	Non-participating	356109	4574977	222
1771	Non-participating	356297	4567806	227
1772	Non-participating	344946	4549311	286
1773	Non-participating	345866	4570177	233
1774	Non-participating	355587	4552253	266
1775	Non-participating	353170	4564146	237
1776	Non-participating	354147	4564177	237
1777	Non-participating	345338	4569832	238
1778	Non-participating	354506	4578465	212
1779	Non-participating	349117	4571054	236
1780	Non-participating	344182	4566550	248
1781	Non-participating	345889	4569671	236
1782	Non-participating	346998	4570802	233
1783	Non-participating	347141	4570699	233
1784	Non-participating	344969	4557199	266

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1785	Non-participating	354031	4550011	270
1786	Non-participating	357982	4572082	219
1787	Non-participating	344336	4559840	260
1788	Non-participating	346949	4572236	228
1789	Non-participating	352997	4564494	238
1790	Non-participating	346824	4569817	240
1791	Non-participating	350883	4547987	282
1792	Non-participating	345650	4563833	250
1793	Non-participating	344096	4566529	247
1794	Non-participating	356310	4567930	227
1795	Non-participating	347109	4569934	240
1796	Non-participating	345645	4569107	242
1797	Non-participating	345988	4570298	232
1798	Non-participating	344311	4566632	247
1799	Non-participating	351703	4579299	221
1800	Non-participating	344610	4561419	261
1801	Non-participating	346950	4572285	228
1802	Non-participating	354272	4563938	237
1803	Non-participating	355043	4561532	238
1804	Non-participating	354441	4550986	265
1805	Non-participating	354633	4578972	208
1806	Non-participating	350197	4571798	234
1807	Non-participating	343928	4559308	262
1808	Non-participating	347969	4579562	220
1809	Non-participating	353211	4579198	223
1810	Non-participating	350563	4571781	239
1811	Non-participating	350033	4571459	239
1812	Non-participating	346899	4570873	232
1813	Non-participating	353649	4549783	267
1814	Non-participating	347815	4544052	291
1815	Non-participating	354354	4550798	266
1816	Non-participating	345819	4574673	227
1817	Non-participating	345754	4570020	234
1818	Non-participating	352639	4558394	251
1819	Non-participating	344137	4566412	247

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1820	Non-participating	345448	4569994	237
1821	Non-participating	345945	4569671	236
1822	Non-participating	349640	4545118	297
1823	Non-participating	346935	4570425	236
1824	Non-participating	346444	4569616	241
1825	Non-participating	345607	4569986	234
1826	Non-participating	355488	4551180	266
1827	Non-participating	345803	4575939	223
1828	Non-participating	345482	4569716	235
1829	Non-participating	353394	4556030	256
1830	Non-participating	345098	4554218	277
1831	Non-participating	354931	4551092	262
1832	Non-participating	346902	4575938	219
1833	Non-participating	354455	4578652	212
1834	Non-participating	341342	4554332	280
1835	Non-participating	344275	4566685	247
1836	Non-participating	356313	4575488	221
1837	Non-participating	355274	4551104	260
1838	Non-participating	351029	4546353	291
1839	Non-participating	349623	4545227	297
1840	Non-participating	358865	4578603	213
1841	Non-participating	349823	4570383	238
1842	Non-participating	359198	4571240	215
1843	Non-participating	346917	4570822	233
1844	Non-participating	349863	4579944	216
1845	Non-participating	360184	4575053	213
1846	Non-participating	344155	4566695	246
1847	Non-participating	344269	4561512	260
1848	Non-participating	354286	4562440	239
1849	Non-participating	361363	4574982	210
1850	Non-participating	351797	4579022	224
1851	Non-participating	360853	4572226	210
1852	Non-participating	345458	4575245	224
1853	Non-participating	348245	4570809	235
1854	Non-participating	354654	4550301	260

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1855	Non-participating	354114	4550371	269
1856	Non-participating	345271	4569933	239
1857	Non-participating	344985	4565583	249
1858	Non-participating	344210	4566968	245
1859	Non-participating	344660	4559914	260
1860	Non-participating	360797	4572663	212
1861	Non-participating	355413	4568410	229
1862	Non-participating	350351	4571799	237
1863	Non-participating	348403	4570955	234
1864	Non-participating	354738	4564043	231
1865	Non-participating	354598	4560892	238
1866	Non-participating	351652	4579359	221
1867	Non-participating	354312	4578981	212
1868	Non-participating	358515	4578692	215
1869	Non-participating	361597	4577501	205
1870	Non-participating	344036	4561629	258
1871	Non-participating	350314	4571331	238
1872	Non-participating	344796	4556730	266
1873	Non-participating	346510	4570609	232
1874	Non-participating	354158	4550300	266
1875	Non-participating	355043	4550849	259
1876	Non-participating	352439	4549510	275
1877	Non-participating	361174	4577648	206
1878	Non-participating	356467	4570331	226
1879	Non-participating	360583	4574640	214
1880	Non-participating	346826	4569899	240
1881	Non-participating	345735	4569305	242
1882	Non-participating	351520	4548476	276
1883	Non-participating	344204	4567043	245
1884	Non-participating	344177	4566583	248
1885	Non-participating	344326	4565978	247
1886	Non-participating	344333	4553201	278
1887	Non-participating	348409	4570882	235
1888	Non-participating	345699	4569015	242
1889	Non-participating	350076	4545146	298

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1890	Non-participating	361122	4572638	211
1891	Non-participating	342070	4555863	277
1892	Non-participating	345811	4569611	236
1893	Non-participating	354021	4550272	269
1894	Non-participating	354649	4550614	262
1895	Non-participating	353131	4578975	226
1896	Non-participating	346840	4576180	220
1897	Non-participating	344152	4566897	245
1898	Non-participating	355569	4568345	229
1899	Non-participating	351507	4548672	274
1900	Non-participating	352722	4558787	249
1901	Non-participating	345683	4543769	286
1902	Non-participating	343981	4553442	277
1903	Non-participating	345424	4569872	237
1904	Non-participating	343993	4546367	292
1905	Non-participating	353992	4549810	270
1906	Non-participating	352395	4549468	277
1907	Non-participating	351422	4548027	280
1908	Non-participating	361435	4572922	208
1909	Non-participating	358312	4578214	217
1910	Non-participating	343928	4559400	262
1911	Non-participating	345295	4569683	238
1912	Non-participating	346018	4569683	236
1913	Non-participating	346358	4570589	231
1914	Non-participating	347848	4572162	230
1915	Non-participating	344904	4557277	266
1916	Non-participating	347249	4570892	232
1917	Non-participating	360670	4575138	212
1918	Non-participating	351776	4579101	224
1919	Non-participating	346544	4573255	225
1920	Non-participating	350652	4571978	232
1921	Non-participating	355774	4566642	229
1922	Non-participating	356551	4569603	226
1923	Non-participating	346281	4572504	227
1924	Non-participating	345775	4569882	234

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1925	Non-participating	345532	4569741	235
1926	Non-participating	354505	4578558	210
1927	Non-participating	347488	4572137	231
1928	Non-participating	355859	4553102	259
1929	Non-participating	354889	4550569	260
1930	Non-participating	354231	4564925	238
1931	Non-participating	360913	4573214	209
1932	Non-participating	361771	4573075	211
1933	Non-participating	345837	4574510	226
1934	Non-participating	345389	4569905	238
1935	Non-participating	345266	4569742	239
1936	Non-participating	347228	4572554	229
1937	Non-participating	344065	4566519	247
1938	Non-participating	344250	4567714	239
1939	Non-participating	354420	4555585	257
1940	Non-participating	353050	4564444	239
1941	Non-participating	354742	4579079	209
1942	Non-participating	344314	4566557	247
1943	Non-participating	349229	4571113	236
1944	Non-participating	345776	4569454	240
1945	Non-participating	345708	4569924	233
1946	Non-participating	355590	4552405	265
1947	Non-participating	349784	4545094	296
1948	Non-participating	344066	4566302	246
1949	Non-participating	345815	4573536	228
1950	Non-participating	342109	4555049	277
1951	Non-participating	345180	4569436	237
1952	Non-participating	346581	4569804	239
1953	Non-participating	347420	4570356	235
1954	Non-participating	352642	4558015	251
1955	Non-participating	361391	4571988	208
1956	Non-participating	343940	4561381	255
1957	Non-participating	354647	4550168	260
1958	Non-participating	344237	4568156	238
1959	Non-participating	344233	4561509	260

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1960	Non-participating	350273	4571233	238
1961	Non-participating	342317	4556713	273
1962	Non-participating	349536	4545109	296
1963	Non-participating	355500	4554469	260
1964	Non-participating	344310	4566095	247
1965	Non-participating	349384	4571198	237
1966	Non-participating	349432	4571299	235
1967	Non-participating	356043	4571100	225
1968	Non-participating	346340	4569627	240
1969	Non-participating	346498	4570448	234
1970	Non-participating	345540	4558534	260
1971	Non-participating	354188	4550857	266
1972	Non-participating	344142	4566961	245
1973	Non-participating	343772	4555809	271
1974	Non-participating	344087	4559909	259
1975	Non-participating	350256	4546114	299
1976	Non-participating	344640	4561461	260
1977	Non-participating	354821	4564259	233
1978	Non-participating	345120	4563858	250
1979	Non-participating	347016	4569924	240
1980	Non-participating	352643	4549456	276
1981	Non-participating	353864	4549991	267
1982	Non-participating	350267	4579529	217
1983	Non-participating	345802	4576104	224
1984	Non-participating	343912	4559223	262
1985	Non-participating	350698	4572003	233
1986	Non-participating	355630	4551214	269
1987	Non-participating	345952	4564379	247
1988	Non-participating	345555	4569812	234
1989	Non-participating	355638	4553403	255
1990	Non-participating	344003	4561786	257
1991	Non-participating	345663	4569934	233
1992	Non-participating	355251	4551184	263
1993	Non-participating	354286	4551008	265
1994	Non-participating	352465	4548126	280

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
1995	Non-participating	344209	4567114	245
1996	Non-participating	351705	4579177	223
1997	Non-participating	358656	4572047	216
1998	Non-participating	346003	4569252	241
1999	Non-participating	345738	4574944	224
2000	Non-participating	344542	4561417	261
2001	Non-participating	345748	4570191	233
2002	Non-participating	354898	4550505	261
2003	Non-participating	354027	4550350	269
2004	Non-participating	354476	4562175	239
2005	Non-participating	345095	4557520	262
2006	Non-participating	351655	4579495	221
2007	Non-participating	344265	4566709	246
2008	Non-participating	344237	4568182	239
2009	Non-participating	350070	4571503	238
2010	Non-participating	343786	4556736	268
2011	Non-participating	346787	4570979	231
2012	Non-participating	355350	4551079	264
2013	Non-participating	350181	4571620	238
2014	Non-participating	344634	4556139	269
2015	Non-participating	343984	4546445	292
2016	Non-participating	352654	4549501	276
2017	Non-participating	351630	4548001	280
2018	Non-participating	353333	4578984	226
2019	Non-participating	344190	4566918	245
2020	Non-participating	344268	4566648	247
2021	Non-participating	341917	4554331	280
2022	Non-participating	356373	4575638	220
2023	Non-participating	345743	4569172	242
2024	Non-participating	361327	4575887	207
2025	Non-participating	344339	4555502	271
2026	Non-participating	353205	4579443	223
2027	Non-participating	342628	4552611	284
2028	Non-participating	346971	4571250	230
2029	Non-participating	346379	4570539	232

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2030	Non-participating	346678	4570672	234
2031	Non-participating	351333	4546409	292
2032	Non-participating	350347	4571739	236
2033	Non-participating	349555	4571125	239
2034	Non-participating	347546	4576471	222
2035	Non-participating	354391	4563913	234
2036	Non-participating	361326	4577622	206
2037	Non-participating	344185	4566628	248
2038	Non-participating	342050	4554316	279
2039	Non-participating	345310	4558255	259
2040	Non-participating	360690	4574554	214
2041	Non-participating	348092	4572941	228
2042	Non-participating	342734	4552603	283
2043	Non-participating	354371	4550493	267
2044	Non-participating	345869	4570283	233
2045	Non-participating	345303	4569772	239
2046	Non-participating	354202	4550338	266
2047	Non-participating	345235	4550070	285
2048	Non-participating	344312	4566732	246
2049	Non-participating	348326	4570843	235
2050	Non-participating	342824	4551519	288
2051	Non-participating	355206	4550818	261
2052	Non-participating	358108	4578840	216
2053	Non-participating	347162	4569789	241
2054	Non-participating	355576	4568384	229
2055	Non-participating	354942	4551055	260
2056	Non-participating	359176	4571212	215
2057	Non-participating	344127	4558620	263
2058	Non-participating	354613	4550903	266
2059	Non-participating	349245	4544188	286
2060	Non-participating	345739	4568988	242
2061	Non-participating	341792	4554336	280
2062	Non-participating	344293	4566214	247
2063	Non-participating	347963	4579222	221
2064	Non-participating	344701	4565348	249

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2065	Non-participating	347729	4572067	230
2066	Non-participating	344991	4557770	262
2067	Non-participating	344635	4567039	246
2068	Non-participating	352161	4559274	247
2069	Non-participating	353938	4550702	268
2070	Non-participating	361332	4572872	211
2071	Non-participating	344309	4566591	247
2072	Non-participating	346420	4573132	227
2073	Non-participating	341985	4554307	279
2074	Non-participating	353320	4560466	242
2075	Non-participating	354365	4551085	264
2076	Non-participating	343914	4553457	277
2077	Non-participating	345696	4569178	242
2078	Non-participating	345447	4569872	237
2079	Non-participating	345548	4570051	236
2080	Non-participating	353907	4549874	270
2081	Non-participating	354964	4550827	260
2082	Non-participating	355066	4563622	235
2083	Non-participating	344439	4561568	260
2084	Non-participating	345408	4569937	237
2085	Non-participating	356538	4569647	226
2086	Non-participating	354470	4578504	211
2087	Non-participating	344201	4566780	247
2088	Non-participating	342045	4555921	276
2089	Non-participating	345496	4569921	236
2090	Non-participating	351490	4564965	240
2091	Non-participating	346433	4569977	236
2092	Non-participating	354206	4550624	268
2093	Non-participating	351575	4548699	276
2094	Non-participating	348518	4544585	293
2095	Non-participating	343575	4559849	260
2096	Non-participating	345262	4569755	239
2097	Non-participating	346916	4570807	233
2098	Non-participating	352099	4557776	251
2099	Non-participating	345272	4549388	285

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2100	Non-participating	353722	4579052	216
2101	Non-participating	345565	4569772	234
2102	Non-participating	350946	4548037	281
2103	Non-participating	346869	4569936	240
2104	Non-participating	350019	4570612	238
2105	Non-participating	345749	4573849	227
2106	Non-participating	342111	4555062	277
2107	Non-participating	347390	4570352	235
2108	Non-participating	347267	4572622	229
2109	Non-participating	345337	4568688	240
2110	Non-participating	345164	4569283	238
2111	Non-participating	345811	4570089	234
2112	Non-participating	355790	4551811	267
2113	Non-participating	344212	4567185	245
2114	Non-participating	349785	4545097	296
2115	Non-participating	344112	4566316	246
2116	Non-participating	354032	4564040	237
2117	Non-participating	344343	4566518	248
2118	Non-participating	350306	4571420	239
2119	Non-participating	344466	4547863	288
2120	Non-participating	351653	4580074	217
2121	Non-participating	344110	4554912	271
2122	Non-participating	350275	4571281	238
2123	Non-participating	357937	4572077	220
2124	Non-participating	342297	4556716	273
2125	Non-participating	345116	4563862	250
2126	Non-participating	353458	4555854	257
2127	Non-participating	354594	4550185	259
2128	Non-participating	361252	4571955	212
2129	Non-participating	349337	4571165	237
2130	Non-participating	350114	4571598	238
2131	Non-participating	345405	4569749	237
2132	Non-participating	346529	4570454	234
2133	Non-participating	344055	4550950	283
2134	Non-participating	349657	4545108	297

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2135	Non-participating	356416	4570423	226
2136	Non-participating	344197	4566963	245
2137	Non-participating	344690	4559906	260
2138	Non-participating	349527	4571260	239
2139	Non-participating	345267	4569862	239
2140	Non-participating	355488	4551372	265
2141	Non-participating	350084	4545214	297
2142	Non-participating	345740	4569970	233
2143	Non-participating	353716	4549405	272
2144	Non-participating	354943	4550722	261
2145	Non-participating	347952	4579766	221
2146	Non-participating	350589	4579309	220
2147	Non-participating	360140	4575179	213
2148	Non-participating	345928	4564028	249
2149	Non-participating	355918	4566960	228
2150	Non-participating	345990	4569207	242
2151	Non-participating	345549	4569776	234
2152	Non-participating	355250	4551141	262
2153	Non-participating	341433	4554262	280
2154	Non-participating	361472	4573739	213
2155	Non-participating	347490	4579314	221
2156	Non-participating	344206	4567080	245
2157	Non-participating	346341	4569643	240
2158	Non-participating	355084	4568404	231
2159	Non-participating	355080	4551446	259
2160	Non-participating	354319	4550922	261
2161	Non-participating	353090	4559228	244
2162	Non-participating	352587	4549460	277
2163	Non-participating	351704	4579233	221
2164	Non-participating	344068	4566387	247
2165	Non-participating	344425	4567159	245
2166	Non-participating	344262	4561536	259
2167	Non-participating	350265	4571772	236
2168	Non-participating	346619	4573185	226
2169	Non-participating	345642	4569947	233

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2170	Non-participating	352543	4548897	275
2171	Non-participating	346995	4569842	240
2172	Non-participating	347050	4569926	240
2173	Non-participating	351642	4579461	221
2174	Non-participating	344141	4566930	245
2175	Non-participating	345217	4547164	292
2176	Non-participating	360889	4577789	208
2177	Non-participating	354609	4564125	234
2178	Non-participating	343763	4556168	270
2179	Non-participating	345599	4569244	242
2180	Non-participating	346782	4570708	234
2181	Non-participating	351527	4548005	280
2182	Non-participating	346843	4570934	232
2183	Non-participating	355684	4578238	218
2184	Non-participating	361454	4577546	206
2185	Non-participating	344190	4566657	247
2186	Non-participating	353075	4578938	226
2187	Non-participating	345771	4569877	234
2188	Non-participating	354457	4550551	266
2189	Non-participating	361259	4577619	206
2190	Non-participating	352483	4578830	228
2191	Non-participating	346446	4570563	232
2192	Non-participating	341942	4554320	280
2193	Non-participating	351521	4548218	279
2194	Non-participating	347643	4576682	220
2195	Non-participating	344224	4566162	247
2196	Non-participating	347305	4576617	219
2197	Non-participating	355559	4553811	255
2198	Non-participating	350351	4546463	295
2199	Non-participating	361498	4577524	206
2200	Non-participating	354349	4578345	212
2201	Non-participating	344203	4566993	245
2202	Non-participating	344088	4561448	258
2203	Non-participating	347196	4571148	232
2204	Non-participating	347229	4578381	223

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2205	Non-participating	345574	4575241	221
2206	Non-participating	354927	4563701	235
2207	Non-participating	344568	4546178	289
2208	Non-participating	348775	4571046	235
2209	Non-participating	353737	4560610	241
2210	Non-participating	345580	4573974	226
2211	Non-participating	344635	4547887	289
2212	Non-participating	354180	4564132	238
2213	Non-participating	347413	4570326	236
2214	Non-participating	345492	4569326	240
2215	Non-participating	345815	4569897	234
2216	Non-participating	347117	4571276	232
2217	Non-participating	359635	4571867	213
2218	Non-participating	344098	4566489	247
2219	Non-participating	344821	4557242	265
2220	Non-participating	350376	4570491	238
2221	Non-participating	345559	4569869	234
2222	Non-participating	361006	4572679	212
2223	Non-participating	344344	4557484	266
2224	Non-participating	343820	4559455	262
2225	Non-participating	353115	4564439	240
2226	Non-participating	348432	4544285	291
2227	Non-participating	344112	4566198	246
2228	Non-participating	352866	4549498	273
2229	Non-participating	358239	4578320	218
2230	Non-participating	360362	4574860	214
2231	Non-participating	347677	4579156	221
2232	Non-participating	353613	4579053	220
2233	Non-participating	350580	4546313	296
2234	Non-participating	345886	4569523	240
2235	Non-participating	354400	4551111	263
2236	Non-participating	353907	4554950	260
2237	Non-participating	354138	4550731	267
2238	Non-participating	361687	4573218	212
2239	Non-participating	346691	4570707	234

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2240	Non-participating	355009	4564616	234
2241	Non-participating	351589	4548601	276
2242	Non-participating	355542	4568294	229
2243	Non-participating	344465	4567160	245
2244	Non-participating	344134	4567052	245
2245	Non-participating	354386	4555558	257
2246	Non-participating	347778	4579233	221
2247	Non-participating	342105	4554991	277
2248	Non-participating	342227	4556619	274
2249	Non-participating	345676	4569853	233
2250	Non-participating	347150	4572444	228
2251	Non-participating	345847	4570120	233
2252	Non-participating	346979	4569920	240
2253	Non-participating	345414	4569814	237
2254	Non-participating	348373	4544084	288
2255	Non-participating	345762	4569505	238
2256	Non-participating	354234	4550412	269
2257	Non-participating	348526	4544024	287
2258	Non-participating	344175	4566436	247
2259	Non-participating	343833	4560207	260
2260	Non-participating	346602	4573212	225
2261	Non-participating	354221	4565274	235
2262	Non-participating	348942	4571103	235
2263	Non-participating	344967	4557272	266
2264	Non-participating	345218	4550029	285
2265	Non-participating	346437	4573140	227
2266	Non-participating	345591	4569914	233
2267	Non-participating	346378	4570120	234
2268	Non-participating	344987	4562731	256
2269	Non-participating	353169	4564151	236
2270	Non-participating	354598	4564022	235
2271	Non-participating	344340	4561572	260
2272	Non-participating	345250	4569707	239
2273	Non-participating	345350	4569851	238
2274	Non-participating	354343	4550292	259

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2275	Non-participating	348044	4579138	220
2276	Non-participating	353958	4579065	214
2277	Non-participating	343956	4560379	260
2278	Non-participating	350504	4571667	239
2279	Non-participating	343767	4556372	270
2280	Non-participating	350928	4548075	281
2281	Non-participating	354281	4550465	269
2282	Non-participating	355762	4578443	217
2283	Non-participating	344073	4566295	246
2284	Non-participating	355470	4551281	263
2285	Non-participating	344656	4549463	288
2286	Non-participating	353999	4564217	234
2287	Non-participating	345493	4570070	236
2288	Non-participating	356352	4567805	226
2289	Non-participating	347014	4570786	233
2290	Non-participating	354660	4550677	262
2291	Non-participating	351517	4548352	277
2292	Non-participating	350663	4579332	220
2293	Non-participating	353233	4579252	222
2294	Non-participating	345418	4574569	225
2295	Non-participating	342094	4554314	279
2296	Non-participating	346608	4570636	234
2297	Non-participating	346879	4572234	228
2298	Non-participating	354201	4564011	237
2299	Non-participating	345400	4569707	237
2300	Non-participating	349991	4571677	235
2301	Non-participating	347000	4573166	226
2302	Non-participating	347137	4569965	239
2303	Non-participating	352455	4549457	278
2304	Non-participating	344115	4566638	246
2305	Non-participating	342026	4552774	281
2306	Non-participating	355488	4568351	229
2307	Non-participating	360989	4574333	214
2308	Non-participating	348048	4576437	220
2309	Non-participating	354588	4578901	209

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2310	Non-participating	344605	4556035	269
2311	Non-participating	350225	4571809	234
2312	Non-participating	345356	4569769	238
2313	Non-participating	354789	4561814	239
2314	Non-participating	354295	4554649	261
2315	Non-participating	344706	4565359	249
2316	Non-participating	344234	4568079	238
2317	Non-participating	343375	4556630	271
2318	Non-participating	345465	4570024	237
2319	Non-participating	355071	4551553	257
2320	Non-participating	345607	4563887	249
2321	Non-participating	344171	4565230	249
2322	Non-participating	344493	4567157	245
2323	Non-participating	343955	4560355	260
2324	Non-participating	345808	4575792	223
2325	Non-participating	342653	4552674	284
2326	Non-participating	345756	4570049	234
2327	Non-participating	345720	4569901	233
2328	Non-participating	358234	4578790	216
2329	Non-participating	344180	4566370	246
2330	Non-participating	351812	4579099	224
2331	Non-participating	344481	4561497	260
2332	Non-participating	355461	4568343	229
2333	Non-participating	355583	4553688	259
2334	Non-participating	355310	4551282	260
2335	Non-participating	347093	4570435	236
2336	Non-participating	345703	4569103	241
2337	Non-participating	346465	4569636	241
2338	Non-participating	354658	4578708	211
2339	Non-participating	343907	4559211	262
2340	Non-participating	346309	4570480	232
2341	Non-participating	358395	4578741	215
2342	Non-participating	360959	4571639	213
2343	Non-participating	344125	4561675	259
2344	Non-participating	345464	4569704	235

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2345	Non-participating	350365	4570283	239
2346	Non-participating	354240	4551065	264
2347	Non-participating	344236	4567961	238
2348	Non-participating	354027	4549909	271
2349	Non-participating	354057	4550268	269
2350	Non-participating	355318	4551087	263
2351	Non-participating	346997	4576622	221
2352	Non-participating	360809	4572374	197
2353	Non-participating	348212	4570805	235
2354	Non-participating	354252	4560722	238
2355	Non-participating	351722	4579375	221
2356	Non-participating	344259	4566142	247
2357	Non-participating	355059	4563002	236
2358	Non-participating	343233	4552576	282
2359	Non-participating	351798	4579047	224
2360	Non-participating	349850	4580087	216
2361	Non-participating	354390	4578908	211
2362	Non-participating	345246	4575277	224
2363	Non-participating	345735	4575573	222
2364	Non-participating	344889	4561357	260
2365	Non-participating	344567	4561409	261
2366	Non-participating	355160	4550846	260
2367	Non-participating	361633	4577488	205
2368	Non-participating	350147	4571386	239
2369	Non-participating	342383	4552609	284
2370	Non-participating	344368	4553265	277
2371	Non-participating	350368	4571817	238
2372	Non-participating	345681	4569269	242
2373	Non-participating	354431	4564037	236
2374	Non-participating	345401	4569368	239
2375	Non-participating	361127	4577668	207
2376	Non-participating	359412	4571505	214
2377	Non-participating	343934	4561327	255
2378	Non-participating	356543	4570347	225
2379	Non-participating	354823	4563800	235

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2380	Non-participating	345709	4568974	242
2381	Non-participating	345713	4569322	241
2382	Non-participating	353655	4554967	258
2383	Non-participating	353488	4555498	257
2384	Non-participating	344195	4566891	245
2385	Non-participating	354782	4579155	208
2386	Non-participating	347010	4571278	230
2387	Non-participating	354079	4563944	234
2388	Non-participating	347344	4570260	236
2389	Non-participating	345808	4569951	234
2390	Non-participating	344999	4557254	267
2391	Non-participating	344181	4566494	248
2392	Non-participating	350005	4570555	238
2393	Non-participating	346824	4569951	239
2394	Non-participating	358605	4578673	214
2395	Non-participating	343782	4556415	269
2396	Non-participating	354501	4550558	264
2397	Non-participating	348431	4544291	291
2398	Non-participating	354790	4560679	239
2399	Non-participating	345387	4569697	237
2400	Non-participating	345808	4569641	235
2401	Non-participating	355629	4578685	216
2402	Non-participating	344126	4566586	247
2403	Non-participating	344499	4561562	260
2404	Non-participating	354106	4550286	268
2405	Non-participating	344312	4566688	247
2406	Non-participating	344187	4566722	247
2407	Non-participating	350205	4571010	238
2408	Non-participating	361531	4572930	207
2409	Non-participating	358249	4578240	218
2410	Non-participating	346488	4570647	232
2411	Non-participating	347837	4572124	230
2412	Non-participating	355939	4553202	256
2413	Non-participating	350620	4571959	232
2414	Non-participating	345362	4569749	238

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2415	Non-participating	346360	4572631	227
2416	Non-participating	345054	4568715	241
2417	Non-participating	355652	4578957	216
2418	Non-participating	346543	4573217	225
2419	Non-participating	356371	4575163	221
2420	Non-participating	344895	4557278	266
2421	Non-participating	345625	4569844	233
2422	Non-participating	347244	4570987	232
2423	Non-participating	342796	4554288	278
2424	Non-participating	350402	4547520	286
2425	Non-participating	344193	4566767	247
2426	Non-participating	353551	4579052	221
2427	Non-participating	345575	4569924	233
2428	Non-participating	354910	4550634	261
2429	Non-participating	350327	4545140	296
2430	Non-participating	344222	4567716	239
2431	Non-participating	343777	4557408	265
2432	Non-participating	349111	4571153	234
2433	Non-participating	345374	4569876	238
2434	Non-participating	347012	4570874	233
2435	Non-participating	354232	4550127	265
2436	Non-participating	354644	4550784	263
2437	Non-participating	345821	4573502	228
2438	Non-participating	350452	4571571	238
2439	Non-participating	346550	4569852	240
2440	Non-participating	354287	4550534	269
2441	Non-participating	354354	4563897	233
2442	Non-participating	344659	4561470	260
2443	Non-participating	344981	4562732	255
2444	Non-participating	356549	4569427	227
2445	Non-participating	355343	4551285	260
2446	Non-participating	354043	4579108	213
2447	Non-participating	354169	4564304	237
2448	Non-participating	347586	4544070	290
2449	Non-participating	349191	4571097	236

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2450	Non-participating	342766	4550995	289
2451	Non-participating	354163	4563942	235
2452	Non-participating	347418	4570343	235
2453	Non-participating	345255	4569717	239
2454	Non-participating	345418	4569438	237
2455	Non-participating	345749	4569459	239
2456	Non-participating	355561	4553586	262
2457	Non-participating	355271	4551257	261
2458	Non-participating	344250	4566096	247
2459	Non-participating	344135	4567484	237
2460	Non-participating	347961	4576579	221
2461	Non-participating	355185	4550830	261
2462	Non-participating	344249	4566211	247
2463	Non-participating	346968	4573171	226
2464	Non-participating	344179	4562237	255
2465	Non-participating	355623	4551325	269
2466	Non-participating	347633	4579297	221
2467	Non-participating	344442	4561505	260
2468	Non-participating	360854	4574330	214
2469	Non-participating	344645	4552644	278
2470	Non-participating	344482	4555449	270
2471	Non-participating	350788	4569696	242
2472	Non-participating	355860	4568212	228
2473	Non-participating	345263	4569809	239
2474	Non-participating	345454	4558531	260
2475	Non-participating	356145	4570802	227
2476	Non-participating	356328	4567825	227
2477	Non-participating	344955	4549319	285
2478	Non-participating	349862	4579913	216
2479	Non-participating	344868	4565460	249
2480	Non-participating	350816	4572011	236
2481	Non-participating	346327	4570448	233
2482	Non-participating	345954	4564382	247
2483	Non-participating	345357	4569780	238
2484	Non-participating	344237	4568117	238

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2485	Non-participating	343300	4556693	271
2486	Non-participating	343943	4559364	262
2487	Non-participating	343987	4561120	255
2488	Non-participating	355097	4551556	257
2489	Non-participating	356340	4567019	226
2490	Non-participating	344173	4565236	249
2491	Non-participating	344329	4567115	245
2492	Non-participating	350117	4571715	237
2493	Non-participating	345802	4576033	223
2494	Non-participating	345749	4569143	242
2495	Non-participating	346992	4569923	240
2496	Non-participating	358147	4578796	216
2497	Non-participating	351710	4579119	224
2498	Non-participating	346090	4569246	241
2499	Non-participating	355481	4568339	229
2500	Non-participating	352932	4557576	249
2501	Non-participating	344187	4568266	241
2502	Non-participating	345539	4569748	235
2503	Non-participating	350167	4545353	297
2504	Non-participating	354272	4550177	264
2505	Non-participating	354555	4550552	262
2506	Non-participating	350123	4571668	237
2507	Non-participating	346765	4570989	230
2508	Non-participating	346325	4570499	232
2509	Non-participating	353953	4549933	271
2510	Non-participating	354651	4550585	260
2511	Non-participating	358539	4578682	215
2512	Non-participating	347042	4576632	221
2513	Non-participating	345750	4575820	224
2514	Non-participating	344236	4567992	237
2515	Non-participating	350060	4571502	238
2516	Non-participating	348155	4570784	235
2517	Non-participating	355431	4551032	262
2518	Non-participating	354606	4578717	210
2519	Non-participating	345812	4574841	224

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2520	Non-participating	344129	4559890	259
2521	Non-participating	344427	4561558	260
2522	Non-participating	354261	4561570	240
2523	Non-participating	353408	4578924	225
2524	Non-participating	354452	4578908	211
2525	Non-participating	350408	4571815	237
2526	Non-participating	345741	4569207	242
2527	Non-participating	345654	4569219	242
2528	Non-participating	355530	4554145	256
2529	Non-participating	361672	4575824	206
2530	Non-participating	351659	4579728	219
2531	Non-participating	351518	4548498	275
2532	Non-participating	345723	4575494	222
2533	Non-participating	344867	4561358	260
2534	Non-participating	344121	4561522	259
2535	Non-participating	344310	4555497	271
2536	Non-participating	345456	4569390	239
2537	Non-participating	353685	4550121	268
2538	Non-participating	345082	4552493	276
2539	Non-participating	354853	4551294	260
2540	Non-participating	351572	4548351	278
2541	Non-participating	344264	4566626	247
2542	Non-participating	342788	4554302	278
2543	Non-participating	354001	4554893	261
2544	Non-participating	350297	4571382	239
2545	Non-participating	345208	4569695	239
2546	Non-participating	354609	4550930	266
2547	Non-participating	355266	4550754	263
2548	Non-participating	343432	4559864	261
2549	Non-participating	345323	4569814	238
2550	Non-participating	348452	4570955	234
2551	Non-participating	347145	4571096	232
2552	Non-participating	349331	4544207	286
2553	Non-participating	350159	4545148	297
2554	Non-participating	347195	4569783	241

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2555	Non-participating	345651	4569872	233
2556	Non-participating	352322	4549473	275
2557	Non-participating	351716	4579052	224
2558	Non-participating	344264	4566733	246
2559	Non-participating	344085	4561535	259
2560	Non-participating	355404	4568375	229
2561	Non-participating	348293	4570841	235
2562	Non-participating	357994	4578934	216
2563	Non-participating	344101	4566572	247
2564	Non-participating	345931	4564024	249
2565	Non-participating	345304	4568538	240
2566	Non-participating	345866	4570239	233
2567	Non-participating	345042	4558276	262
2568	Non-participating	361012	4577716	207
2569	Non-participating	345653	4569136	242
2570	Non-participating	356548	4569511	227
2571	Non-participating	352165	4559277	247
2572	Non-participating	355070	4551171	260
2573	Non-participating	344237	4566163	247
2574	Non-participating	344068	4554773	272
2575	Non-participating	346881	4570776	233
2576	Non-participating	353371	4560468	243
2577	Non-participating	344258	4566478	247
2578	Non-participating	353547	4578673	224
2579	Non-participating	346931	4576603	221
2580	Non-participating	350277	4570792	237
2581	Non-participating	359641	4572125	213
2582	Non-participating	342668	4552626	284
2583	Non-participating	354481	4560840	239
2584	Non-participating	352748	4549515	275
2585	Non-participating	347845	4579205	221
2586	Non-participating	360301	4575237	213
2587	Non-participating	344402	4561567	260
2588	Non-participating	349993	4571610	235
2589	Non-participating	347258	4571261	232

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2590	Non-participating	351513	4548569	275
2591	Non-participating	353914	4550045	267
2592	Non-participating	341532	4555965	275
2593	Non-participating	346345	4572993	228
2594	Non-participating	346402	4570012	235
2595	Non-participating	345813	4569736	235
2596	Non-participating	355193	4551450	261
2597	Non-participating	355246	4551388	263
2598	Non-participating	350263	4545123	296
2599	Non-participating	343787	4557445	265
2600	Non-participating	346670	4569682	241
2601	Non-participating	349049	4571037	236
2602	Non-participating	348199	4544029	289
2603	Non-participating	352097	4557781	251
2604	Non-participating	353785	4579027	215
2605	Non-participating	343956	4560368	260
2606	Non-participating	346911	4569932	240
2607	Non-participating	352763	4549407	275
2608	Non-participating	354184	4550570	269
2609	Non-participating	344228	4568018	237
2610	Non-participating	344153	4566806	246
2611	Non-participating	354820	4563866	235
2612	Non-participating	347374	4570273	236
2613	Non-participating	345789	4570138	233
2614	Non-participating	355565	4552666	262
2615	Non-participating	344108	4566136	246
2616	Non-participating	357881	4571986	219
2617	Non-participating	344658	4549376	289
2618	Non-participating	343496	4553219	279
2619	Non-participating	347383	4570344	235
2620	Non-participating	347225	4570647	234
2621	Non-participating	355714	4551685	266
2622	Non-participating	354109	4564177	237
2623	Non-participating	346824	4569846	240
2624	Non-participating	345436	4569920	237

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2625	Non-participating	345010	4557295	266
2626	Non-participating	354535	4578410	213
2627	Non-participating	355638	4578641	216
2628	Non-participating	345861	4570162	233
2629	Non-participating	354834	4561553	238
2630	Non-participating	354018	4555848	255
2631	Non-participating	345393	4569748	237
2632	Non-participating	346853	4570395	234
2633	Non-participating	344140	4566633	247
2634	Non-participating	343940	4561429	256
2635	Non-participating	345919	4569675	236
2636	Non-participating	356332	4567928	227
2637	Non-participating	355685	4551819	268
2638	Non-participating	361379	4573941	213
2639	Non-participating	350060	4571457	239
2640	Non-participating	345266	4569878	239
2641	Non-participating	342744	4554242	277
2642	Non-participating	342179	4552724	281
2643	Non-participating	343925	4559331	262
2644	Non-participating	354527	4550885	267
2645	Non-participating	355158	4551917	260
2646	Non-participating	344210	4557546	263
2647	Non-participating	350635	4571821	241
2648	Non-participating	346579	4573188	225
2649	Non-participating	355304	4551370	261
2650	Non-participating	355270	4551114	260
2651	Non-participating	350172	4545382	297
2652	Non-participating	356028	4566823	227
2653	Non-participating	344130	4566357	246
2654	Non-participating	345820	4574626	227
2655	Non-participating	345572	4570012	235
2656	Non-participating	347434	4579311	221
2657	Non-participating	345807	4575881	223
2658	Non-participating	344306	4567109	245
2659	Non-participating	347085	4569933	240

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2660	Non-participating	345971	4570319	232
2661	Non-participating	355495	4551146	266
2662	Non-participating	345593	4569109	242
2663	Non-participating	353070	4559237	243
2664	Non-participating	343390	4556604	271
2665	Non-participating	344206	4557545	263
2666	Non-participating	354311	4550851	264
2667	Non-participating	349413	4545125	296
2668	Non-participating	345023	4564123	251
2669	Non-participating	344503	4563942	250
2670	Non-participating	349859	4580004	216
2671	Non-participating	354393	4578971	211
2672	Non-participating	356391	4575540	221
2673	Non-participating	350298	4571796	237
2674	Non-participating	345604	4569205	242
2675	Non-participating	345295	4550180	283
2676	Non-participating	358297	4578654	216
2677	Non-participating	343960	4552539	280
2678	Non-participating	353782	4559914	244
2679	Non-participating	344189	4566695	247
2680	Non-participating	343730	4561458	254
2681	Non-participating	346984	4576099	219
2682	Non-participating	361511	4573694	213
2683	Non-participating	347025	4570906	232
2684	Non-participating	346861	4570908	232
2685	Non-participating	344104	4566151	246
2686	Non-participating	344295	4566170	247
2687	Non-participating	349674	4571305	238
2688	Non-participating	359225	4571258	215
2689	Non-participating	347700	4576774	220
2690	Non-participating	344796	4556731	266
2691	Non-participating	352962	4549486	271
2692	Non-participating	351520	4548293	278
2693	Non-participating	351092	4546355	292
2694	Non-participating	354380	4578379	212

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2695	Non-participating	356192	4570770	227
2696	Non-participating	360726	4572647	212
2697	Non-participating	342178	4554317	278
2698	Non-participating	358479	4578703	215
2699	Non-participating	347297	4576527	219
2700	Non-participating	355414	4568433	229
2701	Non-participating	354770	4550313	263
2702	Non-participating	361550	4577515	205
2703	Non-participating	351648	4579409	221
2704	Non-participating	360782	4575905	210
2705	Non-participating	346459	4570581	232
2706	Non-participating	352469	4549417	278
2707	Non-participating	355297	4550763	263
2708	Non-participating	351601	4548457	277
2709	Non-participating	344301	4565974	248
2710	Non-participating	344110	4566584	247
2711	Non-participating	344354	4557481	266
2712	Non-participating	344701	4549380	289
2713	Non-participating	345690	4569904	233
2714	Non-participating	348366	4570936	234
2715	Non-participating	347184	4571139	232
2716	Non-participating	344989	4557230	266
2717	Non-participating	350388	4570588	237
2718	Non-participating	344068	4566490	247
2719	Non-participating	346826	4569872	239
2720	Non-participating	353505	4579058	222
2721	Non-participating	344013	4561865	257
2722	Non-participating	353741	4560485	242
2723	Non-participating	353958	4554926	261
2724	Non-participating	361078	4572664	212
2725	Non-participating	344132	4567107	245
2726	Non-participating	345786	4569571	237
2727	Non-participating	342733	4552594	283
2728	Non-participating	356555	4576147	219
2729	Non-participating	344336	4559819	260

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2730	Non-participating	350806	4571812	239
2731	Non-participating	346767	4570734	234
2732	Non-participating	342245	4556618	274
2733	Non-participating	351071	4546314	292
2734	Non-participating	353030	4578926	226
2735	Non-participating	353548	4578537	224
2736	Non-participating	360514	4574703	214
2737	Non-participating	346904	4576263	221
2738	Non-participating	356528	4570264	226
2739	Non-participating	359622	4571627	207
2740	Non-participating	355544	4568316	229
2741	Non-participating	354358	4550689	268
2742	Non-participating	355060	4551134	259
2743	Non-participating	358243	4578278	218
2744	Non-participating	344285	4566163	247
2745	Non-participating	347224	4571271	232
2746	Non-participating	344154	4566718	246
2747	Non-participating	358698	4572050	215
2748	Non-participating	345220	4569685	239
2749	Non-participating	355607	4578564	217
2750	Non-participating	344221	4567070	245
2751	Non-participating	344098	4566556	247
2752	Non-participating	345509	4569731	235
2753	Non-participating	349051	4571112	235
2754	Non-participating	350101	4545134	298
2755	Non-participating	345788	4569515	238
2756	Non-participating	344918	4557070	265
2757	Non-participating	355127	4551432	259
2758	Non-participating	350585	4572045	230
2759	Non-participating	346939	4569927	240
2760	Non-participating	354595	4550582	264
2761	Non-participating	345125	4546946	293
2762	Non-participating	348376	4544084	288
2763	Non-participating	345062	4557271	265
2764	Non-participating	344151	4566828	246

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2765	Non-participating	347280	4570715	233
2766	Non-participating	354776	4563972	233
2767	Non-participating	355668	4552806	259
2768	Non-participating	361795	4573010	211
2769	Non-participating	357973	4571996	218
2770	Non-participating	346429	4573105	227
2771	Non-participating	354159	4564908	238
2772	Non-participating	346393	4570038	234
2773	Non-participating	347196	4572499	228
2774	Non-participating	350260	4546112	299
2775	Non-participating	347846	4544043	291
2776	Non-participating	354575	4578697	209
2777	Non-participating	354479	4578401	213
2778	Non-participating	349434	4571213	237
2779	Non-participating	347260	4570634	234
2780	Non-participating	347606	4572169	232
2781	Non-participating	351245	4548049	279
2782	Non-participating	344139	4566443	247
2783	Non-participating	344730	4567147	245
2784	Non-participating	344479	4563930	250
2785	Non-participating	343946	4561594	257
2786	Non-participating	344249	4568000	238
2787	Non-participating	344043	4550954	283
2788	Non-participating	344801	4557319	263
2789	Non-participating	346601	4569675	241
2790	Non-participating	345849	4570132	233
2791	Non-participating	356353	4567748	226
2792	Non-participating	348493	4579221	218
2793	Non-participating	342112	4555002	277
2794	Non-participating	345519	4573627	228
2795	Non-participating	354096	4564133	237
2796	Non-participating	343916	4560985	258
2797	Non-participating	345469	4570032	237
2798	Non-participating	360869	4571807	213
2799	Non-participating	347120	4570718	233

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2800	Non-participating	355491	4568381	229
2801	Non-participating	354517	4550786	268
2802	Non-participating	354358	4550436	267
2803	Non-participating	352146	4547992	280
2804	Non-participating	351336	4546408	292
2805	Non-participating	353284	4579417	222
2806	Non-participating	350591	4579611	218
2807	Non-participating	344877	4565457	249
2808	Non-participating	344200	4561507	260
2809	Non-participating	350064	4571709	236
2810	Non-participating	350572	4571939	232
2811	Non-participating	346633	4570645	234
2812	Non-participating	349542	4545104	296
2813	Non-participating	348209	4544050	289
2814	Non-participating	345214	4569767	239
2815	Non-participating	344131	4566546	247
2816	Non-participating	343833	4551025	283
2817	Non-participating	347130	4569792	240
2818	Non-participating	356607	4569500	225
2819	Non-participating	361358	4573837	212
2820	Non-participating	348450	4576551	221
2821	Non-participating	342986	4551880	285
2822	Non-participating	345332	4569750	239
2823	Non-participating	354097	4549889	270
2824	Non-participating	349416	4545127	296
2825	Non-participating	345681	4569924	233
2826	Non-participating	350175	4571702	236
2827	Non-participating	345568	4570018	235
2828	Non-participating	347251	4570489	234
2829	Non-participating	343168	4554280	279
2830	Non-participating	355559	4551142	268
2831	Non-participating	353197	4579724	221
2832	Non-participating	345802	4576200	224
2833	Non-participating	345806	4575837	223
2834	Non-participating	350699	4571854	240

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2835	Non-participating	347088	4573178	226
2836	Non-participating	344590	4552627	280
2837	Non-participating	343970	4560847	258
2838	Non-participating	345820	4574566	227
2839	Non-participating	345740	4570125	234
2840	Non-participating	354728	4550718	260
2841	Non-participating	355655	4553867	257
2842	Non-participating	355368	4551472	264
2843	Non-participating	344227	4567113	245
2844	Non-participating	347589	4570498	235
2845	Non-participating	354309	4551024	262
2846	Non-participating	361103	4573124	211
2847	Non-participating	358241	4578722	216
2848	Non-participating	347303	4573094	227
2849	Non-participating	344295	4566020	248
2850	Non-participating	349920	4570561	238
2851	Non-participating	345922	4569502	240
2852	Non-participating	349626	4545230	297
2853	Non-participating	361595	4577402	206
2854	Non-participating	349858	4580044	216
2855	Non-participating	354464	4578993	211
2856	Non-participating	358449	4578722	215
2857	Non-participating	350076	4571482	238
2858	Non-participating	353917	4550292	267
2859	Non-participating	344031	4561421	259
2860	Non-participating	354189	4551015	264
2861	Non-participating	356390	4575604	221
2862	Non-participating	347000	4576199	221
2863	Non-participating	346036	4569244	241
2864	Non-participating	353660	4555963	256
2865	Non-participating	345023	4547351	293
2866	Non-participating	356323	4578309	218
2867	Non-participating	350583	4546380	296
2868	Non-participating	347061	4570974	232
2869	Non-participating	354312	4563955	237

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2870	Non-participating	354001	4560637	237
2871	Non-participating	343937	4561299	255
2872	Non-participating	354768	4550271	266
2873	Non-participating	345418	4569306	241
2874	Non-participating	345700	4569283	242
2875	Non-participating	354857	4579073	210
2876	Non-participating	355574	4552543	263
2877	Non-participating	348373	4570864	235
2878	Non-participating	344291	4565980	248
2879	Non-participating	345810	4570035	235
2880	Non-participating	347368	4570247	236
2881	Non-participating	345878	4570306	233
2882	Non-participating	355019	4551083	261
2883	Non-participating	354376	4550507	267
2884	Non-participating	354173	4550391	269
2885	Non-participating	361091	4577683	207
2886	Non-participating	354514	4578972	211
2887	Non-participating	359405	4571274	212
2888	Non-participating	344133	4566496	247
2889	Non-participating	344855	4559922	260
2890	Non-participating	349984	4570511	238
2891	Non-participating	346816	4570014	238
2892	Non-participating	355606	4568374	229
2893	Non-participating	354630	4550849	264
2894	Non-participating	358801	4578606	214
2895	Non-participating	344098	4566593	247
2896	Non-participating	344134	4557510	263
2897	Non-participating	349197	4571184	234
2898	Non-participating	345483	4569875	236
2899	Non-participating	352366	4549470	276
2900	Non-participating	361551	4572832	209
2901	Non-participating	341805	4554339	280
2902	Non-participating	344975	4565530	249
2903	Non-participating	344251	4567947	238
2904	Non-participating	343001	4555898	271

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2905	Non-participating	345413	4569699	236
2906	Non-participating	345810	4569672	235
2907	Non-participating	345207	4569821	239
2908	Non-participating	344241	4566211	246
2909	Non-participating	344153	4566850	245
2910	Non-participating	347249	4571103	232
2911	Non-participating	351522	4548145	279
2912	Non-participating	345526	4570084	237
2913	Non-participating	355447	4551225	263
2914	Non-participating	354220	4550769	266
2915	Non-participating	353471	4578842	224
2916	Non-participating	360813	4574503	214
2917	Non-participating	346675	4576628	221
2918	Non-participating	344141	4566465	247
2919	Non-participating	350248	4570906	238
2920	Non-participating	345632	4569179	242
2921	Non-participating	356601	4569618	225
2922	Non-participating	346351	4572960	228
2923	Non-participating	352469	4549365	278
2924	Non-participating	354569	4578538	211
2925	Non-participating	344258	4560019	260
2926	Non-participating	346961	4570863	233
2927	Non-participating	342181	4554302	278
2928	Non-participating	341364	4554372	280
2929	Non-participating	353867	4549898	270
2930	Non-participating	345434	4569978	237
2931	Non-participating	345542	4569923	234
2932	Non-participating	345262	4569787	239
2933	Non-participating	356402	4575087	221
2934	Non-participating	345144	4568790	238
2935	Non-participating	353666	4579043	218
2936	Non-participating	354300	4550585	268
2937	Non-participating	358042	4578888	217
2938	Non-participating	349154	4571080	236
2939	Non-participating	344132	4566563	247

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2940	Non-participating	344277	4567185	246
2941	Non-participating	345730	4569457	239
2942	Non-participating	345594	4569799	234
2943	Non-participating	346911	4570857	232
2944	Non-participating	355876	4551798	268
2945	Non-participating	350281	4571177	238
2946	Non-participating	345768	4573145	228
2947	Non-participating	354236	4564639	237
2948	Non-participating	354272	4564154	238
2949	Non-participating	354054	4563981	235
2950	Non-participating	346510	4569903	238
2951	Non-participating	347289	4572656	229
2952	Non-participating	345243	4569318	238
2953	Non-participating	345337	4569623	237
2954	Non-participating	345063	4557281	265
2955	Non-participating	344227	4566783	246
2956	Non-participating	345866	4570209	233
2957	Non-participating	345293	4569759	239
2958	Non-participating	344953	4557158	266
2959	Non-participating	354123	4550137	268
2960	Non-participating	344112	4566312	246
2961	Non-participating	350401	4571630	237
2962	Non-participating	346829	4569787	240
2963	Non-participating	346849	4572286	228
2964	Non-participating	345235	4547905	293
2965	Non-participating	345626	4569963	233
2966	Non-participating	344042	4566383	247
2967	Non-participating	344335	4567189	245
2968	Non-participating	350556	4572058	230
2969	Non-participating	349278	4571147	236
2970	Non-participating	356293	4570728	225
2971	Non-participating	351642	4579134	223
2972	Non-participating	347810	4576359	221
2973	Non-participating	344258	4567119	245
2974	Non-participating	350422	4569724	243

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
2975	Non-participating	357823	4572083	219
2976	Non-participating	354306	4554704	261
2977	Non-participating	354936	4550697	262
2978	Non-participating	355224	4551531	262
2979	Non-participating	360882	4571933	213
2980	Non-participating	360368	4575226	213
2981	Non-participating	343950	4561475	257
2982	Non-participating	345925	4563813	249
2983	Non-participating	345748	4569991	234
2984	Non-participating	353431	4549483	270
2985	Non-participating	355533	4551347	266
2986	Non-participating	349360	4545118	295
2987	Non-participating	347966	4579837	221
2988	Non-participating	354250	4578918	211
2989	Non-participating	350332	4571155	238
2990	Non-participating	344502	4555450	270
2991	Non-participating	343288	4556725	270
2992	Non-participating	344880	4556946	264
2993	Non-participating	344156	4561514	259
2994	Non-participating	345580	4569873	233
2995	Non-participating	345268	4569842	239
2996	Non-participating	344098	4565898	247
2997	Non-participating	346412	4569683	240
2998	Non-participating	354415	4550976	263
2999	Non-participating	350084	4545214	297
3000	Non-participating	347505	4579217	221
3001	Non-participating	342758	4554223	277
3002	Non-participating	355815	4568095	228
3003	Non-participating	355760	4566867	227
3004	Non-participating	354382	4550152	262
3005	Non-participating	350246	4571772	236
3006	Non-participating	345802	4576153	224
3007	Non-participating	352512	4549465	278
3008	Non-participating	345811	4569749	235
3009	Non-participating	345583	4569819	234

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3010	Non-participating	351028	4546351	291
3011	Non-participating	355813	4578217	218
3012	Non-participating	344144	4566600	247
3013	Non-participating	350079	4571552	238
3014	Non-participating	346878	4570754	233
3015	Non-participating	354576	4564096	235
3016	Non-participating	353953	4549745	270
3017	Non-participating	344153	4566668	247
3018	Non-participating	354432	4550550	266
3019	Non-participating	345816	4574772	224
3020	Non-participating	346918	4575861	221
3021	Non-participating	352567	4549530	276
3022	Non-participating	345218	4547164	292
3023	Non-participating	361371	4577574	206
3024	Non-participating	349860	4579878	216
3025	Non-participating	345597	4576054	224
3026	Non-participating	344979	4565470	249
3027	Non-participating	344254	4568362	242
3028	Non-participating	350034	4571496	238
3029	Non-participating	343901	4560706	260
3030	Non-participating	344002	4561716	257
3031	Non-participating	344323	4561534	260
3032	Non-participating	345627	4569836	233
3033	Non-participating	352898	4559134	245
3034	Non-participating	355646	4554157	251
3035	Non-participating	355384	4550951	261
3036	Non-participating	350354	4546463	295
3037	Non-participating	348613	4571006	235
3038	Non-participating	350580	4546382	296
3039	Non-participating	361219	4577640	206
3040	Non-participating	341421	4554274	280
3041	Non-participating	344877	4559908	260
3042	Non-participating	347198	4576626	218
3043	Non-participating	345731	4569244	242
3044	Non-participating	355408	4568392	229

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3045	Non-participating	354544	4550251	259
3046	Non-participating	361288	4574988	210
3047	Non-participating	345497	4575243	223
3048	Non-participating	354828	4560787	238
3049	Non-participating	354315	4578922	211
3050	Non-participating	357825	4579087	216
3051	Non-participating	343971	4560759	259
3052	Non-participating	344525	4561516	260
3053	Non-participating	355075	4563619	235
3054	Non-Participating	347892	4570768	235
3055	Non-Participating	347830	4570737	235
3056	Non-Participating	347953	4570791	234
3057	Non-Participating	347995	4570802	234
3058	Non-Participating	348032	4570818	234
3059	Non-Participating	348096	4570846	234
3060	Non-Participating	347941	4570660	235
3061	Non-Participating	348043	4570740	236
3062	Non-Participating	347788	4570650	235
3063	Non-Participating	347761	4570638	236
3064	Non-Participating	347714	4570620	236
3065	Non-Participating	347826	4570664	236
3066	Non-Participating	347852	4570674	236
3067	Non-Participating	347881	4570685	236
3068	Non-Participating	347681	4570610	236
3069	Non-Participating	347684	4570679	236
3070	Non-Participating	347723	4570694	236
3071	Non-Participating	347782	4570717	235
3072	Non-Participating	348188	4570681	236
3073	Non-Participating	348450	4570885	235
3074	Non-Participating	347640	4570667	236
3075	Non-Participating	347611	4570655	235
3076	Non-Participating	347581	4570645	235
3077	Non-Participating	347553	4570636	235
3078	Non-Participating	347520	4570626	235
3079	Non-Participating	347490	4570617	235

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3080	Non-Participating	347458	4570612	235
3081	Non-Participating	347534	4570552	235
3082	Non-Participating	347585	4570564	236
3083	Non-Participating	347622	4570586	236
3084	Non-Participating	347429	4570528	235
3085	Non-Participating	347473	4570531	235
3086	Non-Participating	347505	4570547	235
3087	Non-Participating	347394	4570637	234
3088	Non-Participating	347328	4570669	234
3089	Non-Participating	347315	4570614	235
3090	Non-Participating	347249	4570596	235
3091	Non-Participating	347234	4570592	235
3092	Non-Participating	347204	4570595	235
3093	Non-Participating	347163	4570601	235
3094	Non-Participating	347122	4570606	235
3095	Non-Participating	347089	4570612	235
3096	Non-Participating	347263	4570593	235
3097	Church	347293	4569805	241
3098	Non-Participating	347227	4569792	241
3099	Church	351250	4569492	242
3100	Non-Participating	348707	4573071	227
3101	Non-Participating	348599	4573018	228
3102	Non-Participating	348584	4573096	227
3103	Non-Participating	348537	4573102	227
3104	Non-Participating	348859	4573095	227
3105	Non-Participating	348113	4573107	227
3106	Non-Participating	347985	4573110	227
3107	Non-Participating	347828	4573066	227
3108	Non-Participating	346905	4573171	226
3109	Non-Participating	346936	4573169	226
3110	Non-Participating	346874	4573172	226
3111	Non-Participating	346843	4573177	226
3112	Non-Participating	346818	4573179	226
3113	Non-Participating	346786	4573176	225
3114	Non-Participating	346755	4573178	226

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3115	Non-Participating	346722	4573183	226
3116	Non-Participating	346685	4573185	226
3117	Non-Participating	346535	4573184	225
3118	Non-Participating	346568	4573241	225
3119	Non-Participating	346578	4573273	225
3120	Non-Participating	346596	4573314	225
3121	School	346526	4572970	226
3122	Non-Participating	346832	4573838	224
3123	Non-Participating	346865	4573867	225
3124	Non-Participating	346684	4573818	225
3125	Non-Participating	346756	4573680	223
3126	Non-Participating	346743	4573653	223
3127	Non-Participating	346732	4573625	223
3128	Non-Participating	346719	4573595	224
3129	Non-Participating	346707	4573571	224
3130	Non-Participating	346693	4573537	224
3131	Non-Participating	346678	4573496	225
3132	Non-Participating	346662	4573467	225
3133	Non-Participating	346651	4573441	225
3134	Non-Participating	346641	4573411	225
3135	Non-Participating	346628	4573380	225
3136	Non-Participating	346614	4573355	225
3137	Non-Participating	346935	4574288	222
3138	Non-Participating	346842	4574171	222
3139	Non-Participating	346900	4575303	223
3140	Non-Participating	346899	4575368	222
3141	Non-Participating	346901	4575396	222
3142	Non-Participating	346936	4575565	220
3143	Non-Participating	346837	4575964	219
3144	Non-Participating	346900	4575963	219
3145	Non-Participating	346922	4575910	220
3146	Church	353856	4576137	224
3147	Non-Participating	353831	4575960	225
3148	Church	349685	4558551	251
3149	Non-Participating	354727	4551718	251

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3150	Church	360129	4578147	213
3151	Non-participating	347393	4570512	235
3152	Non-participating	350486	4578382	222
3153	Non-participating	350490	4578431	222
3154	Non-participating	351036	4578518	224
3155	Non-participating	351155	4578584	223
3156	Non-participating	344940	4557115	265
3157	Non-participating	351894	4569312	242
3158	Non-participating	352127	4569261	240
3159	Church	351921	4578819	225
3160	Non-participating	347430	4570609	235
3161	Non-participating	354378	4578283	213
3162	Participating	356086	4576568	220
3163	Non-participating	354323	4578324	211
3164	Non-participating	345904	4565110	249
3165	Non-participating	346866	4569672	241
3166	Non-participating	346921	4569760	241
3167	Non-participating	346948	4569769	240
3168	Non-participating	346997	4569765	241
3169	Non-participating	346991	4569814	240
3170	Non-participating	347010	4569870	240
3171	Non-participating	347038	4569876	240
3172	Non-participating	347063	4569842	240
3173	Non-participating	347056	4569792	240
3174	Non-participating	347098	4569780	241
3175	Participating	352011	4570555	237
3176	Participating	352029	4570499	237
3177	Non-participating	350000	4573310	226
3178	Non-participating	348429	4573022	227
3179	Non-participating	346853	4573929	225
3180	Non-participating	347453	4576215	223
3181	Non-participating	348227	4578259	218
3182	Non-participating	358072	4578394	219
3183	Non-participating	354819	4551411	261
3184	Non-participating	354820	4551314	261

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3185	Non-participating	354582	4551225	261
3186	Non-participating	354461	4551233	265
3187	Non-participating	354444	4551196	264
3188	Non-participating	354404	4551321	265
3189	Non-participating	353827	4551619	262
3190	Non-participating	353902	4551593	261
3191	Non-participating	353992	4551475	259
3192	Non-participating	353840	4551519	261
3193	Non-participating	353864	4551464	263
3194	Non-participating	353856	4551415	262
3195	Non-participating	354207	4551370	259
3196	Non-participating	354215	4551312	262
3197	Non-participating	354195	4551269	264
3198	Non-participating	354011	4551376	262
3199	Non-participating	354085	4551351	261
3200	Non-participating	354031	4551325	265
3201	Non-participating	354119	4551195	266
3202	Non-participating	354006	4551218	266
3203	Non-participating	354080	4551115	262
3204	Non-participating	353980	4551145	267
3205	Non-participating	353888	4551216	263
3206	Non-participating	353921	4551111	267
3207	Non-participating	353874	4551088	267
3208	Non-participating	353882	4550961	267
3209	Non-participating	353753	4551013	266
3210	Non-participating	353747	4550967	267
3211	Non-participating	353593	4550962	267
3212	Participating	353595	4551130	266
3213	Non-participating	353740	4551191	261
3214	Non-participating	353744	4551242	261
3215	Non-participating	353512	4550843	269
3216	Non-participating	354082	4550944	265
3217	Non-participating	354057	4550945	266
3218	Non-participating	354032	4550969	265
3219	Non-participating	353992	4550987	263

ID	Receiver Status	Coordinates (WGS 84, UTM 17N)		Elevation + Receiver Height (m)
		X (m)	Y (m)	
3220	Non-participating	353967	4550876	266
3221	Non-participating	354069	4550827	266
3222	Non-participating	354029	4550807	267
3223	Non-participating	353663	4550676	269
3224	Non-participating	352559	4549465	278
3225	Non-participating	345800	4549403	280
3226	Non-participating	345686	4549937	284
3227	Non-participating	346460	4553376	271
3228	Non-participating	351681	4557772	251
3229	Non-participating	354527	4551468	260
3230	Non-participating	348185	4569886	242
3231	Non-participating	348165	4570467	237
3232	Non-participating	348094	4570265	239
3233	Non-participating	353082	4570453	235
3234	Participating	350657	4573439	226
3235	Non-participating	348180	4573148	227
3236	Non-participating	358255	4577595	219

APPENDIX D. DETAILED MODEL RESULTS

This section provides the model results for each model run at all 3,236 sensitive receptors in Table 8. At the end of the results table are foldout maps (Figure 60 through Figure 65) that provides the location of the receptor IDs that corresponds to the IDs in the results table. The maps are 11”x17”.

TABLE 8: MODEL RESULTS FOR ALL SENSITIVE RECEPTORS

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1	Non-participating	35	34	35	35	36	37	37	40
2	Non-participating	39	38	39	39	40	37	37	39
3	Non-participating	41	40	42	41	43	41	42	44
4	Non-participating	33	32	33	33	35	34	35	37
5	Non-participating	39	38	39	39	41	32	32	35
6	Participating	44	44	45	45	47	34	34	36
7	Non-participating	43	42	43	43	45	34	34	36
8	Non-participating	35	34	35	35	37	38	39	40
9	Non-participating	40	39	40	40	41	41	41	43
10	Non-participating	37	36	38	38	39	32	33	35
11	Participating	44	43	44	44	46	38	39	41
12	Participating	38	38	39	39	40	43	43	45
13	Non-participating	37	36	37	37	38	34	35	37
14	Non-participating	35	34	35	35	36	39	40	41
15	Non-participating	42	41	43	43	44	36	37	40
16	Non-participating	39	38	39	39	40	36	36	38
17	Non-participating	33	32	34	34	35	34	35	36
18	Non-participating	34	33	34	34	36	42	42	46
19	Participating	41	41	41	41	42	38	39	40
20	Non-participating	37	36	38	38	39	32	33	36
21	Non-participating	41	41	42	42	43	33	34	36
22	Non-participating	35	34	35	35	36	36	37	39
23	Non-participating	37	37	38	38	39	41	41	43
24	Non-participating	31	30	31	31	33	34	34	40
25	Non-participating	42	41	42	42	44	37	37	39
26	Non-participating	43	42	44	44	45	30	31	33

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
27	Participating	40	39	41	41	42	41	42	44
28	Non-participating	37	36	37	37	38	43	43	45
29	Non-participating	41	40	41	41	43	36	37	38
30	Non-participating	40	40	41	41	42	40	41	43
31	Non-participating	41	40	42	42	43	40	41	42
32	Non-participating	44	44	45	45	47	41	41	43
33	Participating	41	41	42	42	43	45	45	47
34	Participating	40	39	40	40	42	36	37	38
35	Non-participating	37	36	37	37	38	35	36	38
36	Non-participating	36	35	36	36	38	40	41	42
37	Non-participating	40	39	41	41	42	38	38	40
38	Non-participating	38	38	39	39	40	37	38	39
39	Non-participating	38	37	38	38	39	38	39	41
40	Non-participating	39	38	39	39	41	37	38	40
41	Non-participating	38	37	38	38	40	33	34	35
42	Non-participating	34	33	34	34	35	37	38	39
43	Non-participating	38	37	38	38	39	40	40	42
44	Non-participating	40	39	40	40	42	41	41	43
45	Non-participating	41	40	41	41	43	39	40	41
46	Non-participating	40	39	40	40	41	40	41	43
47	Non-participating	41	40	41	41	43	34	35	36
48	Participating	36	35	36	36	37	38	38	40
49	Non-participating	35	34	35	35	36	37	38	40
50	Non-participating	38	38	39	39	40	37	38	40
51	Non-participating	38	37	38	38	40	34	35	38
52	Non-participating	38	37	38	38	40	30	31	33
53	Non-participating	35	34	35	35	37	34	35	37
54	Participating	44	43	44	44	46	39	40	41
55	Non-participating	32	31	32	32	33	40	41	43
56	Non-participating	35	35	36	36	37	42	42	44
57	Non-participating	40	39	40	40	41	33	34	36
58	Non-participating	41	40	41	41	42	31	32	34
59	Non-participating	42	42	43	43	44	35	36	37
60	Non-participating	34	34	35	35	36	43	44	45
61	Non-participating	32	31	32	32	34	36	36	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
62	Non-participating	36	35	36	36	37	38	38	41
63	Non-participating	43	43	44	44	45	34	35	38
64	Participating	44	44	45	45	46	40	41	42
65	Non-participating	37	36	37	37	39	31	31	34
66	Non-participating	38	38	39	39	40	36	36	39
67	Non-participating	35	35	36	36	37	36	37	38
68	Non-participating	41	40	41	41	42	38	39	41
69	Non-participating	32	31	32	32	34	34	34	36
70	Non-participating	37	36	37	37	38	38	39	41
71	Non-participating	37	36	37	37	38	37	37	39
72	Non-participating	39	38	39	39	41	36	37	39
73	Non-participating	35	34	35	35	36	41	41	43
74	Non-participating	39	38	39	39	41	33	34	36
75	Participating	38	37	39	38	40	32	32	35
76	Non-participating	38	37	38	38	39	35	36	38
77	Participating	47	46	48	48	49	38	38	40
78	Non-participating	37	36	37	37	38	34	35	37
79	Non-participating	41	40	41	41	43	40	40	42
80	Non-participating	34	33	34	34	36	38	38	40
81	Non-participating	33	32	33	33	35	41	41	43
82	Non-participating	36	35	36	36	38	34	35	36
83	Non-participating	39	38	39	39	40	35	36	38
84	Non-participating	35	34	35	35	37	37	38	40
85	Non-participating	40	39	40	40	42	41	41	46
86	Participating	38	38	39	39	40	43	44	46
87	Participating	45	44	46	45	47	44	45	46
88	Non-participating	38	37	39	39	40	33	34	36
89	Non-participating	41	40	42	41	43	42	42	44
90	Non-participating	35	34	35	35	36	35	35	37
91	Participating	44	43	45	44	46	39	39	41
92	Non-participating	36	35	36	36	38	43	43	45
93	Non-participating	38	37	39	39	40	40	40	42
94	Non-participating	41	40	42	42	43	44	44	46
95	Non-participating	43	43	44	44	45	36	37	39
96	Non-participating	44	43	45	45	46	39	39	41

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
97	Non-participating	34	33	34	34	36	32	33	35
98	Non-participating	42	41	42	42	44	32	33	35
99	Non-participating	35	35	36	36	37	35	36	38
100	Non-participating	39	38	40	40	41	39	40	41
101	Participating	35	35	36	36	37	41	41	46
102	Non-participating	43	42	44	44	45	37	38	40
103	Non-participating	40	40	41	41	42	34	35	37
104	Non-participating	44	43	45	45	46	32	33	35
105	Participating	36	35	36	36	37	35	36	38
106	Non-participating	37	36	37	37	39	39	40	41
107	Non-participating	39	38	40	40	41	34	34	38
108	Non-participating	33	33	34	34	35	36	37	39
109	Non-participating	33	33	34	34	35	38	39	40
110	Non-participating	36	35	36	36	38	38	39	41
111	Non-participating	39	39	40	40	41	36	36	38
112	Participating	37	36	37	37	39	28	28	31
113	Participating	42	41	43	43	44	42	42	46
114	Non-participating	41	41	42	42	43	34	34	37
115	Non-participating	38	37	38	38	40	36	37	39
116	Non-participating	35	34	35	35	37	38	39	40
117	Non-participating	33	32	33	33	35	37	37	39
118	Participating	38	37	38	38	39	34	35	37
119	Non-participating	36	35	36	36	38	36	37	39
120	Non-participating	40	39	40	40	41	37	38	40
121	Non-participating	35	34	35	35	36	38	39	40
122	Non-participating	37	36	37	37	39	35	35	38
123	Non-participating	39	38	39	39	40	30	31	33
124	Non-participating	39	38	39	39	41	35	36	37
125	Non-participating	37	36	37	37	38	38	38	41
126	Non-participating	29	28	29	29	31	34	35	37
127	Non-participating	42	42	43	43	44	38	39	41
128	Non-participating	35	34	35	35	36	44	45	46
129	Non-participating	37	36	38	38	39	42	42	44
130	Non-participating	39	38	39	39	40	43	43	45
131	Non-participating	38	37	38	38	39	37	38	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
132	Non-participating	35	34	35	35	37	35	35	37
133	Non-participating	37	36	37	37	39	38	38	41
134	Non-participating	38	37	38	38	40	35	36	38
135	Non-participating	38	37	39	39	40	38	39	40
136	Non-participating	36	35	36	36	37	36	37	39
137	Participating	43	43	44	44	45	34	34	37
138	Non-participating	31	30	31	31	33	41	42	43
139	Non-participating	36	35	36	36	37	34	35	37
140	Non-participating	39	38	39	39	40	39	40	41
141	Non-participating	35	34	35	35	37	40	40	42
142	Non-participating	39	38	39	39	41	40	40	42
143	Participating	46	45	46	46	48	35	36	38
144	Non-participating	44	43	45	45	46	35	36	38
145	Non-participating	42	41	43	43	44	37	38	40
146	Non-participating	43	42	43	43	45	36	36	38
147	Non-participating	38	37	38	38	40	34	34	37
148	Non-participating	36	35	36	36	37	37	37	40
149	Non-participating	38	38	39	39	40	32	33	35
150	Non-participating	36	35	37	37	38	33	34	36
151	Non-participating	39	38	39	39	40	34	35	37
152	Non-participating	37	36	37	37	39	37	38	40
153	Participating	44	43	45	45	46	41	41	43
154	Non-participating	35	34	35	35	36	37	38	39
155	Non-participating	41	41	42	42	43	37	37	39
156	Non-participating	35	34	35	35	37	40	41	42
157	Non-participating	39	39	40	40	41	33	34	37
158	Non-participating	40	39	40	40	42	38	38	41
159	Non-participating	40	40	41	41	42	33	34	38
160	Non-participating	36	35	36	36	38	35	36	38
161	Non-participating	36	35	36	37	38	36	36	38
162	Non-participating	38	37	38	38	40	39	40	42
163	Non-participating	36	35	37	37	38	39	39	41
164	Non-participating	35	34	35	35	37	43	43	45
165	Non-participating	38	37	38	38	40	35	35	38
166	Non-participating	33	32	33	33	35	33	34	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
167	Non-participating	34	33	34	34	36	36	36	38
168	Non-participating	35	34	36	36	37	42	43	44
169	Participating	39	39	40	40	41	33	33	36
170	Non-participating	38	37	38	38	40	39	40	42
171	Non-participating	41	41	42	42	43	36	37	39
172	Non-participating	37	37	38	38	39	40	41	43
173	Non-participating	38	37	38	38	39	38	38	41
174	Non-participating	40	40	41	41	42	41	41	43
175	Non-participating	34	33	34	34	36	36	37	39
176	Non-participating	38	38	39	39	40	34	34	36
177	Non-participating	34	34	35	35	36	35	35	37
178	Non-participating	36	35	36	36	38	36	37	47
179	Non-participating	37	36	37	37	38	41	41	46
180	Non-participating	40	39	40	40	42	43	43	45
181	Non-participating	39	38	40	40	41	34	35	37
182	Non-participating	43	42	44	44	45	38	39	41
183	Non-participating	36	35	36	36	37	36	37	39
184	Non-participating	34	34	35	35	36	38	38	40
185	Non-participating	36	35	37	37	38	35	36	38
186	Non-participating	42	42	43	43	44	41	41	43
187	Participating	37	36	37	37	39	36	37	39
188	Non-participating	34	33	34	34	36	39	40	42
189	Non-participating	40	39	40	40	42	38	39	41
190	Non-participating	37	37	38	38	39	42	42	44
191	Non-participating	41	40	41	41	43	36	36	38
192	Non-participating	38	38	39	39	40	35	36	38
193	Non-participating	41	41	42	42	43	40	40	42
194	Non-participating	37	36	37	37	39	41	41	43
195	Non-participating	34	34	35	35	36	40	40	42
196	Non-participating	35	35	36	36	37	36	37	39
197	Participating	48	47	49	49	50	40	40	42
198	Non-participating	37	36	37	37	39	43	44	45
199	Non-participating	41	40	42	42	43	35	36	38
200	Non-participating	43	42	44	44	45	39	39	41
201	Non-participating	35	34	35	35	37	43	44	45

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
202	Non-participating	39	38	39	39	41	33	34	36
203	Non-participating	37	36	37	37	39	44	45	46
204	Non-participating	38	38	39	39	40	42	43	44
205	Non-participating	36	35	36	36	38	37	37	39
206	Non-participating	41	40	42	42	43	39	40	42
207	Participating	43	42	43	43	45	40	40	42
208	Non-participating	37	36	37	37	39	44	44	46
209	Non-participating	40	39	40	40	42	44	44	46
210	Non-participating	39	38	39	39	41	41	41	42
211	Non-participating	42	41	43	43	44	38	38	40
212	Participating	41	40	41	41	43	38	38	40
213	Non-participating	36	36	37	37	38	40	40	42
214	Participating	42	41	42	42	44	28	29	31
215	Non-participating	36	35	36	36	38	35	35	37
216	Non-participating	40	39	40	40	42	38	38	40
217	Non-participating	41	40	42	42	43	37	37	39
218	Non-participating	40	39	41	41	42	33	34	36
219	Non-participating	37	37	38	38	39	36	36	38
220	Non-participating	40	39	41	40	42	39	40	41
221	Non-participating	43	43	44	44	45	35	35	42
222	Participating	43	43	44	44	46	29	30	32
223	Non-participating	36	36	37	37	38	37	37	40
224	Non-participating	39	38	40	40	41	32	33	35
225	Non-participating	43	43	44	44	45	37	37	39
226	Non-participating	34	34	35	35	36	37	37	39
227	Non-participating	44	44	45	45	46	40	40	44
228	Non-participating	42	41	43	43	44	41	41	43
229	Non-participating	37	37	38	38	39	31	31	33
230	Non-participating	40	39	40	40	42	28	28	31
231	Non-participating	40	39	41	41	42	33	34	35
232	Non-participating	44	43	45	45	46	36	36	39
233	Non-participating	44	43	45	45	46	40	40	42
234	Non-participating	41	40	41	41	42	34	34	36
235	Non-participating	38	37	39	39	40	36	36	38
236	Non-participating	38	38	39	39	40	41	41	43

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
237	Non-participating	40	39	41	41	42	39	40	41
238	Non-participating	29	29	29	29	31	37	38	40
239	Non-participating	35	35	36	36	37	33	34	36
240	Non-participating	38	37	39	39	40	35	36	38
241	Participating	39	38	39	39	40	33	34	36
242	Non-participating	37	37	38	38	39	36	37	39
243	Non-participating	34	33	35	35	36	36	37	39
244	Non-participating	36	36	37	37	38	41	41	43
245	Non-participating	39	39	40	40	41	38	38	40
246	Non-participating	36	35	36	36	38	33	34	39
247	Non-participating	31	30	31	31	32	41	41	43
248	Non-participating	38	37	38	38	39	39	40	41
249	Non-participating	33	33	34	34	35	36	37	39
250	Non-participating	37	36	38	38	39	40	40	42
251	Non-participating	37	37	38	38	39	39	39	41
252	Participating	41	40	41	41	43	38	38	40
253	Participating	36	36	37	37	38	36	37	39
254	Non-participating	40	39	41	41	42	34	35	37
255	Non-participating	41	40	41	41	43	32	33	35
256	Non-participating	32	31	32	32	33	40	40	42
257	Non-participating	29	28	29	29	31	33	34	36
258	Non-participating	34	33	34	34	35	37	38	40
259	Participating	35	34	35	35	37	36	36	39
260	Non-participating	37	36	37	37	38	32	32	34
261	Non-participating	40	39	41	41	42	39	40	41
262	Non-participating	34	34	35	35	36	36	37	39
263	Non-participating	37	36	37	37	38	37	38	40
264	Non-participating	41	40	42	42	43	33	34	36
265	Non-participating	40	39	40	40	41	37	37	40
266	Non-participating	38	37	38	38	40	43	43	47
267	Non-participating	34	34	35	35	36	32	33	35
268	Non-participating	36	35	36	36	38	34	35	37
269	Non-participating	34	33	34	34	36	31	32	34
270	Non-participating	37	36	38	38	39	34	35	37
271	Non-participating	37	36	37	37	39	32	33	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
272	Non-participating	41	40	42	42	43	38	39	40
273	Non-participating	38	37	39	39	40	37	37	39
274	Participating	34	33	34	34	36	35	36	38
275	Participating	45	44	46	46	47	38	38	40
276	Non-participating	35	34	35	35	36	33	34	36
277	Participating	45	44	45	45	47	37	38	40
278	Non-participating	41	40	42	42	43	28	29	31
279	Participating	43	42	44	44	45	44	45	46
280	Participating	47	47	47	47	47	40	41	42
281	Non-participating	40	39	40	40	41	38	38	41
282	Participating	36	35	36	36	38	38	39	41
283	Non-participating	37	36	37	37	39	38	38	40
284	Non-participating	40	40	41	41	42	28	29	31
285	Non-participating	39	39	40	40	41	39	40	41
286	Non-participating	38	37	39	39	40	40	40	42
287	Non-participating	37	36	37	37	39	39	39	41
288	Participating	43	42	44	44	45	42	43	44
289	Non-participating	35	34	35	35	37	37	38	39
290	Non-participating	33	32	34	33	35	39	39	42
291	Non-participating	40	39	41	41	42	41	41	43
292	Non-participating	34	33	34	34	36	36	37	39
293	Non-participating	38	37	38	38	40	36	36	43
294	Participating	39	39	40	40	41	37	38	40
295	Non-participating	36	36	37	37	38	36	36	39
296	Participating	33	33	34	34	35	39	39	42
297	Non-participating	33	32	33	33	34	34	35	37
298	Participating	42	41	42	42	44	35	35	37
299	Non-participating	39	39	40	40	41	41	41	43
300	Non-participating	37	36	37	37	39	37	37	39
301	Non-participating	38	37	38	38	40	36	37	39
302	Non-participating	34	33	34	34	36	42	42	44
303	Non-participating	38	37	38	38	40	37	37	40
304	Non-participating	43	42	44	44	45	34	34	37
305	Participating	41	40	42	42	43	42	42	44
306	Non-participating	33	33	34	34	35	39	40	41

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
307	Non-participating	35	34	36	35	37	41	41	42
308	Non-participating	32	31	32	32	34	37	37	40
309	Non-participating	35	35	36	36	37	38	38	40
310	Participating	40	39	41	41	42	33	34	36
311	Non-participating	33	33	34	34	35	35	36	38
312	Non-participating	39	38	39	39	40	32	32	34
313	Non-participating	37	37	38	38	39	35	36	38
314	Non-participating	36	36	37	37	38	34	35	37
315	Non-participating	38	37	39	39	40	30	31	33
316	Non-participating	34	34	35	35	36	38	38	40
317	Non-participating	38	37	39	39	40	39	40	42
318	Non-participating	30	29	30	30	31	34	34	43
319	Non-participating	44	43	45	45	46	40	41	43
320	Non-participating	41	40	41	41	42	37	37	39
321	Non-participating	39	38	39	39	40	40	41	42
322	Non-participating	39	38	39	39	41	37	37	40
323	Non-participating	38	37	39	39	40	36	37	39
324	Participating	38	37	39	39	40	35	36	38
325	Participating	39	39	40	40	41	41	42	44
326	Non-participating	29	28	29	29	31	37	37	39
327	Non-participating	39	39	40	40	41	28	29	31
328	Non-participating	40	39	41	41	42	36	36	39
329	Non-participating	39	38	40	40	41	39	39	41
330	Non-participating	42	42	43	43	44	40	41	42
331	Non-participating	38	37	38	38	39	42	43	45
332	Participating	42	41	43	42	44	33	34	36
333	Non-participating	40	39	40	40	41	39	39	42
334	Participating	37	37	38	38	39	35	36	38
335	Non-participating	41	40	42	42	43	38	39	40
336	Participating	43	42	43	43	45	33	34	36
337	Non-participating	37	36	37	37	39	38	38	41
338	Non-participating	36	36	37	37	38	38	38	40
339	Non-participating	38	37	38	38	40	33	34	36
340	Non-participating	37	36	37	37	38	44	44	46
341	Non-participating	40	39	40	40	41	37	38	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
342	Non-participating	35	34	36	36	37	37	37	40
343	Non-participating	36	35	36	36	37	41	41	43
344	Non-participating	41	40	42	42	43	40	40	42
345	Non-participating	37	37	38	38	39	38	38	40
346	Non-participating	37	36	38	38	39	37	37	39
347	Non-participating	42	41	43	43	44	36	37	39
348	Non-participating	38	37	38	38	40	40	40	42
349	Non-participating	34	34	35	35	36	44	44	46
350	Participating	42	41	42	42	44	33	34	36
351	Non-participating	42	41	42	42	44	38	39	40
352	Non-participating	39	39	40	40	41	33	34	36
353	Non-participating	41	41	41	41	42	34	35	37
354	Non-participating	38	37	38	38	39	30	31	33
355	Non-participating	38	37	39	39	40	33	34	36
356	Non-participating	34	34	35	35	36	39	40	42
357	Non-participating	36	35	36	36	38	41	42	44
358	Non-participating	33	32	33	33	34	40	41	46
359	Non-participating	36	35	36	36	38	31	32	34
360	Participating	46	45	47	47	48	40	41	42
361	Non-participating	35	34	35	35	37	41	41	43
362	Participating	40	40	41	41	42	43	44	45
363	Non-participating	31	30	32	32	33	43	44	46
364	Non-participating	38	38	39	39	40	40	40	42
365	Participating	39	39	40	40	41	37	38	39
366	Non-participating	40	39	41	40	42	42	42	44
367	Non-participating	35	34	35	35	37	42	43	45
368	Non-participating	41	40	41	41	43	37	37	39
369	Non-participating	37	37	38	38	39	31	32	34
370	Participating	43	42	44	44	45	37	37	39
371	Non-participating	41	40	41	41	42	37	37	39
372	Participating	41	40	42	41	43	37	38	40
373	Non-participating	38	37	38	38	39	37	38	40
374	Non-participating	37	36	38	38	39	37	37	39
375	Non-participating	36	36	37	37	38	41	41	43
376	Non-participating	42	41	42	42	44	40	41	43

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
377	Participating	39	38	39	39	40	38	38	40
378	Non-participating	37	37	38	38	39	37	37	39
379	Non-participating	29	29	30	29	31	29	30	32
380	Participating	40	39	40	40	42	43	43	46
381	Non-participating	37	36	37	37	38	36	37	39
382	Participating	45	44	46	46	47	38	39	41
383	Non-participating	39	39	40	40	41	34	34	36
384	Non-participating	40	40	41	41	42	43	43	46
385	Non-participating	42	42	43	43	45	38	39	41
386	Non-participating	34	33	34	34	36	35	35	37
387	Participating	40	39	41	41	42	37	37	39
388	Non-participating	39	39	40	40	41	37	37	39
389	Non-participating	36	35	36	36	38	39	39	41
390	Participating	45	44	45	45	47	38	38	40
391	Non-participating	39	38	39	39	40	37	38	40
392	Non-participating	34	33	35	35	36	40	41	43
393	Non-participating	38	38	39	39	40	36	37	38
394	Non-participating	38	37	39	39	40	35	35	37
395	Non-participating	34	33	34	34	36	35	36	37
396	Non-participating	44	43	45	45	46	32	33	35
397	Non-participating	38	37	38	38	40	43	44	45
398	Non-participating	38	37	38	38	40	40	40	44
399	Participating	44	43	45	45	46	37	37	40
400	Non-participating	41	41	42	42	43	38	38	40
401	Non-participating	40	39	41	41	42	33	34	36
402	Non-participating	38	37	39	39	40	31	31	33
403	Non-participating	37	36	38	38	39	28	28	31
404	Participating	46	46	47	47	49	32	33	35
405	Non-participating	37	36	37	37	39	40	40	42
406	Non-participating	40	39	40	40	42	42	42	44
407	Non-participating	43	43	44	44	46	40	40	46
408	Participating	42	42	43	43	45	42	42	44
409	Non-participating	34	34	35	35	36	37	37	39
410	Non-participating	39	38	39	39	40	34	34	36
411	Non-participating	34	33	35	34	36	36	37	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
412	Participating	40	39	41	40	42	42	42	44
413	Non-participating	35	34	35	35	37	35	35	37
414	Non-participating	31	30	31	31	33	39	40	41
415	Non-participating	34	33	34	34	36	39	40	42
416	Non-participating	40	39	40	40	42	39	39	41
417	Non-participating	42	41	42	42	44	37	38	40
418	Non-participating	41	40	41	41	43	38	38	46
419	Non-participating	32	32	33	33	34	40	40	42
420	Non-participating	40	39	41	41	42	37	37	40
421	Non-participating	41	40	42	42	43	35	35	37
422	Non-participating	43	43	44	44	45	40	40	42
423	Non-participating	44	43	44	44	46	37	38	40
424	Participating	42	41	42	42	44	34	34	39
425	Non-participating	40	39	40	40	42	40	41	42
426	Non-participating	38	37	38	38	39	37	37	39
427	Participating	47	46	48	48	49	44	44	46
428	Non-participating	42	41	42	42	44	36	36	39
429	Non-participating	43	42	43	43	45	34	34	37
430	Participating	38	38	39	39	40	34	35	37
431	Participating	36	35	36	36	38	36	37	38
432	Non-participating	37	36	38	38	39	39	39	41
433	Non-participating	32	31	32	32	34	39	39	41
434	Non-participating	37	37	38	38	39	28	29	31
435	Non-participating	37	37	38	38	39	36	36	38
436	Participating	36	35	36	36	38	38	39	41
437	Participating	41	40	42	42	43	35	36	38
438	Non-participating	38	38	39	39	40	39	39	41
439	Non-participating	38	37	39	39	40	37	38	40
440	Non-participating	37	36	38	38	39	39	40	42
441	Non-participating	41	40	41	41	43	37	37	39
442	Participating	40	39	41	41	42	31	31	34
443	Non-participating	41	40	41	41	42	41	42	43
444	Non-participating	39	38	39	39	40	37	38	40
445	Non-participating	37	36	38	38	39	36	36	39
446	Non-participating	31	30	31	31	32	34	34	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
447	Non-participating	43	42	43	43	45	42	43	45
448	Non-participating	37	36	37	38	39	44	45	46
449	Non-participating	39	38	39	39	41	34	34	36
450	Non-participating	35	34	35	35	36	36	36	38
451	Non-participating	43	42	44	44	45	34	35	37
452	Non-participating	39	38	39	39	41	35	36	43
453	Non-participating	36	35	36	36	37	43	43	45
454	Participating	39	38	40	40	41	36	37	39
455	Participating	34	33	34	34	36	30	31	33
456	Non-participating	37	36	38	38	39	37	38	40
457	Non-participating	37	37	38	38	39	35	36	38
458	Non-participating	39	38	40	40	41	41	41	43
459	Non-participating	38	37	39	39	40	43	44	46
460	Non-participating	38	37	38	38	40	33	33	35
461	Non-participating	41	40	41	41	43	38	39	40
462	Non-participating	37	36	37	37	38	40	40	44
463	Non-participating	36	35	36	36	37	36	36	38
464	Non-participating	36	35	36	36	37	40	40	42
465	Non-participating	33	33	34	34	35	40	40	42
466	Non-participating	43	42	44	44	45	33	34	41
467	Non-participating	40	40	41	41	42	42	42	44
468	Non-participating	38	37	38	38	40	37	38	40
469	Non-participating	38	37	39	39	40	35	35	37
470	Non-participating	34	33	34	34	36	39	40	41
471	Non-participating	32	31	32	32	33	41	41	43
472	Non-participating	29	28	29	29	31	43	43	45
473	Non-participating	33	32	33	33	35	38	38	40
474	Non-participating	40	39	41	41	42	35	35	37
475	Non-participating	42	41	43	42	44	36	37	39
476	Non-participating	40	39	40	40	42	34	34	37
477	Non-participating	42	41	43	43	44	41	41	43
478	Non-participating	37	37	38	38	39	39	40	41
479	Participating	43	42	44	44	45	34	35	37
480	Non-participating	34	34	35	35	36	40	41	43
481	Non-participating	37	36	37	37	38	33	34	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
482	Non-participating	42	41	42	42	44	38	39	41
483	Non-participating	36	35	36	36	37	37	38	40
484	Non-participating	39	39	40	40	41	32	32	35
485	Non-participating	40	39	40	40	42	42	42	44
486	Non-participating	39	38	40	40	41	35	35	37
487	Participating	45	44	46	46	47	37	37	39
488	Non-participating	38	37	38	38	40	42	42	44
489	Non-participating	39	38	39	39	41	36	37	39
490	Non-participating	40	40	41	41	42	43	44	46
491	Non-participating	38	37	38	38	40	33	34	36
492	Participating	43	42	43	43	45	32	33	35
493	Non-participating	36	35	36	36	37	39	39	41
494	Non-participating	40	40	41	41	42	36	37	39
495	Non-participating	38	37	38	38	40	40	41	43
496	Participating	41	40	42	42	43	34	34	36
497	Non-participating	35	34	35	35	36	37	38	40
498	Non-participating	40	40	41	41	42	38	39	40
499	Non-participating	38	37	38	38	39	36	37	39
500	Participating	44	44	45	45	46	38	38	41
501	Non-participating	44	43	45	45	46	37	38	40
502	Non-participating	37	36	37	37	38	42	42	44
503	Participating	41	40	42	42	43	34	35	36
504	Non-participating	35	34	35	35	36	43	44	45
505	Participating	35	35	36	36	37	37	38	40
506	Non-participating	35	35	36	36	37	43	43	45
507	Non-participating	37	36	37	37	38	45	45	47
508	Non-participating	40	39	40	40	41	33	34	36
509	Non-participating	39	38	40	40	41	42	42	44
510	Participating	45	44	46	46	47	41	41	42
511	Non-participating	30	29	30	30	31	28	28	31
512	Non-participating	36	36	37	37	38	38	39	40
513	Non-participating	39	38	39	39	41	38	38	40
514	Non-participating	36	36	37	37	38	33	34	37
515	Non-participating	39	39	40	40	41	39	39	41
516	Non-participating	38	37	39	38	40	34	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
517	Participating	40	39	41	41	42	41	41	43
518	Participating	43	42	44	44	45	38	39	40
519	Participating	44	43	45	45	46	40	41	43
520	Non-participating	40	39	40	40	42	35	36	38
521	Non-participating	38	37	38	38	39	37	37	39
522	Non-participating	32	31	32	32	34	35	35	37
523	Non-participating	41	41	42	42	43	36	37	39
524	Non-participating	38	37	38	38	40	30	31	33
525	Non-participating	37	36	37	37	38	41	41	43
526	Non-participating	34	34	35	35	36	40	40	46
527	Participating	38	37	38	38	39	35	35	37
528	Non-participating	43	42	43	43	45	33	34	36
529	Non-participating	44	43	45	45	46	34	35	37
530	Non-participating	35	34	35	35	36	33	34	36
531	Non-participating	36	36	37	37	38	39	39	41
532	Non-participating	35	34	35	35	37	40	41	42
533	Non-participating	36	35	36	36	38	42	42	44
534	Non-participating	43	42	43	43	45	33	34	40
535	Participating	37	36	38	38	39	33	33	35
536	Non-participating	37	36	37	37	39	35	36	41
537	Non-participating	31	31	32	32	33	32	33	35
538	Non-participating	38	37	39	39	40	44	45	46
539	Non-participating	36	35	36	36	38	32	33	35
540	Non-participating	41	40	42	42	43	40	40	42
541	Non-participating	43	43	44	44	46	35	36	38
542	Non-participating	34	33	34	34	35	37	38	40
543	Non-participating	38	38	39	39	40	33	33	39
544	Non-participating	40	39	40	40	42	36	37	39
545	Non-participating	37	36	37	37	38	35	36	38
546	Non-participating	40	39	41	41	42	33	34	36
547	Non-participating	40	39	41	41	42	35	36	38
548	Non-participating	34	33	35	35	36	38	38	40
549	Non-participating	42	41	42	42	44	37	38	40
550	Non-participating	38	37	38	38	40	40	41	42
551	Non-participating	35	35	36	36	37	35	36	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
552	Non-participating	39	39	40	40	41	39	40	41
553	Non-participating	41	40	42	42	43	34	34	36
554	Non-participating	43	42	44	43	45	40	40	42
555	Non-participating	38	37	38	38	40	36	37	39
556	Non-participating	36	35	36	36	37	33	34	36
557	Non-participating	37	36	37	37	39	35	36	38
558	Non-participating	35	34	35	35	37	35	36	38
559	Non-participating	41	40	41	41	43	35	36	38
560	Non-participating	39	39	40	40	41	37	37	40
561	Non-participating	35	34	35	35	37	34	35	37
562	Participating	46	46	47	47	49	30	31	33
563	Participating	41	40	41	41	42	30	31	33
564	Non-participating	41	40	41	41	43	32	33	35
565	Non-participating	34	33	34	34	36	34	34	36
566	Non-participating	38	38	39	39	40	37	37	39
567	Non-participating	38	37	38	38	40	37	37	39
568	Non-participating	33	32	33	33	35	40	40	42
569	Non-participating	42	41	43	43	44	37	37	39
570	Participating	43	42	43	43	45	37	37	40
571	Participating	42	41	43	43	44	43	43	45
572	Non-participating	36	35	36	36	37	40	40	42
573	Non-participating	37	37	38	38	39	40	40	42
574	Non-participating	42	41	43	43	44	39	39	41
575	Non-participating	37	36	37	37	39	37	38	40
576	Non-participating	44	43	44	44	46	37	38	40
577	Non-participating	34	33	34	34	36	35	36	38
578	Non-participating	33	33	34	34	35	40	41	43
579	Non-participating	39	38	40	40	41	34	35	38
580	Participating	46	45	47	47	49	44	44	46
581	Participating	44	43	45	44	46	36	36	38
582	Non-participating	37	36	37	37	39	38	38	40
583	Non-participating	41	40	41	41	43	44	44	46
584	Non-participating	34	34	35	35	36	36	36	39
585	Non-participating	38	37	38	38	40	36	37	39
586	Participating	39	39	40	40	41	43	44	46

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
587	Participating	31	30	31	31	32	39	40	42
588	Non-participating	39	38	39	39	40	37	38	40
589	Non-participating	37	37	38	38	39	34	35	37
590	Non-participating	38	38	39	39	40	41	41	43
591	Participating	40	39	40	40	42	38	38	40
592	Non-participating	38	37	38	38	40	32	32	35
593	Participating	38	37	39	39	40	35	36	38
594	Non-participating	42	41	42	42	44	35	36	38
595	Non-participating	35	34	35	35	36	34	35	37
596	Non-participating	43	43	44	44	45	34	35	36
597	Non-participating	38	37	38	38	40	41	42	43
598	Non-participating	43	42	44	44	45	38	39	41
599	Non-participating	45	44	46	46	47	33	34	36
600	Non-participating	34	33	34	34	36	37	38	40
601	Non-participating	42	41	42	42	44	35	36	38
602	Non-participating	41	41	41	41	42	43	44	45
603	Non-participating	29	28	29	29	31	34	35	36
604	Non-participating	38	38	39	39	40	33	34	36
605	Participating	43	42	44	44	45	40	41	42
606	Non-participating	38	38	39	39	40	37	37	39
607	Non-participating	34	33	35	35	36	40	41	43
608	Participating	43	43	44	44	46	40	41	42
609	Non-participating	39	38	40	40	41	35	35	37
610	Non-participating	35	34	36	36	37	40	40	42
611	Non-participating	41	40	42	42	43	37	38	39
612	Participating	37	37	38	38	39	38	39	40
613	Non-participating	38	38	39	39	40	31	32	34
614	Participating	43	42	44	44	45	40	41	42
615	Non-participating	41	40	41	41	43	35	36	38
616	Non-participating	36	35	36	36	38	29	30	32
617	Participating	44	43	45	45	46	37	37	39
618	Non-participating	37	36	38	38	39	36	37	39
619	Non-participating	35	35	36	36	37	42	42	44
620	Participating	38	37	39	39	40	41	42	44
621	Non-participating	37	36	37	37	39	35	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
622	Participating	39	38	39	39	41	39	40	41
623	Non-participating	31	30	31	31	33	43	43	46
624	Participating	39	38	39	39	41	38	39	40
625	Non-participating	41	40	42	42	43	34	35	37
626	Non-participating	40	40	41	41	42	36	37	38
627	Non-participating	36	35	36	36	37	39	40	41
628	Participating	44	44	45	45	46	40	41	43
629	Non-participating	34	33	34	34	36	37	37	39
630	Participating	43	42	43	43	45	36	37	39
631	Participating	43	42	43	43	45	33	34	38
632	Non-participating	36	35	36	36	37	33	34	36
633	Non-participating	34	33	34	34	36	41	42	43
634	Non-participating	40	39	40	40	41	40	41	42
635	Non-participating	40	40	41	41	42	34	34	36
636	Non-participating	42	42	43	43	44	33	34	37
637	Non-participating	34	34	35	35	36	39	40	42
638	Non-participating	34	33	34	34	35	41	42	43
639	Non-participating	36	35	36	36	38	32	33	35
640	Non-participating	33	33	34	34	35	37	38	39
641	Non-participating	44	43	45	45	46	33	33	35
642	Non-participating	33	33	34	34	35	34	34	37
643	Non-participating	40	39	41	41	42	39	40	42
644	Non-participating	36	36	37	37	38	45	46	47
645	Non-participating	38	37	38	38	40	36	36	38
646	Non-participating	34	33	34	34	36	41	41	46
647	Non-participating	37	36	37	37	39	31	32	34
648	Participating	44	43	45	45	46	34	34	37
649	Non-participating	36	35	37	37	38	34	34	37
650	Participating	41	41	41	41	42	41	41	43
651	Non-participating	34	33	35	35	36	40	40	42
652	Participating	44	44	45	45	46	37	37	40
653	Participating	41	41	42	42	43	40	40	42
654	Non-participating	36	36	37	37	38	35	36	37
655	Non-participating	38	38	39	39	40	36	37	39
656	Non-participating	38	37	38	38	40	36	37	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
657	Participating	41	40	42	42	43	34	34	36
658	Non-participating	41	40	41	41	42	45	45	47
659	Participating	43	42	43	43	44	38	39	40
660	Non-participating	36	36	37	37	38	30	31	33
661	Non-participating	40	39	40	40	41	37	38	40
662	Non-participating	34	34	35	35	36	28	28	31
663	Non-participating	40	39	40	40	42	42	43	44
664	Non-participating	36	36	37	37	38	39	40	42
665	Participating	43	42	43	43	45	41	41	43
666	Non-participating	34	34	35	35	36	34	35	37
667	Non-participating	36	36	37	37	38	41	41	43
668	Non-participating	36	35	37	37	38	39	40	41
669	Non-participating	36	35	36	36	38	33	34	38
670	Non-participating	38	37	38	38	40	33	33	35
671	Non-participating	35	34	35	35	37	35	36	38
672	Participating	30	29	30	30	32	42	42	44
673	Non-participating	31	30	32	32	33	35	35	37
674	Non-participating	31	30	31	31	33	37	37	39
675	Non-participating	33	32	33	33	35	33	34	36
676	Non-participating	35	34	35	35	36	38	39	41
677	Non-participating	37	37	38	38	39	39	39	41
678	Non-participating	37	37	38	38	39	40	40	42
679	Non-participating	40	39	41	41	42	38	39	40
680	Non-participating	38	37	38	38	39	35	35	37
681	Non-participating	38	37	38	38	39	39	40	41
682	Non-participating	43	42	44	44	45	37	38	40
683	Participating	42	42	43	43	44	36	37	38
684	Non-participating	40	39	41	41	42	38	38	41
685	Non-participating	40	39	41	41	42	39	40	42
686	Non-participating	39	38	40	40	41	38	39	41
687	Non-participating	38	37	38	38	40	40	40	43
688	Participating	44	43	45	45	46	33	34	36
689	Non-participating	38	37	38	38	40	41	41	43
690	Non-participating	36	35	36	36	38	36	37	39
691	Non-participating	41	40	41	41	43	42	42	44

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
692	Non-participating	35	34	35	35	37	36	37	39
693	Non-participating	44	43	45	45	46	41	41	46
694	Non-participating	37	36	37	37	38	45	45	47
695	Non-participating	38	38	39	39	40	35	36	38
696	Non-participating	44	43	45	45	46	34	35	36
697	Non-participating	37	36	37	37	38	38	38	42
698	Non-participating	37	36	38	38	39	38	38	40
699	Non-participating	44	43	44	44	46	42	42	44
700	Participating	36	35	36	36	38	33	34	36
701	Non-participating	40	39	40	40	42	42	43	44
702	Non-participating	38	37	38	38	40	35	36	37
703	Non-participating	35	34	35	35	37	33	34	36
704	Non-participating	41	40	41	41	43	38	39	40
705	Non-participating	38	37	39	39	40	44	45	46
706	Participating	39	38	40	40	41	30	31	33
707	Non-participating	33	32	33	33	35	37	37	40
708	Non-participating	36	35	36	36	38	39	39	41
709	Non-participating	36	35	36	36	38	34	35	37
710	Participating	42	42	42	42	42	38	39	40
711	Non-participating	36	35	36	36	37	39	40	42
712	Non-participating	35	34	35	35	36	42	42	44
713	Non-participating	41	41	42	42	43	41	41	43
714	Non-participating	39	38	39	39	41	36	36	39
715	Non-participating	34	34	35	35	36	40	40	42
716	Non-participating	38	37	38	38	40	37	37	39
717	Non-participating	36	35	37	37	38	37	38	39
718	Non-participating	43	43	44	44	45	35	35	41
719	Non-participating	35	34	35	35	36	40	40	42
720	Participating	36	35	36	36	37	40	40	42
721	Non-participating	34	33	34	34	36	45	45	47
722	Non-participating	41	40	41	41	42	34	34	36
723	Non-participating	38	37	38	38	39	44	45	47
724	Non-participating	41	40	41	41	43	35	36	38
725	Non-participating	40	40	41	41	42	33	34	40
726	Non-participating	35	35	36	36	37	42	43	44

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
727	Participating	37	37	38	38	39	38	39	41
728	Participating	44	43	45	45	46	39	40	42
729	Non-participating	41	40	41	41	42	42	42	46
730	Non-participating	37	37	38	38	39	39	39	41
731	Non-participating	38	38	39	39	40	32	32	34
732	Non-participating	32	31	32	32	34	39	40	42
733	Participating	40	40	41	41	42	42	43	44
734	Non-participating	40	40	41	41	42	44	44	46
735	Non-participating	36	35	36	36	38	36	36	44
736	Non-participating	31	30	31	31	32	34	35	37
737	Non-participating	37	37	38	38	39	32	33	35
738	Non-participating	37	36	37	37	39	40	41	43
739	Non-participating	42	41	43	42	44	34	35	37
740	Non-participating	42	41	42	42	44	43	44	45
741	Non-participating	36	35	36	36	37	38	39	41
742	Non-participating	39	39	40	40	41	44	45	46
743	Non-participating	43	42	43	43	45	38	38	41
744	Non-participating	38	38	39	39	40	34	34	36
745	Non-participating	35	34	35	35	37	41	41	43
746	Non-participating	37	36	37	37	38	35	36	37
747	Non-participating	39	39	40	40	41	40	40	42
748	Non-participating	41	40	41	41	43	34	34	36
749	Non-participating	37	37	38	38	39	36	37	38
750	Non-participating	37	36	37	37	39	33	34	36
751	Non-participating	35	34	35	35	36	35	36	38
752	Participating	45	44	45	45	47	41	41	43
753	Participating	37	36	37	37	39	40	40	42
754	Non-participating	34	34	35	35	36	39	39	41
755	Non-participating	42	41	42	42	43	39	39	41
756	Non-participating	41	40	41	41	42	44	44	46
757	Non-participating	34	34	35	35	36	37	38	40
758	Non-participating	34	33	34	34	36	40	40	42
759	Non-participating	40	39	40	40	42	34	35	37
760	Non-participating	41	41	42	42	43	40	41	42
761	Participating	36	35	36	36	38	36	37	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
762	Participating	39	38	39	39	40	37	38	40
763	Non-participating	33	32	33	33	35	35	36	38
764	Non-participating	38	37	38	38	39	29	29	32
765	Non-participating	34	33	34	34	35	37	38	40
766	Participating	37	36	37	37	38	42	43	45
767	Non-participating	34	34	35	35	36	38	38	46
768	Participating	36	35	36	36	38	34	35	37
769	Non-participating	40	39	40	40	42	38	38	41
770	Non-participating	45	44	46	46	47	33	34	36
771	Non-participating	37	36	37	37	38	35	36	38
772	Non-participating	41	40	42	42	43	38	39	41
773	Non-participating	32	32	33	32	34	37	38	39
774	Non-participating	35	34	35	35	36	34	35	37
775	Non-participating	35	34	35	35	36	38	38	40
776	Non-participating	41	41	42	42	43	41	41	43
777	Non-participating	40	39	40	40	42	37	37	40
778	Non-participating	38	37	38	38	40	36	37	39
779	Participating	43	42	43	43	45	40	41	43
780	Non-participating	40	39	40	40	42	44	45	46
781	Participating	37	36	38	38	39	38	38	40
782	Non-participating	36	35	36	36	37	39	40	42
783	Non-participating	37	36	37	37	39	36	37	38
784	Non-participating	37	36	37	37	38	40	40	42
785	Participating	44	44	45	45	46	36	37	39
786	Non-participating	35	34	35	35	36	34	34	37
787	Non-participating	45	44	46	45	47	35	36	38
788	Participating	38	37	38	38	39	33	33	35
789	Non-participating	39	38	39	39	40	38	39	41
790	Non-participating	31	30	31	31	33	35	35	38
791	Non-participating	38	37	39	39	40	38	39	40
792	Non-participating	29	28	29	29	31	39	40	42
793	Participating	41	40	42	42	43	41	41	43
794	Non-participating	42	42	43	43	44	40	41	43
795	Non-participating	40	39	40	40	42	35	36	38
796	Non-participating	41	41	42	42	43	38	39	41

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
797	Non-participating	35	34	35	35	37	37	38	39
798	Non-participating	42	41	42	42	43	42	43	45
799	Non-participating	40	39	40	40	41	35	36	38
800	Non-participating	34	34	35	35	36	33	34	35
801	Participating	37	36	37	37	38	35	36	38
802	Non-participating	34	33	34	34	35	37	38	40
803	Non-participating	36	35	36	36	38	34	34	44
804	Non-participating	42	41	42	42	44	37	37	39
805	Non-participating	36	35	36	36	37	35	35	37
806	Non-participating	37	36	38	38	39	40	41	43
807	Non-participating	34	34	35	35	36	39	40	42
808	Non-participating	39	38	39	39	41	42	43	45
809	Non-participating	39	38	40	40	41	36	37	39
810	Non-participating	40	39	41	41	42	42	42	45
811	Non-participating	39	38	39	39	40	40	40	43
812	Non-participating	35	35	36	36	37	39	39	41
813	Non-participating	39	39	40	40	41	39	39	41
814	Non-participating	38	37	38	38	40	40	40	42
815	Non-participating	37	36	37	37	38	40	40	42
816	Non-participating	39	38	39	39	40	44	44	46
817	Non-participating	40	39	40	40	42	38	39	41
818	Non-participating	39	38	39	39	41	37	37	39
819	Non-participating	41	40	41	41	42	36	37	39
820	Non-participating	34	34	35	35	36	37	37	39
821	Non-participating	41	41	42	42	43	43	43	45
822	Non-participating	37	37	38	38	39	38	38	40
823	Participating	43	42	44	44	45	36	37	39
824	Non-participating	42	41	43	43	44	35	35	37
825	Non-participating	37	36	37	37	39	32	33	35
826	Non-participating	41	40	41	41	43	37	38	39
827	Non-participating	45	44	46	46	47	41	41	43
828	Non-participating	36	36	37	37	38	39	39	41
829	Non-participating	35	34	35	35	36	36	37	39
830	Non-participating	39	38	39	39	41	30	31	33
831	Non-participating	38	38	39	39	40	34	34	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
832	Non-participating	42	41	43	43	44	33	34	36
833	Non-participating	34	33	35	35	36	40	40	42
834	Non-participating	43	42	43	43	44	38	39	41
835	Non-participating	36	35	36	36	37	40	41	43
836	Non-participating	34	33	34	34	36	33	34	36
837	Non-participating	39	38	39	39	40	28	28	31
838	Non-participating	44	43	45	45	46	42	43	44
839	Non-participating	31	30	31	31	33	42	43	46
840	Non-participating	38	37	38	38	40	41	41	43
841	Non-participating	39	38	40	40	41	34	35	37
842	Non-participating	35	34	35	35	37	35	36	38
843	Non-participating	39	38	39	39	40	41	41	43
844	Non-participating	40	39	40	40	42	44	44	46
845	Non-participating	42	41	42	42	44	41	41	43
846	Non-participating	41	40	42	42	43	40	41	43
847	Non-participating	37	36	37	37	39	37	37	39
848	Non-participating	40	39	41	41	42	41	42	44
849	Non-participating	38	37	38	38	39	38	39	40
850	Participating	38	37	38	38	40	38	39	40
851	Non-participating	38	37	38	38	39	38	39	41
852	Non-participating	36	35	36	36	38	39	39	41
853	Non-participating	40	39	41	41	42	41	41	43
854	Non-participating	40	39	41	41	42	30	31	33
855	Non-participating	45	44	46	46	47	34	35	37
856	Non-participating	35	34	35	35	36	35	35	37
857	Non-participating	44	44	45	45	47	40	40	42
858	Non-participating	36	35	36	36	38	39	40	42
859	Non-participating	34	34	35	35	36	41	42	43
860	Participating	44	43	45	45	46	37	38	40
861	Non-participating	42	41	43	43	44	42	42	44
862	Non-participating	39	38	39	39	41	33	34	36
863	Non-participating	40	39	40	40	42	37	38	39
864	Non-participating	42	41	42	42	44	29	30	32
865	Non-participating	39	38	40	40	41	32	33	35
866	Participating	37	36	37	37	39	35	36	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
867	Non-participating	33	32	33	33	34	38	38	40
868	Non-participating	40	39	40	40	42	37	38	40
869	Non-participating	42	42	43	43	44	40	41	43
870	Non-participating	44	43	45	45	46	40	41	42
871	Participating	43	43	44	44	45	34	35	37
872	Non-participating	36	36	37	37	38	39	39	41
873	Participating	40	39	40	40	42	40	41	42
874	Non-participating	35	34	35	35	37	34	34	37
875	Non-participating	33	32	33	33	35	35	36	38
876	Non-participating	41	40	41	41	43	43	43	45
877	Non-participating	35	35	36	36	37	37	38	40
878	Participating	36	35	36	36	38	33	33	35
879	Participating	44	43	45	45	46	43	43	45
880	Non-participating	43	43	44	44	45	34	34	36
881	Non-participating	39	38	39	39	41	38	38	40
882	Non-participating	44	43	45	45	46	42	42	44
883	Non-participating	38	38	39	39	40	42	42	44
884	Non-participating	35	34	35	35	36	30	31	33
885	Non-participating	41	40	42	42	43	33	34	36
886	Non-participating	36	35	36	36	37	38	39	41
887	Non-participating	40	39	40	40	42	41	41	42
888	Non-participating	35	34	35	35	36	44	44	46
889	Participating	37	36	37	37	39	34	34	36
890	Non-participating	37	36	37	37	38	36	37	39
891	Non-participating	34	34	35	35	36	44	44	46
892	Non-participating	36	35	36	36	38	41	42	43
893	Non-participating	41	40	41	41	43	35	36	41
894	Non-participating	40	39	40	40	42	34	35	36
895	Non-participating	39	38	40	40	41	36	37	39
896	Non-participating	39	39	40	40	41	33	33	35
897	Non-participating	44	43	44	44	46	39	40	42
898	Non-participating	38	37	39	39	40	38	39	41
899	Non-participating	40	39	41	41	42	42	42	44
900	Non-participating	35	35	36	36	37	33	33	36
901	Non-participating	41	40	41	41	42	34	34	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
902	Non-participating	36	36	37	37	38	30	31	33
903	Participating	41	40	42	42	43	40	41	42
904	Non-participating	38	37	38	38	40	39	40	41
905	Non-participating	36	36	37	37	38	37	38	40
906	Non-participating	30	29	30	30	32	41	41	43
907	Non-participating	38	37	38	38	40	38	39	40
908	Non-participating	42	42	43	43	44	39	39	41
909	Non-participating	39	38	39	39	40	33	34	36
910	Non-participating	35	35	36	36	37	36	37	39
911	Participating	41	41	42	42	43	37	38	39
912	Non-participating	39	38	39	39	40	34	35	37
913	Non-participating	34	33	34	34	36	36	36	38
914	Participating	44	43	45	45	46	35	35	37
915	Non-participating	36	35	36	37	38	43	43	45
916	Non-participating	39	38	39	39	41	37	37	39
917	Non-participating	38	37	38	38	39	38	38	40
918	Non-participating	35	34	35	35	37	38	39	41
919	Non-participating	38	38	39	39	40	44	44	47
920	Participating	36	35	36	36	38	31	32	34
921	Non-participating	41	40	42	42	43	40	40	42
922	Non-participating	38	37	38	38	40	34	35	37
923	Participating	44	43	45	45	46	39	39	41
924	Non-participating	37	36	38	38	39	35	36	38
925	Non-participating	41	40	41	41	43	40	40	42
926	Participating	38	38	39	39	40	39	39	41
927	Non-participating	44	43	45	45	46	43	44	45
928	Non-participating	38	37	39	39	40	41	42	46
929	Non-participating	40	39	40	40	42	44	44	46
930	Non-participating	37	36	37	37	38	38	38	40
931	Non-participating	40	39	41	41	42	43	43	45
932	Participating	44	43	44	44	45	38	39	41
933	Non-participating	37	36	37	37	39	34	35	36
934	Non-participating	35	34	35	35	36	37	37	40
935	Non-participating	36	35	36	36	38	41	42	44
936	Non-participating	34	33	34	34	35	38	38	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
937	Non-participating	39	38	39	39	40	34	35	37
938	Participating	43	43	44	44	45	42	43	44
939	Non-participating	36	35	36	36	37	42	42	44
940	Participating	46	45	46	46	48	41	41	45
941	Participating	45	45	46	46	47	36	37	39
942	Non-participating	39	38	39	39	40	32	33	35
943	Participating	38	37	39	38	40	32	32	34
944	Non-participating	40	39	40	40	42	36	37	38
945	Non-participating	41	40	41	41	43	40	41	42
946	Non-participating	41	40	41	41	43	37	37	39
947	Non-participating	36	36	37	37	38	39	40	46
948	Participating	44	43	45	45	46	35	36	38
949	Non-participating	39	38	39	39	41	33	34	36
950	Non-participating	38	37	38	38	39	39	40	41
951	Non-participating	43	42	43	43	45	36	37	39
952	Non-participating	36	35	36	36	38	37	38	40
953	Non-participating	34	33	34	34	35	36	36	38
954	Non-participating	36	35	36	36	38	36	37	39
955	Non-participating	38	37	38	38	40	44	44	46
956	Participating	43	43	44	44	45	43	44	47
957	Participating	33	32	33	33	35	33	33	35
958	Participating	39	38	40	40	41	39	39	41
959	Non-participating	35	34	35	35	37	38	39	41
960	Non-participating	37	37	38	38	39	36	37	39
961	Participating	37	36	38	38	39	34	35	37
962	Participating	43	42	43	43	45	44	45	46
963	Non-participating	35	35	36	36	37	38	38	40
964	Non-participating	41	40	41	41	43	35	36	38
965	Non-participating	40	39	40	40	42	41	42	43
966	Non-participating	43	42	43	43	45	35	36	37
967	Non-participating	37	36	37	37	39	43	44	45
968	Non-participating	42	41	42	42	44	40	41	42
969	Non-participating	40	40	41	41	42	34	35	37
970	Non-participating	39	38	39	39	41	39	39	41
971	Participating	39	38	39	39	41	36	37	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
972	Non-participating	39	38	40	40	41	40	41	42
973	Non-participating	40	39	41	41	42	42	43	45
974	Non-participating	40	39	40	40	42	35	36	38
975	Non-participating	44	43	45	45	46	44	45	46
976	Non-participating	39	38	39	39	41	31	31	33
977	Non-participating	37	37	38	38	39	34	35	36
978	Non-participating	37	36	37	37	39	36	36	39
979	Non-participating	37	36	38	38	39	28	28	31
980	Non-participating	43	42	44	44	45	40	41	42
981	Non-participating	38	37	39	39	40	32	32	35
982	Non-participating	37	36	37	37	39	38	38	40
983	Non-participating	36	35	36	36	37	37	38	40
984	Non-participating	33	32	33	33	35	34	34	37
985	Non-participating	37	37	38	38	39	34	35	37
986	Non-participating	41	40	41	41	43	44	44	46
987	Non-participating	39	39	40	40	41	41	41	43
988	Non-participating	37	36	37	37	39	40	41	43
989	Non-participating	31	30	32	32	33	44	44	46
990	Non-participating	34	34	35	35	36	38	38	40
991	Non-participating	35	34	35	35	36	34	35	37
992	Non-participating	40	39	41	41	42	42	43	46
993	Non-participating	39	39	40	40	41	36	37	39
994	Non-participating	41	40	41	41	43	46	47	48
995	Non-participating	34	33	34	35	36	34	34	37
996	Non-participating	29	28	29	29	31	39	39	41
997	Non-participating	42	41	43	43	44	34	35	37
998	Participating	46	45	47	47	48	34	35	37
999	Non-participating	43	42	43	43	45	41	41	43
1000	Non-participating	41	40	41	41	43	40	41	43
1001	Non-participating	35	34	35	35	37	34	34	36
1002	Non-participating	36	35	37	37	38	39	40	42
1003	Non-participating	41	40	41	41	43	38	38	40
1004	Non-participating	44	43	44	44	46	41	41	45
1005	Non-participating	41	40	41	41	43	40	40	46
1006	Non-participating	41	40	41	41	43	33	34	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1007	Non-participating	37	37	38	38	39	40	40	42
1008	Non-participating	42	41	42	42	44	37	37	39
1009	Non-participating	38	38	39	39	40	40	40	42
1010	Non-participating	39	38	39	39	40	38	39	40
1011	Non-participating	39	38	39	39	41	39	40	42
1012	Non-participating	39	38	40	40	41	34	34	37
1013	Participating	46	45	47	47	48	36	37	38
1014	Non-participating	41	40	42	42	43	35	35	37
1015	Non-participating	31	31	32	32	33	35	36	37
1016	Non-participating	35	34	35	35	37	43	44	46
1017	Non-participating	36	35	36	36	37	44	45	46
1018	Non-participating	40	40	41	41	42	34	35	37
1019	Non-participating	40	39	40	40	42	35	36	38
1020	Non-participating	41	41	42	42	43	34	34	37
1021	Non-participating	38	37	38	38	40	34	35	37
1022	Non-participating	42	41	43	43	44	33	34	36
1023	Non-participating	34	33	34	34	36	40	41	42
1024	Participating	40	39	40	40	42	37	38	40
1025	Non-participating	38	37	38	38	39	33	34	36
1026	Non-participating	31	30	31	31	32	33	34	36
1027	Non-participating	33	32	33	33	35	39	40	42
1028	Non-participating	36	35	36	36	38	31	31	34
1029	Non-participating	38	37	39	39	40	35	35	37
1030	Participating	44	44	45	45	47	40	41	42
1031	Non-participating	38	37	38	38	40	40	40	42
1032	Non-participating	41	40	41	41	43	35	36	38
1033	Non-participating	40	40	41	41	42	37	38	40
1034	Non-participating	35	34	35	35	37	29	30	32
1035	Non-participating	39	38	40	40	41	33	34	37
1036	Non-participating	40	40	41	41	42	41	41	45
1037	Non-participating	35	34	35	35	36	37	38	40
1038	Participating	42	41	42	42	44	33	34	36
1039	Non-participating	36	35	37	37	38	36	37	39
1040	Non-participating	43	42	44	44	45	33	34	35
1041	Non-participating	38	37	38	38	40	36	37	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1042	Non-participating	34	33	34	34	35	39	40	42
1043	Participating	46	46	47	47	49	42	43	45
1044	Non-participating	43	42	43	43	45	42	43	44
1045	Participating	44	44	45	45	46	32	33	36
1046	Non-participating	35	34	35	35	36	38	39	41
1047	Non-participating	39	38	39	39	40	35	36	38
1048	Non-participating	42	41	43	43	44	31	31	34
1049	Non-participating	42	41	43	43	44	38	39	41
1050	Non-participating	31	31	32	32	33	37	37	40
1051	Non-participating	34	33	34	34	36	34	35	37
1052	Non-participating	39	38	39	39	41	32	33	35
1053	Non-participating	41	40	41	41	42	38	38	40
1054	Participating	39	38	39	39	41	41	41	43
1055	Non-participating	44	43	45	45	46	33	34	36
1056	Participating	47	46	48	48	49	33	34	35
1057	Non-participating	35	34	35	35	36	39	39	41
1058	Non-participating	37	36	37	37	39	36	37	39
1059	Non-participating	44	43	44	44	46	38	38	41
1060	Non-participating	41	41	42	42	43	40	41	43
1061	Non-participating	36	35	37	37	38	35	35	37
1062	Non-participating	35	34	35	35	36	36	37	39
1063	Non-participating	37	36	37	37	39	42	42	45
1064	Non-participating	34	33	34	34	35	41	41	43
1065	Non-participating	40	39	40	40	42	39	39	41
1066	Non-participating	39	38	39	39	41	37	37	39
1067	Participating	44	43	45	45	46	36	36	39
1068	Non-participating	42	41	42	42	44	44	44	46
1069	Non-participating	34	33	34	34	35	36	36	38
1070	Non-participating	35	34	35	35	37	37	38	40
1071	Non-participating	31	31	32	32	33	34	34	37
1072	Non-participating	40	40	41	41	42	33	34	36
1073	Non-participating	39	39	40	40	41	39	40	42
1074	Non-participating	38	37	38	38	40	40	41	42
1075	Non-participating	41	41	42	42	43	37	38	40
1076	Non-participating	38	38	39	39	40	38	39	41

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1077	Non-participating	39	38	40	40	41	38	38	40
1078	Non-participating	34	33	35	34	36	41	42	44
1079	Non-participating	37	36	37	37	39	40	40	42
1080	Participating	37	37	38	38	39	34	35	36
1081	Non-participating	38	37	38	38	39	37	37	39
1082	Participating	43	43	44	44	45	37	37	39
1083	Non-participating	35	34	35	35	37	39	40	42
1084	Non-participating	36	36	37	37	38	31	32	34
1085	Participating	43	42	44	44	45	33	34	36
1086	Non-participating	36	35	36	36	37	36	36	38
1087	Non-participating	43	42	43	43	45	33	33	35
1088	Non-participating	37	37	38	38	39	36	37	38
1089	Non-participating	38	37	39	39	40	40	41	42
1090	Non-participating	39	38	39	39	41	35	36	38
1091	Non-participating	44	43	45	45	46	42	42	44
1092	Participating	36	35	36	36	37	44	44	46
1093	Non-participating	33	32	33	33	34	35	36	38
1094	Non-participating	40	39	41	41	42	40	41	42
1095	Non-participating	35	34	35	35	37	43	43	46
1096	Participating	45	45	46	46	48	40	41	43
1097	Non-participating	39	38	40	40	41	36	36	38
1098	Participating	44	43	44	44	46	39	39	41
1099	Non-participating	36	35	36	36	38	37	38	40
1100	Participating	36	36	37	37	38	43	44	45
1101	Non-participating	40	39	40	40	42	40	40	42
1102	Non-participating	39	38	40	40	41	33	34	36
1103	Non-participating	43	43	44	44	45	39	40	41
1104	Participating	46	45	47	47	48	37	37	42
1105	Non-participating	42	41	42	42	44	42	42	46
1106	Non-participating	44	43	45	45	46	34	35	37
1107	Non-participating	38	38	39	39	40	38	38	40
1108	Participating	39	38	40	40	41	36	36	38
1109	Non-participating	43	42	44	43	45	36	37	38
1110	Non-participating	39	38	39	39	41	38	39	40
1111	Participating	39	38	40	40	41	33	34	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1112	Non-participating	35	34	35	35	36	32	32	34
1113	Non-participating	38	37	38	38	39	37	38	40
1114	Non-participating	42	41	42	42	44	39	40	41
1115	Non-participating	38	38	39	39	40	35	36	37
1116	Non-participating	36	35	36	36	37	32	32	34
1117	Non-participating	43	42	43	43	44	40	40	42
1118	Non-participating	42	41	42	42	44	37	38	40
1119	Non-participating	41	40	41	41	43	33	34	39
1120	Non-participating	37	36	37	37	39	34	34	36
1121	Non-participating	33	32	33	33	35	38	38	40
1122	Non-participating	33	32	33	33	34	37	37	39
1123	Non-participating	37	36	37	37	38	34	35	37
1124	Participating	39	38	39	39	41	41	42	43
1125	Non-participating	40	40	41	41	42	31	31	33
1126	Non-participating	37	36	38	38	39	42	42	44
1127	Non-participating	40	39	40	40	42	42	42	44
1128	Non-participating	36	36	37	37	38	36	36	39
1129	Non-participating	34	33	34	34	36	34	34	37
1130	Non-participating	39	39	40	40	41	35	35	38
1131	Participating	45	44	46	46	47	39	39	41
1132	Non-participating	37	36	38	38	39	44	44	46
1133	Non-participating	38	37	38	38	40	36	37	39
1134	Non-participating	36	36	37	37	38	36	37	39
1135	Non-participating	37	36	37	37	39	38	39	40
1136	Non-participating	44	43	45	45	46	42	42	44
1137	Non-participating	43	43	44	44	46	41	41	43
1138	Non-participating	33	33	34	34	35	35	36	38
1139	Non-participating	39	38	40	40	41	41	42	44
1140	Non-participating	39	38	39	39	41	36	37	39
1141	Non-participating	37	36	37	37	39	39	39	41
1142	Non-participating	35	35	36	36	37	39	39	41
1143	Non-participating	44	43	45	45	46	44	44	46
1144	Non-participating	38	38	39	39	40	36	36	39
1145	Non-participating	36	35	36	36	38	45	45	47
1146	Non-participating	41	41	42	42	43	30	30	32

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1147	Non-participating	36	35	36	36	37	44	45	46
1148	Non-participating	43	42	44	44	45	33	34	36
1149	Non-participating	41	40	41	41	42	34	35	37
1150	Non-participating	35	34	35	35	37	34	35	37
1151	Participating	45	44	46	45	47	34	35	37
1152	Participating	36	35	36	36	37	44	44	46
1153	Non-participating	39	38	39	39	41	41	41	43
1154	Non-participating	37	36	37	37	39	36	36	43
1155	Non-participating	40	40	41	41	42	46	47	48
1156	Non-participating	43	42	43	43	45	34	35	37
1157	Non-participating	36	35	37	36	38	43	43	45
1158	Non-participating	44	43	45	45	46	34	35	37
1159	Non-participating	32	31	32	32	33	37	37	40
1160	Non-participating	35	34	35	35	36	42	42	44
1161	Non-participating	37	36	37	37	39	35	36	37
1162	Participating	40	39	41	40	42	28	29	31
1163	Non-participating	29	28	29	29	31	39	40	42
1164	Non-participating	40	39	41	41	42	40	40	42
1165	Non-participating	33	32	33	33	35	43	44	46
1166	Non-participating	38	38	39	39	40	39	39	41
1167	Non-participating	38	37	38	38	40	34	34	37
1168	Non-participating	34	34	35	35	36	43	43	45
1169	Participating	43	42	44	44	45	39	39	41
1170	Non-participating	35	34	35	35	37	33	34	36
1171	Non-participating	44	43	45	45	46	31	32	34
1172	Non-participating	41	40	42	42	43	35	36	38
1173	Non-participating	41	40	41	41	43	41	41	45
1174	Non-participating	44	43	45	45	46	43	43	45
1175	Non-participating	38	38	39	39	40	36	36	39
1176	Non-participating	35	34	35	35	37	35	36	39
1177	Non-participating	42	42	43	43	45	36	37	39
1178	Non-participating	37	36	37	37	39	38	38	40
1179	Non-participating	46	45	47	47	48	34	34	36
1180	Non-participating	35	34	35	35	36	34	35	37
1181	Non-participating	39	38	40	40	41	37	38	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1182	Non-participating	35	34	35	35	37	35	36	37
1183	Participating	43	42	43	43	45	34	34	36
1184	Non-participating	35	34	35	35	37	39	39	41
1185	Non-participating	41	40	42	42	43	42	42	44
1186	Non-participating	41	40	41	41	43	41	41	43
1187	Non-participating	35	34	35	35	36	35	36	38
1188	Non-participating	40	39	40	40	42	36	37	39
1189	Non-participating	38	37	39	39	40	38	38	40
1190	Non-participating	41	41	42	42	43	34	35	36
1191	Non-participating	40	39	41	41	42	35	35	38
1192	Non-participating	34	33	35	35	36	41	42	43
1193	Non-participating	40	40	41	41	42	31	31	34
1194	Non-participating	37	37	38	38	39	37	37	40
1195	Non-participating	40	39	41	41	42	43	43	45
1196	Non-participating	38	38	39	39	40	37	38	40
1197	Non-participating	40	39	40	40	42	39	39	41
1198	Participating	37	37	38	38	39	42	42	44
1199	Non-participating	34	34	35	35	36	33	34	36
1200	Non-participating	37	36	37	37	38	38	39	41
1201	Non-participating	36	35	36	36	37	35	36	38
1202	Non-participating	36	35	36	36	37	42	42	44
1203	Non-participating	44	43	44	44	46	35	35	37
1204	Non-participating	44	44	45	45	46	39	40	42
1205	Non-participating	35	34	35	35	37	41	41	43
1206	Non-participating	36	35	36	36	38	38	39	40
1207	Non-participating	35	34	35	35	36	39	40	42
1208	Non-participating	35	34	35	35	37	42	42	44
1209	Non-participating	34	34	35	35	36	37	37	40
1210	Non-participating	40	39	41	41	42	32	33	36
1211	Participating	43	42	43	43	45	35	35	37
1212	Non-participating	38	37	39	39	40	36	37	39
1213	Non-participating	34	34	35	35	36	42	42	44
1214	Non-participating	34	34	35	35	36	30	31	33
1215	Non-participating	40	39	40	40	42	33	34	36
1216	Non-participating	32	31	32	32	34	37	38	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1217	Non-participating	36	35	36	36	37	34	34	37
1218	Non-participating	40	40	41	41	42	38	39	41
1219	Non-participating	40	39	41	41	42	35	36	38
1220	Non-participating	36	35	36	36	38	34	35	37
1221	Non-participating	38	37	38	38	40	39	39	41
1222	Non-participating	30	30	31	30	32	44	44	46
1223	Non-participating	35	34	35	35	36	39	39	41
1224	Non-participating	41	40	42	41	43	42	42	44
1225	Non-participating	38	37	39	39	40	40	41	43
1226	Participating	35	34	36	36	37	38	39	41
1227	Non-participating	34	33	35	34	36	42	42	44
1228	Participating	45	45	46	46	48	40	41	43
1229	Participating	43	42	43	43	45	41	41	43
1230	Non-participating	37	37	38	38	39	29	30	32
1231	Participating	45	44	46	46	47	33	34	36
1232	Non-participating	34	33	34	34	35	37	37	40
1233	Participating	36	35	36	36	37	38	39	41
1234	Participating	39	38	40	39	41	34	35	37
1235	Non-participating	37	36	37	37	39	41	42	44
1236	Participating	44	44	45	45	47	46	46	48
1237	Participating	44	43	45	45	46	34	34	36
1238	Non-participating	40	39	40	40	42	36	36	38
1239	Non-participating	42	42	43	43	45	35	36	38
1240	Participating	45	44	45	45	47	37	38	39
1241	Participating	39	38	39	39	40	30	31	33
1242	Non-participating	42	41	43	43	44	36	36	39
1243	Non-participating	33	32	33	33	35	35	35	37
1244	Participating	38	37	39	39	40	37	38	40
1245	Non-participating	39	38	39	39	41	39	40	41
1246	Non-participating	36	35	36	36	38	41	41	43
1247	Non-participating	32	31	32	32	34	33	34	37
1248	Non-participating	39	38	39	39	41	40	40	42
1249	Non-participating	38	37	38	38	39	33	34	36
1250	Non-participating	35	34	36	36	37	31	32	34
1251	Non-participating	33	32	34	33	35	39	39	41

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1252	Non-participating	38	38	39	39	40	39	40	41
1253	Non-participating	41	40	42	42	43	41	41	43
1254	Participating	39	38	39	39	41	43	44	46
1255	Non-participating	34	33	34	34	36	36	36	44
1256	Non-participating	34	33	34	34	35	43	44	45
1257	Non-participating	39	38	40	40	41	35	35	37
1258	Non-participating	37	36	37	37	39	35	35	37
1259	Non-participating	39	38	39	39	40	34	34	37
1260	Non-participating	40	40	41	41	43	33	34	36
1261	Participating	35	34	35	35	36	32	33	35
1262	Non-participating	35	35	36	36	37	41	41	43
1263	Non-participating	37	36	37	37	39	44	45	46
1264	Non-participating	42	42	43	43	44	29	30	32
1265	Participating	43	42	44	44	45	44	44	46
1266	Non-participating	41	40	42	42	43	36	37	39
1267	Non-participating	39	38	40	40	41	42	42	44
1268	Non-participating	37	36	38	38	39	42	43	45
1269	Participating	44	43	45	45	46	35	36	37
1270	Non-participating	37	36	37	37	38	34	34	36
1271	Non-participating	44	43	44	44	46	31	32	34
1272	Non-participating	36	36	37	37	38	34	35	37
1273	Non-participating	38	37	38	38	40	43	44	46
1274	Non-participating	34	34	35	35	36	33	34	36
1275	Non-participating	34	34	35	35	36	36	36	38
1276	Non-participating	40	39	40	40	42	34	35	37
1277	Non-participating	40	39	41	41	42	33	34	36
1278	Non-participating	38	37	38	38	40	37	38	40
1279	Non-participating	39	38	39	39	41	40	40	42
1280	Non-participating	38	37	39	39	40	37	38	39
1281	Participating	36	36	37	37	38	41	42	44
1282	Non-participating	42	41	42	42	44	37	37	39
1283	Non-participating	40	39	41	41	42	41	42	43
1284	Participating	40	39	40	40	41	34	35	37
1285	Participating	42	41	42	42	44	40	40	42
1286	Participating	38	37	38	38	40	38	39	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1287	Non-participating	35	34	35	35	36	37	37	39
1288	Non-participating	37	37	38	38	39	34	35	37
1289	Non-participating	38	37	38	38	39	34	35	37
1290	Non-participating	40	39	40	40	42	39	40	42
1291	Non-participating	32	31	33	32	34	39	39	41
1292	Participating	38	37	38	38	40	44	44	46
1293	Non-participating	34	34	35	35	36	40	40	42
1294	Participating	37	36	37	37	38	38	38	40
1295	Participating	37	36	37	37	39	33	34	36
1296	Participating	36	35	36	36	37	40	41	42
1297	Non-participating	36	35	37	37	38	39	39	41
1298	Non-participating	34	33	34	34	35	34	34	37
1299	Non-participating	37	36	37	37	38	39	40	41
1300	Participating	43	42	44	44	45	38	39	41
1301	Participating	45	44	46	46	47	42	42	44
1302	Non-participating	40	39	41	41	42	37	38	40
1303	Participating	39	39	40	40	41	34	35	37
1304	Non-participating	36	36	37	37	38	35	36	38
1305	Non-participating	42	41	42	42	44	35	36	38
1306	Non-participating	44	43	45	45	46	36	37	39
1307	Non-participating	36	36	37	37	38	38	39	40
1308	Non-participating	41	40	41	41	42	33	33	39
1309	Non-participating	43	43	44	44	45	34	34	37
1310	Non-participating	41	40	41	41	43	40	40	42
1311	Non-participating	36	35	37	37	38	31	32	34
1312	Non-participating	39	38	40	40	41	39	39	41
1313	Non-participating	38	37	38	38	40	31	32	34
1314	Non-participating	44	43	44	44	45	35	36	38
1315	Non-participating	40	39	40	40	42	36	37	39
1316	Non-participating	34	33	34	34	36	36	37	39
1317	Non-participating	40	39	40	40	41	35	36	38
1318	Non-participating	38	37	38	38	40	37	38	40
1319	Non-participating	42	41	43	42	44	34	34	44
1320	Non-participating	35	34	35	35	37	42	43	44
1321	Non-participating	39	38	39	39	40	35	36	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1322	Non-participating	37	36	37	37	38	40	40	42
1323	Non-participating	37	36	37	37	38	38	39	40
1324	Participating	41	40	42	42	43	38	38	40
1325	Non-participating	38	38	39	39	40	40	41	43
1326	Non-participating	34	33	34	34	36	31	32	34
1327	Non-participating	33	32	33	33	34	34	35	37
1328	Non-participating	38	37	38	38	40	44	45	46
1329	Participating	44	44	44	44	44	35	36	38
1330	Non-participating	39	39	40	40	41	43	44	45
1331	Participating	45	45	46	46	48	40	41	46
1332	Non-participating	36	35	36	36	37	42	42	44
1333	Non-participating	33	32	33	33	34	39	40	42
1334	Non-participating	40	39	40	40	42	36	37	39
1335	Non-participating	38	37	38	38	40	36	36	39
1336	Non-participating	34	33	35	35	36	44	45	46
1337	Non-participating	35	34	35	35	36	42	42	45
1338	Non-participating	38	37	39	39	40	37	38	40
1339	Non-participating	37	37	38	38	39	38	39	41
1340	Non-participating	35	35	36	36	37	40	40	44
1341	Non-participating	41	41	42	42	43	34	35	37
1342	Non-participating	32	31	32	32	33	35	36	37
1343	Non-participating	42	41	43	43	44	36	37	38
1344	Non-participating	42	41	42	42	44	32	32	35
1345	Non-participating	37	36	37	37	38	39	39	41
1346	Non-participating	35	34	35	35	37	45	45	47
1347	Non-participating	36	35	36	36	38	33	34	36
1348	Non-participating	39	39	40	40	41	35	35	37
1349	Participating	36	35	36	36	38	41	41	43
1350	Non-participating	44	43	45	44	46	45	46	47
1351	Non-participating	37	36	37	37	39	33	34	38
1352	Non-participating	37	36	37	37	39	36	37	39
1353	Non-participating	39	38	39	39	40	36	37	39
1354	Participating	37	37	38	38	39	35	36	38
1355	Non-participating	42	41	43	43	44	39	39	41
1356	Non-participating	41	40	41	41	43	42	42	44

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1357	Non-participating	36	35	36	36	38	36	37	38
1358	Non-participating	42	41	42	42	44	38	39	41
1359	Non-participating	37	36	38	37	39	38	38	40
1360	Non-participating	39	38	40	40	41	40	41	42
1361	Non-participating	39	38	39	39	41	37	37	39
1362	Non-participating	44	43	44	44	46	42	42	44
1363	Non-participating	37	36	37	37	38	35	36	37
1364	Non-participating	45	44	46	46	47	42	43	44
1365	Non-participating	31	30	31	31	32	40	41	42
1366	Non-participating	44	43	45	45	46	38	38	41
1367	Non-participating	34	33	34	34	36	34	35	37
1368	Non-participating	36	35	36	36	37	37	38	40
1369	Non-participating	35	34	35	35	37	37	38	39
1370	Non-participating	35	34	35	35	37	40	41	43
1371	Non-participating	44	43	44	44	46	35	36	38
1372	Non-participating	41	40	42	42	43	42	42	44
1373	Participating	35	34	35	35	37	33	34	36
1374	Non-participating	37	36	37	37	38	34	35	37
1375	Non-participating	46	45	47	47	48	37	38	40
1376	Non-participating	35	34	35	35	37	38	38	40
1377	Non-participating	43	42	44	44	45	40	41	43
1378	Non-participating	35	34	35	35	37	38	38	41
1379	Non-participating	38	37	38	38	40	38	39	41
1380	Non-participating	42	41	42	42	44	35	36	38
1381	Non-participating	36	35	36	36	37	41	41	42
1382	Non-participating	29	28	29	29	31	34	34	37
1383	Non-participating	40	39	40	40	42	34	34	37
1384	Non-participating	40	40	41	41	42	36	36	39
1385	Non-participating	44	43	44	44	46	43	43	45
1386	Participating	37	36	38	38	39	35	36	37
1387	Non-participating	39	39	40	40	41	38	38	40
1388	Non-participating	35	34	35	35	36	38	39	41
1389	Non-participating	43	42	43	43	45	38	39	40
1390	Non-participating	39	38	40	40	41	36	37	38
1391	Non-participating	34	33	34	34	36	33	33	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1392	Participating	37	36	37	37	38	40	40	43
1393	Non-participating	32	31	32	32	34	35	36	37
1394	Non-participating	36	36	37	37	38	33	34	37
1395	Non-participating	41	41	42	42	43	34	35	37
1396	Non-participating	43	42	44	44	45	35	36	38
1397	Non-participating	37	36	37	37	39	40	41	42
1398	Non-participating	36	35	37	37	38	40	41	42
1399	Non-participating	37	36	37	37	39	35	36	38
1400	Non-participating	38	38	39	39	40	31	32	34
1401	Non-participating	35	34	35	35	36	33	34	36
1402	Non-participating	35	34	36	35	37	34	35	37
1403	Participating	36	35	36	36	38	40	40	42
1404	Non-participating	38	37	38	38	39	39	39	41
1405	Non-participating	36	35	36	36	37	42	42	45
1406	Participating	45	44	46	46	47	29	29	40
1407	Non-participating	35	34	35	35	36	32	33	35
1408	Non-participating	39	39	40	40	41	29	30	32
1409	Participating	38	37	38	38	39	35	36	38
1410	Non-participating	42	41	43	43	44	31	32	34
1411	Non-participating	41	40	41	41	43	29	30	37
1412	Non-participating	36	35	36	36	38	26	27	29
1413	Participating	36	35	36	36	38	31	31	38
1414	Non-participating	37	36	38	38	39	33	34	36
1415	Non-participating	38	38	39	39	40	33	33	35
1416	Non-participating	35	34	35	35	36	31	32	34
1417	Non-participating	35	35	36	36	37	31	31	36
1418	Non-participating	41	40	42	42	43	32	33	36
1419	Non-participating	32	31	32	32	34	30	30	33
1420	Participating	40	40	41	41	42	29	29	32
1421	Non-participating	38	37	38	38	40	33	34	36
1422	Non-participating	43	42	44	44	45	28	29	31
1423	Non-participating	38	37	38	38	40	31	32	34
1424	Participating	38	38	39	39	40	31	32	34
1425	Non-participating	40	39	40	40	41	30	31	46
1426	Non-participating	42	41	42	42	44	27	28	31

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1427	Non-participating	34	34	35	35	36	32	33	36
1428	Non-participating	39	38	39	39	41	35	36	38
1429	Non-participating	36	35	37	37	38	33	34	36
1430	Non-participating	42	41	43	42	44	23	24	27
1431	Participating	44	43	45	45	46	27	28	30
1432	Non-participating	35	35	36	36	37	30	30	34
1433	Non-participating	40	39	40	40	42	33	34	36
1434	Non-participating	41	40	42	42	43	24	25	27
1435	Non-participating	38	38	39	39	40	33	34	36
1436	Participating	39	38	39	39	40	32	32	37
1437	Non-participating	40	39	40	40	42	32	33	39
1438	Non-participating	42	41	43	43	44	30	31	36
1439	Non-participating	38	37	38	38	40	33	33	35
1440	Non-participating	33	32	33	33	35	30	31	33
1441	Participating	41	40	41	41	43	30	31	44
1442	Participating	42	42	43	43	45	31	32	34
1443	Non-participating	35	35	36	36	37	28	29	31
1444	Non-participating	37	37	38	38	39	32	33	35
1445	Participating	46	45	47	47	48	30	31	33
1446	Non-participating	42	42	43	43	44	34	35	37
1447	Non-participating	31	30	31	31	33	29	30	32
1448	Non-participating	34	33	34	34	36	32	33	35
1449	Non-participating	38	37	39	39	40	32	33	35
1450	Non-participating	35	34	35	35	37	30	30	43
1451	Non-participating	39	38	39	39	41	31	31	44
1452	Participating	40	39	41	41	42	27	28	30
1453	Non-participating	36	35	36	37	38	31	32	37
1454	Non-participating	35	34	35	35	37	29	30	32
1455	Non-participating	39	39	40	40	41	32	32	35
1456	Non-participating	44	43	45	44	46	30	30	43
1457	Non-participating	39	38	40	40	41	32	32	46
1458	Non-participating	42	41	42	42	44	28	29	33
1459	Non-participating	41	40	41	41	43	31	32	37
1460	Non-participating	39	38	39	39	41	30	30	36
1461	Non-participating	42	41	43	43	44	34	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1462	Non-participating	41	40	41	41	43	29	30	46
1463	Non-participating	41	41	42	42	43	27	28	33
1464	Non-participating	31	30	31	31	32	36	37	38
1465	Non-participating	34	33	34	34	36	31	31	36
1466	Non-participating	38	37	38	38	39	32	33	35
1467	Non-participating	39	38	39	39	41	32	33	35
1468	Participating	43	42	44	44	45	28	28	31
1469	Non-participating	35	34	35	35	37	31	32	34
1470	Non-participating	42	41	42	42	44	33	34	36
1471	Participating	54	54	54	54	54	29	30	32
1472	Participating	43	43	44	44	45	30	31	33
1473	Non-participating	46	45	47	47	48	31	31	36
1474	Non-participating	35	34	35	35	36	32	32	34
1475	Non-participating	36	35	37	37	38	31	32	34
1476	Non-participating	36	35	37	36	38	31	32	34
1477	Non-participating	38	37	38	38	39	30	30	36
1478	Participating	43	42	44	44	45	33	34	36
1479	Non-participating	31	30	32	32	33	34	35	37
1480	Non-participating	36	35	37	37	38	30	31	44
1481	Non-participating	35	34	36	36	37	31	32	37
1482	Non-participating	38	37	38	38	40	32	33	36
1483	Non-participating	40	39	40	40	41	33	34	37
1484	Non-participating	41	40	42	42	43	34	35	37
1485	Non-participating	34	34	35	35	36	31	32	34
1486	Non-participating	40	39	41	41	42	33	34	36
1487	Non-participating	34	33	34	34	36	29	29	34
1488	Participating	42	41	42	42	44	31	32	34
1489	Non-participating	32	32	33	33	34	33	34	36
1490	Non-participating	39	38	40	40	41	35	35	38
1491	Non-participating	39	39	40	40	41	31	32	34
1492	Non-participating	41	40	41	41	43	32	32	36
1493	Non-participating	44	43	44	44	46	30	30	44
1494	Participating	38	38	39	39	40	29	30	32
1495	Participating	45	45	46	46	48	36	36	39
1496	Non-participating	36	36	37	37	38	32	33	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1497	Non-participating	43	42	44	44	45	30	31	35
1498	Non-participating	35	35	36	36	37	31	31	45
1499	Non-participating	36	35	36	36	37	31	32	34
1500	Non-participating	35	34	35	35	36	30	30	34
1501	Participating	45	44	45	45	47	31	32	35
1502	Non-participating	34	34	35	35	36	31	32	34
1503	Non-participating	33	32	33	33	35	27	28	30
1504	Non-participating	41	40	42	41	43	33	34	36
1505	Non-participating	44	44	45	45	46	30	31	33
1506	Non-participating	30	30	31	31	32	33	34	36
1507	Non-participating	44	43	45	45	46	28	28	34
1508	Non-participating	37	36	38	37	39	27	28	30
1509	Non-participating	42	41	42	42	44	31	32	34
1510	Non-participating	43	42	43	43	45	33	34	36
1511	Non-participating	36	35	36	36	37	34	34	37
1512	Non-participating	34	34	35	35	36	32	33	36
1513	Non-participating	32	31	33	33	34	31	32	34
1514	Non-participating	35	35	36	36	37	29	30	32
1515	Non-participating	44	43	44	44	46	33	33	35
1516	Non-participating	34	33	34	34	36	30	31	33
1517	Participating	39	38	39	39	40	30	31	36
1518	Participating	44	43	44	44	46	31	32	34
1519	Participating	40	39	40	40	42	30	30	44
1520	Non-participating	36	36	37	37	38	30	30	36
1521	Non-participating	35	35	36	36	37	32	32	37
1522	Non-participating	34	34	35	35	36	27	28	30
1523	Non-participating	38	37	38	38	40	33	34	37
1524	Non-participating	40	39	41	40	42	33	34	38
1525	Non-participating	38	37	38	38	39	30	30	36
1526	Participating	45	44	46	46	47	30	31	33
1527	Non-participating	42	41	42	42	44	29	30	32
1528	Non-participating	37	37	38	38	39	30	31	37
1529	Non-participating	41	41	42	42	43	32	33	35
1530	Non-participating	35	34	35	35	37	34	34	37
1531	Participating	43	42	44	43	45	32	33	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1532	Participating	44	43	45	45	46	33	34	36
1533	Non-participating	41	40	41	41	42	32	33	35
1534	Non-participating	38	38	39	39	40	23	23	28
1535	Non-participating	37	36	38	38	39	31	31	45
1536	Non-participating	35	35	36	36	37	33	34	36
1537	Non-participating	35	35	36	36	37	30	31	33
1538	Participating	46	46	47	47	48	26	27	29
1539	Non-participating	40	39	40	40	42	27	28	30
1540	Non-participating	39	38	40	40	41	32	32	34
1541	Non-participating	44	43	44	44	46	36	36	39
1542	Non-participating	40	39	40	40	42	29	30	32
1543	Non-participating	39	38	39	39	40	32	33	36
1544	Non-participating	35	34	35	35	36	29	29	32
1545	Non-participating	41	40	41	41	42	34	35	37
1546	Non-participating	39	38	39	39	41	30	31	44
1547	Non-participating	35	34	35	35	37	28	29	33
1548	Non-participating	40	39	40	40	41	32	33	35
1549	Participating	46	45	46	46	48	29	30	32
1550	Non-participating	39	38	39	39	41	32	33	35
1551	Non-participating	42	41	43	43	44	28	29	31
1552	Participating	45	44	46	46	47	29	30	32
1553	Non-participating	38	37	38	38	40	35	36	38
1554	Participating	42	41	42	42	44	29	30	32
1555	Non-participating	35	34	35	35	37	32	32	34
1556	Non-participating	36	36	37	37	38	29	30	36
1557	Non-participating	36	35	36	36	38	33	33	46
1558	Non-participating	37	36	37	37	39	31	31	44
1559	Non-participating	39	38	39	39	40	30	30	34
1560	Non-participating	34	33	34	34	36	30	30	32
1561	Non-participating	35	34	35	35	36	32	33	35
1562	Non-participating	40	39	41	41	42	34	35	37
1563	Non-participating	32	31	32	32	34	35	35	38
1564	Non-participating	39	39	40	40	41	29	30	32
1565	Non-participating	32	31	32	32	34	29	30	32
1566	Non-participating	37	36	37	37	38	31	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1567	Participating	44	43	45	44	46	31	32	34
1568	Participating	43	42	44	44	45	31	31	34
1569	Non-participating	37	36	38	38	39	28	28	31
1570	Participating	43	42	43	43	45	27	28	33
1571	Non-participating	37	36	38	38	39	34	35	37
1572	Non-participating	36	35	36	36	38	34	35	37
1573	Non-participating	38	37	38	38	40	31	32	35
1574	Non-participating	35	34	35	35	36	29	30	32
1575	Non-participating	42	41	43	43	44	30	31	33
1576	Non-participating	36	35	36	36	38	35	36	38
1577	Non-participating	40	39	41	41	42	29	30	32
1578	Non-participating	39	38	39	39	40	31	31	34
1579	Non-participating	38	38	39	39	40	32	33	35
1580	Non-participating	41	40	41	41	43	34	35	38
1581	Non-participating	32	31	32	34	34	32	32	38
1582	Non-participating	35	35	36	36	37	33	34	36
1583	Non-participating	44	44	45	45	46	31	31	44
1584	Non-participating	36	35	36	36	38	30	31	44
1585	Non-participating	43	43	44	44	45	31	31	46
1586	Non-participating	41	40	41	41	43	30	30	33
1587	Non-participating	42	41	43	43	44	35	35	38
1588	Non-participating	40	39	40	40	42	33	33	39
1589	Non-participating	37	36	37	37	39	26	27	29
1590	Non-participating	37	36	37	37	39	28	29	31
1591	Non-participating	44	43	45	45	46	25	25	31
1592	Non-participating	42	41	43	43	44	31	32	37
1593	Non-participating	38	37	38	38	40	32	32	34
1594	Non-participating	39	38	39	39	41	29	30	32
1595	Non-participating	40	39	40	40	42	32	33	35
1596	Non-participating	35	34	35	35	37	32	33	35
1597	Non-participating	36	35	36	36	37	30	31	44
1598	Non-participating	37	36	37	37	38	32	32	34
1599	Participating	37	36	38	37	39	34	35	37
1600	Non-participating	33	32	33	33	35	31	32	34
1601	Non-participating	40	39	40	40	41	29	29	31

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1602	Non-participating	45	44	45	45	47	29	30	32
1603	Participating	44	43	44	44	46	30	30	36
1604	Non-participating	34	33	34	34	36	28	29	31
1605	Non-participating	35	35	36	36	37	30	31	33
1606	Non-participating	41	40	42	42	43	35	36	38
1607	Non-participating	45	45	46	46	47	31	32	34
1608	Non-participating	34	33	34	34	36	27	28	30
1609	Non-participating	37	36	37	37	39	33	34	36
1610	Non-participating	37	36	37	37	39	28	28	34
1611	Participating	36	35	37	36	38	30	30	37
1612	Non-participating	36	35	37	37	38	32	32	37
1613	Non-participating	39	38	40	39	41	31	32	35
1614	Non-participating	42	41	43	43	44	32	33	36
1615	Non-participating	37	36	37	37	38	33	34	36
1616	Non-participating	39	38	39	39	41	33	33	36
1617	Non-participating	38	38	39	39	40	32	33	35
1618	Non-participating	40	39	41	41	42	32	33	35
1619	Non-participating	37	36	38	38	39	32	33	35
1620	Non-participating	42	41	43	43	44	33	34	36
1621	Non-participating	36	35	36	36	37	31	32	34
1622	Non-participating	42	41	43	43	44	29	30	32
1623	Participating	34	33	35	34	36	30	31	34
1624	Non-participating	40	40	41	41	42	31	31	36
1625	Non-participating	38	38	39	39	40	30	31	37
1626	Non-participating	35	34	35	35	37	32	33	35
1627	Non-participating	38	37	38	38	40	32	32	35
1628	Non-participating	38	37	38	38	39	30	31	33
1629	Non-participating	41	40	41	41	43	30	31	33
1630	Non-participating	36	35	36	36	38	32	33	35
1631	Non-participating	42	41	42	42	44	30	31	33
1632	Non-participating	34	33	35	34	36	26	27	29
1633	Non-participating	35	34	35	35	37	31	32	34
1634	Non-participating	38	37	38	38	40	30	30	36
1635	Participating	39	38	40	39	41	30	30	37
1636	Non-participating	39	38	39	39	40	32	33	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1637	Non-participating	41	40	41	41	43	30	30	43
1638	Non-participating	38	38	39	39	40	30	30	45
1639	Participating	41	40	41	41	43	30	31	33
1640	Participating	38	37	38	38	39	33	34	36
1641	Non-participating	39	38	40	39	41	30	31	33
1642	Non-participating	36	35	37	36	38	31	31	46
1643	Non-participating	41	40	41	41	42	34	35	37
1644	Participating	31	30	31	31	32	32	32	38
1645	Non-participating	35	34	35	35	37	31	31	36
1646	Non-participating	35	34	35	35	36	32	33	35
1647	Non-participating	37	36	37	37	38	26	26	29
1648	Non-participating	43	42	43	43	45	30	30	43
1649	Non-participating	36	35	36	36	37	30	31	33
1650	Non-participating	38	37	39	39	40	25	25	30
1651	Non-participating	39	38	39	39	41	30	31	38
1652	Non-participating	38	38	39	39	40	34	34	38
1653	Participating	46	46	47	47	48	35	36	38
1654	Non-participating	37	36	37	37	38	31	32	34
1655	Non-participating	34	33	34	34	35	25	26	28
1656	Non-participating	41	40	41	41	42	26	27	32
1657	Non-participating	36	35	36	36	37	29	30	32
1658	Non-participating	34	33	34	34	36	29	29	46
1659	Non-participating	35	35	36	36	37	28	29	33
1660	Non-participating	36	36	37	37	38	34	35	37
1661	Non-participating	40	39	41	41	42	25	26	32
1662	Participating	40	40	41	41	42	27	28	30
1663	Participating	39	38	40	40	41	29	30	32
1664	Participating	34	34	35	35	36	31	31	46
1665	Non-participating	41	40	41	41	42	34	34	37
1666	Participating	44	43	44	44	46	33	34	36
1667	Non-participating	36	36	37	37	38	33	34	36
1668	Non-participating	32	32	33	33	34	33	33	37
1669	Non-participating	34	34	35	35	36	32	32	36
1670	Non-participating	35	35	36	36	37	33	33	36
1671	Non-participating	40	39	41	41	42	33	34	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1672	Participating	43	42	43	43	45	30	31	43
1673	Non-participating	39	39	40	40	41	30	31	34
1674	Non-participating	42	42	43	43	44	28	29	33
1675	Participating	31	30	31	31	33	27	28	30
1676	Participating	34	33	35	34	36	30	30	34
1677	Participating	32	31	33	33	34	28	29	31
1678	Participating	29	28	29	29	31	30	31	36
1679	Participating	34	33	34	34	36	35	36	38
1680	Participating	32	31	32	32	33	34	35	37
1681	Participating	31	30	31	31	33	31	32	34
1682	Participating	33	32	33	33	34	30	31	33
1683	Participating	30	29	30	30	32	29	30	32
1684	Participating	30	29	30	30	31	28	28	34
1685	Participating	36	35	36	36	38	34	34	36
1686	Participating	31	30	31	31	33	30	30	32
1687	Participating	35	34	35	35	36	32	33	37
1688	Participating	33	32	33	33	35	30	31	36
1689	Participating	34	33	34	34	36	31	31	33
1690	Participating	31	30	31	31	32	27	28	33
1691	Participating	28	27	28	28	30	30	31	36
1692	Participating	35	34	35	35	36	31	32	34
1693	Participating	36	35	36	36	37	33	34	36
1694	Participating	33	32	33	33	35	30	31	33
1695	Participating	35	34	35	35	36	30	31	44
1696	Participating	32	31	32	32	33	32	32	34
1697	Participating	32	31	32	32	34	33	34	36
1698	Participating	32	31	32	32	34	33	33	38
1699	Participating	30	29	30	30	31	30	31	33
1700	Participating	31	30	31	31	32	29	30	34
1701	Participating	31	30	31	31	33	30	31	36
1702	Participating	33	32	33	33	35	30	31	33
1703	Participating	34	34	35	35	36	32	33	35
1704	Participating	28	27	28	28	30	31	32	34
1705	Participating	34	33	34	34	36	33	34	36
1706	Non-participating	30	29	30	30	32	30	31	33

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1707	Non-participating	33	32	33	33	35	31	31	45
1708	Non-participating	30	30	31	31	32	29	30	46
1709	Non-participating	36	35	36	36	38	34	34	37
1710	Non-participating	32	31	32	32	34	30	30	34
1711	Non-participating	31	30	31	31	33	31	32	35
1712	Non-participating	27	26	27	27	29	29	30	32
1713	Non-participating	32	31	32	32	33	34	35	37
1714	Non-participating	34	33	34	34	36	34	35	37
1715	Non-participating	34	33	34	34	35	28	29	31
1716	Non-participating	32	32	33	33	34	34	35	37
1717	Non-participating	32	31	32	32	33	31	32	33
1718	Non-participating	33	32	33	33	35	32	33	34
1719	Non-participating	31	30	31	31	33	30	31	44
1720	Non-participating	30	29	30	30	32	31	31	45
1721	Non-participating	34	34	35	35	36	24	25	29
1722	Non-participating	30	29	30	30	31	33	34	36
1723	Non-participating	33	32	33	33	34	32	33	39
1724	Non-participating	32	31	32	32	34	30	31	33
1725	Non-participating	32	31	32	32	33	33	33	36
1726	Non-participating	29	28	29	29	31	30	31	33
1727	Non-participating	33	33	34	33	35	25	26	29
1728	Non-participating	36	35	36	36	38	31	32	35
1729	Non-participating	34	33	34	35	36	31	32	36
1730	Non-participating	24	23	25	24	26	32	32	36
1731	Non-participating	28	27	28	28	30	26	27	30
1732	Non-participating	31	30	31	31	33	34	34	37
1733	Non-participating	34	33	34	34	36	34	34	37
1734	Non-participating	26	25	26	27	27	34	35	36
1735	Non-participating	35	34	35	35	36	29	30	32
1736	Non-participating	33	32	33	33	35	29	29	32
1737	Non-participating	33	32	34	34	35	30	31	44
1738	Non-participating	31	31	32	32	33	24	25	29
1739	Non-participating	34	33	34	34	35	33	33	36
1740	Non-participating	31	30	31	31	33	32	33	35
1741	Non-participating	31	31	32	32	33	35	36	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1742	Non-participating	32	32	33	33	34	25	26	29
1743	Non-participating	30	29	30	30	31	31	31	33
1744	Non-participating	33	33	34	34	35	30	31	36
1745	Non-participating	32	31	32	32	33	30	30	37
1746	Non-participating	35	35	36	36	37	29	30	32
1747	Non-participating	31	30	31	31	32	32	33	35
1748	Non-participating	33	32	33	33	35	31	31	45
1749	Non-participating	33	33	34	34	35	35	36	38
1750	Non-participating	31	30	31	31	33	25	26	28
1751	Non-participating	32	31	32	32	34	29	30	32
1752	Non-participating	28	28	29	29	30	30	30	33
1753	Non-participating	32	32	33	33	34	36	37	39
1754	Non-participating	31	30	31	31	32	31	32	34
1755	Non-participating	33	32	33	33	35	32	32	34
1756	Non-participating	31	30	31	31	33	29	30	32
1757	Non-participating	33	32	33	33	35	29	29	34
1758	Non-participating	30	29	30	30	31	31	32	34
1759	Non-participating	33	32	33	33	34	25	26	28
1760	Non-participating	31	30	31	31	33	33	33	39
1761	Non-participating	35	34	35	35	37	24	24	29
1762	Non-participating	30	30	31	31	32	31	31	46
1763	Non-participating	29	28	29	29	30	28	29	31
1764	Non-participating	37	36	37	37	38	31	31	43
1765	Non-participating	32	31	32	32	34	32	33	35
1766	Non-participating	33	32	33	33	35	32	33	36
1767	Non-participating	33	32	33	33	35	33	33	46
1768	Non-participating	29	28	29	29	31	33	34	36
1769	Non-participating	32	31	32	32	34	33	34	36
1770	Non-participating	35	34	35	35	36	28	29	31
1771	Non-participating	30	30	31	31	32	31	31	45
1772	Non-participating	32	31	32	32	33	31	32	35
1773	Non-participating	32	31	32	32	34	24	25	29
1774	Non-participating	33	32	33	33	34	32	33	35
1775	Non-participating	33	32	33	33	34	32	33	35
1776	Non-participating	32	32	33	33	34	29	29	32

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1777	Non-participating	31	30	31	31	33	32	33	39
1778	Non-participating	34	33	34	34	36	30	30	36
1779	Non-participating	35	35	36	36	37	30	30	36
1780	Non-participating	32	31	32	32	33	31	32	34
1781	Non-participating	33	32	33	33	34	29	30	32
1782	Non-participating	34	33	34	34	35	29	30	32
1783	Non-participating	34	33	34	34	36	29	30	34
1784	Non-participating	35	34	35	35	37	30	30	36
1785	Non-participating	32	31	32	32	34	29	30	32
1786	Non-participating	34	33	34	34	36	33	34	36
1787	Non-participating	30	29	30	30	32	31	31	44
1788	Non-participating	32	31	32	32	34	25	25	31
1789	Non-participating	34	34	35	35	36	30	31	36
1790	Non-participating	36	35	36	36	37	35	36	38
1791	Non-participating	33	32	33	33	34	32	33	37
1792	Non-participating	33	32	33	33	35	32	33	35
1793	Non-participating	31	30	31	31	33	34	35	37
1794	Non-participating	30	30	31	31	32	29	30	32
1795	Non-participating	36	36	37	37	38	27	27	34
1796	Non-participating	33	32	34	33	35	30	30	37
1797	Non-participating	31	31	32	32	33	32	33	36
1798	Non-participating	32	31	32	32	34	33	34	36
1799	Non-participating	32	31	32	32	34	31	32	34
1800	Non-participating	31	30	31	31	32	31	32	33
1801	Non-participating	32	31	33	32	34	30	31	37
1802	Non-participating	32	31	32	32	34	32	32	34
1803	Non-participating	28	28	29	29	30	34	35	38
1804	Non-participating	34	33	34	34	36	35	36	38
1805	Non-participating	31	30	31	31	33	30	31	33
1806	Non-participating	34	34	35	35	36	25	25	30
1807	Non-participating	29	28	29	29	31	35	36	38
1808	Non-participating	29	28	29	29	30	32	33	35
1809	Non-participating	32	31	32	32	34	32	33	42
1810	Non-participating	34	34	35	35	36	30	31	38
1811	Non-participating	35	34	35	35	37	31	31	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1812	Non-participating	33	32	33	33	35	30	31	33
1813	Non-participating	32	32	33	33	34	30	31	44
1814	Non-participating	30	29	31	31	32	26	26	29
1815	Non-participating	34	33	34	34	35	30	30	44
1816	Non-participating	32	31	32	32	33	31	32	34
1817	Non-participating	32	31	32	32	33	31	31	46
1818	Non-participating	32	31	32	32	34	34	35	37
1819	Non-participating	31	30	32	31	33	30	31	33
1820	Non-participating	31	30	31	31	33	28	29	31
1821	Non-participating	33	32	33	33	34	31	32	34
1822	Non-participating	28	27	28	28	30	34	35	37
1823	Non-participating	34	33	34	34	36	33	34	36
1824	Non-participating	35	34	35	35	36	25	25	32
1825	Non-participating	31	30	31	31	33	30	31	36
1826	Non-participating	31	30	31	31	33	32	33	35
1827	Non-participating	30	29	30	30	32	29	30	32
1828	Non-participating	32	31	32	32	33	25	26	28
1829	Non-participating	33	32	33	33	35	34	35	37
1830	Non-participating	35	34	35	35	36	33	34	37
1831	Non-participating	33	32	33	33	35	30	31	37
1832	Non-participating	34	33	35	35	36	32	32	36
1833	Non-participating	33	32	33	33	35	28	29	32
1834	Non-participating	24	23	24	24	26	27	28	30
1835	Non-participating	32	31	32	32	34	31	31	34
1836	Non-participating	34	34	35	35	36	31	31	44
1837	Non-participating	31	31	32	32	33	30	31	34
1838	Non-participating	27	26	27	28	29	34	34	37
1839	Non-participating	28	28	29	28	30	30	30	36
1840	Non-participating	33	32	33	33	34	30	31	33
1841	Non-participating	37	36	37	37	38	26	27	29
1842	Non-participating	30	29	30	30	32	30	31	36
1843	Non-participating	33	33	34	33	35	30	31	33
1844	Non-participating	30	29	30	30	32	30	31	33
1845	Non-participating	35	34	35	35	37	27	28	30
1846	Non-participating	31	31	32	32	33	31	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1847	Non-participating	29	29	30	30	31	35	35	37
1848	Non-participating	33	32	33	33	35	32	33	37
1849	Non-participating	30	30	31	31	32	31	32	34
1850	Non-participating	33	33	34	34	35	33	33	38
1851	Non-participating	29	28	30	29	31	30	31	37
1852	Non-participating	30	29	30	30	32	31	31	33
1853	Non-participating	36	35	36	36	38	23	24	28
1854	Non-participating	31	30	31	31	32	28	29	31
1855	Non-participating	33	32	33	33	34	27	28	30
1856	Non-participating	31	30	31	31	32	30	31	44
1857	Non-participating	34	33	34	34	36	33	33	37
1858	Non-participating	32	31	32	32	33	33	34	36
1859	Non-participating	31	30	31	31	33	33	33	35
1860	Non-participating	31	30	31	31	32	33	34	36
1861	Non-participating	33	32	33	33	35	30	31	33
1862	Non-participating	35	34	35	35	37	34	35	37
1863	Non-participating	36	35	36	36	37	31	32	34
1864	Non-participating	30	29	30	30	32	30	30	43
1865	Non-participating	30	29	30	30	32	32	32	45
1866	Non-participating	32	31	32	32	34	28	29	33
1867	Non-participating	32	31	32	32	34	34	35	37
1868	Non-participating	32	31	32	32	34	32	33	35
1869	Non-participating	29	28	29	29	31	30	31	36
1870	Non-participating	28	28	29	29	30	32	33	35
1871	Non-participating	35	34	35	35	37	35	36	39
1872	Non-participating	35	34	36	36	37	35	36	39
1873	Non-participating	32	32	33	33	34	31	31	33
1874	Non-participating	31	30	31	31	32	30	31	43
1875	Non-participating	31	30	32	32	33	35	35	37
1876	Non-participating	36	35	36	36	38	30	31	33
1877	Non-participating	30	30	31	31	32	29	30	32
1878	Non-participating	32	31	32	32	34	30	31	34
1879	Non-participating	33	33	34	34	35	32	32	38
1880	Non-participating	35	35	36	36	37	32	33	36
1881	Non-participating	33	32	33	33	35	31	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1882	Non-participating	34	33	34	34	36	32	32	35
1883	Non-participating	32	31	32	32	33	32	33	35
1884	Non-participating	32	31	32	32	33	28	29	31
1885	Non-participating	32	31	32	32	33	30	31	44
1886	Non-participating	31	30	31	31	33	32	33	35
1887	Non-participating	36	35	36	36	38	31	31	36
1888	Non-participating	34	33	34	34	35	31	31	33
1889	Non-participating	27	26	27	27	29	29	30	32
1890	Non-participating	29	28	29	29	31	33	34	36
1891	Non-participating	26	25	26	26	28	31	32	35
1892	Non-participating	32	31	32	33	34	24	25	29
1893	Non-participating	33	32	33	33	34	32	33	34
1894	Non-participating	30	29	30	31	32	33	34	36
1895	Non-participating	33	32	33	33	35	30	31	45
1896	Non-participating	33	33	34	34	35	32	33	35
1897	Non-participating	31	31	32	32	33	30	31	33
1898	Non-participating	33	32	33	33	34	28	29	31
1899	Non-participating	35	34	35	35	37	28	29	31
1900	Non-participating	32	31	32	32	34	34	35	37
1901	Non-participating	30	29	30	30	31	31	31	44
1902	Non-participating	30	29	30	30	32	27	28	33
1903	Non-participating	31	30	31	31	33	32	33	36
1904	Non-participating	30	29	30	30	31	28	29	31
1905	Non-participating	32	31	32	32	33	29	30	32
1906	Non-participating	36	35	36	36	38	29	30	32
1907	Non-participating	32	31	32	32	34	31	32	34
1908	Non-participating	28	27	28	28	30	34	35	37
1909	Non-participating	34	33	35	35	36	31	32	34
1910	Non-participating	29	28	29	29	31	29	30	33
1911	Non-participating	31	30	31	31	33	31	31	33
1912	Non-participating	33	32	33	33	35	31	32	34
1913	Non-participating	32	31	33	32	34	35	36	38
1914	Non-participating	34	33	34	34	35	31	32	38
1915	Non-participating	34	33	35	35	36	31	31	36
1916	Non-participating	34	33	34	34	36	32	32	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1917	Non-participating	33	33	34	34	35	31	32	34
1918	Non-participating	33	32	33	33	35	30	30	44
1919	Non-participating	33	32	33	33	35	33	34	36
1920	Non-participating	34	34	35	35	36	35	36	38
1921	Non-participating	32	31	32	32	34	30	31	36
1922	Non-participating	31	30	31	31	32	29	30	32
1923	Non-participating	31	30	31	31	33	31	31	34
1924	Non-participating	32	31	32	32	34	27	28	34
1925	Non-participating	32	31	32	32	33	33	34	36
1926	Non-participating	33	33	34	34	35	29	29	31
1927	Non-participating	33	32	33	33	35	30	30	44
1928	Non-participating	31	30	31	31	33	33	34	36
1929	Non-participating	31	30	31	31	33	33	33	35
1930	Non-participating	33	33	34	34	35	33	34	36
1931	Non-participating	31	30	31	31	33	28	28	31
1932	Non-participating	27	26	27	27	29	31	32	34
1933	Non-participating	32	31	32	32	33	27	28	30
1934	Non-participating	31	30	31	31	33	32	32	37
1935	Non-participating	31	30	31	31	33	32	33	35
1936	Non-participating	33	32	33	33	35	32	33	35
1937	Non-participating	31	30	31	31	33	33	34	36
1938	Non-participating	31	30	31	31	33	27	27	30
1939	Non-participating	31	30	31	31	33	32	32	36
1940	Non-participating	35	34	35	35	36	30	31	33
1941	Non-participating	31	31	32	32	33	33	34	36
1942	Non-participating	32	31	32	32	34	32	33	35
1943	Non-participating	35	34	35	35	37	32	32	45
1944	Non-participating	33	32	33	33	35	30	30	43
1945	Non-participating	32	31	32	32	34	30	31	33
1946	Non-participating	33	32	33	33	35	28	29	31
1947	Non-participating	27	26	27	27	29	24	25	29
1948	Non-participating	31	30	31	31	33	24	25	32
1949	Non-participating	31	30	31	31	33	31	31	36
1950	Non-participating	26	25	26	26	28	32	33	35
1951	Non-participating	31	30	31	31	33	31	31	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1952	Non-participating	35	34	35	35	36	35	35	38
1953	Non-participating	36	35	37	36	38	30	31	36
1954	Non-participating	32	31	32	32	34	28	28	30
1955	Non-participating	27	26	27	27	28	31	32	37
1956	Non-participating	28	27	28	28	29	31	32	34
1957	Non-participating	31	30	31	31	32	27	28	30
1958	Non-participating	30	29	31	31	32	30	31	44
1959	Non-participating	29	28	30	30	31	27	28	33
1960	Non-participating	35	34	35	35	37	32	33	35
1961	Non-participating	26	25	26	26	28	34	34	36
1962	Non-participating	28	27	28	28	30	34	35	37
1963	Non-participating	30	29	30	30	32	34	34	37
1964	Non-participating	32	31	32	32	34	32	33	35
1965	Non-participating	35	34	35	35	37	31	32	35
1966	Non-participating	34	34	35	35	36	30	31	36
1967	Non-participating	34	34	35	35	36	32	33	36
1968	Non-participating	34	33	34	34	36	31	32	35
1969	Non-participating	33	32	33	33	35	31	32	34
1970	Non-participating	34	33	34	34	36	30	31	33
1971	Non-participating	34	33	34	34	36	29	29	34
1972	Non-participating	31	31	32	32	33	30	30	37
1973	Non-participating	31	30	31	31	33	30	30	36
1974	Non-participating	29	28	29	29	31	26	27	29
1975	Non-participating	28	28	29	29	30	29	29	32
1976	Non-participating	31	30	31	31	33	31	32	34
1977	Non-participating	30	29	30	30	31	28	28	33
1978	Non-participating	31	31	32	32	33	34	35	37
1979	Non-participating	36	35	36	36	38	30	31	34
1980	Non-participating	35	34	35	35	37	32	33	34
1981	Non-participating	32	32	33	33	34	31	32	34
1982	Non-participating	32	31	32	32	33	31	32	34
1983	Non-participating	30	29	30	30	32	30	30	43
1984	Non-participating	29	28	29	29	31	30	31	33
1985	Non-participating	35	34	35	35	36	29	30	32
1986	Non-participating	31	30	31	31	32	30	31	33

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
1987	Non-participating	33	33	34	34	35	30	30	36
1988	Non-participating	32	31	32	32	33	29	30	32
1989	Non-participating	32	31	32	32	33	33	33	36
1990	Non-participating	29	28	29	29	31	30	31	33
1991	Non-participating	32	31	32	32	33	32	33	35
1992	Non-participating	32	31	32	32	34	31	32	34
1993	Non-participating	34	33	35	35	36	31	32	34
1994	Non-participating	31	30	31	31	33	29	30	32
1995	Non-participating	32	31	32	32	33	24	25	29
1996	Non-participating	33	32	33	33	34	31	32	35
1997	Non-participating	34	33	34	34	36	31	32	35
1998	Non-participating	34	33	34	34	36	31	32	34
1999	Non-participating	31	30	31	31	33	30	31	37
2000	Non-participating	30	30	31	31	32	34	34	37
2001	Non-participating	31	31	32	32	33	34	34	36
2002	Non-participating	31	30	31	31	33	36	36	39
2003	Non-participating	33	32	33	33	35	35	36	37
2004	Non-participating	32	31	32	32	34	30	30	44
2005	Non-participating	34	34	35	35	36	23	24	27
2006	Non-participating	32	31	32	32	33	32	33	35
2007	Non-participating	32	31	32	32	34	30	31	33
2008	Non-participating	30	30	31	31	32	35	36	38
2009	Non-participating	35	34	35	35	36	31	32	34
2010	Non-participating	31	30	31	31	33	34	35	37
2011	Non-participating	32	31	32	33	34	33	34	36
2012	Non-participating	30	30	31	31	32	30	30	37
2013	Non-participating	35	34	35	35	37	29	30	32
2014	Non-participating	35	34	36	35	37	32	33	35
2015	Non-participating	30	29	30	30	31	31	31	43
2016	Non-participating	35	34	35	35	37	29	30	46
2017	Non-participating	32	31	32	32	33	28	29	33
2018	Non-participating	33	32	33	33	34	30	30	36
2019	Non-participating	32	31	32	32	33	33	33	35
2020	Non-participating	32	31	32	32	34	32	32	36
2021	Non-participating	25	24	26	25	27	29	29	40

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2022	Non-participating	34	34	35	35	36	32	32	46
2023	Non-participating	33	33	34	34	35	27	28	33
2024	Non-participating	31	30	32	31	33	29	30	32
2025	Non-participating	34	33	34	34	35	25	26	29
2026	Non-participating	31	30	31	31	33	31	31	36
2027	Non-participating	27	26	27	27	28	31	31	36
2028	Non-participating	33	32	33	33	34	30	31	33
2029	Non-participating	32	32	33	33	34	30	31	45
2030	Non-participating	33	32	33	33	35	32	33	35
2031	Non-participating	28	27	28	28	30	29	30	34
2032	Non-participating	35	34	35	35	37	32	33	35
2033	Non-participating	35	34	35	35	37	30	31	33
2034	Non-participating	35	34	35	35	36	31	32	34
2035	Non-participating	31	30	31	31	32	34	34	37
2036	Non-participating	30	29	30	30	32	32	33	39
2037	Non-participating	32	31	32	32	33	33	34	37
2038	Non-participating	26	25	26	26	28	32	33	34
2039	Non-participating	34	33	34	34	35	28	28	34
2040	Non-participating	33	32	33	33	35	31	32	36
2041	Non-participating	36	35	36	36	37	31	31	33
2042	Non-participating	27	26	27	27	29	26	27	29
2043	Non-participating	32	31	32	32	33	28	28	33
2044	Non-participating	32	31	32	32	33	30	31	37
2045	Non-participating	31	30	31	31	33	36	36	38
2046	Non-participating	31	30	31	31	32	34	35	37
2047	Non-participating	33	32	33	33	35	29	29	46
2048	Non-participating	32	31	32	32	34	31	31	33
2049	Non-participating	36	35	36	36	38	31	32	34
2050	Non-participating	26	26	27	27	28	30	31	33
2051	Non-participating	31	30	31	31	32	31	32	34
2052	Non-participating	31	30	31	31	33	27	27	29
2053	Non-participating	37	36	37	37	39	35	36	38
2054	Non-participating	33	32	33	33	34	30	31	33
2055	Non-participating	33	32	33	33	34	31	32	34
2056	Non-participating	30	29	30	30	32	31	31	46

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2057	Non-participating	30	29	30	30	32	29	30	32
2058	Non-participating	32	32	33	33	34	27	27	30
2059	Non-participating	26	25	26	27	28	32	33	35
2060	Non-participating	34	33	34	34	36	28	29	31
2061	Non-participating	25	24	25	25	27	31	32	34
2062	Non-participating	32	31	32	32	34	28	29	31
2063	Non-participating	30	29	30	30	31	29	30	32
2064	Non-participating	32	31	32	32	34	31	31	35
2065	Non-participating	33	33	34	33	35	29	30	34
2066	Non-participating	34	33	34	34	35	30	31	33
2067	Non-participating	34	33	34	34	35	28	28	31
2068	Non-participating	34	33	34	34	36	34	35	37
2069	Non-participating	34	33	34	34	36	23	24	27
2070	Non-participating	29	28	29	29	31	30	31	33
2071	Non-participating	32	31	32	32	34	34	35	37
2072	Non-participating	32	32	33	33	34	32	32	38
2073	Non-participating	25	25	26	25	27	30	31	33
2074	Non-participating	33	33	34	34	35	30	31	38
2075	Non-participating	33	33	34	34	35	30	30	32
2076	Non-participating	30	29	30	30	32	30	31	33
2077	Non-participating	33	32	34	33	35	26	27	33
2078	Non-participating	31	30	31	31	33	30	31	33
2079	Non-participating	31	30	31	31	33	29	30	32
2080	Non-participating	32	31	32	32	34	33	33	39
2081	Non-participating	30	30	30	31	32	32	32	38
2082	Non-participating	30	29	30	30	32	33	34	36
2083	Non-participating	30	29	30	30	32	32	33	35
2084	Non-participating	31	30	31	31	33	31	31	44
2085	Non-participating	31	30	31	31	32	29	30	32
2086	Non-participating	34	33	34	34	36	32	32	35
2087	Non-participating	32	31	32	32	33	30	31	33
2088	Non-participating	26	25	26	26	28	35	36	38
2089	Non-participating	31	30	31	31	33	31	31	36
2090	Non-participating	36	36	37	37	38	34	34	37
2091	Non-participating	34	33	34	34	35	30	31	44

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2092	Non-participating	33	32	34	33	35	35	36	38
2093	Non-participating	35	34	35	35	37	34	35	38
2094	Non-participating	30	30	31	31	32	31	32	34
2095	Non-participating	28	27	28	28	30	30	31	34
2096	Non-participating	31	30	31	31	33	28	29	31
2097	Non-participating	33	33	34	34	35	29	29	31
2098	Non-participating	34	33	34	34	36	28	29	31
2099	Non-participating	33	32	33	33	34	30	31	37
2100	Non-participating	32	31	32	32	33	31	32	37
2101	Non-participating	32	31	32	32	33	30	31	33
2102	Non-participating	33	32	33	33	34	30	30	44
2103	Non-participating	35	35	36	36	37	29	30	34
2104	Non-participating	36	35	36	36	38	31	32	34
2105	Non-participating	31	30	31	31	33	31	31	45
2106	Non-participating	26	25	26	26	28	30	31	44
2107	Non-participating	36	35	36	36	38	34	35	37
2108	Non-participating	33	33	34	33	35	26	27	29
2109	Non-participating	33	32	34	34	35	33	33	36
2110	Non-participating	31	31	32	32	33	31	32	35
2111	Non-participating	32	31	32	32	34	32	33	36
2112	Non-participating	31	30	31	31	33	26	26	28
2113	Non-participating	32	31	32	32	33	33	34	36
2114	Non-participating	27	26	27	27	29	30	30	37
2115	Non-participating	31	30	31	31	33	30	31	34
2116	Non-participating	33	32	33	33	34	31	32	41
2117	Non-participating	32	31	33	32	34	29	30	32
2118	Non-participating	35	34	35	35	37	32	33	35
2119	Non-participating	31	30	31	31	33	33	34	36
2120	Non-participating	30	29	30	30	31	33	34	36
2121	Non-participating	32	31	32	32	34	31	31	36
2122	Non-participating	35	34	35	35	37	33	33	36
2123	Non-participating	34	33	34	34	36	26	27	30
2124	Non-participating	26	25	26	26	28	30	31	33
2125	Non-participating	31	31	32	32	33	30	31	44
2126	Non-participating	33	32	33	33	35	31	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2127	Non-participating	30	30	31	31	32	30	31	36
2128	Non-participating	26	25	26	26	28	30	31	33
2129	Non-participating	35	34	35	35	37	25	26	29
2130	Non-participating	35	34	35	35	36	30	30	45
2131	Non-participating	31	30	32	31	33	29	29	34
2132	Non-participating	33	32	33	33	35	34	34	37
2133	Non-participating	30	29	30	30	32	30	30	36
2134	Non-participating	28	27	28	28	30	32	33	36
2135	Non-participating	32	31	32	32	34	30	31	33
2136	Non-participating	32	31	32	32	33	30	31	32
2137	Non-participating	31	30	32	31	33	30	31	33
2138	Non-participating	35	34	35	35	36	34	35	37
2139	Non-participating	31	30	31	31	33	33	34	37
2140	Non-participating	32	31	32	32	33	32	32	34
2141	Non-participating	27	26	27	27	29	29	30	32
2142	Non-participating	32	31	32	32	33	30	30	34
2143	Non-participating	31	30	31	31	33	31	32	35
2144	Non-participating	32	31	32	32	33	29	30	32
2145	Non-participating	28	27	28	28	30	31	31	33
2146	Non-participating	32	32	33	33	34	31	32	34
2147	Non-participating	36	35	36	36	37	31	32	34
2148	Non-participating	33	32	33	33	35	30	31	33
2149	Non-participating	32	31	32	32	34	34	35	37
2150	Non-participating	34	33	34	34	36	25	26	28
2151	Non-participating	32	31	32	32	33	31	32	34
2152	Non-participating	32	31	32	32	33	35	36	38
2153	Non-participating	24	23	24	24	26	30	30	37
2154	Non-participating	29	29	30	29	31	30	31	38
2155	Non-participating	28	27	28	28	30	32	32	38
2156	Non-participating	32	31	32	32	33	31	32	34
2157	Non-participating	34	33	34	34	36	31	32	34
2158	Non-participating	34	34	35	35	36	30	31	45
2159	Non-participating	33	33	34	34	35	30	30	45
2160	Non-participating	34	33	34	34	36	35	35	37
2161	Non-participating	31	31	32	32	33	30	30	33

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2162	Non-participating	35	34	35	35	37	30	31	45
2163	Non-participating	32	32	33	33	34	33	34	36
2164	Non-participating	31	30	31	31	33	28	28	33
2165	Non-participating	33	32	33	33	34	30	31	33
2166	Non-participating	29	29	30	30	31	27	28	30
2167	Non-participating	35	34	35	35	37	29	30	34
2168	Non-participating	33	32	34	33	35	31	32	34
2169	Non-participating	32	31	32	32	33	30	31	33
2170	Non-participating	33	32	33	33	35	33	34	36
2171	Non-participating	36	35	37	36	38	37	37	39
2172	Non-participating	36	35	37	36	38	31	31	34
2173	Non-participating	32	31	32	32	33	30	30	37
2174	Non-participating	31	31	32	32	33	33	33	36
2175	Non-participating	35	35	36	36	37	32	33	35
2176	Non-participating	31	30	31	31	33	29	30	32
2177	Non-participating	30	29	30	31	32	30	31	33
2178	Non-participating	31	30	31	31	33	29	29	32
2179	Non-participating	33	32	33	33	35	32	32	45
2180	Non-participating	33	32	33	33	35	34	35	37
2181	Non-participating	32	31	32	32	34	31	32	36
2182	Non-participating	33	32	33	33	35	32	33	37
2183	Non-participating	33	32	33	33	35	30	30	37
2184	Non-participating	29	29	30	30	31	29	29	46
2185	Non-participating	32	31	32	32	33	28	29	33
2186	Non-participating	33	32	33	33	35	28	28	34
2187	Non-participating	32	31	32	32	34	27	28	33
2188	Non-participating	32	31	32	32	33	33	33	35
2189	Non-participating	30	29	30	30	32	29	30	32
2190	Non-participating	34	33	34	34	36	29	29	40
2191	Non-participating	32	32	33	33	34	31	31	44
2192	Non-participating	25	24	26	25	27	34	34	37
2193	Non-participating	33	32	33	33	34	29	30	32
2194	Non-participating	34	34	35	35	36	32	33	39
2195	Non-participating	31	31	32	32	33	35	36	38
2196	Non-participating	34	33	34	34	35	30	30	33

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2197	Non-participating	32	31	32	32	33	32	33	35
2198	Non-participating	29	28	29	29	31	33	34	38
2199	Non-participating	29	29	30	30	31	32	33	35
2200	Non-participating	35	34	35	35	37	31	32	34
2201	Non-participating	32	31	32	32	33	29	29	46
2202	Non-participating	28	28	29	29	30	30	31	37
2203	Non-participating	33	32	33	33	35	26	27	29
2204	Non-participating	30	29	30	30	31	30	31	33
2205	Non-participating	30	29	30	30	32	26	27	29
2206	Non-participating	30	29	30	30	32	34	34	37
2207	Non-participating	32	31	32	32	34	31	32	35
2208	Non-participating	35	35	36	36	37	31	32	36
2209	Non-participating	33	32	33	33	34	31	32	34
2210	Non-participating	31	30	31	31	32	28	28	30
2211	Non-participating	32	31	32	32	33	31	31	34
2212	Non-participating	32	31	32	32	34	32	33	34
2213	Non-participating	36	35	37	37	38	29	30	32
2214	Non-participating	32	32	33	33	34	29	29	46
2215	Non-participating	32	31	32	32	34	34	34	37
2216	Non-participating	33	32	33	33	35	35	36	38
2217	Non-participating	32	31	32	32	34	30	30	32
2218	Non-participating	31	30	31	31	33	31	32	34
2219	Non-participating	34	33	34	34	36	30	31	33
2220	Non-participating	36	35	36	36	38	28	29	34
2221	Non-participating	31	31	32	32	33	29	30	34
2222	Non-participating	30	29	30	30	32	32	33	34
2223	Non-participating	32	31	32	32	33	32	33	35
2224	Non-participating	29	28	29	29	30	31	32	34
2225	Non-participating	34	34	35	35	36	34	35	37
2226	Non-participating	30	29	30	30	31	32	33	38
2227	Non-participating	31	30	31	31	33	32	32	38
2228	Non-participating	34	33	34	34	36	30	30	32
2229	Non-participating	34	33	34	34	35	29	29	31
2230	Non-participating	34	33	35	35	36	29	30	32
2231	Non-participating	29	28	29	29	31	33	34	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2232	Non-participating	32	31	32	32	34	29	30	33
2233	Non-participating	28	27	28	28	30	31	31	35
2234	Non-participating	33	32	33	33	35	28	28	33
2235	Non-participating	33	32	33	34	35	32	33	35
2236	Non-participating	33	33	34	34	35	30	31	38
2237	Non-participating	34	33	34	34	36	32	33	35
2238	Non-participating	28	27	28	28	30	32	32	35
2239	Non-participating	33	32	33	33	35	33	33	35
2240	Non-participating	31	30	31	31	33	32	33	35
2241	Non-participating	34	34	35	35	36	31	31	45
2242	Non-participating	33	32	33	33	35	26	27	30
2243	Non-participating	33	32	33	33	34	32	33	35
2244	Non-participating	31	30	32	31	33	34	35	37
2245	Non-participating	31	30	31	31	33	30	30	37
2246	Non-participating	29	28	29	29	31	31	32	34
2247	Non-participating	25	25	26	26	27	29	30	32
2248	Non-participating	25	25	26	26	27	26	27	34
2249	Non-participating	32	31	32	32	34	30	30	36
2250	Non-participating	33	32	33	33	35	35	35	38
2251	Non-participating	32	31	32	32	34	32	33	36
2252	Non-participating	36	35	36	36	38	25	26	28
2253	Non-participating	31	30	31	31	33	26	26	29
2254	Non-participating	29	28	29	29	30	37	37	40
2255	Non-participating	33	32	33	33	34	31	31	36
2256	Non-participating	32	32	33	33	34	35	36	38
2257	Non-participating	28	28	29	29	30	32	33	35
2258	Non-participating	31	31	32	32	33	31	31	45
2259	Non-participating	28	28	29	29	30	27	28	33
2260	Non-participating	33	32	33	33	35	32	33	35
2261	Non-participating	35	34	35	35	36	35	36	38
2262	Non-participating	35	34	35	35	37	29	30	32
2263	Non-participating	35	34	35	35	36	30	30	44
2264	Non-participating	33	32	33	33	35	32	33	37
2265	Non-participating	33	32	33	33	34	33	33	43
2266	Non-participating	32	31	32	32	33	30	31	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2267	Non-participating	33	32	34	33	35	32	32	35
2268	Non-participating	32	31	32	32	34	30	30	33
2269	Non-participating	33	32	33	33	34	32	33	39
2270	Non-participating	31	30	31	31	33	29	30	32
2271	Non-participating	30	29	30	30	32	33	34	36
2272	Non-participating	31	30	31	31	33	32	32	34
2273	Non-participating	31	30	31	31	33	30	31	45
2274	Non-participating	27	26	27	29	29	31	31	34
2275	Non-participating	30	29	30	30	32	32	33	36
2276	Non-participating	32	31	32	32	34	32	33	35
2277	Non-participating	29	28	29	29	31	31	31	45
2278	Non-participating	35	34	35	35	37	33	34	35
2279	Non-participating	31	30	31	31	33	31	32	34
2280	Non-participating	33	32	33	33	34	34	35	37
2281	Non-participating	33	32	33	33	34	32	33	35
2282	Non-participating	32	31	32	32	34	25	26	29
2283	Non-participating	31	30	31	31	33	29	30	32
2284	Non-participating	31	31	32	32	33	34	35	36
2285	Non-participating	30	30	31	31	32	28	29	31
2286	Non-participating	31	30	31	31	33	34	35	37
2287	Non-participating	31	30	31	31	33	29	29	34
2288	Non-participating	30	30	31	30	32	33	34	36
2289	Non-participating	34	33	34	34	35	32	33	36
2290	Non-participating	31	31	32	32	33	33	34	36
2291	Non-participating	33	33	34	34	35	31	32	34
2292	Non-participating	32	31	32	32	34	23	24	31
2293	Non-participating	32	31	32	32	34	31	32	34
2294	Non-participating	30	29	30	30	32	32	33	37
2295	Non-participating	26	25	26	26	28	31	32	37
2296	Non-participating	33	32	33	33	34	32	33	35
2297	Non-participating	32	31	32	32	34	32	32	34
2298	Non-participating	32	31	32	32	34	25	26	29
2299	Non-participating	31	31	32	32	33	29	29	33
2300	Non-participating	35	34	35	35	36	34	35	38
2301	Non-participating	34	34	35	35	36	34	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2302	Non-participating	36	36	37	37	38	28	29	31
2303	Non-participating	36	35	36	36	37	33	34	36
2304	Non-participating	31	30	31	31	33	31	32	33
2305	Non-participating	24	23	24	24	26	28	28	33
2306	Non-participating	33	32	33	33	35	35	35	38
2307	Non-participating	32	31	32	32	33	33	34	36
2308	Non-participating	36	35	37	37	38	32	33	35
2309	Non-participating	32	31	32	32	34	29	29	46
2310	Non-participating	35	34	35	35	37	30	31	44
2311	Non-participating	34	34	35	35	36	29	30	32
2312	Non-participating	31	30	31	31	33	35	36	39
2313	Non-participating	31	30	31	31	32	30	31	36
2314	Non-participating	33	33	34	34	35	32	33	35
2315	Non-participating	32	31	33	32	34	30	30	44
2316	Non-participating	30	30	31	31	32	33	34	35
2317	Non-participating	29	29	30	30	31	29	30	32
2318	Non-participating	31	30	31	31	33	26	27	30
2319	Non-participating	33	33	34	34	35	35	36	38
2320	Non-participating	33	32	33	33	34	34	34	37
2321	Non-participating	30	29	30	30	32	30	31	33
2322	Non-participating	33	32	33	33	35	31	32	34
2323	Non-participating	29	28	29	29	31	34	35	38
2324	Non-participating	30	30	31	31	32	30	30	36
2325	Non-participating	26	26	27	27	28	34	34	37
2326	Non-participating	32	31	32	32	34	33	34	36
2327	Non-participating	32	31	32	32	34	30	31	33
2328	Non-participating	31	30	31	31	33	31	31	36
2329	Non-participating	31	31	32	32	33	29	30	32
2330	Non-participating	33	32	33	33	35	30	31	33
2331	Non-participating	30	29	30	30	32	30	31	37
2332	Non-participating	33	32	33	33	35	33	33	37
2333	Non-participating	31	31	32	32	33	30	30	44
2334	Non-participating	32	31	32	32	34	26	27	32
2335	Non-participating	35	34	35	35	37	32	32	37
2336	Non-participating	33	33	34	34	35	29	30	32

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2337	Non-participating	34	33	35	35	36	31	31	33
2338	Non-participating	33	32	33	33	34	29	29	31
2339	Non-participating	29	28	29	29	31	34	35	37
2340	Non-participating	32	32	33	33	34	29	30	36
2341	Non-participating	32	31	32	32	33	26	27	30
2342	Non-participating	27	27	28	28	29	23	24	28
2343	Non-participating	29	28	29	29	31	28	28	34
2344	Non-participating	32	31	32	32	33	32	33	35
2345	Non-participating	36	36	37	37	38	34	34	36
2346	Non-participating	35	34	35	35	37	30	30	34
2347	Non-participating	30	29	30	31	32	34	35	37
2348	Non-participating	32	31	32	32	33	32	33	35
2349	Non-participating	32	31	33	33	34	29	29	31
2350	Non-participating	31	31	32	32	33	30	31	33
2351	Non-participating	33	32	33	33	34	26	27	29
2352	Non-participating	27	27	29	29	29	30	31	33
2353	Non-participating	36	35	36	36	38	30	30	44
2354	Non-participating	31	30	31	31	33	31	32	34
2355	Non-participating	32	31	32	32	34	30	30	36
2356	Non-participating	32	31	32	32	33	27	28	30
2357	Non-participating	30	29	30	30	32	29	30	32
2358	Non-participating	28	27	28	28	30	31	31	44
2359	Non-participating	33	33	34	34	35	35	36	39
2360	Non-participating	29	29	30	29	31	31	31	36
2361	Non-participating	32	32	33	33	34	30	31	33
2362	Non-participating	29	28	29	29	31	32	32	39
2363	Non-participating	31	30	31	31	32	30	31	33
2364	Non-participating	32	31	32	32	33	28	29	33
2365	Non-participating	30	30	31	31	32	30	30	34
2366	Non-participating	31	30	32	31	33	33	34	36
2367	Non-participating	29	28	29	29	31	27	28	30
2368	Non-participating	35	34	35	35	37	30	31	36
2369	Non-participating	25	24	25	25	26	29	29	35
2370	Non-participating	31	30	31	31	33	28	29	31
2371	Non-participating	35	34	35	35	37	31	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2372	Non-participating	33	32	33	33	35	33	34	36
2373	Non-participating	32	31	32	32	33	34	35	37
2374	Non-participating	32	31	32	32	33	32	32	39
2375	Non-participating	31	30	31	31	32	33	33	35
2376	Non-participating	31	30	31	31	33	31	31	34
2377	Non-participating	28	27	28	28	29	27	28	30
2378	Non-participating	31	31	32	32	33	30	31	33
2379	Non-participating	31	30	31	31	32	30	31	44
2380	Non-participating	34	33	34	34	36	26	26	32
2381	Non-participating	33	32	33	33	35	33	34	36
2382	Non-participating	34	33	34	34	36	28	29	31
2383	Non-participating	33	33	34	34	35	32	33	36
2384	Non-participating	32	31	32	32	33	32	32	36
2385	Non-participating	31	30	31	31	32	30	30	44
2386	Non-participating	33	32	33	33	34	31	31	46
2387	Non-participating	31	31	32	32	33	33	34	36
2388	Non-participating	36	35	36	36	38	29	30	32
2389	Non-participating	32	31	32	32	34	33	34	36
2390	Non-participating	35	34	35	35	37	34	35	37
2391	Non-participating	32	31	32	32	33	33	34	35
2392	Non-participating	36	35	36	36	38	32	33	35
2393	Non-participating	35	34	35	35	37	27	27	30
2394	Non-participating	32	31	32	32	34	34	35	36
2395	Non-participating	31	30	31	31	33	32	33	35
2396	Non-participating	29	28	30	30	31	30	31	33
2397	Non-participating	30	29	30	30	31	25	25	29
2398	Non-participating	29	28	29	29	31	31	31	34
2399	Non-participating	31	31	32	31	33	33	34	36
2400	Non-participating	32	32	33	33	34	32	33	35
2401	Non-participating	31	31	32	32	33	30	30	33
2402	Non-participating	31	30	31	31	33	28	29	31
2403	Non-participating	30	29	31	30	32	31	32	34
2404	Non-participating	32	31	32	32	34	33	34	36
2405	Non-participating	32	31	32	32	34	31	32	35
2406	Non-participating	32	31	32	32	33	34	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2407	Non-participating	35	35	35	35	37	29	30	32
2408	Non-participating	27	26	27	28	29	33	34	35
2409	Non-participating	34	33	34	34	36	31	31	46
2410	Non-participating	32	32	33	33	34	30	30	44
2411	Non-participating	34	33	34	34	35	31	31	34
2412	Non-participating	26	26	27	27	28	30	31	33
2413	Non-participating	35	34	35	35	36	31	31	36
2414	Non-participating	31	30	31	31	33	35	35	38
2415	Non-participating	31	31	32	32	33	32	33	36
2416	Non-participating	32	32	33	33	34	34	35	37
2417	Non-participating	31	30	31	31	32	35	35	38
2418	Non-participating	33	32	33	33	35	30	30	43
2419	Non-participating	34	34	35	35	36	34	35	38
2420	Non-participating	34	33	35	35	36	31	32	34
2421	Non-participating	32	31	32	32	33	28	28	33
2422	Non-participating	34	33	34	34	35	31	32	34
2423	Non-participating	27	27	28	27	29	32	33	35
2424	Non-participating	31	30	31	31	33	28	29	31
2425	Non-participating	32	31	32	32	33	30	30	44
2426	Non-participating	32	31	32	33	34	31	32	37
2427	Non-participating	31	31	32	32	33	25	26	29
2428	Non-participating	31	31	32	32	33	33	34	36
2429	Non-participating	27	26	27	27	29	29	29	34
2430	Non-participating	31	30	31	31	33	34	35	37
2431	Non-participating	30	29	30	30	32	32	33	36
2432	Non-participating	35	34	35	35	37	25	25	32
2433	Non-participating	31	30	31	31	33	27	27	30
2434	Non-participating	33	33	34	34	35	32	33	35
2435	Non-participating	32	31	32	32	33	33	34	36
2436	Non-participating	31	30	31	32	32	33	33	35
2437	Non-participating	31	30	31	31	33	32	33	35
2438	Non-participating	35	34	35	35	37	30	31	33
2439	Non-participating	34	34	35	35	36	26	27	29
2440	Non-participating	33	32	33	33	34	32	33	35
2441	Non-participating	30	29	30	30	32	32	33	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2442	Non-participating	31	30	31	31	33	31	32	34
2443	Non-participating	32	31	32	32	34	33	33	35
2444	Non-participating	30	29	30	30	32	31	31	46
2445	Non-participating	32	31	32	32	33	32	33	35
2446	Non-participating	32	31	32	32	34	30	31	44
2447	Non-participating	32	32	33	33	34	33	34	36
2448	Non-participating	31	30	31	31	33	30	30	37
2449	Non-participating	35	35	36	35	37	31	32	34
2450	Non-participating	26	25	26	26	28	31	31	44
2451	Non-participating	32	31	32	32	34	30	30	44
2452	Non-participating	36	35	37	37	38	30	31	37
2453	Non-participating	31	30	31	31	33	34	35	37
2454	Non-participating	31	31	32	32	33	26	27	29
2455	Non-participating	33	32	33	33	34	31	32	37
2456	Non-participating	32	31	32	32	34	34	35	37
2457	Non-participating	32	31	32	32	34	32	33	35
2458	Non-participating	32	31	32	32	33	34	35	37
2459	Non-participating	31	30	31	31	33	35	35	38
2460	Non-participating	36	35	36	36	37	29	30	32
2461	Non-participating	31	30	31	31	33	34	35	37
2462	Non-participating	32	31	32	32	33	28	28	30
2463	Non-participating	34	34	35	35	36	34	35	37
2464	Non-participating	29	28	29	29	31	30	31	44
2465	Non-participating	31	30	31	31	33	33	34	37
2466	Non-participating	29	28	29	29	30	30	30	33
2467	Non-participating	30	29	30	30	32	31	32	34
2468	Non-participating	32	31	32	32	34	26	27	29
2469	Non-participating	32	31	32	32	33	33	33	35
2470	Non-participating	34	34	35	35	36	31	32	35
2471	Non-participating	37	37	38	38	39	32	33	35
2472	Non-participating	32	31	32	32	34	32	33	37
2473	Non-participating	31	30	31	31	33	32	33	35
2474	Non-participating	34	33	34	34	35	27	28	30
2475	Non-participating	34	33	34	34	35	29	30	32
2476	Non-participating	30	30	31	31	32	32	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2477	Non-participating	32	31	32	32	33	34	34	36
2478	Non-participating	30	29	30	30	32	34	34	37
2479	Non-participating	33	32	33	33	35	34	34	37
2480	Non-participating	35	34	35	35	37	32	32	35
2481	Non-participating	33	32	33	33	34	31	32	34
2482	Non-participating	33	33	34	34	35	30	30	44
2483	Non-participating	31	30	31	31	33	33	33	47
2484	Non-participating	30	29	31	31	32	29	29	35
2485	Non-participating	29	28	29	29	31	27	28	33
2486	Non-participating	29	28	29	29	31	29	29	46
2487	Non-participating	29	28	29	29	31	28	29	31
2488	Non-participating	34	33	34	34	35	33	33	36
2489	Non-participating	30	29	30	30	32	34	34	38
2490	Non-participating	30	29	30	30	32	31	31	36
2491	Non-participating	32	31	32	32	34	29	30	32
2492	Non-participating	35	34	35	35	36	30	30	33
2493	Non-participating	30	29	30	30	32	24	25	30
2494	Non-participating	34	33	34	34	35	29	30	33
2495	Non-participating	36	35	36	36	38	31	32	34
2496	Non-participating	31	30	31	31	33	27	28	33
2497	Non-participating	33	32	33	33	35	30	30	36
2498	Non-participating	34	33	35	34	36	27	28	30
2499	Non-participating	33	32	33	33	35	33	34	36
2500	Non-participating	32	31	32	32	34	32	33	35
2501	Non-participating	30	29	30	30	32	32	33	35
2502	Non-participating	32	31	32	32	33	30	31	33
2503	Non-participating	27	27	28	27	29	30	31	33
2504	Non-participating	31	31	32	32	33	26	27	30
2505	Non-participating	27	26	27	28	29	30	31	33
2506	Non-participating	35	34	35	35	36	30	31	33
2507	Non-participating	32	31	32	33	34	32	32	45
2508	Non-participating	32	32	33	33	34	28	29	33
2509	Non-participating	32	31	32	32	34	34	34	37
2510	Non-participating	28	28	29	29	30	33	34	36
2511	Non-participating	32	31	32	32	34	32	32	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2512	Non-participating	33	32	33	33	34	27	28	30
2513	Non-participating	30	29	30	30	32	28	29	31
2514	Non-participating	30	29	30	31	32	30	30	37
2515	Non-participating	35	34	35	35	36	30	31	44
2516	Non-participating	36	35	36	36	38	28	29	31
2517	Non-participating	31	30	31	31	32	36	37	39
2518	Non-participating	32	32	33	33	34	28	28	31
2519	Non-participating	31	31	32	32	33	29	29	32
2520	Non-participating	29	29	30	30	31	36	37	39
2521	Non-participating	30	29	30	30	32	26	27	29
2522	Non-participating	33	32	33	33	34	30	30	37
2523	Non-participating	33	32	33	33	35	30	31	33
2524	Non-participating	32	31	33	32	34	27	28	30
2525	Non-participating	35	34	35	35	37	31	31	36
2526	Non-participating	33	33	34	34	35	34	34	37
2527	Non-participating	33	32	33	33	35	30	31	36
2528	Non-participating	31	30	31	31	32	34	35	37
2529	Non-participating	30	29	30	30	31	27	28	31
2530	Non-participating	31	30	31	31	32	30	30	32
2531	Non-participating	34	33	34	34	36	29	30	32
2532	Non-participating	31	30	31	31	32	29	29	32
2533	Non-participating	32	31	32	32	33	29	30	32
2534	Non-participating	29	28	29	29	31	34	35	37
2535	Non-participating	33	33	34	34	35	34	35	37
2536	Non-participating	31	31	31	32	33	30	31	33
2537	Non-participating	33	32	33	33	35	27	28	33
2538	Non-participating	33	32	33	33	35	31	32	34
2539	Non-participating	33	32	34	34	35	30	31	36
2540	Non-participating	33	32	34	33	35	28	29	31
2541	Non-participating	32	31	32	32	34	29	30	32
2542	Non-participating	27	27	28	27	29	31	32	34
2543	Non-participating	33	33	34	34	35	31	31	44
2544	Non-participating	35	34	35	35	37	35	36	38
2545	Non-participating	31	30	31	31	33	33	34	35
2546	Non-participating	33	32	33	33	34	29	30	32

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2547	Non-participating	30	30	31	31	32	30	31	33
2548	Non-participating	27	27	28	28	29	34	35	37
2549	Non-participating	31	30	31	31	33	31	31	46
2550	Non-participating	36	35	36	36	37	35	36	38
2551	Non-participating	33	32	33	33	35	32	32	37
2552	Non-participating	26	26	27	27	28	27	28	30
2553	Non-participating	27	26	27	27	29	28	29	31
2554	Non-participating	37	37	38	38	39	28	29	31
2555	Non-participating	32	31	32	32	34	31	32	34
2556	Non-participating	36	35	36	36	38	31	31	33
2557	Non-participating	33	33	34	34	35	34	35	37
2558	Non-participating	32	31	32	32	34	31	32	34
2559	Non-participating	29	28	29	29	30	27	28	33
2560	Non-participating	33	32	33	33	35	34	35	36
2561	Non-participating	36	35	36	36	38	33	34	36
2562	Non-participating	30	30	31	31	32	33	34	36
2563	Non-participating	31	30	31	31	33	33	34	38
2564	Non-participating	33	32	33	33	35	31	32	34
2565	Non-participating	34	33	34	34	35	33	34	36
2566	Non-participating	32	31	32	32	33	30	31	33
2567	Non-participating	33	32	33	33	35	27	28	30
2568	Non-participating	31	30	31	31	33	32	33	36
2569	Non-participating	33	32	33	33	35	31	32	34
2570	Non-participating	30	30	31	31	32	30	31	33
2571	Non-participating	34	33	34	34	36	26	27	33
2572	Non-participating	33	32	33	33	34	28	29	31
2573	Non-participating	32	31	32	32	33	31	31	38
2574	Non-participating	32	31	32	32	34	32	32	38
2575	Non-participating	33	33	34	33	35	30	31	33
2576	Non-participating	33	33	34	34	35	32	33	35
2577	Non-participating	32	31	32	32	34	35	36	38
2578	Non-participating	34	33	34	34	35	31	31	46
2579	Non-participating	33	32	33	33	34	31	31	36
2580	Non-participating	36	35	36	36	37	36	36	39
2581	Non-participating	33	32	33	33	35	30	31	35

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2582	Non-participating	27	26	27	27	29	30	31	33
2583	Non-participating	31	30	31	31	32	31	31	33
2584	Non-participating	35	34	35	35	36	31	32	34
2585	Non-participating	29	29	30	29	31	30	30	32
2586	Non-participating	35	34	35	35	37	31	32	34
2587	Non-participating	30	29	30	30	32	27	28	30
2588	Non-participating	35	34	35	35	36	30	30	44
2589	Non-participating	33	32	33	33	35	31	31	35
2590	Non-participating	34	34	35	35	36	35	36	38
2591	Non-participating	32	32	33	33	34	34	34	37
2592	Non-participating	24	23	24	24	26	31	32	34
2593	Non-participating	32	31	32	32	34	30	31	33
2594	Non-participating	33	33	34	34	35	32	32	34
2595	Non-participating	32	31	32	32	34	30	30	43
2596	Non-participating	33	32	33	33	35	29	30	34
2597	Non-participating	33	32	33	33	34	34	34	37
2598	Non-participating	27	26	27	27	29	30	31	36
2599	Non-participating	30	29	30	30	32	35	36	38
2600	Non-participating	35	34	36	35	37	27	27	29
2601	Non-participating	36	35	36	36	37	24	24	29
2602	Non-participating	29	28	30	30	31	33	33	46
2603	Non-participating	34	33	34	34	36	29	30	46
2604	Non-participating	32	31	32	32	33	27	28	32
2605	Non-participating	29	28	29	29	31	30	31	37
2606	Non-participating	36	35	36	36	37	31	32	37
2607	Non-participating	34	33	35	34	36	29	30	36
2608	Non-participating	33	32	33	33	35	30	31	45
2609	Non-participating	30	29	30	30	32	30	31	44
2610	Non-participating	31	31	32	32	33	32	33	36
2611	Non-participating	31	30	31	31	32	31	32	34
2612	Non-participating	36	36	37	37	38	30	30	36
2613	Non-participating	32	31	32	32	33	30	31	33
2614	Non-participating	33	32	33	33	35	33	33	35
2615	Non-participating	31	30	31	31	33	32	33	35
2616	Non-participating	34	33	34	34	35	31	32	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2617	Non-participating	31	30	31	31	32	30	31	33
2618	Non-participating	28	27	28	28	30	30	31	44
2619	Non-participating	36	35	36	36	38	34	35	37
2620	Non-participating	35	34	35	35	36	32	32	39
2621	Non-participating	31	30	31	31	33	29	30	32
2622	Non-participating	32	32	33	33	34	31	32	34
2623	Non-participating	35	35	36	36	37	34	35	37
2624	Non-participating	31	30	31	31	33	33	33	35
2625	Non-participating	35	34	35	35	36	28	29	33
2626	Non-participating	34	34	35	35	36	32	33	36
2627	Non-participating	32	31	32	32	33	25	25	29
2628	Non-participating	32	31	32	32	34	23	23	28
2629	Non-participating	30	29	30	30	32	31	32	34
2630	Non-participating	32	31	32	32	33	30	30	36
2631	Non-participating	31	30	31	31	33	30	31	36
2632	Non-participating	34	33	34	34	36	30	30	37
2633	Non-participating	31	30	32	32	33	33	34	36
2634	Non-participating	28	27	28	28	29	31	31	41
2635	Non-participating	33	32	33	33	34	31	32	34
2636	Non-participating	30	30	31	30	32	32	33	35
2637	Non-participating	32	31	32	32	33	30	30	32
2638	Non-participating	30	29	30	30	31	34	35	37
2639	Non-participating	35	34	35	35	37	30	30	44
2640	Non-participating	31	30	31	31	33	31	31	44
2641	Non-participating	27	26	28	27	29	32	32	38
2642	Non-participating	25	24	25	25	27	30	31	37
2643	Non-participating	29	28	29	29	31	32	33	36
2644	Non-participating	33	33	34	34	35	30	30	32
2645	Non-participating	35	34	35	35	36	34	35	37
2646	Non-participating	31	30	31	31	32	29	30	33
2647	Non-participating	35	34	35	35	37	32	33	34
2648	Non-participating	33	32	33	33	35	31	32	34
2649	Non-participating	30	29	30	30	31	30	31	33
2650	Non-participating	32	31	32	32	33	33	33	37
2651	Non-participating	27	27	28	27	29	33	33	36

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2652	Non-participating	31	30	31	31	33	30	31	38
2653	Non-participating	31	30	31	31	33	30	31	37
2654	Non-participating	32	31	32	32	33	34	35	37
2655	Non-participating	31	30	31	31	33	31	31	44
2656	Non-participating	28	27	28	28	30	31	31	36
2657	Non-participating	30	30	31	30	32	30	30	37
2658	Non-participating	32	31	32	32	34	34	35	37
2659	Non-participating	36	36	37	37	38	30	31	33
2660	Non-participating	32	31	32	32	34	30	30	44
2661	Non-participating	31	30	31	31	33	34	35	37
2662	Non-participating	33	32	33	33	35	35	35	38
2663	Non-participating	32	31	32	32	33	31	32	34
2664	Non-participating	30	29	30	30	31	33	34	36
2665	Non-participating	31	30	31	31	33	30	31	36
2666	Non-participating	34	33	34	34	36	30	30	43
2667	Non-participating	29	28	29	29	30	31	31	45
2668	Non-participating	31	30	31	31	33	34	35	37
2669	Non-participating	30	29	30	30	32	34	35	37
2670	Non-participating	30	29	30	30	31	31	32	34
2671	Non-participating	32	31	32	32	34	31	32	34
2672	Non-participating	34	34	35	35	36	35	36	38
2673	Non-participating	35	34	35	35	37	31	31	44
2674	Non-participating	33	32	33	33	35	36	37	39
2675	Non-participating	34	33	34	34	35	33	34	36
2676	Non-participating	32	31	32	32	34	32	33	35
2677	Non-participating	28	28	29	29	30	30	31	33
2678	Non-participating	31	30	31	31	33	32	33	35
2679	Non-participating	32	31	32	32	33	27	28	30
2680	Non-participating	27	26	27	28	29	34	34	36
2681	Non-participating	34	33	34	34	36	27	27	33
2682	Non-participating	29	28	29	29	31	32	33	37
2683	Non-participating	33	33	34	34	35	30	31	36
2684	Non-participating	33	32	33	33	35	31	32	34
2685	Non-participating	31	30	31	31	33	30	31	33
2686	Non-participating	32	31	32	32	34	28	28	31

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2687	Non-participating	34	33	34	34	36	27	27	30
2688	Non-participating	30	29	30	30	32	31	32	34
2689	Non-participating	34	33	35	35	36	34	35	37
2690	Non-participating	35	34	36	36	37	33	34	36
2691	Non-participating	34	33	34	34	35	27	28	32
2692	Non-participating	33	32	33	33	35	34	35	37
2693	Non-participating	28	27	28	28	30	28	29	33
2694	Non-participating	35	34	35	35	36	30	31	36
2695	Non-participating	33	32	33	33	35	30	30	36
2696	Non-participating	31	30	31	31	33	30	30	43
2697	Non-participating	26	25	26	26	28	33	34	37
2698	Non-participating	32	31	32	32	34	33	34	36
2699	Non-participating	34	33	34	34	36	26	27	29
2700	Non-participating	33	32	33	33	35	27	28	30
2701	Non-participating	31	30	31	31	33	26	27	30
2702	Non-participating	29	28	29	29	31	31	32	34
2703	Non-participating	32	31	32	32	34	31	32	34
2704	Non-participating	34	33	34	34	36	28	29	31
2705	Non-participating	32	32	33	33	34	34	35	37
2706	Non-participating	35	35	36	36	37	29	30	32
2707	Non-participating	31	30	31	31	32	34	35	37
2708	Non-participating	34	33	34	34	35	31	32	37
2709	Non-participating	32	31	32	32	33	30	31	36
2710	Non-participating	31	30	31	31	33	26	27	29
2711	Non-participating	32	31	32	32	33	32	32	34
2712	Non-participating	31	30	31	31	33	30	31	44
2713	Non-participating	32	31	32	32	34	33	34	36
2714	Non-participating	36	35	36	36	37	32	33	36
2715	Non-participating	33	32	33	33	35	30	31	33
2716	Non-participating	35	34	35	35	37	30	31	33
2717	Non-participating	36	35	36	36	37	30	30	44
2718	Non-participating	31	30	31	31	33	30	30	32
2719	Non-participating	35	35	36	36	37	30	31	33
2720	Non-participating	32	31	32	32	34	34	35	36
2721	Non-participating	29	28	29	29	31	35	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2722	Non-participating	32	31	32	32	34	35	35	37
2723	Non-participating	33	33	34	34	35	29	29	31
2724	Non-participating	29	29	30	30	31	29	30	32
2725	Non-participating	31	30	31	31	33	28	29	31
2726	Non-participating	32	31	32	33	34	33	33	45
2727	Non-participating	27	26	27	27	29	29	29	45
2728	Non-participating	34	33	34	34	36	34	34	37
2729	Non-participating	30	29	30	30	32	27	28	33
2730	Non-participating	36	35	36	36	37	27	28	33
2731	Non-participating	33	32	33	33	35	29	29	34
2732	Non-participating	26	25	26	26	28	31	31	36
2733	Non-participating	28	27	28	28	30	30	31	33
2734	Non-participating	33	32	33	33	35	28	29	31
2735	Non-participating	34	34	35	35	36	30	30	33
2736	Non-participating	34	33	34	34	35	28	29	31
2737	Non-participating	33	33	34	34	35	35	35	38
2738	Non-participating	32	31	32	32	33	27	28	30
2739	Non-participating	27	26	27	29	29	29	30	32
2740	Non-participating	33	32	33	33	35	23	23	28
2741	Non-participating	33	32	33	33	35	31	31	35
2742	Non-participating	32	31	32	32	34	32	33	35
2743	Non-participating	34	33	34	34	35	32	33	38
2744	Non-participating	32	31	32	32	34	32	33	35
2745	Non-participating	33	32	33	33	35	30	31	33
2746	Non-participating	31	31	32	32	33	30	30	32
2747	Non-participating	34	33	34	34	36	29	30	32
2748	Non-participating	31	30	31	31	33	28	29	31
2749	Non-participating	32	31	32	32	34	31	32	34
2750	Non-participating	32	31	32	32	33	28	29	31
2751	Non-participating	31	30	31	31	33	28	28	33
2752	Non-participating	32	31	32	32	33	29	30	34
2753	Non-participating	35	34	35	35	37	29	30	32
2754	Non-participating	27	26	27	27	29	35	35	38
2755	Non-participating	33	32	33	33	34	35	35	38
2756	Non-participating	35	34	35	35	37	35	35	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2757	Non-participating	33	32	33	33	35	35	35	38
2758	Non-participating	35	34	35	35	37	35	35	38
2759	Non-participating	36	35	36	36	37	35	35	38
2760	Non-participating	31	30	31	31	32	35	36	38
2761	Non-participating	35	34	35	35	37	35	36	38
2762	Non-participating	29	28	29	29	30	35	36	38
2763	Non-participating	35	34	35	35	37	35	36	38
2764	Non-participating	31	31	32	32	33	35	36	38
2765	Non-participating	35	34	35	35	36	35	35	38
2766	Non-participating	31	30	31	31	33	35	35	38
2767	Non-participating	32	31	33	33	34	35	36	38
2768	Non-participating	27	27	28	28	29	35	35	38
2769	Non-participating	34	33	34	34	35	35	35	38
2770	Non-participating	32	32	33	33	34	35	35	38
2771	Non-participating	34	33	34	34	35	35	35	38
2772	Non-participating	33	33	34	34	35	36	36	39
2773	Non-participating	33	32	33	33	35	35	36	38
2774	Non-participating	28	28	29	29	30	35	35	38
2775	Non-participating	30	29	30	30	32	35	35	38
2776	Non-participating	33	32	33	33	34	35	35	38
2777	Non-participating	34	34	35	35	36	35	35	38
2778	Non-participating	35	34	35	35	36	34	35	38
2779	Non-participating	35	34	35	35	36	34	35	38
2780	Non-participating	33	32	33	33	35	34	35	38
2781	Non-participating	32	32	33	33	34	35	35	38
2782	Non-participating	31	31	32	32	33	35	35	38
2783	Non-participating	34	33	34	34	36	35	35	38
2784	Non-participating	30	29	30	30	32	35	35	38
2785	Non-participating	28	27	28	28	30	35	35	38
2786	Non-participating	30	29	30	30	32	35	35	38
2787	Non-participating	30	29	30	30	31	34	34	37
2788	Non-participating	34	33	34	34	35	34	34	37
2789	Non-participating	35	34	35	35	37	34	34	37
2790	Non-participating	32	31	32	32	34	34	34	37
2791	Non-participating	30	30	31	30	32	34	34	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2792	Non-participating	31	30	31	31	33	34	34	37
2793	Non-participating	26	25	26	26	28	33	34	37
2794	Non-participating	30	29	30	30	32	33	34	37
2795	Non-participating	32	32	33	33	34	33	34	37
2796	Non-participating	28	28	29	29	30	34	34	37
2797	Non-participating	31	30	31	31	33	37	37	40
2798	Non-participating	28	27	28	28	30	36	37	39
2799	Non-participating	34	33	34	34	36	35	36	38
2800	Non-participating	33	32	33	33	35	36	37	39
2801	Non-participating	33	32	33	33	35	36	37	39
2802	Non-participating	31	30	31	31	33	36	37	39
2803	Non-participating	31	30	31	31	33	36	36	38
2804	Non-participating	28	27	28	28	30	36	36	38
2805	Non-participating	31	30	31	31	33	35	36	38
2806	Non-participating	31	30	31	31	33	33	34	36
2807	Non-participating	33	32	33	33	35	33	34	36
2808	Non-participating	29	28	29	29	31	33	34	36
2809	Non-participating	35	34	35	35	36	33	34	36
2810	Non-participating	34	34	34	35	36	33	34	36
2811	Non-participating	33	32	33	33	35	33	34	36
2812	Non-participating	28	27	28	28	30	33	34	36
2813	Non-participating	29	29	30	30	31	33	33	36
2814	Non-participating	31	30	31	31	33	32	33	36
2815	Non-participating	31	31	32	32	33	32	33	35
2816	Non-participating	29	28	29	29	31	32	33	35
2817	Non-participating	37	36	37	37	39	32	33	35
2818	Non-participating	29	28	29	29	31	33	33	36
2819	Non-participating	30	29	30	30	32	36	36	38
2820	Non-participating	37	36	38	38	39	36	37	39
2821	Non-participating	27	26	27	27	29	35	35	37
2822	Non-participating	31	30	31	31	33	35	35	37
2823	Non-participating	31	30	31	31	33	34	35	37
2824	Non-participating	29	28	29	29	30	34	35	37
2825	Non-participating	32	31	32	32	33	34	35	37
2826	Non-participating	35	34	35	35	37	34	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2827	Non-participating	31	30	31	31	33	34	35	37
2828	Non-participating	35	34	35	35	37	33	34	36
2829	Non-participating	29	28	29	29	30	33	34	36
2830	Non-participating	31	30	31	31	32	33	34	36
2831	Non-participating	30	29	30	30	32	33	34	36
2832	Non-participating	30	29	30	30	32	33	34	36
2833	Non-participating	30	30	31	31	32	33	34	36
2834	Non-participating	35	34	35	35	37	38	39	40
2835	Non-participating	35	34	35	35	37	37	38	39
2836	Non-participating	31	30	31	31	33	36	37	38
2837	Non-participating	29	28	29	29	31	36	37	38
2838	Non-participating	32	31	32	32	33	36	36	38
2839	Non-participating	32	31	32	32	33	35	36	38
2840	Non-participating	29	29	30	31	31	33	34	36
2841	Non-participating	30	30	31	31	32	33	34	36
2842	Non-participating	32	31	33	33	34	33	34	36
2843	Non-participating	32	31	32	32	33	40	41	42
2844	Non-participating	36	35	36	36	38	36	36	38
2845	Non-participating	34	33	34	34	35	35	35	38
2846	Non-participating	30	29	30	30	32	35	36	38
2847	Non-participating	32	31	32	32	33	35	36	38
2848	Non-participating	35	34	35	35	37	35	35	37
2849	Non-participating	32	31	32	32	33	34	35	37
2850	Non-participating	36	35	36	36	38	34	35	37
2851	Non-participating	33	32	33	33	35	40	41	42
2852	Non-participating	28	28	29	28	30	40	41	42
2853	Non-participating	29	28	29	29	31	34	35	37
2854	Non-participating	29	29	30	30	31	34	35	37
2855	Non-participating	32	31	32	32	34	34	35	37
2856	Non-participating	32	31	32	32	33	35	35	40
2857	Non-participating	35	34	35	35	37	35	36	39
2858	Non-participating	32	32	33	33	34	35	36	39
2859	Non-participating	28	27	28	28	30	35	36	39
2860	Non-participating	35	34	35	35	36	36	36	39
2861	Non-participating	34	34	35	35	36	35	36	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2862	Non-participating	34	33	34	34	36	35	36	39
2863	Non-participating	34	33	34	34	36	35	36	39
2864	Non-participating	32	32	33	33	34	36	36	39
2865	Non-participating	34	33	34	34	36	36	36	39
2866	Non-participating	32	31	32	32	33	36	36	39
2867	Non-participating	29	28	29	28	30	39	40	42
2868	Non-participating	33	33	34	33	35	35	36	38
2869	Non-participating	32	31	32	32	34	36	37	39
2870	Non-participating	31	31	32	32	33	34	35	37
2871	Non-participating	28	27	28	28	29	32	33	35
2872	Non-participating	30	29	30	30	31	32	32	35
2873	Non-participating	32	31	32	32	34	34	34	36
2874	Non-participating	33	32	33	33	35	33	34	36
2875	Non-participating	31	30	31	31	33	32	33	35
2876	Non-participating	33	32	33	33	35	34	35	37
2877	Non-participating	36	35	36	36	38	34	35	37
2878	Non-participating	32	31	32	32	33	35	36	38
2879	Non-participating	32	31	32	32	34	39	40	41
2880	Non-participating	36	36	37	37	38	39	39	41
2881	Non-participating	32	31	32	32	33	37	38	39
2882	Non-participating	31	31	32	32	33	38	39	40
2883	Non-participating	32	31	32	32	33	38	38	40
2884	Non-participating	32	32	33	33	34	37	38	40
2885	Non-participating	31	30	31	31	32	36	36	38
2886	Non-participating	32	31	32	32	34	35	36	38
2887	Non-participating	28	27	29	29	30	35	36	38
2888	Non-participating	31	31	32	32	33	36	37	39
2889	Non-participating	32	31	32	32	34	36	36	38
2890	Non-participating	36	35	36	36	38	36	37	39
2891	Non-participating	35	34	35	35	36	35	36	38
2892	Non-participating	33	32	33	33	34	36	36	38
2893	Non-participating	31	30	31	32	33	32	33	35
2894	Non-participating	33	32	33	33	34	35	36	38
2895	Non-participating	31	30	31	31	33	36	36	38
2896	Non-participating	31	30	31	31	32	35	36	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2897	Non-participating	35	34	35	35	37	35	36	38
2898	Non-participating	31	30	31	31	33	34	35	37
2899	Non-participating	36	35	36	36	38	35	36	38
2900	Non-participating	28	27	28	28	29	35	35	37
2901	Non-participating	25	24	25	25	27	35	36	38
2902	Non-participating	34	33	34	34	35	36	36	38
2903	Non-participating	30	29	31	31	32	36	37	39
2904	Non-participating	28	28	29	29	30	35	36	37
2905	Non-participating	31	31	32	32	33	33	34	36
2906	Non-participating	32	32	33	33	34	34	34	36
2907	Non-participating	31	30	31	31	32	34	35	37
2908	Non-participating	32	31	32	32	33	34	35	36
2909	Non-participating	31	31	32	32	33	34	35	36
2910	Non-participating	33	33	34	34	35	33	34	36
2911	Non-participating	32	32	33	33	34	33	34	36
2912	Non-participating	31	30	31	31	33	34	34	36
2913	Non-participating	31	31	32	32	33	34	35	37
2914	Non-participating	34	33	34	34	35	33	34	36
2915	Non-participating	33	32	33	33	35	34	35	36
2916	Non-participating	32	32	33	33	34	36	36	38
2917	Non-participating	31	31	32	32	33	34	35	37
2918	Non-participating	31	31	32	32	33	35	36	38
2919	Non-participating	35	35	36	35	37	43	43	45
2920	Non-participating	33	32	33	33	35	37	37	40
2921	Non-participating	30	29	30	30	32	38	39	41
2922	Non-participating	32	31	32	32	34	38	39	40
2923	Non-participating	35	34	35	35	37	36	37	39
2924	Non-participating	34	33	34	34	35	38	38	40
2925	Non-participating	30	29	30	30	31	45	45	47
2926	Non-participating	33	33	34	33	35	44	44	46
2927	Non-participating	26	25	26	26	28	38	38	40
2928	Non-participating	24	23	24	24	26	41	41	42
2929	Non-participating	32	31	32	32	34	40	40	42
2930	Non-participating	31	30	31	31	33	41	42	43
2931	Non-participating	31	31	32	32	33	39	40	42

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2932	Non-participating	31	30	31	31	33	35	35	38
2933	Non-participating	35	34	35	35	36	44	44	46
2934	Non-participating	32	31	32	32	34	44	45	46
2935	Non-participating	32	31	32	32	34	37	38	40
2936	Non-participating	33	32	33	33	35	47	47	49
2937	Non-participating	31	30	31	31	32	38	39	40
2938	Non-participating	35	35	36	36	37	45	45	47
2939	Non-participating	31	30	32	32	33	44	44	46
2940	Non-participating	32	31	32	32	34	34	35	37
2941	Non-participating	33	32	33	33	34	35	35	37
2942	Non-participating	32	31	32	32	33	36	37	39
2943	Non-participating	33	32	33	33	35	42	43	44
2944	Non-participating	31	30	31	31	32	37	37	39
2945	Non-participating	35	34	35	35	37	43	44	45
2946	Non-participating	31	30	31	31	32	46	46	48
2947	Non-participating	33	32	33	33	34	44	44	46
2948	Non-participating	32	31	32	32	34	39	40	41
2949	Non-participating	32	31	32	32	33	36	37	39
2950	Non-participating	34	33	34	34	36	48	49	50
2951	Non-participating	34	33	34	34	35	43	43	45
2952	Non-participating	31	31	32	32	33	40	41	43
2953	Non-participating	31	31	32	31	33	41	42	44
2954	Non-participating	35	34	35	35	37	43	44	46
2955	Non-participating	32	31	32	32	34	38	38	41
2956	Non-participating	32	31	32	32	33	40	41	43
2957	Non-participating	31	30	31	31	33	36	36	38
2958	Non-participating	35	34	35	35	37	34	35	37
2959	Non-participating	32	31	32	32	33	33	34	37
2960	Non-participating	31	30	31	31	33	45	45	48
2961	Non-participating	35	34	35	35	37	45	45	47
2962	Non-participating	36	35	36	36	37	43	44	45
2963	Non-participating	32	31	32	32	34	47	47	47
2964	Non-participating	34	33	35	35	36	35	36	38
2965	Non-participating	31	31	32	32	33	43	43	45
2966	Non-participating	31	30	31	31	33	39	39	41

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
2967	Non-participating	32	31	32	32	34	32	33	35
2968	Non-participating	35	34	35	35	37	42	42	44
2969	Non-participating	35	34	35	35	37	41	41	43
2970	Non-participating	32	32	33	33	34	39	40	42
2971	Non-participating	33	32	33	33	34	38	38	40
2972	Non-participating	36	35	36	36	38	39	40	41
2973	Non-participating	32	31	32	32	34	42	42	44
2974	Non-participating	37	37	38	38	39	37	37	39
2975	Non-participating	34	33	34	34	36	43	43	45
2976	Non-participating	33	32	33	33	35	42	42	44
2977	Non-participating	32	31	32	32	33	46	46	48
2978	Non-participating	33	32	33	33	35	40	40	42
2979	Non-participating	28	28	29	29	30	39	40	41
2980	Non-participating	35	34	35	35	36	43	44	45
2981	Non-participating	28	27	28	29	30	41	41	43
2982	Non-participating	33	33	34	34	35	38	39	40
2983	Non-participating	32	31	32	32	33	39	40	42
2984	Non-participating	32	31	32	32	34	45	46	47
2985	Non-participating	31	30	32	31	33	40	40	42
2986	Non-participating	29	28	29	29	31	45	45	47
2987	Non-participating	28	27	28	28	30	44	44	46
2988	Non-participating	32	32	33	33	34	47	47	49
2989	Non-participating	35	34	35	35	37	43	43	45
2990	Non-participating	34	34	35	35	36	40	40	42
2991	Non-participating	28	28	29	29	30	42	42	44
2992	Non-participating	35	34	35	35	37	47	48	49
2993	Non-participating	29	28	29	29	31	38	38	40
2994	Non-participating	32	31	32	32	33	35	36	38
2995	Non-participating	31	30	31	31	33	35	36	38
2996	Non-participating	31	30	31	31	32	41	41	43
2997	Non-participating	34	33	34	35	36	40	40	42
2998	Non-participating	34	33	34	34	36	39	39	41
2999	Non-participating	27	26	27	27	29	33	34	37
3000	Non-participating	29	28	29	29	30	43	43	45
3001	Non-participating	27	26	27	27	29	45	46	47

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3002	Non-participating	32	31	32	32	34	43	43	45
3003	Non-participating	32	31	32	32	34	41	41	43
3004	Non-participating	29	28	29	30	31	44	45	46
3005	Non-participating	35	34	35	35	37	41	41	43
3006	Non-participating	30	29	30	30	32	34	35	37
3007	Non-participating	35	35	36	36	37	45	46	47
3008	Non-participating	32	31	32	32	34	40	40	42
3009	Non-participating	32	31	32	32	33	43	43	45
3010	Non-participating	27	26	27	28	29	44	44	46
3011	Non-participating	33	32	33	33	34	37	38	39
3012	Non-participating	31	31	32	32	33	37	37	39
3013	Non-participating	35	34	35	35	36	47	47	49
3014	Non-participating	33	33	34	34	35	40	41	42
3015	Non-participating	31	31	31	31	33	42	43	45
3016	Non-participating	31	31	32	32	33	42	42	44
3017	Non-participating	31	31	32	32	33	47	47	49
3018	Non-participating	31	30	31	32	32	44	44	46
3019	Non-participating	31	31	32	32	33	39	40	41
3020	Non-participating	35	34	35	35	36	29	30	32
3021	Non-participating	35	35	36	36	37	39	40	42
3022	Non-participating	35	35	36	36	37	38	38	40
3023	Non-participating	30	29	30	30	31	43	43	45
3024	Non-participating	30	29	30	30	32	43	44	46
3025	Non-participating	29	29	30	29	31	37	37	39
3026	Non-participating	34	33	34	34	35	43	43	45
3027	Non-participating	30	29	30	30	32	44	45	46
3028	Non-participating	35	34	35	35	36	38	38	40
3029	Non-participating	29	28	29	29	30	38	39	41
3030	Non-participating	29	28	29	29	30	38	39	41
3031	Non-participating	30	29	30	30	31	44	45	46
3032	Non-participating	32	31	32	32	34	43	43	45
3033	Non-participating	31	30	31	31	33	43	43	45
3034	Non-participating	30	29	30	30	31	44	44	46
3035	Non-participating	31	30	31	31	33	41	41	42
3036	Non-participating	29	28	29	29	31	44	45	46

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3037	Non-participating	36	35	36	36	37	41	42	43
3038	Non-participating	29	28	29	28	30	41	42	43
3039	Non-participating	30	29	31	31	32	42	43	44
3040	Non-participating	24	23	24	24	26	43	43	46
3041	Non-participating	32	31	32	32	34	29	30	32
3042	Non-participating	33	32	33	33	35	42	43	44
3043	Non-participating	33	32	33	33	35	44	45	46
3044	Non-participating	33	32	33	33	35	35	36	38
3045	Non-participating	31	30	31	31	33	39	39	41
3046	Non-participating	31	30	31	31	32	42	42	42
3047	Non-participating	30	29	30	30	32	35	35	38
3048	Non-participating	29	29	30	30	31	37	38	39
3049	Non-participating	32	32	33	33	34	44	44	46
3050	Non-participating	30	29	30	30	31	40	41	42
3051	Non-participating	29	28	29	29	31	44	45	47
3052	Non-participating	30	30	31	31	32	36	37	39
3053	Non-participating	30	29	30	30	32	35	36	38
3054	Non-Participating	36	35	36	36	38	38	39	40
3055	Non-Participating	36	35	36	36	37	36	37	38
3056	Non-Participating	36	35	36	36	38	35	36	38
3057	Non-Participating	36	35	36	36	38	42	43	45
3058	Non-Participating	36	35	36	36	37	37	37	39
3059	Non-Participating	36	35	36	36	38	44	45	46
3060	Non-Participating	36	36	37	37	38	37	38	39
3061	Non-Participating	36	35	36	36	38	41	41	43
3062	Non-Participating	36	35	36	36	38	36	36	39
3063	Non-Participating	36	35	36	36	38	43	44	45
3064	Non-Participating	36	35	36	36	38	37	38	40
3065	Non-Participating	36	35	36	36	38	44	45	46
3066	Non-Participating	36	35	36	36	38	36	37	39
3067	Non-Participating	36	35	36	36	38	43	44	45
3068	Non-Participating	36	35	36	36	38	39	40	42
3069	Non-Participating	36	35	36	36	37	35	36	38
3070	Non-Participating	36	35	36	36	37	44	45	46
3071	Non-Participating	36	35	36	36	37	36	37	39

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3072	Non-Participating	37	36	37	37	38	41	42	43
3073	Non-Participating	36	35	36	36	38	41	41	43
3074	Non-Participating	36	35	36	36	37	44	45	46
3075	Non-Participating	36	35	36	36	37	35	36	38
3076	Non-Participating	36	35	36	36	37	44	44	47
3077	Non-Participating	35	35	36	36	37	38	38	40
3078	Non-Participating	35	35	36	36	37	43	44	45
3079	Non-Participating	35	35	36	36	37	43	44	45
3080	Non-Participating	35	35	36	36	37	46	46	48
3081	Non-Participating	36	35	36	36	38	45	46	47
3082	Non-Participating	36	35	36	36	38	38	38	40
3083	Non-Participating	36	35	36	36	38	44	44	46
3084	Non-Participating	36	35	36	36	37	43	44	45
3085	Non-Participating	36	35	36	36	37	32	33	35
3086	Non-Participating	36	35	36	36	37	39	39	41
3087	Non-Participating	35	34	35	35	37	37	37	39
3088	Non-Participating	35	34	35	35	36	42	43	45
3089	Non-Participating	35	34	35	35	37	38	39	41
3090	Non-Participating	35	34	35	35	37	46	47	48
3091	Non-Participating	35	34	35	35	37	46	47	49
3092	Non-Participating	35	34	35	35	36	40	40	42
3093	Non-Participating	35	34	35	35	36	45	45	47
3094	Non-Participating	34	34	35	35	36	41	42	44
3095	Non-Participating	34	33	35	34	36	47	47	49
3096	Non-Participating	35	34	35	35	37	44	45	46
3097	Church	38	37	38	38	40	38	39	41
3098	Non-Participating	37	37	38	38	39	47	47	49
3099	Church	37	37	38	38	39	44	44	46
3100	Non-Participating	37	36	37	37	38	37	37	39
3101	Non-Participating	36	36	37	37	38	43	44	46
3102	Non-Participating	37	36	37	37	38	43	44	45
3103	Non-Participating	37	36	37	37	38	35	35	38
3104	Non-Participating	37	36	37	37	39	46	46	48
3105	Non-Participating	36	36	37	37	38	44	44	46
3106	Non-Participating	36	36	37	37	38	35	36	38

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3107	Non-Participating	36	35	36	36	38	46	46	48
3108	Non-Participating	34	33	34	34	36	39	39	41
3109	Non-Participating	34	33	35	35	36	39	39	41
3110	Non-Participating	34	33	34	34	36	38	39	41
3111	Non-Participating	34	33	34	34	36	45	46	47
3112	Non-Participating	34	33	34	34	36	45	45	47
3113	Non-Participating	34	33	34	34	36	35	36	37
3114	Non-Participating	34	33	34	34	35	40	40	42
3115	Non-Participating	34	33	34	34	35	43	43	45
3116	Non-Participating	34	33	34	34	35	43	43	45
3117	Non-Participating	33	32	33	33	35	37	37	39
3118	Non-Participating	33	32	34	33	35	43	43	45
3119	Non-Participating	33	33	34	34	35	35	35	37
3120	Non-Participating	34	33	34	34	35	46	46	48
3121	School	32	32	33	33	34	42	43	45
3122	Non-Participating	36	36	37	37	38	45	46	47
3123	Non-Participating	37	36	37	37	38	35	35	37
3124	Non-Participating	35	35	36	36	37	39	39	41
3125	Non-Participating	35	35	36	36	37	45	45	47
3126	Non-Participating	35	34	36	35	37	44	45	46
3127	Non-Participating	35	34	35	35	37	45	45	47
3128	Non-Participating	35	34	35	35	37	38	39	40
3129	Non-Participating	35	34	35	35	36	37	38	40
3130	Non-Participating	35	34	35	35	36	38	39	41
3131	Non-Participating	34	34	35	35	36	34	34	36
3132	Non-Participating	34	33	35	34	36	43	44	45
3133	Non-Participating	34	33	34	34	36	44	44	46
3134	Non-Participating	34	33	34	34	36	36	36	38
3135	Non-Participating	34	33	34	34	36	39	40	41
3136	Non-Participating	34	33	34	34	35	42	42	44
3137	Non-Participating	39	38	39	39	40	37	38	40
3138	Non-Participating	37	37	38	38	39	37	38	40
3139	Non-Participating	37	36	37	37	38	36	36	39
3140	Non-Participating	36	36	37	37	38	36	37	39
3141	Non-Participating	36	36	37	37	38	35	35	37

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3142	Non-Participating	36	35	36	36	38	43	43	45
3143	Non-Participating	34	33	34	34	36	45	46	47
3144	Non-Participating	34	33	35	35	36	39	39	41
3145	Non-Participating	34	33	35	35	36	41	41	43
3146	Church	42	41	42	42	44	44	44	44
3147	Non-Participating	40	40	41	41	42	46	46	48
3148	Church	35	35	36	36	37	35	35	38
3149	Non-Participating	36	35	37	37	38	37	37	39
3150	Church	33	32	33	33	35	34	35	37
3151	Non-participating	36	35	36	36	37	37	37	39
3152	Non-participating	36	35	37	37	38	36	37	38
3153	Non-participating	36	35	36	36	38	35	36	38
3154	Non-participating	36	35	36	36	37	45	46	47
3155	Non-participating	35	35	36	36	37	37	38	39
3156	Non-participating	35	34	35	35	37	35	36	38
3157	Non-participating	41	40	41	41	42	40	40	42
3158	Non-participating	41	40	41	41	42	38	38	40
3159	Church	34	34	35	35	36	44	45	46
3160	Non-participating	35	34	36	35	37	38	39	40
3161	Non-participating	35	34	36	35	37	41	41	43
3162	Participating	35	34	35	35	37	42	43	45
3163	Non-participating	35	34	35	35	37	46	47	48
3164	Non-participating	36	35	36	36	37	40	40	42
3165	Non-participating	36	35	36	36	38	43	44	45
3166	Non-participating	36	35	36	36	38	54	54	54
3167	Non-participating	36	35	36	36	38	43	44	45
3168	Non-participating	36	36	37	37	38	43	44	45
3169	Non-participating	36	35	37	37	38	41	42	44
3170	Non-participating	36	35	37	36	38	38	38	41
3171	Non-participating	36	35	37	37	38	46	46	48
3172	Non-participating	37	36	37	37	38	45	45	47
3173	Non-participating	37	36	37	37	38	38	39	40
3174	Non-participating	37	36	37	37	39	44	44	46
3175	Participating	44	43	44	44	44	40	40	42
3176	Participating	45	45	45	45	45	45	46	47

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3177	Non-participating	40	39	40	40	42	43	43	45
3178	Non-participating	36	36	37	37	38	44	44	46
3179	Non-participating	37	36	37	37	39	46	47	48
3180	Non-participating	35	34	36	36	37	46	46	48
3181	Non-participating	33	32	34	34	35	45	45	47
3182	Non-participating	33	32	33	33	35	42	42	44
3183	Non-participating	35	34	35	35	36	44	44	46
3184	Non-participating	34	33	34	34	36	43	43	45
3185	Non-participating	33	33	34	34	35	43	43	45
3186	Non-participating	35	34	35	35	37	36	37	39
3187	Non-participating	35	34	35	35	37	44	44	46
3188	Non-participating	36	35	36	36	38	35	36	38
3189	Non-participating	40	39	40	40	41	33	34	36
3190	Non-participating	39	38	39	39	41	38	39	41
3191	Non-participating	38	37	38	38	39	40	41	43
3192	Non-participating	39	38	39	39	40	37	38	39
3193	Non-participating	38	37	39	39	40	29	30	32
3194	Non-participating	38	37	38	38	40	46	47	48
3195	Non-participating	37	36	37	37	38	40	41	42
3196	Non-participating	36	35	37	36	38	39	39	41
3197	Non-participating	36	35	37	37	38	34	34	36
3198	Non-participating	37	36	38	38	39	43	44	46
3199	Non-participating	36	36	37	37	38	43	43	45
3200	Non-participating	37	36	37	37	39	30	31	34
3201	Non-participating	36	35	36	36	38	33	34	36
3202	Non-participating	36	36	37	37	38	31	32	34
3203	Non-participating	33	32	33	35	35	28	29	31
3204	Non-participating	36	35	36	36	38	33	34	36
3205	Non-participating	37	36	37	37	38	30	31	33
3206	Non-participating	36	35	36	36	38	30	30	34
3207	Non-participating	36	35	36	36	38	32	33	34
3208	Non-participating	35	34	35	35	37	29	29	34
3209	Non-participating	36	35	36	36	38	28	29	32
3210	Non-participating	36	35	36	36	37	35	36	38
3211	Non-participating	36	35	36	36	38	30	31	34

ID	Receiver Status	V150 4.2 MW	V150 5.6 MW at 105m or 125m HH	N149 4.5 MW at 109m HH	N149 4.5 MW at 125m HH	SG 4.5-145	GE 3.0-140	22 GE 3.0-140 & 65 GE 5.5-158	Cumulative (Emerson w/SG4.5-145 & Republic)
3212	Participating	36	36	37	37	38	34	34	37
3213	Non-participating	37	36	37	37	38	32	32	36
3214	Non-participating	37	36	37	37	39	33	34	36
3215	Non-participating	36	35	36	36	37	29	30	32
3216	Non-participating	34	33	35	35	36	27	28	30
3217	Non-participating	35	34	35	35	36	34	34	37
3218	Non-participating	35	34	35	35	37	35	35	38
3219	Non-participating	35	34	35	35	36	32	32	35
3220	Non-participating	35	34	35	35	36	34	35	36
3221	Non-participating	34	33	34	34	36	31	31	33
3222	Non-participating	34	34	35	35	36	31	32	34
3223	Non-participating	35	34	35	35	36	31	32	34
3224	Non-participating	35	34	35	35	37	28	29	32
3225	Non-participating	34	33	35	35	36	30	30	34
3226	Non-participating	35	34	35	35	36	30	31	33
3227	Non-participating	37	36	37	37	38	32	33	35
3228	Non-participating	35	35	36	36	37	33	34	36
3229	Non-participating	36	35	36	36	38	27	27	32
3230	Non-participating	43	42	44	44	45	33	34	36
3231	Non-participating	38	37	38	38	40	34	35	37
3232	Non-participating	39	38	39	39	41	43	44	44
3233	Non-participating	39	38	39	39	40	45	45	45
3234	Participating	42	41	43	42	44	36	36	38
3235	Non-participating	37	36	37	37	38	42	42	44
3236	Non-participating	38	37	39	39	40	31	32	35

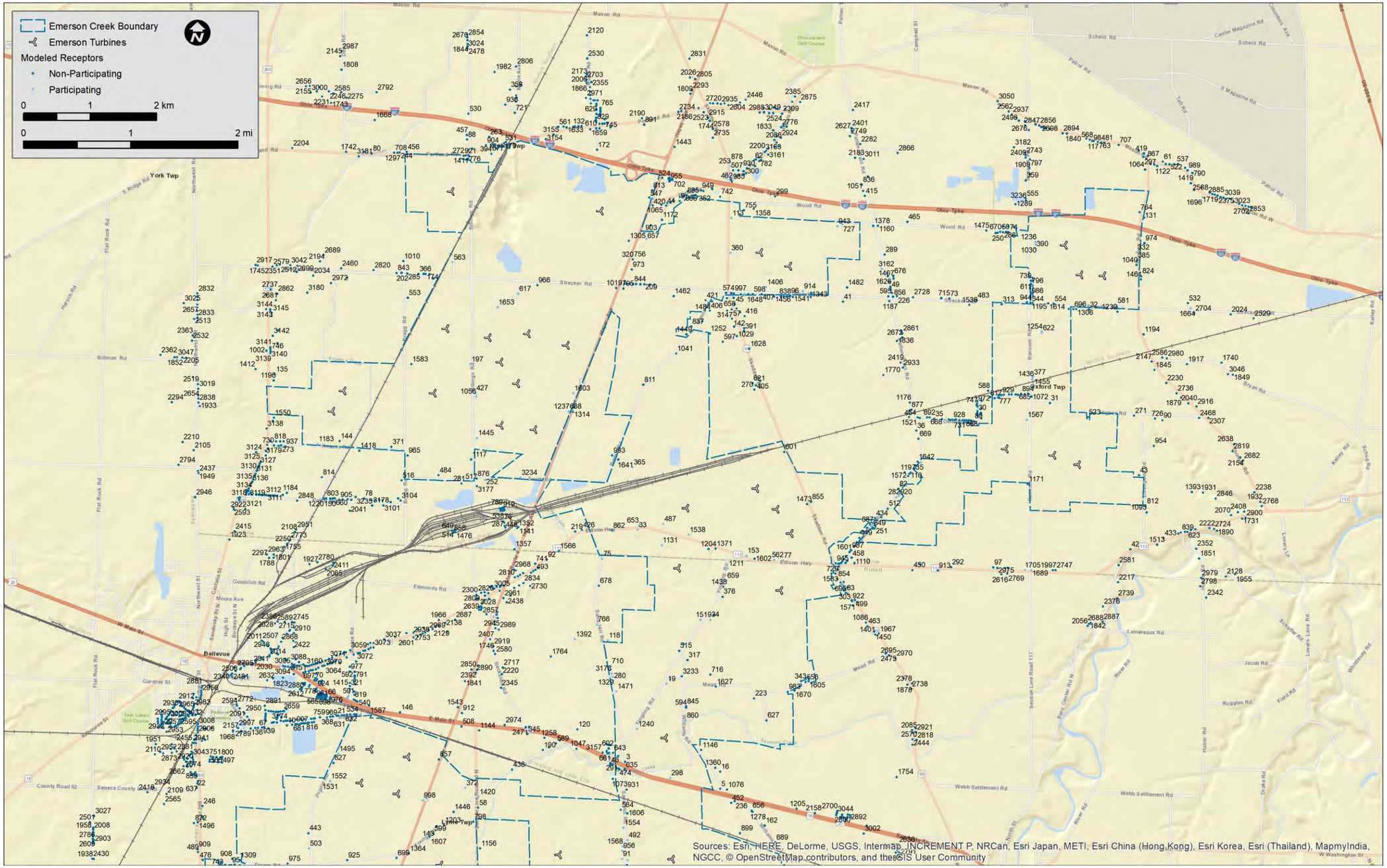


FIGURE 60: MODELED RECEPTOR MAP (NORTHERN AREA)

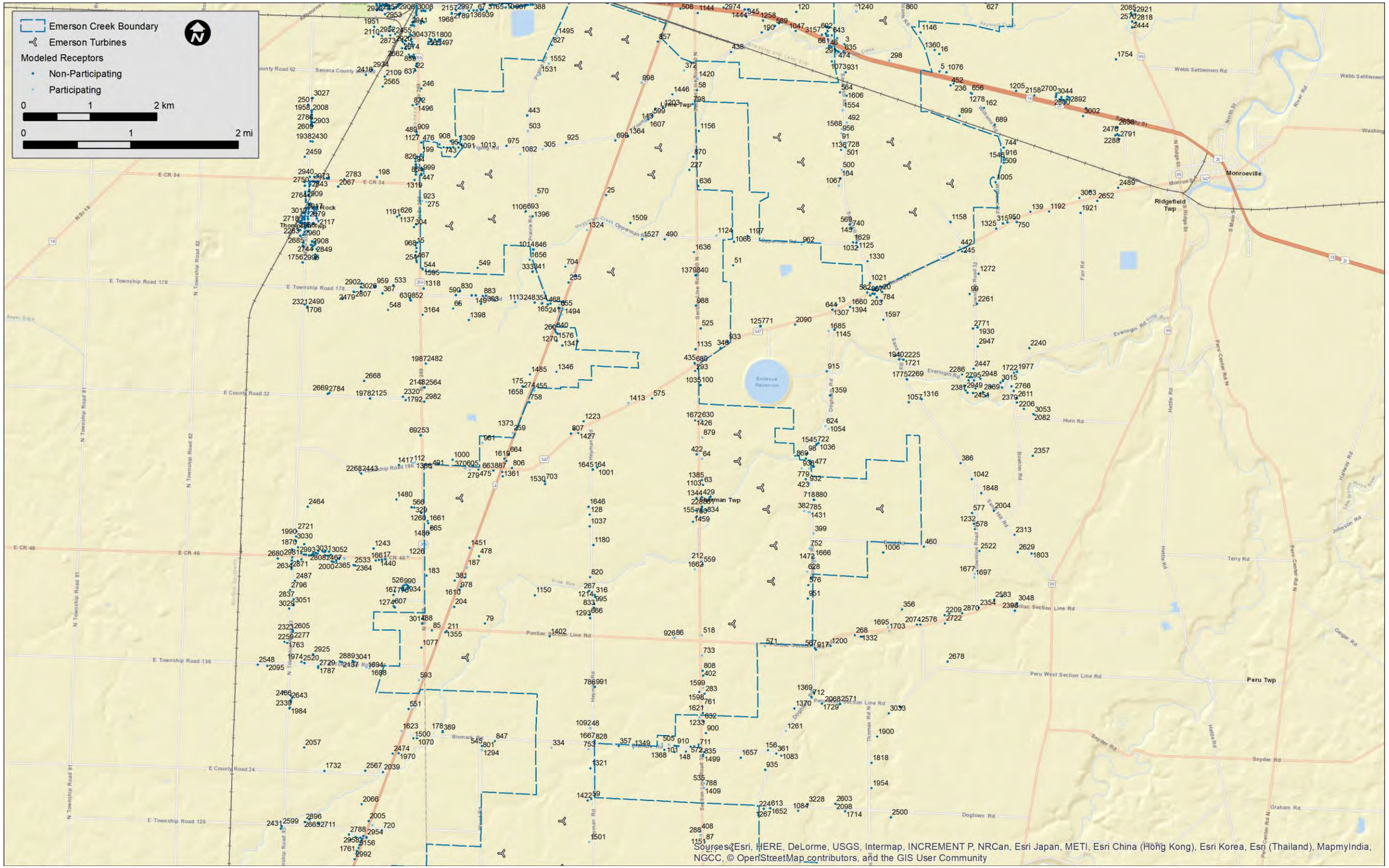


FIGURE 61: MODELED RECEPTOR MAP (MIDDLE AREA)

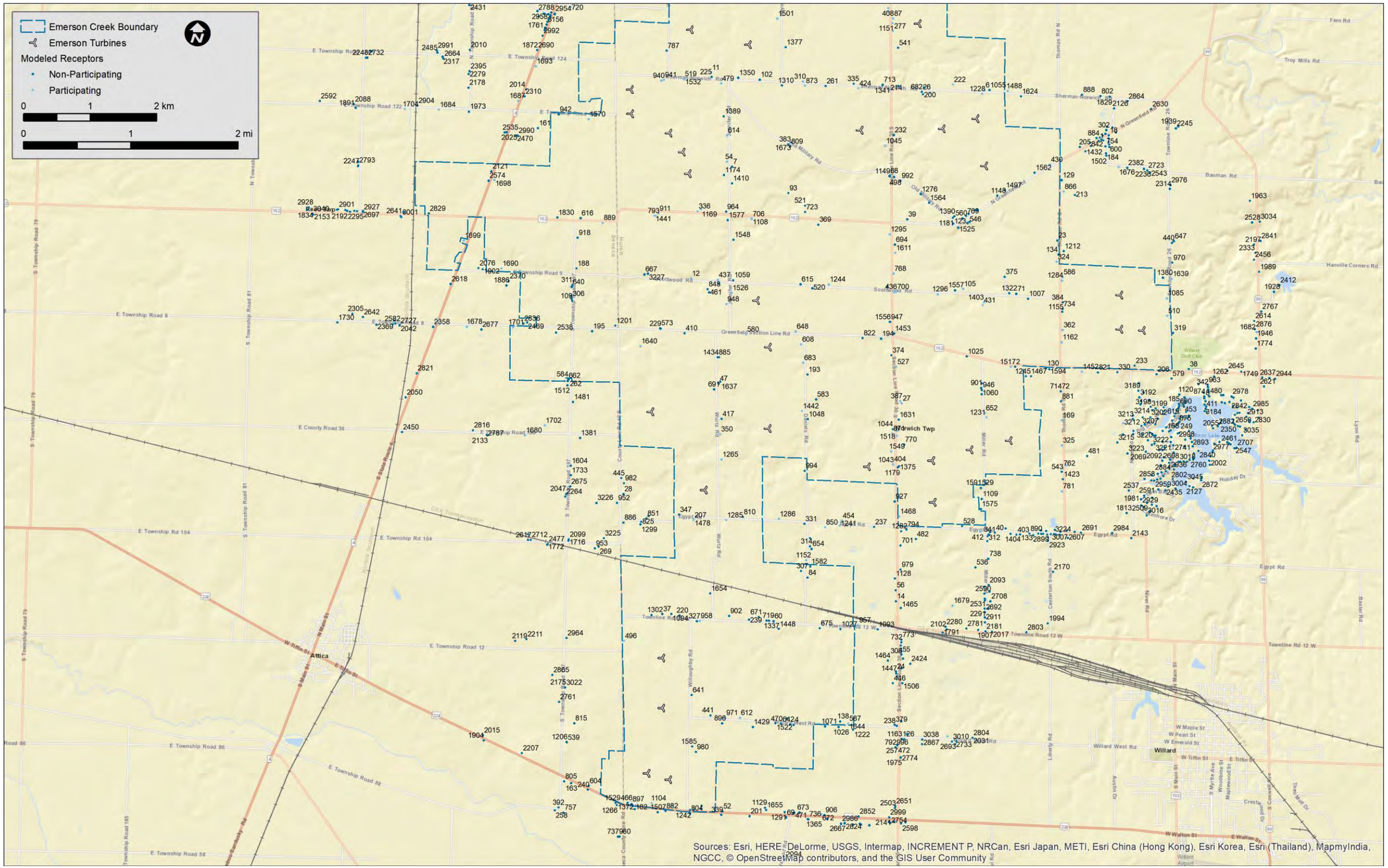


FIGURE 62: MODELED RECEPTOR MAP (SOUTHERN AREA)

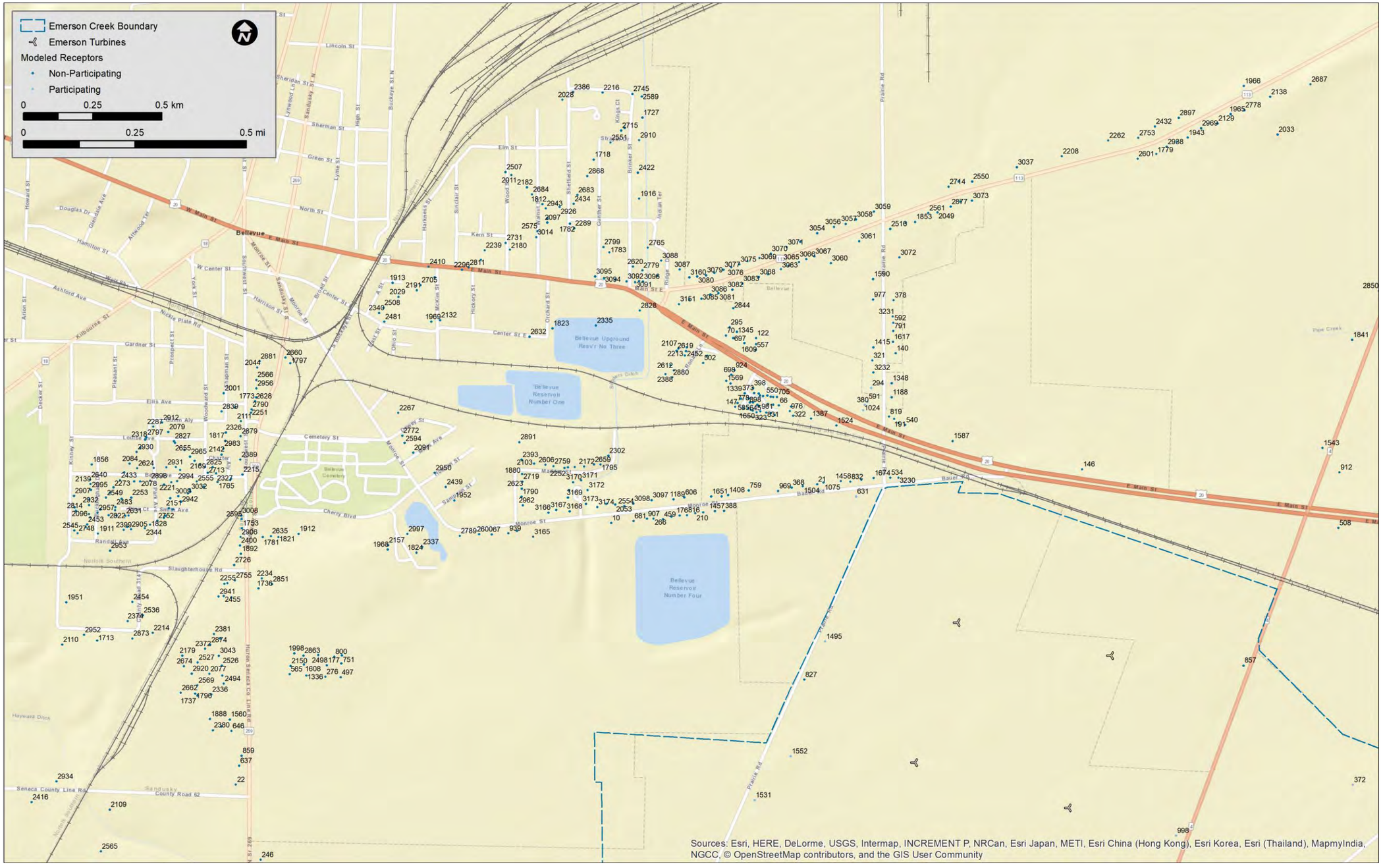


FIGURE 63: MODELED RECEPTOR MAP (BELLEVUE AREA)

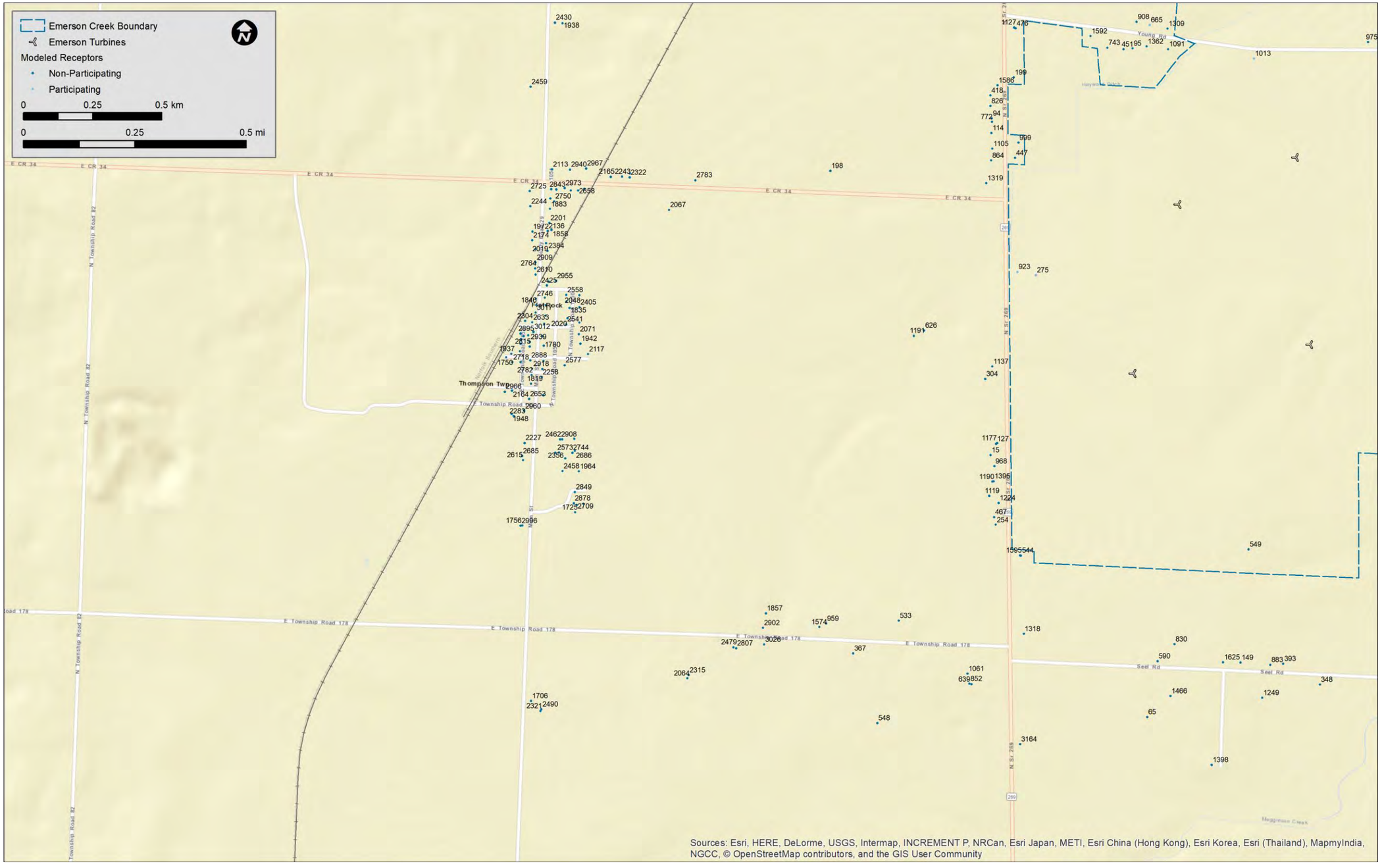


FIGURE 64: MODELED RECEPTOR MAP (FLAT ROCK AREA)

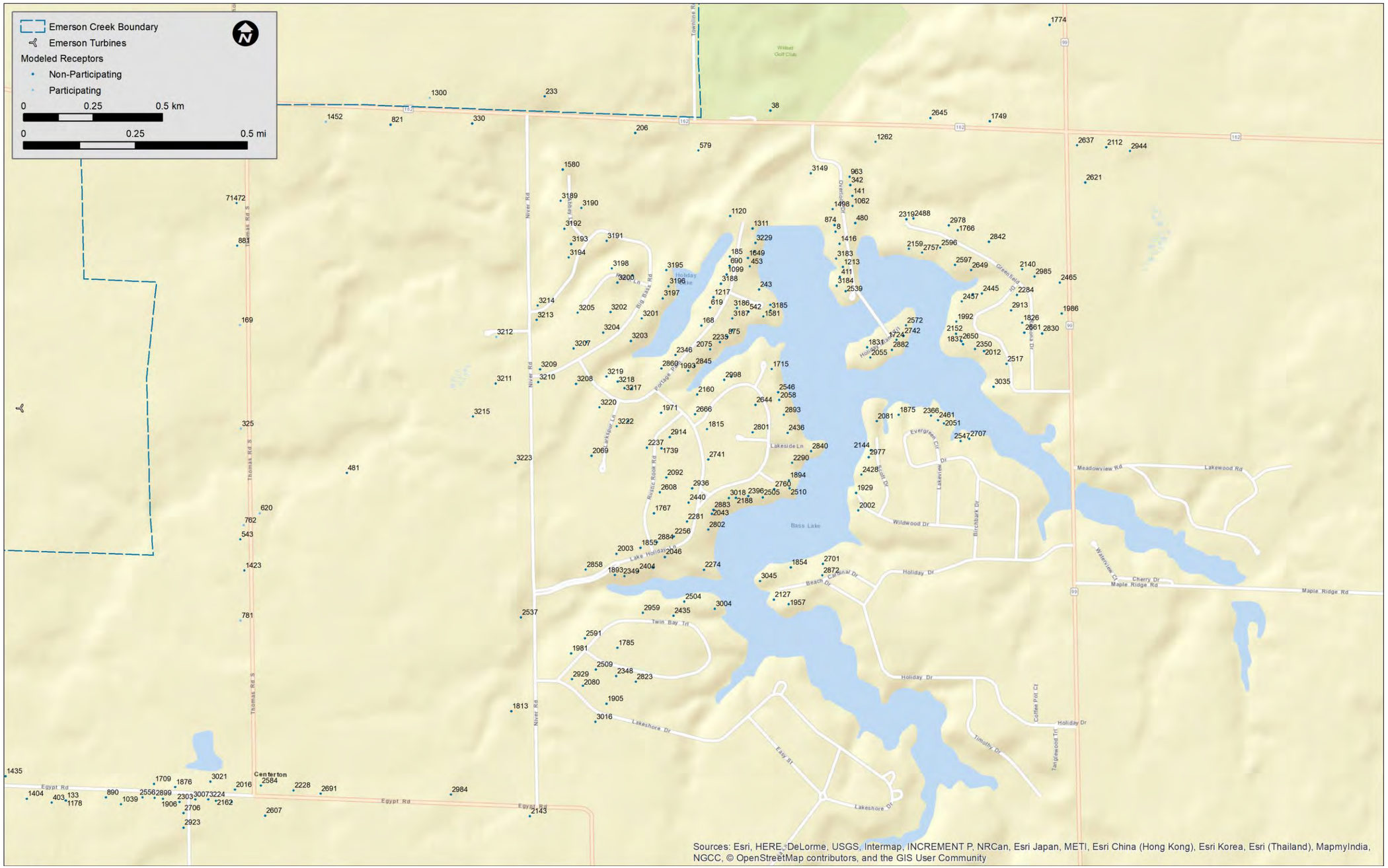


FIGURE 65: MODELED RECEPTOR MAP (HOLIDAY LAKE AREA)

RSG
the science of insight

55 Railroad Row
White River Junction, VT 05001
802.295.4999
www.rsginc.com

White River Junction & Burlington, VT

Arlington, VA

Chicago, IL

Evansville, IN

Portland, OR

Salt Lake City, UT

San Diego, CA

RSG promotes sustainable business practices that minimize negative impacts on the environment. We print all proposals and reports on recycled paper that utilizes a minimum of 30% post-consumer waste. RSG also encourages recycling of printed materials (including this document) whenever practicable. **For more information on RSG's sustainability practices, please visit www.rsginc.com.**

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 4

Shadow Flicker Analysis Update
By Environmental Design & Research
September 9, 2019

1. Attachment 4 - Figure 1, Sheet 1: Proposed Turbine Layout for the V150 turbine model at the 105 and 125 meter hub heights.

2. Attachment 4 - Figure 1, Sheet 2: Proposed Turbine Layout for the GE158 turbine model at the 107.5 hub height and the GE140 turbine model at the 110 meter hub height.

3. Attachment 4 - Figure 2, Sheet 1: Projected Shadow Flicker for the V150 turbine model at the 105 and 125 meter hub heights.

4. Attachment 4 - Figure 2, Sheet 2: Projected Shadow Flicker for the GE158 turbine model at the 107.5 hub height and the GE140 turbine model at the 110 meter hub height.

5. Attachment 4 - Figure 3, Sheet 1: Cumulative Impact Area for the V150 turbine model at the 105 and 125 meter hub heights.

6. Attachment 4 - Figure 3, Sheet 2: Cumulative Impact Area for the GE158 turbine model at the 107.5 hub height and the GE140 turbine model at the 110 meter hub height.

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

To:	Nate Pedder	EDR Project No:	17119
From:	Lindsay Donahoe		
Date:	September 9, 2019		
Reference:	Emerson Creek Wind Farm Updated Shadow Flicker Analysis		

Introduction

This memorandum report presents the findings of an updated shadow flicker analysis for the Emerson Creek Wind Farm (the Project). The layout evaluated in this analysis includes 87 wind turbines. Several new wind turbine generators are being considered for this Project. The new turbine models under consideration, and their associated dimensions, are listed in Table 1. The shadow flicker impact was evaluated for two difference scenarios. The first shadow flicker analysis evaluated a layout that consisted of 84 V150 turbines at 125 meter hub height and three V150 turbines at 105 meter hub height at 1,495 receptors within 10 rotor diameters (1,500 meters) of the wind turbines (hereafter referred to as the Vestas Scenario). The second analysis included a layout that consisted of 64 GE158 turbines at 107.5 meter hub height and 23 GE140 turbines at 110 meter hub height at 1,627 receptors within 10 rotor diameters (1,580 meters) of the wind turbines (hereafter referred to as the GE Scenario)[1].

Table 1. Approximate Turbine Dimensions by Model

Turbine Model	Hub Height	Rotor Diameter	Maximum Total Height
Vestas V150	125 meters	150 meters	200 meters
GE158	107.5 meters	158 meters	186.5 meters
GE140	110 meters	140 meters	180 meters

Shadow flicker refers to the shadows that a wind turbine casts over structures and observers at times of the day when the sun is directly behind the turbine rotor from an observer's position. During intervals of sunshine, operating wind turbine generators will cast a shadow on surrounding areas as the rotor blades pass in front of the sun, causing a flickering effect while the rotor is in motion. Shadow flicker is most pronounced in northern latitudes during winter months because of the lower angle of the sun in the winter sky. However, it is possible to encounter shadow flicker anywhere for brief periods after sunrise and before sunset (U.S. Department of the Interior, 2005). Shadow flicker does not occur when fog or clouds obscure the sun, or when turbines are not operating. Obstacles such as terrain, vegetation, and/or buildings occurring between residences and wind turbines can significantly reduce or eliminate shadow flicker effects.

The location and duration of shadow flicker can be predicted quite accurately using computer modeling programs and input data regarding turbine locations, turbine dimensions, receptor locations, local topography, and sunshine frequency. A conservative assumption that the turbines are in continuous operation is also applied. Shadow flicker effects predicted by the modeling exercise are expressed in terms of frequency (hours per year) at each receptor location.

[1] Two different scenarios were modeled because the turbine with the largest rotor diameter (GE 158) is only proposed at 64 of the 87 turbine locations. Running only the GE Scenario could result in under predicted impacts from the 23 turbines proposed to use the GE140 turbine when comparted to the Vestas Scenario. Running only the Vestas Scenario could under predict impacts from the 64 turbine proposed to use the GE158 turbine.

Methods

This updated shadow flicker analysis evaluated the potential impact of two turbine layout scenarios. The first is 84 Vestas 150 turbines, each with a rotor diameter of 150 meters and a hub height of 125 meters and three V150 turbines, each with a rotor diameter of 150 meters and a hub height of 105 meters. The second layout includes 64 GE158 turbines, each with a rotor diameter of 158 meters and a hub height of 107.5 meters and 23 GE140 turbines, each with a rotor diameter of 140 meters and a hub height of 107.5 meters. Consistent with the Emerson Creek Wind Farm Shadow Flicker Report (EDR, 2019) a study area of 10 rotor diameters was used for analysis of shadow flicker effects. Each turbine was buffered by an area ten times the rotor diameter depending on the largest turbine model proposed at for each scenario (either 1,500 meters for the first scenario or 1,580 meters for the second scenario; Figure 1).

As described in Section 3.3 of the Emerson Creek Wind Farm Shadow Flicker Report (EDR, 2019), Rule 4906-4-09(E)(1) of the Ohio Administrative Code (OAC) requires that, "*The Facility shall be designed to avoid unreasonable adverse shadow flicker effect at any non-participating sensitive receptor within 1,000 meters of any turbine. At a minimum, the facility shall be operated so that shadow flicker levels do not exceed thirty hours per year at any such receptor.*" The OPSB has used this threshold of acceptability (i.e., 30 annual hours of shadow flicker) in certifying all commercial wind power projects to date in Ohio (OPSB, 2011a, 2011b, 2012, 2013, 2014).

WindPRO 3.2.737 software and the associated Shadow module was used to conduct the shadow flicker analysis. *WindPRO* is a widely accepted modeling software package developed specifically for the design and evaluation of wind power projects. Input variables and assumptions used for shadow flicker modeling calculations for the proposed Project include:

- The latitude and longitude coordinates of 87 proposed wind turbine sites (provided by the Applicant).
- The latitude and longitude coordinates for 1,495 potential receptors located within the 1,500-meter Study Area (provided by the Applicant).
- The latitude and longitude coordinates for 1,627 potential receptors located within the 1,580-meter Study Area (provided by the Applicant).
- USGS 1:24,000 topographic mapping and USGS digital elevation model (DEM) data.
- The rotor diameter (150 meters) and hub heights (125 meters and 105 meters) for the V150 turbine.
- The rotor diameter (158 meters) and hub height (107.5 meters) for the GE158 turbine.
- The rotor diameter (140 meters) and hub height (110 meters) for the GE140 turbine.
- Annual wind rose data (provided by the Applicant) to determine the approximate directional frequency of rotor orientation throughout the year (Table A1 of Attachment A).
- To account for the occurrence of cloudy conditions, the average monthly percent of available sunshine for the nearest National Oceanic and Atmospheric Administration (NOAA) weather station in Cleveland, Ohio was used (Table A2 of Attachment A). Data were obtained from NOAA's "Comparative Climatic Data for the United States through 2015" (http://www.ncdc.noaa.gov).
- No allowance was made for wind being below or above generation speeds. Blades are assumed to be moving during all daylight hours when the sun's elevation is more than 3 degrees above the horizon. Shadow flicker is generally considered imperceptible when the sun is less than 3 degrees above the horizon due to the scattering effect of the atmosphere on low angle sunlight (States Committee for Pollution Control, 2002).
- The possible screening effect of trees and buildings adjacent to the receptors was not taken into consideration in the modeling. In addition, the number and/or orientation of windows in residential receptors were not considered in the analysis.

Based on these variables and assumptions, *WindPRO* was used to calculate the theoretical number of hours per year that shadow flicker would occur at any given location in the vicinity of the Project.

The model calculations include the cumulative sum of shadow hours for all turbines. This omni-directional approach reports total shadow flicker results at a receptor regardless of the presence or orientation of windows at the receptor residence (i.e., it assumes shadows from all directions can be perceived at a residence, which may or may not be true). A receptor in the model is defined as a one square meter area, one meter above ground level; the actual dimensions of the house or window locations are not taken into consideration.

Because the proposed Project is located adjacent to the proposed Republic Wind Farm, there exists the potential for cumulative shadow flicker impacts at certain receptors (i.e., those receptors located within a 10-rotor diameter distance of Emerson Creek Wind Farm turbines that are also within a 10-rotor diameter distance of proposed Republic Wind turbines). To evaluate the potential for cumulative shadow flicker impacts from the Project and proposed Republic wind farm, additional shadow flicker analyses were run for selected turbines and receptors.

To determine receptors that would potentially be affected by turbines from both projects, a 10-rotor diameter buffer was applied to the proposed Republic turbines (1,500 meters) and to the proposed Emerson Creek turbines. Fifty-eight receptors are located within the area where the Republic Wind turbine buffer overlaps with the Study Area for the proposed Vestas turbines and 60 receptors are located within the area where the Republic Wind turbine buffer overlaps with the Study Area for the proposed GE turbines. Therefore, these receptors have the potential for cumulative impacts. The cumulative shadow flicker analysis was run for each scenario using the methods described above.

Results

Output from the model includes the following information:

- Calculated shadow flicker time (specific days, maximum hours per day, and total hours per year when shadow flicker is expected) at each of the receptors located in the Study Areas.
- Tabulated and plotted time of day that structures are predicted to receive shadow flicker (Attachment B).
- Shadow isolines, which are used to create maps showing turbine locations, receptors, and projected shadow flicker duration (hours per year) without taking into consideration the effect of screening provided by vegetation and structures (Figure 2).

A summary of the projected shadow flicker at each of the 1,495 receptors in the Vestas Scenario Study Area is presented below:

- 639 (43%) of the receptors are not expected to experience any shadow flicker,
- 18 (1%) of the receptors may be affected 0-1 hour/year,
- 432 (29%) of the receptors may be affected 1-10 hours/year,
- 203 (14%) of the receptors may be affected 10-20 hours/year,
- 91 (6%) of the receptors may be affected 20-30 hours/year,
- 112 (7%) of the receptors may be affected for more than 30 hours/year.

A summary of the projected shadow flicker at each of the 1,627 receptors in the GE Scenario Study Area is presented below:

- 706 (43%) of the receptors are not expected to experience any shadow flicker,
- 27 (2%) of the receptors may be affected 0-1 hour/year,
- 493 (30%) of the receptors may be affected 1-10 hours/year,
- 207 (13%) of the receptors may be affected 10-20 hours/year,
- 87 (5%) of the receptors may be affected 20-30 hours/year,

- 107 (7%) of the receptors may be affected for more than 30 hours/year.

As these results indicate, 93% of the receptors in both the Vestas Scenario and the GE Scenario are predicted to receive less than 30 hours of shadow flicker per year, with the majority of the receptors predicted to receive less than 10 hours of shadow flicker per year (73% in the Vestas Scenario and 75% in the GE Scenario). While 112 receptors were predicted to receive more than 30 hours of shadow flicker per year in the Vestas Scenario, 57 of those receptors are located on properties owned by Project participants. In the GE Scenario, 107 receptors were predicted to received more than 30 hours of shadow flicker per year, of which, 57 are Project participants. At most receptor locations shadow flicker will occur primarily in the early morning or late afternoon and will generally last less than 1 hour per day. The maximum daily duration of shadow flicker is at 2 hours and 25 minutes (at receptor 1043, see Attachment B). These initial calculations are conservative in their assumption that all turbine locations will be built; with a maximum nameplate capacity of 297.66 MW, only 53 of the Vestas turbines would be built, and in the GE scenario, likely somewhere around a total of 55-70 would be built. Fewer turbines will lead to reduced shadow flicker impacts, likely both by number of homes receiving shadow flicker and the amount of shadow flicker received at many homes. The Project's final design will limit shadow flicker at any non-participant to 30 hours per year through either turbine location selection or through curtailment as necessary. This will be determined and discussed in the final pre-construction shadow flicker analysis for compliance filing prior to construction.

Table 2 provides the results of the predicted shadow flicker at each structure calculated to experience more than 30 hours of shadow flicker per year. The times of day and duration of shadow flicker experienced by each structure will vary throughout the calendar year based on the position of the sun in the sky and the direction of prevailing winds. See Attachment B for detailed calendars that illustrate the specific times of year and day that shadow flicker may occur.

Table 2. Summary of Receptors Predicted to Experience Shadow Flicker > 30 hours/year

Receptor ID	Project Status	Receptor Type	Vestas Predicted Annual Shadow Flicker (hh:mm/year)	GE Predicted Annual Shadow Flicker (hh:mm/year)
951	Non-Participant	House	26:43	31:54
641	Non-Participant	House	26:53	30:15
1505	Non-Participant	House	29:14	30:12
576	Non-Participant	House	29:56	31:49
1422	Non-Participant	House	30:48	29:23
1204	Non-Participant	House	31:00	35:42
824	Non-Participant	House	31:11	29:30
986	Non-Participant	House	31:20	30:31
304	Non-Participant	House	31:35	26:24
1137	Non-Participant	House	31:40	27:02
861	Non-Participant	House	31:48	29:40
1583	Non-Participant	House	31:59	35:11
1620	Non-Participant	House	32:39	33:13

Receptor ID	Project Status	Receptor Type	Vestas Predicted Annual Shadow Flicker (hh:mm/year)	GE Predicted Annual Shadow Flicker (hh:mm/year)
228	Non-Participant	House	32:44	31:42
1022	Non-Participant	House	32:59	32:54
869	Non-Participant	House	33:06	33:14
1438	Non-Participant	House	33:21	34:23
328	Non-Participant	House	33:26	39:28
385	Non-Participant	House	34:09	34:00
145	Non-Participant	House	34:25	34:05
1314	Non-Participant	House	34:34	36:58
344	Non-Participant	House	34:38	32:59
477	Non-Participant	House	34:43	32:24
1253	Non-Participant	House	34:43	28:35
834	Non-Participant	Business	34:46	36:18
569	Non-Participant	House	34:53	34:44
1396	Non-Participant	House	35:16	28:23
1040	Non-Participant	House	35:18	35:04
1174	Non-Participant	House	35:19	35:00
1551	Non-Participant	House	35:48	34:18
740	Non-Participant	House	35:56	36:48
611	Non-Participant	House	35:58	33:18
1461	Non-Participant	House	36:01	33:52
1146	Non-Participant	House	36:18	33:52
255	Non-Participant	House	37:05	30:41
422	Non-Participant	House	37:26	42:57
1158	Non-Participant	House	37:39	40:21
855	Non-Participant	House	39:25	37:16
596	Non-Participant	House	40:02	42:39
319	Non-Participant	House	40:17	40:43
693	Non-Participant	House	40:19	33:42
423	Non-Participant	House	40:20	41:09
880	Non-Participant	House	40:29	41:33
1493	Non-Participant	House	40:39	41:44
718	Non-Participant	House	40:58	42:11

Receptor ID	Project Status	Receptor Type	Vestas Predicted Annual Shadow Flicker (hh:mm/year)	GE Predicted Annual Shadow Flicker (hh:mm/year)
1106	Non-Participant	House	41:42	35:57
7	Non-Participant	House	42:01	39:11
770	Non-Participant	House	43:22	53:09
501	Non-Participant	House	45:22	43:40
1136	Non-Participant	House	47:54	45:24
1473	Non-Participant	House	53:34	50:46
857	Non-Participant	House	54:09	47:06
104	Non-Participant	House	54:26	53:47
232	Non-Participant	House	57:20	55:50
870	Non-Participant	House	62:25	59:56
827	Non-Participant	House	64:46	65:29
1375	Non-Participant	House	92:56	96:24
1179	Non-Participant	House	95:43	99:40
1445	Participant	House	12:13	30:47
1518	Participant	House	29:10	30:15
580	Participant	House	31:11	28:01
1067	Participant	House	31:15	33:49
1468	Participant	House	31:17	39:14
614	Participant	House	31:26	28:14
653	Participant	House	31:51	33:15
64	Participant	House	32:09	33:58
1568	Participant	House	32:50	31:01
1526	Participant	House	34:12	38:36
1085	Participant	House	34:18	31:42
332	Participant	House	35:18	34:20
1264	Participant	House	35:22	28:59
938	Participant	House	35:45	36:12
1237	Participant	House	35:56	39:44
688	Participant	House	36:21	40:04
1603	Participant	House	36:56	34:52
956	Participant	House	37:52	36:11
87	Participant	House	37:59	42:25

Receptor ID	Project Status	Receptor Type	Vestas Predicted Annual Shadow Flicker (hh:mm/year)	GE Predicted Annual Shadow Flicker (hh:mm/year)
779	Participant	House	38:05	37:39
137	Participant	House	38:23	41:31
932	Participant	House	39:05	42:01
518	Participant	House	39:46	50:06
860	Participant	House	40:21	35:18
91	Participant	House	40:35	39:13
570	Participant	House	41:09	39:54
728	Participant	House	41:34	40:49
752	Participant	House	42:11	44:44
1472	Participant	House	42:18	49:27
275	Participant	House	43:12	39:16
941	Participant	House	44:20	45:02
879	Participant	House	45:53	48:30
1236	Participant	House	46:05	40:18
940	Participant	House	46:48	47:35
382	Participant	House	47:22	50:28
1666	Participant	House	47:55	52:39
1552	Participant	House	48:02	48:01
399	Participant	House	48:54	53:07
923	Participant	House	50:18	46:12
54	Participant	House	50:22	48:11
785	Participant	House	50:37	53:02
1431	Participant	House	51:09	53:26
500	Participant	House	53:41	51:29
1269	Participant	House	54:15	52:00
1549	Participant	House	54:23	64:40
1151	Participant	House	54:25	58:30
1030	Participant	House	54:30	47:01
277	Participant	House	59:56	72:47
1531	Participant	House	60:14	59:10
948	Participant	House	62:11	65:18
998	Participant	House	62:13	67:29

Receptor ID	Project Status	Receptor Type	Vestas Predicted Annual Shadow Flicker (hh:mm/year)	GE Predicted Annual Shadow Flicker (hh:mm/year)
427	Participant	House	65:20	71:22
510	Participant	House	67:38	74:42
1056	Participant	House	69:27	75:08
1495	Participant	House	73:07	60:47
360	Participant	House	75:56	81:47
390	Participant	House	76:26	67:22
404	Participant	House	78:46	83:15
1043	Participant	House	82:30	86:45
197	Participant	House	90:47	92:10

The cumulative shadow flicker analysis was also performed using the methods described in Section 3.2 of the Emerson Creek Wind Farm Shadow Flicker Analysis (EDR, 2019). The cumulative shadow flicker analysis evaluated the cumulative shadow flicker impact at receptors that were within 10 rotor diameters of both the Emerson Creek turbines and turbines from the proposed Republic Wind Farm (Figure 3). As described in the methodology above, this analysis was run for both the Vestas and GE Scenarios. For the Vestas scenario, 58 receptors were located in the cumulative impact area. For the GE Scenario, 60 receptors were located in the cumulative impact area. Table 2 below, presents the cumulative shadow flicker impacts with the "predicted" columns representing shadow flicker from the Project only, and the "cumulative predicted" columns representing the combined shadow flicker impacts from both the proposed Emerson Creek and Republic Wind Farms. Only receptors that were originally predicted to have shadow flicker from the Emerson Creek Wind Farm are included in Table 3. Results from the cumulative shadow flicker analysis at each receptor in the cumulative impact area are included in Attachment C.

Table 3. Daily Effect to Structures with Potential Cumulative Shadow Flicker

Receptor ID	Project Status	Vestas Scenario		GE Scenario	
		Predicted Annual Shadow Flicker – Emerson Creek Only (hh:mm/year)	Cumulative Predicted Annual Shadow Flicker (hh:mm/year)	Predicted Annual Shadow Flicker – Emerson Creek Only (hh:mm/day)	Cumulative Predicted Annual Shadow Flicker (hh:mm/day)
872	Non-Participant	0:00	12:44	0:06	12:50
254	Non-Participant	0:30	14:00	0:37	14:07
909	Non-Participant	3:00	37:11	2:56	37:07
467	Non-Participant	3:08	18:59	2:52	18:43
489	Non-Participant	3:11	38:40	3:03	38:31
198	Non-Participant	6:45	6:45	5:35	5:35
1127	Non-Participant	6:55	40:29	5:21	39:03

Receptor ID	Project Status	Vestas Scenario		GE Scenario	
		Predicted Annual Shadow Flicker – Emerson Creek Only (hh:mm/year)	Cumulative Predicted Annual Shadow Flicker (hh:mm/year)	Predicted Annual Shadow Flicker – Emerson Creek Only (hh:mm/day)	Cumulative Predicted Annual Shadow Flicker (hh:mm/day)
1592	Non-Participant	6:57	19:51	7:21	20:14
476	Non-Participant	7:01	40:08	5:26	38:40
1224	Non-Participant	7:26	26:52	6:42	26:09
743	Non-Participant	8:13	19:33	8:56	20:14
451	Non-Participant	9:27	19:08	10:42	20:21
908	Non-Participant	9:40	17:40	9:38	17:37
1309	Non-Participant	10:05	14:41	9:30	15:46
15	Non-Participant	10:14	24:36	8:58	23:21
95	Non-Participant	10:22	19:09	12:17	21:00
1119	Non-Participant	11:23	32:24	10:09	31:11
1362	Non-Participant	13:00	20:42	13:45	21:25
1190	Non-Participant	14:24	32:23	12:44	30:44
1395	Non-Participant	14:29	31:58	12:48	30:17
1586	Non-Participant	14:34	23:08	13:06	21:40
968	Non-Participant	14:53	29:34	10:29	25:12
1091	Non-Participant	14:53	19:36	15:07	21:33
199	Non-Participant	15:09	38:11	13:47	36:50
418	Non-Participant	15:15	22:36	13:32	20:54
826	Non-Participant	16:16	23:51	14:29	22:04
94	Non-Participant	17:21	25:01	15:30	23:11
772	Non-Participant	17:37	25:20	15:44	23:27
114	Non-Participant	17:43	25:50	15:58	24:06
1105	Non-Participant	18:45	27:41	16:47	25:43
864	Non-Participant	19:35	31:43	17:28	29:35
127	Non-Participant	20:15	32:59	20:48	33:31
1177	Non-Participant	20:47	33:19	21:23	33:54
1319	Non-Participant	21:39	43:33	19:16	41:11
1191	Non-Participant	22:09	42:33	20:10	40:31
999	Non-Participant	23:33	31:22	21:14	29:03
447	Non-Participant	23:52	34:34	21:27	32:10
626	Non-Participant	24:03	42:39	21:22	39:55

Receptor ID	Project Status	Vestas Scenario		GE Scenario	
		Predicted Annual Shadow Flicker – Emerson Creek Only (hh:mm/year)	Cumulative Predicted Annual Shadow Flicker (hh:mm/year)	Predicted Annual Shadow Flicker – Emerson Creek Only (hh:mm/day)	Cumulative Predicted Annual Shadow Flicker (hh:mm/day)
304	Non-Participant	31:35	44:33	26:24	39:21
1137	Non-Participant	31:40	43:35	27:02	38:56
665	Participant	9:57	15:20	9:41	16:57
1013	Participant	14:56	17:25	12:01	14:30
275	Participant	43:12	51:37	39:16	47:40
923	Participant	50:18	58:37	46:12	54:31

Fifteen of the receptors located in the cumulative impact area for the Vestas Scenario, and 16 of the receptors for the GE Scenario were originally predicted to receive no shadow flicker from Emerson Creek turbines (and hence, will not experience cumulative impacts and are not included in Table 3). One receptor (Receptor ID 198) from the GE Scenario was predicted to receive no additional shadow flicker from the proposed Republic turbines; this receptors also will not experience cumulative shadow flicker impacts from the proposed Project. As indicated in Table 3, the cumulative shadow flicker analysis results indicate that a total of 27 receptors will experience cumulative shadow flicker from Emerson Creek turbines (both Vestas and GE Scenarios) and the proposed Republic wind turbines. Sixteen non-participating receptors (in both the Vestas and GE Scenarios) are predicted to receive over 30 hours of shadow flicker due to the cumulative impact from the existing turbines (Table 3).

Conclusion

In summary, as a result of modeling the proposed 87 turbine locations using the Vestas Scenario described above, WindPRO predicted that 55 non-participating receptors will receive more than 30 hours of shadow flicker per year. Using the GE Scenario described above, WindPRO predicted that 50 non-participating receptors will receive more than 30 hours of shadow flicker per year. The cumulative shadow flicker analysis predicted that 16 non-participating receptors would experience over 30 hours per year of shadow flicker due to cumulative effects of the Project (for both the Vestas and GE Scenarios) and the proposed Republic Wind Farm.

Although shadow flicker at these receptors are currently modeled to exceed the 30-hour per year threshold, these calculations do not take into account the actual location and orientation of windows; the screening effects associated with existing, site-specific conditions and obstacles such as trees and/or buildings; or the reduced number of turbines to be constructed for the Vestas scenario (53) and GE scenario (55-70) compared to this analysis (87). Further, this analysis assumes turbine rotors are continuously in motion. Given these assumptions, the predicted shadow flicker frequency represents a conservative scenario, and overstates the actual frequency of shadow flicker that would be experienced at any given receptor location. Once the final turbine model is selected, the Applicant will conduct the final pre-construction shadow flicker analysis for compliance filing, and ultimately, the Applicant is committing to operating the Facility such that no non-participating receptors are modeled to receive more than 30 hours of shadow flicker per year. It is anticipated that this will be accomplished through the pursuit of neighbor agreements, turbine operational measures, and/or other mitigation measures.

References

Environmental Design & Research, Landscape Architecture, Engineering & Environmental Services, D.P.C. (EDR). 2019. *Shadow Flicker Report, Emerson Creek Wind Farm*. Prepared for Apex Clean Energy. January 2019

Ohio Power Siting Board (OPSB). 2011a. *Opinion, Order, and Certificate in the Matter of Hog Creek Windfarm, LLC.* Case No. 10-654-EL-BGN, Section V, (44), p. 32.

OPSB. 2011b. *Opinion, Order, and Certificate in the Matter of Hardin Wind Energy, LLC.* Case No. 11-3446-EL-BGA. Opinion Section D, p. 5.

OPSB. 2012. *Opinion, Order, and Certificate in the Matter of Champaign Wind, LLC.* Case No. 12-160-EL-BGN. Section VI, (F), P. 48.

OPSB. 2013. *Opinion, Order, and Certificate in the Matter of Northwest Ohio Wind, LLC.* Case No. 13-0197-EL-BGN. Section V, (39).

OPSB. 2014. *Opinion, Order, and Certificate in the Matter of Hardin Wind, LLC.* Case No. 13-1177-EL-BGN. Opinion Section D, p. 2.

States Committee for Pollution Control – Nordrhein-Westfalen, 2002. Notes on the Identification and Evaluation of the Optical Emissions of Wind Turbines. Available at: http://www.umwelt.sachsen.de/umwelt/download/laerm_licht_mobilfunk/WEA-Schattenwurf-Hinweise_LAI.pdf (Accessed November 2015).

U.S. Department of the Interior. 2005. *Final Programmatic Environmental Impact Statement on Wind Energy Development on BLM-Administered Lands in the Western United States.* Bureau of Land Management.

Figures

Emerson Creek Wind

Erie, Seneca, and Huron Counties, Ohio

Figure 1: Proposed Turbine Layout - Sheet 1

Receptor
V150 (125 meter hub height)
V150 (105 meter hub height)
1,500-meter Study Area
Township Boundary

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 3, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

EMERSON CREEK WIND

edr

Emerson Creek Wind

Erie, Seneca, and Huron Counties, Ohio

Figure 1: Proposed Turbine Layout - Sheet 2

- Receptor
- GE158 (107.5 meter hub height)
- GE140 (110 meter hub height)
- 1,580-meter Study Area
- Township Boundary

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 3, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Shadow-flicker areas and isolines were created using WindPRO 3.2.737 software and associated Shadow module. The model is based on a "expected case" scenario where the model assumes the wind conditions allow for continuous turbine operation, there may be a percentage of clouds, the turbine may not always be directly between the receptor and the sun, and the turbine may not always be perpendicular to the sun. These calculations do not take into account the actual location and orientation of windows, or the screening effects associated with existing, site-specific conditions and obstacles such as trees and/or buildings.

Emerson Creek Wind

Erie, Seneca, and Huron Counties, Ohio

Figure 2: Projected Shadow Flicker - Sheet 1

Non-participant > 30 hours/year
Participant > 30 hours/year
Receptor < 30 hours/year
V150 (125 meter hub height)
V150 (105 meter hub height)
1,500-meter Study Area
Township Boundary

Shadow Flicker Isolines
0 hours/year
10 hours/year
20 hours/year
30 hours/year
100 hours/year

Shadow Flicker (hours/year)
< 1
1 - 10
10 - 20
20 - 30
30 - 100
> 100

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 4, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Emerson Creek Wind

Erie, Seneca, and Huron Counties, Ohio

Figure 2: Projected Shadow Flicker - Sheet 2

Shadow-flicker areas and isolines were created using WindPRO 3.2.737 software and associated Shadow module. The model is based on a "expected case" scenario where the model assumes the wind conditions allow for continuous turbine operation, there may be a percentage of clouds, the turbine may not always be directly between the receptor and the sun, and the turbine may not always be perpendicular to the sun. These calculations do not take into account the actual location and orientation of windows, or the screening effects associated with existing, site-specific conditions and obstacles such as trees and/or buildings.

- Non-participant > 30 hours/year
- Participant > 30 hours/year
- Receptor < 30 hours/year
- GE140 (110 meter hub height)
- GE158 (107.5 meter hub height)
- 1,580-meter Study Area
- Township Boundary

Shadow Flicker Isolines

- 0 hours/year
- 10 hours/year
- 20 hours/year
- 30 hours/year
- 100 hours/year

Shadow Flicker (hours/year)

- < 1
- 1 - 10
- 10 - 20
- 20 - 30
- 30 - 100
- > 100

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Emerson Creek Wind

Erie, Seneca, and Huron Counties, Ohio

Figure 3: Cumulative Impact Area - Sheet 1

Receptor in Cumulative Impact Area
Receptor
V150 (125 meter hub height)
V150 (105 meter hub height)
Republic Wind Turbine
1,500-meter Study Area
1,500-meter Republic Study Area
Cumulative Impact Area
Township Boundary

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Emerson Creek Wind

Erie, Seneca, and Huron Counties, Ohio

Figure 3: Cumulative Impact Area - Sheet 2

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Receptor in Cumulative Impact Area
- Receptor
- GE158 (107.5 meter hub height)
- GE140 (110 meter hub height)
- Republic Wind Turbine
- 1,580-meter Study Area
- 1,500-meter Republic Study Area
- Cumulative Impact Area
- Township Boundary

EMERSON CREEK WIND

edr

Attachment A
Wind Rose and Sunshine Data

Table A1. Wind Rose Data

SECTOR	N	NNE	NE	ENE	E	ESE	SE	SSE
Frequency	3.43	3.44	6.36	7.66	3.71	3.36	3.02	4.22
Hours of Operation	300	301	557	671	325	294	265	370

SECTOR	S	SSW	SW	WSW	W	WNW	NW	NNW
Frequency	5.65	12.21	12.78	12.18	8.42	6.36	4.20	3.01
Hours of Operation	495	1,070	1,120	1,067	738	557	368	264

Source: Wind rose data provided by Apex Clean Energy, Inc.

Table A2. Sunshine Probability Data[1]

Month	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Sunshine Probability[2]	0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

[1]Source: NOAA Comparative Climatic Data for the United States through 2015 – Cleveland, Ohio Weather Station.
[2]Defined by NOAA as the total time that sunshine reaches the surface of the earth, expressed as the percentage of the maximum amount possible from sunrise to sunset with clear sky conditions.

Attachment B
WindPRO results and Calendars

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

Assumptions for shadow calculations

Maximum distance for influence	1,500	m
Minimum sun height over horizon for influence	3	°
Day step for calculation	1	days
Time step for calculation	1	minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067

W	WNW	NW	NNW	Sum
738	557	368	264	8,760

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_2018-10-16_Emerson SFA_2.wpo (5)
Obstacles not used in calculation
Eye height for map: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 17

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	RPM
			[m]					[kW]	[m]	[m]	[RPM]
T1	349,610	4,577,737	217.3	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T10	350,596	4,574,852	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T11	349,346	4,574,706	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T12	350,350	4,574,226	220.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T13	350,857	4,574,161	220.5	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T14	357,937	4,573,872	214.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T15	358,653	4,573,775	212.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T16	359,025	4,573,635	210.6	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T17	354,188	4,573,276	218.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T18	353,140	4,572,979	220.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T19	354,497	4,572,964	218.3	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T2	351,853	4,577,442	218.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T20	354,715	4,572,600	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T21	353,014	4,572,078	226.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T22	354,553	4,571,744	222.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T23	352,819	4,569,529	230.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T24	348,396	4,569,363	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T25	348,244	4,568,858	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T26	348,798	4,568,694	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T27	351,228	4,567,779	236.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T28	352,926	4,567,712	231.2	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T29	349,444	4,567,624	240.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T3	358,825	4,576,927	210.6	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T30	351,584	4,567,411	236.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T31	353,180	4,567,359	230.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T32	349,341	4,567,218	240.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T33	353,823	4,567,087	229.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T34	346,474	4,567,059	239.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T35	351,585	4,566,709	236.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T36	353,266	4,566,658	230.3	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T37	346,951	4,566,553	241.9	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T38	346,312	4,566,449	244.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T39	348,733	4,565,759	240.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T4	359,059	4,576,484	209.8	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T40	350,634	4,563,323	239.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	RPM
			[m]					[kW]	[m]	[m]	[RPM]
T41	350,633	4,562,919	238.6	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T42	350,980	4,562,522	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T43	346,461	4,562,366	252.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T44	351,176	4,561,655	240.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T45	351,138	4,561,116	241.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T46	350,550	4,560,477	242.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T47	346,548	4,559,973	249.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T48	348,005	4,557,521	254.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T49	350,518	4,557,129	252.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T5	359,405	4,576,468	208.5	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T50	347,093	4,557,038	257.2	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T51	347,967	4,556,813	256.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T52	346,198	4,556,139	262.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T53	346,199	4,555,776	263.2	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T54	351,385	4,555,703	254.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T55	350,877	4,555,552	254.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T56	349,645	4,555,532	258.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T57	346,776	4,555,489	261.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T58	351,517	4,554,997	256.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T59	347,062	4,554,879	262.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T6	349,536	4,575,674	218.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T60	353,545	4,553,056	260.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T61	348,088	4,552,977	268.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T62	353,545	4,552,541	262.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T63	348,267	4,552,275	270.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T64	346,500	4,551,303	274.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T65	348,263	4,551,051	272.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T66	351,881	4,550,874	267.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T67	351,296	4,550,732	266.7	VESTAS V150-5.6 5600 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	105.0	10.4
T68	350,723	4,550,571	269.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T69	349,753	4,550,478	270.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T7	350,758	4,575,598	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T70	347,305	4,550,131	275.5	VESTAS V150-5.6 5600 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	105.0	10.4
T71	350,744	4,549,945	268.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T72	350,171	4,575,540	218.8	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T73	347,988	4,574,744	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T74	347,821	4,574,437	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T75	348,951	4,569,244	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T76	352,771	4,562,205	239.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T77	351,065	4,562,197	240.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T78	346,973	4,555,202	262.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T79	353,883	4,552,527	261.5	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T8	351,344	4,575,426	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T80	346,667	4,547,606	290.6	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T81	346,668	4,546,855	291.6	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T82	346,447	4,545,876	284.0	VESTAS V150-5.6 5600 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	105.0	10.4
T83	346,772	4,545,781	287.8	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T84	354,248	4,576,820	216.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T85	353,297	4,576,782	220.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T86	354,685	4,576,614	216.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T87	346,898	4,567,229	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T9	350,345	4,575,175	219.3	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
2	351,971	4,551,976	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3	352,230	4,569,172	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
5	353,658	4,568,766	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
6	351,513	4,556,129	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
7	347,724	4,554,982	261.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
8	354,816	4,551,509	259.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
9	353,048	4,577,587	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
10	347,147	4,569,722	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
11	347,408	4,556,393	259.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
12	347,106	4,553,301	263.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
15	345,797	4,566,154	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
16	353,657	4,569,026	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
17	345,291	4,561,441	254.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
19	352,856	4,570,343	233.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
20	352,798	4,565,458	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
21	347,892	4,569,862	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
23	352,606	4,553,875	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
25	348,655	4,566,909	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
26	350,575	4,556,102	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
27	350,270	4,551,427	265.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
28	346,094	4,550,068	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
29	357,524	4,574,391	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
30	357,523	4,574,412	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
31	358,610	4,574,557	212.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
32	359,196	4,575,959	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
33	352,420	4,572,652	229.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
34	353,513	4,571,307	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
35	356,876	4,574,320	216.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
36	356,604	4,574,142	216.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
37	346,674	4,548,267	286.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
38	354,582	4,551,944	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
39	350,352	4,554,193	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
40	351,670	4,549,484	270.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
41	355,503	4,576,077	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
43	359,948	4,573,474	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
44	352,845	4,577,517	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
45	353,876	4,576,036	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
46	352,002	4,569,123	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
47	347,527	4,551,727	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
48	348,421	4,558,912	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
50	357,955	4,577,125	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
51	350,566	4,565,854	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
52	347,575	4,545,306	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
53	345,869	4,563,307	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
54	347,645	4,555,057	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
56	350,180	4,548,624	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
57	353,835	4,575,824	219.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
58	350,022	4,568,482	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
59	348,436	4,557,851	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
62	354,167	4,578,198	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
63	350,113	4,562,562	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
64	350,095	4,562,953	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
65	346,363	4,565,208	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
66	347,752	4,570,146	235.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
68	350,087	4,554,842	256.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
70	347,562	4,570,399	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
72	352,661	4,551,610	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
74	357,991	4,577,122	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
75	351,886	4,572,221	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
76	350,397	4,572,776	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
77	354,598	4,572,195	221.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
78	348,304	4,573,128	223.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
79	346,838	4,560,484	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
80	348,422	4,578,302	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
83	355,544	4,571,708	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
85	346,043	4,560,379	252.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
86	349,686	4,560,271	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
87	350,142	4,557,205	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
88	349,856	4,578,512	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
89	357,466	4,574,287	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
90	360,302	4,574,299	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
91	352,181	4,567,715	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
93	348,569	4,554,584	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
94	345,801	4,567,370	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
95	346,311	4,567,623	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
96	354,709	4,576,167	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
98	351,676	4,563,037	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
99	354,114	4,565,428	230.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
100	350,070	4,564,063	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
102	348,139	4,556,289	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
103	355,457	4,572,148	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
104	352,174	4,567,157	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
106	347,924	4,564,968	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
107	354,055	4,566,057	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
110	356,502	4,573,493	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
111	357,296	4,574,297	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
112	345,753	4,562,890	250.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
113	353,826	4,577,333	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
114	345,801	4,567,317	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
115	347,685	4,570,183	233.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
116	351,846	4,578,748	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
120	351,512	4,569,660	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
122	347,671	4,570,389	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
123	351,043	4,554,129	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
124	353,404	4,577,741	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
127	345,817	4,566,194	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
129	352,674	4,554,779	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
130	352,437	4,551,955	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
131	360,024	4,577,342	209.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
132	351,530	4,578,710	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
133	352,046	4,549,462	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
134	352,624	4,553,662	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
135	346,967	4,574,989	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
137	351,700	4,562,581	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
139	355,024	4,566,656	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
140	348,175	4,570,335	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
141	354,876	4,551,637	258.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
142	354,016	4,575,678	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
143	349,258	4,568,017	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
144	347,943	4,573,987	221.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
145	352,318	4,566,469	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
146	348,848	4,569,916	237.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
147	347,596	4,570,141	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
149	346,701	4,565,405	245.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
150	347,798	4,573,124	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
151	350,383	4,572,986	224.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
152	353,894	4,577,969	210.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
153	354,049	4,572,266	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
154	345,664	4,561,060	253.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
155	350,006	4,562,178	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
157	357,719	4,574,646	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
158	357,851	4,574,638	215.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
159	351,996	4,569,421	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
160	356,588	4,573,619	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
161	344,808	4,555,561	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
162	354,329	4,568,216	228.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
163	345,306	4,545,729	285.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
165	347,693	4,565,281	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
167	345,464	4,560,913	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
168	354,333	4,551,170	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
169	352,673	4,551,172	265.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
170	346,468	4,549,738	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
171	358,318	4,576,290	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
172	351,808	4,578,358	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
173	352,713	4,565,517	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
174	349,233	4,576,495	219.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
176	347,395	4,569,750	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
178	346,203	4,558,869	253.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
179	350,401	4,578,410	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
180	355,544	4,572,258	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
181	355,665	4,572,405	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
182	346,259	4,545,337	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
183	345,964	4,561,199	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
185	354,436	4,551,418	260.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
186	353,969	4,576,188	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
187	346,571	4,561,321	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
189	352,257	4,576,347	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
191	348,169	4,570,098	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
192	347,724	4,570,118	235.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
193	348,855	4,551,861	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
195	345,622	4,552,512	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
196	354,235	4,578,242	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
197	349,904	4,575,140	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
198	345,218	4,567,181	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
199	345,881	4,567,518	238.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
200	350,589	4,556,069	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
201	347,989	4,545,233	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
202	348,870	4,576,511	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
203	352,717	4,565,375	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
204	346,375	4,560,736	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
205	352,943	4,555,276	255.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
206	354,095	4,551,863	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
207	347,145	4,549,677	278.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
209	352,520	4,576,339	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
210	347,452	4,569,757	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
211	346,262	4,560,367	252.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
212	350,086	4,561,425	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
213	352,869	4,554,555	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
214	350,084	4,556,125	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
215	356,654	4,574,331	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
216	357,357	4,574,299	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
217	357,572	4,574,389	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
218	358,235	4,574,692	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
220	346,936	4,548,248	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
221	351,732	4,561,166	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
222	351,041	4,556,215	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
223	354,169	4,570,124	226.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
224	351,028	4,557,704	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
225	347,418	4,556,330	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
227	349,910	4,567,290	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
228	350,100	4,562,231	240.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
229	346,647	4,552,551	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
230	352,864	4,577,559	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
231	353,959	4,575,917	219.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
232	350,152	4,555,457	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
233	353,769	4,551,995	261.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
234	351,988	4,569,306	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
235	347,681	4,570,145	234.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
236	353,873	4,568,579	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
237	349,858	4,549,572	272.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
239	347,980	4,548,181	282.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
240	345,557	4,545,630	283.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
241	347,959	4,565,262	243.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
242	345,899	4,560,556	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
243	354,541	4,551,300	259.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
244	348,842	4,578,319	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
245	354,001	4,566,061	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
248	347,591	4,565,296	243.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
249	354,445	4,551,153	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
250	357,794	4,577,110	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
251	355,981	4,572,718	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
252	350,125	4,573,402	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
253	353,814	4,578,116	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
254	345,816	4,565,902	244.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
255	348,095	4,565,598	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
258	345,058	4,545,318	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
259	347,256	4,563,342	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
260	347,905	4,564,854	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
261	349,127	4,556,190	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
262	345,273	4,551,786	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
263	350,188	4,578,550	218.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
264	352,613	4,577,227	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
265	352,044	4,569,134	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
266	347,300	4,569,738	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
268	352,390	4,560,308	238.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
270	354,171	4,574,759	218.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
271	359,876	4,574,368	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
272	349,837	4,578,271	219.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
273	347,060	4,573,920	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
275	345,961	4,566,804	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
277	350,140	4,557,015	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
278	347,266	4,545,387	291.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
279	346,614	4,562,783	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
280	352,048	4,570,388	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
281	349,773	4,573,347	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
283	350,133	4,559,428	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
284	355,437	4,572,104	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
285	348,957	4,576,500	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
286	357,907	4,577,123	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
288	350,071	4,557,308	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
289	356,127	4,576,785	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
291	352,144	4,569,061	234.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
293	349,992	4,564,270	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
294	348,087	4,570,209	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
295	347,576	4,570,429	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
298	352,907	4,568,928	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
299	354,483	4,577,656	212.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
300	354,048	4,578,008	210.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
301	345,895	4,560,480	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
303	355,639	4,571,586	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
304	345,777	4,566,429	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
305	347,708	4,567,596	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
310	348,787	4,556,261	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
312	351,558	4,549,360	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
313	357,884	4,576,036	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
314	348,896	4,549,284	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
315	354,609	4,566,484	226.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
317	353,167	4,570,701	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
319	354,350	4,552,485	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
320	352,345	4,576,711	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
321	348,092	4,570,309	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
322	347,805	4,570,109	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
323	347,673	4,570,121	234.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
324	352,600	4,553,553	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
325	352,676	4,550,799	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
327	347,192	4,548,158	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
328	345,881	4,562,145	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
329	345,780	4,562,224	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
330	353,508	4,551,897	262.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
331	348,807	4,549,619	273.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
332	359,914	4,576,818	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
333	347,552	4,565,759	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
334	347,837	4,558,618	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
335	349,549	4,556,225	254.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
336	347,205	4,554,311	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
337	354,012	4,577,983	211.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
338	345,885	4,568,343	236.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
339	347,559	4,545,255	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
340	347,894	4,564,883	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
341	347,556	4,565,765	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
342	354,869	4,551,676	257.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
343	354,878	4,570,381	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
344	358,324	4,576,201	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
346	350,374	4,564,617	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
347	346,924	4,549,759	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
348	346,988	4,565,325	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
349	345,596	4,561,006	253.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
350	347,544	4,550,966	271.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
351	346,663	4,562,849	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
352	353,322	4,577,656	214.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
353	351,983	4,569,366	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
354	347,584	4,565,292	243.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
355	347,723	4,570,179	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
357	348,847	4,558,644	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
359	358,247	4,577,901	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
360	353,807	4,576,810	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
362	352,684	4,552,529	262.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
364	350,394	4,572,944	224.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
365	352,339	4,573,592	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
366	349,125	4,576,496	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
367	345,301	4,565,438	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
368	347,800	4,569,850	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
369	349,018	4,554,113	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
370	346,541	4,562,806	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
371	348,720	4,573,901	221.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
372	349,827	4,568,777	238.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
373	347,630	4,570,191	233.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
376	353,695	4,571,653	225.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
377	358,358	4,574,946	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
378	348,168	4,570,526	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
380	348,063	4,570,148	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
381	346,386	4,561,128	250.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
382	351,627	4,562,173	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
383	348,565	4,555,317	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
384	352,691	4,552,943	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
385	359,920	4,576,696	209.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
386	353,974	4,562,887	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
387	350,248	4,551,465	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
388	347,555	4,569,766	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
389	346,202	4,558,849	253.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
390	358,397	4,576,871	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
391	354,018	4,575,635	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
392	345,116	4,545,363	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
393	346,855	4,565,400	243.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
394	350,220	4,578,295	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
395	351,856	4,578,925	220.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
396	349,397	4,568,206	241.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
397	352,789	4,577,937	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
398	347,660	4,570,210	233.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
399	351,771	4,561,830	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
400	351,952	4,569,438	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
401	346,036	4,562,819	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
402	350,114	4,559,700	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
403	351,996	4,549,454	268.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
404	350,142	4,550,519	270.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
406	353,503	4,575,941	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
407	354,282	4,576,189	216.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
408	350,070	4,557,364	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
410	347,011	4,552,480	273.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
412	351,450	4,549,498	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
413	352,008	4,578,698	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
416	354,024	4,575,861	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
417	347,565	4,551,197	273.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
418	345,797	4,567,453	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
420	352,645	4,577,524	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
421	353,437	4,576,097	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
422	350,017	4,563,022	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
423	351,657	4,562,647	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
424	349,619	4,556,157	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
425	358,284	4,574,699	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
427	349,978	4,574,706	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
428	357,582	4,574,324	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
429	350,093	4,562,379	241.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
430	352,497	4,555,013	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
432	350,293	4,578,380	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
434	355,984	4,572,830	219.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
435	349,987	4,564,393	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
437	347,510	4,553,283	262.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
438	350,531	4,569,056	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
439	347,651	4,570,131	234.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
440	354,332	4,553,838	258.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
441	347,401	4,546,746	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
442	353,964	4,566,128	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
443	347,472	4,568,103	238.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
444	355,571	4,571,787	221.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
445	346,062	4,550,304	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
447	345,885	4,567,227	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
449	355,749	4,572,534	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
451	346,278	4,567,619	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
452	353,823	4,568,555	233.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
453	354,508	4,551,383	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
454	349,368	4,549,669	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
456	348,946	4,578,328	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
457	349,849	4,578,580	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
458	355,632	4,572,237	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
459	347,334	4,569,736	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
460	353,426	4,561,634	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
461	347,380	4,553,095	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
462	353,851	4,578,050	211.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
463	355,870	4,571,208	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
464	356,623	4,574,339	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
466	346,153	4,545,432	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
467	345,810	4,565,930	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
468	347,779	4,565,267	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
469	347,714	4,570,152	234.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
474	352,129	4,569,071	235.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
475	346,741	4,562,791	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
476	345,887	4,567,695	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
477	351,774	4,562,837	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
478	346,753	4,561,495	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
479	347,562	4,556,232	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
480	354,887	4,551,539	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
481	353,057	4,550,640	259.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
482	350,482	4,549,391	272.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
484	349,426	4,573,471	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
485	357,997	4,574,685	214.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
486	353,261	4,577,671	214.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
487	352,803	4,572,744	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
488	345,898	4,560,486	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
489	345,814	4,567,816	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
490	349,535	4,566,246	239.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
491	357,902	4,577,210	214.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
492	352,270	4,567,998	234.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
494	355,427	4,572,058	220.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
495	357,092	4,574,309	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
496	346,100	4,547,861	290.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
498	350,157	4,554,825	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
499	355,679	4,571,604	221.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
500	352,193	4,567,289	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
501	352,253	4,567,621	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
502	347,479	4,570,300	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
503	347,480	4,567,871	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
504	345,632	4,560,981	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
507	353,932	4,578,049	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
508	349,773	4,569,705	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
509	354,625	4,567,394	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
510	354,258	4,552,740	260.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
513	353,169	4,577,735	216.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
515	353,042	4,570,841	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
516	348,871	4,573,395	222.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
517	349,922	4,573,377	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
518	350,097	4,560,304	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
519	346,998	4,556,297	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
520	348,931	4,553,155	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
521	348,820	4,554,397	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
523	359,180	4,574,345	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
524	352,880	4,577,931	218.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
526	345,628	4,561,056	253.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
528	351,177	4,549,585	270.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
529	351,459	4,550,162	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
530	349,876	4,578,899	215.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
531	350,411	4,578,458	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
532	360,683	4,576,054	204.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
533	345,465	4,565,556	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
534	348,156	4,569,886	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
535	350,129	4,558,088	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
536	351,377	4,548,969	270.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
538	350,359	4,572,943	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
539	345,241	4,546,338	292.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
540	348,209	4,570,076	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
541	350,217	4,556,764	252.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
542	354,503	4,551,220	259.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
543	352,674	4,550,401	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
544	345,907	4,565,791	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
545	346,793	4,558,645	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
546	351,275	4,554,269	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
547	352,590	4,577,641	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
549	346,730	4,565,814	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
550	347,711	4,570,182	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
551	345,695	4,559,201	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
552	357,589	4,574,590	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
553	348,963	4,576,139	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
554	358,665	4,576,046	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
555	358,247	4,577,626	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
556	354,941	4,570,369	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
557	347,670	4,570,347	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
558	345,685	4,561,006	252.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
559	350,106	4,561,367	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
560	351,184	4,554,207	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
561	351,222	4,578,701	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
562	354,467	4,572,202	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
563	349,640	4,576,668	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
564	352,166	4,568,451	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
566	345,738	4,562,229	252.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
567	351,790	4,560,113	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
569	352,313	4,566,468	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
570	347,602	4,566,895	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
571	351,039	4,560,143	243.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
572	350,127	4,558,552	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
573	346,646	4,552,558	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
574	353,743	4,576,210	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
575	349,349	4,563,858	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
576	351,691	4,561,059	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
577	354,146	4,562,143	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
578	354,189	4,561,900	235.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
579	354,323	4,551,800	251.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
580	347,938	4,552,465	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
581	359,611	4,576,021	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
582	352,574	4,565,450	232.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
583	348,983	4,551,490	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
584	345,263	4,551,791	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
585	347,648	4,570,158	233.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
586	352,685	4,553,323	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
588	357,682	4,574,744	215.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
590	346,401	4,565,410	244.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
591	348,074	4,570,160	236.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
592	348,167	4,570,444	232.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
593	345,851	4,559,631	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
594	353,143	4,569,988	228.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
596	351,467	4,574,491	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
597	353,699	4,575,477	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
598	354,146	4,576,189	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
599	349,349	4,568,095	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
601	354,621	4,573,824	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
602	351,979	4,569,374	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
604	345,568	4,545,687	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
605	346,550	4,562,812	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
606	347,411	4,569,815	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
607	345,468	4,560,743	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
608	348,758	4,552,313	269.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
609	351,597	4,549,496	271.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
610	351,794	4,578,679	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
611	358,321	4,576,229	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
612	347,842	4,546,710	292.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
613	351,116	4,557,711	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
614	347,647	4,555,453	260.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
615	348,752	4,553,216	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
617	350,625	4,576,196	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
618	346,904	4,573,988	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
619	354,364	4,551,235	261.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
620	352,744	4,550,496	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
622	358,491	4,575,609	212.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
624	351,945	4,563,446	235.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
625	347,256	4,545,343	290.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
626	345,557	4,566,604	241.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
628	351,675	4,561,259	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
629	351,796	4,578,897	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
630	350,079	4,563,539	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
631	348,032	4,569,818	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
634	355,466	4,571,860	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
635	352,223	4,569,064	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
636	350,040	4,567,048	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
639	345,728	4,565,326	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
641	347,114	4,547,050	295.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
643	352,046	4,569,307	237.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
645	347,659	4,570,157	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
647	354,357	4,553,863	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
648	348,676	4,552,509	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
650	352,901	4,570,406	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
652	351,520	4,551,282	266.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
653	352,439	4,572,720	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
654	348,917	4,549,246	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
655	347,961	4,565,210	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
656	354,130	4,568,440	228.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
657	352,549	4,577,023	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
658	353,903	4,575,974	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
659	353,749	4,571,891	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
660	347,869	4,573,129	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
661	352,003	4,569,150	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
662	345,252	4,551,767	276.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
663	346,961	4,562,776	248.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
664	347,202	4,563,018	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
665	346,372	4,567,707	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
668	356,804	4,574,343	216.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
669	356,639	4,574,023	217.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
670	357,864	4,577,126	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
677	350,216	4,578,420	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
678	351,836	4,571,816	230.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
679	355,494	4,572,184	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
680	349,988	4,564,379	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
681	347,228	4,569,729	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
682	350,572	4,556,104	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
683	348,790	4,552,039	266.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
684	357,523	4,574,436	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
685	358,134	4,574,682	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
686	353,119	4,577,664	216.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
687	355,907	4,572,735	219.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
688	351,382	4,574,432	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
689	354,486	4,567,965	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
690	354,434	4,551,385	261.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
691	347,450	4,551,641	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
692	345,873	4,563,308	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
693	347,455	4,566,665	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
695	355,574	4,571,691	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
696	358,967	4,575,963	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
697	347,588	4,570,390	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
698	347,581	4,570,257	232.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
699	348,796	4,567,729	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
701	350,255	4,549,296	273.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
702	352,940	4,577,907	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
703	347,736	4,562,612	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
704	348,047	4,565,834	241.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
705	347,747	4,570,178	234.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
706	348,019	4,554,197	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
708	348,755	4,578,314	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
710	352,013	4,570,611	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
713	349,986	4,556,214	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
714	352,661	4,551,611	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
716	353,512	4,570,481	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
717	354,102	4,578,129	209.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
718	351,772	4,562,341	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
722	351,812	4,563,174	234.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
723	348,823	4,554,301	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
724	351,366	4,554,327	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
725	357,423	4,574,294	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
726	360,189	4,574,323	206.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
727	355,489	4,577,244	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
728	352,266	4,567,695	236.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
729	355,432	4,572,149	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
730	346,951	4,573,920	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
731	357,180	4,574,303	216.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
733	350,097	4,560,005	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
734	352,687	4,552,846	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
735	356,521	4,573,514	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
737	346,035	4,544,924	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
738	351,573	4,549,097	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
739	358,324	4,576,393	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
740	352,339	4,566,412	235.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
742	353,657	4,577,655	213.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
743	346,219	4,567,625	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
744	354,622	4,567,620	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
745	351,916	4,578,753	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
746	346,907	4,575,336	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
747	357,511	4,574,526	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
748	358,323	4,576,143	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
749	352,680	4,565,496	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
750	354,818	4,566,508	226.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
752	351,708	4,561,611	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
753	348,394	4,558,597	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
755	354,014	4,577,451	214.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
756	352,344	4,576,714	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
757	345,192	4,545,287	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
759	347,644	4,569,840	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
760	350,014	4,562,092	240.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
761	350,112	4,559,235	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
762	352,686	4,550,451	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
764	359,958	4,577,418	209.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
766	351,805	4,571,238	231.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
767	345,595	4,560,990	253.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
769	351,240	4,554,240	258.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
770	350,305	4,550,810	266.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
772	345,803	4,567,357	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
774	345,689	4,561,039	253.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
775	345,658	4,561,062	253.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
776	349,866	4,578,224	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
777	357,834	4,574,637	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
778	347,604	4,570,156	233.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
779	351,702	4,562,804	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
780	351,470	4,551,732	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
781	352,675	4,550,109	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
782	354,246	4,578,189	208.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
783	353,943	4,577,980	210.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
784	352,790	4,565,323	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
785	351,697	4,562,153	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
787	346,742	4,556,724	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
788	350,126	4,558,014	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
789	350,409	4,572,991	224.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
791	348,167	4,570,415	232.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
793	346,580	4,554,244	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
794	350,342	4,549,535	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
795	352,204	4,576,277	219.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
796	358,321	4,576,318	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
797	358,304	4,578,085	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
798	349,949	4,568,273	238.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
799	357,840	4,574,680	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
801	346,788	4,558,585	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
803	347,732	4,573,126	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
804	347,095	4,545,273	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
805	345,200	4,545,754	284.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
806	347,245	4,562,813	246.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
808	350,107	4,559,776	243.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
809	348,596	4,555,286	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
810	347,885	4,549,723	276.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
811	352,500	4,574,832	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
812	360,051	4,573,010	209.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
813	352,633	4,577,746	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
814	347,671	4,573,443	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
815	345,355	4,546,628	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
816	347,422	4,569,751	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
817	357,784	4,574,631	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
818	347,101	4,573,981	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
819	348,151	4,570,106	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
821	353,214	4,551,893	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
822	349,687	4,552,409	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
823	350,203	4,551,016	265.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
824	359,982	4,576,463	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
825	346,359	4,549,648	278.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
826	345,797	4,567,414	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
827	347,844	4,569,157	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
828	348,483	4,558,714	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
829	351,792	4,578,780	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
830	346,461	4,565,471	245.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
831	347,707	4,570,121	235.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
832	348,011	4,569,871	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
834	350,160	4,562,184	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
835	350,115	4,558,492	248.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
837	353,220	4,575,704	221.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
838	354,569	4,576,160	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
840	349,999	4,565,708	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
841	351,578	4,549,458	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
843	348,796	4,576,511	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
844	352,351	4,576,345	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
845	353,144	4,570,004	228.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
846	347,570	4,566,093	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
847	346,990	4,558,715	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
848	347,355	4,553,143	264.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
849	355,951	4,572,682	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
850	349,117	4,549,568	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
851	346,438	4,549,702	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
852	345,721	4,565,328	245.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
853	355,477	4,572,161	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
854	355,417	4,571,916	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
855	355,022	4,573,074	218.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
857	349,431	4,569,208	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
860	353,139	4,569,793	229.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
861	350,095	4,562,235	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
862	352,036	4,572,642	229.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
863	352,909	4,577,564	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
864	345,799	4,567,218	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
865	345,996	4,561,840	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
866	352,704	4,554,608	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
868	357,332	4,574,297	216.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
869	351,656	4,562,959	236.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
870	349,964	4,567,481	238.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
871	350,129	4,550,974	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
872	345,753	4,568,254	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
873	348,818	4,556,197	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
874	354,812	4,551,533	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
875	354,426	4,551,131	260.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
876	349,995	4,573,422	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
878	353,805	4,578,177	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
879	350,101	4,563,273	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
880	351,782	4,562,341	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
881	352,663	4,551,458	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
882	346,721	4,545,308	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
883	346,809	4,565,397	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
885	347,510	4,552,119	273.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
886	346,091	4,549,639	275.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
887	346,965	4,562,776	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
889	345,780	4,554,139	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
890	352,190	4,549,472	270.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
891	352,515	4,578,738	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
892	356,767	4,574,339	216.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
893	357,575	4,574,410	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
894	358,181	4,574,696	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
895	353,149	4,577,675	216.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
896	347,575	4,546,627	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
897	346,214	4,545,413	289.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
898	347,675	4,570,149	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
899	353,957	4,568,099	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
901	351,464	4,551,664	266.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
902	347,679	4,548,237	283.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
903	352,520	4,577,112	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
904	350,139	4,578,425	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
905	347,938	4,573,106	223.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
907	347,277	4,569,738	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
908	346,325	4,567,718	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
909	345,809	4,567,858	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
911	346,620	4,554,278	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
912	349,778	4,569,906	237.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
914	354,903	4,576,237	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
916	354,630	4,567,471	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
917	351,808	4,560,091	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
919	350,381	4,572,964	224.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
921	349,801	4,578,266	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
922	355,631	4,571,598	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
923	345,895	4,566,816	240.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
924	347,593	4,570,274	232.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
925	348,055	4,567,696	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
926	349,672	4,560,262	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
927	350,163	4,549,957	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
928	357,148	4,574,305	217.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
929	357,881	4,574,678	215.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
930	354,060	4,578,082	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
931	352,252	4,568,752	234.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
932	351,695	4,562,580	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
933	350,487	4,564,709	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
934	345,683	4,561,023	253.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
935	351,045	4,558,290	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
937	347,123	4,573,906	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
938	351,593	4,562,809	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
940	346,662	4,556,274	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
941	346,699	4,556,285	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
942	345,119	4,555,767	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
943	355,419	4,577,211	216.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
944	358,264	4,576,067	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
945	355,392	4,572,153	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
946	351,472	4,551,632	267.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
948	347,638	4,552,918	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
949	353,368	4,577,748	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
950	354,680	4,566,505	227.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
951	351,682	4,560,860	241.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
952	345,999	4,549,935	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
954	360,174	4,573,916	206.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
955	352,895	4,577,886	218.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
956	352,186	4,567,835	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
958	347,235	4,548,163	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
959	345,203	4,565,546	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
960	346,011	4,544,926	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
961	346,802	4,563,189	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
962	351,590	4,566,165	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
963	354,867	4,551,706	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
964	347,633	4,554,303	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
965	348,961	4,573,771	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
966	350,914	4,576,328	221.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
967	352,685	4,565,427	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
968	345,811	4,566,113	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
969	347,751	4,569,838	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
970	354,336	4,553,542	256.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
971	347,619	4,546,710	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
972	357,519	4,574,552	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
973	352,326	4,576,558	218.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
974	360,032	4,576,959	208.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
975	347,161	4,567,645	239.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
976	347,793	4,570,125	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
977	348,093	4,570,528	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
978	346,459	4,560,988	251.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
979	350,253	4,548,933	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
980	347,182	4,546,195	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
981	347,687	4,570,125	234.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
982	346,100	4,550,230	275.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
985	353,836	4,577,882	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
986	358,324	4,576,168	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
987	355,624	4,572,345	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
988	350,003	4,565,251	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
990	345,606	4,561,043	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
992	350,254	4,554,770	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
993	352,037	4,573,772	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
994	348,814	4,550,416	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
997	353,860	4,576,204	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
998	349,188	4,568,594	238.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
999	345,898	4,567,282	239.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1000	346,353	4,562,940	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1002	346,842	4,575,344	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1003	349,887	4,578,256	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1004	358,897	4,575,970	210.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1005	354,501	4,567,102	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1006	352,816	4,561,551	239.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1007	352,167	4,552,998	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1008	347,527	4,553,226	265.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1009	347,050	4,573,981	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1010	348,894	4,576,687	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1011	353,865	4,575,707	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1012	347,547	4,569,819	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1013	346,750	4,567,586	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1014	347,558	4,566,094	241.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1016	356,170	4,576,511	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1017	358,312	4,577,993	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1018	353,559	4,571,374	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1019	352,094	4,576,282	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1020	353,758	4,576,127	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1021	352,615	4,565,593	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1022	350,084	4,562,200	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1023	351,855	4,578,894	220.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1024	348,058	4,570,129	236.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1025	351,248	4,552,131	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1028	347,018	4,575,643	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1029	353,909	4,575,563	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1030	358,398	4,576,931	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1031	347,664	4,570,192	233.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1032	352,414	4,566,196	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1033	352,669	4,576,334	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1034	351,887	4,578,752	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1035	350,072	4,564,060	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1036	351,844	4,563,189	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1038	350,094	4,562,068	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1039	352,245	4,549,448	270.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1040	359,913	4,576,629	208.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1042	354,143	4,562,647	235.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1043	350,142	4,550,503	271.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1044	350,138	4,551,042	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1045	350,020	4,555,293	255.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1046	351,791	4,578,807	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1047	351,500	4,569,368	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1048	348,862	4,551,191	268.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1049	348,050	4,569,879	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1052	353,392	4,575,782	220.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1053	351,953	4,569,336	237.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1054	351,997	4,563,400	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1055	351,589	4,556,129	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1056	349,990	4,574,656	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1058	352,618	4,565,404	232.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1059	347,742	4,553,279	267.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1060	351,470	4,551,566	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1061	345,713	4,565,364	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1062	354,877	4,551,600	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1063	350,278	4,578,437	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1065	352,773	4,577,533	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1066	350,575	4,566,210	238.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1067	352,148	4,567,052	235.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1068	351,670	4,563,033	236.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1069	345,342	4,561,445	254.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1070	345,820	4,558,760	254.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1072	358,335	4,574,658	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1073	352,044	4,568,916	235.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1074	347,642	4,570,135	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1075	347,914	4,569,868	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1076	353,763	4,568,752	230.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1077	345,885	4,560,119	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1079	356,077	4,572,844	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1080	350,092	4,564,453	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1081	352,770	4,565,542	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1082	347,370	4,567,520	240.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1084	351,539	4,557,672	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1085	354,254	4,553,007	259.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1086	355,850	4,571,264	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1087	355,021	4,576,211	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1088	350,416	4,572,759	225.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1089	355,825	4,572,628	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1090	355,710	4,572,466	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1091	346,439	4,567,620	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1092	348,416	4,558,915	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1094	346,811	4,548,270	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1095	360,068	4,572,915	209.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1096	359,105	4,576,036	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1097	358,073	4,577,202	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1098	350,690	4,556,090	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1099	354,424	4,551,354	261.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1100	356,678	4,573,662	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1101	358,038	4,574,686	214.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1102	353,054	4,577,649	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1103	350,109	4,562,559	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1104	346,516	4,545,426	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1105	345,804	4,567,260	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1106	347,448	4,566,657	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1107	347,733	4,570,150	234.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1108	348,018	4,554,207	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1109	351,472	4,549,995	265.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1110	355,673	4,572,156	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1111	355,507	4,571,788	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1113	347,292	4,565,303	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1114	350,221	4,556,192	252.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1115	357,985	4,577,207	214.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1117	349,916	4,573,710	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1118	350,013	4,562,364	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1119	345,792	4,566,007	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1120	354,437	4,551,564	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1123	348,415	4,573,104	223.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1124	350,315	4,566,303	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1125	352,429	4,566,126	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1126	347,162	4,562,920	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1127	345,882	4,567,698	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1128	350,169	4,548,801	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1130	353,192	4,577,651	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1131	352,776	4,572,423	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1132	356,988	4,574,315	217.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1133	352,893	4,577,905	218.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1134	354,181	4,578,116	209.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1135	349,998	4,564,598	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1136	352,183	4,567,587	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1137	345,804	4,566,473	242.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1138	348,312	4,578,328	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1139	349,930	4,578,372	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1140	355,532	4,571,761	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1141	350,624	4,572,696	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1143	354,660	4,576,156	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1144	350,034	4,569,643	238.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1146	353,375	4,569,349	229.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1148	351,705	4,554,548	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1149	350,089	4,554,841	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1150	347,591	4,560,908	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1151	350,135	4,557,137	252.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1153	357,250	4,574,297	216.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1154	350,479	4,564,704	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1155	352,683	4,552,800	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1156	350,050	4,567,872	238.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1158	353,825	4,566,506	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1160	356,029	4,577,219	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1161	347,628	4,570,372	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1162	352,673	4,552,347	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1164	346,137	4,562,885	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1166	353,104	4,570,939	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1167	347,680	4,570,190	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1168	345,618	4,560,981	253.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1169	347,251	4,554,344	264.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1170	351,474	4,578,708	218.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1171	358,277	4,573,337	214.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1172	352,783	4,577,306	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1173	348,186	4,570,084	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1174	347,604	4,554,855	261.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1175	351,258	4,554,136	258.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1177	345,821	4,566,197	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1178	352,046	4,549,461	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1179	350,209	4,550,467	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1181	351,038	4,554,215	258.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1182	351,304	4,578,706	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1183	347,609	4,573,941	221.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1184	347,149	4,573,210	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1185	349,348	4,576,426	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1186	349,293	4,576,490	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1188	348,161	4,570,177	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1189	347,373	4,569,808	237.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1190	345,804	4,566,058	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1191	345,520	4,566,585	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1193	349,201	4,576,494	219.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1194	360,020	4,575,590	209.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1195	358,322	4,576,063	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1196	346,947	4,574,899	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1197	350,779	4,566,294	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1198	352,668	4,565,517	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1199	345,595	4,561,016	253.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1200	352,022	4,560,145	239.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1201	345,969	4,552,596	271.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1202	354,195	4,578,214	208.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1203	349,510	4,568,221	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1204	353,482	4,572,366	223.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1206	345,235	4,546,346	292.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1207	345,674	4,561,056	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1210	357,581	4,574,470	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1211	353,769	4,572,075	225.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1212	352,705	4,553,713	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1213	354,842	4,551,381	257.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1215	352,458	4,576,342	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1217	354,376	4,551,272	261.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1218	352,005	4,569,424	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1219	355,517	4,572,218	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1220	347,709	4,573,124	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1221	347,627	4,570,134	234.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1224	345,826	4,565,981	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1225	347,824	4,565,279	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1226	345,682	4,561,488	252.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1227	345,484	4,560,819	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1228	351,481	4,556,074	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1229	354,027	4,576,192	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1231	351,546	4,551,216	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1232	354,175	4,561,977	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1233	350,055	4,559,074	246.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1234	345,901	4,559,672	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1235	350,363	4,578,401	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1236	358,395	4,576,976	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1237	351,379	4,574,429	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1238	352,297	4,576,348	219.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1239	359,624	4,575,927	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1240	352,411	4,569,664	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1241	349,338	4,549,590	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1242	347,095	4,545,324	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1243	345,168	4,561,610	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1244	349,175	4,553,214	265.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1245	352,136	4,551,836	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1246	346,830	4,573,771	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1248	347,479	4,569,761	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1249	346,779	4,565,277	243.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1250	351,843	4,578,681	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1252	353,500	4,575,602	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1253	358,320	4,576,267	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1254	358,491	4,575,633	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1257	353,289	4,577,680	214.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1259	347,739	4,570,112	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1260	345,979	4,562,021	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1262	354,960	4,551,831	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1264	348,206	4,565,701	240.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1265	347,565	4,550,586	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1266	345,992	4,545,396	287.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1267	351,022	4,557,701	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1268	350,248	4,578,439	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1269	352,276	4,567,249	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1270	347,931	4,564,830	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1271	350,227	4,562,388	240.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1272	354,246	4,565,729	228.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1273	347,644	4,570,172	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1274	345,485	4,560,725	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1276	350,555	4,554,570	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1277	357,398	4,574,300	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1278	354,143	4,568,427	228.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1279	347,098	4,562,757	248.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1280	347,942	4,565,220	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1281	350,116	4,559,347	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1282	350,262	4,549,509	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1283	353,762	4,575,943	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1284	352,679	4,553,274	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1285	347,633	4,549,675	276.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1286	348,424	4,549,694	276.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1288	357,823	4,577,115	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1289	358,092	4,577,540	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1290	355,541	4,572,159	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1292	347,989	4,565,118	243.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1294	346,798	4,558,584	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1297	348,811	4,578,313	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1298	354,581	4,551,245	258.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1299	346,347	4,549,613	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1300	353,356	4,551,990	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1301	350,250	4,550,020	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1302	346,513	4,548,253	287.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1303	355,486	4,571,825	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1304	347,837	4,573,129	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1305	352,286	4,576,990	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1306	359,008	4,575,963	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1308	351,971	4,569,293	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1309	346,437	4,567,694	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1310	348,471	4,556,199	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1311	354,517	4,551,519	257.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1312	353,092	4,577,660	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1313	355,863	4,572,683	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1314	351,448	4,574,421	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1315	358,097	4,574,685	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1317	352,017	4,569,146	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1318	345,917	4,565,508	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1319	345,782	4,567,136	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1321	348,422	4,558,313	250.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1323	348,467	4,573,099	223.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1324	348,370	4,566,386	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1325	354,510	4,566,408	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1328	352,916	4,577,908	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1329	352,043	4,570,445	233.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1330	352,583	4,565,914	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1331	346,827	4,545,389	291.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1334	349,875	4,578,351	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1335	347,020	4,573,915	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1338	347,734	4,570,178	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1339	347,578	4,570,226	232.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1341	349,982	4,556,205	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1343	355,017	4,576,152	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1344	350,010	4,562,367	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1345	347,601	4,570,413	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1347	347,999	4,564,656	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1348	348,160	4,570,227	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1350	347,815	4,556,316	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1351	348,895	4,549,403	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1353	357,202	4,574,311	216.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1354	350,137	4,564,494	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1355	346,242	4,560,350	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1356	351,403	4,554,329	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1358	354,165	4,577,470	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1360	353,587	4,569,083	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1361	347,104	4,562,688	249.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1362	346,362	4,567,630	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1363	347,494	4,570,326	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1364	348,982	4,567,795	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1366	354,611	4,576,155	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1367	345,485	4,560,962	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1371	353,589	4,572,370	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1372	345,992	4,545,396	287.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1373	347,290	4,563,408	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1374	345,885	4,568,329	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1375	350,231	4,550,485	271.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1377	348,529	4,556,773	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1378	355,954	4,577,216	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1379	350,006	4,565,708	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1380	354,191	4,553,314	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1381	345,441	4,550,912	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1383	357,528	4,574,500	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1384	358,323	4,576,107	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1385	350,095	4,562,633	241.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1386	345,788	4,562,902	250.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1387	347,869	4,570,099	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1388	345,637	4,560,983	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1389	347,600	4,555,737	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1390	351,061	4,554,234	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1395	345,808	4,566,059	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1396	347,556	4,566,591	241.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1397	347,855	4,564,935	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1398	346,597	4,565,036	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1399	354,006	4,578,035	210.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1400	350,415	4,572,952	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1402	347,808	4,560,287	248.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1404	351,906	4,549,468	269.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1405	354,270	4,578,207	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1406	354,351	4,576,296	216.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1408	347,569	4,569,824	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1409	350,123	4,558,015	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1410	347,726	4,554,730	261.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1411	349,873	4,578,274	219.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1412	346,676	4,575,067	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1414	354,785	4,566,560	226.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1415	348,094	4,570,357	233.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1416	354,831	4,551,465	259.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1417	345,548	4,562,856	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1418	348,233	4,573,842	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1420	350,027	4,568,647	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1421	347,616	4,570,171	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1422	348,378	4,557,828	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1423	352,688	4,550,290	267.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1424	352,566	4,574,894	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1425	355,568	4,572,190	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1426	349,996	4,563,528	241.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1428	351,562	4,549,433	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1429	348,034	4,546,569	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1430	347,148	4,545,327	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1431	351,708	4,562,154	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1433	352,391	4,576,346	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1434	347,529	4,552,120	272.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1435	351,829	4,549,549	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1436	358,346	4,574,917	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1437	352,220	4,576,349	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1438	353,706	4,571,799	224.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1439	347,702	4,565,289	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1441	346,559	4,554,245	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1442	348,773	4,551,313	268.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1443	352,974	4,578,399	221.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1445	350,004	4,574,032	221.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1446	349,651	4,568,420	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1449	353,148	4,575,587	221.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1451	346,608	4,561,617	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1452	352,981	4,551,903	264.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1454	351,451	4,578,703	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1455	358,363	4,574,803	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1456	354,464	4,576,157	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1457	347,522	4,569,765	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1458	347,978	4,569,873	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1459	349,959	4,562,006	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1460	351,290	4,554,155	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1461	359,982	4,576,414	207.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1462	352,961	4,576,162	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1463	351,964	4,569,430	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1466	346,447	4,565,283	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1467	352,215	4,551,836	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1468	350,232	4,549,730	271.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1469	351,963	4,578,755	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1470	358,325	4,576,345	212.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1471	352,098	4,570,229	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1472	351,796	4,561,416	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1473	354,963	4,573,041	218.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1475	357,658	4,577,146	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1477	352,714	4,565,528	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1478	347,145	4,549,691	278.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1480	345,513	4,562,343	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1481	345,336	4,551,451	276.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1482	355,563	4,576,291	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1483	352,961	4,577,593	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1484	353,535	4,576,082	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1486	346,029	4,561,917	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1488	351,862	4,556,118	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1490	355,515	4,571,870	221.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1491	357,308	4,574,297	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1492	357,529	4,574,363	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1493	351,652	4,562,645	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1494	348,015	4,565,192	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1495	347,920	4,569,295	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1496	345,809	4,568,267	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1497	351,823	4,554,627	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1498	354,806	4,551,589	259.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1499	350,117	4,558,516	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1500	345,766	4,558,760	255.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1501	348,400	4,557,206	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1504	347,839	4,569,856	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1505	351,549	4,550,227	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1507	346,604	4,545,293	289.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1508	350,326	4,578,397	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1509	349,023	4,566,495	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1510	350,603	4,556,169	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1511	354,523	4,551,436	258.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1512	345,249	4,551,701	277.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1515	350,210	4,562,374	240.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1517	351,907	4,551,977	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1518	350,198	4,550,943	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1519	353,361	4,571,305	227.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1520	348,062	4,573,114	223.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1523	347,786	4,565,267	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1524	347,961	4,570,074	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1525	351,118	4,554,067	259.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1526	347,715	4,553,088	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1527	349,201	4,566,249	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1528	355,650	4,571,521	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1529	345,976	4,545,429	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1530	347,740	4,562,575	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1531	347,665	4,568,723	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1532	347,003	4,556,299	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1533	355,392	4,571,998	221.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1534	350,413	4,572,970	224.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1535	353,820	4,577,911	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1538	353,183	4,572,579	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1539	357,920	4,574,680	215.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1540	353,237	4,577,669	215.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1541	354,750	4,576,152	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1542	352,101	4,569,081	235.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1543	349,717	4,569,993	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1545	351,812	4,563,164	234.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1546	354,625	4,567,434	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1547	345,688	4,561,023	253.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1548	347,745	4,553,886	258.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1549	350,111	4,550,708	267.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1550	346,950	4,574,335	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1551	351,766	4,562,830	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1552	347,796	4,568,881	239.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1553	357,113	4,574,303	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1554	352,205	4,568,182	235.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1559	353,257	4,577,760	215.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1561	345,647	4,560,978	252.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1562	352,265	4,554,891	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1564	350,683	4,554,438	256.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1567	358,259	4,574,305	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1568	352,194	4,567,903	235.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1569	347,564	4,570,235	232.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1570	345,571	4,555,696	262.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1571	355,714	4,571,570	221.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1573	352,895	4,577,936	218.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1574	345,179	4,565,533	245.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1575	351,460	4,549,844	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1576	347,917	4,564,725	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1577	347,660	4,554,179	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1578	353,536	4,577,769	212.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1579	350,350	4,572,973	224.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1580	353,834	4,551,732	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1581	354,557	4,551,203	259.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1583	349,015	4,575,139	219.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1584	356,566	4,573,571	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1585	347,126	4,546,276	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1586	345,822	4,567,489	239.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1587	348,381	4,570,019	237.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1588	352,223	4,576,388	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1589	352,653	4,565,430	233.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1590	348,093	4,570,603	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1591	351,459	4,550,161	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1592	346,159	4,567,667	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1593	347,696	4,570,181	233.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1594	352,489	4,551,940	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1595	345,904	4,565,792	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1596	351,576	4,578,714	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1598	350,057	4,559,456	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1599	350,117	4,559,517	244.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1601	355,603	4,572,322	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1602	354,176	4,572,221	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1603	351,451	4,574,702	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1604	345,301	4,550,492	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1605	354,983	4,570,382	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1606	352,263	4,568,399	235.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1607	349,292	4,568,050	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1609	347,671	4,570,368	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1610	346,481	4,561,034	251.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1612	350,438	4,578,472	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1613	357,522	4,574,586	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1614	358,587	4,576,053	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1615	347,004	4,575,457	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1616	347,798	4,570,143	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1617	348,166	4,570,376	233.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1618	346,143	4,562,882	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1619	347,129	4,562,958	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1620	350,090	4,562,167	240.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1621	350,110	4,559,140	246.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1622	353,821	4,576,206	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1623	345,586	4,558,867	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1624	352,066	4,556,035	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1625	346,637	4,565,406	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1626	356,176	4,576,461	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1627	353,593	4,570,299	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1628	354,094	4,575,373	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1629	352,365	4,566,198	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1631	350,223	4,551,183	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1632	351,853	4,578,864	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1633	351,347	4,578,692	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1634	346,986	4,573,983	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1635	353,984	4,575,723	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1636	349,977	4,566,054	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1637	347,547	4,551,757	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1638	347,364	4,569,745	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1639	354,328	4,553,297	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1640	346,345	4,552,287	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1641	352,125	4,573,708	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1642	356,623	4,573,677	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1643	351,986	4,569,424	236.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1647	346,532	4,561,170	250.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1648	354,079	4,576,189	218.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1649	354,500	4,551,413	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1650	347,659	4,570,128	234.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1651	347,509	4,569,818	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1652	351,122	4,557,713	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1653	350,311	4,575,995	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1654	347,394	4,548,574	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1656	347,510	4,565,937	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1657	350,678	4,558,472	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1659	351,706	4,578,667	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1661	345,989	4,561,988	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1662	349,989	4,561,296	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1663	347,605	4,546,711	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1664	360,728	4,575,977	204.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1665	351,953	4,569,321	237.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1666	351,776	4,561,467	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1667	348,486	4,558,724	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1669	351,794	4,578,841	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1671	352,602	4,576,337	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1672	350,083	4,563,534	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1673	348,613	4,555,346	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1674	348,095	4,569,885	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1688	345,110	4,559,813	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1693	344,776	4,556,490	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1694	345,062	4,559,825	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1709	352,364	4,549,521	270.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1728	347,361	4,570,291	231.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1795	347,109	4,569,934	235.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1841	349,823	4,570,383	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1853	348,245	4,570,809	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1876	352,439	4,549,510	272.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1899	351,507	4,548,672	270.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1906	352,395	4,549,468	272.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1909	358,312	4,578,214	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1953	347,420	4,570,356	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1979	347,016	4,569,924	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2049	348,326	4,570,843	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2053	347,162	4,569,789	237.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2093	351,575	4,548,699	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2107	347,390	4,570,352	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2147	360,140	4,575,179	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2171	346,995	4,569,842	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2172	347,050	4,569,926	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2175	345,217	4,547,164	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2213	347,413	4,570,326	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2302	347,137	4,569,965	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2353	348,212	4,570,805	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2388	347,344	4,570,260	231.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2409	358,249	4,578,240	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2452	347,418	4,570,343	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
2516	348,155	4,570,784	231.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2554	347,195	4,569,783	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2556	352,322	4,549,473	271.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2561	348,293	4,570,841	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2612	347,374	4,570,273	231.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2619	347,383	4,570,344	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2645	355,158	4,551,917	255.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2659	347,085	4,569,933	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2704	360,782	4,575,905	205.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2743	358,243	4,578,278	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2817	347,130	4,569,792	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2820	348,450	4,576,551	216.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2835	347,088	4,573,178	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2844	347,589	4,570,498	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2848	347,303	4,573,094	222.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2880	347,368	4,570,247	231.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2899	352,366	4,549,470	272.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2964	345,235	4,547,905	288.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3022	345,218	4,547,164	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3054	347,892	4,570,768	230.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3055	347,830	4,570,737	231.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3056	347,953	4,570,791	230.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3057	347,995	4,570,802	230.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3058	348,032	4,570,818	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3060	347,941	4,570,660	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3061	348,043	4,570,740	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3062	347,788	4,570,650	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3063	347,761	4,570,638	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3064	347,714	4,570,620	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3065	347,826	4,570,664	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3066	347,852	4,570,674	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3067	347,881	4,570,685	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3068	347,681	4,570,610	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3069	347,684	4,570,679	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3070	347,723	4,570,694	231.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3071	347,782	4,570,717	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3072	348,188	4,570,681	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3081	347,534	4,570,552	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3082	347,585	4,570,564	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3083	347,622	4,570,586	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3085	347,473	4,570,531	231.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3086	347,505	4,570,547	231.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3097	347,293	4,569,805	237.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3098	347,227	4,569,792	237.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3105	348,113	4,573,107	223.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3106	347,985	4,573,110	223.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3107	347,828	4,573,066	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3122	346,832	4,573,838	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3123	346,865	4,573,867	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3124	346,684	4,573,818	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3125	346,756	4,573,680	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3126	346,743	4,573,653	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3127	346,732	4,573,625	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3128	346,719	4,573,595	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3129	346,707	4,573,571	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3130	346,693	4,573,537	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3131	346,678	4,573,496	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3137	346,935	4,574,288	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3138	346,842	4,574,171	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3139	346,900	4,575,303	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3140	346,899	4,575,368	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3141	346,901	4,575,396	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3142	346,936	4,575,565	215.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3146	353,856	4,576,137	221.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3147	353,831	4,575,960	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
3149	354,727	4,551,718	245.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3152	350,486	4,578,382	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3153	350,490	4,578,431	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3154	351,036	4,578,518	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3155	351,155	4,578,584	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3157	351,894	4,569,312	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3158	352,127	4,569,261	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3159	351,921	4,578,819	220.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3161	354,378	4,578,283	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3162	356,086	4,576,568	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3164	345,904	4,565,110	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3168	346,997	4,569,765	237.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3169	346,991	4,569,814	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3170	347,010	4,569,870	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3171	347,038	4,569,876	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3172	347,063	4,569,842	235.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3173	347,056	4,569,792	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3174	347,098	4,569,780	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3175	352,011	4,570,555	233.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3176	352,029	4,570,499	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3177	350,000	4,573,310	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3179	346,853	4,573,929	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3181	348,227	4,578,259	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3183	354,819	4,551,411	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3185	354,582	4,551,225	258.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3186	354,461	4,551,233	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3187	354,444	4,551,196	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3188	354,404	4,551,321	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3189	353,827	4,551,619	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3190	353,902	4,551,593	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3191	353,992	4,551,475	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3192	353,840	4,551,519	261.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3193	353,864	4,551,464	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3194	353,856	4,551,415	258.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3195	354,207	4,551,370	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3196	354,215	4,551,312	259.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3197	354,195	4,551,269	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3198	354,011	4,551,376	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3199	354,085	4,551,351	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3200	354,031	4,551,325	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3201	354,119	4,551,195	262.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3202	354,006	4,551,218	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3203	354,080	4,551,115	263.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3204	353,980	4,551,145	263.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3205	353,888	4,551,216	259.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3206	353,921	4,551,111	263.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3207	353,874	4,551,088	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3212	353,595	4,551,129	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3213	353,740	4,551,191	258.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3214	353,744	4,551,242	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3228	351,681	4,557,772	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3229	354,527	4,551,468	256.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3230	348,185	4,569,886	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3231	348,165	4,570,467	232.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3232	348,094	4,570,265	234.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3233	353,082	4,570,453	231.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3234	350,657	4,573,439	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3235	348,180	4,573,148	223.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3236	358,255	4,577,595	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

Calculation Results

Shadow receptor

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
2	0:00	0	0:00	0:00
3	0:00	0	0:00	0:00
5	0:00	0	0:00	0:00
6	50:44	64	1:19	9:17
7	122:52	189	0:51	42:01
8	0:00	0	0:00	0:00
9	28:28	93	0:29	6:30
10	34:37	96	0:27	5:58
11	26:55	83	0:28	7:21
12	19:25	45	0:34	4:56
15	23:53	66	0:30	10:14
16	9:16	32	0:21	3:08
17	0:00	0	0:00	0:00
19	0:00	0	0:00	0:00
20	0:00	0	0:00	0:00
21	79:07	104	0:58	11:48
23	18:57	48	0:29	2:26
25	45:42	70	0:48	20:49
26	59:52	114	0:52	13:31
27	24:40	82	0:29	3:37
28	11:24	38	0:26	4:04
29	51:10	102	0:48	7:33
30	40:42	94	0:41	5:56
31	7:32	26	0:21	1:16
32	0:00	0	0:00	0:00
33	89:03	140	0:47	25:30
34	37:46	81	0:33	17:02
35	16:24	44	0:31	3:53
36	9:38	33	0:25	2:37
37	0:00	0	0:00	0:00
38	12:04	41	0:22	4:07
39	0:00	0	0:00	0:00
40	36:25	72	0:37	12:35
41	7:00	39	0:15	2:22
43	31:39	55	0:46	10:25
44	19:38	44	0:35	6:33
45	0:00	0	0:00	0:00
46	27:43	57	0:37	12:47
47	47:51	104	0:37	9:01
48	0:00	0	0:00	0:00
50	41:19	100	0:39	9:38
51	0:00	0	0:00	0:00
52	25:53	74	0:28	8:52
53	0:00	0	0:00	0:00
54	148:43	213	0:56	50:22
56	0:00	0	0:00	0:00
57	0:00	0	0:00	0:00
58	27:22	86	0:28	6:44
59	112:37	124	1:06	25:48
62	0:00	0	0:00	0:00
63	61:58	143	0:40	15:34
64	123:39	207	1:03	32:09
65	0:00	0	0:00	0:00
66	0:00	0	0:00	0:00
68	9:13	32	0:24	3:23
70	0:00	0	0:00	0:00
72	9:01	30	0:23	1:32
74	45:07	105	0:40	10:26
75	14:32	39	0:31	4:26
76	0:00	0	0:00	0:00
77	0:00	0	0:00	0:00
78	0:00	0	0:00	0:00
79	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
80	13:15	41	0:27	2:53
83	20:26	46	0:35	6:56
85	87:09	110	0:55	13:25
86	36:23	71	0:40	14:33
87	124:14	114	1:25	37:59
88	0:00	0	0:00	0:00
89	100:51	129	0:58	16:09
90	12:33	44	0:25	2:57
91	131:08	149	1:22	40:35
93	0:00	0	0:00	0:00
94	79:11	183	0:47	17:21
95	59:15	95	0:50	10:22
96	0:00	0	0:00	0:00
98	121:34	186	1:09	28:39
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
102	0:00	0	0:00	0:00
103	30:47	77	0:36	9:21
104	181:19	262	0:58	54:26
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
110	10:10	39	0:23	4:02
111	61:48	108	0:47	11:11
112	55:05	98	0:41	8:12
113	108:27	66	2:09	16:31
114	74:12	168	0:48	17:43
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
120	10:00	34	0:25	3:07
122	0:00	0	0:00	0:00
123	0:00	0	0:00	0:00
124	0:00	0	0:00	0:00
127	45:43	103	0:42	20:15
129	15:36	43	0:30	5:05
130	11:18	43	0:20	5:16
131	16:34	59	0:28	4:35
132	0:00	0	0:00	0:00
133	15:08	51	0:26	5:07
134	29:07	72	0:33	4:37
135	49:35	114	0:36	9:56
137	129:49	235	0:48	38:23
139	18:47	55	0:28	6:21
140	0:00	0	0:00	0:00
141	0:00	0	0:00	0:00
142	0:00	0	0:00	0:00
143	66:21	68	1:13	9:41
144	0:00	0	0:00	0:00
145	95:49	136	1:13	34:25
146	15:30	36	0:33	2:42
147	14:25	40	0:27	1:48
149	0:00	0	0:00	0:00
150	0:00	0	0:00	0:00
151	0:00	0	0:00	0:00
152	0:00	0	0:00	0:00
153	97:49	166	0:51	24:39
154	0:00	0	0:00	0:00
155	75:03	183	0:36	28:09
157	7:47	30	0:20	0:56
158	0:00	0	0:00	0:00
159	34:00	62	0:42	12:44
160	11:01	38	0:25	4:09
161	10:18	36	0:24	3:51
162	28:37	88	0:26	6:23
163	21:07	60	0:29	7:41

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
165	30:43	69	0:33	14:02
167	10:31	36	0:22	1:18
168	0:00	0	0:00	0:00
169	33:44	57	0:52	10:23
170	34:43	73	0:38	15:52
171	72:28	134	0:47	29:35
172	0:00	0	0:00	0:00
173	0:00	0	0:00	0:00
174	0:00	0	0:00	0:00
176	18:35	44	0:33	4:36
178	0:00	0	0:00	0:00
179	26:09	55	0:35	4:52
180	78:01	148	0:41	25:45
181	75:56	195	0:37	24:06
182	0:00	0	0:00	0:00
183	0:00	0	0:00	0:00
185	0:00	0	0:00	0:00
186	0:00	0	0:00	0:00
187	0:00	0	0:00	0:00
189	38:22	80	0:33	17:17
191	0:00	0	0:00	0:00
192	0:00	0	0:00	0:00
193	0:00	0	0:00	0:00
195	0:00	0	0:00	0:00
196	0:00	0	0:00	0:00
197	278:04	319	1:40	90:47
198	32:58	104	0:27	6:45
199	88:11	147	0:48	15:09
200	61:31	121	0:53	13:51
201	29:24	84	0:28	10:11
202	0:00	0	0:00	0:00
203	0:00	0	0:00	0:00
204	0:00	0	0:00	0:00
205	8:11	30	0:23	2:30
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
209	14:52	53	0:24	3:02
210	21:09	49	0:35	5:05
211	87:29	86	1:14	12:22
212	36:24	93	0:32	11:48
213	12:09	42	0:25	4:02
214	57:04	127	0:38	9:26
215	10:28	36	0:26	2:36
216	83:41	132	0:50	13:55
217	42:16	95	0:42	6:12
218	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	71:35	132	0:57	22:54
222	24:54	44	0:42	3:07
223	10:12	36	0:24	2:46
224	18:05	40	0:34	3:12
225	25:23	77	0:28	7:28
227	75:36	136	0:59	27:26
228	91:06	197	0:40	32:44
229	0:00	0	0:00	0:00
230	18:37	43	0:34	6:09
231	0:00	0	0:00	0:00
232	162:25	155	2:07	57:20
233	0:00	0	0:00	0:00
234	42:38	82	0:42	17:28
235	0:00	0	0:00	0:00
236	0:00	0	0:00	0:00
237	45:15	80	0:39	20:25
239	11:14	38	0:25	3:05

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
240	48:08	103	0:39	19:09
241	0:00	0	0:00	0:00
242	44:53	73	0:43	6:14
243	0:00	0	0:00	0:00
244	48:15	90	0:38	7:00
245	0:00	0	0:00	0:00
248	33:53	85	0:30	15:11
249	0:00	0	0:00	0:00
250	28:30	81	0:33	7:14
251	11:16	35	0:28	3:44
252	0:00	0	0:00	0:00
253	0:00	0	0:00	0:00
254	1:05	15	0:06	0:30
255	88:43	122	0:55	37:05
258	15:01	61	0:22	6:37
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	20:27	60	0:27	7:01
262	11:44	38	0:27	2:52
263	0:00	0	0:00	0:00
264	94:42	168	0:45	24:21
265	25:11	52	0:36	11:40
266	23:15	70	0:30	4:45
268	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	32:47	92	0:30	6:55
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
275	186:19	228	1:12	43:12
277	138:34	109	1:30	59:56
278	13:39	49	0:22	4:37
279	31:17	44	0:54	5:23
280	0:00	0	0:00	0:00
281	0:00	0	0:00	0:00
283	0:00	0	0:00	0:00
284	25:02	53	0:37	7:29
285	0:00	0	0:00	0:00
286	36:55	95	0:37	8:47
288	82:27	93	1:10	21:34
289	8:05	30	0:23	2:38
291	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	0:00	0	0:00	0:00
295	0:00	0	0:00	0:00
298	0:00	0	0:00	0:00
299	20:42	56	0:26	3:51
300	0:00	0	0:00	0:00
301	60:40	96	0:45	8:55
303	17:43	45	0:32	5:54
304	86:28	95	1:19	31:35
305	30:53	59	0:42	8:46
310	29:45	62	0:34	4:01
312	0:00	0	0:00	0:00
313	28:00	89	0:29	12:20
314	0:00	0	0:00	0:00
315	10:43	34	0:26	3:35
317	0:00	0	0:00	0:00
319	114:40	124	1:12	40:17
320	23:45	51	0:37	8:39
321	0:00	0	0:00	0:00
322	23:35	66	0:26	3:14
323	7:44	28	0:21	0:55
324	22:17	53	0:34	4:29
325	41:31	91	0:44	14:06

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
327	31:17	54	0:43	5:50
328	74:58	89	1:00	33:26
329	62:31	98	0:51	24:55
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	134:44	186	1:19	35:18
333	28:35	91	0:30	9:52
334	0:00	0	0:00	0:00
335	10:15	38	0:24	2:00
336	0:00	0	0:00	0:00
337	0:00	0	0:00	0:00
338	0:00	0	0:00	0:00
339	15:10	58	0:22	5:11
340	0:00	0	0:00	0:00
341	30:02	93	0:29	10:20
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	79:50	126	0:47	34:38
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	70:02	98	1:10	25:22
351	0:00	0	0:00	0:00
352	23:36	74	0:27	4:18
353	35:43	67	0:42	13:48
354	33:21	84	0:30	14:57
355	0:00	0	0:00	0:00
357	0:00	0	0:00	0:00
359	0:00	0	0:00	0:00
360	216:32	176	2:13	75:56
362	29:05	58	0:40	10:09
364	0:00	0	0:00	0:00
365	44:27	84	0:37	6:20
366	5:27	26	0:16	0:38
367	0:00	0	0:00	0:00
368	81:08	112	0:57	12:36
369	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	10:22	36	0:22	3:31
372	47:37	103	0:37	16:20
373	0:00	0	0:00	0:00
376	30:27	62	0:41	11:14
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
380	0:00	0	0:00	0:00
381	0:00	0	0:00	0:00
382	147:47	196	1:28	47:22
383	20:05	50	0:32	7:41
384	68:20	123	0:51	20:10
385	108:09	139	1:26	34:09
386	15:38	54	0:27	3:32
387	24:54	78	0:28	3:35
388	33:26	55	0:51	7:38
389	0:00	0	0:00	0:00
390	224:03	237	1:19	76:26
391	0:00	0	0:00	0:00
392	15:42	59	0:24	6:50
393	0:00	0	0:00	0:00
394	39:41	66	0:44	7:38
395	0:00	0	0:00	0:00
396	13:58	51	0:22	4:46
397	24:44	58	0:34	6:06
398	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
399	131:21	164	1:10	48:54
400	29:25	57	0:40	10:51
401	71:07	84	1:00	10:08
402	0:00	0	0:00	0:00
403	18:01	57	0:27	6:07
404	246:53	209	2:23	78:46
406	2:13	22	0:08	1:01
407	7:17	31	0:18	2:27
408	81:33	94	1:07	18:47
410	40:27	104	0:32	16:28
412	0:00	0	0:00	0:00
413	0:00	0	0:00	0:00
416	0:00	0	0:00	0:00
417	56:11	101	0:48	16:58
418	78:52	169	0:45	15:15
420	30:51	55	0:43	10:21
421	28:28	83	0:27	12:47
422	130:21	241	0:54	37:26
423	148:54	256	0:49	40:20
424	11:23	40	0:26	2:24
425	0:00	0	0:00	0:00
427	221:39	295	0:58	65:20
428	77:25	117	1:01	11:44
429	72:08	178	0:40	19:59
430	22:59	67	0:35	7:46
432	21:41	48	0:34	3:56
434	18:50	65	0:27	6:06
435	0:00	0	0:00	0:00
437	52:30	77	0:53	11:38
438	0:00	0	0:00	0:00
439	8:51	30	0:22	1:04
440	0:00	0	0:00	0:00
441	42:00	69	0:47	14:07
442	0:00	0	0:00	0:00
443	24:42	73	0:26	11:14
444	18:51	44	0:34	6:19
445	9:52	35	0:26	2:57
447	90:56	163	0:55	23:52
449	57:30	166	0:34	16:51
451	50:58	82	0:49	9:27
452	0:00	0	0:00	0:00
453	0:00	0	0:00	0:00
454	10:29	37	0:24	3:58
456	46:26	76	0:42	6:30
457	0:00	0	0:00	0:00
458	65:56	144	0:37	22:09
459	20:43	64	0:31	4:34
460	0:00	0	0:00	0:00
461	52:35	103	0:48	12:58
462	0:00	0	0:00	0:00
463	16:19	55	0:25	5:32
464	9:49	34	0:25	2:26
466	0:38	7	0:06	0:17
467	6:45	35	0:15	3:08
468	17:28	49	0:27	8:06
469	0:00	0	0:00	0:00
474	0:00	0	0:00	0:00
475	56:35	66	1:04	10:44
476	40:47	93	0:35	7:01
477	126:32	278	0:41	34:43
478	0:00	0	0:00	0:00
479	27:00	94	0:25	7:36
480	0:00	0	0:00	0:00
481	15:54	42	0:30	5:10

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
482	0:00	0	0:00	0:00
484	0:00	0	0:00	0:00
485	0:00	0	0:00	0:00
486	27:16	79	0:28	4:57
487	15:06	57	0:24	6:34
488	59:53	93	0:44	8:44
489	16:51	48	0:29	3:11
490	38:34	80	0:39	8:48
491	37:45	102	0:36	8:06
492	133:47	169	1:09	28:39
494	25:13	52	0:38	7:49
495	27:24	58	0:38	5:42
496	54:00	76	0:55	13:03
498	10:37	35	0:26	3:56
499	16:09	42	0:31	5:25
500	175:07	268	1:14	53:41
501	135:23	149	1:25	45:22
502	0:00	0	0:00	0:00
503	19:25	44	0:41	3:25
504	0:00	0	0:00	0:00
507	0:00	0	0:00	0:00
508	42:15	101	0:38	10:54
509	38:06	86	0:41	11:56
510	209:48	207	1:55	67:38
513	25:49	80	0:26	4:56
515	0:00	0	0:00	0:00
516	0:00	0	0:00	0:00
517	0:00	0	0:00	0:00
518	89:03	88	1:13	39:46
519	89:26	191	0:42	25:31
520	26:43	52	0:40	8:32
521	0:00	0	0:00	0:00
523	37:07	86	0:39	8:16
524	19:19	50	0:32	5:08
526	0:00	0	0:00	0:00
528	0:00	0	0:00	0:00
529	61:42	112	0:46	20:36
530	0:00	0	0:00	0:00
531	15:10	40	0:28	2:41
532	14:49	46	0:27	4:56
533	0:00	0	0:00	0:00
534	41:12	76	0:37	5:46
535	0:00	0	0:00	0:00
536	0:00	0	0:00	0:00
538	0:00	0	0:00	0:00
539	9:50	36	0:24	2:24
540	0:00	0	0:00	0:00
541	0:00	0	0:00	0:00
542	0:00	0	0:00	0:00
543	19:06	68	0:24	6:21
544	0:00	0	0:00	0:00
545	0:00	0	0:00	0:00
546	0:00	0	0:00	0:00
547	34:19	59	0:45	10:55
549	0:00	0	0:00	0:00
550	0:00	0	0:00	0:00
551	0:00	0	0:00	0:00
552	25:44	66	0:28	3:31
553	84:16	117	0:56	13:16
554	2:45	16	0:13	1:16
555	0:00	0	0:00	0:00
556	0:00	0	0:00	0:00
557	0:00	0	0:00	0:00
558	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
559	40:27	100	0:33	13:53
560	0:00	0	0:00	0:00
561	0:00	0	0:00	0:00
562	8:11	30	0:24	2:43
563	0:00	0	0:00	0:00
564	49:54	74	0:57	8:39
566	50:41	82	0:48	19:49
567	14:52	45	0:28	4:54
569	97:07	136	1:12	34:53
570	127:05	199	1:06	41:09
571	0:00	0	0:00	0:00
572	0:00	0	0:00	0:00
573	0:00	0	0:00	0:00
574	41:15	78	0:37	18:39
575	10:24	36	0:25	2:28
576	90:11	142	1:02	29:56
577	9:50	34	0:25	3:18
578	9:58	36	0:24	3:14
579	0:00	0	0:00	0:00
580	135:12	121	1:27	31:11
581	0:00	0	0:00	0:00
582	0:00	0	0:00	0:00
583	45:44	86	0:43	10:45
584	11:30	38	0:27	2:48
585	2:15	15	0:11	0:15
586	61:57	132	0:39	11:32
588	0:00	0	0:00	0:00
590	0:00	0	0:00	0:00
591	0:00	0	0:00	0:00
592	0:00	0	0:00	0:00
593	32:09	57	0:42	14:49
594	39:25	56	0:53	7:17
596	124:52	203	0:51	40:02
597	0:00	0	0:00	0:00
598	0:00	0	0:00	0:00
599	0:00	0	0:00	0:00
601	13:37	34	0:31	2:21
602	34:46	65	0:42	13:21
604	43:14	90	0:39	16:29
605	0:00	0	0:00	0:00
606	19:30	47	0:33	4:26
607	25:57	76	0:28	3:42
608	79:15	91	1:08	27:50
609	32:03	63	0:38	11:01
610	0:00	0	0:00	0:00
611	84:02	132	0:47	35:58
612	14:27	40	0:29	4:51
613	30:22	56	0:41	5:40
614	108:03	196	0:48	31:26
615	41:36	66	0:49	13:05
617	19:37	65	0:30	4:38
618	26:18	57	0:35	12:07
619	0:00	0	0:00	0:00
620	57:42	117	0:40	19:58
622	0:00	0	0:00	0:00
624	21:15	71	0:26	6:39
625	0:33	13	0:04	0:10
626	68:04	134	0:55	24:03
628	87:17	146	1:01	25:30
629	0:00	0	0:00	0:00
630	76:00	120	0:57	16:52
631	89:10	104	1:09	13:10
634	23:08	48	0:37	7:38
635	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
636	55:12	88	0:49	18:38
639	0:00	0	0:00	0:00
641	85:29	95	1:10	26:53
643	61:09	116	0:45	25:49
645	0:22	6	0:04	0:02
647	0:00	0	0:00	0:00
648	100:30	110	1:12	28:59
650	0:00	0	0:00	0:00
652	106:22	92	1:37	16:08
653	85:43	135	0:49	31:51
654	0:00	0	0:00	0:00
655	0:00	0	0:00	0:00
656	17:42	64	0:26	3:51
657	41:30	86	0:44	11:34
658	0:00	0	0:00	0:00
659	79:48	140	0:47	25:34
660	0:00	0	0:00	0:00
661	38:16	68	0:41	17:29
662	11:07	36	0:26	2:44
663	84:14	102	0:56	17:43
664	28:01	56	0:36	5:15
665	68:46	90	0:52	9:57
668	14:03	40	0:29	3:21
669	10:22	34	0:26	3:11
670	33:19	90	0:35	8:01
677	0:00	0	0:00	0:00
678	16:23	46	0:30	6:21
679	54:40	111	0:39	17:49
680	0:00	0	0:00	0:00
681	30:38	86	0:29	5:32
682	60:17	116	0:51	13:35
683	68:39	80	1:02	23:56
684	28:46	82	0:30	4:17
685	0:00	0	0:00	0:00
686	35:18	102	0:27	6:37
687	22:15	71	0:29	7:21
688	114:58	170	1:03	36:21
689	11:05	39	0:25	2:52
690	0:00	0	0:00	0:00
691	65:42	137	0:37	12:38
692	0:00	0	0:00	0:00
693	118:02	183	1:11	40:19
695	19:23	45	0:34	6:34
696	0:00	0	0:00	0:00
697	0:00	0	0:00	0:00
698	0:00	0	0:00	0:00
699	102:45	147	0:52	21:21
701	0:00	0	0:00	0:00
702	16:16	45	0:30	4:39
703	11:09	34	0:27	3:27
704	40:59	63	0:49	13:06
705	0:00	0	0:00	0:00
706	0:00	0	0:00	0:00
708	34:14	79	0:35	5:24
710	0:00	0	0:00	0:00
713	46:35	115	0:34	7:29
714	8:48	30	0:22	1:30
716	0:00	0	0:00	0:00
717	0:00	0	0:00	0:00
718	123:32	204	1:18	40:58
722	63:10	146	0:36	16:20
723	0:00	0	0:00	0:00
724	0:00	0	0:00	0:00
725	94:59	130	0:54	15:20

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
726	18:07	60	0:27	4:02
727	48:54	108	0:37	10:53
728	129:39	139	1:24	41:34
729	26:04	55	0:37	7:20
730	0:00	0	0:00	0:00
731	34:55	66	0:41	6:44
733	0:00	0	0:00	0:00
734	70:49	128	0:50	23:22
735	10:24	38	0:24	4:06
737	0:00	0	0:00	0:00
738	0:00	0	0:00	0:00
739	48:35	84	0:47	18:07
740	97:19	121	1:14	35:56
742	0:00	0	0:00	0:00
743	42:07	73	0:45	8:13
744	56:12	125	0:38	12:34
745	0:00	0	0:00	0:00
746	18:30	60	0:29	3:21
747	18:26	67	0:27	2:50
748	63:28	112	0:44	28:01
749	0:00	0	0:00	0:00
750	12:03	41	0:22	4:06
752	140:41	204	1:04	42:11
753	0:00	0	0:00	0:00
755	20:49	47	0:33	3:46
756	23:46	50	0:37	8:39
757	21:07	68	0:25	9:40
759	48:36	84	0:55	8:56
760	79:01	192	0:36	27:33
761	0:00	0	0:00	0:00
762	41:14	95	0:39	14:03
764	15:06	43	0:29	4:16
766	0:00	0	0:00	0:00
767	0:00	0	0:00	0:00
769	0:00	0	0:00	0:00
770	174:24	172	1:58	43:22
772	79:00	184	0:47	17:37
774	0:00	0	0:00	0:00
775	0:00	0	0:00	0:00
776	0:00	0	0:00	0:00
777	0:00	0	0:00	0:00
778	9:34	32	0:22	1:10
779	132:29	266	0:54	38:05
780	0:00	0	0:00	0:00
781	0:00	0	0:00	0:00
782	0:00	0	0:00	0:00
783	0:00	0	0:00	0:00
784	0:00	0	0:00	0:00
785	163:13	215	1:24	50:37
787	32:54	81	0:35	8:31
788	0:00	0	0:00	0:00
789	0:00	0	0:00	0:00
791	0:00	0	0:00	0:00
793	0:00	0	0:00	0:00
794	0:00	0	0:00	0:00
795	29:02	67	0:32	13:16
796	61:38	108	0:47	24:20
797	0:00	0	0:00	0:00
798	31:27	95	0:29	9:40
799	0:00	0	0:00	0:00
801	0:00	0	0:00	0:00
803	0:00	0	0:00	0:00
804	0:00	0	0:00	0:00
805	11:07	38	0:26	4:04

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
806	35:56	70	0:40	8:50
808	0:00	0	0:00	0:00
809	22:43	55	0:33	8:57
810	0:00	0	0:00	0:00
811	25:56	67	0:29	8:56
812	5:06	28	0:14	1:43
813	31:26	58	0:42	9:37
814	0:00	0	0:00	0:00
815	32:47	113	0:27	7:13
816	19:38	46	0:34	4:49
817	2:19	16	0:12	0:16
818	0:00	0	0:00	0:00
819	0:00	0	0:00	0:00
821	0:00	0	0:00	0:00
822	8:42	31	0:24	2:52
823	115:28	141	1:27	19:38
824	90:01	150	1:03	31:11
825	19:07	58	0:27	8:50
826	79:11	173	0:46	16:16
827	237:20	274	1:42	64:46
828	0:00	0	0:00	0:00
829	0:00	0	0:00	0:00
830	0:00	0	0:00	0:00
831	2:00	14	0:11	0:13
832	65:19	94	0:57	9:19
834	94:42	181	0:42	34:46
835	0:00	0	0:00	0:00
837	0:00	0	0:00	0:00
838	26:16	74	0:26	9:05
840	11:35	35	0:27	3:53
841	14:52	42	0:26	5:04
843	0:00	0	0:00	0:00
844	33:40	67	0:36	15:23
845	29:27	48	0:47	5:16
846	27:32	82	0:29	8:07
847	0:00	0	0:00	0:00
848	41:59	88	0:46	10:32
849	20:42	68	0:28	6:51
850	0:00	0	0:00	0:00
851	26:09	65	0:32	12:02
852	0:00	0	0:00	0:00
853	41:17	95	0:35	13:12
854	25:27	50	0:39	8:09
855	128:11	193	1:02	39:25
857	176:08	229	1:26	54:09
860	165:03	144	1:23	40:21
861	89:11	201	0:39	31:48
862	43:16	114	0:32	12:27
863	16:59	41	0:33	5:36
864	72:21	142	0:49	19:35
865	0:00	0	0:00	0:00
866	17:14	50	0:29	5:46
868	75:51	132	0:49	12:57
869	128:38	221	1:11	33:06
870	179:54	199	1:24	62:25
871	100:08	158	0:54	19:13
872	0:00	0	0:00	0:00
873	38:44	74	0:36	5:24
874	0:00	0	0:00	0:00
875	0:00	0	0:00	0:00
876	0:00	0	0:00	0:00
878	0:00	0	0:00	0:00
879	174:14	235	1:04	45:53
880	122:12	203	1:18	40:29

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
881	44:54	80	0:38	8:55
882	0:00	0	0:00	0:00
883	0:00	0	0:00	0:00
885	62:09	124	0:46	21:25
886	26:11	88	0:27	11:42
887	83:52	102	0:56	17:40
889	0:26	13	0:03	0:12
890	0:00	0	0:00	0:00
891	0:00	0	0:00	0:00
892	13:02	38	0:28	3:10
893	30:20	86	0:30	4:32
894	0:00	0	0:00	0:00
895	34:36	96	0:27	6:20
896	50:11	128	0:38	14:29
897	0:00	0	0:00	0:00
898	0:00	0	0:00	0:00
899	23:35	70	0:32	6:26
901	0:00	0	0:00	0:00
902	28:23	80	0:30	6:06
903	78:01	128	0:48	23:51
904	0:00	0	0:00	0:00
905	0:00	0	0:00	0:00
907	25:33	76	0:30	4:59
908	66:21	92	0:49	9:40
909	17:12	50	0:29	3:00
911	0:00	0	0:00	0:00
912	41:18	100	0:36	8:53
914	0:00	0	0:00	0:00
916	39:02	90	0:40	11:23
917	14:36	45	0:27	4:50
919	0:00	0	0:00	0:00
921	0:00	0	0:00	0:00
922	17:59	45	0:32	6:01
923	194:14	242	1:04	50:18
924	0:00	0	0:00	0:00
925	33:39	85	0:46	9:41
926	35:39	71	0:40	14:19
927	60:46	80	0:58	21:04
928	31:50	64	0:40	6:20
929	0:00	0	0:00	0:00
930	0:00	0	0:00	0:00
931	0:00	0	0:00	0:00
932	131:58	242	0:49	39:05
933	0:00	0	0:00	0:00
934	0:00	0	0:00	0:00
935	0:00	0	0:00	0:00
937	0:00	0	0:00	0:00
938	118:09	208	1:14	35:45
940	149:23	236	1:09	46:48
941	141:51	232	1:04	44:20
942	46:26	118	0:32	18:31
943	53:22	110	0:40	11:59
944	43:31	100	0:32	19:23
945	29:00	58	0:38	7:55
946	0:00	0	0:00	0:00
948	176:09	202	1:15	62:11
949	0:00	0	0:00	0:00
950	9:16	34	0:24	3:07
951	77:32	118	0:59	26:43
952	9:55	37	0:24	3:42
954	14:09	38	0:30	4:21
955	17:59	47	0:32	5:11
956	147:04	187	1:20	37:52
958	36:06	60	0:44	6:51

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
959	0:00	0	0:00	0:00
960	0:00	0	0:00	0:00
961	0:00	0	0:00	0:00
962	0:00	0	0:00	0:00
963	0:00	0	0:00	0:00
964	0:00	0	0:00	0:00
965	23:01	90	0:24	8:56
966	0:00	0	0:00	0:00
967	0:00	0	0:00	0:00
968	33:32	90	0:30	14:53
969	75:45	117	0:58	12:12
970	39:57	83	0:39	9:05
971	40:23	102	0:37	11:26
972	22:02	80	0:27	3:14
973	27:37	60	0:36	10:54
974	95:34	155	0:55	22:40
975	93:33	68	1:45	17:50
976	22:51	64	0:26	3:07
977	0:00	0	0:00	0:00
978	0:00	0	0:00	0:00
979	0:00	0	0:00	0:00
980	113:26	137	1:04	25:59
981	4:25	20	0:16	0:30
982	11:07	35	0:27	3:30
985	0:00	0	0:00	0:00
986	71:24	118	0:47	31:20
987	70:00	179	0:38	22:13
988	17:38	57	0:27	5:59
990	0:00	0	0:00	0:00
992	13:25	40	0:27	5:03
993	43:02	126	0:29	9:23
994	24:06	50	0:37	8:44
997	27:34	56	0:37	12:43
998	177:49	130	1:32	62:13
999	98:54	197	0:55	23:33
1000	0:00	0	0:00	0:00
1002	22:31	74	0:28	3:49
1003	0:00	0	0:00	0:00
1004	0:00	0	0:00	0:00
1005	66:53	121	0:55	22:30
1006	0:00	0	0:00	0:00
1007	18:37	67	0:25	5:37
1008	54:38	77	0:56	13:21
1009	0:00	0	0:00	0:00
1010	0:00	0	0:00	0:00
1011	0:00	0	0:00	0:00
1012	27:19	58	0:37	5:31
1013	97:37	82	1:28	14:56
1014	27:44	81	0:29	8:12
1016	7:49	30	0:23	2:37
1017	0:00	0	0:00	0:00
1018	43:27	94	0:35	19:12
1019	31:11	82	0:29	14:01
1020	15:55	46	0:26	7:24
1021	0:00	0	0:00	0:00
1022	89:06	190	0:39	32:59
1023	0:00	0	0:00	0:00
1024	1:08	11	0:08	0:07
1025	0:00	0	0:00	0:00
1028	8:52	32	0:21	1:05
1029	0:00	0	0:00	0:00
1030	189:44	231	1:18	54:30
1031	0:00	0	0:00	0:00
1032	14:19	37	0:36	6:21

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1033	0:00	0	0:00	0:00
1034	0:00	0	0:00	0:00
1035	0:00	0	0:00	0:00
1036	59:29	141	0:35	15:17
1038	65:10	168	0:36	22:13
1039	0:00	0	0:00	0:00
1040	106:51	135	1:26	35:18
1042	9:20	33	0:24	2:51
1043	258:13	218	2:25	82:30
1044	81:38	137	0:49	13:24
1045	49:40	106	0:41	21:05
1046	0:00	0	0:00	0:00
1047	10:37	36	0:26	3:55
1048	84:39	141	0:55	20:41
1049	59:29	90	0:57	8:15
1052	0:00	0	0:00	0:00
1053	34:25	68	0:40	13:33
1054	24:15	90	0:25	7:03
1055	77:17	74	1:35	14:31
1056	244:09	288	1:09	69:27
1058	0:00	0	0:00	0:00
1059	143:11	135	1:16	24:10
1060	0:00	0	0:00	0:00
1061	0:00	0	0:00	0:00
1062	0:00	0	0:00	0:00
1063	0:25	6	0:05	0:04
1065	22:56	48	0:37	7:38
1066	22:41	57	0:30	10:28
1067	105:45	180	0:58	31:15
1068	123:17	188	1:10	29:10
1069	0:00	0	0:00	0:00
1070	0:00	0	0:00	0:00
1072	0:00	0	0:00	0:00
1073	0:00	0	0:00	0:00
1074	9:06	30	0:22	1:06
1075	75:25	102	0:57	11:09
1076	0:00	0	0:00	0:00
1077	41:53	64	0:50	11:53
1079	9:20	33	0:25	2:54
1080	0:00	0	0:00	0:00
1081	0:00	0	0:00	0:00
1082	99:01	111	1:18	25:50
1084	21:11	54	0:31	5:06
1085	135:04	172	1:14	34:18
1086	15:14	51	0:26	5:09
1087	0:00	0	0:00	0:00
1088	0:00	0	0:00	0:00
1089	27:17	80	0:31	9:03
1090	64:21	196	0:35	19:41
1091	96:06	112	1:00	14:53
1092	0:00	0	0:00	0:00
1094	0:00	0	0:00	0:00
1095	0:00	0	0:00	0:00
1096	0:00	0	0:00	0:00
1097	63:26	135	0:43	12:28
1098	59:39	80	1:11	13:00
1099	0:00	0	0:00	0:00
1100	12:50	40	0:27	4:49
1101	0:00	0	0:00	0:00
1102	33:07	113	0:28	6:44
1103	62:28	145	0:40	15:36
1104	0:00	0	0:00	0:00
1105	72:55	150	0:49	18:45
1106	121:42	182	1:11	41:42

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1107	0:00	0	0:00	0:00
1108	0:00	0	0:00	0:00
1109	36:39	61	0:47	12:33
1110	56:33	122	0:35	19:20
1111	21:41	47	0:36	7:18
1113	0:00	0	0:00	0:00
1114	44:40	97	0:39	7:21
1115	49:05	137	0:39	10:00
1117	29:15	62	0:36	13:26
1118	57:07	147	0:36	16:33
1119	24:50	65	0:30	11:23
1120	0:00	0	0:00	0:00
1123	0:00	0	0:00	0:00
1124	16:13	52	0:27	6:47
1125	0:00	0	0:00	0:00
1126	48:57	80	0:42	9:44
1127	40:19	92	0:36	6:55
1128	0:00	0	0:00	0:00
1130	35:19	95	0:28	6:21
1131	125:41	102	1:27	18:27
1132	21:09	50	0:34	4:45
1133	18:15	48	0:32	5:06
1134	0:00	0	0:00	0:00
1135	0:00	0	0:00	0:00
1136	150:13	184	1:28	47:54
1137	91:26	92	1:29	31:40
1138	10:44	36	0:25	2:24
1139	0:00	0	0:00	0:00
1140	20:25	45	0:35	6:53
1141	0:00	0	0:00	0:00
1143	22:34	82	0:24	7:48
1144	16:06	43	0:31	4:54
1146	103:27	115	1:02	36:18
1148	0:00	0	0:00	0:00
1149	9:12	32	0:24	3:23
1150	0:00	0	0:00	0:00
1151	151:08	142	1:26	54:25
1153	51:34	91	0:45	9:53
1154	0:00	0	0:00	0:00
1155	77:10	145	0:49	27:17
1156	84:59	159	0:53	23:51
1158	107:44	127	1:01	37:39
1160	10:09	38	0:24	2:42
1161	0:00	0	0:00	0:00
1162	41:42	86	0:40	16:17
1164	11:38	30	0:30	1:25
1166	0:00	0	0:00	0:00
1167	0:00	0	0:00	0:00
1168	0:00	0	0:00	0:00
1169	0:00	0	0:00	0:00
1170	0:00	0	0:00	0:00
1171	58:47	87	0:46	26:19
1172	78:07	127	0:51	15:29
1173	0:00	0	0:00	0:00
1174	101:20	141	1:03	35:19
1175	0:00	0	0:00	0:00
1177	46:56	104	0:42	20:47
1178	15:10	51	0:26	5:08
1179	287:12	257	2:15	95:43
1181	0:00	0	0:00	0:00
1182	0:00	0	0:00	0:00
1183	0:00	0	0:00	0:00
1184	0:00	0	0:00	0:00
1185	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1186	0:00	0	0:00	0:00
1188	0:00	0	0:00	0:00
1189	18:02	46	0:32	4:13
1190	31:48	77	0:30	14:24
1191	61:55	117	0:55	22:09
1193	0:00	0	0:00	0:00
1194	0:00	0	0:00	0:00
1195	37:43	94	0:32	16:41
1196	43:04	97	0:36	10:23
1197	21:22	48	0:33	9:55
1198	0:00	0	0:00	0:00
1199	0:00	0	0:00	0:00
1200	0:00	0	0:00	0:00
1201	0:00	0	0:00	0:00
1202	0:00	0	0:00	0:00
1203	24:15	72	0:26	8:22
1204	116:01	146	1:29	31:00
1206	9:44	37	0:24	2:22
1207	0:00	0	0:00	0:00
1210	20:27	64	0:29	3:13
1211	73:04	148	0:46	22:40
1212	39:53	78	0:35	5:36
1213	0:00	0	0:00	0:00
1215	25:20	74	0:30	9:30
1217	0:00	0	0:00	0:00
1218	34:34	62	0:43	12:56
1219	68:51	129	0:42	22:42
1220	0:00	0	0:00	0:00
1221	11:51	36	0:25	1:28
1224	16:02	52	0:24	7:26
1225	14:57	44	0:26	6:58
1226	0:00	0	0:00	0:00
1227	23:05	58	0:28	3:04
1228	115:44	76	2:04	21:37
1229	0:00	0	0:00	0:00
1231	162:16	116	1:48	26:56
1232	9:36	34	0:24	3:10
1233	0:00	0	0:00	0:00
1234	42:24	65	0:48	19:24
1235	24:29	52	0:35	4:31
1236	182:47	227	1:16	46:05
1237	113:44	168	1:04	35:56
1238	37:33	76	0:35	17:01
1239	0:00	0	0:00	0:00
1240	99:27	101	1:17	27:34
1241	10:34	39	0:24	4:10
1242	0:00	0	0:00	0:00
1243	0:00	0	0:00	0:00
1244	15:57	41	0:31	4:57
1245	0:00	0	0:00	0:00
1246	0:00	0	0:00	0:00
1248	22:18	49	0:35	5:16
1249	0:00	0	0:00	0:00
1250	0:00	0	0:00	0:00
1252	0:00	0	0:00	0:00
1253	83:03	140	0:47	34:43
1254	0:00	0	0:00	0:00
1257	22:37	72	0:25	4:13
1259	21:22	72	0:25	3:02
1260	0:00	0	0:00	0:00
1262	0:00	0	0:00	0:00
1264	92:18	113	1:05	35:22
1265	0:00	0	0:00	0:00
1266	27:22	54	0:37	12:38

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
1267	17:52	40	0:34	3:09
1268	0:00	0	0:00	0:00
1269	184:05	259	1:20	54:15
1270	0:00	0	0:00	0:00
1271	103:57	198	0:46	28:24
1272	0:00	0	0:00	0:00
1273	0:00	0	0:00	0:00
1274	26:25	78	0:28	3:48
1276	36:58	73	0:36	16:48
1277	90:45	130	0:52	14:43
1278	16:18	56	0:26	3:37
1279	54:06	91	0:48	13:14
1280	0:00	0	0:00	0:00
1281	0:00	0	0:00	0:00
1282	0:00	0	0:00	0:00
1283	0:00	0	0:00	0:00
1284	69:28	141	0:39	13:03
1285	0:00	0	0:00	0:00
1286	20:20	62	0:29	6:54
1288	30:28	85	0:34	7:36
1289	43:38	76	0:39	6:06
1290	50:32	107	0:38	16:49
1292	0:00	0	0:00	0:00
1294	0:00	0	0:00	0:00
1297	45:55	94	0:37	6:48
1298	0:00	0	0:00	0:00
1299	11:18	46	0:20	5:16
1300	0:00	0	0:00	0:00
1301	76:10	88	1:07	23:51
1302	0:00	0	0:00	0:00
1303	22:18	48	0:37	7:27
1304	0:00	0	0:00	0:00
1305	18:21	42	0:34	5:07
1306	0:00	0	0:00	0:00
1308	41:51	81	0:41	17:16
1309	70:24	86	0:57	10:05
1310	14:40	48	0:27	2:33
1311	0:00	0	0:00	0:00
1312	34:48	106	0:28	6:43
1313	24:50	75	0:30	8:13
1314	105:14	164	1:01	34:34
1315	0:00	0	0:00	0:00
1317	34:45	64	0:40	15:56
1318	0:00	0	0:00	0:00
1319	70:43	125	1:02	21:39
1321	0:00	0	0:00	0:00
1323	0:00	0	0:00	0:00
1324	9:08	33	0:24	3:04
1325	13:32	40	0:28	4:23
1328	17:14	46	0:31	4:52
1329	0:00	0	0:00	0:00
1330	0:00	0	0:00	0:00
1331	0:00	0	0:00	0:00
1334	0:00	0	0:00	0:00
1335	0:00	0	0:00	0:00
1338	0:00	0	0:00	0:00
1339	0:00	0	0:00	0:00
1341	46:24	117	0:34	7:30
1343	0:00	0	0:00	0:00
1344	56:56	148	0:36	16:26
1345	0:00	0	0:00	0:00
1347	0:00	0	0:00	0:00
1348	0:00	0	0:00	0:00
1350	16:54	46	0:27	3:02

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1351	0:00	0	0:00	0:00
1353	37:53	70	0:42	7:01
1354	0:00	0	0:00	0:00
1355	102:26	96	1:16	14:57
1356	0:00	0	0:00	0:00
1358	30:55	64	0:34	5:54
1360	16:40	41	0:30	5:41
1361	46:17	74	0:49	13:05
1362	81:23	116	0:54	13:00
1363	0:00	0	0:00	0:00
1364	78:18	89	1:08	20:48
1366	25:30	77	0:25	8:49
1367	0:00	0	0:00	0:00
1371	99:19	166	1:08	26:43
1372	27:24	54	0:37	12:39
1373	0:00	0	0:00	0:00
1374	0:00	0	0:00	0:00
1375	274:01	257	2:09	92:56
1377	77:24	88	1:21	26:41
1378	11:55	42	0:26	3:02
1379	11:28	35	0:27	3:51
1380	43:34	67	0:50	13:31
1381	37:07	95	0:33	16:20
1383	18:07	60	0:27	2:51
1384	51:00	104	0:37	22:37
1385	66:18	157	0:39	20:11
1386	56:23	90	0:43	8:11
1387	24:01	60	0:28	3:13
1388	0:00	0	0:00	0:00
1389	96:48	198	0:46	25:35
1390	0:00	0	0:00	0:00
1395	32:00	77	0:30	14:29
1396	115:48	250	0:56	35:16
1397	0:00	0	0:00	0:00
1398	0:00	0	0:00	0:00
1399	0:00	0	0:00	0:00
1400	0:00	0	0:00	0:00
1402	11:14	35	0:27	3:27
1404	24:28	72	0:29	8:23
1405	0:00	0	0:00	0:00
1406	37:08	81	0:32	12:53
1408	37:47	65	0:52	7:44
1409	0:00	0	0:00	0:00
1410	60:17	91	0:52	20:20
1411	0:00	0	0:00	0:00
1412	24:48	79	0:28	5:17
1414	22:10	54	0:31	7:36
1415	0:00	0	0:00	0:00
1416	0:00	0	0:00	0:00
1417	23:53	55	0:35	4:44
1418	0:00	0	0:00	0:00
1420	51:59	161	0:28	13:16
1421	4:00	20	0:15	0:27
1422	132:41	128	1:13	30:48
1423	9:02	38	0:21	2:58
1424	25:37	89	0:28	8:50
1425	62:46	124	0:40	21:04
1426	80:40	131	0:51	16:30
1428	2:25	15	0:12	0:48
1429	28:23	112	0:25	7:21
1430	0:00	0	0:00	0:00
1431	164:52	217	1:25	51:09
1433	29:34	64	0:36	13:33
1434	67:30	130	0:47	23:21

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1435	24:44	64	0:32	8:24
1436	0:00	0	0:00	0:00
1437	38:02	85	0:32	17:02
1438	96:48	148	0:49	33:21
1439	31:50	70	0:33	14:32
1441	0:00	0	0:00	0:00
1442	88:21	139	1:00	22:08
1443	0:15	5	0:04	0:02
1445	32:20	61	0:41	12:13
1446	41:36	84	0:40	14:08
1449	0:00	0	0:00	0:00
1451	0:00	0	0:00	0:00
1452	0:00	0	0:00	0:00
1454	0:00	0	0:00	0:00
1455	0:00	0	0:00	0:00
1456	21:02	59	0:28	7:14
1457	24:50	52	0:37	5:41
1458	68:04	96	0:56	9:51
1459	71:46	199	0:32	21:05
1460	0:00	0	0:00	0:00
1461	103:56	172	0:59	36:01
1462	13:11	52	0:20	6:07
1463	30:36	58	0:41	11:21
1466	0:00	0	0:00	0:00
1467	0:00	0	0:00	0:00
1468	69:16	80	1:03	31:17
1469	0:00	0	0:00	0:00
1470	56:19	98	0:47	21:44
1471	20:59	48	0:33	2:42
1472	124:57	170	0:55	42:18
1473	169:08	233	1:10	53:34
1475	13:11	38	0:29	3:42
1477	0:00	0	0:00	0:00
1478	0:00	0	0:00	0:00
1480	23:03	48	0:37	8:07
1481	13:29	38	0:30	4:06
1482	52:15	106	0:45	18:05
1483	15:09	39	0:31	4:56
1484	27:05	69	0:30	12:23
1486	0:00	0	0:00	0:00
1488	106:59	100	1:24	22:46
1490	20:46	45	0:36	6:50
1491	65:12	114	0:48	11:38
1492	64:23	111	0:54	9:40
1493	149:48	254	0:50	40:39
1494	0:00	0	0:00	0:00
1495	258:40	283	1:24	73:07
1496	0:00	0	0:00	0:00
1497	0:00	0	0:00	0:00
1498	0:00	0	0:00	0:00
1499	0:00	0	0:00	0:00
1500	0:00	0	0:00	0:00
1501	101:43	133	1:02	22:39
1504	81:42	109	0:57	12:26
1505	85:31	150	0:41	29:14
1507	0:00	0	0:00	0:00
1508	20:48	46	0:33	3:46
1509	0:00	0	0:00	0:00
1510	69:27	118	1:00	13:42
1511	0:00	0	0:00	0:00
1512	10:56	35	0:26	2:46
1515	102:04	202	0:45	28:01
1517	0:00	0	0:00	0:00
1518	148:26	164	1:30	29:10

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1519	23:28	71	0:29	10:12
1520	0:00	0	0:00	0:00
1523	16:24	47	0:26	7:37
1524	22:16	54	0:29	2:56
1525	0:00	0	0:00	0:00
1526	118:38	110	1:24	34:12
1527	48:44	68	0:53	9:27
1528	18:08	46	0:32	5:54
1529	43:24	72	0:43	19:43
1530	11:09	35	0:27	3:31
1531	146:10	166	1:22	60:14
1532	88:47	192	0:42	25:21
1533	27:00	53	0:40	8:25
1534	0:00	0	0:00	0:00
1535	0:00	0	0:00	0:00
1538	13:19	45	0:26	5:26
1539	0:00	0	0:00	0:00
1540	29:49	84	0:28	5:22
1541	0:00	0	0:00	0:00
1542	0:00	0	0:00	0:00
1543	12:59	54	0:24	3:04
1545	64:41	148	0:36	16:40
1546	38:39	89	0:40	11:45
1547	0:00	0	0:00	0:00
1548	0:00	0	0:00	0:00
1549	187:28	189	1:32	54:23
1550	70:27	145	0:40	29:10
1551	129:09	277	0:42	35:48
1552	137:55	171	1:15	48:02
1553	28:45	58	0:38	5:57
1554	82:40	133	1:01	15:24
1559	11:05	48	0:24	2:54
1561	0:00	0	0:00	0:00
1562	40:04	68	0:46	13:30
1564	0:00	0	0:00	0:00
1567	115:46	68	2:21	18:41
1568	135:19	178	1:18	32:50
1569	0:00	0	0:00	0:00
1570	83:15	156	0:55	29:19
1571	15:22	42	0:30	5:06
1573	18:41	50	0:31	4:57
1574	0:00	0	0:00	0:00
1575	44:05	71	0:48	14:52
1576	0:00	0	0:00	0:00
1577	0:00	0	0:00	0:00
1578	0:00	0	0:00	0:00
1579	0:00	0	0:00	0:00
1580	0:00	0	0:00	0:00
1581	0:00	0	0:00	0:00
1583	140:39	234	1:13	31:59
1584	10:52	38	0:25	4:10
1585	70:53	110	0:47	15:08
1586	80:00	159	0:46	14:34
1587	0:00	0	0:00	0:00
1588	36:33	94	0:32	16:04
1589	0:00	0	0:00	0:00
1590	0:00	0	0:00	0:00
1591	61:26	112	0:46	20:31
1592	36:59	70	0:42	6:57
1593	0:00	0	0:00	0:00
1594	2:19	19	0:09	1:04
1595	0:00	0	0:00	0:00
1596	0:00	0	0:00	0:00
1598	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1599	0:00	0	0:00	0:00
1601	67:45	173	0:39	21:33
1602	66:17	105	0:57	11:23
1603	125:25	262	0:46	36:56
1604	0:00	0	0:00	0:00
1605	0:00	0	0:00	0:00
1606	39:14	93	0:30	7:04
1607	25:17	40	0:48	3:30
1609	0:00	0	0:00	0:00
1610	0:00	0	0:00	0:00
1612	14:44	40	0:27	2:36
1613	23:42	72	0:27	3:21
1614	24:24	52	0:35	11:18
1615	32:07	80	0:31	4:36
1616	21:55	60	0:26	2:56
1617	0:00	0	0:00	0:00
1618	12:00	30	0:30	1:28
1619	37:14	64	0:41	7:09
1620	86:31	178	0:39	32:39
1621	0:00	0	0:00	0:00
1622	33:56	65	0:39	15:33
1623	0:00	0	0:00	0:00
1624	48:14	70	0:59	13:43
1625	0:00	0	0:00	0:00
1626	7:54	30	0:22	2:39
1627	0:00	0	0:00	0:00
1628	0:00	0	0:00	0:00
1629	20:52	51	0:31	9:40
1631	28:19	78	0:30	5:04
1632	0:00	0	0:00	0:00
1633	0:00	0	0:00	0:00
1634	10:17	33	0:24	4:47
1635	0:00	0	0:00	0:00
1636	11:27	35	0:27	3:31
1637	36:39	91	0:31	7:13
1638	17:18	43	0:32	4:18
1639	34:26	76	0:42	10:15
1640	0:00	0	0:00	0:00
1641	45:04	130	0:30	9:18
1642	11:13	36	0:26	4:11
1643	32:52	62	0:42	12:16
1647	0:00	0	0:00	0:00
1648	0:00	0	0:00	0:00
1649	0:00	0	0:00	0:00
1650	8:28	30	0:22	1:01
1651	24:50	55	0:36	5:12
1652	30:24	56	0:41	5:41
1653	146:40	144	1:43	27:13
1654	0:00	0	0:00	0:00
1656	37:51	117	0:29	12:31
1657	0:00	0	0:00	0:00
1659	0:00	0	0:00	0:00
1661	0:00	0	0:00	0:00
1662	32:49	92	0:30	11:51
1663	40:41	100	0:37	11:34
1664	14:52	49	0:26	5:02
1665	35:43	71	0:40	14:17
1666	145:04	196	0:57	47:55
1667	0:00	0	0:00	0:00
1669	0:00	0	0:00	0:00
1671	0:00	0	0:00	0:00
1672	78:13	121	0:58	17:19
1673	21:49	51	0:34	8:17
1674	46:31	84	0:47	6:31

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
1688	8:43	32	0:23	3:12
1693	8:05	30	0:23	2:07
1694	7:52	31	0:22	2:53
1709	0:00	0	0:00	0:00
1728	10:41	36	0:22	1:19
1795	10:51	37	0:25	2:29
1841	0:00	0	0:00	0:00
1853	0:00	0	0:00	0:00
1876	0:00	0	0:00	0:00
1899	0:00	0	0:00	0:00
1906	0:00	0	0:00	0:00
1909	0:00	0	0:00	0:00
1953	0:00	0	0:00	0:00
1979	9:01	34	0:24	2:10
2049	0:00	0	0:00	0:00
2053	24:56	78	0:27	4:31
2093	0:00	0	0:00	0:00
2107	0:00	0	0:00	0:00
2147	0:00	0	0:00	0:00
2171	8:38	33	0:23	2:09
2172	9:36	34	0:24	2:17
2175	8:08	31	0:23	2:11
2213	0:00	0	0:00	0:00
2302	11:34	39	0:26	2:29
2353	0:00	0	0:00	0:00
2388	17:34	48	0:26	2:16
2409	0:00	0	0:00	0:00
2452	0:00	0	0:00	0:00
2516	0:00	0	0:00	0:00
2554	23:20	73	0:28	4:23
2556	0:00	0	0:00	0:00
2561	0:00	0	0:00	0:00
2612	12:44	40	0:24	1:35
2619	0:00	0	0:00	0:00
2645	27:03	76	0:27	9:22
2659	10:20	36	0:25	2:24
2704	14:49	53	0:25	5:01
2743	0:00	0	0:00	0:00
2817	26:38	81	0:26	4:41
2820	21:52	56	0:27	2:54
2835	0:00	0	0:00	0:00
2844	0:00	0	0:00	0:00
2848	0:00	0	0:00	0:00
2880	17:36	48	0:27	2:15
2899	0:00	0	0:00	0:00
2964	8:17	31	0:23	2:14
3022	8:08	31	0:23	2:11
3054	0:00	0	0:00	0:00
3055	0:00	0	0:00	0:00
3056	0:00	0	0:00	0:00
3057	0:00	0	0:00	0:00
3058	0:00	0	0:00	0:00
3060	0:00	0	0:00	0:00
3061	0:00	0	0:00	0:00
3062	0:00	0	0:00	0:00
3063	0:00	0	0:00	0:00
3064	0:00	0	0:00	0:00
3065	0:00	0	0:00	0:00
3066	0:00	0	0:00	0:00
3067	0:00	0	0:00	0:00
3068	0:00	0	0:00	0:00
3069	0:00	0	0:00	0:00
3070	0:00	0	0:00	0:00
3071	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
3072	0:00	0	0:00	0:00
3081	0:00	0	0:00	0:00
3082	0:00	0	0:00	0:00
3083	0:00	0	0:00	0:00
3085	0:00	0	0:00	0:00
3086	0:00	0	0:00	0:00
3097	15:08	41	0:30	3:41
3098	19:33	66	0:28	4:00
3105	0:00	0	0:00	0:00
3106	0:00	0	0:00	0:00
3107	0:00	0	0:00	0:00
3122	0:00	0	0:00	0:00
3123	0:00	0	0:00	0:00
3124	7:22	36	0:16	3:26
3125	0:00	0	0:00	0:00
3126	0:00	0	0:00	0:00
3127	0:00	0	0:00	0:00
3128	0:00	0	0:00	0:00
3129	0:00	0	0:00	0:00
3130	0:00	0	0:00	0:00
3131	0:00	0	0:00	0:00
3137	66:20	137	0:39	27:47
3138	47:56	118	0:36	20:33
3139	25:31	78	0:30	4:25
3140	17:22	50	0:29	3:04
3141	18:04	52	0:29	3:03
3142	26:53	66	0:28	3:40
3146	2:10	15	0:11	1:00
3147	0:00	0	0:00	0:00
3149	0:00	0	0:00	0:00
3152	37:02	74	0:35	7:14
3153	28:47	60	0:34	5:27
3154	0:00	0	0:00	0:00
3155	0:00	0	0:00	0:00
3157	29:44	63	0:38	11:46
3158	65:57	90	0:50	29:25
3159	0:00	0	0:00	0:00
3161	0:00	0	0:00	0:00
3162	9:03	32	0:24	3:01
3164	0:00	0	0:00	0:00
3168	8:36	32	0:24	2:12
3169	8:32	32	0:23	2:09
3170	8:51	32	0:24	2:11
3171	9:18	34	0:24	2:17
3172	9:45	34	0:25	2:25
3173	9:39	33	0:25	2:26
3174	29:34	87	0:26	5:04
3175	0:00	0	0:00	0:00
3176	0:00	0	0:00	0:00
3177	0:00	0	0:00	0:00
3179	14:27	43	0:25	6:44
3181	8:57	33	0:23	2:12
3183	0:00	0	0:00	0:00
3185	0:00	0	0:00	0:00
3186	0:00	0	0:00	0:00
3187	0:00	0	0:00	0:00
3188	0:00	0	0:00	0:00
3189	0:00	0	0:00	0:00
3190	0:00	0	0:00	0:00
3191	0:00	0	0:00	0:00
3192	0:00	0	0:00	0:00
3193	0:00	0	0:00	0:00
3194	0:00	0	0:00	0:00
3195	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
3196	0:00	0	0:00	0:00
3197	0:00	0	0:00	0:00
3198	0:00	0	0:00	0:00
3199	0:00	0	0:00	0:00
3200	0:00	0	0:00	0:00
3201	0:00	0	0:00	0:00
3202	0:00	0	0:00	0:00
3203	0:00	0	0:00	0:00
3204	0:00	0	0:00	0:00
3205	0:00	0	0:00	0:00
3206	0:00	0	0:00	0:00
3207	0:00	0	0:00	0:00
3212	0:00	0	0:00	0:00
3213	0:00	0	0:00	0:00
3214	0:00	0	0:00	0:00
3228	16:38	53	0:27	3:49
3229	0:00	0	0:00	0:00
3230	40:07	74	0:38	5:35
3231	0:00	0	0:00	0:00
3232	0:00	0	0:00	0:00
3233	0:00	0	0:00	0:00
3234	0:00	0	0:00	0:00
3235	0:00	0	0:00	0:00
3236	5:05	22	0:18	0:35

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
T1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (597)	171:23	30:04
T10	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (606)	253:07	92:26
T11	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (607)	218:15	50:30
T12	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (608)	130:59	28:41
T13	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (609)	248:26	72:32
T14	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (610)	326:00	64:42
T15	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (611)	151:01	28:05
T16	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (612)	181:55	54:51
T17	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (613)	91:02	30:04
T18	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (614)	134:28	45:01
T19	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (615)	181:50	62:50
T2	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (598)	229:17	73:52
T20	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (681)	253:31	83:19
T21	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (617)	484:08	122:41
T22	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (618)	463:51	130:46
T23	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (619)	591:56	181:26
T24	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (620)	466:52	132:41
T25	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (621)	471:43	132:38
T26	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (622)	400:04	122:11
T27	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (623)	282:07	82:03
T28	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (624)	280:13	76:43
T29	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (625)	360:56	101:35
T3	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (599)	468:29	151:58
T30	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (626)	319:55	95:19
T31	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (627)	245:31	65:38
T32	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (628)	296:59	88:43
T33	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (629)	178:56	52:28
T34	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (630)	443:51	122:30
T35	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (631)	248:44	76:11
T36	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (632)	258:52	84:59
T37	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (633)	331:51	103:26
T38	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (634)	413:04	111:57
T39	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (635)	406:35	134:08
T4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (600)	363:15	114:35
T40	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (636)	302:02	104:12

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-08-29_Emerson SFA

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
T41	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (637)	362:08	102:33
T42	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (638)	489:43	154:28
T43	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (639)	552:41	138:42
T44	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (640)	431:48	125:53
T45	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (641)	409:00	119:32
T46	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (642)	191:38	69:00
T47	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (643)	304:25	68:28
T48	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (644)	144:42	33:30
T49	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (645)	481:04	156:12
T5	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (601)	438:37	140:35
T50	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (646)	19:48	6:27
T51	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (647)	226:41	69:49
T52	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (648)	173:24	56:24
T53	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (649)	225:06	63:28
T54	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (650)	342:28	75:23
T55	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (651)	284:03	72:42
T56	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (652)	244:35	68:03
T57	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (653)	132:15	39:52
T58	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (654)	155:51	56:23
T59	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (655)	229:59	72:45
T6	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (602)	112:27	22:05
T60	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (656)	398:53	118:42
T61	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (657)	573:39	168:30
T62	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (658)	300:23	85:43
T63	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (659)	483:03	141:22
T64	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (660)	161:40	52:08
T65	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (661)	290:45	78:43
T66	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (662)	314:25	74:54
T67	VESTAS V150-5.6 5600 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (594)	150:41	43:13
T68	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (663)	498:23	141:57
T69	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (664)	435:49	125:58
T7	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (603)	108:35	20:36
T70	VESTAS V150-5.6 5600 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (595)	95:42	37:01
T71	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (665)	452:08	148:07
T72	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (666)	42:09	13:33
T73	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (667)	166:33	47:32
T74	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (668)	177:20	54:51
T75	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (669)	382:51	110:32
T76	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (670)	215:32	63:35
T77	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (671)	412:45	116:36
T78	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (672)	208:19	61:59
T79	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (673)	361:50	108:09
T8	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (604)	85:27	23:45
T80	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (674)	143:42	32:24
T81	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (675)	169:19	54:56
T82	VESTAS V150-5.6 5600 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (596)	222:28	69:14
T83	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (676)	212:06	63:24
T84	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (677)	259:20	73:51
T85	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (678)	454:16	129:52
T86	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (679)	232:20	68:49
T87	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (680)	608:15	145:38
T9	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (605)	189:47	71:19

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6198)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April			May			June		
1	07:57		07:43		07:07		07:16		18:23 (T59)	06:31		19:19 (T78)	06:02		19:30 (T78)
	17:13		17:48		18:22		19:56	30	18:53 (T59)	20:27	42	20:01 (T78)	20:57	47	20:32 (T57)
2	07:57		07:42		07:06		07:15		18:26 (T59)	06:29		19:19 (T78)	06:01		19:32 (T78)
	17:14		17:49		18:23		19:57	25	18:51 (T59)	20:28	43	20:02 (T78)	20:58	45	20:33 (T57)
3	07:57		07:41		07:04		17:42 (T59)		07:13	18:28 (T59)		06:28		19:19 (T78)	06:01		19:33 (T78)
	17:15		17:50		18:24	8	17:50 (T59)		19:58	19	18:47 (T59)	20:29	43	20:02 (T78)	20:58	43	20:34 (T57)
4	07:57		07:40		07:03		17:36 (T59)		07:11	18:33 (T59)		06:27		19:18 (T78)	06:01		19:34 (T78)
	17:16		17:52		18:25	19	17:55 (T59)		19:59	8	18:41 (T59)	20:30	45	20:03 (T78)	20:59	42	20:34 (T57)
5	07:57		07:39		07:01		17:32 (T59)		07:10			06:25		19:17 (T78)	06:00		19:36 (T78)
	17:17		17:53		18:27	25	17:57 (T59)		20:00			20:31	45	20:02 (T78)	21:00	40	20:35 (T57)
6	07:57		07:38		06:59		17:30 (T59)		07:08			06:24		19:17 (T78)	06:00		19:39 (T78)
	17:18		17:54		18:28	30	18:00 (T59)		20:00			20:32	45	20:02 (T78)	21:00	36	20:36 (T57)
7	07:57		07:37		06:58		17:28 (T59)		07:06			06:23		19:17 (T78)	06:00		20:07 (T57)
	17:19		17:55		18:29	33	18:01 (T59)		20:01			20:33	45	20:02 (T78)	21:01	30	20:37 (T57)
8	07:57		07:36		07:56		18:25 (T59)		07:05			06:22		19:17 (T78)	05:59		20:06 (T57)
	17:20		17:57		19:30	37	19:02 (T59)		20:02			20:34	46	20:03 (T78)	21:02	31	20:37 (T57)
9	07:57		07:35		07:55		18:24 (T59)		07:03			06:21		19:17 (T78)	05:59		20:07 (T57)
	17:21		17:58		19:31	40	19:04 (T59)		20:04			20:35	46	20:03 (T78)	21:02	30	20:37 (T57)
10	07:57		07:34		07:53		18:23 (T59)		07:02			06:20		19:17 (T78)	05:59		20:07 (T57)
	17:22		17:59		19:32	42	19:05 (T59)		20:05			20:36	46	20:03 (T78)	21:03	31	20:38 (T57)
11	07:57		07:32		07:51		18:22 (T59)		07:00			06:18		19:17 (T78)	05:59		20:07 (T57)
	17:23		18:00		19:33	44	19:06 (T59)		20:06			20:37	45	20:02 (T78)	21:03	32	20:39 (T57)
12	07:56		07:31		07:50		18:21 (T59)		06:58			06:17		19:17 (T78)	05:59		20:07 (T57)
	17:24		18:02		19:34	45	19:06 (T59)		20:07			20:38	45	20:02 (T78)	21:04	32	20:39 (T57)
13	07:56		07:30		07:48		18:19 (T59)		06:57			06:16		19:18 (T78)	05:59		20:07 (T57)
	17:25		18:03		19:36	48	19:07 (T59)		20:08			20:39	44	20:02 (T78)	21:04	33	20:40 (T57)
14	07:56		07:29		07:46		18:19 (T59)		06:55			06:15		19:18 (T78)	05:59		20:08 (T57)
	17:26		18:04		19:37	48	19:07 (T59)		20:09			20:41	44	20:02 (T78)	21:05	32	20:40 (T57)
15	07:55		07:27		07:45		18:18 (T59)		06:54			06:14		19:18 (T78)	05:59		20:08 (T57)
	17:27		18:05		19:38	49	19:07 (T59)		20:10			20:42	44	20:02 (T78)	21:05	32	20:40 (T57)
16	07:55		07:26		07:43		18:17 (T59)		06:52			06:13		19:18 (T78)	05:59		20:08 (T57)
	17:28		18:06		19:39	50	19:07 (T59)		20:11			20:42	43	20:01 (T78)	21:06	33	20:41 (T57)
17	07:54		07:25		07:41		18:18 (T59)		06:51			06:12		19:19 (T78)	05:59		20:08 (T57)
	17:30		18:08		19:40	50	19:08 (T59)		20:12			20:43	42	20:01 (T78)	21:06	33	20:41 (T57)
18	07:54		07:23		07:40		18:17 (T59)		06:49			06:12		19:19 (T78)	05:59		20:08 (T57)
	17:31		18:09		19:41	50	19:07 (T59)		20:13			20:44	41	20:00 (T78)	21:07	33	20:41 (T57)
19	07:53		07:22		07:38		18:16 (T59)		06:48			06:11		19:19 (T78)	05:59		20:08 (T57)
	17:32		18:10		19:42	51	19:07 (T59)		20:14			20:45	41	20:00 (T78)	21:07	33	20:41 (T57)
20	07:53		07:21		07:36		18:16 (T59)		06:46			06:10		19:21 (T78)	05:59		20:08 (T57)
	17:33		18:11		19:43	50	19:06 (T59)		20:15			20:46	39	20:00 (T78)	21:07	34	20:42 (T57)
21	07:52		07:19		07:35		18:16 (T59)		06:45	19:39 (T78)		06:09		19:21 (T78)	05:59		20:09 (T57)
	17:34		18:13		19:44	50	19:06 (T59)		20:16	6	19:45 (T78)	20:47	38	19:59 (T78)	21:07	34	20:43 (T57)
22	07:52		07:18		07:33		18:16 (T59)		06:43	19:33 (T78)		06:08		19:21 (T78)	05:59		20:09 (T57)
	17:35		18:14		19:45	49	19:05 (T59)		20:17	17	19:50 (T78)	20:48	38	19:59 (T78)	21:08	34	20:43 (T57)
23	07:51		07:16		07:31		18:16 (T59)		06:42	19:30 (T78)		06:07		19:22 (T78)	06:00		20:09 (T57)
	17:37		18:15		19:46	49	19:05 (T59)		20:18	23	19:53 (T78)	20:49	45	20:25 (T57)	21:08	33	20:42 (T57)
24	07:50		07:15		07:30		18:17 (T59)		06:40	19:29 (T78)		06:07		19:23 (T78)	06:00		20:09 (T57)
	17:38		18:16		19:48	47	19:04 (T59)		20:20	26	19:55 (T78)	20:50	48	20:27 (T57)	21:08	33	20:42 (T57)
25	07:49		07:13		07:28		18:17 (T59)		06:39	19:26 (T78)		06:06		19:23 (T78)	06:00		20:10 (T57)
	17:39		18:17		19:49	46	19:03 (T59)		20:21	30	19:56 (T78)	20:51	49	20:27 (T57)	21:08	33	20:43 (T57)
26	07:49		07:12		07:26		18:17 (T59)		06:37	19:25 (T78)		06:05		19:24 (T78)	06:00		20:10 (T57)
	17:40		18:18		19:50	45	19:02 (T59)		20:22	33	19:58 (T78)	20:52	48	20:27 (T57)	21:08	33	20:43 (T57)
27	07:48		07:10		07:25		18:18 (T59)		06:36	19:23 (T78)		06:05		19:25 (T78)	06:01		20:10 (T57)
	17:42		18:20		19:51	44	19:02 (T59)		20:23	35	19:58 (T78)	20:53	50	20:29 (T57)	21:08	33	20:43 (T57)
28	07:47		07:09		07:23		18:19 (T59)		06:35	19:22 (T78)		06:04		19:26 (T78)	06:01		20:11 (T57)
	17:43		18:21		19:52	41	19:00 (T59)		20:24	37	19:59 (T78)	20:54	49	20:29 (T57)	21:08	32	20:43 (T57)
29	07:46				07:21		18:19 (T59)		06:33	19:21 (T78)		06:03		19:27 (T78)	06:02		20:10 (T57)
	17:44				19:53	39	18:58 (T59)		20:25	39	20:00 (T78)	20:54	49	20:30 (T57)	21:08	33	20:43 (T57)
30	07:45				07:20		18:21 (T59)		06:32	19:20 (T78)		06:03		19:28 (T78)	06:02		20:11 (T57)
	17:45				19:54	36	18:57 (T59)		20:26	40	20:00 (T78)	20:55	48	20:31 (T57)	21:08	32	20:43 (T57)
31	07:44				07:18		18:22 (T59)					06:02		19:29 (T78)			
	17:47				19:55	33	18:55 (T59)					20:56	48	20:32 (T57)			
Potential sun hours	297		297		370				399			448			452		
Total, worst case						1198				368			1384			1032	
Sun reduction						0.44				0.52			0.57			0.64	
Oper. time red.						1.00				1.00			1.00			1.00	
Wind dir. red.						0.66				0.59			0.57			0.54	
Total reduction						0.29				0.31			0.33			0.35	
Total, real						352				114			450			360	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6198)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:03	20:11 (T57)	06:27	19:28 (T78)	06:58		07:28	17:59 (T59)	07:02	07:37
	21:08	32 20:43 (T57)	20:50	45 20:13 (T78)	20:07		19:15	46 18:45 (T59)	17:28	07:04
2	06:03	20:12 (T57)	06:28	19:27 (T78)	06:59		07:29	17:59 (T59)	07:03	07:38
	21:08	31 20:43 (T57)	20:49	45 20:12 (T78)	20:06		19:13	45 18:44 (T59)	17:27	07:04
3	06:04	20:12 (T57)	06:29	19:27 (T78)	07:00		07:30	18:01 (T59)	07:04	07:39
	21:08	31 20:43 (T57)	20:48	45 20:12 (T78)	20:04		19:12	43 18:44 (T59)	17:26	07:04
4	06:04	20:13 (T57)	06:30	19:27 (T78)	07:01		07:31	18:02 (T59)	07:06	07:40
	21:08	30 20:43 (T57)	20:47	45 20:12 (T78)	20:02		19:10	40 18:42 (T59)	17:25	07:03
5	06:05	20:12 (T57)	06:31	19:27 (T78)	07:02		07:32	18:02 (T59)	07:07	07:41
	21:08	30 20:42 (T57)	20:46	45 20:12 (T78)	20:01		19:08	39 18:41 (T59)	17:23	07:03
6	06:05	19:47 (T78)	06:32	19:27 (T78)	07:03		07:33	18:03 (T59)	07:08	07:42
	21:08	32 20:42 (T57)	20:44	45 20:12 (T78)	19:57		19:07	36 18:39 (T59)	17:22	07:03
7	06:06	19:43 (T78)	06:33	19:27 (T78)	07:04		07:34	18:05 (T59)	07:09	07:43
	21:07	38 20:41 (T57)	20:43	45 20:12 (T78)	19:56		19:05	32 18:37 (T59)	17:21	07:03
8	06:07	19:42 (T78)	06:34	19:27 (T78)	07:05	18:29 (T59)	07:35	18:07 (T59)	07:10	07:44
	21:07	41 20:42 (T57)	20:42	44 20:11 (T78)	19:54	6 18:35 (T59)	19:03	27 18:34 (T59)	17:20	07:03
9	06:07	19:41 (T78)	06:34	19:27 (T78)	07:06	18:23 (T59)	07:36	18:09 (T59)	07:12	07:45
	21:07	43 20:42 (T57)	20:41	44 20:11 (T78)	19:52	18 18:41 (T59)	19:02	22 18:31 (T59)	17:19	07:03
10	06:08	19:39 (T78)	06:35	19:27 (T78)	07:06	18:19 (T59)	07:37	18:12 (T59)	07:13	07:46
	21:06	46 20:41 (T57)	20:40	44 20:11 (T78)	19:51	25 18:44 (T59)	19:00	15 18:27 (T59)	17:18	07:03
11	06:09	19:39 (T78)	06:36	19:28 (T78)	07:07	18:17 (T59)	07:38		07:14	07:46
	21:06	46 20:41 (T57)	20:38	42 20:10 (T78)	19:49	29 18:46 (T59)	18:59		17:17	07:03
12	06:09	19:38 (T78)	06:37	19:28 (T78)	07:08	18:14 (T59)	07:39		07:15	07:47
	21:05	47 20:40 (T57)	20:37	41 20:09 (T78)	19:47	33 18:47 (T59)	18:57		17:16	07:03
13	06:10	19:37 (T78)	06:38	19:29 (T78)	07:09	18:12 (T59)	07:40		07:16	07:48
	21:05	47 20:39 (T57)	20:36	40 20:09 (T78)	19:46	36 18:48 (T59)	18:55		17:15	07:03
14	06:11	19:36 (T78)	06:39	19:29 (T78)	07:10	18:11 (T59)	07:41		07:18	07:49
	21:04	49 20:39 (T57)	20:34	39 20:08 (T78)	19:44	38 18:49 (T59)	18:54		17:14	07:04
15	06:12	19:36 (T78)	06:40	19:30 (T78)	07:11	18:08 (T59)	07:43		07:19	07:50
	21:04	49 20:39 (T57)	20:33	37 20:07 (T78)	19:42	41 18:49 (T59)	18:52		17:13	07:04
16	06:12	19:35 (T78)	06:41	19:31 (T78)	07:12	18:07 (T59)	07:44		07:20	07:50
	21:03	49 20:38 (T57)	20:32	34 20:05 (T78)	19:40	43 18:50 (T59)	18:51		17:13	07:04
17	06:13	19:34 (T78)	06:43	19:32 (T78)	07:13	18:05 (T59)	07:45		07:21	07:51
	21:03	48 20:37 (T57)	20:30	32 20:04 (T78)	19:39	45 18:50 (T59)	18:49		17:12	07:04
18	06:14	19:33 (T78)	06:44	19:33 (T78)	07:14	18:04 (T59)	07:46		07:22	07:52
	21:02	49 20:37 (T57)	20:29	29 20:02 (T78)	19:37	46 18:50 (T59)	18:48		17:11	07:05
19	06:15	19:33 (T78)	06:45	19:35 (T78)	07:15	18:03 (T59)	07:47		07:23	07:52
	21:01	47 20:36 (T57)	20:27	26 20:01 (T78)	19:35	48 18:51 (T59)	18:46		17:10	07:05
20	06:16	19:32 (T78)	06:46	19:37 (T78)	07:16	18:02 (T59)	07:48		07:25	07:53
	21:01	47 20:36 (T57)	20:26	21 19:58 (T78)	19:34	49 18:51 (T59)	18:45		17:10	07:05
21	06:16	19:32 (T78)	06:47	19:40 (T78)	07:17	18:02 (T59)	07:49		07:26	07:53
	21:00	42 20:33 (T57)	20:24	15 19:55 (T78)	19:32	49 18:51 (T59)	18:43		17:09	07:06
22	06:17	19:32 (T78)	06:48		07:18	18:01 (T59)	07:50		07:27	07:54
	20:59	37 20:09 (T78)	20:23		19:30	50 18:51 (T59)	18:42		17:08	07:06
23	06:18	19:30 (T78)	06:49		07:19	18:00 (T59)	07:52		07:28	07:54
	20:58	39 20:09 (T78)	20:21		19:29	50 18:50 (T59)	18:40		17:08	07:07
24	06:19	19:30 (T78)	06:50		07:20	18:00 (T59)	07:53		07:29	07:55
	20:58	40 20:10 (T78)	20:20		19:27	50 18:50 (T59)	18:39		17:07	07:07
25	06:20	19:30 (T78)	06:51		07:21	17:59 (T59)	07:54		07:30	07:55
	20:57	40 20:10 (T78)	20:18		19:25	51 18:50 (T59)	18:37		17:07	07:08
26	06:21	19:29 (T78)	06:52		07:23	17:59 (T59)	07:55		07:32	07:56
	20:56	42 20:11 (T78)	20:17		19:23	50 18:49 (T59)	18:36		17:06	07:09
27	06:22	19:29 (T78)	06:53		07:24	17:59 (T59)	07:56		07:33	07:56
	20:55	42 20:11 (T78)	20:15		19:22	50 18:49 (T59)	18:35		17:06	07:09
28	06:23	19:29 (T78)	06:54		07:25	17:59 (T59)	07:57		07:34	07:56
	20:54	43 20:12 (T78)	20:14		19:20	49 18:48 (T59)	18:33		17:05	07:10
29	06:24	19:28 (T78)	06:55		07:26	17:59 (T59)	07:58		07:35	07:57
	20:53	44 20:12 (T78)	20:12		19:18	48 18:47 (T59)	18:32		17:05	07:11
30	06:25	19:28 (T78)	06:56		07:27	17:59 (T59)	08:00		07:36	07:57
	20:52	45 20:13 (T78)	20:10		19:17	47 18:46 (T59)	18:31		17:04	07:12
31	06:26	19:28 (T78)	06:57				08:01			07:57
	20:51	45 20:13 (T78)	20:09				18:30			07:12
Potential sun hours	459		428		375		345		297	287
Total, worst case		1291		803		951		345		
Sun reduction		0.66		0.61		0.59		0.48		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.56		0.57		0.66		0.66		
Total reduction		0.37		0.35		0.39		0.32		
Total, real		479		281		375		111		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6238)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June		
1	07:57	07:43			07:07		16:55 (T59)	07:16			06:31		19:00 (T78)	06:02		19:56 (T57)
	17:13	17:48			18:22	54	17:49 (T59)	19:56			20:27	51	19:51 (T78)	20:57	36	20:32 (T57)
2	07:57	07:42			07:06		16:54 (T59)	07:15			06:29		19:00 (T78)	06:01		19:56 (T57)
	17:14	17:49			18:23	54	17:48 (T59)	19:57			20:28	51	19:51 (T78)	20:58	37	20:33 (T57)
3	07:57	07:41			07:04		16:54 (T59)	07:13			06:28		19:00 (T78)	06:01		19:57 (T57)
	17:15	17:50			18:24	55	17:49 (T59)	19:58			20:29	51	19:51 (T78)	20:58	36	20:33 (T57)
4	07:57	07:40			07:03		16:53 (T59)	07:11			06:27		19:01 (T78)	06:01		19:56 (T57)
	17:16	17:52			18:25	56	17:49 (T59)	19:59			20:30	50	19:51 (T78)	20:59	37	20:33 (T57)
5	07:57	07:39			07:01		16:53 (T59)	07:10			06:25		19:00 (T78)	06:00		19:56 (T57)
	17:17	17:53			18:27	55	17:48 (T59)	20:00			20:31	50	19:50 (T78)	21:00	38	20:34 (T57)
6	07:57	07:38			06:59		16:53 (T59)	07:08			06:24		19:01 (T78)	06:00		19:57 (T57)
	17:18	17:54			18:28	55	17:48 (T59)	20:00			20:32	49	19:50 (T78)	21:00	37	20:34 (T57)
7	07:57	07:37			06:58		16:53 (T59)	07:06			06:23		19:01 (T78)	06:00		19:57 (T57)
	17:19	17:55			18:29	55	17:48 (T59)	20:01			20:33	48	19:49 (T78)	21:01	38	20:35 (T57)
8	07:57	07:36			07:56		17:52 (T59)	07:05			06:22		19:01 (T78)	05:59		19:56 (T57)
	17:20	17:57			19:30	55	18:47 (T59)	20:02			20:34	48	19:49 (T78)	21:02	38	20:34 (T57)
9	07:57	07:35			07:55		17:53 (T59)	07:03			06:21		19:02 (T78)	05:59		19:57 (T57)
	17:21	17:58			19:31	54	18:47 (T59)	20:04			20:35	47	19:49 (T78)	21:02	38	20:35 (T57)
10	07:57	07:34			07:53		17:53 (T59)	07:02			06:20		19:03 (T78)	05:59		19:57 (T57)
	17:22	17:59			19:32	53	18:46 (T59)	20:05			20:36	45	19:48 (T78)	21:03	38	20:35 (T57)
11	07:57	07:32			07:51		17:54 (T59)	07:00			06:18		19:03 (T78)	05:59		19:57 (T57)
	17:23	18:00			19:33	52	18:46 (T59)	20:06			20:37	45	19:48 (T78)	21:03	38	20:35 (T57)
12	07:56	07:31			07:50		17:54 (T59)	06:58			06:17		19:04 (T78)	05:59		19:57 (T57)
	17:24	18:02			19:34	51	18:45 (T59)	20:07			20:38	43	19:47 (T78)	21:04	39	20:36 (T57)
13	07:56	07:30			07:48		17:54 (T59)	06:57		19:21 (T78)	06:16		19:04 (T78)	05:59		19:58 (T57)
	17:25	18:03			19:36	50	18:44 (T59)	20:08	16	19:37 (T78)	20:40	42	19:46 (T78)	21:04	38	20:36 (T57)
14	07:56	07:29			07:46		17:55 (T59)	06:55		19:17 (T78)	06:15		19:05 (T78)	05:59		19:58 (T57)
	17:26	18:04			19:37	49	18:44 (T59)	20:09	23	19:40 (T78)	20:41	40	19:45 (T78)	21:05	38	20:36 (T57)
15	07:55	07:27			07:45		17:56 (T59)	06:54		19:15 (T78)	06:14		19:06 (T78)	05:59		19:58 (T57)
	17:27	18:05			19:38	46	18:42 (T59)	20:10	28	19:43 (T78)	20:42	39	19:45 (T78)	21:05	38	20:36 (T57)
16	07:55	07:26		17:14 (T59)	07:43		17:56 (T59)	06:52		19:12 (T78)	06:13		19:07 (T78)	05:59		19:58 (T57)
	17:28	18:06	17	17:31 (T59)	19:39	44	18:40 (T59)	20:11	32	19:44 (T78)	20:43	37	19:44 (T78)	21:06	39	20:37 (T57)
17	07:54	07:25		17:10 (T59)	07:41		17:58 (T59)	06:51		19:11 (T78)	06:12		19:08 (T78)	05:59		19:58 (T57)
	17:30	18:08	24	17:34 (T59)	19:40	42	18:40 (T59)	20:12	35	19:46 (T78)	20:43	43	20:17 (T57)	21:06	39	20:37 (T57)
18	07:54	07:23		17:08 (T59)	07:40		17:59 (T59)	06:49		19:09 (T78)	06:12		19:08 (T78)	05:59		19:58 (T57)
	17:31	18:09	29	17:37 (T59)	19:41	39	18:38 (T59)	20:13	38	19:47 (T78)	20:44	48	20:20 (T57)	21:07	39	20:37 (T57)
19	07:53	07:22		17:06 (T59)	07:38		18:00 (T59)	06:48		19:08 (T78)	06:11		19:09 (T78)	05:59		19:58 (T57)
	17:32	18:10	34	17:40 (T59)	19:42	35	18:35 (T59)	20:14	40	19:48 (T78)	20:45	50	20:22 (T57)	21:07	39	20:37 (T57)
20	07:53	07:21		17:03 (T59)	07:36		18:01 (T59)	06:46		19:06 (T78)	06:10		19:12 (T78)	05:59		19:59 (T57)
	17:33	18:11	38	17:41 (T59)	19:43	32	18:33 (T59)	20:15	42	19:48 (T78)	20:46	48	20:23 (T57)	21:07	38	20:37 (T57)
21	07:52	07:19		17:02 (T59)	07:35		18:04 (T59)	06:45		19:05 (T78)	06:09		19:13 (T78)	05:59		20:00 (T57)
	17:34	18:13	41	17:43 (T59)	19:44	27	18:31 (T59)	20:16	45	19:50 (T78)	20:47	49	20:24 (T57)	21:07	38	20:38 (T57)
22	07:52	07:18		17:00 (T59)	07:33		18:07 (T59)	06:43		19:04 (T78)	06:08		19:14 (T78)	05:59		20:00 (T57)
	17:35	18:14	43	17:43 (T59)	19:45	20	18:27 (T59)	20:17	46	19:50 (T78)	20:48	47	20:24 (T57)	21:08	38	20:38 (T57)
23	07:51	07:16		17:00 (T59)	07:31		18:11 (T59)	06:42		19:03 (T78)	06:07		19:15 (T78)	06:00		20:00 (T57)
	17:37	18:15	45	17:45 (T59)	19:46	11	18:22 (T59)	20:18	47	19:50 (T78)	20:49	46	20:25 (T57)	21:08	38	20:38 (T57)
24	07:50	07:15		16:58 (T59)	07:30			06:40		19:03 (T78)	06:07		19:18 (T78)	06:00		19:59 (T57)
	17:38	18:16	47	17:45 (T59)	19:48			20:20	48	19:51 (T78)	20:50	44	20:27 (T57)	21:08	39	20:38 (T57)
25	07:49	07:13		16:57 (T59)	07:28			06:39		19:02 (T78)	06:06		19:21 (T78)	06:00		20:00 (T57)
	17:39	18:17	49	17:46 (T59)	19:49			20:21	49	19:51 (T78)	20:51	39	20:27 (T57)	21:08	39	20:39 (T57)
26	07:49	07:12		16:56 (T59)	07:26			06:37		19:02 (T78)	06:05		19:57 (T57)	06:00		20:00 (T57)
	17:40	18:18	51	17:47 (T59)	19:50			20:22	49	19:51 (T78)	20:52	30	20:27 (T57)	21:08	39	20:39 (T57)
27	07:48	07:10		16:56 (T59)	07:25			06:36		19:01 (T78)	06:05		19:58 (T57)	06:01		20:00 (T57)
	17:42	18:20	52	17:48 (T59)	19:51			20:23	50	19:51 (T78)	20:53	31	20:29 (T57)	21:08	39	20:39 (T57)
28	07:47	07:09		16:55 (T59)	07:23			06:35		19:01 (T78)	06:04		19:57 (T57)	06:01		20:01 (T57)
	17:43	18:21	53	17:48 (T59)	19:52			20:24	50	19:51 (T78)	20:54	32	20:29 (T57)	21:08	38	20:39 (T57)
29	07:46				07:21			06:33		19:01 (T78)	06:03		19:57 (T57)	06:02		20:01 (T57)
	17:44				19:53			20:25	51	19:52 (T78)	20:54	33	20:30 (T57)	21:08	38	20:39 (T57)
30	07:45				07:20			06:32		19:00 (T78)	06:03		19:56 (T57)	06:02		20:02 (T57)
	17:45				19:54			20:26	51	19:51 (T78)	20:55	35	20:31 (T57)	21:08	38	20:40 (T57)
31	07:44				07:18						06:02		19:57 (T57)			
	17:47				19:55						20:56	35	20:32 (T57)			
Potential sun hours	297	297			370			399			448			452		
Total, worst case			523			1044			740			1346			1142	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.69			0.69			0.57			0.57			0.54	
Total reduction			0.28			0.31			0.30			0.33			0.35	
Total, real			147			323			224			440			403	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6238)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:03		20:01 (T57)	06:27	19:14 (T78)	06:58		07:28	17:33 (T59)	07:02	07:37
	21:08	39	20:40 (T57)	20:50	44	19:58 (T78)	20:07		19:15	51	18:24 (T59)	17:28	17:04
2	06:03		20:02 (T57)	06:28	19:13 (T78)	06:59		07:29	17:31 (T59)	07:03	07:38
	21:08	38	20:40 (T57)	20:49	44	19:57 (T78)	20:06		19:13	53	18:24 (T59)	17:27	17:04
3	06:04		20:02 (T57)	06:29	19:12 (T78)	07:00		07:30	17:32 (T59)	07:04	07:39
	21:08	38	20:40 (T57)	20:48	46	19:58 (T78)	20:04		19:12	53	18:25 (T59)	17:26	17:04
4	06:04		20:02 (T57)	06:30	19:11 (T78)	07:01		07:31	17:31 (T59)	07:06	07:40
	21:08	38	20:40 (T57)	20:47	47	19:58 (T78)	20:02		19:10	54	18:25 (T59)	17:25	17:03
5	06:05		20:02 (T57)	06:31	19:11 (T78)	07:02		07:32	17:30 (T59)	07:07	07:41
	21:08	38	20:40 (T57)	20:46	48	19:59 (T78)	20:01		19:08	55	18:25 (T59)	17:23	17:03
6	06:05		20:03 (T57)	06:32	19:11 (T78)	07:03		07:33	17:29 (T59)	07:08	07:42
	21:08	37	20:40 (T57)	20:44	48	19:59 (T78)	19:57		19:07	55	18:24 (T59)	17:22	17:03
7	06:06		20:03 (T57)	06:33	19:10 (T78)	07:04		07:34	17:29 (T59)	07:09	07:43
	21:07	37	20:40 (T57)	20:43	49	19:59 (T78)	19:56		19:05	55	18:24 (T59)	17:21	17:03
8	06:07		20:03 (T57)	06:34	19:10 (T78)	07:05		07:35	17:28 (T59)	07:10	07:44
	21:07	37	20:40 (T57)	20:42	50	20:00 (T78)	19:54		19:03	56	18:24 (T59)	17:20	17:03
9	06:07		20:04 (T57)	06:35	19:09 (T78)	07:06		07:36	17:28 (T59)	07:12	07:45
	21:07	37	20:41 (T57)	20:41	51	20:00 (T78)	19:52		19:02	55	18:23 (T59)	17:19	17:03
10	06:08		20:04 (T57)	06:35	19:09 (T78)	07:06		07:37	17:28 (T59)	07:13	07:46
	21:06	36	20:40 (T57)	20:40	51	20:00 (T78)	19:51		19:00	55	18:23 (T59)	17:18	17:03
11	06:09		20:04 (T57)	06:36	19:09 (T78)	07:07		07:38	17:27 (T59)	07:14	07:46
	21:06	36	20:40 (T57)	20:38	51	20:00 (T78)	19:49		18:59	55	18:22 (T59)	17:17	17:03
12	06:09		20:05 (T57)	06:37	19:09 (T78)	07:08		07:39	17:27 (T59)	07:15	07:47
	21:05	35	20:40 (T57)	20:37	51	20:00 (T78)	19:47		18:57	55	18:22 (T59)	17:16	17:03
13	06:10		20:05 (T57)	06:38	19:09 (T78)	07:09		07:40	17:27 (T59)	07:16	07:48
	21:05	34	20:39 (T57)	20:36	50	19:59 (T78)	19:46		18:55	54	18:21 (T59)	17:15	17:03
14	06:11		20:05 (T57)	06:39	19:08 (T78)	07:10		07:41	17:28 (T59)	07:18	07:49
	21:05	34	20:39 (T57)	20:34	51	19:59 (T78)	19:44		18:54	53	18:21 (T59)	17:14	17:04
15	06:12		20:06 (T57)	06:40	19:08 (T78)	07:11		07:43	17:29 (T59)	07:19	07:50
	21:04	33	20:39 (T57)	20:33	51	19:59 (T78)	19:42		18:52	51	18:20 (T59)	17:13	17:04
16	06:12		20:07 (T57)	06:42	19:08 (T78)	07:12		07:44	17:29 (T59)	07:20	07:50
	21:03	31	20:38 (T57)	20:32	50	19:58 (T78)	19:40		18:51	50	18:19 (T59)	17:13	17:04
17	06:13		20:06 (T57)	06:43	19:09 (T78)	07:13		07:45	17:29 (T59)	07:21	07:51
	21:03	31	20:37 (T57)	20:30	49	19:58 (T78)	19:39		18:49	49	18:18 (T59)	17:12	17:04
18	06:14		19:33 (T78)	06:44	19:09 (T78)	07:14		07:46	17:30 (T59)	07:22	07:52
	21:02	34	20:37 (T57)	20:29	48	19:57 (T78)	19:37		18:48	46	18:16 (T59)	17:11	17:05
19	06:15		19:29 (T78)	06:45	19:09 (T78)	07:15		07:47	17:30 (T59)	07:24	07:52
	21:01	41	20:36 (T57)	20:27	48	19:57 (T78)	19:35		18:46	45	18:15 (T59)	17:10	17:05
20	06:16		19:27 (T78)	06:46	19:09 (T78)	07:16		18:00 (T59)	07:48	17:32 (T59)	07:25	07:53
	21:01	44	20:36 (T57)	20:26	47	19:56 (T78)	19:34	6	18:06 (T59)	18:45	42	18:14 (T59)	17:10	17:05
21	06:16		19:25 (T78)	06:47	19:10 (T78)	07:17		17:53 (T59)	07:49	17:33 (T59)	07:26	07:53
	21:00	47	20:35 (T57)	20:24	45	19:55 (T78)	19:32	19	18:12 (T59)	18:43	40	18:13 (T59)	17:09	17:06
22	06:17		19:24 (T78)	06:48	19:10 (T78)	07:18		17:49 (T59)	07:50	17:35 (T59)	07:27	07:54
	20:59	48	20:35 (T57)	20:23	44	19:54 (T78)	19:30	26	18:15 (T59)	18:42	36	18:11 (T59)	17:08	17:06
23	06:18		19:22 (T78)	06:49	19:10 (T78)	07:19		17:46 (T59)	07:52	17:36 (T59)	07:28	07:54
	20:58	48	20:33 (T57)	20:21	42	19:52 (T78)	19:29	31	18:17 (T59)	18:40	33	18:09 (T59)	17:08	17:07
24	06:19		19:21 (T78)	06:50	19:11 (T78)	07:20		17:44 (T59)	07:53	17:38 (T59)	07:29	07:55
	20:58	48	20:32 (T57)	20:20	40	19:51 (T78)	19:27	34	18:18 (T59)	18:39	28	18:06 (T59)	17:07	17:07
25	06:20		19:20 (T78)	06:51	19:12 (T78)	07:22		17:42 (T59)	07:54	17:41 (T59)	07:30	07:55
	20:57	48	20:32 (T57)	20:18	37	19:49 (T78)	19:25	38	18:20 (T59)	18:37	23	18:04 (T59)	17:07	17:08
26	06:21		19:19 (T78)	06:52	19:13 (T78)	07:23		17:40 (T59)	07:55	17:45 (T59)	07:32	07:56
	20:56	47	20:30 (T57)	20:17	35	19:48 (T78)	19:23	41	18:21 (T59)	18:36	15	18:00 (T59)	17:06	17:09
27	06:22		19:18 (T78)	06:53	19:14 (T78)	07:24		17:38 (T59)	07:56				07:33	07:56
	20:55	39	20:25 (T57)	20:15	32	19:46 (T78)	19:22	44	18:22 (T59)	18:35			17:06	17:09
28	06:23		19:17 (T78)	06:54	19:16 (T78)	07:25		17:36 (T59)	07:57				07:34	07:56
	20:54	38	19:55 (T78)	20:14	28	19:44 (T78)	19:20	46	18:22 (T59)	18:33			17:05	17:10
29	06:24		19:16 (T78)	06:55	19:18 (T78)	07:26		17:35 (T59)	07:58				07:35	07:57
	20:53	40	19:56 (T78)	20:12	23	19:41 (T78)	19:18	48	18:23 (T59)	18:32			17:05	17:11
30	06:25		19:16 (T78)	06:56	19:21 (T78)	07:27		17:34 (T59)	08:00				07:36	07:57
	20:52	40	19:56 (T78)	20:10	16	19:37 (T78)	19:17	49	18:23 (T59)	18:31			17:04	17:12
31	06:26		19:15 (T78)	06:57						08:01				07:57
	20:51	42	19:57 (T78)	20:09						18:30				17:12
Potential sun hours	459			428			375			345			297	287
Total, worst case		1213			1316			382			1217			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.55			0.57			0.69			0.69			
Total reduction		0.37			0.36			0.41			0.34			
Total, real		449			467			158			411			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6245)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May	June
1	07:57		08:20 (T77)	07:43		08:04 (T42)	07:07			07:16		07:49 (T41)	06:30	06:01
	17:13	30	08:50 (T77)	17:48	18	08:22 (T42)	18:22			19:56	60	08:49 (T41)	20:27	20:57
2	07:57		08:20 (T77)	07:43		08:03 (T42)	07:06			07:15		07:48 (T41)	06:29	06:01
	17:14	31	08:51 (T77)	17:49	21	08:24 (T42)	18:23			19:57	61	08:49 (T41)	20:28	20:58
3	07:57		08:21 (T77)	07:42		08:02 (T42)	07:04			07:13		07:48 (T41)	06:28	06:01
	17:15	30	08:51 (T77)	17:50	24	08:26 (T42)	18:24			19:58	61	08:49 (T41)	20:29	20:58
4	07:58		08:21 (T77)	07:40		08:01 (T42)	07:03			07:11		07:47 (T41)	06:26	06:00
	17:16	31	08:52 (T77)	17:51	26	08:27 (T42)	18:25			19:59	62	08:49 (T41)	20:30	20:59
5	07:58		08:22 (T77)	07:39		08:00 (T42)	07:01			07:10		07:47 (T41)	06:25	06:00
	17:17	30	08:52 (T77)	17:53	28	08:28 (T42)	18:26			20:00	62	08:49 (T41)	20:31	21:00
6	07:57		08:22 (T77)	07:38		07:58 (T42)	06:59			07:08		07:46 (T41)	06:24	06:00
	17:18	31	08:53 (T77)	17:54	30	08:28 (T42)	18:28			20:00	63	08:49 (T41)	20:32	21:01
7	07:57		08:22 (T77)	07:37		07:57 (T42)	06:58			07:06		07:46 (T41)	06:23	05:59
	17:18	30	08:52 (T77)	17:55	32	08:29 (T42)	18:29			20:01	62	08:48 (T41)	20:33	21:01
8	07:57		08:23 (T77)	07:36		07:56 (T42)	07:56			07:05		07:46 (T41)	06:22	05:59
	17:19	30	08:53 (T77)	17:56	34	08:30 (T42)	19:30			20:02	62	08:48 (T41)	20:34	21:02
9	07:57		08:23 (T77)	07:35		07:56 (T42)	07:55			07:03		07:45 (T41)	06:20	05:59
	17:20	30	08:53 (T77)	17:58	34	08:30 (T42)	19:31			20:04	62	08:47 (T41)	20:35	21:02
10	07:57		08:24 (T77)	07:34		07:56 (T42)	07:53			07:01		07:45 (T41)	06:19	05:59
	17:22	30	08:54 (T77)	17:59	35	08:31 (T42)	19:32			20:05	61	08:46 (T41)	20:37	21:03
11	07:57		08:24 (T77)	07:32		07:55 (T42)	07:51			07:00		07:46 (T41)	06:18	05:58
	17:23	29	08:53 (T77)	18:00	35	08:30 (T42)	19:33			20:06	60	08:46 (T41)	20:38	21:04
12	07:56		08:25 (T77)	07:31		07:55 (T42)	07:50			06:58		07:45 (T41)	06:17	05:58
	17:24	29	08:54 (T77)	18:01	36	08:31 (T42)	19:34			20:07	60	08:45 (T41)	20:39	21:04
13	07:56		08:26 (T77)	07:30		07:55 (T42)	07:48			06:57		07:46 (T41)	06:16	05:58
	17:25	29	08:55 (T77)	18:03	36	08:31 (T42)	19:35			20:08	58	08:44 (T41)	20:40	21:05
14	07:56		08:26 (T77)	07:29		07:56 (T42)	07:46			06:55		07:46 (T41)	06:15	05:58
	17:26	28	08:54 (T77)	18:04	35	08:31 (T42)	19:37			20:09	57	08:43 (T41)	20:41	21:05
15	07:55		08:27 (T77)	07:27		07:55 (T42)	07:45			06:53		07:47 (T41)	06:14	05:58
	17:27	27	08:54 (T77)	18:05	35	08:30 (T42)	19:38			20:10	55	08:42 (T41)	20:42	21:06
16	07:55		08:27 (T77)	07:26		07:56 (T42)	07:43			06:52		07:47 (T41)	06:13	05:58
	17:28	27	08:54 (T77)	18:06	34	08:30 (T42)	19:39			20:11	54	08:41 (T41)	20:43	21:06
17	07:54		08:29 (T77)	07:25		07:56 (T42)	07:41		08:22 (T41)	06:50		07:48 (T41)	06:12	05:58
	17:29	25	08:54 (T77)	18:07	33	08:29 (T42)	19:40	3	08:25 (T41)	20:12	52	08:40 (T41)	20:44	21:06
18	07:54		08:29 (T77)	07:23		07:57 (T42)	07:40		08:14 (T41)	06:49		07:48 (T41)	06:11	05:58
	17:30	25	08:54 (T77)	18:09	32	08:29 (T42)	19:41	20	08:34 (T41)	20:13	51	08:39 (T41)	20:45	21:07
19	07:53		08:31 (T77)	07:22		07:58 (T42)	07:38		08:09 (T41)	06:47		07:49 (T41)	06:10	05:58
	17:32	23	08:54 (T77)	18:10	30	08:28 (T42)	19:42	28	08:37 (T41)	20:14	49	08:38 (T41)	20:46	21:07
20	07:53		08:31 (T77)	07:21		07:58 (T42)	07:36		08:06 (T41)	06:46		07:49 (T41)	06:09	05:59
	17:33	22	08:53 (T77)	18:11	29	08:27 (T42)	19:43	33	08:39 (T41)	20:15	47	08:36 (T41)	20:46	21:07
21	07:52		08:32 (T77)	07:19		08:00 (T42)	07:35		08:04 (T41)	06:44		07:51 (T41)	06:09	05:59
	17:34	20	08:52 (T77)	18:12	26	08:26 (T42)	19:44	38	08:42 (T41)	20:16	44	08:35 (T41)	20:47	21:08
22	07:52		08:35 (T77)	07:18		08:01 (T42)	07:33		08:02 (T41)	06:43		07:51 (T41)	06:08	05:59
	17:35	17	08:52 (T77)	18:14	23	08:24 (T42)	19:45	41	08:43 (T41)	20:17	41	08:32 (T41)	20:48	21:08
23	07:51		08:36 (T77)	07:16		08:03 (T42)	07:31		07:59 (T41)	06:41		07:53 (T41)	06:07	05:59
	17:36	14	08:50 (T77)	18:15	19	08:22 (T42)	19:46	45	08:44 (T41)	20:18	38	08:31 (T41)	20:49	21:08
24	07:50		08:39 (T77)	07:15		08:05 (T42)	07:30		07:58 (T41)	06:40		07:54 (T41)	06:06	05:59
	17:38	8	08:47 (T77)	18:16	13	08:18 (T42)	19:47	48	08:46 (T41)	20:20	34	08:28 (T41)	20:50	21:08
25	07:50			07:13			07:28		07:56 (T41)	06:39		07:56 (T41)	06:06	06:00
	17:39			18:17			19:49	51	08:47 (T41)	20:21	30	08:26 (T41)	20:51	21:08
26	07:49			07:12			07:26		07:55 (T41)	06:37		07:59 (T41)	06:05	06:00
	17:40			18:18			19:50	52	08:47 (T41)	20:22	25	08:24 (T41)	20:52	21:08
27	07:48			07:10			07:25		07:54 (T41)	06:36		08:01 (T41)	06:04	06:00
	17:41			18:19			19:51	55	08:49 (T41)	20:23	19	08:20 (T41)	20:53	21:09
28	07:47			07:09			07:23		07:52 (T41)	06:34		08:06 (T41)	06:04	06:01
	17:43			18:21			19:52	57	08:49 (T41)	20:24	9	08:15 (T41)	20:54	21:09
29	07:46						07:21		07:51 (T41)	06:33			06:03	06:01
	17:44						19:53	58	08:49 (T41)	20:25			20:55	21:09
30	07:45		08:06 (T42)				07:20		07:50 (T41)	06:32			06:02	06:02
	17:45	11	08:17 (T42)				19:54	59	08:49 (T41)	20:26			20:55	21:09
31	07:44		08:05 (T42)				07:18		07:50 (T41)				06:02	
	17:46	15	08:20 (T42)				19:55	60	08:50 (T41)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		652			698			648			1399			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.52			0.55			0.62			0.62			
Total reduction		0.16			0.21			0.27			0.32			
Total, real		104			149			173			441			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6245)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December		
1	06:02	06:26			06:57		07:44 (T41)	07:28			07:02		07:24 (T42)	07:37		08:06 (T77)
	21:09	20:50			20:07	61	08:45 (T41)	19:15			17:28	36	08:00 (T42)	17:04	29	08:35 (T77)
2	06:03	06:27			06:58		07:44 (T41)	07:29			07:03		07:25 (T42)	07:38		08:07 (T77)
	21:08	20:49			20:06	61	08:45 (T41)	19:13			17:27	35	08:00 (T42)	17:03	30	08:37 (T77)
3	06:03	06:28			06:59		07:43 (T41)	07:30			07:04		07:26 (T42)	07:39		08:07 (T77)
	21:08	20:48			20:04	62	08:45 (T41)	19:11			17:26	33	07:59 (T42)	17:03	30	08:37 (T77)
4	06:04	06:29			07:00		07:43 (T41)	07:31			07:06		07:27 (T42)	07:40		08:08 (T77)
	21:08	20:47			20:02	62	08:45 (T41)	19:10			17:24	32	07:59 (T42)	17:03	30	08:38 (T77)
5	06:04	06:30			07:01		07:43 (T41)	07:32			07:07		07:28 (T42)	07:41		08:08 (T77)
	21:08	20:46			20:01	62	08:45 (T41)	19:08			17:23	30	07:58 (T42)	17:03	30	08:38 (T77)
6	06:05	06:31			07:02		07:42 (T41)	07:33			07:08		07:30 (T42)	07:42		08:08 (T77)
	21:08	20:45			19:57	63	08:45 (T41)	19:06			17:22	28	07:58 (T42)	17:03	31	08:39 (T77)
7	06:06	06:32			07:03		07:42 (T41)	07:34			07:09		07:31 (T42)	07:43		08:09 (T77)
	21:07	20:43			19:56	62	08:44 (T41)	19:05			17:21	26	07:57 (T42)	17:03	30	08:39 (T77)
8	06:06	06:33			07:04		07:42 (T41)	07:35			07:10		07:32 (T42)	07:44		08:08 (T77)
	21:07	20:42			19:54	62	08:44 (T41)	19:03			17:20	23	07:55 (T42)	17:03	31	08:39 (T77)
9	06:07	06:34			07:05		07:42 (T41)	07:36			07:12		07:34 (T42)	07:45		08:09 (T77)
	21:07	20:41			19:52	62	08:44 (T41)	19:02			17:19	21	07:55 (T42)	17:03	30	08:39 (T77)
10	06:08	06:35			07:06		07:42 (T41)	07:37			07:13		07:35 (T42)	07:46		08:09 (T77)
	21:06	20:40			19:51	61	08:43 (T41)	19:00			17:18	18	07:53 (T42)	17:03	31	08:40 (T77)
11	06:08	06:36			07:07		07:42 (T41)	07:38			07:14		07:36 (T42)	07:47		08:10 (T77)
	21:06	20:38			19:49	60	08:42 (T41)	18:58			17:17	15	07:51 (T42)	17:03	30	08:40 (T77)
12	06:09	06:37			07:08		07:41 (T41)	07:39			07:15		07:37 (T42)	07:47		08:11 (T77)
	21:06	20:37			19:47	60	08:41 (T41)	18:57			17:16	11	07:48 (T42)	17:03	30	08:41 (T77)
13	06:10	06:38			07:09		07:41 (T41)	07:40			07:16			07:48		08:12 (T77)
	21:05	20:36			19:46	59	08:40 (T41)	18:55			17:15			17:03	29	08:41 (T77)
14	06:10	06:39			07:10		07:41 (T41)	07:41			07:18			07:49		08:12 (T77)
	21:05	20:34			19:44	58	08:39 (T41)	18:54			17:14			17:03	29	08:41 (T77)
15	06:11	06:40		08:12 (T41)	07:11		07:42 (T41)	07:43			07:19			07:50		08:13 (T77)
	21:04	20:33	12	08:24 (T41)	19:42	56	08:38 (T41)	18:52			17:13			17:03	29	08:42 (T77)
16	06:12	06:41		08:08 (T41)	07:12		07:42 (T41)	07:44			07:20			07:50		08:14 (T77)
	21:04	20:32	21	08:29 (T41)	19:40	55	08:37 (T41)	18:50			17:12			17:04	28	08:42 (T77)
17	06:13	06:42		08:05 (T41)	07:13		07:43 (T41)	07:45		08:40 (T42)	07:21			07:51		08:14 (T77)
	21:03	20:30	26	08:31 (T41)	19:39	53	08:36 (T41)	18:49	7	08:47 (T42)	17:11			17:04	28	08:42 (T77)
18	06:14	06:43		08:01 (T41)	07:14		07:43 (T41)	07:46		08:36 (T42)	07:22		08:13 (T77)	07:52		08:15 (T77)
	21:02	20:29	32	08:33 (T41)	19:37	51	08:34 (T41)	18:47	15	08:51 (T42)	17:11	8	08:21 (T77)	17:04	28	08:43 (T77)
19	06:14	06:44		07:59 (T41)	07:15		07:44 (T41)	07:47		08:33 (T42)	07:24		08:10 (T77)	07:52		08:16 (T77)
	21:02	20:27	36	08:35 (T41)	19:35	49	08:33 (T41)	18:46	20	08:53 (T42)	17:10	14	08:24 (T77)	17:05	28	08:44 (T77)
20	06:15	06:45		07:58 (T41)	07:16		07:45 (T41)	07:48		08:32 (T42)	07:25		08:10 (T77)	07:53		08:16 (T77)
	21:01	20:26	38	08:36 (T41)	19:34	46	08:31 (T41)	18:44	24	08:56 (T42)	17:09	17	08:27 (T77)	17:05	28	08:44 (T77)
21	06:16	06:46		07:56 (T41)	07:17		07:46 (T41)	07:49		08:30 (T42)	07:26		08:08 (T77)	07:53		08:17 (T77)
	21:00	20:24	41	08:37 (T41)	19:32	43	08:29 (T41)	18:43	27	08:57 (T42)	17:09	20	08:28 (T77)	17:06	28	08:45 (T77)
22	06:17	06:47		07:54 (T41)	07:18		07:48 (T41)	07:50		08:28 (T42)	07:27		08:07 (T77)	07:54		08:17 (T77)
	20:59	20:23	45	08:39 (T41)	19:30	39	08:27 (T41)	18:42	30	08:58 (T42)	17:08	22	08:29 (T77)	17:06	28	08:45 (T77)
23	06:18	06:48		07:53 (T41)	07:19		07:50 (T41)	07:52		08:27 (T42)	07:28		08:07 (T77)	07:54		08:18 (T77)
	20:59	20:21	47	08:40 (T41)	19:28	34	08:24 (T41)	18:40	31	08:58 (T42)	17:07	23	08:30 (T77)	17:07	28	08:46 (T77)
24	06:19	06:49		07:52 (T41)	07:20		07:52 (T41)	07:53		08:26 (T42)	07:29		08:06 (T77)	07:55		08:18 (T77)
	20:58	20:20	49	08:41 (T41)	19:27	30	08:22 (T41)	18:39	33	08:59 (T42)	17:07	25	08:31 (T77)	17:07	28	08:46 (T77)
25	06:20	06:50		07:51 (T41)	07:21		07:55 (T41)	07:54		08:26 (T42)	07:31		08:07 (T77)	07:55		08:18 (T77)
	20:57	20:18	50	08:41 (T41)	19:25	23	08:18 (T41)	18:37	34	09:00 (T42)	17:06	25	08:32 (T77)	17:08	28	08:46 (T77)
26	06:21	06:51		07:49 (T41)	07:22		08:00 (T41)	07:55		08:25 (T42)	07:32		08:06 (T77)	07:56		08:19 (T77)
	20:56	20:17	53	08:42 (T41)	19:23	12	08:12 (T41)	18:36	35	09:00 (T42)	17:06	27	08:33 (T77)	17:08	28	08:47 (T77)
27	06:22	06:52		07:48 (T41)	07:23			07:56		08:25 (T42)	07:33		08:06 (T77)	07:56		08:19 (T77)
	20:55	20:15	55	08:43 (T41)	19:22			18:35	35	09:00 (T42)	17:05	28	08:34 (T77)	17:09	28	08:47 (T77)
28	06:23	06:53		07:47 (T41)	07:24			07:57		08:24 (T42)	07:34		08:06 (T77)	07:56		08:19 (T77)
	20:54	20:14	56	08:43 (T41)	19:20			18:33	36	09:00 (T42)	17:05	28	08:34 (T77)	17:10	29	08:48 (T77)
29	06:23	06:54		07:47 (T41)	07:25			07:59		08:25 (T42)	07:35		08:06 (T77)	07:57		08:19 (T77)
	20:53	20:12	57	08:44 (T41)	19:18			18:32	36	09:01 (T42)	17:04	29	08:35 (T77)	17:10	29	08:48 (T77)
30	06:24	06:55		07:46 (T41)	07:27			08:00		08:25 (T42)	07:36		08:06 (T77)	07:57		08:20 (T77)
	20:52	20:10	58	08:44 (T41)	19:16			18:31	36	09:01 (T42)	17:04	29	08:35 (T77)	17:11	29	08:49 (T77)
31	06:25	06:56		07:45 (T41)				08:01		08:24 (T42)				07:57		08:20 (T77)
	20:51	20:09	60	08:45 (T41)				18:29	36	09:00 (T42)				17:12	30	08:50 (T77)
Potential sun hours	460	429			375			345			297			287		
Total, worst case			736			1346			435			603			902	
Sun reduction			0.61			0.59			0.48			0.30			0.22	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.62			0.62			0.55			0.53			0.52	
Total reduction			0.37			0.36			0.26			0.16			0.11	
Total, real			272			482			112			95			102	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 87 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6261)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March		April		May	June	July	August		September		October		November	December
1	07:57	07:43	07:07		07:16		08:12 (T49)	06:30	06:02	06:02	06:26		06:57		08:12 (T49)	07:28	08:09 (T49)	07:02	07:37
	17:13	17:48	18:22		19:56	84	09:36 (T49)	20:27	20:57	21:08	20:50		20:07	75	09:27 (T49)	19:15	63 09:12 (T49)	17:28	17:04
2	07:57	07:42	07:06		07:15		08:12 (T49)	06:29	06:01	06:03	06:27		06:58		08:11 (T49)	07:29	08:10 (T49)	07:03	07:38
	17:14	17:49	18:23		19:57	83	09:35 (T49)	20:28	20:58	21:08	20:49		20:06	77	09:28 (T49)	19:13	60 09:10 (T49)	17:27	17:04
3	07:57	07:41	07:04		07:13		08:12 (T49)	06:28	06:01	06:03	06:28		06:59		08:10 (T49)	07:30	08:12 (T49)	07:04	07:39
	17:15	17:50	18:24		19:58	83	09:35 (T49)	20:29	20:58	21:08	20:48		20:04	78	09:28 (T49)	19:11	56 09:08 (T49)	17:26	17:03
4	07:57	07:40	07:03		07:58 (T49)		07:11	08:12 (T49)	06:27	06:00	06:04	06:29		07:00		08:09 (T49)	07:31	08:14 (T49)	07:06	07:40
	17:16	17:51	18:25	12	08:10 (T49)		19:59	82 09:34 (T49)	20:30	20:59	21:08	20:47		20:02	79	09:28 (T49)	19:10	53 09:07 (T49)	17:24	17:03
5	07:57	07:39	07:01		07:50 (T49)		07:10	08:12 (T49)	06:25	06:00	06:04	06:30		07:01		08:09 (T49)	07:32	08:16 (T49)	07:07	07:41
	17:17	17:53	18:26	26	08:16 (T49)		20:00	82 09:34 (T49)	20:31	21:00	21:08	20:46		20:01	80	09:29 (T49)	19:08	48 09:04 (T49)	17:23	17:03
6	07:57	07:38	06:59		07:47 (T49)		07:08	08:12 (T49)	06:24	06:00	06:05	06:31		07:02		08:08 (T49)	07:33	08:18 (T49)	07:08	07:42
	17:18	17:54	18:28	34	08:21 (T49)		20:00	81 09:33 (T49)	20:32	21:00	21:08	20:44		19:57	81	09:29 (T49)	19:06	44 09:02 (T49)	17:22	17:03
7	07:57	07:37	06:58		07:43 (T49)		07:06	08:12 (T49)	06:23	05:59	06:06	06:32		07:03		08:07 (T49)	07:34	08:21 (T49)	07:09	07:43
	17:19	17:55	18:29	41	08:24 (T49)		20:01	80 09:32 (T49)	20:33	21:01	21:07	20:43		19:56	82	09:29 (T49)	19:05	37 08:58 (T49)	17:21	17:03
8	07:57	07:36	07:56		08:39 (T49)		07:05	08:12 (T49)	06:22	05:59	06:06	06:33		07:04		08:07 (T49)	07:35	08:24 (T49)	07:10	07:44
	17:20	17:56	19:30	47	09:26 (T49)		20:02	79 09:31 (T49)	20:34	21:02	21:07	20:42		19:54	82	09:29 (T49)	19:03	30 08:54 (T49)	17:20	17:03
9	07:57	07:35	07:55		08:38 (T49)		07:03	08:12 (T49)	06:21	05:59	06:07	06:34		07:05		08:06 (T49)	07:36	08:28 (T49)	07:12	07:45
	17:21	17:58	19:31	50	09:28 (T49)		20:03	78 09:30 (T49)	20:35	21:02	21:07	20:41		19:52	84	09:30 (T49)	19:02	21 08:49 (T49)	17:19	17:03
10	07:57	07:34	07:53		08:35 (T49)		07:01	08:12 (T49)	06:19	05:59	06:08	06:35		07:06		08:06 (T49)	07:37		07:13	07:46
	17:22	17:59	19:32	55	09:30 (T49)		20:05	77 09:29 (T49)	20:36	21:03	21:06	20:39		19:51	84	09:30 (T49)	19:00		17:18	17:03
11	07:57	07:32	07:51		08:33 (T49)		07:00	08:13 (T49)	06:18	05:59	06:08	06:36		07:07		08:06 (T49)	07:38		07:14	07:46
	17:23	18:00	19:33	58	09:31 (T49)		20:06	75 09:28 (T49)	20:37	21:03	21:06	20:38		19:49	83	09:29 (T49)	18:58		17:17	17:03
12	07:56	07:31	07:50		08:31 (T49)		06:58	08:13 (T49)	06:17	05:59	06:09	06:37		07:08		08:04 (T49)	07:39		07:15	07:47
	17:24	18:01	19:34	62	09:33 (T49)		20:07	74 09:27 (T49)	20:38	21:04	21:05	20:37		19:47	84	09:28 (T49)	18:57		17:16	17:03
13	07:56	07:30	07:48		08:29 (T49)		06:57	08:14 (T49)	06:16	05:58	06:10	06:38		07:09		08:04 (T49)	07:40		07:16	07:48
	17:25	18:03	19:35	65	09:34 (T49)		20:08	72 09:26 (T49)	20:39	21:04	21:05	20:36		19:45	84	09:28 (T49)	18:55		17:15	17:03
14	07:56	07:29	07:46		08:27 (T49)		06:55	08:14 (T49)	06:15	05:58	06:11	06:39	08:43 (T49)	07:10		08:04 (T49)	07:41		07:18	07:49
	17:26	18:04	19:37	67	09:34 (T49)		20:09	70 09:24 (T49)	20:40	21:05	21:04	20:34	18 09:01 (T49)	19:44	84	09:28 (T49)	18:54		17:14	17:03
15	07:55	07:27	07:45		08:26 (T49)		06:54	08:15 (T49)	06:14	05:58	06:11	06:40	08:39 (T49)	07:11		08:03 (T49)	07:42		07:19	07:49
	17:27	18:05	19:38	70	09:36 (T49)		20:10	68 09:23 (T49)	20:41	21:05	21:04	20:33	26 09:05 (T49)	19:42	85	09:28 (T49)	18:52		17:13	17:04
16	07:55	07:26	07:43		08:25 (T49)		06:52	08:15 (T49)	06:13	05:58	06:12	06:41	08:36 (T49)	07:12		08:03 (T49)	07:44		07:20	07:50
	17:28	18:06	19:39	71	09:36 (T49)		20:11	67 09:22 (T49)	20:42	21:06	21:03	20:31	32 09:08 (T49)	19:40	84	09:27 (T49)	18:51		17:12	17:04
17	07:54	07:25	07:41		08:23 (T49)		06:50	08:16 (T49)	06:12	05:58	06:13	06:42	08:33 (T49)	07:13		08:03 (T49)	07:45		07:21	07:51
	17:29	18:08	19:40	74	09:37 (T49)		20:12	65 09:21 (T49)	20:43	21:06	21:03	20:30	38 09:11 (T49)	19:39	84	09:27 (T49)	18:49		17:12	17:04
18	07:54	07:23	07:40		08:23 (T49)		06:49	08:16 (T49)	06:11	05:58	06:14	06:43	08:31 (T49)	07:14		08:03 (T49)	07:46		07:22	07:52
	17:31	18:09	19:41	75	09:38 (T49)		20:13	63 09:19 (T49)	20:44	21:07	21:02	20:29	42 09:13 (T49)	19:37	83	09:26 (T49)	18:47		17:11	17:04
19	07:53	07:22	07:38		08:21 (T49)		06:47	08:18 (T49)	06:10	05:59	06:15	06:44	08:29 (T49)	07:15		08:03 (T49)	07:47		07:23	07:52
	17:32	18:10	19:42	77	09:38 (T49)		20:14	60 09:18 (T49)	20:45	21:07	21:01	20:27	46 09:15 (T49)	19:35	83	09:26 (T49)	18:46		17:10	17:05
20	07:53	07:20	07:36		08:20 (T49)		06:46	08:18 (T49)	06:10	05:59	06:15	06:45	08:26 (T49)	07:16		08:03 (T49)	07:48		07:25	07:53
	17:33	18:11	19:43	78	09:38 (T49)		20:15	57 09:15 (T49)	20:46	21:07	21:01	20:26	49 09:15 (T49)	19:34	82	09:25 (T49)	18:45		17:09	17:05
21	07:52	07:19	07:35		08:19 (T49)		06:44	08:20 (T49)	06:09	05:59	06:16	06:46	08:25 (T49)	07:17		08:03 (T49)	07:49		07:26	07:53
	17:34	18:12	19:44	80	09:39 (T49)		20:16	54 09:14 (T49)	20:47	21:07	21:00	20:24	52 09:17 (T49)	19:32	81	09:24 (T49)	18:43		17:09	17:06
22	07:52	07:18	07:33		08:18 (T49)		06:43	08:20 (T49)	06:08	05:59	06:17	06:47	08:23 (T49)	07:18		08:04 (T49)	07:50		07:27	07:54
	17:35	18:14	19:45	81	09:39 (T49)		20:17	52 09:12 (T49)	20:48	21:08	20:59	20:23	55 09:18 (T49)	19:30	80	09:24 (T49)	18:42		17:08	17:06
23	07:51	07:16	07:31		08:17 (T49)		06:41	08:22 (T49)	06:07	05:59	06:18	06:48	08:22 (T49)	07:19		08:04 (T49)	07:51		07:28	07:54
	17:36	18:15	19:46	82	09:39 (T49)		20:18	48 09:10 (T49)	20:49	21:08	20:58	20:21	57 09:19 (T49)	19:28	79	09:23 (T49)	18:40		17:07	17:07
24	07:50	07:15	07:30		08:17 (T49)		06:40	08:23 (T49)	06:06	06:00	06:19	06:49	08:20 (T49)	07:20		08:04 (T49)	07:53		07:29	07:55
	17:38	18:16	19:47	82	09:39 (T49)		20:19	44 09:07 (T49)	20:50	21:08	20:58	20:20	61 09:21 (T49)	19:27	78	09:22 (T49)	18:39		17:07	17:07
25	07:49	07:13	07:28		08:16 (T49)		06:39	08:25 (T49)	06:06	06:00	06:20	06:50	08:19 (T49)	07:21		08:05 (T49)	07:54		07:30	07:55
	17:39	18:17	19:48	83	09:39 (T49)		20:21	40 09:05 (T49)	20:51	21:08	20:57	20:18	63 09:22 (T49)	19:25	76	09:21 (T49)	18:37		17:06	17:08
26	07:49	07:12	07:26		08:15 (T49)		06:37	08:27 (T49)	06:05	06:00	06:21	06:51	08:18 (T49)	07:22		08:05 (T49)	07:55		07:31	07:56
	17:40	18:18	19:50	84	09:39 (T49)		20:22	36 09:03 (T49)	20:52	21:08	20:56	20:17	65 09:23 (T49)	19:23	75	09:20 (T49)	18:36		17:06	17:09
27	07:48	07:10	07:25		08:15 (T49)		06:36	08:29 (T49)	06:04	06:01	06:22	06:52	08:17 (T49)	07:23		08:06 (T49)	07:56		07:33	07:56
	17:41	18:19	19:51	84	09:39 (T49)		20:23	31 09:00 (T49)	20:53	21:08	20:55	20:15	67 09:24 (T49)	19:22	72	09:18 (T49)	18:35		17:05	17:09
28	07:47	07:09	07:23		08:14 (T49)		06:34	08:32 (T49)	06:04	06:01	06:23	06:53	08:15 (T49)	07:24		08:07 (T49)	07:57		07:34	07:56
	17:43	18:21	19:52	84	09:38 (T49)		20:24	25 08:57 (T49)	20:54	21:08	20:54	20:14	69 09:24 (T49)	19:20	70	09:17 (T49)	18:33		17:05	17:10
29	07:46		07:21		08:13 (T49)		06:33	08:37 (T49)	06:03	06:01	06:24	06:54	08:14 (T49)	07:25		08:07 (T49)	07:58		07:35	07:56
	17:44		19:53	85	09:38 (T49)		20:25	15 08:52 (T49)	20:54	21:08	20:53	20:12	71 09:25 (T49)	19:18	68	09:15 (T49)	18:32		17:05	17:11
30	07:45		07:20		08:14 (T49)		06:32		06:03	06:02	06:25	06:55	08:13 (T49)	07:27		08:08 (T49)	08:00		07:36	07:57
	17:45		19:54	84	09:38 (T49)		20:26		20:55	21:08	20:52	20:10	73 09:26 (T49)	19:17	66	09:14 (T49)	18:31		17:04	17:11
31	07:44		07:18		08:13 (T49)				06:02		06:26	06:56	08:12 (T49)				08:01			07:57
	17:46		19:55	84	09:37 (T49)				20:56		20:51	20:09	75 09:27 (T49)				18:29			17:12
Potential sun hours	297	297	370		399		448	452	459	428		375		345			297	287	
Total, worst case			1875		1825					959		2383		412					
Sun reduction			0.44		0.52					0.61		0.59		0.48					
Oper. time red.			1.00		1.00					1.00		1.00		1.00					
Wind dir. red.			0.58		0.58					0.58		0.58		0.58					
Total reduction			0.25		0.30					0.35		0.34		0.28					
Total, real			475		546					336		809		114					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Project:
2019-08-29_Emerson SFA

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 91 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6265)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May	June
1	07:57			07:43		16:35 (T30)	07:07		07:38 (T31)	07:16		07:38 (T28)	06:30	06:01
	17:13			17:47	42	17:17 (T30)	18:22	51	17:08 (T30)	19:56	73	19:34 (T27)	20:27	20:57
2	07:57			07:43		16:34 (T30)	07:06		07:38 (T31)	07:14		07:37 (T28)	06:29	06:01
	17:14			17:49	44	17:18 (T30)	18:23	41	17:03 (T30)	19:57	76	19:35 (T27)	20:28	20:58
3	07:58			07:41		16:34 (T30)	07:04		07:38 (T31)	07:13		07:37 (T28)	06:28	06:00
	17:15			17:50	45	17:19 (T30)	18:24	25	08:03 (T31)	19:58	78	19:36 (T27)	20:29	20:58
4	07:58			07:40		16:33 (T30)	07:02		07:40 (T31)	07:11		07:36 (T28)	06:26	06:00
	17:15			17:51	47	17:20 (T30)	18:25	22	08:02 (T31)	19:59	80	19:36 (T27)	20:30	20:59
5	07:58			07:39		16:33 (T30)	07:01		07:42 (T31)	07:09		07:35 (T28)	06:25	06:00
	17:16			17:52	47	17:20 (T30)	18:26	18	08:00 (T31)	20:00	82	19:36 (T27)	20:31	21:00
6	07:58			07:38		16:32 (T30)	06:59		07:45 (T31)	07:08		07:35 (T28)	06:24	05:59
	17:17			17:54	48	17:20 (T30)	18:27	12	07:57 (T31)	20:00	82	19:37 (T27)	20:32	21:01
7	07:57			07:37		16:31 (T30)	06:58			07:06		07:35 (T28)	06:23	05:59
	17:18			17:55	50	17:21 (T30)	18:29			20:01	82	19:36 (T27)	20:33	21:01
8	07:57			07:36		16:31 (T30)	07:56			07:05		07:35 (T28)	06:21	05:59
	17:19			17:56	51	17:22 (T30)	19:30			20:02	82	19:36 (T27)	20:34	21:02
9	07:57			07:35		16:31 (T30)	07:54			07:03		07:35 (T28)	06:20	05:59
	17:20			17:57	51	17:22 (T30)	19:31			20:03	80	19:35 (T27)	20:35	21:02
10	07:57			07:34		16:31 (T30)	07:53			07:01		07:34 (T28)	06:19	05:58
	17:21			17:59	52	17:23 (T30)	19:32			20:05	80	19:34 (T27)	20:37	21:03
11	07:57			07:32		16:30 (T30)	07:51			07:00		07:35 (T28)	06:18	05:58
	17:22			18:00	52	17:22 (T30)	19:33			20:06	78	19:34 (T27)	20:38	21:04
12	07:56			07:31		16:31 (T30)	07:50			06:58		07:35 (T28)	06:17	05:58
	17:23			18:01	52	17:23 (T30)	19:34			20:07	75	19:33 (T27)	20:39	21:04
13	07:56			07:30		07:50 (T31)	07:48			06:56		07:36 (T28)	06:16	05:58
	17:25			18:02	60	17:23 (T30)	19:35			20:08	73	19:33 (T27)	20:40	21:05
14	07:56			07:29		07:49 (T31)	07:46			06:55		07:36 (T28)	06:15	05:58
	17:26			18:04	64	17:23 (T30)	19:36			20:09	70	19:31 (T27)	20:41	21:05
15	07:55			07:27		07:47 (T31)	07:45			06:53		07:36 (T28)	06:14	05:58
	17:27			18:05	68	17:23 (T30)	19:38			20:10	65	19:29 (T27)	20:42	21:06
16	07:55			07:26		07:46 (T31)	07:43			06:52		07:37 (T28)	06:13	05:58
	17:28			18:06	70	17:23 (T30)	19:39			20:11	61	19:28 (T27)	20:43	21:06
17	07:55			07:25		07:44 (T31)	07:41			06:50		07:37 (T28)	06:12	05:58
	17:29			18:07	73	17:22 (T30)	19:40			20:12	56	19:26 (T27)	20:44	21:06
18	07:54			07:23		07:43 (T31)	07:40			06:49		07:39 (T28)	06:11	05:58
	17:30			18:09	74	17:22 (T30)	19:41			20:13	48	19:24 (T27)	20:45	21:07
19	07:53			07:22		07:42 (T31)	07:38			06:47		07:40 (T28)	06:10	05:58
	17:31			18:10	75	17:22 (T30)	19:42			20:14	39	19:20 (T27)	20:46	21:07
20	07:53			07:21		07:40 (T31)	07:36			06:46		07:42 (T28)	06:09	05:58
	17:33			18:11	76	17:21 (T30)	19:43			20:15	24	08:06 (T28)	20:46	21:07
21	07:52			07:19		07:39 (T31)	07:35			06:44		07:44 (T28)	06:08	05:59
	17:34			18:12	76	17:20 (T30)	19:44			20:16	18	08:02 (T28)	20:47	21:08
22	07:52			07:18		07:37 (T31)	07:33			06:43		07:48 (T28)	06:08	05:59
	17:35			18:13	77	17:19 (T30)	19:45			20:17	11	07:59 (T28)	20:48	21:08
23	07:51		16:48 (T30)	07:16		07:37 (T31)	07:31		07:58 (T28)	06:41			06:07	05:59
	17:36	12	17:00 (T30)	18:15	74	17:18 (T30)	19:46	9	08:07 (T28)	20:18			20:49	21:08
24	07:50		16:45 (T30)	07:15		07:36 (T31)	07:30		07:54 (T28)	06:40			06:06	05:59
	17:37	18	17:03 (T30)	18:16	74	17:17 (T30)	19:47	18	08:12 (T28)	20:20			20:50	21:08
25	07:50		16:42 (T30)	07:13		07:36 (T31)	07:28		07:50 (T28)	06:38			06:05	06:00
	17:39	23	17:05 (T30)	18:17	71	17:16 (T30)	19:48	24	08:14 (T28)	20:21			20:51	21:08
26	07:49		16:41 (T30)	07:12		07:36 (T31)	07:26		07:47 (T28)	06:37			06:05	06:00
	17:40	27	17:08 (T30)	18:18	67	17:14 (T30)	19:50	29	08:16 (T28)	20:22			20:52	21:09
27	07:48		16:40 (T30)	07:10		07:37 (T31)	07:24		07:45 (T28)	06:36			06:04	06:00
	17:41	30	17:10 (T30)	18:19	63	17:13 (T30)	19:51	42	19:26 (T27)	20:23			20:53	21:09
28	07:47		16:39 (T30)	07:09		07:37 (T31)	07:23		07:44 (T28)	06:34			06:03	06:01
	17:42	33	17:12 (T30)	18:20	57	17:10 (T30)	19:52	53	19:30 (T27)	20:24			20:54	21:09
29	07:46		16:37 (T30)				07:21		07:42 (T28)	06:33			06:03	06:01
	17:44	36	17:13 (T30)				19:53	60	19:31 (T27)	20:25			20:55	21:09
30	07:45		16:36 (T30)				07:19		07:40 (T28)	06:31			06:02	06:01
	17:45	38	17:14 (T30)				19:54	65	19:32 (T27)	20:26			20:55	21:09
31	07:44		16:36 (T30)				07:18		07:40 (T28)				06:02	
	17:46	40	17:16 (T30)				19:55	69	19:34 (T27)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		257			1700			538			1413			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.72			0.68			0.62			0.63			
Total reduction		0.23			0.28			0.27			0.33			
Total, real		58			469			148			464			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 91 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6265)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December
1	06:02	06:26			06:57		07:34 (T28)	07:27			07:02		16:00 (T30)	07:37
	21:09	20:50			20:07	78	19:33 (T27)	19:15			17:28	52	16:52 (T30)	17:04
2	06:02	06:27			06:58		07:33 (T28)	07:29			07:03		16:01 (T30)	07:38
	21:08	20:49			20:06	80	19:33 (T27)	19:13			17:27	51	16:52 (T30)	17:03
3	06:03	06:28			06:59		07:33 (T28)	07:30			07:04		16:01 (T30)	07:39
	21:08	20:48			20:04	80	19:33 (T27)	19:11			17:25	50	16:51 (T30)	17:03
4	06:04	06:29			07:00		07:32 (T28)	07:31			07:06		16:01 (T30)	07:40
	21:08	20:47			20:02	82	19:33 (T27)	19:10			17:24	50	16:51 (T30)	17:03
5	06:04	06:30			07:01		07:32 (T28)	07:32			07:07		16:01 (T30)	07:41
	21:08	20:46			20:01	82	19:33 (T27)	19:08			17:23	49	16:50 (T30)	17:03
6	06:05	06:31			07:02		07:31 (T28)	07:33			07:08		16:03 (T30)	07:42
	21:08	20:45			19:57	82	19:33 (T27)	19:06			17:22	47	16:50 (T30)	17:03
7	06:05	06:32			07:03		07:31 (T28)	07:34		08:23 (T31)	07:09		16:03 (T30)	07:43
	21:07	20:43			19:56	81	19:32 (T27)	19:05	7	08:30 (T31)	17:21	46	16:49 (T30)	17:02
8	06:06	06:33			07:04		07:31 (T28)	07:35		08:19 (T31)	07:10		16:04 (T30)	07:44
	21:07	20:42			19:54	80	19:31 (T27)	19:03	15	08:34 (T31)	17:20	45	16:49 (T30)	17:02
9	06:07	06:34			07:05		07:30 (T28)	07:36		08:16 (T31)	07:12		16:05 (T30)	07:45
	21:07	20:41			19:52	79	19:30 (T27)	19:01	20	08:36 (T31)	17:19	44	16:49 (T30)	17:02
10	06:07	06:35			07:06		07:30 (T28)	07:37		08:14 (T31)	07:13		16:06 (T30)	07:46
	21:06	20:40			19:51	76	19:28 (T27)	19:00	23	08:37 (T31)	17:18	42	16:48 (T30)	17:02
11	06:08	06:36			07:07		07:30 (T28)	07:38		08:12 (T31)	07:14		16:07 (T30)	07:47
	21:06	20:38			19:49	74	19:27 (T27)	18:58	32	17:33 (T30)	17:17	39	16:46 (T30)	17:02
12	06:09	06:37			07:08		07:31 (T28)	07:39		08:11 (T31)	07:15		16:07 (T30)	07:47
	21:06	20:37			19:47	69	19:25 (T27)	18:57	46	17:39 (T30)	17:16	38	16:45 (T30)	17:03
13	06:09	06:38			07:09		07:31 (T28)	07:40		08:10 (T31)	07:16		16:09 (T30)	07:48
	21:05	20:36			19:45	65	19:23 (T27)	18:55	53	17:41 (T30)	17:15	36	16:45 (T30)	17:03
14	06:10	06:39			07:10		07:32 (T28)	07:41		08:10 (T31)	07:18		16:11 (T30)	07:49
	21:05	20:34			19:44	61	19:22 (T27)	18:53	60	17:44 (T30)	17:14	33	16:44 (T30)	17:03
15	06:11	06:40			07:11		07:33 (T28)	07:42		08:09 (T31)	07:19		16:12 (T30)	07:50
	21:04	20:33			19:42	54	19:20 (T27)	18:52	65	17:46 (T30)	17:13	30	16:42 (T30)	17:03
16	06:12	06:41			07:12		07:34 (T28)	07:44		08:08 (T31)	07:20		16:14 (T30)	07:50
	21:04	20:32			19:40	45	19:16 (T27)	18:50	69	17:47 (T30)	17:12	27	16:41 (T30)	17:03
17	06:13	06:42			07:13		07:35 (T28)	07:45		08:08 (T31)	07:21		16:16 (T30)	07:51
	21:03	20:30			19:39	30	08:05 (T28)	18:49	72	17:48 (T30)	17:11	23	16:39 (T30)	17:04
18	06:13	06:43			07:14		07:37 (T28)	07:46		08:07 (T31)	07:22		16:19 (T30)	07:52
	21:02	20:29			19:37	25	08:02 (T28)	18:47	75	17:49 (T30)	17:11	18	16:37 (T30)	17:04
19	06:14	06:44			07:15		07:39 (T28)	07:47		08:07 (T31)	07:24		16:22 (T30)	07:52
	21:02	20:27			19:35	20	07:59 (T28)	18:46	76	17:49 (T30)	17:10	12	16:34 (T30)	17:04
20	06:15	06:45			07:16		07:43 (T28)	07:48		08:09 (T31)	07:25			07:53
	21:01	20:26			19:33	12	07:55 (T28)	18:44	77	17:51 (T30)	17:09			17:05
21	06:16	06:46		07:52 (T28)	07:17			07:49		08:10 (T31)	07:26			07:53
	21:00	20:24	12	08:04 (T28)	19:32			18:43	76	17:51 (T30)	17:08			17:05
22	06:17	06:47		07:48 (T28)	07:18			07:50		08:11 (T31)	07:27			07:54
	20:59	20:23	20	08:08 (T28)	19:30			18:41	76	17:51 (T30)	17:08			17:06
23	06:18	06:48		07:46 (T28)	07:19			07:51		08:12 (T31)	07:28			07:54
	20:59	20:21	24	08:10 (T28)	19:28			18:40	76	17:52 (T30)	17:07			17:06
24	06:19	06:49		07:43 (T28)	07:20			07:53		08:13 (T31)	07:29			07:55
	20:58	20:20	40	19:24 (T27)	19:27			18:39	73	17:52 (T30)	17:07			17:07
25	06:20	06:50		07:42 (T28)	07:21			07:54		08:15 (T31)	07:31			07:55
	20:57	20:18	49	19:27 (T27)	19:25			18:37	72	17:53 (T30)	17:06			17:07
26	06:20	06:51		07:40 (T28)	07:22			07:55		08:16 (T31)	07:32			07:56
	20:56	20:17	56	19:29 (T27)	19:23			18:36	70	17:53 (T30)	17:05			17:08
27	06:21	06:52		07:39 (T28)	07:23			07:56		08:17 (T31)	07:33			07:56
	20:55	20:15	61	19:30 (T27)	19:21			18:34	66	17:52 (T30)	17:05			17:09
28	06:22	06:53		07:37 (T28)	07:24			07:57		08:18 (T31)	07:34			07:56
	20:54	20:14	66	19:31 (T27)	19:20			18:33	64	17:52 (T30)	17:05			17:09
29	06:23	06:54		07:36 (T28)	07:25			07:58		08:20 (T31)	07:35			07:57
	20:53	20:12	71	19:32 (T27)	19:18			18:32	58	17:53 (T30)	17:04			17:10
30	06:24	06:55		07:35 (T28)	07:26			08:00		17:00 (T30)	07:36			07:57
	20:52	20:10	74	19:33 (T27)	19:16			18:30	52	17:52 (T30)	17:04			17:11
31	06:25	06:56		07:35 (T28)				08:01		17:00 (T30)				07:57
	20:51	20:09	75	19:33 (T27)				18:29	52	17:52 (T30)				17:12
Potential sun hours	460	429			375			345			297			287
Total, worst case			548			1255			1425			732		
Sun reduction			0.61			0.59			0.48			0.30		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.63			0.63			0.66			0.72		
Total reduction			0.39			0.37			0.32			0.22		
Total, real			212			468			456			160		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 104 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6275)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:57		15:54 (T35)	07:43		08:04 (T36)	07:07	07:16			06:30		06:58 (T31)	06:01		19:26 (T30)
	17:13	46	16:40 (T35)	17:47	39	16:46 (T35)	18:22	19:56			20:27	32	07:30 (T31)	20:57	56	20:22 (T30)
2	07:57		15:54 (T35)	07:43		08:03 (T36)	07:06	07:14			06:29		06:59 (T31)	06:01		19:27 (T30)
	17:14	46	16:40 (T35)	17:49	42	16:45 (T35)	18:23	19:57			20:28	31	07:30 (T31)	20:58	56	20:23 (T30)
3	07:58		15:54 (T35)	07:41		08:02 (T36)	07:04	07:13			06:28		06:58 (T31)	06:00		19:26 (T30)
	17:15	47	16:41 (T35)	17:50	43	16:44 (T35)	18:24	19:58			20:29	30	07:28 (T31)	20:58	56	20:22 (T30)
4	07:58		15:55 (T35)	07:40		08:01 (T36)	07:02	07:11			06:26		06:59 (T31)	06:00		19:27 (T30)
	17:15	46	16:41 (T35)	17:51	42	16:43 (T35)	18:25	19:59			20:30	29	07:28 (T31)	20:59	56	20:23 (T30)
5	07:58		15:55 (T35)	07:39		08:00 (T36)	07:01	07:09			06:25		07:00 (T31)	06:00		19:27 (T30)
	17:16	47	16:42 (T35)	17:52	41	16:41 (T35)	18:26	20:00			20:31	27	07:27 (T31)	21:00	57	20:24 (T30)
6	07:57		15:55 (T35)	07:38		07:58 (T36)	06:59	07:08			06:24		07:01 (T31)	05:59		19:26 (T30)
	17:17	48	16:43 (T35)	17:54	39	16:38 (T35)	18:27	20:00			20:32	25	07:26 (T31)	21:01	57	20:23 (T30)
7	07:57		15:56 (T35)	07:37		07:57 (T36)	06:58	07:06			06:23		07:03 (T31)	05:59		19:27 (T30)
	17:18	47	16:43 (T35)	17:55	34	16:35 (T35)	18:29	20:01			20:33	22	07:25 (T31)	21:01	57	20:24 (T30)
8	07:57		15:55 (T35)	07:36		07:56 (T36)	07:56	07:05			06:21		07:03 (T31)	05:59		19:27 (T30)
	17:19	48	16:43 (T35)	17:56	22	08:18 (T36)	19:30	20:02			20:34	28	19:57 (T30)	21:02	57	20:24 (T30)
9	07:57		15:56 (T35)	07:35		07:55 (T36)	07:54	07:03			06:20		07:05 (T31)	05:59		19:28 (T30)
	17:20	48	16:44 (T35)	17:57	24	08:19 (T36)	19:31	20:03			20:35	34	20:02 (T30)	21:02	57	20:25 (T30)
10	07:57		15:56 (T35)	07:34		07:54 (T36)	07:53	07:01			06:19		07:08 (T31)	05:58		19:27 (T30)
	17:21	49	16:45 (T35)	17:59	26	08:20 (T36)	19:32	20:05			20:36	32	20:04 (T30)	21:03	57	20:24 (T30)
11	07:57		15:56 (T35)	07:32		07:52 (T36)	07:51	07:00			06:18		19:38 (T30)	05:58		19:27 (T30)
	17:22	49	16:45 (T35)	18:00	27	08:19 (T36)	19:33	20:06			20:38	29	20:07 (T30)	21:04	57	20:24 (T30)
12	07:56		15:57 (T35)	07:31		07:51 (T36)	07:50	06:58			06:17		19:37 (T30)	05:58		19:27 (T30)
	17:23	48	16:45 (T35)	18:01	29	08:20 (T36)	19:34	20:07			20:39	31	20:08 (T30)	21:04	58	20:25 (T30)
13	07:56		15:57 (T35)	07:30		07:50 (T36)	07:48	06:56			06:16		19:35 (T30)	05:58		19:28 (T30)
	17:25	49	16:46 (T35)	18:02	30	08:20 (T36)	19:35	20:08			20:40	35	20:10 (T30)	21:05	57	20:25 (T30)
14	07:56		15:57 (T35)	07:29		07:51 (T36)	07:46	06:55			06:15		19:34 (T30)	05:58		19:28 (T30)
	17:26	49	16:46 (T35)	18:04	29	08:20 (T36)	19:36	20:09			20:41	37	20:11 (T30)	21:05	57	20:25 (T30)
15	07:55		15:58 (T35)	07:27		07:50 (T36)	07:45	06:53		07:12 (T31)	06:14		19:33 (T30)	05:58		19:28 (T30)
	17:27	49	16:47 (T35)	18:05	29	08:19 (T36)	19:38	20:10	12	07:24 (T31)	20:42	39	20:12 (T30)	21:06	57	20:25 (T30)
16	07:55		15:58 (T35)	07:26		07:51 (T36)	07:43	06:52		07:11 (T31)	06:13		19:31 (T30)	05:58		19:28 (T30)
	17:28	49	16:47 (T35)	18:06	28	08:19 (T36)	19:39	20:11	16	07:27 (T31)	20:43	42	20:13 (T30)	21:06	57	20:25 (T30)
17	07:55		15:59 (T35)	07:25		07:51 (T36)	07:41	06:50		07:09 (T31)	06:12		19:31 (T30)	05:58		19:28 (T30)
	17:29	49	16:48 (T35)	18:07	27	08:18 (T36)	19:40	20:12	19	07:28 (T31)	20:44	44	20:15 (T30)	21:06	58	20:26 (T30)
18	07:54		15:59 (T35)	07:23		07:52 (T36)	07:40	06:49		07:08 (T31)	06:11		19:31 (T30)	05:58		19:28 (T30)
	17:30	49	16:48 (T35)	18:09	25	08:17 (T36)	19:41	20:13	21	07:29 (T31)	20:45	44	20:15 (T30)	21:07	58	20:26 (T30)
19	07:53		16:00 (T35)	07:22		07:54 (T36)	07:38	06:47		07:06 (T31)	06:10		19:30 (T30)	05:58		19:30 (T30)
	17:31	49	16:49 (T35)	18:10	22	08:16 (T36)	19:42	20:14	24	07:30 (T31)	20:46	46	20:16 (T30)	21:07	57	20:27 (T30)
20	07:53		16:00 (T35)	07:21		07:54 (T36)	07:36	06:46		07:05 (T31)	06:09		19:29 (T30)	05:58		19:30 (T30)
	17:33	48	16:48 (T35)	18:11	20	08:14 (T36)	19:43	20:15	26	07:31 (T31)	20:46	48	20:17 (T30)	21:07	57	20:27 (T30)
21	07:52		16:00 (T35)	07:19		07:57 (T36)	07:35	06:44		07:03 (T31)	06:08		19:28 (T30)	05:59		19:30 (T30)
	17:34	48	16:48 (T35)	18:12	16	08:13 (T36)	19:44	20:16	28	07:31 (T31)	20:47	49	20:17 (T30)	21:08	57	20:27 (T30)
22	07:52		16:01 (T35)	07:18		07:59 (T36)	07:33	06:43		07:02 (T31)	06:08		19:28 (T30)	05:59		19:30 (T30)
	17:35	48	16:49 (T35)	18:13	10	08:09 (T36)	19:45	20:17	30	07:32 (T31)	20:48	50	20:18 (T30)	21:08	57	20:27 (T30)
23	07:51		16:01 (T35)	07:16			07:31	06:41		07:01 (T31)	06:07		19:28 (T30)	05:59		19:30 (T30)
	17:36	48	16:49 (T35)	18:15			19:46	20:18	31	07:32 (T31)	20:49	51	20:19 (T30)	21:08	57	20:27 (T30)
24	07:50		16:02 (T35)	07:15			07:30	06:40		06:59 (T31)	06:06		19:27 (T30)	05:59		19:30 (T30)
	17:37	47	16:49 (T35)	18:16			19:47	20:20	33	07:32 (T31)	20:50	52	20:19 (T30)	21:08	58	20:28 (T30)
25	07:50		16:02 (T35)	07:13			07:28	06:38		06:58 (T31)	06:05		19:28 (T30)	06:00		19:30 (T30)
	17:39	46	16:48 (T35)	18:17			19:48	20:21	34	07:32 (T31)	20:51	52	20:20 (T30)	21:08	58	20:28 (T30)
26	07:49		16:04 (T35)	07:12			07:26	06:37		06:57 (T31)	06:05		19:27 (T30)	06:00		19:30 (T30)
	17:40	45	16:49 (T35)	18:18			19:50	20:22	35	07:32 (T31)	20:52	53	20:20 (T30)	21:09	58	20:28 (T30)
27	07:48		16:04 (T35)	07:10			07:24	06:36		06:57 (T31)	06:04		19:26 (T30)	06:00		19:31 (T30)
	17:41	45	16:49 (T35)	18:19			19:51	20:23	35	07:32 (T31)	20:53	54	20:20 (T30)	21:09	57	20:28 (T30)
28	07:47		16:05 (T35)	07:09			07:23	06:34		06:58 (T31)	06:03		19:27 (T30)	06:01		19:31 (T30)
	17:42	43	16:48 (T35)	18:20			19:52	20:24	34	07:32 (T31)	20:54	54	20:21 (T30)	21:09	57	20:28 (T30)
29	07:46		16:06 (T35)				07:21	06:33		06:57 (T31)	06:03		19:26 (T30)	06:01		19:32 (T30)
	17:44	42	16:48 (T35)				19:53	20:25	34	07:31 (T31)	20:55	55	20:21 (T30)	21:09	57	20:29 (T30)
30	07:45		16:07 (T35)				07:19	06:31		06:57 (T31)	06:02		19:27 (T30)	06:01		19:31 (T30)
	17:45	40	16:47 (T35)				19:54	20:26	34	07:31 (T31)	20:55	55	20:22 (T30)	21:09	58	20:29 (T30)
31	07:44		16:08 (T35)				07:18				06:02		19:26 (T30)			
	17:46	39	16:47 (T35)				19:55				20:56	55	20:21 (T30)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		1451			644				446			1265			1713	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.74			0.61				0.67			0.58			0.55	
Total reduction		0.24			0.25				0.36			0.34			0.37	
Total, real		345			163				161			432			632	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 104 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6275)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02		19:32 (T30)	06:26		19:48 (T30)	06:57	07:27			07:02		07:23 (T36)	07:37		15:39 (T35)
	21:09	57	20:29 (T30)	20:50	30	20:18 (T30)	20:07	19:15			17:28	25	07:48 (T36)	17:04	49	16:28 (T35)
2	06:02		19:32 (T30)	06:27		07:22 (T31)	06:58	07:29			07:03		07:25 (T36)	07:38		15:39 (T35)
	21:08	57	20:29 (T30)	20:49	28	20:16 (T30)	20:06	19:13			17:27	24	07:49 (T36)	17:03	49	16:28 (T35)
3	06:03		19:33 (T30)	06:28		07:17 (T31)	06:59	07:30			07:04		07:26 (T36)	07:39		15:40 (T35)
	21:08	57	20:30 (T30)	20:48	34	20:14 (T30)	20:04	19:11			17:25	22	07:48 (T36)	17:03	48	16:28 (T35)
4	06:04		19:32 (T30)	06:29		07:15 (T31)	07:00	07:31			07:06		07:27 (T36)	07:40		15:40 (T35)
	21:08	57	20:29 (T30)	20:47	33	20:11 (T30)	20:02	19:10			17:24	36	16:06 (T35)	17:03	48	16:28 (T35)
5	06:04		19:33 (T30)	06:30		07:13 (T31)	07:01	07:32			07:07		07:28 (T36)	07:41		15:41 (T35)
	21:08	57	20:30 (T30)	20:46	20	07:33 (T31)	20:01	19:08			17:23	39	16:08 (T35)	17:03	48	16:29 (T35)
6	06:05		19:33 (T30)	06:31		07:12 (T31)	07:02	07:33			07:08		07:30 (T36)	07:42		15:41 (T35)
	21:08	56	20:29 (T30)	20:45	23	07:35 (T31)	19:57	19:06			17:22	42	16:11 (T35)	17:03	48	16:29 (T35)
7	06:05		19:33 (T30)	06:32		07:11 (T31)	07:03	07:34			07:09		07:31 (T36)	07:43		15:42 (T35)
	21:07	57	20:30 (T30)	20:43	25	07:36 (T31)	19:56	19:05			17:21	43	16:13 (T35)	17:02	47	16:29 (T35)
8	06:06		19:33 (T30)	06:33		07:10 (T31)	07:04	07:35			07:10		07:32 (T36)	07:44		15:43 (T35)
	21:07	56	20:29 (T30)	20:42	27	07:37 (T31)	19:54	19:03			17:20	42	16:14 (T35)	17:02	46	16:29 (T35)
9	06:07		19:33 (T30)	06:34		07:09 (T31)	07:05	07:36			07:12		07:34 (T36)	07:45		15:42 (T35)
	21:07	57	20:30 (T30)	20:41	28	07:37 (T31)	19:52	19:01			17:19	42	16:16 (T35)	17:02	47	16:29 (T35)
10	06:07		19:34 (T30)	06:35		07:08 (T31)	07:06	07:37			07:13		07:35 (T36)	07:46		15:43 (T35)
	21:06	56	20:30 (T30)	20:40	30	07:38 (T31)	19:51	19:00			17:18	38	16:17 (T35)	17:02	46	16:29 (T35)
11	06:08		19:34 (T30)	06:36		07:07 (T31)	07:07	07:38			07:14		15:39 (T35)	07:47		15:44 (T35)
	21:06	55	20:29 (T30)	20:38	32	07:39 (T31)	19:49	18:58			17:17	39	16:18 (T35)	17:03	46	16:30 (T35)
12	06:09		19:34 (T30)	06:37		07:07 (T31)	07:08	07:39			07:15		15:38 (T35)	07:47		15:44 (T35)
	21:06	56	20:30 (T30)	20:37	32	07:39 (T31)	19:47	18:57			17:16	40	16:18 (T35)	17:03	46	16:30 (T35)
13	06:09		19:35 (T30)	06:38		07:06 (T31)	07:09	07:40			07:16		15:38 (T35)	07:48		15:45 (T35)
	21:05	55	20:30 (T30)	20:36	33	07:39 (T31)	19:45	18:55			17:15	42	16:20 (T35)	17:03	46	16:31 (T35)
14	06:10		19:35 (T30)	06:39		07:05 (T31)	07:10	07:41			07:18		15:37 (T35)	07:49		15:45 (T35)
	21:05	55	20:30 (T30)	20:34	33	07:38 (T31)	19:44	18:53			17:14	43	16:20 (T35)	17:03	45	16:30 (T35)
15	06:11		19:35 (T30)	06:40		07:04 (T31)	07:11	07:42			07:19		15:36 (T35)	07:50		15:46 (T35)
	21:04	54	20:29 (T30)	20:33	35	07:39 (T31)	19:42	18:52			17:13	45	16:21 (T35)	17:03	45	16:31 (T35)
16	06:12		19:36 (T30)	06:41		07:04 (T31)	07:12	07:44			07:20		15:37 (T35)	07:50		15:47 (T35)
	21:04	53	20:29 (T30)	20:32	34	07:38 (T31)	19:40	18:50			17:12	45	16:22 (T35)	17:03	44	16:31 (T35)
17	06:13		19:36 (T30)	06:42		07:04 (T31)	07:13	07:45			07:21		15:36 (T35)	07:51		15:48 (T35)
	21:03	53	20:29 (T30)	20:30	34	07:38 (T31)	19:39	18:49			17:11	46	16:22 (T35)	17:04	44	16:32 (T35)
18	06:13		19:37 (T30)	06:43		07:04 (T31)	07:14	07:46			07:22		15:36 (T35)	07:52		15:48 (T35)
	21:02	52	20:29 (T30)	20:29	34	07:38 (T31)	19:37	18:47			17:11	47	16:23 (T35)	17:04	44	16:32 (T35)
19	06:14		19:37 (T30)	06:44		07:05 (T31)	07:15	07:47			07:24		15:35 (T35)	07:52		15:49 (T35)
	21:02	52	20:29 (T30)	20:27	33	07:38 (T31)	19:35	18:46			17:10	48	16:23 (T35)	17:04	44	16:33 (T35)
20	06:15		19:37 (T30)	06:45		07:06 (T31)	07:16	07:48		08:29 (T36)	07:25		15:36 (T35)	07:53		15:48 (T35)
	21:01	51	20:28 (T30)	20:26	31	07:37 (T31)	19:33	18:44	13	08:42 (T36)	17:09	48	16:24 (T35)	17:05	45	16:33 (T35)
21	06:16		19:38 (T30)	06:46		07:07 (T31)	07:17	07:49		08:27 (T36)	07:26		15:36 (T35)	07:53		15:49 (T35)
	21:00	50	20:28 (T30)	20:24	30	07:37 (T31)	19:32	18:43	17	08:44 (T36)	17:08	48	16:24 (T35)	17:05	45	16:34 (T35)
22	06:17		19:38 (T30)	06:47		07:08 (T31)	07:18	07:50		08:25 (T36)	07:27		15:36 (T35)	07:54		15:49 (T35)
	20:59	50	20:28 (T30)	20:23	28	07:36 (T31)	19:30	18:41	20	08:45 (T36)	17:08	48	16:24 (T35)	17:06	45	16:34 (T35)
23	06:18		19:39 (T30)	06:48		07:09 (T31)	07:19	07:51		08:23 (T36)	07:28		15:36 (T35)	07:54		15:50 (T35)
	20:59	48	20:27 (T30)	20:21	26	07:35 (T31)	19:28	18:40	23	08:46 (T36)	17:07	49	16:25 (T35)	17:06	45	16:35 (T35)
24	06:19		19:40 (T30)	06:49		07:10 (T31)	07:20	07:53		08:22 (T36)	07:29		15:36 (T35)	07:55		15:50 (T35)
	20:58	47	20:27 (T30)	20:20	24	07:34 (T31)	19:27	18:39	25	08:47 (T36)	17:07	49	16:25 (T35)	17:07	45	16:35 (T35)
25	06:20		19:41 (T30)	06:50		07:11 (T31)	07:21	07:54		08:22 (T36)	07:31		15:37 (T35)	07:55		15:51 (T35)
	20:57	45	20:26 (T30)	20:18	21	07:32 (T31)	19:25	18:37	26	08:48 (T36)	17:06	49	16:26 (T35)	17:08	44	16:35 (T35)
26	06:20		19:41 (T30)	06:51		07:12 (T31)	07:22	07:55		08:21 (T36)	07:32		15:37 (T35)	07:56		15:52 (T35)
	20:56	45	20:26 (T30)	20:17	18	07:30 (T31)	19:23	18:36	28	08:49 (T36)	17:05	49	16:26 (T35)	17:08	44	16:36 (T35)
27	06:21		19:41 (T30)	06:52		07:13 (T31)	07:23	07:56		08:20 (T36)	07:33		15:37 (T35)	07:56		15:52 (T35)
	20:55	43	20:24 (T30)	20:15	15	07:28 (T31)	19:21	18:34	29	08:49 (T36)	17:05	49	16:26 (T35)	17:09	44	16:36 (T35)
28	06:22		19:42 (T30)	06:53		07:14 (T31)	07:24	07:57		08:19 (T36)	07:34		15:37 (T35)	07:56		15:52 (T35)
	20:54	41	20:23 (T30)	20:14	11	07:25 (T31)	19:20	18:33	30	08:49 (T36)	17:05	49	16:26 (T35)	17:09	45	16:37 (T35)
29	06:23		19:44 (T30)	06:54			07:25	07:58		08:20 (T36)	07:35		15:37 (T35)	07:57		15:52 (T35)
	20:53	38	20:22 (T30)	20:12			19:18	18:32	30	08:50 (T36)	17:04	49	16:26 (T35)	17:10	45	16:37 (T35)
30	06:24		19:45 (T30)	06:55			07:26	08:00		08:21 (T36)	07:36		15:38 (T35)	07:57		15:53 (T35)
	20:52	36	20:21 (T30)	20:10			19:16	18:30	28	08:49 (T36)	17:04	49	16:27 (T35)	17:11	45	16:38 (T35)
31	06:25		19:46 (T30)	06:56				08:01		08:22 (T36)				07:57		15:53 (T35)
	20:51	34	20:20 (T30)	20:09				18:29	27	08:49 (T36)				17:12	46	16:39 (T35)
Potential sun hours	460			429			375	345			297			287		
Total, worst case		1580			782				296			1284			1418	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.55			0.65				0.55			0.71			0.74	
Total reduction		0.38			0.42				0.27			0.22			0.17	
Total, real		601			325				81			287			239	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 137 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6297)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		16:22 (T77)	07:07		07:38 (T76)	07:16		18:30 (T42)	06:30		19:37 (T41)	06:01		
	17:13			17:47	48	17:10 (T77)	18:22	27	08:05 (T76)	19:56	42	19:12 (T42)	20:27	28	20:05 (T41)	20:57		
2	07:57			07:42		16:22 (T77)	07:06		07:38 (T76)	07:14		18:30 (T42)	06:29		19:37 (T41)	06:01		
	17:14			17:49	48	17:10 (T77)	18:23	25	08:03 (T76)	19:57	40	19:10 (T42)	20:28	29	20:06 (T41)	20:58		
3	07:57			07:41		16:22 (T77)	07:04		07:39 (T76)	07:13		18:31 (T42)	06:28		19:36 (T41)	06:01		
	17:15			17:50	48	17:10 (T77)	18:24	23	08:02 (T76)	19:58	39	19:10 (T42)	20:29	30	20:06 (T41)	20:58		
4	07:57			07:40		16:23 (T77)	07:02		07:41 (T76)	07:11		18:32 (T42)	06:26		19:36 (T41)	06:00		
	17:16			17:51	47	17:10 (T77)	18:25	19	08:00 (T76)	19:59	36	19:08 (T42)	20:30	31	20:07 (T41)	20:59		
5	07:57			07:39		16:23 (T77)	07:01		07:42 (T76)	07:09		18:33 (T42)	06:25		19:36 (T41)	06:00		
	17:17			17:52	47	17:10 (T77)	18:26	16	07:58 (T76)	20:00	33	19:06 (T42)	20:31	32	20:08 (T41)	21:00		
6	07:57			07:38		16:23 (T77)	06:59		07:46 (T76)	07:08		18:35 (T42)	06:24		19:36 (T41)	05:59		
	17:17			17:54	46	17:09 (T77)	18:27	8	07:54 (T76)	20:00	30	19:05 (T42)	20:32	32	20:08 (T41)	21:00		
7	07:57		16:33 (T77)	07:37		16:23 (T77)	06:58			07:06		18:36 (T42)	06:23		19:36 (T41)	05:59		
	17:18	8	16:41 (T77)	17:55	46	17:09 (T77)	18:29			20:01	26	19:02 (T42)	20:33	32	20:08 (T41)	21:01		
8	07:57		16:31 (T77)	07:36		16:24 (T77)	07:56			07:05		18:39 (T42)	06:22		19:36 (T41)	05:59		
	17:19	13	16:44 (T77)	17:56	45	17:09 (T77)	19:30			20:02	21	19:00 (T42)	20:34	32	20:08 (T41)	21:02		
9	07:57		16:30 (T77)	07:35		16:25 (T77)	07:54			07:03		18:41 (T42)	06:20		19:36 (T41)	05:59		
	17:20	17	16:47 (T77)	17:57	44	17:09 (T77)	19:31			20:03	15	18:56 (T42)	20:35	31	20:07 (T41)	21:02		
10	07:57		16:29 (T77)	07:34		16:26 (T77)	07:53			07:01			06:19		19:36 (T41)	05:59		
	17:21	20	16:49 (T77)	17:59	43	17:09 (T77)	19:32			20:05			20:36	30	20:06 (T41)	21:03		
11	07:57		16:28 (T77)	07:32		16:26 (T77)	07:51		18:51 (T42)	07:00			06:18		19:36 (T41)	05:58		
	17:23	22	16:50 (T77)	18:00	41	17:07 (T77)	19:33	11	19:02 (T42)	20:06			20:37	30	20:06 (T41)	21:04		
12	07:56		16:27 (T77)	07:31		16:27 (T77)	07:50		18:47 (T42)	06:58			06:17		19:36 (T41)	05:58		
	17:24	25	16:52 (T77)	18:01	40	17:07 (T77)	19:34	20	19:07 (T42)	20:07			20:38	29	20:05 (T41)	21:04		
13	07:56		16:27 (T77)	07:30		16:28 (T77)	07:48		18:43 (T42)	06:57			06:16		19:37 (T41)	05:58		
	17:25	27	16:54 (T77)	18:02	38	17:06 (T77)	19:35	26	19:09 (T42)	20:08			20:39	28	20:05 (T41)	21:05		
14	07:56		16:26 (T77)	07:29		07:49 (T76)	07:46		18:41 (T42)	06:55			06:15		19:37 (T41)	05:58		
	17:26	29	16:55 (T77)	18:04	41	17:04 (T77)	19:36	30	19:11 (T42)	20:09			20:40	27	20:04 (T41)	21:05		
15	07:55		16:25 (T77)	07:27		07:47 (T76)	07:45		18:39 (T42)	06:53			06:14		19:38 (T41)	05:58		
	17:27	32	16:57 (T77)	18:05	45	17:03 (T77)	19:38	34	19:13 (T42)	20:10			20:42	25	20:03 (T41)	21:05		
16	07:55		16:24 (T77)	07:26		07:46 (T76)	07:43		18:37 (T42)	06:52			06:13		19:40 (T41)	05:58		
	17:28	33	16:57 (T77)	18:06	46	17:02 (T77)	19:39	36	19:13 (T42)	20:11			20:42	23	20:03 (T41)	21:06		
17	07:54		16:24 (T77)	07:25		07:44 (T76)	07:41		18:35 (T42)	06:50			06:12		19:41 (T41)	05:58		
	17:29	35	16:59 (T77)	18:07	45	17:00 (T77)	19:40	39	19:14 (T42)	20:12			20:43	21	20:02 (T41)	21:06		
18	07:54		16:24 (T77)	07:23		07:43 (T76)	07:40		18:35 (T42)	06:49			06:11		19:42 (T41)	05:58		
	17:30	36	17:00 (T77)	18:09	43	16:58 (T77)	19:41	41	19:16 (T42)	20:13			20:44	19	20:01 (T41)	21:07		
19	07:53		16:24 (T77)	07:22		07:42 (T76)	07:38		18:33 (T42)	06:47			06:10		19:43 (T41)	05:58		
	17:32	37	17:01 (T77)	18:10	38	16:55 (T77)	19:42	43	19:16 (T42)	20:14			20:45	17	20:00 (T41)	21:07		
20	07:53		16:23 (T77)	07:20		07:40 (T76)	07:36		18:32 (T42)	06:46			06:09		19:44 (T41)	05:59		
	17:33	39	17:02 (T77)	18:11	26	08:06 (T76)	19:43	44	19:16 (T42)	20:15			20:46	14	19:58 (T41)	21:07		
21	07:52		16:22 (T77)	07:19		07:39 (T76)	07:35		18:32 (T42)	06:44			06:09		19:46 (T41)	05:59		
	17:34	41	17:03 (T77)	18:12	28	08:07 (T76)	19:44	45	19:17 (T42)	20:16			20:47	10	19:56 (T41)	21:08		
22	07:52		16:23 (T77)	07:18		07:37 (T76)	07:33		18:31 (T42)	06:43			06:08			05:59		
	17:35	41	17:04 (T77)	18:13	30	08:07 (T76)	19:45	46	19:17 (T42)	20:17			20:48			21:08		
23	07:51		16:22 (T77)	07:16		07:37 (T76)	07:31		18:30 (T42)	06:41			06:07			05:59		
	17:36	43	17:05 (T77)	18:15	30	08:07 (T76)	19:46	46	19:16 (T42)	20:18			20:49			21:08		
24	07:50		16:22 (T77)	07:15		07:36 (T76)	07:30		18:30 (T42)	06:40		19:48 (T41)	06:06			05:59		
	17:38	43	17:05 (T77)	18:16	31	08:07 (T76)	19:47	47	19:17 (T42)	20:19	10	19:58 (T41)	20:50			21:08		
25	07:49		16:21 (T77)	07:13		07:37 (T76)	07:28		18:29 (T42)	06:38		19:45 (T41)	06:06			06:00		
	17:39	45	17:06 (T77)	18:17	30	08:07 (T76)	19:48	47	19:16 (T42)	20:21	14	19:59 (T41)	20:51			21:08		
26	07:49		16:21 (T77)	07:12		07:36 (T76)	07:26		18:29 (T42)	06:37		19:42 (T41)	06:05			06:00		
	17:40	45	17:06 (T77)	18:18	30	08:06 (T76)	19:50	47	19:16 (T42)	20:22	17	19:59 (T41)	20:52			21:08		
27	07:48		16:22 (T77)	07:10		07:37 (T76)	07:24		18:28 (T42)	06:36		19:41 (T41)	06:04			06:00		
	17:41	46	17:08 (T77)	18:19	29	08:06 (T76)	19:51	47	19:15 (T42)	20:23	20	20:01 (T41)	20:53			21:08		
28	07:47		16:22 (T77)	07:09		07:37 (T76)	07:23		18:29 (T42)	06:34		19:40 (T41)	06:04			06:01		
	17:42	46	17:08 (T77)	18:21	28	08:05 (T76)	19:52	46	19:15 (T42)	20:24	22	20:02 (T41)	20:54			21:09		
29	07:46		16:22 (T77)				07:21		18:29 (T42)	06:33		19:38 (T41)	06:03			06:01		
	17:44	47	17:09 (T77)				19:53	45	19:14 (T42)	20:25	24	20:02 (T41)	20:54			21:09		
30	07:45		16:22 (T77)				07:19		18:29 (T42)	06:32		19:38 (T41)	06:02			06:02		
	17:45	47	17:09 (T77)				19:54	44	19:13 (T42)	20:26	26	20:04 (T41)	20:55			21:08		
31	07:44		16:22 (T77)				07:18		18:30 (T42)				06:02					
	17:46	47	17:09 (T77)				19:55	43	19:13 (T42)				20:56					
Potential sun hours	297			297			370			399			448			453		
Total, worst case		864			1101			945			415			550				
Sun reduction		0.31			0.40			0.44			0.52			0.57				
Oper. time red.		1.00			1.00			1.00			1.00			1.00				
Wind dir. red.		0.73			0.67			0.64			0.62			0.57				
Total reduction		0.23			0.27			0.29			0.33			0.33				
Total, real		199			302			271			137			181				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 137 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6297)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:26	19:47 (T41)	06:57		07:27	18:24 (T42)	07:02	15:54 (T77)	07:37	16:10 (T77)
	21:08		20:50 29	20:16 (T41)	20:07		19:15 23	18:47 (T42)	17:28 43	16:37 (T77)	17:04 22	16:32 (T77)
2	06:03		06:27	19:46 (T41)	06:58		07:29	18:27 (T42)	07:03	15:54 (T77)	07:38	16:11 (T77)
	21:08		20:49 31	20:17 (T41)	20:06		19:13 16	18:43 (T42)	17:27 45	16:39 (T77)	17:03 20	16:31 (T77)
3	06:03		06:28	19:46 (T41)	06:59	18:39 (T42)	07:30		07:04	15:54 (T77)	07:39	16:14 (T77)
	21:08		20:48 31	20:17 (T41)	20:04 15	18:54 (T42)	19:11		17:26 45	16:39 (T77)	17:03 17	16:31 (T77)
4	06:04		06:29	19:46 (T41)	07:00	18:36 (T42)	07:31		07:06	15:53 (T77)	07:40	16:16 (T77)
	21:08		20:47 31	20:17 (T41)	20:02 21	18:57 (T42)	19:10		17:24 46	16:39 (T77)	17:03 14	16:30 (T77)
5	06:04		06:30	19:46 (T41)	07:01	18:33 (T42)	07:32		07:07	15:52 (T77)	07:41	16:19 (T77)
	21:08		20:46 31	20:17 (T41)	20:01 26	18:59 (T42)	19:08		17:23 47	16:39 (T77)	17:03 9	16:28 (T77)
6	06:05		06:31	19:45 (T41)	07:02	18:31 (T42)	07:33		07:08	15:53 (T77)	07:42	
	21:08		20:44 32	20:17 (T41)	19:57 30	19:01 (T42)	19:06		17:22 47	16:40 (T77)	17:03	
7	06:05		06:32	19:45 (T41)	07:03	18:29 (T42)	07:34		07:09	15:52 (T77)	07:43	
	21:07		20:43 32	20:17 (T41)	19:56 33	19:02 (T42)	19:05		17:21 48	16:40 (T77)	17:03	
8	06:06		06:33	19:45 (T41)	07:04	18:27 (T42)	07:35	08:19 (T76)	07:10	15:52 (T77)	07:44	
	21:07		20:42 32	20:17 (T41)	19:54 36	19:03 (T42)	19:03 13	08:32 (T76)	17:20 48	16:40 (T77)	17:03	
9	06:07		06:34	19:45 (T41)	07:05	18:26 (T42)	07:36	08:16 (T76)	07:12	15:53 (T77)	07:45	
	21:07		20:41 32	20:17 (T41)	19:52 38	19:04 (T42)	19:01 18	08:34 (T76)	17:19 48	16:41 (T77)	17:03	
10	06:07		06:35	19:46 (T41)	07:06	18:23 (T42)	07:37	08:14 (T76)	07:13	15:53 (T77)	07:46	
	21:06		20:39 30	20:16 (T41)	19:51 40	19:03 (T42)	19:00 21	08:35 (T76)	17:18 47	16:40 (T77)	17:03	
11	06:08		06:36	19:46 (T41)	07:07	18:22 (T42)	07:38	08:12 (T76)	07:14	15:53 (T77)	07:46	
	21:06		20:38 28	20:14 (T41)	19:49 42	19:04 (T42)	18:58 24	08:36 (T76)	17:17 47	16:40 (T77)	17:03	
12	06:09		06:37	19:46 (T41)	07:08	18:21 (T42)	07:39	08:11 (T76)	07:15	15:52 (T77)	07:47	
	21:06		20:37 27	20:13 (T41)	19:47 43	19:04 (T42)	18:57 26	08:37 (T76)	17:16 48	16:40 (T77)	17:03	
13	06:10		06:38	19:47 (T41)	07:09	18:20 (T42)	07:40	08:10 (T76)	07:16	15:54 (T77)	07:48	
	21:05		20:36 25	20:12 (T41)	19:45 44	19:04 (T42)	18:55 28	08:38 (T76)	17:15 47	16:41 (T77)	17:03	
14	06:10		06:39	19:47 (T41)	07:10	18:19 (T42)	07:41	08:09 (T76)	07:18	15:54 (T77)	07:49	
	21:05		20:34 24	20:11 (T41)	19:44 46	19:05 (T42)	18:54 29	08:38 (T76)	17:14 46	16:40 (T77)	17:03	
15	06:11		06:40	19:48 (T41)	07:11	18:18 (T42)	07:42	08:09 (T76)	07:19	15:54 (T77)	07:50	
	21:04		20:33 21	20:09 (T41)	19:42 47	19:05 (T42)	18:52 30	08:39 (T76)	17:13 46	16:40 (T77)	17:03	
16	06:12		06:41	19:48 (T41)	07:12	18:18 (T42)	07:44	08:08 (T76)	07:20	15:54 (T77)	07:50	
	21:03		20:31 19	20:07 (T41)	19:40 46	19:04 (T42)	18:50 31	08:39 (T76)	17:12 45	16:39 (T77)	17:04	
17	06:13		06:42	19:50 (T41)	07:13	18:17 (T42)	07:45	08:08 (T76)	07:21	15:55 (T77)	07:51	
	21:03		20:30 16	20:06 (T41)	19:39 47	19:04 (T42)	18:49 31	08:39 (T76)	17:11 45	16:40 (T77)	17:04	
18	06:14		06:43	19:51 (T41)	07:14	18:17 (T42)	07:46	08:08 (T76)	07:22	15:56 (T77)	07:52	
	21:02		20:29 13	20:04 (T41)	19:37 47	19:04 (T42)	18:47 30	08:38 (T76)	17:11 43	16:39 (T77)	17:04	
19	06:14		06:44	19:55 (T41)	07:15	18:16 (T42)	07:47	08:08 (T76)	07:23	15:56 (T77)	07:52	
	21:02		20:27 8	20:03 (T41)	19:35 47	19:03 (T42)	18:46 30	08:38 (T76)	17:10 43	16:39 (T77)	17:05	
20	06:15		06:45		07:16	18:16 (T42)	07:48	08:08 (T76)	07:25	15:58 (T77)	07:53	
	21:01		20:26		19:33 47	19:03 (T42)	18:44 29	08:37 (T76)	17:09 41	16:39 (T77)	17:05	
21	06:16		06:46		07:17	18:16 (T42)	07:49	08:10 (T76)	07:26	15:58 (T77)	07:53	
	21:00		20:24		19:32 46	19:02 (T42)	18:43 27	08:37 (T76)	17:08 41	16:39 (T77)	17:05	
22	06:17	19:59 (T41)	06:47		07:18	18:16 (T42)	07:50	08:11 (T76)	07:27	15:59 (T77)	07:54	
	20:59 5	20:04 (T41)	20:23		19:30 45	19:01 (T42)	18:41 28	17:19 (T77)	17:08 39	16:38 (T77)	17:06	
23	06:18	19:56 (T41)	06:48		07:19	18:16 (T42)	07:51	08:12 (T76)	07:28	16:00 (T77)	07:54	
	20:59 11	20:07 (T41)	20:21		19:28 44	19:00 (T42)	18:40 39	17:25 (T77)	17:07 37	16:37 (T77)	17:07	
24	06:19	19:54 (T41)	06:49		07:20	18:17 (T42)	07:53	08:13 (T76)	07:29	16:01 (T77)	07:55	
	20:58 15	20:09 (T41)	20:20		19:27 42	18:59 (T42)	18:39 43	17:28 (T77)	17:07 36	16:37 (T77)	17:07	
25	06:20	19:53 (T41)	06:50		07:21	18:17 (T42)	07:54	08:15 (T76)	07:30	16:02 (T77)	07:55	
	20:57 18	20:11 (T41)	20:18		19:25 41	18:58 (T42)	18:37 45	17:31 (T77)	17:06 35	16:37 (T77)	17:08	
26	06:21	19:52 (T41)	06:51		07:22	18:17 (T42)	07:55	08:16 (T76)	07:32	16:03 (T77)	07:56	
	20:56 20	20:12 (T41)	20:17		19:23 40	18:57 (T42)	18:36 45	17:32 (T77)	17:06 33	16:36 (T77)	17:08	
27	06:22	19:51 (T41)	06:52		07:23	18:18 (T42)	07:56	08:17 (T76)	07:33	16:04 (T77)	07:56	
	20:55 22	20:13 (T41)	20:15		19:22 37	18:55 (T42)	18:34 44	17:33 (T77)	17:05 32	16:36 (T77)	17:09	
28	06:22	19:50 (T41)	06:53		07:24	18:19 (T42)	07:57	08:20 (T76)	07:34	16:06 (T77)	07:56	
	20:54 24	20:14 (T41)	20:14		19:20 35	18:54 (T42)	18:33 39	17:34 (T77)	17:05 29	16:35 (T77)	17:10	
29	06:23	19:48 (T41)	06:54		07:25	18:20 (T42)	07:58	16:57 (T77)	07:35	16:07 (T77)	07:57	
	20:53 26	20:14 (T41)	20:12		19:18 32	18:52 (T42)	18:32 38	17:35 (T77)	17:04 27	16:34 (T77)	17:10	
30	06:24	19:48 (T41)	06:55		07:26	18:22 (T42)	08:00	16:56 (T77)	07:36	16:08 (T77)	07:57	
	20:52 27	20:15 (T41)	20:10		19:16 27	18:49 (T42)	18:30 41	17:37 (T77)	17:04 25	16:33 (T77)	17:11	
31	06:25	19:47 (T41)	06:56				08:01	16:55 (T77)			07:57	
	20:51 29	20:16 (T41)	20:09				18:29 42	17:37 (T77)			17:12	
Potential sun hours	460		429		375		345		297		287	
Total, worst case	197		492		1084		810		1249		82	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.57		0.57		0.65		0.63		0.73		0.73	
Total reduction	0.38		0.35		0.39		0.31		0.22		0.16	
Total, real	75		173		425		248		278		13	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 145 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6304)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:58 (T36)	06:01		19:27 (T35)	06:02		19:38 (T35)	06:26		07:18 (T36)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	69	20:02 (T35)	20:57	37	20:04 (T35)	21:09	28	20:06 (T35)	20:50	60	20:17 (T35)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:14		06:29		06:59 (T36)	06:01		19:28 (T35)	06:02		19:38 (T35)	06:27		07:16 (T36)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	71	20:04 (T35)	20:58	36	20:04 (T35)	21:08	28	20:06 (T35)	20:49	64	20:17 (T35)	20:06	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:28		06:58 (T36)	06:00		19:28 (T35)	06:03		19:38 (T35)	06:28		07:14 (T36)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58		20:29	73	20:04 (T35)	20:58	36	20:04 (T35)	21:08	29	20:07 (T35)	20:48	67	20:17 (T35)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		06:59 (T36)	06:00		19:29 (T35)	06:04		19:37 (T35)	06:29		07:13 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	72	20:04 (T35)	20:59	35	20:04 (T35)	21:08	31	20:08 (T35)	20:47	69	20:17 (T35)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		07:00 (T36)	06:00		19:30 (T35)	06:04		19:37 (T35)	06:30		07:12 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	72	20:05 (T35)	21:00	34	20:04 (T35)	21:08	32	20:09 (T35)	20:46	70	20:16 (T35)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		07:00 (T36)	05:59		19:30 (T35)	06:05		19:36 (T35)	06:31		07:11 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	73	20:06 (T35)	21:01	33	20:03 (T35)	21:08	33	20:09 (T35)	20:44	71	20:16 (T35)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06		06:23		07:01 (T36)	05:59		19:31 (T35)	06:05		19:37 (T35)	06:32		07:10 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:33	71	20:06 (T35)	21:01	32	20:03 (T35)	21:07	33	20:10 (T35)	20:43	72	20:15 (T35)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:05		06:21		07:03 (T36)	05:59		19:32 (T35)	06:06		19:36 (T35)	06:33		07:09 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	70	20:07 (T35)	21:02	31	20:03 (T35)	21:07	34	20:10 (T35)	20:42	73	20:15 (T35)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		07:03 (T36)	05:59		19:33 (T35)	06:07		19:36 (T35)	06:34		07:08 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	68	20:06 (T35)	21:02	29	20:02 (T35)	21:07	35	20:11 (T35)	20:41	73	20:14 (T35)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		07:04 (T36)	05:58		19:32 (T35)	06:07		19:36 (T35)	06:35		07:08 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	66	20:07 (T35)	21:03	29	20:01 (T35)	21:06	35	20:11 (T35)	20:40	72	20:13 (T35)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		07:06 (T36)	05:58		19:33 (T35)	06:08		19:35 (T35)	06:36		07:07 (T36)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	63	20:07 (T35)	21:04	28	20:01 (T35)	21:06	36	20:11 (T35)	20:38	71	20:12 (T35)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58		06:17		07:09 (T36)	05:58		19:34 (T35)	06:09		19:35 (T35)	06:37		07:07 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:39	57	20:07 (T35)	21:04	27	20:01 (T35)	21:06	37	20:12 (T35)	20:37	69	20:11 (T35)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16		19:21 (T35)	05:58		19:34 (T35)	06:09		19:35 (T35)	06:38		07:06 (T36)	07:09	07:40	07:16	07:48
	17:25	18:02	19:35	20:08		20:40	46	20:07 (T35)	21:05	27	20:01 (T35)	21:05	38	20:13 (T35)	20:36	67	20:09 (T35)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		19:20 (T35)	05:58		19:35 (T35)	06:10		19:35 (T35)	06:39		07:05 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:41	47	20:07 (T35)	21:05	26	20:01 (T35)	21:05	39	20:14 (T35)	20:34	65	20:07 (T35)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53	07:12 (T36)	06:14		19:20 (T35)	05:58		19:35 (T35)	06:11		19:34 (T35)	06:40		07:05 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:38	20:10	13 07:25 (T36)	20:42	47	20:07 (T35)	21:06	26	20:01 (T35)	21:04	40	20:14 (T35)	20:33	61	20:05 (T35)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	07:11 (T36)	06:13		19:20 (T35)	05:58		19:36 (T35)	06:12		19:34 (T35)	06:41		07:05 (T36)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11	17 07:28 (T36)	20:43	47	20:07 (T35)	21:06	25	20:01 (T35)	21:04	40	20:14 (T35)	20:31	56	20:02 (T35)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	07:09 (T36)	06:12		19:21 (T35)	05:58		19:36 (T35)	06:13		19:34 (T35)	06:42		07:05 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12	21 07:30 (T36)	20:44	47	20:08 (T35)	21:06	25	20:01 (T35)	21:03	41	20:15 (T35)	20:30	50	19:59 (T35)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49	07:08 (T36)	06:11		19:21 (T35)	05:58		19:36 (T35)	06:13		19:33 (T35)	06:43		07:05 (T36)	07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13	23 07:31 (T36)	20:45	46	20:07 (T35)	21:07	25	20:01 (T35)	21:02	43	20:16 (T35)	20:29	36	07:41 (T36)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47	07:06 (T36)	06:10		19:21 (T35)	05:58		19:38 (T35)	06:14		19:33 (T35)	06:44		07:05 (T36)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14	26 07:32 (T36)	20:45	46	20:07 (T35)	21:07	24	20:02 (T35)	21:02	43	20:16 (T35)	20:27	35	07:40 (T36)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	07:05 (T36)	06:09		19:22 (T35)	05:58		19:38 (T35)	06:15		19:32 (T35)	06:45		07:06 (T36)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	28 07:33 (T36)	20:46	45	20:07 (T35)	21:07	24	20:02 (T35)	21:01	44	20:16 (T35)	20:26	34	07:40 (T36)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	07:03 (T36)	06:08		19:22 (T35)	05:59		19:38 (T35)	06:16		19:32 (T35)	06:46		07:07 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	30 07:33 (T36)	20:47	44	20:06 (T35)	21:08	24	20:02 (T35)	21:00	44	20:16 (T35)	20:24	32	07:39 (T36)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	07:02 (T36)	06:08		19:23 (T35)	05:59		19:38 (T35)	06:17		19:32 (T35)	06:47		07:08 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17	32 07:34 (T36)	20:48	44	20:07 (T35)	21:08	24	20:02 (T35)	20:59	45	20:17 (T35)	20:23	30	07:38 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	07:01 (T36)	06:07		19:23 (T35)	05:59		19:38 (T35)	06:18		19:32 (T35)	06:48		07:09 (T36)	07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18	34 07:35 (T36)	20:49	44	20:07 (T35)	21:08	24	20:02 (T35)	20:59	45	20:17 (T35)	20:21	28	07:37 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	06:59 (T36)	06:06		19:23 (T35)	05:59		19:38 (T35)	06:19		19:32 (T35)	06:49		07:10 (T36)	07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20	35 07:34 (T36)	20:50	43	20:06 (T35)	21:08	25	20:03 (T35)	20:58	46	20:18 (T35)	20:20	26	07:36 (T36)	19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	06:59 (T36)	06:05		19:24 (T35)	06:00		19:38 (T35)	06:20		19:32 (T35)	06:50		07:11 (T36)	07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21	36 07:35 (T36)	20:51	42	20:06 (T35)	21:08	25	20:03 (T35)	20:57	46	20:18 (T35)	20:18	23	07:34 (T36)	19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:58 (T36)	06:05		19:24 (T35)	06:00		19:38 (T35)	06:20		19:32 (T35)	06:51		07:12 (T36)	07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	51 19:53 (T35)	20:52	42	20:06 (T35)	21:08	25	20:03 (T35)	20:56	46	20:18 (T35)	20:17	20	07:32 (T36)	19:23	18:36	17:06	17:08
27	07:48	07:10	07:24	06:36	06:58 (T36)	06:04		19:24 (T35)	06:00		19:38 (T35)	06:21		19:31 (T35)	06:52		07:13 (T36)	07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	58 19:56 (T35)	20:53	41	20:05 (T35)	21:09	26	20:04 (T35)	20:55	46	20:17 (T35)	20:15	17	07:30 (T36)	19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	06:58 (T36)	06:03		19:25 (T35)	06:01		19:38 (T35)	06:22		19:31 (T35)	06:53		07:14 (T36)	07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24	63 19:59 (T35)	20:54	40	20:05 (T35)	21:09	26	20:04 (T35)	20:54	46	20:17 (T35)	20:14	13	07:27 (T36)	19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:57 (T36)	06:03		19:25 (T35)	06:01		19:39 (T35)	06:23		19:31 (T35)	06:54			07:25	07:58	07:35	07:57
	17:44		19:53	20:25	66 19:59 (T35)	20:55	40	20:05 (T35)	21:09	26	20:05 (T35)	20:53	47	20:18 (T35)	20:12			19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	06:58 (T36)	06:02		19:26 (T35)	06:01		19:38 (T35)	06:24		19:31 (T35)	06:55			07:26	08:00	07:36	07:57
	17:45		19:54	20:26	68 20:01 (T35)	20:55	39	20:05 (T35)	21:09	27	20:05 (T35)	20:52	47	20:18 (T35)	20:10			19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:26 (T35)				06:25		07:22 (T36)	06:56				08:01		07:57
	17:46		19:55			20:56	38	20:04 (T35)				20:51	53	20:18 (T35)	20:09				18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				601		1653		841		1230		1424					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.65		0.59		0.57		0.57		0.62					
Total reduction				0.34		0.33		0.36		0.37		0.38					
Total, real				203		553		305		461		543					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 197 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6346)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:58	15:49 (T11)	07:44	16:03 (T11)	07:07	07:48 (T10)	07:16		06:30	07:03 (T8)	06:01	07:38 (T9)
	17:13 47	16:36 (T11)	17:47 41	16:44 (T11)	18:22 43	08:31 (T10)	19:56		20:27 88	08:38 (T9)	20:57 42	08:20 (T9)
2	07:58	15:49 (T11)	07:43	16:04 (T11)	07:06	07:48 (T10)	07:14		06:29	07:07 (T8)	06:01	07:38 (T9)
	17:14 48	16:37 (T11)	17:49 39	16:43 (T11)	18:23 42	08:30 (T10)	19:57		20:28 81	08:38 (T9)	20:58 40	08:18 (T9)
3	07:58	15:49 (T11)	07:42	16:06 (T11)	07:04	07:49 (T10)	07:13	07:58 (T9)	06:27	07:22 (T9)	06:00	06:28 (T7)
	17:14 48	16:37 (T11)	17:50 36	16:42 (T11)	18:24 40	08:29 (T10)	19:58 20	08:18 (T9)	20:29 75	08:37 (T9)	20:59 43	08:18 (T9)
4	07:58	15:50 (T11)	07:41	16:07 (T11)	07:03	07:49 (T10)	07:11	07:53 (T9)	06:26	07:22 (T9)	06:00	06:25 (T7)
	17:15 48	16:38 (T11)	17:51 34	16:41 (T11)	18:25 39	08:28 (T10)	19:59 29	08:22 (T9)	20:30 75	08:37 (T9)	21:00 47	08:18 (T9)
5	07:58	15:50 (T11)	07:40	16:09 (T11)	07:01	07:50 (T10)	07:09	07:49 (T9)	06:25	07:22 (T9)	06:00	06:23 (T7)
	17:16 49	16:39 (T11)	17:52 31	16:40 (T11)	18:26 36	08:26 (T10)	20:00 36	08:25 (T9)	20:32 74	08:36 (T9)	21:00 48	08:16 (T9)
6	07:58	15:50 (T11)	07:39	16:11 (T11)	06:59	07:51 (T10)	07:08	07:46 (T9)	06:24	07:22 (T9)	05:59	06:22 (T7)
	17:17 50	16:40 (T11)	17:54 27	16:38 (T11)	18:27 34	08:25 (T10)	20:00 42	08:28 (T9)	20:33 74	08:36 (T9)	21:01 50	08:16 (T9)
7	07:58	15:51 (T11)	07:37	16:14 (T11)	06:58	07:52 (T10)	07:06	07:44 (T9)	06:23	07:23 (T9)	05:59	06:22 (T7)
	17:18 49	16:40 (T11)	17:55 23	16:37 (T11)	18:29 31	08:23 (T10)	20:02 45	08:29 (T9)	20:34 73	08:36 (T9)	21:02 50	08:16 (T9)
8	07:58	15:51 (T11)	07:36	08:06 (T10)	07:56	08:54 (T10)	07:05	07:42 (T9)	06:21	07:22 (T9)	05:59	06:22 (T7)
	17:19 50	16:41 (T11)	17:56 25	16:33 (T11)	19:30 28	09:22 (T10)	20:03 49	08:31 (T9)	20:35 72	08:34 (T9)	21:02 49	08:15 (T9)
9	07:57	15:51 (T11)	07:35	08:02 (T10)	07:55	08:56 (T10)	07:03	07:40 (T9)	06:20	07:22 (T9)	05:58	06:21 (T7)
	17:20 50	16:41 (T11)	17:57 22	16:27 (T11)	19:31 23	09:19 (T10)	20:04 52	08:32 (T9)	20:36 72	08:34 (T9)	21:03 50	08:15 (T9)
10	07:57	15:51 (T11)	07:34	08:00 (T10)	07:53	08:58 (T10)	07:01	07:37 (T9)	06:19	07:23 (T9)	05:58	06:20 (T7)
	17:21 51	16:42 (T11)	17:59 22	08:22 (T10)	19:32 17	09:15 (T10)	20:05 56	08:33 (T9)	20:37 71	08:34 (T9)	21:03 48	08:13 (T9)
11	07:57	15:52 (T11)	07:33	07:58 (T10)	07:51		07:00	07:36 (T9)	06:18	07:23 (T9)	05:58	06:20 (T7)
	17:22 51	16:43 (T11)	18:00 27	08:25 (T10)	19:33		20:06 59	08:35 (T9)	20:38 70	08:33 (T9)	21:04 48	08:13 (T9)
12	07:57	15:52 (T11)	07:31	07:55 (T10)	07:50		06:58	07:34 (T9)	06:17	07:24 (T9)	05:58	06:20 (T7)
	17:23 50	16:42 (T11)	18:01 31	08:26 (T10)	19:34		20:07 61	08:35 (T9)	20:39 68	08:32 (T9)	21:05 47	08:12 (T9)
13	07:56	15:52 (T11)	07:30	07:54 (T10)	07:48		06:57	07:34 (T9)	06:16	07:24 (T9)	05:58	06:20 (T7)
	17:24 51	16:43 (T11)	18:02 33	08:27 (T10)	19:35		20:08 63	08:37 (T9)	20:40 68	08:32 (T9)	21:05 47	08:12 (T9)
14	07:56	15:53 (T11)	07:29	07:53 (T10)	07:46		06:55	07:32 (T9)	06:15	07:24 (T9)	05:58	06:20 (T7)
	17:26 51	16:44 (T11)	18:04 36	08:29 (T10)	19:37		20:09 65	08:37 (T9)	20:41 67	08:31 (T9)	21:05 46	08:12 (T9)
15	07:56	15:53 (T11)	07:28	07:52 (T10)	07:45		06:53	07:12 (T8)	06:14	07:25 (T9)	05:58	06:20 (T7)
	17:27 51	16:44 (T11)	18:05 37	08:29 (T10)	19:38		20:10 71	08:37 (T9)	20:42 66	08:31 (T9)	21:06 45	08:11 (T9)
16	07:55	15:54 (T11)	07:26	07:51 (T10)	07:43		06:52	07:11 (T8)	06:13	07:25 (T9)	05:58	06:20 (T7)
	17:28 51	16:45 (T11)	18:06 40	08:31 (T10)	19:39		20:11 76	08:38 (T9)	20:43 65	08:30 (T9)	21:06 45	08:11 (T9)
17	07:55	15:53 (T11)	07:25	07:51 (T10)	07:41		06:50	07:09 (T8)	06:12	07:27 (T9)	05:58	06:20 (T7)
	17:29 52	16:45 (T11)	18:07 41	08:32 (T10)	19:40		20:12 81	08:38 (T9)	20:44 63	08:30 (T9)	21:07 43	08:10 (T9)
18	07:54	15:54 (T11)	07:24	07:49 (T10)	07:40		06:49	07:08 (T8)	06:11	07:27 (T9)	05:58	06:20 (T7)
	17:30 52	16:46 (T11)	18:09 43	08:32 (T10)	19:41		20:13 85	08:39 (T9)	20:45 62	08:29 (T9)	21:07 43	08:10 (T9)
19	07:54	15:54 (T11)	07:22	07:49 (T10)	07:38		06:47	07:06 (T8)	06:10	07:28 (T9)	05:58	06:21 (T7)
	17:31 52	16:46 (T11)	18:10 44	08:33 (T10)	19:42		20:14 89	08:39 (T9)	20:46 61	08:29 (T9)	21:07 43	08:11 (T9)
20	07:53	15:54 (T11)	07:21	07:48 (T10)	07:36		06:46	07:05 (T8)	06:09	07:28 (T9)	05:58	06:21 (T7)
	17:32 51	16:45 (T11)	18:11 44	08:32 (T10)	19:43		20:15 91	08:39 (T9)	20:47 60	08:28 (T9)	21:08 43	08:11 (T9)
21	07:53	15:56 (T11)	07:19	07:48 (T10)	07:35		06:44	07:03 (T8)	06:08	07:28 (T9)	05:58	06:21 (T7)
	17:34 50	16:46 (T11)	18:12 45	08:33 (T10)	19:44		20:17 93	08:39 (T9)	20:48 59	08:27 (T9)	21:08 43	08:11 (T9)
22	07:52	15:56 (T11)	07:18	07:48 (T10)	07:33		06:43	07:02 (T8)	06:08	07:30 (T9)	05:59	06:21 (T7)
	17:35 50	16:46 (T11)	18:13 46	08:34 (T10)	19:45		20:18 95	08:39 (T9)	20:49 57	08:27 (T9)	21:08 43	08:11 (T9)
23	07:51	15:56 (T11)	07:16	07:47 (T10)	07:31		06:41	07:01 (T8)	06:07	07:30 (T9)	05:59	06:21 (T7)
	17:36 50	16:46 (T11)	18:15 46	08:33 (T10)	19:46		20:19 97	08:40 (T9)	20:50 56	08:26 (T9)	21:08 43	08:11 (T9)
24	07:51	15:56 (T11)	07:15	07:48 (T10)	07:30		06:40	06:59 (T8)	06:06	07:31 (T9)	05:59	06:22 (T7)
	17:37 50	16:46 (T11)	18:16 46	08:34 (T10)	19:47		20:20 98	08:39 (T9)	20:51 54	08:25 (T9)	21:09 43	08:12 (T9)
25	07:50	15:58 (T11)	07:13	07:47 (T10)	07:28		06:38	06:59 (T8)	06:05	07:32 (T9)	05:59	06:22 (T7)
	17:39 49	16:47 (T11)	18:17 46	08:33 (T10)	19:49		20:21 98	08:39 (T9)	20:51 53	08:25 (T9)	21:09 43	08:12 (T9)
26	07:49	15:58 (T11)	07:12	07:47 (T10)	07:26		06:37	06:58 (T8)	06:05	07:33 (T9)	06:00	06:22 (T7)
	17:40 48	16:46 (T11)	18:18 45	08:32 (T10)	19:50		20:22 99	08:39 (T9)	20:52 51	08:24 (T9)	21:09 45	08:13 (T9)
27	07:48	15:59 (T11)	07:10	07:47 (T10)	07:25		06:36	06:59 (T8)	06:04	07:33 (T9)	06:00	06:23 (T7)
	17:41 47	16:46 (T11)	18:19 45	08:32 (T10)	19:51		20:23 98	08:39 (T9)	20:53 50	08:23 (T9)	21:09 45	08:14 (T9)
28	07:47	15:59 (T11)	07:09	07:47 (T10)	07:23		06:34	07:00 (T8)	06:03	07:34 (T9)	06:00	06:23 (T7)
	17:42 47	16:46 (T11)	18:21 44	08:31 (T10)	19:52		20:24 96	08:39 (T9)	20:54 49	08:23 (T9)	21:09 45	08:14 (T9)
29	07:47	16:00 (T11)			07:21		06:33	07:00 (T8)	06:03	07:35 (T9)	06:01	06:24 (T7)
	17:44 45	16:45 (T11)			19:53		20:25 94	08:38 (T9)	20:55 46	08:21 (T9)	21:09 47	08:16 (T9)
30	07:46	16:01 (T11)			07:19		06:31	07:02 (T8)	06:02	07:36 (T9)	06:01	06:24 (T7)
	17:45 44	16:45 (T11)			19:54		20:26 91	08:38 (T9)	20:56 45	08:21 (T9)	21:09 47	08:16 (T9)
31	07:45	16:02 (T11)			07:18				06:02	07:37 (T9)		
	17:46 42	16:44 (T11)			19:55				20:57 43	08:20 (T9)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case	1524		1039		333		2029		1968		1361	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.74		0.60		0.56		0.65		0.65		0.68	
Total reduction	0.23		0.24		0.25		0.34		0.38		0.44	
Total, real	353		252		82		697		738		602	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 197 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6346)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		06:24 (T7)	06:26		07:34 (T9)	06:57		07:35 (T9)	07:28			07:02		07:30 (T10)	07:37		15:34 (T11)
	21:09	49	08:17 (T9)	20:50	69	08:43 (T9)	20:07	59	08:34 (T9)	19:15			17:28	22	07:52 (T10)	17:03	51	16:25 (T11)
2	06:02		06:25 (T7)	06:27		07:34 (T9)	06:58		07:36 (T9)	07:29			07:03		07:32 (T10)	07:38		15:34 (T11)
	21:09	49	08:18 (T9)	20:49	70	08:44 (T9)	20:06	56	08:32 (T9)	19:13			17:27	24	15:59 (T11)	17:03	51	16:25 (T11)
3	06:03		06:25 (T7)	06:28		07:33 (T9)	06:59		07:38 (T9)	07:30		08:39 (T10)	07:05		07:38 (T10)	07:39		15:35 (T11)
	21:09	50	08:19 (T9)	20:48	71	08:44 (T9)	20:04	53	08:31 (T9)	19:11	12	08:51 (T10)	17:25	22	16:03 (T11)	17:03	50	16:25 (T11)
4	06:03		06:26 (T7)	06:29		07:33 (T9)	07:00		07:39 (T9)	07:31		08:35 (T10)	07:06		15:42 (T11)	07:40		15:35 (T11)
	21:09	50	08:20 (T9)	20:47	72	08:45 (T9)	20:02	50	08:29 (T9)	19:10	20	08:55 (T10)	17:24	24	16:06 (T11)	17:03	50	16:25 (T11)
5	06:04		06:28 (T7)	06:30		07:33 (T9)	07:01		07:41 (T9)	07:32		08:32 (T10)	07:07		15:41 (T11)	07:41		15:36 (T11)
	21:08	49	08:21 (T9)	20:46	72	08:45 (T9)	20:01	45	08:26 (T9)	19:08	25	08:57 (T10)	17:23	28	16:09 (T11)	17:03	49	16:25 (T11)
6	06:05		06:28 (T7)	06:31		07:32 (T9)	07:02		07:42 (T9)	07:33		08:30 (T10)	07:08		15:39 (T11)	07:42		15:36 (T11)
	21:08	50	08:22 (T9)	20:45	74	08:46 (T9)	19:57	42	08:24 (T9)	19:06	29	08:59 (T10)	17:22	31	16:10 (T11)	17:02	50	16:26 (T11)
7	06:05		06:30 (T7)	06:32		07:32 (T9)	07:03		07:45 (T9)	07:34		08:28 (T10)	07:09		15:37 (T11)	07:43		15:37 (T11)
	21:08	48	08:23 (T9)	20:44	74	08:46 (T9)	19:56	36	08:21 (T9)	19:05	32	09:00 (T10)	17:21	34	16:11 (T11)	17:02	49	16:26 (T11)
8	06:06		06:31 (T7)	06:33		07:32 (T9)	07:04		07:48 (T9)	07:35		08:26 (T10)	07:11		15:36 (T11)	07:44		15:38 (T11)
	21:08	48	08:24 (T9)	20:42	74	08:46 (T9)	19:54	29	08:17 (T9)	19:03	35	09:01 (T10)	17:20	37	16:13 (T11)	17:02	48	16:26 (T11)
9	06:06		06:33 (T7)	06:34		07:31 (T9)	07:05		07:52 (T9)	07:36		08:24 (T10)	07:12		15:35 (T11)	07:45		15:38 (T11)
	21:07	46	08:25 (T9)	20:41	75	08:46 (T9)	19:52	21	08:13 (T9)	19:02	38	09:02 (T10)	17:19	39	16:14 (T11)	17:02	49	16:27 (T11)
10	06:07		07:47 (T9)	06:35		07:31 (T9)	07:06			07:37		08:23 (T10)	07:13		15:34 (T11)	07:46		15:39 (T11)
	21:07	39	08:26 (T9)	20:40	76	08:47 (T9)	19:51			19:00	40	09:03 (T10)	17:18	41	16:15 (T11)	17:02	48	16:27 (T11)
11	06:08		07:45 (T9)	06:36		07:14 (T8)	07:07			07:38		08:22 (T10)	07:14		15:33 (T11)	07:47		15:40 (T11)
	21:06	42	08:27 (T9)	20:39	84	08:47 (T9)	19:49			18:58	41	09:03 (T10)	17:17	42	16:15 (T11)	17:02	47	16:27 (T11)
12	06:09		07:45 (T9)	06:37		07:12 (T8)	07:08			07:39		08:21 (T10)	07:16		15:33 (T11)	07:48		15:40 (T11)
	21:06	43	08:28 (T9)	20:37	89	08:47 (T9)	19:47			18:57	42	09:03 (T10)	17:16	44	16:17 (T11)	17:03	47	16:27 (T11)
13	06:09		07:45 (T9)	06:38		07:10 (T8)	07:09			07:40		08:21 (T10)	07:17		15:32 (T11)	07:49		15:40 (T11)
	21:05	44	08:29 (T9)	20:36	92	08:47 (T9)	19:46			18:55	44	09:05 (T10)	17:15	45	16:17 (T11)	17:03	47	16:27 (T11)
14	06:10		07:44 (T9)	06:39		07:08 (T8)	07:10			07:42		08:20 (T10)	07:18		15:31 (T11)	07:49		15:41 (T11)
	21:05	46	08:30 (T9)	20:35	94	08:46 (T9)	19:44			18:54	45	09:05 (T10)	17:14	47	16:18 (T11)	17:03	47	16:28 (T11)
15	06:11		07:43 (T9)	06:40		07:07 (T8)	07:11			07:43		08:20 (T10)	07:19		15:32 (T11)	07:50		15:42 (T11)
	21:04	48	08:31 (T9)	20:33	97	08:46 (T9)	19:42			18:52	45	09:05 (T10)	17:13	47	16:19 (T11)	17:03	47	16:29 (T11)
16	06:12		07:43 (T9)	06:41		07:06 (T8)	07:12			07:44		08:19 (T10)	07:20		15:31 (T11)	07:51		15:42 (T11)
	21:04	49	08:32 (T9)	20:32	99	08:46 (T9)	19:40			18:50	46	09:05 (T10)	17:12	48	16:19 (T11)	17:03	46	16:28 (T11)
17	06:12		07:42 (T9)	06:42		07:05 (T8)	07:13			07:45		08:18 (T10)	07:21		15:31 (T11)	07:51		15:43 (T11)
	21:03	51	08:33 (T9)	20:30	99	08:45 (T9)	19:39			18:49	46	09:04 (T10)	17:11	49	16:20 (T11)	17:04	46	16:29 (T11)
18	06:13		07:42 (T9)	06:43		07:04 (T8)	07:14			07:46		08:18 (T10)	07:23		15:30 (T11)	07:52		15:44 (T11)
	21:03	52	08:34 (T9)	20:29	100	08:45 (T9)	19:37			18:47	46	09:04 (T10)	17:10	50	16:20 (T11)	17:04	46	16:30 (T11)
19	06:14		07:41 (T9)	06:44		07:05 (T8)	07:15			07:47		08:19 (T10)	07:24		15:31 (T11)	07:53		15:44 (T11)
	21:02	54	08:35 (T9)	20:27	99	08:45 (T9)	19:35			18:46	46	09:05 (T10)	17:10	50	16:21 (T11)	17:04	46	16:30 (T11)
20	06:15		07:40 (T9)	06:45		07:06 (T8)	07:16			07:48		08:19 (T10)	07:25		15:31 (T11)	07:53		15:45 (T11)
	21:01	55	08:35 (T9)	20:26	97	08:45 (T9)	19:34			18:44	45	09:04 (T10)	17:09	50	16:21 (T11)	17:05	45	16:30 (T11)
21	06:16		07:40 (T9)	06:46		07:07 (T8)	07:17			07:49		08:19 (T10)	07:26		15:31 (T11)	07:54		15:45 (T11)
	21:00	56	08:36 (T9)	20:25	95	08:44 (T9)	19:32			18:43	45	09:04 (T10)	17:08	50	16:21 (T11)	17:05	45	16:30 (T11)
22	06:17		07:39 (T9)	06:47		07:08 (T8)	07:18			07:51		08:19 (T10)	07:27		15:30 (T11)	07:54		15:46 (T11)
	21:00	58	08:37 (T9)	20:23	93	08:44 (T9)	19:30			18:41	44	09:03 (T10)	17:08	52	16:22 (T11)	17:06	45	16:31 (T11)
23	06:18		07:39 (T9)	06:48		07:09 (T8)	07:19			07:52		08:19 (T10)	07:29		15:31 (T11)	07:55		15:46 (T11)
	20:59	59	08:38 (T9)	20:22	90	08:43 (T9)	19:28			18:40	43	09:02 (T10)	17:07	52	16:23 (T11)	17:06	45	16:31 (T11)
24	06:19		07:38 (T9)	06:49		07:10 (T8)	07:20			07:53		08:20 (T10)	07:30		15:31 (T11)	07:55		15:46 (T11)
	20:58	61	08:39 (T9)	20:20	88	08:42 (T9)	19:27			18:39	42	09:02 (T10)	17:06	52	16:23 (T11)	17:07	45	16:31 (T11)
25	06:19		07:38 (T9)	06:50		07:11 (T8)	07:21			07:54		08:20 (T10)	07:31		15:31 (T11)	07:56		15:47 (T11)
	20:57	61	08:39 (T9)	20:18	84	08:42 (T9)	19:25			18:37	41	09:01 (T10)	17:06	52	16:23 (T11)	17:07	46	16:33 (T11)
26	06:20		07:37 (T9)	06:51		07:12 (T8)	07:22			07:55		08:21 (T10)	07:32		15:32 (T11)	07:56		15:47 (T11)
	20:56	63	08:40 (T9)	20:17	81	08:41 (T9)	19:23			18:36	39	09:00 (T10)	17:05	51	16:23 (T11)	17:08	46	16:33 (T11)
27	06:21		07:36 (T9)	06:52		07:13 (T8)	07:23			07:56		08:21 (T10)	07:33		15:32 (T11)	07:56		15:47 (T11)
	20:55	64	08:40 (T9)	20:15	76	08:40 (T9)	19:22			18:34	38	08:59 (T10)	17:05	51	16:23 (T11)	17:09	46	16:33 (T11)
28	06:22		07:36 (T9)	06:53		07:14 (T8)	07:25			07:58		08:23 (T10)	07:34		15:33 (T11)	07:57		15:48 (T11)
	20:54	65	08:41 (T9)	20:14	71	08:39 (T9)	19:20			18:33	35	08:58 (T10)	17:05	51	16:24 (T11)	17:09	46	16:34 (T11)
29	06:23		07:35 (T9)	06:54		07:33 (T9)	07:26			07:59		08:24 (T10)	07:35		15:33 (T11)	07:57		15:48 (T11)
	20:54	66	08:41 (T9)	20:12	65	08:38 (T9)	19:18			18:32	33	08:57 (T10)	17:04	51	16:24 (T11)	17:10	47	16:35 (T11)
30	06:24		07:35 (T9)	06:55		07:34 (T9)	07:27			08:00		08:25 (T10)	07:36		15:34 (T11)	07:57		15:48 (T11)
	20:53	67	08:42 (T9)	20:11	63	08:37 (T9)	19:16			18:30	30	08:55 (T10)	17:04	50	16:24 (T11)	17:11	47	16:35 (T11)
31	06:25		07:34 (T9)	06:56		07:34 (T9)				08:01		08:27 (T10)				07:57		15:48 (T11)
	20:51	69	08:43 (T9)	20:09	61	08:35 (T9)				18:29	26	08:53 (T10)				17:12	48	16:36 (T11)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		1651			2544			391			1093			1286			1465	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.66			0.65			0.65			0.56			0.73			0.74	
Total reduction		0.44			0.40			0.39			0.27			0.22			0.16	
Total, real		725			1025			152			295			286			241	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 228 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6374)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		08:04 (T44)	07:07			07:16		07:41 (T77)	06:30		06:53 (T42)	06:02		06:42 (T42)
	17:13			17:48	25	08:29 (T44)	18:22			19:56	36	08:17 (T77)	20:27	11	07:04 (T42)	20:57	33	07:15 (T42)
2	07:57			07:42		08:03 (T44)	07:06			07:15		07:41 (T77)	06:29		06:50 (T42)	06:01		06:43 (T42)
	17:14			17:49	26	08:29 (T44)	18:23			19:57	35	08:16 (T77)	20:28	17	07:07 (T42)	20:58	32	07:15 (T42)
3	07:57			07:41		08:02 (T44)	07:04			07:13		07:41 (T77)	06:28		06:47 (T42)	06:01		06:43 (T42)
	17:15			17:50	28	08:30 (T44)	18:24			19:58	35	08:16 (T77)	20:29	21	07:08 (T42)	20:58	31	07:14 (T42)
4	07:58			07:40		08:01 (T44)	07:03			07:11		07:41 (T77)	06:26		06:46 (T42)	06:00		06:44 (T42)
	17:16			17:51	29	08:30 (T44)	18:25			19:59	33	08:14 (T77)	20:30	24	07:10 (T42)	20:59	30	07:14 (T42)
5	07:57			07:39		08:01 (T44)	07:01			07:10		07:42 (T77)	06:25		06:45 (T42)	06:00		06:44 (T42)
	17:17			17:53	30	08:31 (T44)	18:26			20:00	32	08:14 (T77)	20:31	26	07:11 (T42)	21:00	30	07:14 (T42)
6	07:57			07:38		08:00 (T44)	06:59			07:08		07:42 (T77)	06:24		06:44 (T42)	06:00		06:44 (T42)
	17:18			17:54	30	08:30 (T44)	18:28			20:00	30	08:12 (T77)	20:32	29	07:13 (T42)	21:01	29	07:13 (T42)
7	07:57			07:37		08:01 (T44)	06:58			07:06		07:43 (T77)	06:23		06:43 (T42)	05:59		06:45 (T42)
	17:19			17:55	29	08:30 (T44)	18:29			20:01	28	08:11 (T77)	20:33	30	07:13 (T42)	21:01	28	07:13 (T42)
8	07:57			07:36		08:01 (T44)	07:56			07:05		07:44 (T77)	06:22		06:42 (T42)	05:59		06:46 (T42)
	17:20			17:56	29	08:30 (T44)	19:30			20:02	26	08:10 (T77)	20:34	32	07:14 (T42)	21:02	27	07:13 (T42)
9	07:57			07:35		08:02 (T44)	07:55			07:03		07:45 (T77)	06:20		06:41 (T42)	05:59		06:47 (T42)
	17:21			17:58	28	08:30 (T44)	19:31			20:04	22	08:07 (T77)	20:35	34	07:15 (T42)	21:02	26	07:13 (T42)
10	07:57			07:34		08:03 (T44)	07:53			07:01		07:47 (T77)	06:19		06:40 (T42)	05:59		06:47 (T42)
	17:22			17:59	26	08:29 (T44)	19:32			20:05	18	08:05 (T77)	20:36	36	07:16 (T42)	21:03	26	07:13 (T42)
11	07:57			07:32		08:03 (T44)	07:51			07:00		07:50 (T77)	06:18		06:38 (T42)	05:58		06:48 (T42)
	17:23			18:00	25	08:28 (T44)	19:33			20:06	12	08:02 (T77)	20:38	37	07:15 (T42)	21:04	25	07:13 (T42)
12	07:56			07:31		08:04 (T44)	07:50			06:58			06:17		06:38 (T42)	05:58		06:49 (T42)
	17:24			18:01	23	08:27 (T44)	19:34			20:07			20:39	37	07:15 (T42)	21:04	24	07:13 (T42)
13	07:56			07:30		08:06 (T44)	07:48			06:57			06:16		06:38 (T42)	05:58		06:48 (T42)
	17:25			18:03	20	08:26 (T44)	19:35			20:08			20:40	38	07:16 (T42)	21:05	24	07:12 (T42)
14	07:56			07:29		08:08 (T44)	07:46			06:55			06:15		06:38 (T42)	05:58		06:49 (T42)
	17:26			18:04	17	08:25 (T44)	19:37			20:09			20:41	39	07:17 (T42)	21:05	23	07:12 (T42)
15	07:55			07:27		08:10 (T44)	07:45			06:53			06:14		06:38 (T42)	05:58		06:49 (T42)
	17:27			18:05	12	08:22 (T44)	19:38			20:10			20:42	39	07:17 (T42)	21:06	22	07:11 (T42)
16	07:55			07:26			07:43			06:52			06:13		06:38 (T42)	05:58		06:51 (T42)
	17:28			18:06			19:39			20:11			20:43	39	07:17 (T42)	21:06	21	07:12 (T42)
17	07:54			07:25			07:41			06:50			06:12		06:38 (T42)	05:58		06:51 (T42)
	17:29			18:07			19:40			20:12			20:44	39	07:17 (T42)	21:06	21	07:12 (T42)
18	07:54			07:23			07:40			06:49			06:11		06:38 (T42)	05:58		06:51 (T42)
	17:30			18:09			19:41			20:13			20:45	39	07:17 (T42)	21:07	21	07:12 (T42)
19	07:53			07:22			07:38			06:47			06:10		06:37 (T42)	05:58		06:51 (T42)
	17:32			18:10			19:42			20:14			20:45	40	07:17 (T42)	21:07	21	07:12 (T42)
20	07:53			07:21			07:36		07:58 (T77)	06:46			06:09		06:37 (T42)	05:59		06:52 (T42)
	17:33			18:11			19:43	9	08:07 (T77)	20:15			20:46	39	07:16 (T42)	21:07	20	07:12 (T42)
21	07:52			07:19			07:35		07:54 (T77)	06:44			06:09		06:38 (T42)	05:59		06:52 (T42)
	17:34			18:12			19:44	17	08:11 (T77)	20:16			20:47	39	07:17 (T42)	21:08	20	07:12 (T42)
22	07:52			07:18			07:33		07:52 (T77)	06:43			06:08		06:38 (T42)	05:59		06:52 (T42)
	17:35			18:14			19:45	21	08:13 (T77)	20:17			20:48	39	07:17 (T42)	21:08	20	07:12 (T42)
23	07:51			07:16			07:31		07:50 (T77)	06:41			06:07		06:38 (T42)	05:59		06:52 (T42)
	17:36			18:15			19:46	24	08:14 (T77)	20:18			20:49	38	07:16 (T42)	21:08	21	07:13 (T42)
24	07:50		08:11 (T44)	07:15			07:30		07:49 (T77)	06:40			06:06		06:38 (T42)	05:59		06:52 (T42)
	17:38	7	08:18 (T44)	18:16			19:47	27	08:16 (T77)	20:20			20:50	38	07:16 (T42)	21:08	21	07:13 (T42)
25	07:50		08:10 (T44)	07:13			07:28		07:47 (T77)	06:39			06:06		06:39 (T42)	06:00		06:52 (T42)
	17:39	10	08:20 (T44)	18:17			19:49	30	08:17 (T77)	20:21			20:51	37	07:16 (T42)	21:08	21	07:13 (T42)
26	07:49		08:09 (T44)	07:12			07:26		07:45 (T77)	06:37			06:05		06:39 (T42)	06:00		06:53 (T42)
	17:40	13	08:22 (T44)	18:18			19:50	32	08:17 (T77)	20:22			20:52	37	07:16 (T42)	21:08	21	07:14 (T42)
27	07:48		08:09 (T44)	07:10			07:25		07:44 (T77)	06:36			06:04		06:40 (T42)	06:00		06:52 (T42)
	17:41	15	08:24 (T44)	18:19			19:51	34	08:18 (T77)	20:23			20:53	36	07:16 (T42)	21:09	22	07:14 (T42)
28	07:47		08:08 (T44)	07:09			07:23		07:43 (T77)	06:34			06:04		06:40 (T42)	06:01		06:52 (T42)
	17:43	18	08:26 (T44)	18:21			19:52	35	08:18 (T77)	20:24			20:54	36	07:16 (T42)	21:09	22	07:14 (T42)
29	07:46		08:07 (T44)				07:21		07:42 (T77)	06:33			06:03		06:41 (T42)	06:01		06:52 (T42)
	17:44	20	08:27 (T44)				19:53	35	08:17 (T77)	20:25			20:54	35	07:16 (T42)	21:09	24	07:16 (T42)
30	07:45		08:06 (T44)				07:20		07:41 (T77)	06:32			06:03		06:41 (T42)	06:02		06:52 (T42)
	17:45	21	08:27 (T44)				19:54	36	08:17 (T77)	20:26			20:55	34	07:15 (T42)	21:09	24	07:16 (T42)
31	07:44		08:05 (T44)				07:18		07:42 (T77)				06:02		06:42 (T42)			
	17:46	23	08:28 (T44)				19:55	35	08:17 (T77)				20:56	33	07:15 (T42)			
Potential sun hours	297			297			370			399			448			453		
Total, worst case		127			377			335			307			1048			730	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.54			0.54			0.63			0.63			0.70			0.70	
Total reduction		0.16			0.21			0.27			0.32			0.39			0.44	
Total, real		21			80			91			98			411			321	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 228 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6374)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:52 (T42)	06:26		06:49 (T42)	06:57		07:49 (T77)	07:28			07:02		07:32 (T44)	07:37	
	21:09	25	07:17 (T42)	20:50	37	07:26 (T42)	20:07	12	08:01 (T77)	19:15			17:28	26	07:58 (T44)	17:04	
2	06:03		06:52 (T42)	06:27		06:49 (T42)	06:58		07:46 (T77)	07:29			07:03		07:32 (T44)	07:38	
	21:08	25	07:17 (T42)	20:49	36	07:25 (T42)	20:06	18	08:04 (T77)	19:13			17:27	27	07:59 (T44)	17:03	
3	06:03		06:52 (T42)	06:28		06:50 (T42)	06:59		07:43 (T77)	07:30			07:04		07:31 (T44)	07:39	
	21:08	26	07:18 (T42)	20:48	35	07:25 (T42)	20:04	22	08:05 (T77)	19:11			17:26	29	08:00 (T44)	17:03	
4	06:04		06:51 (T42)	06:29		06:51 (T42)	07:00		07:41 (T77)	07:31			07:06		07:31 (T44)	07:40	
	21:08	27	07:18 (T42)	20:47	33	07:24 (T42)	20:02	26	08:07 (T77)	19:10			17:24	29	08:00 (T44)	17:03	
5	06:04		06:51 (T42)	06:30		06:52 (T42)	07:01		07:40 (T77)	07:32			07:07		07:30 (T44)	07:41	
	21:08	28	07:19 (T42)	20:46	32	07:24 (T42)	20:01	28	08:08 (T77)	19:08			17:23	30	08:00 (T44)	17:03	
6	06:05		06:51 (T42)	06:31		06:53 (T42)	07:02		07:38 (T77)	07:33			07:08		07:31 (T44)	07:42	
	21:08	28	07:19 (T42)	20:44	30	07:23 (T42)	19:57	31	08:09 (T77)	19:06			17:22	29	08:00 (T44)	17:03	
7	06:06		06:51 (T42)	06:32		06:54 (T42)	07:03		07:37 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	29	07:20 (T42)	20:43	28	07:22 (T42)	19:56	32	08:09 (T77)	19:05			17:21	29	08:00 (T44)	17:03	
8	06:06		06:51 (T42)	06:33		06:55 (T42)	07:04		07:36 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	30	07:21 (T42)	20:42	26	07:21 (T42)	19:54	33	08:09 (T77)	19:03			17:20	28	08:00 (T44)	17:03	
9	06:07		06:50 (T42)	06:34		06:56 (T42)	07:05		07:36 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	31	07:21 (T42)	20:41	23	07:19 (T42)	19:52	34	08:10 (T77)	19:02			17:19	26	08:00 (T44)	17:03	
10	06:08		06:50 (T42)	06:35		06:57 (T42)	07:06		07:35 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	32	07:22 (T42)	20:40	20	07:17 (T42)	19:51	35	08:10 (T77)	19:00			17:18	25	08:00 (T44)	17:03	
11	06:08		06:50 (T42)	06:36		06:59 (T42)	07:07		07:34 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	33	07:23 (T42)	20:38	16	07:15 (T42)	19:49	36	08:10 (T77)	18:58			17:17	23	07:59 (T44)	17:03	
12	06:09		06:49 (T42)	06:37		07:03 (T42)	07:08		07:33 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	33	07:22 (T42)	20:37	8	07:11 (T42)	19:47	35	08:08 (T77)	18:57			17:16	21	07:58 (T44)	17:03	
13	06:10		06:49 (T42)	06:38			07:09		07:33 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	34	07:23 (T42)	20:36			19:46	35	08:08 (T77)	18:55			17:15	19	07:58 (T44)	17:03	
14	06:10		06:49 (T42)	06:39			07:10		07:32 (T77)	07:41			07:18		07:40 (T44)	07:49	
	21:05	35	07:24 (T42)	20:34			19:44	36	08:08 (T77)	18:54			17:14	17	07:57 (T44)	17:03	
15	06:11		06:49 (T42)	06:40			07:11		07:32 (T77)	07:43			07:19		07:41 (T44)	07:50	
	21:04	36	07:25 (T42)	20:33			19:42	35	08:07 (T77)	18:52			17:13	15	07:56 (T44)	17:03	
16	06:12		06:48 (T42)	06:41			07:12		07:33 (T77)	07:44			07:20		07:43 (T44)	07:50	
	21:03	36	07:24 (T42)	20:32			19:40	33	08:06 (T77)	18:50			17:12	13	07:56 (T44)	17:04	
17	06:13		06:49 (T42)	06:42			07:13		07:33 (T77)	07:45			07:21		07:44 (T44)	07:51	
	21:03	36	07:25 (T42)	20:30			19:39	32	08:05 (T77)	18:49			17:12	10	07:54 (T44)	17:04	
18	06:14		06:49 (T42)	06:43			07:14		07:34 (T77)	07:46			07:22		07:45 (T44)	07:52	
	21:02	37	07:26 (T42)	20:29			19:37	30	08:04 (T77)	18:47			17:11	7	07:52 (T44)	17:04	
19	06:14		06:49 (T42)	06:44			07:15		07:35 (T77)	07:47			07:24			07:52	
	21:02	37	07:26 (T42)	20:27			19:35	28	08:03 (T77)	18:46			17:10			17:05	
20	06:15		06:49 (T42)	06:45			07:16		07:36 (T77)	07:48			07:25			07:53	
	21:01	38	07:27 (T42)	20:26			19:34	25	08:01 (T77)	18:44			17:09			17:05	
21	06:16		06:48 (T42)	06:46			07:17		07:37 (T77)	07:49			07:26			07:53	
	21:00	38	07:26 (T42)	20:24			19:32	22	07:59 (T77)	18:43			17:09			17:06	
22	06:17		06:48 (T42)	06:47			07:18		07:38 (T77)	07:50			07:27			07:54	
	20:59	38	07:26 (T42)	20:23			19:30	19	07:57 (T77)	18:42			17:08			17:06	
23	06:18		06:48 (T42)	06:48			07:19		07:41 (T77)	07:52			07:28			07:54	
	20:59	39	07:27 (T42)	20:21			19:28	12	07:53 (T77)	18:40			17:07			17:07	
24	06:19		06:48 (T42)	06:49			07:20			07:53			07:29			07:55	
	20:58	39	07:27 (T42)	20:20			19:27			18:39			17:07			17:07	
25	06:20		06:48 (T42)	06:50			07:21			07:54			07:30			07:55	
	20:57	39	07:27 (T42)	20:18			19:25			18:37			17:06			17:08	
26	06:21		06:48 (T42)	06:51			07:22			07:55		08:43 (T44)	07:32			07:56	
	20:56	39	07:27 (T42)	20:17			19:23			18:36	6	08:49 (T44)	17:06			17:08	
27	06:22		06:48 (T42)	06:52			07:23			07:56		08:39 (T44)	07:33			07:56	
	20:55	39	07:27 (T42)	20:15			19:22			18:35	13	08:52 (T44)	17:05			17:09	
28	06:23		06:49 (T42)	06:53			07:24			07:57		08:36 (T44)	07:34			07:56	
	20:54	39	07:28 (T42)	20:14			19:20			18:33	18	08:54 (T44)	17:05			17:10	
29	06:23		06:48 (T42)	06:54			07:25			07:58		08:35 (T44)	07:35			07:57	
	20:53	38	07:26 (T42)	20:12			19:18			18:32	21	08:56 (T44)	17:04			17:10	
30	06:24		06:48 (T42)	06:55			07:27			08:00		08:34 (T44)	07:36			07:57	
	20:52	38	07:26 (T42)	20:10			19:16			18:31	23	08:57 (T44)	17:04			17:11	
31	06:25		06:48 (T42)	06:56						08:01		08:33 (T44)				07:57	
	20:51	38	07:26 (T42)	20:09						18:29	25	08:58 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1060			324			649			106			403			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.70			0.63			0.54			0.54			
Total reduction		0.45			0.42			0.36			0.25			0.16			
Total, real		481			136			235			27			64			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 232 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6378)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:57	07:43		07:07	07:37 (T58)	07:16		06:30	07:00 (T54)	06:02	18:54 (T56)
	17:13	17:48		18:22	17 07:54 (T58)	19:56		20:27	121 19:37 (T56)	20:57	23 19:17 (T56)
2	07:57	07:42		07:06	07:38 (T58)	07:15		06:29	07:01 (T54)	06:01	18:56 (T56)
	17:14	17:49		18:23	14 07:52 (T58)	19:57		20:28	120 19:37 (T56)	20:57	21 19:17 (T56)
3	07:57	07:41		07:04	07:41 (T58)	07:13		06:28	07:03 (T54)	06:01	18:58 (T56)
	17:15	17:50		18:24	7 07:48 (T58)	19:58		20:29	116 19:37 (T56)	20:58	17 19:15 (T56)
4	07:57	07:40		07:02		07:11		06:27	07:03 (T54)	06:00	19:00 (T56)
	17:16	17:51		18:25		19:59		20:30	115 19:36 (T56)	20:59	13 19:13 (T56)
5	07:57	07:39		07:01		07:10		06:25	07:06 (T54)	06:00	19:03 (T56)
	17:17	17:53		18:26		20:00		20:31	111 19:36 (T56)	21:00	8 19:11 (T56)
6	07:57	07:38		06:59		07:08	19:04 (T56)	06:24	07:15 (T55)	06:00	
	17:18	17:54		18:28		20:00	11 19:15 (T56)	20:32	100 19:36 (T56)	21:00	
7	07:57	07:37		06:58		07:06	18:57 (T56)	06:23	07:16 (T55)	05:59	
	17:19	17:55		18:29		20:01	23 19:20 (T56)	20:33	98 19:36 (T56)	21:01	
8	07:57	07:36		07:56		07:05	07:33 (T55)	06:22	07:17 (T55)	05:59	
	17:20	17:56		19:30		20:02	44 19:24 (T56)	20:34	94 19:35 (T56)	21:02	
9	07:57	07:35		07:55		07:03	07:28 (T55)	06:21	07:19 (T55)	05:59	
	17:21	17:58		19:31		20:03	57 19:26 (T56)	20:35	91 19:35 (T56)	21:02	
10	07:57	07:34		07:53		07:01	07:25 (T55)	06:19	07:20 (T55)	05:59	
	17:22	17:59		19:32		20:05	67 19:28 (T56)	20:36	87 19:35 (T56)	21:03	
11	07:56	07:32		07:51		07:00	07:23 (T55)	06:18	07:22 (T55)	05:59	
	17:23	18:00		19:33		20:06	75 19:30 (T56)	20:37	82 19:34 (T56)	21:03	
12	07:56	07:31		07:50		06:58	07:21 (T55)	06:17	07:24 (T55)	05:59	
	17:24	18:01		19:34		20:07	81 19:31 (T56)	20:38	77 19:34 (T56)	21:04	
13	07:56	07:30		07:48		06:57	07:20 (T55)	06:16	07:27 (T55)	05:58	
	17:25	18:03		19:35		20:08	86 19:32 (T56)	20:39	70 19:33 (T56)	21:04	
14	07:56	07:29		07:46		06:55	07:18 (T55)	06:15	18:36 (T56)	05:58	
	17:26	18:04		19:37		20:09	91 19:33 (T56)	20:40	57 19:33 (T56)	21:05	
15	07:55	07:27		07:45		06:54	07:13 (T54)	06:14	18:37 (T56)	05:58	
	17:27	18:05		19:38		20:10	99 19:34 (T56)	20:41	55 19:32 (T56)	21:05	
16	07:55	07:26	07:46 (T58)	07:43		06:52	07:11 (T54)	06:13	18:37 (T56)	05:58	
	17:28	18:06	6 07:52 (T58)	19:39		20:11	104 19:35 (T56)	20:42	54 19:31 (T56)	21:06	
17	07:54	07:25	07:44 (T58)	07:41		06:50	07:10 (T54)	06:12	18:38 (T56)	05:58	
	17:29	18:08	10 07:54 (T58)	19:40		20:12	107 19:36 (T56)	20:43	53 19:31 (T56)	21:06	
18	07:54	07:23	07:43 (T58)	07:40		06:49	07:08 (T54)	06:11	18:39 (T56)	05:59	
	17:31	18:09	13 07:56 (T58)	19:41		20:13	111 19:36 (T56)	20:44	51 19:30 (T56)	21:06	
19	07:53	07:22	07:42 (T58)	07:38		06:47	07:07 (T54)	06:10	18:39 (T56)	05:59	
	17:32	18:10	15 07:57 (T58)	19:42		20:14	114 19:37 (T56)	20:45	50 19:29 (T56)	21:07	
20	07:53	07:20	07:40 (T58)	07:36		06:46	07:05 (T54)	06:10	18:40 (T56)	05:59	
	17:33	18:11	17 07:57 (T58)	19:43		20:15	117 19:37 (T56)	20:46	48 19:28 (T56)	21:07	
21	07:52	07:19	07:39 (T58)	07:35		06:44	07:04 (T54)	06:09	18:41 (T56)	05:59	
	17:34	18:12	19 07:58 (T58)	19:44		20:16	120 19:38 (T56)	20:47	47 19:28 (T56)	21:07	
22	07:51	07:18	07:37 (T58)	07:33		06:43	07:02 (T54)	06:08	18:42 (T56)	05:59	
	17:35	18:14	21 07:58 (T58)	19:45		20:17	121 19:37 (T56)	20:48	45 19:27 (T56)	21:08	
23	07:51	07:16	07:36 (T58)	07:31		06:41	07:01 (T54)	06:07	18:43 (T56)	05:59	
	17:37	18:15	22 07:58 (T58)	19:46		20:18	123 19:38 (T56)	20:49	43 19:26 (T56)	21:08	
24	07:50	07:15	07:34 (T58)	07:30		06:40	06:59 (T54)	06:06	18:45 (T56)	06:00	
	17:38	18:16	24 07:58 (T58)	19:47		20:19	125 19:37 (T56)	20:50	41 19:26 (T56)	21:08	
25	07:49	07:13	07:34 (T58)	07:28		06:39	06:59 (T54)	06:06	18:45 (T56)	06:00	
	17:39	18:17	24 07:58 (T58)	19:48		20:21	126 19:38 (T56)	20:51	40 19:25 (T56)	21:08	
26	07:49	07:12	07:34 (T58)	07:26		06:37	06:59 (T54)	06:05	18:46 (T56)	06:00	
	17:40	18:18	23 07:57 (T58)	19:50		20:22	126 19:38 (T56)	20:52	37 19:23 (T56)	21:08	
27	07:48	07:10	07:35 (T58)	07:25		06:36	06:58 (T54)	06:04	18:48 (T56)	06:01	
	17:41	18:19	22 07:57 (T58)	19:51		20:23	127 19:38 (T56)	20:53	35 19:23 (T56)	21:08	
28	07:47	07:09	07:35 (T58)	07:23		06:34	06:59 (T54)	06:04	18:48 (T56)	06:01	
	17:43	18:21	20 07:55 (T58)	19:52		20:24	125 19:38 (T56)	20:53	34 19:22 (T56)	21:08	
29	07:46			07:21		06:33	06:59 (T54)	06:03	18:50 (T56)	06:01	
	17:44			19:53		20:25	125 19:38 (T56)	20:54	31 19:21 (T56)	21:08	
30	07:45			07:20		06:32	06:59 (T54)	06:03	18:51 (T56)	06:02	
	17:45			19:54		20:26	123 19:37 (T56)	20:55	29 19:20 (T56)	21:08	
31	07:44			07:18				06:02	18:53 (T56)		
	17:46			19:55				20:56	26 19:19 (T56)		
Potential sun hours	297	297		370		399		448		452	
Total, worst case			236		38		2428		2058		82
Sun reduction			0.40		0.44		0.52		0.57		0.64
Oper. time red.			1.00		1.00		1.00		1.00		1.00
Wind dir. red.			0.56		0.56		0.63		0.61		0.59
Total reduction			0.23		0.25		0.33		0.35		0.38
Total, real			53		9		790		714		31

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 232 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6378)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		06:27		07:33 (T55)	06:57		07:22 (T55)	07:28			07:02	07:37
	21:08		20:50	80	19:44 (T56)	20:07	75	19:29 (T56)	19:15			17:28	17:04
2	06:03		06:27		07:31 (T55)	06:58		07:24 (T55)	07:29			07:03	07:38
	21:08		20:49	84	19:44 (T56)	20:06	67	19:27 (T56)	19:13			17:27	17:04
3	06:03		06:28		07:29 (T55)	06:59		07:26 (T55)	07:30			07:04	07:39
	21:08		20:48	89	19:45 (T56)	20:04	57	19:24 (T56)	19:11			17:26	17:03
4	06:04		06:29		07:28 (T55)	07:00		07:30 (T55)	07:31			07:05	07:40
	21:08		20:47	92	19:45 (T56)	20:02	44	19:21 (T56)	19:10			17:25	17:03
5	06:05		06:30		07:27 (T55)	07:01		18:54 (T56)	07:32			07:07	07:41
	21:08		20:46	95	19:45 (T56)	20:01	23	19:17 (T56)	19:08			17:23	17:03
6	06:05		06:31		07:25 (T55)	07:02		18:59 (T56)	07:33			07:08	07:42
	21:07		20:44	99	19:46 (T56)	19:57	13	19:12 (T56)	19:07			17:22	17:03
7	06:06		19:12 (T56)	06:32		07:18 (T54)	07:03			07:34			07:09	07:43
	21:07	2	19:14 (T56)	20:43	107	19:46 (T56)	19:56			19:05			17:21	17:03
8	06:06		19:08 (T56)	06:33		07:15 (T54)	07:04			07:35			07:10	07:44
	21:07	11	19:19 (T56)	20:42	112	19:46 (T56)	19:54			19:03			17:20	17:03
9	06:07		19:05 (T56)	06:34		07:12 (T54)	07:05			07:36			07:11	07:45
	21:07	16	19:21 (T56)	20:41	116	19:46 (T56)	19:52			19:02			17:19	17:03
10	06:08		19:04 (T56)	06:35		07:11 (T54)	07:06			07:37			07:13	07:45
	21:06	19	19:23 (T56)	20:39	118	19:46 (T56)	19:51			19:00			17:18	17:03
11	06:08		19:03 (T56)	06:36		07:10 (T54)	07:07			07:38		08:13 (T58)	07:14	07:46
	21:06	22	19:25 (T56)	20:38	120	19:46 (T56)	19:49			18:58	11	08:24 (T58)	17:17	17:03
12	06:09		19:02 (T56)	06:37		07:09 (T54)	07:08			07:39		08:11 (T58)	07:15	07:47
	21:05	25	19:27 (T56)	20:37	121	19:46 (T56)	19:47			18:57	15	08:26 (T58)	17:16	17:03
13	06:10		19:00 (T56)	06:38		07:08 (T54)	07:09			07:40		08:09 (T58)	07:16	07:48
	21:05	28	19:28 (T56)	20:36	124	19:46 (T56)	19:45			18:55	18	08:27 (T58)	17:15	17:03
14	06:11		18:59 (T56)	06:39		07:07 (T54)	07:10			07:41		08:07 (T58)	07:17	07:49
	21:04	30	19:29 (T56)	20:34	125	19:46 (T56)	19:44			18:54	21	08:28 (T58)	17:14	17:03
15	06:11		18:58 (T56)	06:40		07:06 (T54)	07:11			07:42		08:07 (T58)	07:19	07:49
	21:04	33	19:31 (T56)	20:33	126	19:46 (T56)	19:42			18:52	22	08:29 (T58)	17:13	17:04
16	06:12		18:58 (T56)	06:41		07:06 (T54)	07:12			07:44		08:06 (T58)	07:20	07:50
	21:03	34	19:32 (T56)	20:31	125	19:45 (T56)	19:40			18:51	24	08:30 (T58)	17:12	17:04
17	06:13		18:56 (T56)	06:42		07:06 (T54)	07:13			07:45		08:06 (T58)	07:21	07:51
	21:03	36	19:32 (T56)	20:30	125	19:45 (T56)	19:39			18:49	24	08:30 (T58)	17:12	17:04
18	06:14		18:55 (T56)	06:43		07:05 (T54)	07:14			07:46		08:06 (T58)	07:22	07:51
	21:02	39	19:34 (T56)	20:29	126	19:45 (T56)	19:37			18:48	23	08:29 (T58)	17:11	17:05
19	06:15		18:54 (T56)	06:44		07:06 (T54)	07:15			07:47		08:07 (T58)	07:23	07:52
	21:01	41	19:35 (T56)	20:27	124	19:44 (T56)	19:35			18:46	22	08:29 (T58)	17:10	17:05
20	06:15		18:54 (T56)	06:45		07:06 (T54)	07:16			07:48		08:08 (T58)	07:25	07:53
	21:01	42	19:36 (T56)	20:26	123	19:43 (T56)	19:34			18:45	20	08:28 (T58)	17:09	17:05
21	06:16		18:53 (T56)	06:46		07:07 (T54)	07:17			07:49		08:10 (T58)	07:26	07:53
	21:00	44	19:37 (T56)	20:24	121	19:42 (T56)	19:32			18:43	19	08:29 (T58)	17:09	17:06
22	06:17		18:51 (T56)	06:47		07:08 (T54)	07:18			07:50		08:11 (T58)	07:27	07:54
	20:59	46	19:37 (T56)	20:23	119	19:41 (T56)	19:30			18:42	17	08:28 (T58)	17:08	17:06
23	06:18		18:51 (T56)	06:48		07:09 (T54)	07:19			07:51		08:12 (T58)	07:28	07:54
	20:58	47	19:38 (T56)	20:21	116	19:40 (T56)	19:28			18:40	15	08:27 (T58)	17:07	17:07
24	06:19		18:50 (T56)	06:49		07:10 (T54)	07:20			07:53		08:13 (T58)	07:29	07:55
	20:58	49	19:39 (T56)	20:20	113	19:40 (T56)	19:27			18:39	12	08:25 (T58)	17:07	17:07
25	06:20		18:49 (T56)	06:50		07:11 (T54)	07:21			07:54		08:14 (T58)	07:30	07:55
	20:57	51	19:40 (T56)	20:18	111	19:39 (T56)	19:25			18:37	9	08:23 (T58)	17:06	17:08
26	06:21		18:49 (T56)	06:51		07:12 (T54)	07:22			07:55		08:16 (T58)	07:31	07:55
	20:56	52	19:41 (T56)	20:17	107	19:38 (T56)	19:23			18:36	5	08:21 (T58)	17:06	17:09
27	06:22		18:48 (T56)	06:52		07:13 (T54)	07:23			07:56			07:33	07:56
	20:55	54	19:42 (T56)	20:15	104	19:37 (T56)	19:22			18:35			17:05	17:09
28	06:23		18:48 (T56)	06:53		07:14 (T54)	07:24			07:57			07:34	07:56
	20:54	54	19:42 (T56)	20:14	99	19:35 (T56)	19:20			18:33			17:05	17:10
29	06:24		18:47 (T56)	06:54		07:19 (T55)	07:25			07:58			07:35	07:56
	20:53	56	19:43 (T56)	20:12	91	19:34 (T56)	19:18			18:32			17:05	17:11
30	06:25		07:40 (T55)	06:55		07:20 (T55)	07:27			08:00			07:36	07:57
	20:52	65	19:44 (T56)	20:10	85	19:32 (T56)	19:17			18:31			17:04	17:11
31	06:26		07:35 (T55)	06:56		07:21 (T55)				08:01				07:57
	20:51	73	19:43 (T56)	20:09	81	19:31 (T56)				18:29				17:12
Potential sun hours	459			428			375			345			297	287
Total, worst case		969			3378			279			277			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.59			0.62			0.62			0.56			
Total reduction		0.39			0.38			0.36			0.27			
Total, real		380			1287			101			75			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 255 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6398)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:44	07:07	07:16		06:30	06:56 (T39)	06:02	06:57 (T39)	06:02	07:07 (T39)	06:26	07:01 (T39)	06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56		20:27 46	07:42 (T39)	20:57 44	07:41 (T39)	21:09 36	07:43 (T39)	20:50 54	07:55 (T39)	20:07	19:15	17:28	17:04
2	07:58	07:43	07:06	07:15		06:29	06:55 (T39)	06:01	06:58 (T39)	06:03	07:06 (T39)	06:27	07:01 (T39)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28 48	07:43 (T39)	20:58 43	07:41 (T39)	21:09 37	07:43 (T39)	20:49 54	07:55 (T39)	20:06	19:13	17:27	17:04
3	07:58	07:42	07:04	07:13		06:28	06:55 (T39)	06:01	06:58 (T39)	06:03	07:07 (T39)	06:28	07:02 (T39)	06:59	07:30	07:05	07:39
	17:15	17:50	18:24	19:58		20:29 49	07:44 (T39)	20:59 42	07:40 (T39)	21:08 37	07:44 (T39)	20:48 53	07:55 (T39)	20:04	19:12	17:26	17:03
4	07:58	07:41	07:03	07:11		06:26	06:53 (T39)	06:00	06:58 (T39)	06:04	07:06 (T39)	06:29	07:02 (T39)	07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59		20:30 51	07:44 (T39)	20:59 42	07:40 (T39)	21:08 38	07:44 (T39)	20:47 53	07:55 (T39)	20:02	19:10	17:24	17:03
5	07:58	07:40	07:01	07:10		06:25	06:53 (T39)	06:00	06:59 (T39)	06:04	07:06 (T39)	06:30	07:02 (T39)	07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00		20:31 51	07:44 (T39)	21:00 41	07:40 (T39)	21:08 39	07:45 (T39)	20:46 53	07:55 (T39)	20:01	19:08	17:23	17:03
6	07:58	07:38	06:59	07:08		06:24	06:53 (T39)	06:00	06:59 (T39)	06:05	07:05 (T39)	06:31	07:02 (T39)	07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00		20:32 52	07:45 (T39)	21:01 40	07:39 (T39)	21:08 40	07:45 (T39)	20:45 52	07:54 (T39)	19:57	19:07	17:22	17:03
7	07:58	07:37	06:58	07:06		06:23	06:52 (T39)	05:59	07:00 (T39)	06:06	07:06 (T39)	06:32	07:03 (T39)	07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:02		20:34 53	07:45 (T39)	21:01 39	07:39 (T39)	21:08 40	07:46 (T39)	20:43 51	07:54 (T39)	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05		06:22	06:52 (T39)	05:59	07:01 (T39)	06:06	07:06 (T39)	06:33	07:03 (T39)	07:04	07:35	07:11	07:44
	17:20	17:56	19:30	20:03		20:35 53	07:45 (T39)	21:02 38	07:39 (T39)	21:07 41	07:47 (T39)	20:42 51	07:54 (T39)	19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03		06:20	06:52 (T39)	05:59	07:01 (T39)	06:07	07:05 (T39)	06:34	07:03 (T39)	07:05	07:36	07:12	07:45
	17:21	17:58	19:31	20:04		20:36 53	07:45 (T39)	21:03 38	07:39 (T39)	21:07 42	07:47 (T39)	20:41 50	07:53 (T39)	19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01		06:19	06:52 (T39)	05:59	07:02 (T39)	06:08	07:05 (T39)	06:35	07:04 (T39)	07:06	07:37	07:13	07:46
	17:22	17:59	19:32	20:05		20:37 54	07:46 (T39)	21:03 37	07:39 (T39)	21:07 43	07:48 (T39)	20:40 49	07:53 (T39)	19:51	19:00	17:18	17:03
11	07:57	07:33	07:51	07:00		06:18	06:52 (T39)	05:58	07:03 (T39)	06:08	07:05 (T39)	06:36	07:04 (T39)	07:07	07:38	07:14	07:47
	17:23	18:00	19:33	20:06		20:38 54	07:46 (T39)	21:04 36	07:39 (T39)	21:06 44	07:49 (T39)	20:38 48	07:52 (T39)	19:49	18:58	17:17	17:03
12	07:57	07:31	07:50	06:58		06:17	06:52 (T39)	05:58	07:03 (T39)	06:09	07:04 (T39)	06:37	07:05 (T39)	07:08	07:39	07:15	07:48
	17:24	18:01	19:34	20:07		20:39 54	07:46 (T39)	21:04 36	07:39 (T39)	21:06 45	07:49 (T39)	20:37 46	07:51 (T39)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57		06:16	06:52 (T39)	05:58	07:03 (T39)	06:10	07:04 (T39)	06:38	07:06 (T39)	07:09	07:40	07:17	07:48
	17:25	18:03	19:36	20:08		20:40 54	07:46 (T39)	21:05 35	07:38 (T39)	21:05 46	07:50 (T39)	20:36 44	07:50 (T39)	19:46	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15	06:51 (T39)	05:58	07:03 (T39)	06:10	07:04 (T39)	06:39	07:07 (T39)	07:10	07:42	07:18	07:49
	17:26	18:04	19:37	20:09		20:41 55	07:46 (T39)	21:05 35	07:38 (T39)	21:05 47	07:51 (T39)	20:34 42	07:49 (T39)	19:44	18:54	17:14	17:03
15	07:56	07:28	07:45	06:54		06:14	06:51 (T39)	05:58	07:04 (T39)	06:11	07:04 (T39)	06:40	07:08 (T39)	07:11	07:43	07:19	07:50
	17:27	18:05	19:38	20:10		20:42 54	07:45 (T39)	21:06 34	07:38 (T39)	21:04 47	07:51 (T39)	20:33 40	07:48 (T39)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13	06:51 (T39)	05:58	07:05 (T39)	06:12	07:03 (T39)	06:41	07:09 (T39)	07:12	07:44	07:20	07:51
	17:28	18:06	19:39	20:11		20:43 54	07:45 (T39)	21:06 34	07:39 (T39)	21:04 48	07:51 (T39)	20:32 37	07:46 (T39)	19:41	18:51	17:12	17:04
17	07:55	07:25	07:41	06:50		06:12	06:51 (T39)	05:58	07:05 (T39)	06:13	07:03 (T39)	06:42	07:10 (T39)	07:13	07:45	07:21	07:51
	17:29	18:08	19:40	20:12		20:44 54	07:45 (T39)	21:07 34	07:39 (T39)	21:03 49	07:52 (T39)	20:30 35	07:45 (T39)	19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49		06:11	06:51 (T39)	05:58	07:06 (T39)	06:14	07:03 (T39)	06:43	07:11 (T39)	07:14	07:46	07:23	07:52
	17:30	18:09	19:41	20:13		20:45 54	07:45 (T39)	21:07 33	07:39 (T39)	21:02 49	07:52 (T39)	20:29 32	07:43 (T39)	19:37	18:48	17:11	17:04
19	07:54	07:22	07:38	06:47		06:10	06:51 (T39)	05:58	07:06 (T39)	06:14	07:03 (T39)	06:44	07:13 (T39)	07:15	07:47	07:24	07:52
	17:32	18:10	19:42	20:14		20:46 53	07:44 (T39)	21:07 33	07:39 (T39)	21:02 50	07:53 (T39)	20:27 27	07:40 (T39)	19:35	18:46	17:10	17:05
20	07:53	07:21	07:36	06:46		06:09	06:51 (T39)	05:59	07:06 (T39)	06:15	07:03 (T39)	06:45	07:15 (T39)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15		20:47 53	07:44 (T39)	21:08 33	07:39 (T39)	21:01 51	07:54 (T39)	20:26 21	07:36 (T39)	19:34	18:45	17:09	17:05
21	07:52	07:19	07:35	06:44		06:09	06:53 (T39)	05:59	07:06 (T39)	06:16	07:02 (T39)	06:46	07:19 (T39)	07:17	07:49	07:26	07:54
	17:34	18:12	19:44	20:16		20:48 51	07:44 (T39)	21:08 33	07:39 (T39)	21:00 51	07:53 (T39)	20:24 13	07:32 (T39)	19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43	07:13 (T39)	06:08	06:53 (T39)	05:59	07:06 (T39)	06:17	07:02 (T39)	06:47		07:18	07:51	07:27	07:54
	17:35	18:14	19:45	20:18 15	07:28 (T39)	20:49 51	07:44 (T39)	21:08 33	07:39 (T39)	21:00 52	07:54 (T39)	20:23		19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41	07:10 (T39)	06:07	06:53 (T39)	05:59	07:07 (T39)	06:18	07:02 (T39)	06:48		07:19	07:52	07:28	07:55
	17:36	18:15	19:46	20:19 22	07:32 (T39)	20:49 50	07:43 (T39)	21:08 33	07:40 (T39)	20:59 52	07:54 (T39)	20:21		19:29	18:40	17:07	17:07
24	07:50	07:15	07:30	06:40	07:06 (T39)	06:06	06:53 (T39)	05:59	07:07 (T39)	06:19	07:02 (T39)	06:49		07:20	07:53	07:30	07:55
	17:38	18:16	19:48	20:20 28	07:34 (T39)	20:50 50	07:43 (T39)	21:08 33	07:40 (T39)	20:58 53	07:55 (T39)	20:20		19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:39	07:04 (T39)	06:06	06:54 (T39)	06:00	07:06 (T39)	06:20	07:02 (T39)	06:50		07:21	07:54	07:31	07:55
	17:39	18:17	19:49	20:21 32	07:36 (T39)	20:51 49	07:43 (T39)	21:09 34	07:40 (T39)	20:57 53	07:55 (T39)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	07:03 (T39)	06:05	06:54 (T39)	06:00	07:07 (T39)	06:21	07:02 (T39)	06:51		07:23	07:55	07:32	07:56
	17:40	18:18	19:50	20:22 35	07:38 (T39)	20:52 49	07:43 (T39)	21:09 34	07:41 (T39)	20:56 53	07:55 (T39)	20:17		19:23	18:36	17:06	17:08
27	07:48	07:10	07:25	06:36	07:01 (T39)	06:04	06:55 (T39)	06:00	07:07 (T39)	06:22	07:02 (T39)	06:52		07:24	07:56	07:33	07:56
	17:41	18:20	19:51	20:23 38	07:39 (T39)	20:53 48	07:43 (T39)	21:09 34	07:41 (T39)	20:55 54	07:56 (T39)	20:15		19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:34	07:00 (T39)	06:04	06:55 (T39)	06:01	07:06 (T39)	06:23	07:02 (T39)	06:53		07:25	07:57	07:34	07:57
	17:43	18:21	19:52	20:24 40	07:40 (T39)	20:54 47	07:42 (T39)	21:09 35	07:41 (T39)	20:54 54	07:56 (T39)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:59 (T39)	06:03	06:56 (T39)	06:01	07:07 (T39)	06:24	07:02 (T39)	06:54		07:26	07:59	07:35	07:57
	17:44		19:53	20:25 42	07:41 (T39)	20:55 46	07:42 (T39)	21:09 35	07:42 (T39)	20:53 54	07:56 (T39)	20:12		19:18	18:32	17:04	17:10
30	07:46		07:20	06:32	06:57 (T39)	06:03	06:56 (T39)	06:02	07:06 (T39)	06:24	07:01 (T39)	06:55		07:27	08:00	07:36	07:57
	17:45		19:54	20:26 45	07:42 (T39)	20:56 46	07:42 (T39)	21:09 36	07:42 (T39)	20:52 54	07:55 (T39)	20:11		19:17	18:31	17:04	17:11
31	07:45		07:18			06:02	06:57 (T39)			06:25	07:01 (T39)	06:56			08:01		07:57
	17:46		19:55			20:56 45	07:42 (T39)			20:51 54	07:55 (T39)	20:09			18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				297		1581		1087		1453		905					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.68		0.68		0.68		0.68		0.68					
Total reduction				0.35		0.39		0.44		0.45		0.42					
Total, real				105		615		475		654		377					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 275 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6413)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:48 (T38)	07:44		08:59 (T38)	07:07		07:27 (T37)	07:16			06:30			06:02		06:23 (T87)
	17:13	69	09:57 (T38)	17:48	65	10:04 (T38)	18:22	26	07:53 (T37)	19:56			20:27			20:57	43	07:06 (T34)
2	07:58		08:48 (T38)	07:43		09:00 (T38)	07:06		07:25 (T37)	07:15			06:29			06:01		06:23 (T87)
	17:14	69	09:57 (T38)	17:49	63	10:03 (T38)	18:23	28	07:53 (T37)	19:57			20:28			20:58	44	07:07 (T34)
3	07:58		08:49 (T38)	07:42		09:01 (T38)	07:04		07:24 (T37)	07:13			06:28			06:01		06:22 (T87)
	17:15	69	09:58 (T38)	17:50	62	10:03 (T38)	18:24	30	07:54 (T37)	19:58			20:29			20:59	46	07:08 (T34)
4	07:58		08:49 (T38)	07:41		09:02 (T38)	07:03		07:22 (T37)	07:11			06:27			06:00		06:22 (T87)
	17:16	69	09:58 (T38)	17:51	60	10:02 (T38)	18:25	32	07:54 (T37)	19:59			20:30			20:59	47	07:09 (T34)
5	07:58		08:49 (T38)	07:40		09:03 (T38)	07:01		07:22 (T37)	07:10			06:25			06:00		06:22 (T87)
	17:17	70	09:59 (T38)	17:53	59	10:02 (T38)	18:27	33	07:55 (T37)	20:01			20:32			21:00	48	07:10 (T34)
6	07:58		08:50 (T38)	07:39		09:04 (T38)	07:00		07:21 (T37)	07:08			06:24			06:00		06:22 (T87)
	17:18	70	10:00 (T38)	17:54	57	10:01 (T38)	18:28	34	07:55 (T37)	20:01			20:33			21:01	49	07:11 (T34)
7	07:58		08:50 (T38)	07:37		09:05 (T38)	06:58		07:21 (T37)	07:06			06:23			05:59		06:22 (T87)
	17:19	70	10:00 (T38)	17:55	55	10:00 (T38)	18:29	33	07:54 (T37)	20:02			20:34			21:02	49	07:11 (T34)
8	07:58		08:51 (T38)	07:36		09:05 (T38)	07:56		08:21 (T37)	07:05			06:22			05:59		06:22 (T87)
	17:20	70	10:01 (T38)	17:56	53	09:58 (T38)	19:30	34	08:55 (T37)	20:03			20:35			21:02	50	07:12 (T34)
9	07:57		08:50 (T38)	07:35		09:07 (T38)	07:55		08:21 (T37)	07:03			06:21			05:59		06:22 (T87)
	17:21	71	10:01 (T38)	17:58	50	09:57 (T38)	19:31	33	08:54 (T37)	20:04			20:36			21:03	51	07:13 (T34)
10	07:57		08:51 (T38)	07:34		09:08 (T38)	07:53		08:20 (T37)	07:02			06:19			05:59		06:23 (T87)
	17:22	70	10:01 (T38)	17:59	48	09:56 (T38)	19:32	33	08:53 (T37)	20:05			20:37			21:03	51	07:14 (T34)
11	07:57		08:52 (T38)	07:33		09:10 (T38)	07:52		08:21 (T37)	07:00			06:18			05:59		06:23 (T87)
	17:23	70	10:02 (T38)	18:00	44	09:54 (T38)	19:33	32	08:53 (T37)	20:06			20:38			21:04	52	07:15 (T34)
12	07:57		08:51 (T38)	07:31		09:11 (T38)	07:50		08:21 (T37)	06:58			06:17			05:58		06:23 (T87)
	17:24	71	10:02 (T38)	18:01	40	09:51 (T38)	19:34	31	08:52 (T37)	20:07			20:39			21:04	52	07:15 (T34)
13	07:56		08:52 (T38)	07:30		09:13 (T38)	07:48		08:21 (T37)	06:57			06:16			05:58		06:23 (T87)
	17:25	71	10:03 (T38)	18:03	36	09:49 (T38)	19:36	29	08:50 (T37)	20:08			20:40			21:05	53	07:16 (T34)
14	07:56		08:53 (T38)	07:29		09:16 (T38)	07:47		08:23 (T37)	06:55			06:15			05:58		06:24 (T87)
	17:26	71	10:04 (T38)	18:04	31	09:47 (T38)	19:37	27	08:50 (T37)	20:09			20:41			21:05	52	07:16 (T34)
15	07:56		08:52 (T38)	07:28		09:18 (T38)	07:45		08:24 (T37)	06:54			06:14			05:58		06:24 (T87)
	17:27	72	10:04 (T38)	18:05	25	09:43 (T38)	19:38	24	08:48 (T37)	20:10			20:42			21:06	53	07:17 (T34)
16	07:55		08:53 (T38)	07:26		09:23 (T38)	07:43		08:25 (T37)	06:52			06:13			05:58		06:24 (T87)
	17:28	71	10:04 (T38)	18:06	16	09:39 (T38)	19:39	20	08:45 (T37)	20:11			20:43			21:06	53	07:17 (T34)
17	07:55		08:53 (T38)	07:25			07:42		08:28 (T37)	06:51			06:12			05:58		06:24 (T87)
	17:29	71	10:04 (T38)	18:08			19:40	15	08:43 (T37)	20:12			20:44			21:07	53	07:17 (T34)
18	07:54		08:54 (T38)	07:24			07:40		08:31 (T37)	06:49			06:11		06:32 (T87)	05:58		06:24 (T87)
	17:31	71	10:05 (T38)	18:09			19:41	7	08:38 (T37)	20:13			20:45	11	06:43 (T87)	21:07	54	07:18 (T34)
19	07:54		08:54 (T38)	07:22			07:38			06:47			06:10		06:31 (T87)	05:59		06:24 (T87)
	17:32	71	10:05 (T38)	18:10			19:42			20:14			20:46	14	06:45 (T87)	21:07	54	07:18 (T34)
20	07:53		08:54 (T38)	07:21			07:37			06:46			06:10		06:30 (T87)	05:59		06:24 (T87)
	17:33	71	10:05 (T38)	18:11			19:43			20:16			20:47	17	06:47 (T87)	21:08	54	07:18 (T34)
21	07:53		08:55 (T38)	07:19			07:35			06:44			06:09		06:30 (T87)	05:59		06:24 (T87)
	17:34	71	10:06 (T38)	18:12			19:44			20:17			20:48	19	06:49 (T87)	21:08	54	07:18 (T34)
22	07:52		08:55 (T38)	07:18			07:33			06:43			06:08		06:29 (T87)	05:59		06:25 (T87)
	17:35	71	10:06 (T38)	18:14			19:45			20:18			20:49	21	06:50 (T87)	21:08	54	07:19 (T34)
23	07:51		08:55 (T38)	07:16			07:31			06:42			06:07		06:28 (T87)	05:59		06:25 (T87)
	17:36	71	10:06 (T38)	18:15			19:47			20:19			20:50	22	06:50 (T87)	21:08	54	07:19 (T34)
24	07:51		08:55 (T38)	07:15			07:30			06:40			06:06		06:28 (T87)	06:00		06:25 (T87)
	17:38	70	10:05 (T38)	18:16			19:48			20:20			20:50	24	06:52 (T87)	21:09	54	07:19 (T34)
25	07:50		08:56 (T38)	07:14		07:35 (T37)	07:28			06:39			06:06		06:27 (T87)	06:00		06:25 (T87)
	17:39	70	10:06 (T38)	18:17	10	07:45 (T37)	19:49			20:21			20:51	25	06:52 (T87)	21:09	53	07:18 (T34)
26	07:49		08:57 (T38)	07:12		07:32 (T37)	07:26			06:37			06:05		06:26 (T87)	06:00		06:26 (T87)
	17:40	69	10:06 (T38)	18:18	16	07:48 (T37)	19:50			20:22			20:52	27	06:53 (T87)	21:09	53	07:19 (T34)
27	07:48		08:57 (T38)	07:11		07:30 (T37)	07:25			06:36			06:04		06:26 (T87)	06:01		06:26 (T87)
	17:41	69	10:06 (T38)	18:20	20	07:50 (T37)	19:51			20:23			20:53	29	06:55 (T34)	21:09	53	07:19 (T34)
28	07:47		08:57 (T38)	07:09		07:28 (T37)	07:23			06:34			06:04		06:25 (T87)	06:01		06:26 (T87)
	17:43	68	10:05 (T38)	18:21	23	07:51 (T37)	19:52			20:24			20:54	33	06:58 (T34)	21:09	53	07:19 (T34)
29	07:47		08:58 (T38)				07:21			06:33			06:03		06:25 (T87)	06:01		06:27 (T87)
	17:44	67	10:05 (T38)				19:53			20:25			20:55	36	07:01 (T34)	21:09	52	07:19 (T34)
30	07:46		08:58 (T38)				07:20			06:32			06:03		06:24 (T87)	06:02		06:26 (T87)
	17:45	67	10:05 (T38)				19:54			20:26			20:56	39	07:03 (T34)	21:09	53	07:19 (T34)
31	07:45		08:59 (T38)				07:18						06:02		06:24 (T87)			
	17:46	65	10:04 (T38)				19:55						20:56	41	07:05 (T34)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		2165			833			501						358			1541	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.53			0.53			0.57						0.72			0.72	
Total reduction		0.16			0.20			0.24						0.39			0.44	
Total, real		338			169			120						139			675	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 275 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6413)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		06:27 (T87)	06:26			06:58			07:28		08:01 (T37)	07:02		08:38 (T38)	07:37		08:34 (T38)
	21:09	52	07:19 (T34)	20:50			20:07			19:15	30	08:31 (T37)	17:28	48	09:26 (T38)	17:04	70	09:44 (T38)
2	06:03		06:27 (T87)	06:27			06:59			07:29		08:00 (T37)	07:04		08:36 (T38)	07:38		08:34 (T38)
	21:09	51	07:18 (T34)	20:49			20:06			19:13	31	08:31 (T37)	17:27	51	09:27 (T38)	17:04	71	09:45 (T38)
3	06:03		06:28 (T87)	06:28			07:00			07:30		07:59 (T37)	07:05		08:35 (T38)	07:39		08:34 (T38)
	21:09	51	07:19 (T34)	20:48			20:04			19:12	32	08:31 (T37)	17:26	53	09:28 (T38)	17:03	71	09:45 (T38)
4	06:04		06:27 (T87)	06:29			07:01			07:31		07:58 (T37)	07:06		08:34 (T38)	07:40		08:35 (T38)
	21:08	51	07:18 (T34)	20:47			20:03			19:10	34	08:32 (T37)	17:25	55	09:29 (T38)	17:03	70	09:45 (T38)
5	06:04		06:28 (T87)	06:30			07:02			07:32		07:58 (T37)	07:07		08:34 (T38)	07:41		08:35 (T38)
	21:08	50	07:18 (T34)	20:46			20:01			19:08	33	08:31 (T37)	17:23	57	09:31 (T38)	17:03	70	09:45 (T38)
6	06:05		06:29 (T87)	06:31			07:03			07:33		07:57 (T37)	07:08		08:33 (T38)	07:42		08:36 (T38)
	21:08	49	07:18 (T34)	20:45			19:58			19:07	34	08:31 (T37)	17:22	59	09:32 (T38)	17:03	70	09:46 (T38)
7	06:06		06:28 (T87)	06:32			07:04			07:34		07:57 (T37)	07:09		08:32 (T38)	07:43		08:37 (T38)
	21:08	49	07:17 (T34)	20:44			19:56			19:05	34	08:31 (T37)	17:21	60	09:32 (T38)	17:03	69	09:46 (T38)
8	06:06		06:29 (T87)	06:33			07:05			07:35		07:57 (T37)	07:11		08:32 (T38)	07:44		08:37 (T38)
	21:07	48	07:17 (T34)	20:42			19:54			19:03	33	08:30 (T37)	17:20	62	09:34 (T38)	17:03	69	09:46 (T38)
9	06:07		06:29 (T87)	06:34			07:06			07:36		07:57 (T37)	07:12		08:31 (T38)	07:45		08:38 (T38)
	21:07	46	07:15 (T34)	20:41			19:53			19:02	32	08:29 (T37)	17:19	63	09:34 (T38)	17:03	69	09:47 (T38)
10	06:08		06:30 (T87)	06:35			07:07			07:37		07:57 (T37)	07:13		08:30 (T38)	07:46		08:38 (T38)
	21:07	45	07:15 (T34)	20:40			19:51			19:00	31	08:28 (T37)	17:18	65	09:35 (T38)	17:03	69	09:47 (T38)
11	06:08		06:31 (T87)	06:36			07:08			07:38		07:58 (T37)	07:14		08:30 (T38)	07:47		08:38 (T38)
	21:06	43	07:14 (T34)	20:39			19:49			18:59	29	08:27 (T37)	17:17	65	09:35 (T38)	17:03	69	09:47 (T38)
12	06:09		06:31 (T87)	06:37			07:09			07:39		08:00 (T37)	07:16		08:30 (T38)	07:48		08:39 (T38)
	21:06	42	07:13 (T34)	20:37			19:47			18:57	27	08:27 (T37)	17:16	67	09:37 (T38)	17:03	68	09:47 (T38)
13	06:10		06:32 (T87)	06:38			07:10			07:41		08:01 (T37)	07:17		08:30 (T38)	07:48		08:40 (T38)
	21:05	40	07:12 (T34)	20:36			19:46			18:55	25	08:26 (T37)	17:15	67	09:37 (T38)	17:03	68	09:48 (T38)
14	06:11		06:33 (T87)	06:39			07:11			07:42		08:02 (T37)	07:18		08:29 (T38)	07:49		08:40 (T38)
	21:05	38	07:11 (T34)	20:35			19:44			18:54	22	08:24 (T37)	17:14	68	09:37 (T38)	17:03	68	09:48 (T38)
15	06:11		06:34 (T87)	06:40			07:12			07:43		08:03 (T37)	07:19		08:30 (T38)	07:50		08:40 (T38)
	21:04	35	07:09 (T34)	20:33			19:42			18:52	19	08:22 (T37)	17:13	69	09:39 (T38)	17:03	68	09:48 (T38)
16	06:12		06:34 (T87)	06:41			07:13			07:44		08:04 (T37)	07:20		08:30 (T38)	07:51		08:41 (T38)
	21:04	31	07:05 (T34)	20:32			19:41			18:51	15	08:19 (T37)	17:12	69	09:39 (T38)	17:04	68	09:49 (T38)
17	06:13		06:35 (T87)	06:42			07:14			07:45		08:09 (T37)	07:21		08:29 (T38)	07:51		08:42 (T38)
	21:03	27	07:02 (T87)	20:30			19:39			18:49	5	08:14 (T37)	17:12	70	09:39 (T38)	17:04	67	09:49 (T38)
18	06:14		06:36 (T87)	06:43			07:15			07:46			07:23		08:29 (T38)	07:52		08:42 (T38)
	21:03	26	07:02 (T87)	20:29			19:37			18:48			17:11	70	09:39 (T38)	17:04	67	09:49 (T38)
19	06:15		06:37 (T87)	06:44			07:16			07:47			07:24		08:30 (T38)	07:53		08:43 (T38)
	21:02	25	07:02 (T87)	20:28			19:35			18:46			17:10	71	09:41 (T38)	17:05	67	09:50 (T38)
20	06:15		06:38 (T87)	06:45			07:17			07:48			07:25		08:30 (T38)	07:53		08:44 (T38)
	21:01	23	07:01 (T87)	20:26			19:34			18:45			17:09	71	09:41 (T38)	17:05	67	09:51 (T38)
21	06:16		06:39 (T87)	06:46			07:18			07:49			07:26		08:30 (T38)	07:54		08:44 (T38)
	21:00	22	07:01 (T87)	20:25			19:32			18:43			17:09	71	09:41 (T38)	17:06	67	09:51 (T38)
22	06:17		06:39 (T87)	06:47			07:19			07:51			07:27		08:30 (T38)	07:54		08:45 (T38)
	21:00	20	06:59 (T87)	20:23			19:30			18:42			17:08	71	09:41 (T38)	17:06	67	09:52 (T38)
23	06:18		06:40 (T87)	06:48			07:20			07:52			07:29		08:31 (T38)	07:55		08:45 (T38)
	20:59	18	06:58 (T87)	20:22			19:29			18:40			17:07	71	09:42 (T38)	17:07	67	09:52 (T38)
24	06:19		06:41 (T87)	06:49			07:21			07:53			07:30		08:31 (T38)	07:55		08:45 (T38)
	20:58	16	06:57 (T87)	20:20			19:27			18:39			17:07	71	09:42 (T38)	17:07	67	09:52 (T38)
25	06:20		06:42 (T87)	06:50			07:22			07:54			07:31		08:31 (T38)	07:56		08:46 (T38)
	20:57	13	06:55 (T87)	20:19			19:25			18:37			17:06	71	09:42 (T38)	17:08	67	09:53 (T38)
26	06:21		06:45 (T87)	06:51			07:23		08:10 (T37)	07:55		09:51 (T38)	07:32		08:31 (T38)	07:56		08:46 (T38)
	20:56	7	06:52 (T87)	20:17			19:23	13	08:23 (T37)	18:36	19	10:10 (T38)	17:06	72	09:43 (T38)	17:08	67	09:53 (T38)
27	06:22			06:52			07:24		08:07 (T37)	07:56		09:47 (T38)	07:33		08:31 (T38)	07:56		08:46 (T38)
	20:55			20:15			19:22	19	08:26 (T37)	18:35	27	10:14 (T38)	17:05	72	09:43 (T38)	17:09	67	09:53 (T38)
28	06:23			06:53			07:25		08:06 (T37)	07:58		09:45 (T38)	07:34		08:32 (T38)	07:57		08:47 (T38)
	20:54			20:14			19:20	22	08:28 (T37)	18:33	33	10:18 (T38)	17:05	71	09:43 (T38)	17:10	68	09:55 (T38)
29	06:24			06:54			07:26		08:04 (T37)	07:59		09:43 (T38)	07:35		08:33 (T38)	07:57		08:47 (T38)
	20:53			20:12			19:18	26	08:30 (T37)	18:32	37	10:20 (T38)	17:05	71	09:44 (T38)	17:11	68	09:55 (T38)
30	06:25			06:56			07:27		08:02 (T37)	08:00		09:40 (T38)	07:36		08:33 (T38)	07:57		08:48 (T38)
	20:53			20:11			19:17	28	08:30 (T37)	18:31	42	10:22 (T38)	17:04	71	09:44 (T38)	17:11	67	09:55 (T38)
31	06:25			06:57						08:01		09:39 (T38)				07:57		08:48 (T38)
	20:51			20:09						18:29	44	10:23 (T38)				17:12	68	09:56 (T38)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		918						108			668			1972			2115	
Sun reduction		0.66						0.59			0.48			0.30			0.22	
Oper. time red.		1.00						1.00			1.00			1.00			1.00	
Wind dir. red.		0.72						0.57			0.56			0.53			0.53	
Total reduction		0.45						0.32			0.26			0.15			0.11	
Total, real		414						35			171			298			234	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 277 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6414)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57 / 17:13	07:43 / 17:48	07:07 / 18:22	07:16 / 19:56	06:30 / 20:27 38	07:16 (T49) / 07:54 (T49) 88	06:02 / 06:50 (T49) 88	06:02 / 08:18 (T49) 89	06:56 (T49) / 21:08 89	06:26 / 08:25 (T49) 70	07:09 (T49) / 08:19 (T49)	06:57 / 20:07	07:28 / 19:15	07:02 / 17:28	07:37 / 17:04
2	07:57 / 17:14	07:42 / 17:49	07:06 / 18:23	07:15 / 19:57	06:29 / 20:28 44	07:13 (T49) / 07:57 (T49) 88	06:01 / 06:51 (T49) 88	06:03 / 08:19 (T49) 89	06:56 (T49) / 21:08 89	06:27 / 08:25 (T49) 68	07:10 (T49) / 08:18 (T49)	06:58 / 20:06	07:29 / 19:13	07:03 / 17:27	07:38 / 17:04
3	07:57 / 17:15	07:41 / 17:50	07:04 / 18:24	07:13 / 19:58	06:28 / 20:29 48	07:11 (T49) / 07:59 (T49) 88	06:01 / 06:50 (T49) 88	06:03 / 08:18 (T49) 89	06:56 (T49) / 21:08 89	06:28 / 08:25 (T49) 66	07:11 (T49) / 08:17 (T49)	06:59 / 20:04	07:30 / 19:11	07:04 / 17:26	07:39 / 17:03
4	07:57 / 17:16	07:40 / 17:51	07:03 / 18:25	07:11 / 19:59	06:27 / 20:30 52	07:08 (T49) / 08:00 (T49) 88	06:00 / 06:51 (T49) 88	06:04 / 08:19 (T49) 89	06:56 (T49) / 21:08 89	06:29 / 08:25 (T49) 64	07:12 (T49) / 08:16 (T49)	07:00 / 20:02	07:31 / 19:10	07:06 / 17:25	07:40 / 17:03
5	07:57 / 17:17	07:39 / 17:53	07:01 / 18:26	07:10 / 20:00	06:25 / 20:31 55	07:07 (T49) / 08:02 (T49) 88	06:00 / 06:51 (T49) 88	06:04 / 08:19 (T49) 88	06:57 (T49) / 21:08 89	06:30 / 08:25 (T49) 62	07:13 (T49) / 08:15 (T49)	07:01 / 20:01	07:32 / 19:08	07:07 / 17:23	07:41 / 17:03
6	07:57 / 17:18	07:38 / 17:54	06:59 / 18:28	07:08 / 20:00	06:24 / 20:32 58	07:05 (T49) / 08:03 (T49) 89	06:00 / 06:51 (T49) 89	06:05 / 08:20 (T49) 89	06:57 (T49) / 21:08 89	06:31 / 08:26 (T49) 60	07:14 (T49) / 08:14 (T49)	07:02 / 19:57	07:33 / 19:06	07:08 / 17:22	07:42 / 17:03
7	07:57 / 17:19	07:37 / 17:55	06:58 / 18:29	07:06 / 20:01	06:23 / 20:33 61	07:04 (T49) / 08:05 (T49) 88	05:59 / 06:51 (T49) 88	06:06 / 08:19 (T49) 89	06:57 (T49) / 21:07 89	06:32 / 08:26 (T49) 57	07:15 (T49) / 08:12 (T49)	07:03 / 19:56	07:34 / 19:05	07:09 / 17:21	07:43 / 17:03
8	07:57 / 17:20	07:36 / 17:56	07:56 / 19:30	07:05 / 20:02	06:22 / 20:34 63	07:03 (T49) / 08:06 (T49) 89	05:59 / 06:51 (T49) 89	06:06 / 08:20 (T49) 88	06:58 (T49) / 21:07 88	06:33 / 08:26 (T49) 54	07:17 (T49) / 08:11 (T49)	07:04 / 19:54	07:35 / 19:03	07:10 / 17:20	07:44 / 17:03
9	07:57 / 17:21	07:35 / 17:58	07:55 / 19:31	07:03 / 20:03	06:21 / 20:35 65	07:02 (T49) / 08:07 (T49) 89	05:59 / 06:51 (T49) 89	06:07 / 08:20 (T49) 88	06:57 (T49) / 21:07 88	06:34 / 08:25 (T49) 50	07:19 (T49) / 08:09 (T49)	07:05 / 19:52	07:36 / 19:02	07:12 / 17:19	07:45 / 17:03
10	07:57 / 17:22	07:34 / 17:59	07:53 / 19:32	07:01 / 20:05	06:19 / 20:36 67	07:01 (T49) / 08:08 (T49) 89	05:59 / 06:51 (T49) 89	06:08 / 08:20 (T49) 88	06:58 (T49) / 21:06 88	06:35 / 08:26 (T49) 46	07:21 (T49) / 08:07 (T49)	07:06 / 19:51	07:37 / 19:00	07:13 / 17:18	07:46 / 17:03
11	07:57 / 17:23	07:32 / 18:00	07:51 / 19:33	07:00 / 20:06	06:18 / 20:37 69	07:00 (T49) / 08:09 (T49) 89	05:59 / 06:52 (T49) 89	06:08 / 08:21 (T49) 87	06:59 (T49) / 21:06 87	06:36 / 08:26 (T49) 42	07:23 (T49) / 08:05 (T49)	07:07 / 19:49	07:38 / 18:58	07:14 / 17:17	07:46 / 17:03
12	07:56 / 17:24	07:31 / 18:01	07:50 / 19:34	06:58 / 20:07	06:17 / 20:38 71	06:59 (T49) / 08:10 (T49) 89	05:59 / 06:52 (T49) 89	06:09 / 08:21 (T49) 88	06:59 (T49) / 21:05 88	06:37 / 08:27 (T49) 37	07:25 (T49) / 08:02 (T49)	07:08 / 19:47	07:39 / 18:57	07:15 / 17:16	07:47 / 17:03
13	07:56 / 17:25	07:30 / 18:03	07:48 / 19:35	06:57 / 20:08	06:16 / 20:39 73	06:58 (T49) / 08:11 (T49) 89	05:58 / 06:52 (T49) 89	06:10 / 08:21 (T49) 87	06:59 (T49) / 21:05 87	06:38 / 08:26 (T49) 30	07:28 (T49) / 07:58 (T49)	07:09 / 19:45	07:40 / 18:55	07:16 / 17:15	07:48 / 17:03
14	07:56 / 17:26	07:29 / 18:04	07:46 / 19:37	06:55 / 20:09	06:15 / 20:40 74	06:57 (T49) / 08:11 (T49) 90	05:58 / 06:52 (T49) 90	06:11 / 08:22 (T49) 87	06:59 (T49) / 21:04 87	06:39 / 08:26 (T49) 21	07:33 (T49) / 07:54 (T49)	07:10 / 19:44	07:41 / 18:54	07:18 / 17:14	07:49 / 17:03
15	07:55 / 17:27	07:27 / 18:05	07:45 / 19:38	06:54 / 20:10	06:14 / 20:41 76	06:56 (T49) / 08:12 (T49) 90	05:58 / 06:52 (T49) 90	06:11 / 08:22 (T49) 86	07:00 (T49) / 21:04 86	06:40 / 08:26 (T49)		07:11 / 19:42	07:42 / 18:52	07:19 / 17:13	07:49 / 17:04
16	07:55 / 17:28	07:26 / 18:06	07:43 / 19:39	06:52 / 20:11	06:13 / 20:42 77	06:55 (T49) / 08:12 (T49) 89	05:58 / 06:53 (T49) 89	06:12 / 08:22 (T49) 86	07:01 (T49) / 21:03 86	06:41 / 08:27 (T49)		07:12 / 19:40	07:44 / 18:51	07:20 / 17:12	07:50 / 17:04
17	07:54 / 17:29	07:25 / 18:08	07:41 / 19:40	06:50 / 20:12	06:12 / 20:43 78	06:55 (T49) / 08:13 (T49) 89	05:58 / 06:53 (T49) 89	06:13 / 08:22 (T49) 86	07:00 (T49) / 21:03 86	06:42 / 08:26 (T49)		07:13 / 19:39	07:45 / 18:49	07:21 / 17:12	07:51 / 17:04
18	07:54 / 17:31	07:23 / 18:09	07:40 / 19:41	06:49 / 20:13	06:11 / 20:44 79	06:54 (T49) / 08:13 (T49) 89	05:58 / 06:53 (T49) 89	06:14 / 08:22 (T49) 85	07:01 (T49) / 21:02 85	06:43 / 08:26 (T49)		07:14 / 19:37	07:46 / 18:47	07:22 / 17:11	07:52 / 17:04
19	07:53 / 17:32	07:22 / 18:10	07:38 / 19:42	06:47 / 20:14	06:10 / 20:45 81	06:53 (T49) / 08:14 (T49) 89	05:59 / 06:53 (T49) 89	06:15 / 08:22 (T49) 85	07:01 (T49) / 21:01 85	06:44 / 08:26 (T49)		07:15 / 19:35	07:47 / 18:46	07:23 / 17:10	07:52 / 17:05
20	07:53 / 17:33	07:20 / 18:11	07:36 / 19:43	06:46 / 20:15	06:10 / 20:46 81	06:53 (T49) / 08:14 (T49) 89	05:59 / 06:53 (T49) 89	06:15 / 08:22 (T49) 84	07:02 (T49) / 21:01 84	06:45 / 08:26 (T49)		07:16 / 19:34	07:48 / 18:45	07:25 / 17:09	07:53 / 17:05
21	07:52 / 17:34	07:19 / 18:12	07:35 / 19:44	06:44 / 20:16	06:09 / 20:47 82	06:53 (T49) / 08:15 (T49) 89	05:59 / 06:53 (T49) 89	06:16 / 08:22 (T49) 83	07:03 (T49) / 21:00 83	06:46 / 08:26 (T49)		07:17 / 19:32	07:49 / 18:43	07:26 / 17:09	07:53 / 17:06
22	07:52 / 17:35	07:18 / 18:14	07:33 / 19:45	06:43 / 20:17	06:08 / 20:48 83	06:52 (T49) / 08:15 (T49) 89	05:59 / 06:54 (T49) 89	06:17 / 08:23 (T49) 83	07:02 (T49) / 20:59 83	06:47 / 08:25 (T49)		07:18 / 19:30	07:50 / 18:42	07:27 / 17:08	07:54 / 17:06
23	07:51 / 17:36	07:16 / 18:15	07:31 / 19:46	06:41 / 20:18	06:07 / 20:49 83	06:52 (T49) / 08:15 (T49) 89	05:59 / 06:54 (T49) 89	06:18 / 08:23 (T49) 82	07:03 (T49) / 20:58 82	06:48 / 08:25 (T49)		07:19 / 19:28	07:51 / 18:40	07:28 / 17:07	07:54 / 17:07
24	07:50 / 17:38	07:15 / 18:16	07:30 / 19:47	06:40 / 20:19	06:06 / 20:50 84	06:52 (T49) / 08:16 (T49) 89	06:00 / 06:54 (T49) 89	06:19 / 08:23 (T49) 81	07:03 (T49) / 20:58 81	06:49 / 08:24 (T49)		07:20 / 19:27	07:53 / 18:39	07:29 / 17:07	07:55 / 17:07
25	07:49 / 17:39	07:13 / 18:17	07:28 / 19:48	06:39 / 20:21	06:06 / 20:51 84	06:52 (T49) / 08:16 (T49) 89	06:00 / 06:54 (T49) 89	06:20 / 08:23 (T49) 80	07:04 (T49) / 20:57 80	06:50 / 08:24 (T49)		07:21 / 19:25	07:54 / 18:37	07:30 / 17:06	07:55 / 17:08
26	07:49 / 17:40	07:12 / 18:18	07:26 / 19:50	06:37 / 20:22	06:05 / 20:52 85	06:51 (T49) / 08:16 (T49) 89	06:00 / 06:55 (T49) 89	06:21 / 08:24 (T49) 79	07:05 (T49) / 20:56 79	06:51 / 08:24 (T49)		07:22 / 19:23	07:55 / 18:36	07:31 / 17:06	07:56 / 17:09
27	07:48 / 17:41	07:10 / 18:19	07:25 / 19:51	06:36 / 20:23	06:04 / 20:53 86	06:51 (T49) / 08:17 (T49) 90	06:01 / 06:54 (T49) 90	06:22 / 08:24 (T49) 77	07:06 (T49) / 20:55 77	06:52 / 08:23 (T49)		07:23 / 19:22	07:56 / 18:35	07:33 / 17:05	07:56 / 17:09
28	07:47 / 17:43	07:09 / 18:21	07:23 / 19:52	06:34 / 20:24 10	07:30 (T49) / 07:40 (T49)	06:04 / 08:17 (T49) 90	06:01 / 06:55 (T49) 90	06:23 / 08:25 (T49) 77	07:06 (T49) / 20:54 77	06:53 / 08:23 (T49)		07:24 / 19:20	07:57 / 18:33	07:34 / 17:05	07:56 / 17:10
29	07:46		07:21 / 19:53	06:33 / 20:25 23	07:24 (T49) / 07:47 (T49)	06:03 / 08:18 (T49) 89	06:01 / 06:55 (T49) 89	06:24 / 08:24 (T49) 75	07:07 (T49) / 20:53 75	06:54 / 08:22 (T49)		07:25 / 19:18	07:58 / 18:32	07:35 / 17:05	07:56 / 17:11
30	07:45 / 17:44		07:20 / 19:54	06:32 / 20:26 32	07:19 (T49) / 07:51 (T49)	06:03 / 08:18 (T49) 89	06:02 / 06:55 (T49) 89	06:25 / 08:24 (T49) 74	07:08 (T49) / 20:52 74	06:55 / 08:22 (T49)		07:27 / 19:17	08:00 / 18:31	07:36 / 17:04	07:57 / 17:11
31	07:44 / 17:46		07:18 / 19:55		06:02 / 20:56 87	06:51 (T49) / 08:18 (T49)		06:26 / 20:51 72	07:08 (T49) / 20:50 72	06:56 / 08:20 (T49)			08:01 / 18:29		07:57 / 17:12
Potential sun hours	297	297	370	399	448	452	459	428	375	345	297	287
Total, worst case				65	2244	2668	2610	727				
Sun reduction				0.52	0.57	0.64	0.66	0.61				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.69	0.69	0.69	0.69	0.69				
Total reduction				0.36	0.40	0.44	0.46	0.42				
Total, real				23	887	1184	1194	307				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 304 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6434)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March		April		May		June
1	07:58	07:44	07:07		07:16		07:49 (T38)	06:30	07:31 (T38)	06:02
	17:13	17:48	18:22		19:56	35	08:24 (T38)	20:27	54	08:25 (T38)	20:57
2	07:58	07:43	07:06		07:15		07:47 (T38)	06:29	07:32 (T38)	06:01
	17:14	17:49	18:23		19:57	40	08:27 (T38)	20:28	52	08:24 (T38)	20:58
3	07:58	07:42	07:04		07:13		07:44 (T38)	06:28	07:33 (T38)	06:01
	17:15	17:50	18:24		19:58	44	08:28 (T38)	20:29	50	08:23 (T38)	20:59
4	07:58	07:41	07:03		07:11		07:42 (T38)	06:27	07:33 (T38)	06:00
	17:16	17:51	18:25		19:59	47	08:29 (T38)	20:30	48	08:21 (T38)	20:59
5	07:58	07:40	07:01		07:10		07:29 (T37)	06:25	07:34 (T38)	06:00
	17:17	17:53	18:27		20:01	61	08:31 (T38)	20:32	46	08:20 (T38)	21:00
6	07:58	07:39	07:00		07:08		07:27 (T37)	06:24	07:35 (T38)	06:00
	17:18	17:54	18:28		20:01	64	08:31 (T38)	20:33	44	08:19 (T38)	21:01
7	07:58	07:37	06:58		07:06		07:25 (T37)	06:23	07:36 (T38)	05:59
	17:19	17:55	18:29		20:02	66	08:31 (T38)	20:34	42	08:18 (T38)	21:02
8	07:58	07:36	07:56		07:05		07:24 (T37)	06:22	07:38 (T38)	05:59
	17:20	17:56	19:30		20:03	69	08:33 (T38)	20:35	39	08:17 (T38)	21:02
9	07:57	07:35	07:55		07:03		07:22 (T37)	06:21	07:39 (T38)	05:59
	17:21	17:58	19:31		20:04	71	08:33 (T38)	20:36	36	08:15 (T38)	21:03
10	07:57	07:34	07:53		07:02		07:21 (T37)	06:19	07:41 (T38)	05:59
	17:22	17:59	19:32		20:05	73	08:34 (T38)	20:37	33	08:14 (T38)	21:03
11	07:57	07:33	07:52		07:00		07:19 (T37)	06:18	07:42 (T38)	05:59
	17:23	18:00	19:33		20:06	74	08:33 (T38)	20:38	30	08:12 (T38)	21:04
12	07:57	07:31	07:50		06:58		07:17 (T37)	06:17	07:44 (T38)	05:58
	17:24	18:01	19:35		20:07	76	08:33 (T38)	20:39	26	08:10 (T38)	21:04
13	07:56	07:30	07:48		06:57		07:16 (T37)	06:16	07:47 (T38)	05:58
	17:25	18:03	19:36		20:08	78	08:34 (T38)	20:40	20	08:07 (T38)	21:05
14	07:56	07:29	07:47		06:55		07:15 (T37)	06:15	07:50 (T38)	05:58
	17:26	18:04	19:37		20:09	78	08:33 (T38)	20:41	14	08:04 (T38)	21:05
15	07:56	07:28	07:45		06:54		07:16 (T37)	06:14			05:58
	17:27	18:05	19:38		20:10	78	08:34 (T38)	20:42			21:06
16	07:55	07:26	07:43		06:52		07:15 (T37)	06:13			05:58
	17:28	18:06	19:39		20:11	78	08:33 (T38)	20:43			21:06
17	07:55	07:25	07:42		06:51		07:16 (T37)	06:12			05:58
	17:29	18:08	19:40		20:12	78	08:34 (T38)	20:44			21:07
18	07:54	07:24	07:40		06:49		07:15 (T37)	06:11			05:58
	17:31	18:09	19:41		20:13	78	08:33 (T38)	20:45			21:07
19	07:54	07:22	07:38		06:47		07:16 (T37)	06:10			05:59
	17:32	18:10	19:42		20:14	77	08:33 (T38)	20:46			21:07
20	07:53	07:21	07:37		06:46		07:17 (T37)	06:10			05:59
	17:33	18:11	19:43		20:16	75	08:32 (T38)	20:47			21:08
21	07:53	07:19	07:35		06:44		07:18 (T37)	06:09			05:59
	17:34	18:12	19:44		20:17	74	08:32 (T38)	20:48			21:08
22	07:52	07:18	07:33		06:43		07:19 (T37)	06:08			05:59
	17:35	18:14	19:45		20:18	72	08:31 (T38)	20:49			21:08
23	07:51	07:16	07:31		06:42		07:21 (T37)	06:07			05:59
	17:36	18:15	19:47		20:19	70	08:31 (T38)	20:50			21:08
24	07:51	07:15	07:30		06:40		07:23 (T37)	06:06			06:00
	17:38	18:16	19:48		20:20	67	08:30 (T38)	20:50			21:09
25	07:50	07:14	07:28		06:39		07:29 (T38)	06:06			06:00
	17:39	18:17	19:49		20:21	61	08:30 (T38)	20:51			21:09
26	07:49	07:12	07:26		06:37		07:30 (T38)	06:05			06:00
	17:40	18:18	19:50		20:22	59	08:29 (T38)	20:52			21:09
27	07:48	07:11	07:25		06:36		07:29 (T38)	06:04			06:01
	17:41	18:20	19:51		20:23	59	08:28 (T38)	20:53			21:09
28	07:47	07:09	07:23		06:34		07:30 (T38)	06:04			06:01
	17:43	18:21	19:52		20:24	58	08:28 (T38)	20:54			21:09
29	07:47		07:21	08:00 (T38)	06:33		07:31 (T38)	06:03			06:01
	17:44		19:53	14 08:14 (T38)	20:25	56	08:27 (T38)	20:55			21:09
30	07:46		07:20	07:56 (T38)	06:32		07:30 (T38)	06:03			06:02
	17:45		19:54	24 08:20 (T38)	20:26	55	08:25 (T38)	20:56			21:09
31	07:45		07:18	07:52 (T38)				06:02			
	17:46		19:55	30 08:22 (T38)				20:56			
Potential sun hours	297	297	370		399			449			453
Total, worst case				68		1971			534		
Sun reduction				0.44		0.52			0.57		
Oper. time red.				1.00		1.00			1.00		
Wind dir. red.				0.64		0.64			0.64		
Total reduction				0.28		0.34			0.37		
Total, real				19		661			195		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 304 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6434)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November	December
1	06:02			06:26		07:53 (T38)	06:58		07:18 (T37)	07:28	07:02	07:37
	21:09			20:50	27	08:20 (T38)	20:07	74	08:32 (T38)	19:15	17:28	17:04
2	06:03			06:27		07:51 (T38)	06:59		07:19 (T37)	07:29	07:04	07:38
	21:09			20:49	31	08:22 (T38)	20:06	73	08:32 (T38)	19:13	17:27	17:04
3	06:03			06:28		07:50 (T38)	07:00		07:20 (T37)	07:30	07:05	07:39
	21:09			20:48	34	08:24 (T38)	20:04	71	08:31 (T38)	19:12	17:26	17:03
4	06:04			06:29		07:48 (T38)	07:01		07:21 (T37)	07:31	07:06	07:40
	21:08			20:47	38	08:26 (T38)	20:03	69	08:30 (T38)	19:10	17:25	17:03
5	06:04			06:30		07:47 (T38)	07:02		07:22 (T37)	07:32	07:07	07:41
	21:08			20:46	40	08:27 (T38)	20:01	66	08:28 (T38)	19:08	17:23	17:03
6	06:05			06:31		07:46 (T38)	07:03		07:23 (T37)	07:33	07:08	07:42
	21:08			20:45	42	08:28 (T38)	19:58	64	08:27 (T38)	19:07	17:22	17:03
7	06:06			06:32		07:44 (T38)	07:04		07:24 (T37)	07:34	07:09	07:43
	21:08			20:44	45	08:29 (T38)	19:56	61	08:26 (T38)	19:05	17:21	17:03
8	06:06			06:33		07:43 (T38)	07:05		07:26 (T37)	07:35	07:11	07:44
	21:07			20:42	47	08:30 (T38)	19:54	51	08:24 (T38)	19:03	17:20	17:03
9	06:07			06:34		07:42 (T38)	07:06		07:38 (T38)	07:36	07:12	07:45
	21:07			20:41	49	08:31 (T38)	19:53	44	08:22 (T38)	19:02	17:19	17:03
10	06:08			06:35		07:41 (T38)	07:07		07:40 (T38)	07:37	07:13	07:46
	21:07			20:40	51	08:32 (T38)	19:51	40	08:20 (T38)	19:00	17:18	17:03
11	06:08			06:36		07:41 (T38)	07:08		07:41 (T38)	07:38	07:14	07:47
	21:06			20:39	52	08:33 (T38)	19:49	37	08:18 (T38)	18:59	17:17	17:03
12	06:09			06:37		07:40 (T38)	07:09		07:44 (T38)	07:39	07:16	07:48
	21:06			20:37	54	08:34 (T38)	19:47	31	08:15 (T38)	18:57	17:16	17:03
13	06:10			06:38		07:39 (T38)	07:10		07:46 (T38)	07:41	07:17	07:48
	21:05			20:36	55	08:34 (T38)	19:46	26	08:12 (T38)	18:55	17:15	17:03
14	06:11			06:39		07:38 (T38)	07:11		07:51 (T38)	07:42	07:18	07:49
	21:05			20:35	57	08:35 (T38)	19:44	16	08:07 (T38)	18:54	17:14	17:03
15	06:11			06:40		07:38 (T38)	07:12			07:43	07:19	07:50
	21:04			20:33	57	08:35 (T38)	19:42			18:52	17:13	17:04
16	06:12			06:41		07:37 (T38)	07:13			07:44	07:20	07:51
	21:04			20:32	59	08:36 (T38)	19:41			18:51	17:12	17:04
17	06:13			06:42		07:36 (T38)	07:14			07:45	07:21	07:51
	21:03			20:30	60	08:36 (T38)	19:39			18:49	17:12	17:04
18	06:14			06:43		07:36 (T38)	07:15			07:46	07:23	07:52
	21:03			20:29	61	08:37 (T38)	19:37			18:48	17:11	17:04
19	06:15			06:44		07:29 (T37)	07:16			07:47	07:24	07:53
	21:02			20:28	68	08:37 (T38)	19:35			18:46	17:10	17:05
20	06:15			06:45		07:26 (T37)	07:17			07:48	07:25	07:53
	21:01			20:26	71	08:37 (T38)	19:34			18:45	17:09	17:05
21	06:16			06:46		07:24 (T37)	07:18			07:49	07:26	07:54
	21:00			20:25	73	08:37 (T38)	19:32			18:43	17:09	17:06
22	06:17			06:47		07:23 (T37)	07:19			07:51	07:27	07:54
	21:00			20:23	74	08:37 (T38)	19:30			18:42	17:08	17:06
23	06:18			06:48		07:20 (T37)	07:20			07:52	07:29	07:55
	20:59			20:22	76	08:36 (T38)	19:29			18:40	17:07	17:07
24	06:19			06:49		07:19 (T37)	07:21			07:53	07:30	07:55
	20:58			20:20	77	08:36 (T38)	19:27			18:39	17:07	17:07
25	06:20			06:50		07:18 (T37)	07:22			07:54	07:31	07:56
	20:57			20:19	78	08:36 (T38)	19:25			18:37	17:06	17:08
26	06:21			06:51		07:18 (T37)	07:23			07:55	07:32	07:56
	20:56			20:17	78	08:36 (T38)	19:23			18:36	17:06	17:08
27	06:22			06:52		07:17 (T37)	07:24			07:56	07:33	07:56
	20:55			20:15	78	08:35 (T38)	19:22			18:35	17:05	17:09
28	06:23			06:54		07:16 (T37)	07:25			07:58	07:34	07:57
	20:54			20:14	79	08:35 (T38)	19:20			18:33	17:05	17:10
29	06:24		08:03 (T38)	06:55		07:16 (T37)	07:26			07:59	07:35	07:57
	20:53	9	08:12 (T38)	20:12	78	08:34 (T38)	19:18			18:32	17:05	17:11
30	06:25		07:59 (T38)	06:56		07:16 (T37)	07:27			08:00	07:36	07:57
	20:53	17	08:16 (T38)	20:11	78	08:34 (T38)	19:17			18:31	17:04	17:11
31	06:26		07:55 (T38)	06:57		07:17 (T37)				08:01		07:57
	20:51	23	08:18 (T38)	20:09	76	08:33 (T38)				18:29		17:12
Potential sun hours	460			429			375			345	297	287
Total, worst case		49			1843			723				
Sun reduction		0.66			0.61			0.59				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.64			0.64			0.64				
Total reduction		0.42			0.39			0.38				
Total, real		21			724			275				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 319 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6442)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June
1	07:57	07:43	07:07			07:16		18:44 (T79)	06:30		18:20 (T79)	06:02
	17:13	17:48	18:22			19:56	49	19:33 (T62)	20:27	68	19:28 (T79)	20:56
2	07:57	07:42	07:05			07:14		18:40 (T79)	06:29		18:20 (T79)	06:01
	17:14	17:49	18:23			19:57	53	19:33 (T62)	20:28	68	19:28 (T79)	20:57
3	07:57	07:41	07:04			07:13		18:38 (T79)	06:28		18:20 (T79)	06:01
	17:15	17:50	18:24			19:58	56	19:34 (T62)	20:29	67	19:27 (T79)	20:58
4	07:57	07:40	07:02			07:11		18:36 (T79)	06:26		18:21 (T79)	06:00
	17:16	17:51	18:25			19:59	59	19:35 (T62)	20:30	65	19:26 (T79)	20:59
5	07:57	07:39	07:01			07:09		18:33 (T79)	06:25		18:21 (T79)	06:00
	17:17	17:53	18:26			20:00	61	19:34 (T62)	20:31	65	19:26 (T79)	20:59
6	07:57	07:38	06:59			07:08		18:32 (T79)	06:24		18:22 (T79)	06:00
	17:18	17:54	18:27			20:00	63	19:35 (T62)	20:32	63	19:25 (T79)	21:00
7	07:57	07:37	06:58			07:06		18:30 (T79)	06:23		18:23 (T79)	05:59
	17:19	17:55	18:29			20:01	65	19:35 (T62)	20:33	62	19:25 (T79)	21:01
8	07:57	07:36	07:56			07:05		18:28 (T79)	06:22		18:24 (T79)	05:59
	17:20	17:56	19:30			20:02	67	19:35 (T62)	20:34	60	19:24 (T79)	21:01
9	07:57	07:34	07:54			07:03		18:28 (T79)	06:20		18:25 (T79)	05:59
	17:21	17:58	19:31			20:03	67	19:35 (T62)	20:35	59	19:24 (T79)	21:02
10	07:56	07:33	07:53			07:01		18:26 (T79)	06:19		18:24 (T79)	05:59
	17:22	17:59	19:32			20:04	68	19:34 (T62)	20:36	58	19:22 (T79)	21:03
11	07:56	07:32	07:51			07:00		18:25 (T79)	06:18		18:25 (T79)	05:59
	17:23	18:00	19:33			20:05	70	19:35 (T62)	20:37	56	19:21 (T79)	21:03
12	07:56	07:31	07:49			06:58		18:24 (T79)	06:17		18:26 (T79)	05:58
	17:24	18:01	19:34			20:06	70	19:34 (T62)	20:38	54	19:20 (T79)	21:04
13	07:56	07:30	07:48			06:57		18:24 (T79)	06:16		18:27 (T79)	05:58
	17:25	18:02	19:35			20:07	70	19:34 (T62)	20:39	53	19:20 (T79)	21:04
14	07:55	07:28	07:46			06:55		18:22 (T79)	06:15		18:28 (T79)	05:58
	17:26	18:04	19:36			20:09	71	19:33 (T62)	20:40	51	19:19 (T79)	21:05
15	07:55	07:27	07:44			06:53		18:21 (T79)	06:14		18:30 (T79)	05:58
	17:27	18:05	19:37			20:10	70	19:31 (T62)	20:41	49	19:19 (T79)	21:05
16	07:54	07:26	07:43			06:52		18:21 (T79)	06:13		18:31 (T79)	05:58
	17:28	18:06	19:39			20:11	70	19:31 (T79)	20:42	47	19:18 (T79)	21:05
17	07:54	07:24	07:41			06:50		18:20 (T79)	06:12		18:32 (T79)	05:58
	17:29	18:07	19:40			20:12	71	19:31 (T79)	20:43	44	19:16 (T79)	21:06
18	07:54	07:23	07:39			06:49		18:20 (T79)	06:11		18:33 (T79)	05:58
	17:30	18:09	19:41			20:13	71	19:31 (T79)	20:44	42	19:15 (T79)	21:06
19	07:53	07:22	07:38			06:47		18:19 (T79)	06:10		18:34 (T79)	05:59
	17:32	18:10	19:42			20:14	72	19:31 (T79)	20:45	40	19:14 (T79)	21:07
20	07:52	07:20	07:36			06:46		18:19 (T79)	06:09		18:35 (T79)	05:59
	17:33	18:11	19:43			20:15	72	19:31 (T79)	20:46	38	19:13 (T79)	21:07
21	07:52	07:19	07:34			06:44		18:19 (T79)	06:09		18:37 (T79)	05:59
	17:34	18:12	19:44			20:16	71	19:30 (T79)	20:47	35	19:12 (T79)	21:07
22	07:51	07:17	07:33			06:43		18:19 (T79)	06:08		18:39 (T79)	05:59
	17:35	18:13	19:45			20:17	72	19:31 (T79)	20:48	31	19:10 (T79)	21:07
23	07:51	07:16	07:31			06:41		18:19 (T79)	06:07		18:40 (T79)	05:59
	17:36	18:15	19:46			20:18	72	19:31 (T79)	20:49	29	19:09 (T79)	21:08
24	07:50	07:14	07:29			06:40		18:18 (T79)	06:06		18:42 (T79)	06:00
	17:38	18:16	19:47			20:19	72	19:30 (T79)	20:50	25	19:07 (T79)	21:08
25	07:49	07:13	07:28			06:38		18:19 (T79)	06:06		18:45 (T79)	06:00
	17:39	18:17	19:48			20:20	71	19:30 (T79)	20:51	20	19:05 (T79)	21:08
26	07:48	07:11	07:26			06:37		18:18 (T79)	06:05		18:47 (T79)	06:00
	17:40	18:18	19:49			20:21	72	19:30 (T79)	20:51	15	19:02 (T79)	21:08
27	07:48	07:10	07:24		19:15 (T62)	06:36		18:19 (T79)	06:04		18:52 (T79)	06:01
	17:41	18:19	19:50	5	19:20 (T62)	20:22	71	19:30 (T79)	20:52	7	18:59 (T79)	21:08
28	07:47	07:08	07:23		19:09 (T62)	06:34		18:19 (T79)	06:04			06:01
	17:43	18:20	19:51	17	19:26 (T62)	20:23	71	19:30 (T79)	20:53			21:08
29	07:46		07:21		19:06 (T62)	06:33		18:19 (T79)	06:03			06:01
	17:44		19:53	22	19:28 (T62)	20:25	69	19:28 (T79)	20:54			21:08
30	07:45		07:19		18:54 (T79)	06:32		18:19 (T79)	06:03			06:02
	17:45		19:54	36	19:30 (T62)	20:26	69	19:28 (T79)	20:55			21:08
31	07:44		07:18		18:48 (T79)				06:02			
	17:46		19:55	44	19:32 (T62)				20:56			
Potential sun hours	297	297	370			399			448			452
Total, worst case				124			2025			1271		
Sun reduction				0.44			0.52			0.57		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.61			0.61			0.61		
Total reduction				0.27			0.32			0.35		
Total, real				34			644			442		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 319 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6442)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02		06:26	18:36 (T79)	06:57	18:24 (T79)	07:27	07:02	07:37
	21:08		20:50 55	19:31 (T79)	20:07 70	19:34 (T62)	19:15	17:28	17:04
2	06:03		06:27	18:35 (T79)	06:58	18:25 (T79)	07:28	07:03	07:38
	21:08		20:49 57	19:32 (T79)	20:05 68	19:33 (T62)	19:13	17:27	17:04
3	06:03		06:28	18:35 (T79)	06:59	18:26 (T79)	07:29	07:04	07:39
	21:08		20:48 58	19:33 (T79)	20:04 67	19:33 (T62)	19:11	17:26	17:03
4	06:04		06:29	18:34 (T79)	07:00	18:26 (T79)	07:30	07:05	07:40
	21:08		20:46 60	19:34 (T79)	20:02 67	19:33 (T62)	19:10	17:24	17:03
5	06:04		06:30	18:33 (T79)	07:01	18:27 (T79)	07:31	07:06	07:41
	21:07		20:45 61	19:34 (T79)	20:00 65	19:32 (T62)	19:08	17:23	17:03
6	06:05		06:31	18:32 (T79)	07:02	18:28 (T79)	07:33	07:08	07:42
	21:07		20:44 63	19:35 (T79)	19:57 63	19:31 (T62)	19:06	17:22	17:03
7	06:06		06:32	18:32 (T79)	07:03	18:29 (T79)	07:34	07:09	07:43
	21:07		20:43 63	19:35 (T79)	19:55 62	19:31 (T62)	19:05	17:21	17:03
8	06:06		06:33	18:31 (T79)	07:04	18:30 (T79)	07:35	07:10	07:43
	21:07		20:42 65	19:36 (T79)	19:54 59	19:29 (T62)	19:03	17:20	17:03
9	06:07		06:34	18:30 (T79)	07:05	18:31 (T79)	07:36	07:11	07:44
	21:06		20:40 66	19:36 (T79)	19:52 57	19:28 (T62)	19:01	17:19	17:03
10	06:08		06:35	18:30 (T79)	07:06	18:33 (T79)	07:37	07:12	07:45
	21:06		20:39 66	19:36 (T79)	19:50 53	19:26 (T62)	19:00	17:18	17:03
11	06:08		06:36	18:29 (T79)	07:07	18:36 (T79)	07:38	07:14	07:46
	21:06		20:38 68	19:37 (T79)	19:49 49	19:25 (T62)	18:58	17:17	17:03
12	06:09		06:37	18:28 (T79)	07:08	18:39 (T79)	07:39	07:15	07:47
	21:05		20:37 69	19:37 (T79)	19:47 44	19:23 (T62)	18:57	17:16	17:03
13	06:10		06:38	18:28 (T79)	07:09	18:44 (T79)	07:40	07:16	07:48
	21:05		20:35 69	19:37 (T79)	19:45 37	19:21 (T62)	18:55	17:15	17:03
14	06:11		06:39	18:27 (T79)	07:10	18:55 (T62)	07:41	07:17	07:48
	21:04		20:34 70	19:37 (T79)	19:44 24	19:19 (T62)	18:53	17:14	17:03
15	06:11		06:40	18:27 (T79)	07:11	18:58 (T62)	07:42	07:18	07:49
	21:04		20:33 70	19:37 (T79)	19:42 18	19:16 (T62)	18:52	17:13	17:03
16	06:12		06:41	18:25 (T79)	07:12	19:02 (T62)	07:43	07:20	07:50
	21:03		20:31 71	19:36 (T79)	19:40 9	19:11 (T62)	18:50	17:12	17:04
17	06:13	18:58 (T79)	06:42	18:25 (T79)	07:13		07:44	07:21	07:51
	21:02 12	19:10 (T79)	20:30 71	19:36 (T79)	19:38		18:49	17:12	17:04
18	06:14	18:55 (T79)	06:43	18:25 (T79)	07:14		07:46	07:22	07:51
	21:02 18	19:13 (T79)	20:28 71	19:36 (T79)	19:37		18:47	17:11	17:04
19	06:15	18:53 (T79)	06:44	18:24 (T79)	07:15		07:47	07:23	07:52
	21:01 23	19:16 (T79)	20:27 72	19:36 (T79)	19:35		18:46	17:10	17:05
20	06:15	18:51 (T79)	06:45	18:24 (T79)	07:16		07:48	07:24	07:52
	21:00 27	19:18 (T79)	20:25 72	19:36 (T79)	19:33		18:44	17:09	17:05
21	06:16	18:49 (T79)	06:46	18:24 (T79)	07:17		07:49	07:25	07:53
	21:00 30	19:19 (T79)	20:24 72	19:36 (T79)	19:32		18:43	17:09	17:06
22	06:17	18:48 (T79)	06:47	18:23 (T79)	07:18		07:50	07:27	07:53
	20:59 33	19:21 (T79)	20:22 72	19:35 (T79)	19:30		18:41	17:08	17:06
23	06:18	18:46 (T79)	06:48	18:23 (T79)	07:19		07:51	07:28	07:54
	20:58 36	19:22 (T79)	20:21 72	19:35 (T79)	19:28		18:40	17:07	17:07
24	06:19	18:45 (T79)	06:49	18:23 (T79)	07:20		07:52	07:29	07:54
	20:57 39	19:24 (T79)	20:19 71	19:34 (T79)	19:26		18:39	17:07	17:07
25	06:20	18:44 (T79)	06:50	18:23 (T79)	07:21		07:53	07:30	07:55
	20:56 41	19:25 (T79)	20:18 71	19:34 (T79)	19:25		18:37	17:06	17:08
26	06:21	18:43 (T79)	06:51	18:23 (T79)	07:22		07:55	07:31	07:55
	20:56 43	19:26 (T79)	20:16 70	19:33 (T79)	19:23		18:36	17:06	17:08
27	06:22	18:42 (T79)	06:52	18:23 (T79)	07:23		07:56	07:32	07:56
	20:55 46	19:28 (T79)	20:15 70	19:33 (T79)	19:21		18:34	17:05	17:09
28	06:23	18:41 (T79)	06:53	18:23 (T79)	07:24		07:57	07:33	07:56
	20:54 48	19:29 (T79)	20:13 70	19:33 (T62)	19:20		18:33	17:05	17:10
29	06:23	18:39 (T79)	06:54	18:23 (T79)	07:25		07:58	07:34	07:56
	20:53 50	19:29 (T79)	20:12 71	19:34 (T62)	19:18		18:32	17:04	17:11
30	06:24	18:38 (T79)	06:55	18:24 (T79)	07:26		07:59	07:36	07:56
	20:52 52	19:30 (T79)	20:10 70	19:34 (T62)	19:16		18:31	17:04	17:11
31	06:25	18:37 (T79)	06:56	18:24 (T79)			08:00		07:57
	20:51 54	19:31 (T79)	20:09 70	19:34 (T62)			18:29		17:12
Potential sun hours	459		428		375		345	298	288
Total, worst case	552		2096		812				
Sun reduction	0.66		0.61		0.59				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	0.61		0.61		0.61				
Total reduction	0.40		0.37		0.36				
Total, real	222		781		294				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 328 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6450)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May		June		July		August		September	October	November	December
1	07:57	07:44	07:07	07:16	06:30		06:02		06:35 (T43)	06:02	06:41 (T43)	06:27	06:58 (T43)	06:58	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27		20:57	57	07:32 (T43)	21:09 59	07:40 (T43)	20:50 30	07:28 (T43)	20:07	19:15	17:28	17:04
2	07:58	07:43	07:06	07:15	06:29		06:01		06:36 (T43)	06:03	06:40 (T43)	06:28	07:00 (T43)	06:59	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28		20:58	57	07:33 (T43)	21:09 59	07:39 (T43)	20:49 26	07:26 (T43)	20:06	19:13	17:27	17:04
3	07:58	07:42	07:04	07:13	06:28		06:01		06:36 (T43)	06:03	06:41 (T43)	06:29	07:03 (T43)	07:00	07:30	07:05	07:39
	17:15	17:50	18:24	19:58	20:29		20:59	58	07:34 (T43)	21:08 59	07:40 (T43)	20:48 20	07:23 (T43)	20:04	19:12	17:26	17:03
4	07:58	07:41	07:03	07:11	06:27		06:00		06:35 (T43)	06:04	06:42 (T43)	06:29	07:06 (T43)	07:01	07:31	07:06	07:40
	17:16	17:52	18:25	19:59	20:30		20:59	58	07:33 (T43)	21:08 58	07:40 (T43)	20:47 14	07:20 (T43)	20:03	19:10	17:25	17:03
5	07:58	07:40	07:01	07:10	06:25		06:00		06:36 (T43)	06:05	06:42 (T43)	06:30		07:02	07:32	07:07	07:41
	17:17	17:53	18:27	20:01	20:31		21:00	58	07:34 (T43)	21:08 58	07:40 (T43)	20:46		20:01	19:08	17:23	17:03
6	07:58	07:38	07:00	07:08	06:24		06:00		06:36 (T43)	06:05	06:42 (T43)	06:31		07:03	07:33	07:08	07:42
	17:18	17:54	18:28	20:01	20:33		21:01	58	07:34 (T43)	21:08 59	07:41 (T43)	20:45		19:58	19:07	17:22	17:03
7	07:58	07:37	06:58	07:06	06:23		05:59		06:35 (T43)	06:06	06:42 (T43)	06:32		07:04	07:34	07:09	07:43
	17:19	17:55	18:29	20:02	20:34		21:01	59	07:34 (T43)	21:08 58	07:40 (T43)	20:43		19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22	07:02 (T43)	05:59		06:36 (T43)	06:06	06:43 (T43)	06:33		07:05	07:35	07:11	07:44
	17:20	17:57	19:30	20:03	20:35	3 07:05 (T43)	21:02	58	07:34 (T43)	21:07 58	07:41 (T43)	20:42		19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03	06:21	06:55 (T43)	05:59		06:36 (T43)	06:07	06:43 (T43)	06:34		07:06	07:36	07:12	07:45
	17:21	17:58	19:31	20:04	20:36	17 07:12 (T43)	21:03	59	07:35 (T43)	21:07 58	07:41 (T43)	20:41		19:53	19:02	17:19	17:03
10	07:57	07:34	07:53	07:02	06:20	06:52 (T43)	05:59		06:36 (T43)	06:08	06:43 (T43)	06:35		07:07	07:37	07:13	07:46
	17:22	17:59	19:32	20:05	20:37	23 07:15 (T43)	21:03	59	07:35 (T43)	21:07 57	07:40 (T43)	20:40		19:51	19:00	17:18	17:03
11	07:57	07:33	07:51	07:00	06:18	06:50 (T43)	05:59		06:37 (T43)	06:08	06:43 (T43)	06:36		07:08	07:38	07:14	07:47
	17:23	18:00	19:33	20:06	20:38	27 07:17 (T43)	21:04	58	07:35 (T43)	21:06 58	07:41 (T43)	20:38		19:49	18:59	17:17	17:03
12	07:57	07:31	07:50	06:58	06:17	06:48 (T43)	05:59		06:37 (T43)	06:09	06:44 (T43)	06:37		07:09	07:39	07:15	07:48
	17:24	18:02	19:35	20:07	20:39	31 07:19 (T43)	21:04	59	07:36 (T43)	21:06 57	07:41 (T43)	20:37		19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57	06:16	06:46 (T43)	05:58		06:37 (T43)	06:10	06:44 (T43)	06:38		07:10	07:41	07:17	07:48
	17:25	18:03	19:36	20:08	20:40	35 07:21 (T43)	21:05	59	07:36 (T43)	21:05 56	07:40 (T43)	20:36		19:46	18:55	17:15	17:03
14	07:56	07:29	07:47	06:55	06:15	06:45 (T43)	05:58		06:37 (T43)	06:11	06:44 (T43)	06:39		07:11	07:42	07:18	07:49
	17:26	18:04	19:37	20:09	20:41	37 07:22 (T43)	21:05	59	07:36 (T43)	21:05 56	07:40 (T43)	20:34		19:44	18:54	17:14	17:03
15	07:56	07:28	07:45	06:54	06:14	06:43 (T43)	05:58		06:37 (T43)	06:11	06:45 (T43)	06:40		07:12	07:43	07:19	07:50
	17:27	18:05	19:38	20:10	20:42	40 07:23 (T43)	21:06	59	07:36 (T43)	21:04 56	07:41 (T43)	20:33		19:42	18:52	17:13	17:04
16	07:55	07:26	07:43	06:52	06:13	06:42 (T43)	05:58		06:38 (T43)	06:12	06:46 (T43)	06:41		07:13	07:44	07:20	07:51
	17:28	18:06	19:39	20:11	20:43	42 07:24 (T43)	21:06	59	07:37 (T43)	21:04 55	07:41 (T43)	20:32		19:41	18:51	17:13	17:04
17	07:55	07:25	07:42	06:51	06:12	06:41 (T43)	05:58		06:38 (T43)	06:13	06:45 (T43)	06:42		07:14	07:45	07:21	07:51
	17:29	18:08	19:40	20:12	20:44	44 07:25 (T43)	21:07	59	07:37 (T43)	21:03 55	07:40 (T43)	20:30		19:39	18:49	17:12	17:04
18	07:54	07:24	07:40	06:49	06:11	06:40 (T43)	05:59		06:38 (T43)	06:14	06:46 (T43)	06:43		07:15	07:46	07:23	07:52
	17:31	18:09	19:41	20:13	20:45	46 07:26 (T43)	21:07	59	07:37 (T43)	21:02 54	07:40 (T43)	20:29		19:37	18:48	17:11	17:05
19	07:54	07:22	07:38	06:48	06:11	06:39 (T43)	05:59		06:38 (T43)	06:15	06:47 (T43)	06:44		07:16	07:47	07:24	07:52
	17:32	18:10	19:42	20:14	20:46	47 07:26 (T43)	21:07	59	07:37 (T43)	21:02 53	07:40 (T43)	20:27		19:35	18:46	17:10	17:05
20	07:53	07:21	07:37	06:46	06:10	06:39 (T43)	05:59		06:38 (T43)	06:16	06:47 (T43)	06:45		07:17	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	20:47	49 07:28 (T43)	21:08	59	07:37 (T43)	21:01 52	07:39 (T43)	20:26		19:34	18:45	17:09	17:05
21	07:52	07:19	07:35	06:45	06:09	06:39 (T43)	05:59		06:38 (T43)	06:16	06:48 (T43)	06:47		07:18	07:49	07:26	07:54
	17:34	18:13	19:44	20:17	20:48	49 07:28 (T43)	21:08	59	07:37 (T43)	21:00 51	07:39 (T43)	20:25		19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43	06:08	06:38 (T43)	05:59		06:39 (T43)	06:17	06:48 (T43)	06:48		07:19	07:51	07:27	07:54
	17:35	18:14	19:45	20:18	20:49	50 07:28 (T43)	21:08	59	07:38 (T43)	21:00 50	07:38 (T43)	20:23		19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:42	06:07	06:37 (T43)	05:59		06:39 (T43)	06:18	06:49 (T43)	06:49		07:20	07:52	07:28	07:55
	17:37	18:15	19:47	20:19	20:49	52 07:29 (T43)	21:08	59	07:38 (T43)	20:59 48	07:37 (T43)	20:22		19:29	18:40	17:08	17:07
24	07:50	07:15	07:30	06:40	06:07	06:37 (T43)	06:00		06:39 (T43)	06:19	06:49 (T43)	06:50		07:21	07:53	07:30	07:55
	17:38	18:16	19:48	20:20	20:50	53 07:30 (T43)	21:08	59	07:38 (T43)	20:58 48	07:37 (T43)	20:20		19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:39	06:06	06:37 (T43)	06:00		06:40 (T43)	06:20	06:50 (T43)	06:51		07:22	07:54	07:31	07:55
	17:39	18:17	19:49	20:21	20:51	53 07:30 (T43)	21:09	59	07:39 (T43)	20:57 46	07:36 (T43)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:05	06:36 (T43)	06:00		06:40 (T43)	06:21	06:51 (T43)	06:52		07:23	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	20:52	54 07:30 (T43)	21:09	59	07:39 (T43)	20:56 45	07:36 (T43)	20:17		19:23	18:36	17:06	17:09
27	07:48	07:10	07:25	06:36	06:04	06:36 (T43)	06:01		06:39 (T43)	06:22	06:52 (T43)	06:53		07:24	07:56	07:33	07:56
	17:41	18:20	19:51	20:23	20:53	55 07:31 (T43)	21:09	60	07:39 (T43)	20:55 43	07:35 (T43)	20:15		19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:35	06:04	06:36 (T43)	06:01		06:40 (T43)	06:23	06:53 (T43)	06:54		07:25	07:58	07:34	07:57
	17:43	18:21	19:52	20:24	20:54	55 07:31 (T43)	21:09	59	07:39 (T43)	20:54 41	07:34 (T43)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:03	06:36 (T43)	06:01		06:40 (T43)	06:24	06:54 (T43)	06:55		07:26	07:59	07:35	07:57
	17:44		19:53	20:25	20:55	56 07:32 (T43)	21:09	59	07:39 (T43)	20:53 39	07:33 (T43)	20:12		19:18	18:32	17:05	17:11
30	07:46		07:20	06:32	06:03	06:36 (T43)	06:02		06:40 (T43)	06:25	06:56 (T43)	06:56		07:27	08:00	07:36	07:57
	17:45		19:54	20:26	20:56	56 07:32 (T43)	21:09	59	07:39 (T43)	20:52 36	07:32 (T43)	20:11		19:17	18:31	17:04	17:11
31	07:45		07:18		06:02	06:36 (T43)				06:26	06:57 (T43)	06:57			08:01		07:57
	17:46		19:55		20:56	57 07:33 (T43)				20:51 34	07:31 (T43)	20:09			18:30		17:12
Potential sun hours	297	297	370	399	448		453			460		429		375	345	297	287
Total, worst case						1031		1761		1616		90					
Sun reduction						0.57		0.64		0.66		0.61					
Oper. time red.						1.00		1.00		1.00		1.00					
Wind dir. red.						0.71		0.71		0.71		0.71					
Total reduction						0.40		0.45		0.47		0.43					
Total, real						416		797		755		39					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 332 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6454)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May	June
1	07:57		16:03 (T5)	07:43		16:02 (T5)	07:07		17:08 (T4)	07:16		19:19 (T3)	06:30	06:01
	17:12	35	16:38 (T5)	17:47	58	17:00 (T5)	18:21	23	17:31 (T4)	19:56	15	19:34 (T3)	20:27	20:57
2	07:57		16:03 (T5)	07:42		16:03 (T5)	07:05		17:11 (T4)	07:14		19:16 (T3)	06:28	06:00
	17:13	36	16:39 (T5)	17:48	57	17:00 (T5)	18:22	18	17:29 (T4)	19:57	19	19:35 (T3)	20:28	20:58
3	07:57		16:03 (T5)	07:41		16:03 (T5)	07:04		17:14 (T4)	07:12		19:14 (T3)	06:27	06:00
	17:14	37	16:40 (T5)	17:49	57	17:00 (T5)	18:24	11	17:25 (T4)	19:58	22	19:36 (T3)	20:29	20:58
4	07:57		16:03 (T5)	07:40		16:04 (T5)	07:02			07:11		19:13 (T3)	06:26	05:59
	17:15	38	16:41 (T5)	17:51	56	17:00 (T5)	18:25			19:59	24	19:37 (T3)	20:30	20:59
5	07:57		16:03 (T5)	07:39		16:03 (T5)	07:01			07:09		19:12 (T3)	06:24	05:59
	17:16	39	16:42 (T5)	17:52	61	17:22 (T4)	18:26			20:00	26	19:38 (T3)	20:31	21:00
6	07:57		16:03 (T5)	07:38		16:04 (T5)	06:59			07:07		19:10 (T3)	06:23	05:59
	17:17	40	16:43 (T5)	17:53	69	17:27 (T4)	18:27			20:00	29	19:39 (T3)	20:32	21:01
7	07:57		16:02 (T5)	07:37		16:05 (T5)	06:57			07:06		19:10 (T3)	06:22	05:58
	17:18	41	16:43 (T5)	17:54	72	17:30 (T4)	18:28			20:01	31	19:41 (T3)	20:33	21:01
8	07:57		16:02 (T5)	07:36		16:06 (T5)	07:56			07:04		19:09 (T3)	06:21	05:58
	17:19	42	16:44 (T5)	17:56	75	17:32 (T4)	19:29			20:02	32	19:41 (T3)	20:34	21:02
9	07:57		16:02 (T5)	07:35		16:07 (T5)	07:54			07:02		19:09 (T3)	06:20	05:58
	17:20	43	16:45 (T5)	17:57	77	17:34 (T4)	19:30			20:03	31	19:40 (T3)	20:35	21:02
10	07:57		16:02 (T5)	07:33		16:07 (T5)	07:53			07:01		19:09 (T3)	06:19	05:58
	17:21	44	16:46 (T5)	17:58	78	17:34 (T4)	19:32			20:04	32	19:41 (T3)	20:36	21:03
11	07:57		16:01 (T5)	07:32		16:08 (T5)	07:51			06:59		19:08 (T3)	06:17	05:58
	17:22	46	16:47 (T5)	17:59	79	17:36 (T4)	19:33			20:05	32	19:40 (T3)	20:37	21:04
12	07:56		16:01 (T5)	07:31		16:09 (T5)	07:49			06:58		19:09 (T3)	06:16	05:57
	17:23	47	16:48 (T5)	18:01	78	17:37 (T4)	19:34			20:06	31	19:40 (T3)	20:38	21:04
13	07:56		16:02 (T5)	07:30		16:11 (T5)	07:48			06:56		19:09 (T3)	06:15	05:57
	17:24	47	16:49 (T5)	18:02	78	17:38 (T4)	19:35			20:07	30	19:39 (T3)	20:39	21:05
14	07:56		16:01 (T5)	07:28		16:11 (T5)	07:46			06:54		19:10 (T3)	06:14	05:57
	17:25	49	16:50 (T5)	18:03	77	17:38 (T4)	19:36			20:09	28	19:38 (T3)	20:40	21:05
15	07:55		16:01 (T5)	07:27		16:13 (T5)	07:44			06:53		19:10 (T3)	06:13	05:57
	17:26	50	16:51 (T5)	18:04	75	17:39 (T4)	19:37			20:10	27	19:37 (T3)	20:41	21:06
16	07:55		16:01 (T5)	07:26		16:15 (T5)	07:43			06:51		19:10 (T3)	06:12	05:57
	17:27	50	16:51 (T5)	18:06	73	17:40 (T4)	19:38			20:11	25	19:35 (T3)	20:42	21:06
17	07:54		16:01 (T5)	07:24		16:16 (T5)	07:41			06:50		19:12 (T3)	06:11	05:57
	17:28	52	16:53 (T5)	18:07	70	17:40 (T4)	19:39			20:12	22	19:34 (T3)	20:43	21:06
18	07:54		16:01 (T5)	07:23		16:19 (T5)	07:39			06:48		19:12 (T3)	06:10	05:57
	17:30	52	16:53 (T5)	18:08	66	17:40 (T4)	19:40			20:13	20	19:32 (T3)	20:44	21:07
19	07:53		16:01 (T5)	07:22		16:21 (T5)	07:38			06:47		19:15 (T3)	06:10	05:58
	17:31	53	16:54 (T5)	18:09	61	17:40 (T4)	19:42			20:14	15	19:30 (T3)	20:45	21:07
20	07:53		16:01 (T5)	07:20		16:26 (T5)	07:36			06:45		19:17 (T3)	06:09	05:58
	17:32	54	16:55 (T5)	18:10	51	17:40 (T4)	19:43			20:15	9	19:26 (T3)	20:46	21:07
21	07:52		16:00 (T5)	07:19		17:02 (T4)	07:34			06:44			06:08	05:58
	17:33	55	16:55 (T5)	18:12	38	17:40 (T4)	19:44			20:16			20:47	21:08
22	07:52		16:01 (T5)	07:17		17:02 (T4)	07:33			06:42			06:07	05:58
	17:34	55	16:56 (T5)	18:13	37	17:39 (T4)	19:45			20:17			20:48	21:08
23	07:51		16:01 (T5)	07:16		17:03 (T4)	07:31			06:41			06:06	05:58
	17:36	55	16:56 (T5)	18:14	36	17:39 (T4)	19:46			20:18			20:49	21:08
24	07:50		16:01 (T5)	07:14		17:03 (T4)	07:29			06:39			06:05	05:59
	17:37	56	16:57 (T5)	18:15	35	17:38 (T4)	19:47			20:19			20:50	21:08
25	07:49		16:01 (T5)	07:13		17:04 (T4)	07:27			06:38			06:05	05:59
	17:38	56	16:57 (T5)	18:16	34	17:38 (T4)	19:48			20:20			20:51	21:08
26	07:49		16:00 (T5)	07:11		17:05 (T4)	07:26			06:36			06:04	05:59
	17:39	57	16:57 (T5)	18:18	31	17:36 (T4)	19:49			20:21			20:52	21:08
27	07:48		16:01 (T5)	07:10		17:05 (T4)	07:24			06:35			06:03	06:00
	17:41	58	16:59 (T5)	18:19	29	17:34 (T4)	19:50			20:23			20:53	21:09
28	07:47		16:01 (T5)	07:08		17:07 (T4)	07:22			06:34			06:03	06:00
	17:42	58	16:59 (T5)	18:20	26	17:33 (T4)	19:51			20:24			20:54	21:09
29	07:46		16:02 (T5)				07:21			06:32			06:02	06:00
	17:43	57	16:59 (T5)				19:52			20:25			20:54	21:09
30	07:45		16:02 (T5)				07:19			06:31			06:02	06:01
	17:44	57	16:59 (T5)				19:53			20:26			20:55	21:09
31	07:44		16:02 (T5)				07:17		19:21 (T3)				06:01	
	17:46	57	16:59 (T5)				19:55	12	19:33 (T3)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		1516			1634			64			500			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.73			0.72			0.69			0.61			
Total reduction		0.23			0.29			0.31			0.32			
Total, real		348			477			20			160			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 332 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6454)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December	
1	06:01	06:26		06:57		19:07 (T3)	07:27		07:02	15:36 (T5)	07:37	15:43 (T5)
	21:08	20:50		20:07	32	19:39 (T3)	19:14		17:27	78	17:04 (T4)	17:03	46	16:29 (T5)
2	06:02	06:27		06:58		19:07 (T3)	07:28		07:03	15:35 (T5)	07:38	15:45 (T5)
	21:08	20:49		20:05	32	19:39 (T3)	19:13		17:26	77	17:02 (T4)	17:03	45	16:30 (T5)
3	06:02	06:28		06:59		19:07 (T3)	07:29		07:04	15:35 (T5)	07:39	15:46 (T5)
	21:08	20:48		20:04	31	19:38 (T3)	19:11		17:25	76	17:02 (T4)	17:02	43	16:29 (T5)
4	06:03	06:29		07:00		19:06 (T3)	07:30		07:05	15:34 (T5)	07:40	15:47 (T5)
	21:08	20:47		20:02	32	19:38 (T3)	19:09		17:24	73	17:00 (T4)	17:02	42	16:29 (T5)
5	06:03	06:30		07:01		19:06 (T3)	07:31		07:07	15:34 (T5)	07:41	15:48 (T5)
	21:08	20:46		20:00	31	19:37 (T3)	19:08		17:23	68	16:57 (T4)	17:02	41	16:29 (T5)
6	06:04	06:31		07:02		19:07 (T3)	07:32		07:08	15:34 (T5)	07:42	15:49 (T5)
	21:08	20:44		19:57	28	19:35 (T3)	19:06		17:21	57	16:51 (T4)	17:02	40	16:29 (T5)
7	06:05	06:31		07:03		19:07 (T3)	07:33		07:09	15:33 (T5)	07:43	15:50 (T5)
	21:07	20:43		19:55	26	19:33 (T3)	19:04		17:20	57	16:30 (T5)	17:02	39	16:29 (T5)
8	06:05	06:32		07:04		19:07 (T3)	07:35		07:10	15:33 (T5)	07:44	15:50 (T5)
	21:07	20:42		19:54	25	19:32 (T3)	19:03		17:19	57	16:30 (T5)	17:02	38	16:28 (T5)
9	06:06	06:34		07:05		19:08 (T3)	07:36		07:11	15:33 (T5)	07:45	15:51 (T5)
	21:07	20:41		19:52	22	19:30 (T3)	19:01		17:18	57	16:30 (T5)	17:02	37	16:28 (T5)
10	06:07	06:35		07:06		19:09 (T3)	07:37		07:13	15:33 (T5)	07:46	15:52 (T5)
	21:06	20:39		19:50	19	19:28 (T3)	18:59		17:17	57	16:30 (T5)	17:02	36	16:28 (T5)
11	06:07	06:36		07:07		19:11 (T3)	07:38	17:47 (T4)	07:14	15:33 (T5)	07:46	15:53 (T5)
	21:06	20:38		19:49	16	19:27 (T3)	18:58	14 18:01 (T4)	17:16	57	16:30 (T5)	17:02	35	16:28 (T5)
12	06:08	06:37		07:08		19:13 (T3)	07:39	17:43 (T4)	07:15	15:33 (T5)	07:47	15:54 (T5)
	21:06	20:37		19:47	12	19:25 (T3)	18:56	21 18:04 (T4)	17:15	57	16:30 (T5)	17:02	34	16:28 (T5)
13	06:09	06:38		07:09			07:40	17:41 (T4)	07:16	15:33 (T5)	07:48	15:55 (T5)
	21:05	20:35		19:45			18:55	24 18:05 (T4)	17:14	58	16:31 (T5)	17:02	33	16:28 (T5)
14	06:10	06:39		07:10			07:41	17:39 (T4)	07:17	15:33 (T5)	07:49	15:55 (T5)
	21:05	20:34		19:43			18:53	27 18:06 (T4)	17:13	58	16:31 (T5)	17:02	33	16:28 (T5)
15	06:10	06:40		07:11			07:42	17:37 (T4)	07:19	15:33 (T5)	07:50	15:56 (T5)
	21:04	20:33		19:42			18:51	30 18:07 (T4)	17:12	58	16:31 (T5)	17:03	32	16:28 (T5)
16	06:11	06:41		07:12			07:43	17:37 (T4)	07:20	15:33 (T5)	07:50	15:57 (T5)
	21:03	20:31		19:40			18:50	32 18:09 (T4)	17:12	57	16:30 (T5)	17:03	31	16:28 (T5)
17	06:12	06:42		07:13			07:44	17:35 (T4)	07:21	15:34 (T5)	07:51	15:57 (T5)
	21:03	20:30		19:38			18:48	34 18:09 (T4)	17:11	57	16:31 (T5)	17:03	31	16:28 (T5)
18	06:13	06:43		07:14			07:46	17:34 (T4)	07:22	15:35 (T5)	07:52	15:58 (T5)
	21:02	20:28		19:37			18:47	36 18:10 (T4)	17:10	56	16:31 (T5)	17:03	31	16:29 (T5)
19	06:14	06:44		07:15			07:47	17:33 (T4)	07:23	15:35 (T5)	07:52	15:59 (T5)
	21:02	20:27		19:35			18:45	37 18:10 (T4)	17:09	55	16:30 (T5)	17:04	30	16:29 (T5)
20	06:14	06:45		07:16			07:48	17:33 (T4)	07:25	15:36 (T5)	07:53	15:59 (T5)
	21:01	20:26		19:33			18:44	37 18:10 (T4)	17:08	55	16:31 (T5)	17:04	30	16:29 (T5)
21	06:15	06:46		07:17			07:49	17:33 (T4)	07:26	15:36 (T5)	07:53	16:00 (T5)
	21:00	20:24		19:31			18:42	38 18:11 (T4)	17:08	55	16:31 (T5)	17:05	30	16:30 (T5)
22	06:16	06:47		07:18			07:50	16:55 (T5)	07:27	15:37 (T5)	07:54	16:00 (T5)
	20:59	20:23		19:30			18:41	54 18:10 (T4)	17:07	54	16:31 (T5)	17:05	30	16:30 (T5)
23	06:17	06:48	19:21 (T3)	07:19			07:51	16:51 (T5)	07:28	15:37 (T5)	07:54	16:01 (T5)
	20:59	20:21	11 19:32 (T3)	19:28			18:39	62 18:10 (T4)	17:07	53	16:30 (T5)	17:06	30	16:31 (T5)
24	06:18	06:49	19:18 (T3)	07:20			07:52	16:48 (T5)	07:29	15:38 (T5)	07:55	16:01 (T5)
	20:58	20:20	16 19:34 (T3)	19:26			18:38	67 18:10 (T4)	17:06	52	16:30 (T5)	17:06	30	16:31 (T5)
25	06:19	06:50	19:16 (T3)	07:21			07:54	16:45 (T5)	07:30	15:39 (T5)	07:55	16:01 (T5)
	20:57	20:18	20 19:36 (T3)	19:25			18:37	71 18:09 (T4)	17:05	52	16:31 (T5)	17:07	30	16:31 (T5)
26	06:20	06:51	19:14 (T3)	07:22			07:55	16:44 (T5)	07:32	15:40 (T5)	07:56	16:02 (T5)
	20:56	20:16	23 19:37 (T3)	19:23			18:35	75 18:10 (T4)	17:05	50	16:30 (T5)	17:07	31	16:33 (T5)
27	06:21	06:52	19:13 (T3)	07:23			07:56	16:42 (T5)	07:33	15:40 (T5)	07:56	16:02 (T5)
	20:55	20:15	25 19:38 (T3)	19:21			18:34	76 18:09 (T4)	17:04	50	16:30 (T5)	17:08	31	16:33 (T5)
28	06:22	06:53	19:12 (T3)	07:24			07:57	16:41 (T5)	07:34	15:41 (T5)	07:56	16:02 (T5)
	20:54	20:13	27 19:39 (T3)	19:19			18:33	77 18:08 (T4)	17:04	49	16:30 (T5)	17:09	32	16:34 (T5)
29	06:23	06:54	19:10 (T3)	07:25			07:58	16:39 (T5)	07:35	15:42 (T5)	07:57	16:02 (T5)
	20:53	20:12	28 19:38 (T3)	19:18			18:31	79 18:07 (T4)	17:04	47	16:29 (T5)	17:10	32	16:34 (T5)
30	06:24	06:55	19:09 (T3)	07:26			07:59	16:39 (T5)	07:36	15:42 (T5)	07:57	16:03 (T5)
	20:52	20:10	30 19:39 (T3)	19:16			18:30	79 18:07 (T4)	17:03	47	16:29 (T5)	17:10	33	16:36 (T5)
31	06:25	06:56	19:08 (T3)				08:01	16:37 (T5)				07:57		16:03 (T5)
	20:51	20:09	31 19:39 (T3)				18:29	79 18:05 (T4)				17:11	34	16:37 (T5)
Potential sun hours	460	429		375			345		297			287		
Total, worst case		211		306			1049		1734			1070		
Sun reduction		0.61		0.59			0.48		0.30			0.22		
Oper. time red.		1.00		1.00			1.00		1.00			1.00		
Wind dir. red.		0.61		0.61			0.72		0.73			0.73		
Total reduction		0.37		0.36			0.35		0.22			0.16		
Total, real		79		111			365		384			174		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 344 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6466)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:50 (T5)	06:01	06:31 (T4)	06:01	06:37 (T4)	06:26	06:50 (T4)	06:57	07:27	07:02	07:37
	17:12	17:47	18:21	19:56		20:27	31	07:21 (T5) 20:57	46	07:17 (T4) 21:09	47	07:24 (T4) 20:50	37	07:27 (T5) 20:07	19:14	17:27	17:03
2	07:57	07:42	07:05	07:14		06:28		06:50 (T5) 06:00		06:31 (T4) 06:02		06:37 (T4) 06:27		06:52 (T4) 06:58	07:28	07:03	07:38
	17:13	17:48	18:22	19:57		20:28	32	07:22 (T5) 20:58	47	07:18 (T4) 21:08	46	07:23 (T4) 20:49	36	07:28 (T5) 20:05	19:13	17:26	17:03
3	07:57	07:41	07:04	07:12		06:27		06:50 (T5) 06:00		06:32 (T4) 06:02		06:38 (T4) 06:28		06:54 (T4) 06:59	07:29	07:04	07:39
	17:14	17:49	18:24	19:58		20:29	32	07:22 (T5) 20:58	47	07:19 (T4) 21:08	46	07:24 (T4) 20:48	35	07:29 (T5) 20:04	19:11	17:25	17:02
4	07:58	07:40	07:02	07:11		06:26		06:50 (T5) 05:59		06:31 (T4) 06:03		06:38 (T4) 06:29		06:56 (T4) 07:00	07:30	07:05	07:40
	17:15	17:51	18:25	19:59		20:30	32	07:22 (T5) 20:59	47	07:18 (T4) 21:08	47	07:25 (T4) 20:47	33	07:29 (T5) 20:02	19:09	17:24	17:02
5	07:58	07:39	07:01	07:09		06:25		06:49 (T5) 05:59		06:32 (T4) 06:04		06:38 (T4) 06:30		07:00 (T5) 07:01	07:31	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	31	07:20 (T5) 21:00	47	07:19 (T4) 21:08	47	07:25 (T4) 20:46	29	07:29 (T5) 20:00	19:08	17:23	17:02
6	07:57	07:38	06:59	07:07		06:23		06:50 (T5) 05:59		06:32 (T4) 06:04		06:38 (T4) 06:31		07:00 (T5) 07:02	07:32	07:08	07:42
	17:17	17:53	18:27	20:00		20:32	30	07:20 (T5) 21:01	47	07:19 (T4) 21:08	47	07:25 (T4) 20:44	30	07:30 (T5) 19:57	19:06	17:21	17:02
7	07:57	07:37	06:57	07:06		06:22		06:50 (T5) 05:58		06:32 (T4) 06:05		06:38 (T4) 06:32		06:59 (T5) 07:03	07:34	07:09	07:43
	17:18	17:54	18:28	20:01		20:33	30	07:20 (T5) 21:01	46	07:18 (T4) 21:07	47	07:25 (T4) 20:43	31	07:30 (T5) 19:55	19:04	17:20	17:02
8	07:57	07:36	07:56	07:04		06:21		06:49 (T4) 05:58		06:32 (T4) 06:05		06:39 (T4) 06:33		06:59 (T5) 07:04	07:35	07:10	07:44
	17:19	17:56	19:29	20:02		20:34	30	07:19 (T5) 21:02	47	07:19 (T4) 21:07	46	07:25 (T4) 20:42	31	07:30 (T5) 19:54	19:03	17:19	17:02
9	07:57	07:35	07:54	07:03		06:20		06:45 (T4) 05:58		06:32 (T4) 06:06		06:39 (T4) 06:34		06:59 (T5) 07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	34	07:19 (T5) 21:02	47	07:19 (T4) 21:07	47	07:26 (T4) 20:41	31	07:30 (T5) 19:52	19:01	17:18	17:02
10	07:57	07:34	07:53	07:01		06:19		06:43 (T4) 05:58		06:33 (T4) 06:07		06:39 (T4) 06:35		06:58 (T5) 07:06	07:37	07:13	07:46
	17:21	17:58	19:32	20:04		20:36	35	07:18 (T5) 21:03	46	07:19 (T4) 21:06	46	07:25 (T4) 20:39	32	07:30 (T5) 19:50	18:59	17:17	17:02
11	07:57	07:32	07:51	06:59		06:18		06:41 (T4) 05:58		06:33 (T4) 06:07		06:39 (T4) 06:36		06:58 (T5) 07:07	07:38	07:14	07:47
	17:22	17:59	19:33	20:05		20:37	36	07:17 (T5) 21:04	47	07:20 (T4) 21:06	47	07:26 (T4) 20:38	32	07:30 (T5) 19:49	18:58	17:16	17:02
12	07:56	07:31	07:49	06:58		06:16		06:39 (T4) 05:58		06:33 (T4) 06:08		06:40 (T4) 06:37		06:58 (T5) 07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:06		20:38	37	07:16 (T5) 21:04	47	07:20 (T4) 21:06	46	07:26 (T4) 20:37	32	07:30 (T5) 19:47	18:56	17:15	17:02
13	07:56	07:30	07:48	06:56		06:15		06:38 (T4) 05:57		06:34 (T4) 06:09		06:39 (T4) 06:38		06:59 (T5) 07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08		20:39	37	07:15 (T5) 21:05	46	07:20 (T4) 21:05	47	07:26 (T4) 20:36	31	07:30 (T5) 19:45	18:55	17:14	17:02
14	07:56	07:28	07:46	06:55		06:14		06:37 (T4) 05:57		06:34 (T4) 06:10		06:39 (T4) 06:39		07:00 (T5) 07:10	07:41	07:18	07:49
	17:25	18:03	19:36	20:09		20:41	36	07:13 (T5) 21:05	46	07:20 (T4) 21:05	47	07:26 (T4) 20:34	29	07:29 (T5) 19:44	18:53	17:13	17:02
15	07:55	07:27	07:44	06:53		06:13		06:36 (T4) 05:57		06:34 (T4) 06:10		06:40 (T4) 06:40		07:01 (T5) 07:11	07:42	07:19	07:50
	17:26	18:04	19:37	20:10		20:42	35	07:11 (T5) 21:06	46	07:20 (T4) 21:04	46	07:26 (T4) 20:33	28	07:29 (T5) 19:42	18:52	17:12	17:03
16	07:55	07:26	07:43	06:51		06:12		06:35 (T4) 05:57		06:34 (T4) 06:11		06:40 (T4) 06:41		07:02 (T5) 07:12	07:43	07:20	07:50
	17:27	18:06	19:38	20:11		20:43	37	07:12 (T4) 21:06	47	07:21 (T4) 21:03	46	07:26 (T4) 20:31	26	07:28 (T5) 19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50		06:11		06:34 (T4) 05:57		06:35 (T4) 06:12		06:40 (T4) 06:42		07:03 (T5) 07:13	07:44	07:21	07:51
	17:29	18:07	19:39	20:12		20:44	38	07:12 (T4) 21:06	46	07:21 (T4) 21:03	45	07:25 (T4) 20:30	24	07:27 (T5) 19:38	18:48	17:11	17:03
18	07:54	07:23	07:39	06:48		06:10		06:33 (T4) 05:58		06:35 (T4) 06:13		06:40 (T4) 06:43		07:04 (T5) 07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13		20:44	40	07:13 (T4) 21:07	46	07:21 (T4) 21:02	46	07:26 (T4) 20:29	22	07:26 (T5) 19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47		06:10		06:33 (T4) 05:58		06:35 (T4) 06:14		06:41 (T4) 06:44		07:05 (T5) 07:15	07:47	07:23	07:52
	17:31	18:09	19:42	20:14		20:45	40	07:13 (T4) 21:07	46	07:21 (T4) 21:02	45	07:26 (T4) 20:27	20	07:25 (T5) 19:35	18:45	17:09	17:04
20	07:53	07:20	07:36	06:45	07:06 (T5)	06:09		06:33 (T4) 05:58		06:35 (T4) 06:15		06:41 (T4) 06:45		07:06 (T5) 07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15	5 07:11 (T5)	20:46	42	07:15 (T4) 21:07	46	07:21 (T4) 21:01	45	07:26 (T4) 20:26	18	07:24 (T5) 19:33	18:44	17:09	17:04
21	07:52	07:19	07:34	06:44	07:03 (T5)	06:08		06:32 (T4) 05:58		06:35 (T4) 06:15		06:42 (T4) 06:46		07:07 (T5) 07:17	07:49	07:26	07:53
	17:33	18:12	19:44	20:16	12 07:15 (T5)	20:47	43	07:15 (T4) 21:08	46	07:21 (T4) 21:00	44	07:26 (T4) 20:24	15	07:22 (T5) 19:31	18:42	17:08	17:05
22	07:52	07:17	07:33	06:42	07:02 (T5)	06:07		06:32 (T4) 05:58		06:36 (T4) 06:16		06:43 (T4) 06:47		07:08 (T5) 07:18	07:50	07:27	07:54
	17:34	18:13	19:45	20:17	15 07:17 (T5)	20:48	43	07:15 (T4) 21:08	46	07:22 (T4) 20:59	43	07:26 (T4) 20:23	11	07:19 (T5) 19:30	18:41	17:07	17:05
23	07:51	07:16	07:31	06:41	07:00 (T5)	06:06		06:31 (T4) 05:58		06:36 (T4) 06:17		06:42 (T4) 06:48		07:11 (T5) 07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18	18 07:18 (T5)	20:49	44	07:15 (T4) 21:08	46	07:22 (T4) 20:59	42	07:24 (T4) 20:21	2	07:13 (T5) 19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:39	06:59 (T5)	06:06		06:32 (T4) 05:59		06:36 (T4) 06:18		06:43 (T4) 06:49		07:20	07:52	07:29	07:55
	17:37	18:15	19:47	20:19	21 07:20 (T5)	20:50	44	07:16 (T4) 21:08	46	07:22 (T4) 20:58	41	07:24 (T4) 20:20		19:26	18:38	17:06	17:06
25	07:49	07:13	07:28	06:38	06:57 (T5)	06:05		06:31 (T4) 05:59		06:37 (T4) 06:19		06:44 (T4) 06:50		07:21	07:54	07:30	07:55
	17:38	18:17	19:48	20:20	23 07:20 (T5)	20:51	45	07:16 (T4) 21:08	46	07:23 (T4) 20:57	40	07:24 (T4) 20:18		19:25	18:37	17:05	17:07
26	07:49	07:12	07:26	06:36	06:56 (T5)	06:04		06:31 (T4) 05:59		06:36 (T4) 06:20		06:44 (T4) 06:51		07:22	07:55	07:32	07:56
	17:39	18:18	19:49	20:22	25 07:21 (T5)	20:52	45	07:16 (T4) 21:09	47	07:23 (T4) 20:56	39	07:23 (T4) 20:17		19:23	18:35	17:05	17:08
27	07:48	07:10	07:24	06:35	06:55 (T5)	06:04		06:31 (T4) 06:00		06:36 (T4) 06:21		06:45 (T4) 06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:50	20:23	27 07:22 (T5)	20:53	46	07:17 (T4) 21:09	46	07:22 (T4) 20:55	38	07:23 (T4) 20:15		19:21	18:34	17:05	17:08
28	07:47	07:08	07:22	06:34	06:53 (T5)	06:03		06:31 (T4) 06:00		06:37 (T4) 06:22		06:46 (T4) 06:53		07:24	07:57	07:34	07:56
	17:42	18:20	19:51	20:24	28 07:21 (T5)	20:54	46	07:17 (T4) 21:09	46	07:23 (T4) 20:54	36	07:22 (T4) 20:13		19:19	18:33	17:04	17:09
29	07:46		07:21	06:32	06:52 (T5)	06:02		06:31 (T4) 06:00		06:37 (T4) 06:23		06:47 (T4) 06:54		07:25	07:58	07:35	07:57
	17:43		19:52	20:25	30 07:22 (T5)	20:55	46	07:17 (T4) 21:09	46	07:23 (T4) 20:53	36	07:23 (T5) 20:12		19:18	18:31	17:04	17:10
30	07:45		07:19	06:31	06:51 (T5)	06:02		06:31 (T4) 06:01		06:38 (T4) 06:24		06:48 (T4) 06:55		07:26	08:00	07:36	07:57
	17:44		19:54	20:26	31 07:22 (T5)	20:55	46	07:17 (T4) 21:09	46	07:24 (T4) 20:52	37	07:25 (T5) 20:10		19:16	18:30	17:03	17:10
31	07:44		07:17			06:01		06:31 (T4)			06:25	06:49 (T4) 06:56			08:01		07:57
	17:46		19:55			20:56	47	07:18 (T4)			20:51	37 07:26 (T5) 20:09			18:29		17:11
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				235		1190		1391		1359		615					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.68		0.70		0.71		0.71		0.68					
Total reduction				0.35		0.40		0.45		0.47		0.42					
Total, real				83		475		630		634		256					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 360 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6479)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June	
1	07:58	07:44			07:07		07:27 (T86)	07:16		07:50 (T84)	06:30		07:31 (T84)	06:01	
	17:12	17:47			18:21	19	07:46 (T86)	19:56	114	19:16 (T85)	20:27	70	08:41 (T84)	20:57	
2	07:58	07:43			07:06		07:25 (T86)	07:14		07:48 (T84)	06:29		07:30 (T84)	06:00	
	17:13	17:48			18:23	23	07:48 (T86)	19:57	117	19:15 (T85)	20:28	70	08:40 (T84)	20:58	
3	07:58	07:42			07:04		07:23 (T86)	07:13		07:46 (T84)	06:27		07:31 (T84)	06:00	
	17:14	17:50			18:24	26	07:49 (T86)	19:58	122	19:16 (T85)	20:29	68	08:39 (T84)	20:59	
4	07:58	07:41			07:02		07:22 (T86)	07:11		07:44 (T84)	06:26		07:32 (T84)	06:00	
	17:15	17:51			18:25	29	07:51 (T86)	19:59	124	19:15 (T85)	20:30	66	08:38 (T84)	20:59	
5	07:58	07:39			07:01		07:20 (T86)	07:09		07:42 (T84)	06:25		07:32 (T84)	05:59	
	17:16	17:52			18:26	31	07:51 (T86)	20:00	127	19:14 (T85)	20:31	66	08:38 (T84)	21:00	
6	07:58	07:38			06:59		07:19 (T86)	07:08		07:42 (T84)	06:24		07:33 (T84)	05:59	
	17:17	17:53			18:27	34	07:53 (T86)	20:00	128	19:15 (T85)	20:32	64	08:37 (T84)	21:01	
7	07:58	07:37			06:58		07:17 (T86)	07:06		07:40 (T84)	06:22		07:33 (T84)	05:59	
	17:18	17:55			18:28	36	07:53 (T86)	20:01	130	19:14 (T85)	20:33	62	08:35 (T84)	21:01	
8	07:57	07:36			07:56		08:16 (T86)	07:04		07:38 (T84)	06:21		07:34 (T84)	05:58	
	17:19	17:56			19:30	37	08:53 (T86)	20:02	132	19:13 (T85)	20:35	61	08:35 (T84)	21:02	
9	07:57	07:35			07:54		08:16 (T86)	07:03		07:38 (T84)	06:20		07:34 (T84)	05:58	
	17:20	17:57			19:31	37	08:53 (T86)	20:03	132	19:13 (T85)	20:36	60	08:34 (T84)	21:03	
10	07:57	07:34			07:53		08:15 (T86)	07:01		07:36 (T84)	06:19		07:35 (T84)	05:58	
	17:21	17:58			19:32	38	08:53 (T86)	20:05	133	19:12 (T85)	20:37	58	08:33 (T84)	21:03	
11	07:57	07:33			07:51		08:15 (T86)	07:00		07:36 (T84)	06:18		07:36 (T84)	05:58	
	17:22	18:00			19:33	38	08:53 (T86)	20:06	133	19:12 (T85)	20:38	56	08:32 (T84)	21:04	
12	07:57	07:31			07:50		08:15 (T86)	06:58		07:35 (T84)	06:17		07:37 (T84)	05:58	
	17:23	18:01			19:34	38	08:53 (T86)	20:07	133	19:11 (T85)	20:39	54	08:31 (T84)	21:04	
13	07:56	07:30			07:48		08:14 (T86)	06:56		07:34 (T84)	06:16		07:38 (T84)	05:58	
	17:24	18:02			19:35	38	08:52 (T86)	20:08	132	19:09 (T85)	20:40	52	08:30 (T84)	21:05	
14	07:56	07:29			07:46		08:14 (T86)	06:55		07:33 (T84)	06:15		07:39 (T84)	05:58	
	17:25	18:03			19:36	37	08:51 (T86)	20:09	133	19:09 (T85)	20:41	50	08:29 (T84)	21:05	
15	07:56	07:27			07:45		08:15 (T86)	06:53		07:32 (T84)	06:14		07:40 (T84)	05:58	
	17:26	18:05			19:37	54	18:57 (T85)	20:10	131	19:08 (T85)	20:42	48	08:28 (T84)	21:06	
16	07:55	07:26			07:43		08:15 (T86)	06:52		07:32 (T84)	06:13		07:41 (T84)	05:58	
	17:28	18:06			19:39	62	19:01 (T85)	20:11	130	19:07 (T85)	20:43	45	08:26 (T84)	21:06	
17	07:55	07:25			07:41		08:15 (T86)	06:50		07:31 (T84)	06:12		07:42 (T84)	05:58	
	17:29	18:07			19:40	67	19:04 (T85)	20:12	128	19:05 (T85)	20:44	43	08:25 (T84)	21:07	
18	07:54	07:23			07:40		08:16 (T86)	06:49		07:31 (T84)	06:11		07:43 (T84)	05:58	
	17:30	18:08			19:41	70	19:06 (T85)	20:13	126	19:05 (T85)	20:45	40	08:23 (T84)	21:07	
19	07:54	07:22			07:38		08:17 (T86)	06:47		07:31 (T84)	06:10		07:45 (T84)	05:58	
	17:31	18:10			19:42	72	19:08 (T85)	20:14	123	19:03 (T85)	20:46	38	08:23 (T84)	21:07	
20	07:53	07:21			07:36		08:17 (T86)	06:45		07:31 (T84)	06:09		07:46 (T84)	05:58	
	17:32	18:11			19:43	74	19:09 (T85)	20:15	121	19:02 (T85)	20:47	35	08:21 (T84)	21:08	
21	07:52	07:19			07:34		08:19 (T86)	06:44		07:30 (T84)	06:08		07:48 (T84)	05:58	
	17:33	18:12			19:44	73	19:11 (T85)	20:16	118	19:00 (T85)	20:48	31	08:19 (T84)	21:08	
22	07:52	07:18			07:33		08:21 (T86)	06:42		07:30 (T84)	06:07		07:49 (T84)	05:58	
	17:35	18:13			19:45	71	19:12 (T85)	20:17	115	18:58 (T85)	20:49	28	08:17 (T84)	21:08	
23	07:51	07:16			07:31		08:24 (T86)	06:41		07:29 (T84)	06:07		07:52 (T84)	05:59	
	17:36	18:14			19:46	67	19:12 (T85)	20:19	111	18:56 (T85)	20:49	24	08:16 (T84)	21:08	
24	07:50	07:15			07:29		18:17 (T85)	06:40		07:30 (T84)	06:06		07:54 (T84)	05:59	
	17:37	18:16			19:47	56	19:13 (T85)	20:20	106	18:54 (T85)	20:50	20	08:14 (T84)	21:09	
25	07:50	07:13			07:28		18:16 (T85)	06:38		07:30 (T84)	06:05		07:57 (T84)	05:59	
	17:38	18:17			19:48	58	19:14 (T85)	20:21	101	18:52 (T85)	20:51	13	08:10 (T84)	21:09	
26	07:49	07:12			07:26		18:15 (T85)	06:37		07:29 (T84)	06:04			06:00	
	17:40	18:18			19:49	59	19:14 (T85)	20:22	95	18:48 (T85)	20:52			21:09	
27	07:48	07:10			07:24		08:07 (T84)	06:35		07:30 (T84)	06:04			06:00	
	17:41	18:19			19:51	78	19:14 (T85)	20:23	81	18:42 (T85)	20:53			21:09	
28	07:47	07:09		07:30 (T86)	07:23		08:02 (T84)	06:34		07:29 (T84)	06:03			06:00	
	17:42	18:20	12	07:42 (T86)	19:52	89	19:15 (T85)	20:24	73	08:42 (T84)	20:54			21:09	
29	07:46				07:21		07:58 (T84)	06:33		07:30 (T84)	06:02			06:01	
	17:43				19:53	98	19:15 (T85)	20:25	72	08:42 (T84)	20:55			21:09	
30	07:45				07:19		07:55 (T84)	06:31		07:30 (T84)	06:02			06:01	
	17:45				19:54	104	19:15 (T85)	20:26	71	08:41 (T84)	20:56			21:09	
31	07:45				07:18		07:53 (T84)				06:01				
	17:46				19:55	109	19:16 (T85)				20:56				
Potential sun hours	297	297			370			399			449			453	
Total, worst case			12			1722			3492			1222			
Sun reduction			0.40			0.44			0.52			0.57			
Oper. time red.			1.00			1.00			1.00			1.00			
Wind dir. red.			0.57			0.62			0.64			0.64			
Total reduction			0.23			0.27			0.33			0.36			
Total, real			3			466			1164			445			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 360 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6479)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December
1	06:02			06:26		07:47 (T84)	06:57		07:35 (T84)	07:27		07:54 (T86)	07:02	07:37
	21:09			20:50	55	08:42 (T84)	20:07	133	19:11 (T85)	19:15	38	08:32 (T86)	17:28	17:03
2	06:02			06:27		07:46 (T84)	06:58		07:35 (T84)	07:28		07:53 (T86)	07:03	07:38
	21:09			20:49	57	08:43 (T84)	20:06	133	19:11 (T85)	19:13	38	08:31 (T86)	17:26	17:03
3	06:03			06:28		07:45 (T84)	06:59		07:36 (T84)	07:30		07:53 (T86)	07:05	07:39
	21:09			20:48	59	08:44 (T84)	20:04	132	19:11 (T85)	19:11	38	08:31 (T86)	17:25	17:03
4	06:03			06:29		07:45 (T84)	07:00		07:36 (T84)	07:31		07:53 (T86)	07:06	07:40
	21:08			20:47	60	08:45 (T84)	20:02	132	19:11 (T85)	19:10	37	08:30 (T86)	17:24	17:02
5	06:04			06:30		07:44 (T84)	07:01		07:37 (T84)	07:32		07:54 (T86)	07:07	07:41
	21:08			20:46	62	08:46 (T84)	20:01	130	19:11 (T85)	19:08	37	08:31 (T86)	17:23	17:02
6	06:04			06:31		07:43 (T84)	07:02		07:37 (T84)	07:33		07:54 (T86)	07:08	07:42
	21:08			20:45	63	08:46 (T84)	19:57	128	19:10 (T85)	19:06	36	08:30 (T86)	17:22	17:02
7	06:05			06:32		07:42 (T84)	07:03		07:37 (T84)	07:34		07:54 (T86)	07:09	07:43
	21:08			20:43	65	08:47 (T84)	19:56	127	19:09 (T85)	19:05	35	08:29 (T86)	17:21	17:02
8	06:06			06:33		07:41 (T84)	07:04		07:38 (T84)	07:35		07:55 (T86)	07:11	07:44
	21:07			20:42	66	08:47 (T84)	19:54	124	19:09 (T85)	19:03	32	08:27 (T86)	17:19	17:02
9	06:06			06:34		07:40 (T84)	07:05		07:39 (T84)	07:36		07:56 (T86)	07:12	07:45
	21:07			20:41	67	08:47 (T84)	19:52	123	19:09 (T85)	19:01	30	08:26 (T86)	17:18	17:02
10	06:07			06:35		07:40 (T84)	07:06		07:41 (T84)	07:37		07:57 (T86)	07:13	07:46
	21:07			20:40	68	08:48 (T84)	19:51	118	19:08 (T85)	19:00	27	08:24 (T86)	17:17	17:02
11	06:08			06:36		07:39 (T84)	07:07		07:42 (T84)	07:38		07:58 (T86)	07:14	07:47
	21:06			20:38	69	08:48 (T84)	19:49	115	19:08 (T85)	18:58	25	08:23 (T86)	17:16	17:02
12	06:08			06:37		07:38 (T84)	07:08		07:44 (T84)	07:39		07:59 (T86)	07:15	07:48
	21:06			20:37	71	08:49 (T84)	19:47	110	19:07 (T85)	18:56	21	08:20 (T86)	17:15	17:02
13	06:09			06:38		07:38 (T84)	07:09		07:45 (T84)	07:40		08:01 (T86)	07:17	07:48
	21:05			20:36	71	08:49 (T84)	19:45	105	19:06 (T85)	18:55	16	08:17 (T86)	17:14	17:02
14	06:10			06:39		07:37 (T84)	07:10		07:48 (T84)	07:41		08:06 (T86)	07:18	07:49
	21:05			20:34	73	08:50 (T84)	19:44	99	19:06 (T85)	18:53	7	08:13 (T86)	17:14	17:03
15	06:11			06:40		07:37 (T84)	07:11		07:51 (T84)	07:42			07:19	07:50
	21:04			20:33	73	08:50 (T84)	19:42	91	19:05 (T85)	18:52			17:13	17:03
16	06:11			06:41		07:37 (T84)	07:12		07:55 (T84)	07:44			07:20	07:51
	21:04			20:32	85	18:51 (T85)	19:40	81	19:04 (T85)	18:50			17:12	17:03
17	06:12			06:42		07:36 (T84)	07:13		18:03 (T85)	07:45			07:21	07:51
	21:03			20:30	95	18:55 (T85)	19:39	60	19:03 (T85)	18:49			17:11	17:03
18	06:13		08:08 (T84)	06:43		07:36 (T84)	07:14		18:03 (T85)	07:46			07:23	07:52
	21:02	9	08:17 (T84)	20:29	102	18:58 (T85)	19:37	59	19:02 (T85)	18:47			17:10	17:04
19	06:14		08:05 (T84)	06:44		07:35 (T84)	07:15		18:04 (T85)	07:47			07:24	07:53
	21:02	16	08:21 (T84)	20:27	108	19:00 (T85)	19:35	56	19:00 (T85)	18:46			17:09	17:04
20	06:15		08:02 (T84)	06:45		07:35 (T84)	07:16		08:11 (T86)	07:48			07:25	07:53
	21:01	22	08:24 (T84)	20:26	112	19:02 (T85)	19:33	65	18:59 (T85)	18:44			17:09	17:05
21	06:16		08:01 (T84)	06:46		07:35 (T84)	07:17		08:07 (T86)	07:49			07:26	07:54
	21:00	26	08:27 (T84)	20:24	115	19:03 (T85)	19:32	70	18:57 (T85)	18:43			17:08	17:05
22	06:17		07:59 (T84)	06:47		07:35 (T84)	07:18		08:04 (T86)	07:50			07:27	07:54
	21:00	30	08:29 (T84)	20:23	119	19:05 (T85)	19:30	73	18:56 (T85)	18:41			17:07	17:05
23	06:17		07:58 (T84)	06:48		07:35 (T84)	07:19		08:02 (T86)	07:52			07:28	07:55
	20:59	33	08:31 (T84)	20:21	122	19:06 (T85)	19:28	74	18:54 (T85)	18:40			17:07	17:06
24	06:18		07:56 (T84)	06:49		07:34 (T84)	07:20		08:00 (T86)	07:53			07:30	07:55
	20:58	37	08:33 (T84)	20:20	124	19:07 (T85)	19:27	73	18:52 (T85)	18:38			17:06	17:07
25	06:19		07:54 (T84)	06:50		07:34 (T84)	07:21		07:59 (T86)	07:54			07:31	07:56
	20:57	39	08:33 (T84)	20:18	127	19:08 (T85)	19:25	71	18:50 (T85)	18:37			17:06	17:07
26	06:20		07:53 (T84)	06:51		07:34 (T84)	07:22		07:58 (T86)	07:55			07:32	07:56
	20:56	42	08:35 (T84)	20:17	128	19:08 (T85)	19:23	68	18:47 (T85)	18:36			17:05	17:08
27	06:21		07:52 (T84)	06:52		07:34 (T84)	07:23		07:56 (T86)	07:56			07:33	07:56
	20:55	44	08:36 (T84)	20:15	129	19:09 (T85)	19:21	64	18:44 (T85)	18:34			17:05	17:08
28	06:22		07:51 (T84)	06:53		07:34 (T84)	07:24		07:56 (T86)	07:57			07:34	07:57
	20:54	46	08:37 (T84)	20:14	132	19:10 (T85)	19:20	58	18:40 (T85)	18:33			17:04	17:09
29	06:23		07:50 (T84)	06:54		07:34 (T84)	07:25		07:55 (T86)	07:59			07:35	07:57
	20:53	49	08:39 (T84)	20:12	132	19:10 (T85)	19:18	46	18:33 (T85)	18:31			17:04	17:10
30	06:24		07:49 (T84)	06:55		07:35 (T84)	07:26		07:54 (T86)	08:00			07:36	07:57
	20:52	51	08:40 (T84)	20:10	132	19:10 (T85)	19:16	38	08:32 (T86)	18:30			17:04	17:11
31	06:25		07:48 (T84)	06:56		07:35 (T84)				08:01				07:57
	20:51	53	08:41 (T84)	20:09	133	19:11 (T85)				18:29				17:11
Potential sun hours	460			429			375			345			297	287
Total, worst case		497			2874			2756			417			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.64			0.64			0.57			
Total reduction		0.42			0.39			0.37			0.28			
Total, real		209			1122			1032			115			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 382 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6496)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March			April			May			June		
1	07:57		15:13 (T44)	07:43	07:07			07:16		07:35 (T76)	06:30		18:36 (T77)	06:01		19:57 (T42)
	17:13	42	15:55 (T44)	17:47	18:22			19:56	73	19:24 (T77)	20:27	36	19:12 (T77)	20:57	31	20:28 (T42)
2	07:57		15:13 (T44)	07:42	07:06			07:14		07:33 (T76)	06:29		18:38 (T77)	06:01		19:56 (T42)
	17:14	43	15:56 (T44)	17:49	18:23			19:57	77	19:24 (T77)	20:28	32	19:10 (T77)	20:58	33	20:29 (T42)
3	07:57		15:14 (T44)	07:41	07:04			07:13		07:32 (T76)	06:28		18:39 (T77)	06:01		19:55 (T42)
	17:15	42	15:56 (T44)	17:50	18:24			19:58	81	19:26 (T77)	20:29	28	19:07 (T77)	20:58	34	20:29 (T42)
4	07:57		15:15 (T44)	07:40	07:02			07:11		07:30 (T76)	06:26		18:42 (T77)	06:00		19:55 (T42)
	17:16	41	15:56 (T44)	17:51	18:25			19:59	84	19:26 (T77)	20:30	23	19:05 (T77)	20:59	36	20:31 (T42)
5	07:57		15:16 (T44)	07:39	07:01			07:09		07:30 (T76)	06:25		18:45 (T77)	06:00		19:55 (T42)
	17:17	40	15:56 (T44)	17:52	18:26			20:00	85	19:26 (T77)	20:31	17	19:02 (T77)	21:00	37	20:32 (T42)
6	07:57		15:17 (T44)	07:38	06:59			07:08		07:30 (T76)	06:24		18:51 (T77)	06:00		19:54 (T42)
	17:17	39	15:56 (T44)	17:54	18:27			20:00	86	19:27 (T77)	20:32	5	18:56 (T77)	21:00	37	20:31 (T42)
7	07:57		15:17 (T44)	07:37	06:58			07:06		07:30 (T76)	06:23			05:59		19:54 (T42)
	17:18	38	15:55 (T44)	17:55	18:29			20:01	87	19:27 (T77)	20:33			21:01	38	20:32 (T42)
8	07:57		15:19 (T44)	07:36	07:56			07:05		07:30 (T76)	06:22			05:59		19:54 (T42)
	17:19	36	15:55 (T44)	17:56	19:30			20:02	88	19:28 (T77)	20:34			21:02	39	20:33 (T42)
9	07:57		15:20 (T44)	07:35	07:54			07:03		07:30 (T76)	06:20			05:59		19:54 (T42)
	17:20	35	15:55 (T44)	17:58	19:31			20:03	87	19:27 (T77)	20:35			21:02	40	20:34 (T42)
10	07:57		15:22 (T44)	07:34	07:53			07:01		07:30 (T76)	06:19			05:59		19:54 (T42)
	17:21	33	15:55 (T44)	17:59	19:32			20:05	87	19:27 (T77)	20:36			21:03	40	20:34 (T42)
11	07:57		15:22 (T44)	07:32	07:51			07:00		07:31 (T76)	06:18			05:58		19:54 (T42)
	17:23	32	15:54 (T44)	18:00	19:33			20:06	84	19:27 (T77)	20:37			21:03	41	20:35 (T42)
12	07:56		15:24 (T44)	07:31	07:50			06:58		07:32 (T76)	06:17			05:58		19:53 (T42)
	17:24	29	15:53 (T44)	18:01	19:34			20:07	82	19:27 (T77)	20:38			21:04	41	20:34 (T42)
13	07:56		15:26 (T44)	07:30	07:48			06:57		07:34 (T76)	06:16			05:58		19:53 (T42)
	17:25	27	15:53 (T44)	18:02	19:35			20:08	79	19:27 (T77)	20:39			21:05	42	20:35 (T42)
14	07:56		15:27 (T44)	07:29	07:46			06:55		07:35 (T76)	06:15			05:58		19:53 (T42)
	17:26	25	15:52 (T44)	18:04	19:36			20:09	75	19:27 (T77)	20:40			21:05	42	20:35 (T42)
15	07:55		15:30 (T44)	07:27	07:45			06:53		07:38 (T76)	06:14			05:58		19:53 (T42)
	17:27	21	15:51 (T44)	18:05	19:38			20:10	68	19:26 (T77)	20:41			21:05	43	20:36 (T42)
16	07:55		15:32 (T44)	07:26	07:43			06:52		18:26 (T77)	06:13			05:58		19:54 (T42)
	17:28	16	15:48 (T44)	18:06	19:39			20:11	60	19:26 (T77)	20:42			21:06	42	20:36 (T42)
17	07:54		15:36 (T44)	07:25	07:41			06:50		18:26 (T77)	06:12			05:58		19:55 (T42)
	17:29	10	15:46 (T44)	18:07	19:40			20:12	59	19:25 (T77)	20:43			21:06	42	20:37 (T42)
18	07:54			07:23	07:40			06:49		18:27 (T77)	06:11			05:58		19:55 (T42)
	17:30			18:09	19:41			20:13	58	19:25 (T77)	20:44			21:07	42	20:37 (T42)
19	07:53			07:22	07:38			06:47		18:26 (T77)	06:10			05:58		19:55 (T42)
	17:32			18:10	19:42			20:14	58	19:24 (T77)	20:45			21:07	42	20:37 (T42)
20	07:53			07:20	07:36			06:46		18:27 (T77)	06:09			05:59		19:55 (T42)
	17:33			18:11	19:43			20:15	57	19:24 (T77)	20:46			21:07	43	20:38 (T42)
21	07:52			07:19	07:35			06:44		18:28 (T77)	06:09			05:59		19:55 (T42)
	17:34			18:12	19:44			20:16	55	19:23 (T77)	20:47			21:08	43	20:38 (T42)
22	07:52			07:18	07:33			06:43		18:28 (T77)	06:08			05:59		19:55 (T42)
	17:35			18:13	19:45			20:17	54	19:22 (T77)	20:48			21:08	43	20:38 (T42)
23	07:51			07:16	07:31			06:41		18:29 (T77)	06:07			05:59		19:56 (T42)
	17:36			18:15	19:46			20:18	53	19:22 (T77)	20:49			21:08	42	20:38 (T42)
24	07:50			07:15	07:30			06:40		18:29 (T77)	06:06			05:59		19:56 (T42)
	17:38			18:16	19:47			20:19	51	19:20 (T77)	20:50			21:08	42	20:38 (T42)
25	07:49			07:13	07:28		18:56 (T77)	06:38		18:30 (T77)	06:06		20:06 (T42)	06:00		19:56 (T42)
	17:39			18:17	19:48	13	19:09 (T77)	20:21	50	19:20 (T77)	20:51	11	20:17 (T42)	21:08	42	20:38 (T42)
26	07:49			07:12	07:26		18:50 (T77)	06:37		18:30 (T77)	06:05		20:03 (T42)	06:00		19:57 (T42)
	17:40			18:18	19:50	23	19:13 (T77)	20:22	48	19:18 (T77)	20:52	17	20:20 (T42)	21:08	42	20:39 (T42)
27	07:48			07:10	07:24		07:43 (T76)	06:36		18:31 (T77)	06:04		20:02 (T42)	06:00		19:56 (T42)
	17:41			18:19	19:51	40	19:16 (T77)	20:23	46	19:17 (T77)	20:53	20	20:22 (T42)	21:08	43	20:39 (T42)
28	07:47			07:09	07:23		07:42 (T76)	06:34		18:33 (T77)	06:04		20:00 (T42)	06:01		19:56 (T42)
	17:42			18:21	19:52	49	19:19 (T77)	20:24	43	19:16 (T77)	20:54	24	20:24 (T42)	21:09	42	20:38 (T42)
29	07:46				07:21		07:40 (T76)	06:33		18:33 (T77)	06:03		19:59 (T42)	06:01		19:57 (T42)
	17:44				19:53	57	19:20 (T77)	20:25	41	19:14 (T77)	20:54	25	20:24 (T42)	21:09	42	20:39 (T42)
30	07:45				07:19		07:38 (T76)	06:32		18:35 (T77)	06:02		19:58 (T42)	06:02		19:57 (T42)
	17:45				19:54	62	19:21 (T77)	20:26	38	19:13 (T77)	20:55	28	20:26 (T42)	21:08	42	20:39 (T42)
31	07:44				07:18		07:37 (T76)				06:02		19:57 (T42)			
	17:46				19:55	68	19:23 (T77)				20:56	30	20:27 (T42)			
Potential sun hours	297			297	370			399			448			453		
Total, worst case		549				312			1994			296			1208	
Sun reduction		0.31				0.44			0.52			0.57			0.64	
Oper. time red.		1.00				1.00			1.00			1.00			1.00	
Wind dir. red.		0.74				0.63			0.63			0.58			0.54	
Total reduction		0.24				0.28			0.34			0.34			0.35	
Total, real		131				89			670			101			428	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 382 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6496)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		19:58 (T42)	06:26			06:57			07:30 (T76)	07:27			07:02				07:37		15:04 (T44)
	21:08	41	20:39 (T42)	20:50			20:07	84		19:26 (T77)	19:15			17:28				17:04	32	15:36 (T44)
2	06:03		19:58 (T42)	06:27			06:58			07:29 (T76)	07:29			07:03				07:38		15:04 (T44)
	21:08	41	20:39 (T42)	20:49			20:06	87		19:26 (T77)	19:13			17:27				17:03	33	15:37 (T44)
3	06:03		19:59 (T42)	06:28			06:59			07:28 (T76)	07:30			07:04				07:39		15:03 (T44)
	21:08	40	20:39 (T42)	20:48			20:04	87		19:25 (T77)	19:11			17:26				17:03	35	15:38 (T44)
4	06:04		19:59 (T42)	06:29			07:00			07:27 (T76)	07:31			07:06				07:40		15:04 (T44)
	21:08	39	20:38 (T42)	20:47			20:02	88		19:25 (T77)	19:10			17:24				17:03	36	15:40 (T44)
5	06:04		20:00 (T42)	06:30			07:01			07:27 (T76)	07:32			07:07				07:41		15:03 (T44)
	21:08	39	20:39 (T42)	20:46			20:01	87		19:24 (T77)	19:08			17:23				17:03	38	15:41 (T44)
6	06:05		20:00 (T42)	06:31			07:02			07:26 (T76)	07:33			07:08				07:42		15:02 (T44)
	21:08	38	20:38 (T42)	20:44			19:57	86		19:23 (T77)	19:06			17:22				17:03	39	15:41 (T44)
7	06:05		20:01 (T42)	06:32		18:58 (T77)	07:03			07:26 (T76)	07:34			07:09				07:43		15:02 (T44)
	21:07	37	20:38 (T42)	20:43	11	19:09 (T77)	19:56	85		19:22 (T77)	19:05			17:21				17:03	40	15:42 (T44)
8	06:06		20:02 (T42)	06:33		18:54 (T77)	07:04			07:26 (T76)	07:35			07:10				07:44		15:02 (T44)
	21:07	36	20:38 (T42)	20:42	19	19:13 (T77)	19:54	84		19:21 (T77)	19:03			17:20				17:03	41	15:43 (T44)
9	06:07		20:02 (T42)	06:34		18:51 (T77)	07:05			07:26 (T76)	07:36			07:12				07:45		15:02 (T44)
	21:07	35	20:37 (T42)	20:41	25	19:16 (T77)	19:52	81		19:20 (T77)	19:02			17:19				17:03	42	15:44 (T44)
10	06:07		20:03 (T42)	06:35		18:48 (T77)	07:06			07:26 (T76)	07:37			07:13				07:46		15:02 (T44)
	21:06	34	20:37 (T42)	20:39	30	19:18 (T77)	19:51	77		19:17 (T77)	19:00			17:18				17:03	43	15:45 (T44)
11	06:08		20:04 (T42)	06:36		18:46 (T77)	07:07			07:27 (T76)	07:38			07:14				07:46		15:03 (T44)
	21:06	33	20:37 (T42)	20:38	33	19:19 (T77)	19:49	73		19:16 (T77)	18:58			17:17				17:03	42	15:45 (T44)
12	06:09		20:05 (T42)	06:37		18:45 (T77)	07:08			07:28 (T76)	07:39			07:15				07:47		15:03 (T44)
	21:06	30	20:35 (T42)	20:37	36	19:21 (T77)	19:47	68		19:14 (T77)	18:57			17:16				17:03	43	15:46 (T44)
13	06:10		20:06 (T42)	06:38		18:43 (T77)	07:09			07:29 (T76)	07:40			07:16				07:48		15:03 (T44)
	21:05	29	20:35 (T42)	20:36	39	19:22 (T77)	19:45	64		19:13 (T77)	18:55			17:15				17:03	44	15:47 (T44)
14	06:10		20:07 (T42)	06:39		18:42 (T77)	07:10			07:30 (T76)	07:41			07:18				07:49		15:03 (T44)
	21:05	27	20:34 (T42)	20:34	41	19:23 (T77)	19:44	58		19:11 (T77)	18:54			17:14				17:03	44	15:47 (T44)
15	06:11		20:09 (T42)	06:40		18:40 (T77)	07:11			07:31 (T76)	07:42			07:19				07:50		15:03 (T44)
	21:04	25	20:34 (T42)	20:33	44	19:24 (T77)	19:42	50		19:08 (T77)	18:52			17:13				17:03	45	15:48 (T44)
16	06:12		20:10 (T42)	06:41		18:38 (T77)	07:12			07:32 (T76)	07:44			07:20				07:50		15:04 (T44)
	21:03	22	20:32 (T42)	20:31	46	19:24 (T77)	19:40	42		19:06 (T77)	18:50			17:12				17:04	45	15:49 (T44)
17	06:13		20:12 (T42)	06:42		18:37 (T77)	07:13			18:38 (T77)	07:45			07:21				07:51		15:04 (T44)
	21:03	18	20:30 (T42)	20:30	48	19:25 (T77)	19:39	24		19:02 (T77)	18:49			17:11				17:04	45	15:49 (T44)
18	06:14		20:14 (T42)	06:43		18:36 (T77)	07:14			18:42 (T77)	07:46			07:22				07:52		15:04 (T44)
	21:02	14	20:28 (T42)	20:29	50	19:26 (T77)	19:37	15		18:57 (T77)	18:47			17:11				17:04	46	15:50 (T44)
19	06:14		20:18 (T42)	06:44		18:34 (T77)	07:15				07:47			07:23				07:52		15:05 (T44)
	21:01	7	20:25 (T42)	20:27	52	19:26 (T77)	19:35				18:46			17:10				17:05	46	15:51 (T44)
20	06:15			06:45		18:33 (T77)	07:16				07:48			07:25				07:53		15:05 (T44)
	21:01			20:26	54	19:27 (T77)	19:33				18:44			17:09				17:05	46	15:51 (T44)
21	06:16			06:46		18:33 (T77)	07:17				07:49			07:26				07:53		15:06 (T44)
	21:00			20:24	54	19:27 (T77)	19:32				18:43			17:09				17:06	46	15:52 (T44)
22	06:17			06:47		18:32 (T77)	07:18				07:50			07:27				07:54		15:06 (T44)
	20:59			20:23	55	19:27 (T77)	19:30				18:41			17:08				17:06	46	15:52 (T44)
23	06:18			06:48		18:31 (T77)	07:19				07:51			07:28				07:54		15:07 (T44)
	20:59			20:21	57	19:28 (T77)	19:28				18:40			17:07				17:07	46	15:53 (T44)
24	06:19			06:49		18:30 (T77)	07:20				07:53			07:29				07:55		15:07 (T44)
	20:58			20:20	58	19:28 (T77)	19:27				18:39			17:07				17:07	46	15:53 (T44)
25	06:20			06:50		18:30 (T77)	07:21				07:54			07:30			15:15 (T44)	07:55		15:07 (T44)
	20:57			20:18	58	19:28 (T77)	19:25				18:37			17:06	9		15:24 (T44)	17:08	46	15:53 (T44)
26	06:21			06:51		18:29 (T77)	07:22				07:55			07:32			15:11 (T44)	07:56		15:09 (T44)
	20:56			20:17	59	19:28 (T77)	19:23				18:36			17:06	16		15:27 (T44)	17:08	45	15:54 (T44)
27	06:22			06:52		18:28 (T77)	07:23				07:56			07:33			15:09 (T44)	07:56		15:09 (T44)
	20:55			20:15	60	19:28 (T77)	19:22				18:34			17:05	21		15:30 (T44)	17:09	45	15:54 (T44)
28	06:22			06:53		07:39 (T76)	07:24				07:57			07:34			15:07 (T44)	07:56		15:09 (T44)
	20:54			20:14	69	19:28 (T77)	19:20				18:33			17:05	25		15:32 (T44)	17:10	45	15:54 (T44)
29	06:23			06:54		07:36 (T76)	07:25				07:58			07:35			15:06 (T44)	07:57		15:10 (T44)
	20:53			20:12	75	19:27 (T77)	19:18				18:32			17:04	27		15:33 (T44)	17:10	44	15:54 (T44)
30	06:24			06:55		07:33 (T76)	07:26				08:00			07:36			15:05 (T44)	07:57		15:11 (T44)
	20:52			20:10	80	19:27 (T77)	19:16				18:31			17:04	29		15:34 (T44)	17:11	44	15:55 (T44)
31	06:25			06:56		07:32 (T76)					08:01							07:57		15:12 (T44)
	20:51			20:09	82	19:27 (T77)					18:29							17:12	43	15:55 (T44)
Potential sun hours	460			429			375				345			297				287		
Total, worst case		585			1235			1240				127				1321				
Sun reduction		0.66			0.61			0.59				0.30				0.22				
Oper. time red.		1.00			1.00			1.00				1.00				1.00				
Wind dir. red.		0.54			0.62			0.63				0.74				0.74				
Total reduction		0.37			0.39			0.38				0.23				0.17				
Total, real		214			485			474				29				223				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 385 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6499)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June
1	07:57	07:43		16:53 (T5)	07:07		16:31 (T5)	07:16		06:30		19:25 (T3)	06:01
	17:12	17:47	13	17:06 (T5)	18:21	86	17:57 (T4)	19:56		20:27	22	19:47 (T3)	20:57
2	07:57	07:42		16:49 (T5)	07:05		16:32 (T5)	07:14		06:28		19:27 (T3)	06:00
	17:13	17:48	21	17:10 (T5)	18:22	86	17:58 (T4)	19:57		20:28	19	19:46 (T3)	20:58
3	07:57	07:41		16:46 (T5)	07:04		16:32 (T5)	07:12		06:27		19:29 (T3)	06:00
	17:14	17:49	27	17:13 (T5)	18:24	86	17:58 (T4)	19:58		20:29	15	19:44 (T3)	20:58
4	07:57	07:40		16:44 (T5)	07:02		16:33 (T5)	07:11		06:26		19:32 (T3)	05:59
	17:15	17:51	32	17:16 (T5)	18:25	86	17:59 (T4)	19:59		20:30	10	19:42 (T3)	20:59
5	07:57	07:39		16:42 (T5)	07:01		16:33 (T5)	07:09		06:24			05:59
	17:16	17:52	35	17:17 (T5)	18:26	85	17:58 (T4)	20:00		20:31			21:00
6	07:57	07:38		16:40 (T5)	06:59		16:34 (T5)	07:07		06:23			05:59
	17:17	17:53	39	17:19 (T5)	18:27	84	17:58 (T4)	20:00		20:32			21:00
7	07:57	07:37		16:39 (T5)	06:57		16:36 (T5)	07:06		06:22			05:58
	17:18	17:54	41	17:20 (T5)	18:28	82	17:58 (T4)	20:01		20:33			21:01
8	07:57	07:36		16:38 (T5)	07:56		17:36 (T5)	07:04		06:21			05:58
	17:19	17:56	44	17:22 (T5)	19:29	81	18:57 (T4)	20:02		20:34			21:02
9	07:57	07:35		16:37 (T5)	07:54		17:37 (T5)	07:02		06:20			05:58
	17:20	17:57	47	17:24 (T5)	19:30	79	18:56 (T4)	20:03		20:35			21:02
10	07:57	07:33		16:35 (T5)	07:53		17:40 (T5)	07:01		06:19			05:58
	17:21	17:58	49	17:24 (T5)	19:32	73	18:56 (T4)	20:04		20:36			21:03
11	07:57	07:32		16:35 (T5)	07:51		17:41 (T5)	06:59		06:17			05:58
	17:22	17:59	50	17:25 (T5)	19:33	69	18:55 (T4)	20:05		20:37			21:04
12	07:56	07:31		16:34 (T5)	07:49		17:43 (T5)	06:58		19:36 (T3)	06:16		05:57
	17:23	18:01	52	17:26 (T5)	19:34	62	18:53 (T4)	20:06	10	19:46 (T3)	20:38		21:04
13	07:56	07:30		16:34 (T5)	07:48		17:47 (T5)	06:56		19:32 (T3)	06:15		05:57
	17:24	18:02	53	17:27 (T5)	19:35	53	18:53 (T4)	20:07	14	19:46 (T3)	20:39		21:05
14	07:56	07:28		16:32 (T5)	07:46		17:51 (T5)	06:54		19:30 (T3)	06:14		05:57
	17:25	18:03	56	17:28 (T5)	19:36	42	18:51 (T4)	20:09	18	19:48 (T3)	20:40		21:05
15	07:55	07:27		16:32 (T5)	07:44		18:23 (T4)	06:53		19:28 (T3)	06:13		05:57
	17:26	18:04	56	17:28 (T5)	19:37	26	18:49 (T4)	20:10	20	19:48 (T3)	20:41		21:06
16	07:55	07:26		16:32 (T5)	07:43		18:26 (T4)	06:51		19:26 (T3)	06:12		05:57
	17:27	18:06	57	17:29 (T5)	19:38	21	18:47 (T4)	20:11	23	19:49 (T3)	20:42		21:06
17	07:54	07:24		16:31 (T5)	07:41		18:28 (T4)	06:50		19:26 (T3)	06:11		05:57
	17:28	18:07	58	17:29 (T5)	19:39	16	18:44 (T4)	20:12	25	19:51 (T3)	20:43		21:06
18	07:54	07:23		16:31 (T5)	07:39		18:33 (T4)	06:48		19:24 (T3)	06:10		05:57
	17:30	18:08	59	17:30 (T5)	19:40	5	18:38 (T4)	20:13	27	19:51 (T3)	20:44		21:07
19	07:53	07:22		16:30 (T5)	07:38			06:47		19:24 (T3)	06:10		05:58
	17:31	18:09	60	17:30 (T5)	19:42			20:14	29	19:53 (T3)	20:45		21:07
20	07:53	07:20		16:30 (T5)	07:36			06:45		19:23 (T3)	06:09		05:58
	17:32	18:10	60	17:30 (T5)	19:43			20:15	30	19:53 (T3)	20:46		21:07
21	07:52	07:19		16:30 (T5)	07:34			06:44		19:23 (T3)	06:08		05:58
	17:33	18:12	65	17:43 (T4)	19:44			20:16	31	19:54 (T3)	20:47		21:08
22	07:52	07:17		16:30 (T5)	07:33			06:42		19:23 (T3)	06:07		05:58
	17:34	18:13	75	17:48 (T4)	19:45			20:17	31	19:54 (T3)	20:48		21:08
23	07:51	07:16		16:30 (T5)	07:31			06:41		19:22 (T3)	06:06		05:58
	17:36	18:14	81	17:51 (T4)	19:46			20:18	32	19:54 (T3)	20:49		21:08
24	07:50	07:14		16:30 (T5)	07:29			06:39		19:23 (T3)	06:05		05:59
	17:37	18:15	83	17:53 (T4)	19:47			20:19	31	19:54 (T3)	20:50		21:08
25	07:49	07:13		16:30 (T5)	07:27			06:38		19:22 (T3)	06:05		05:59
	17:38	18:16	85	17:55 (T4)	19:48			20:20	31	19:53 (T3)	20:51		21:08
26	07:49	07:11		16:30 (T5)	07:26			06:36		19:23 (T3)	06:04		05:59
	17:39	18:18	85	17:55 (T4)	19:49			20:21	29	19:52 (T3)	20:52		21:08
27	07:48	07:10		16:30 (T5)	07:24			06:35		19:23 (T3)	06:03		06:00
	17:41	18:19	86	17:56 (T4)	19:50			20:23	29	19:52 (T3)	20:53		21:09
28	07:47	07:08		16:31 (T5)	07:22			06:34		19:23 (T3)	06:03		06:00
	17:42	18:20	86	17:57 (T4)	19:51			20:24	28	19:51 (T3)	20:54		21:09
29	07:46				07:21			06:32		19:24 (T3)	06:02		06:00
	17:43				19:52			20:25	26	19:50 (T3)	20:54		21:09
30	07:45				07:19			06:31		19:25 (T3)	06:02		06:01
	17:44				19:53			20:26	24	19:49 (T3)	20:55		21:09
31	07:44				07:17						06:01		
	17:46				19:55						20:56		
Potential sun hours	297	297			370			399			449		453
Total, worst case			1555			1122			488			66	
Sun reduction			0.40			0.44			0.52			0.57	
Oper. time red.			1.00			1.00			1.00			1.00	
Wind dir. red.			0.71			0.70			0.57			0.57	
Total reduction			0.29			0.31			0.30			0.33	
Total, real			446			348			147			22	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 385 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6499)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December
1	06:01	06:26		06:57		07:27		17:24 (T5)	07:02	16:05 (T5)	07:37
	21:08	20:50		20:07		19:14	59	18:33 (T4)	17:27	48	16:53 (T5)	17:03
2	06:02	06:27		06:58		07:28		17:21 (T5)	07:03		16:06 (T5)	07:38
	21:08	20:49		20:05		19:13	65	18:33 (T4)	17:26	46	16:52 (T5)	17:03
3	06:02	06:28		06:59		07:29		17:18 (T5)	07:04		16:08 (T5)	07:39
	21:08	20:48		20:04		19:11	71	18:33 (T4)	17:25	44	16:52 (T5)	17:02
4	06:03	06:29		07:00		07:30		17:16 (T5)	07:05		16:09 (T5)	07:40
	21:08	20:47		20:02		19:09	76	18:34 (T4)	17:24	41	16:50 (T5)	17:02
5	06:03	06:30		07:01		07:31		17:14 (T5)	07:07		16:10 (T5)	07:41
	21:08	20:46		20:00		19:08	80	18:34 (T4)	17:23	38	16:48 (T5)	17:02
6	06:04	06:31		07:02		07:32		17:12 (T5)	07:08		16:13 (T5)	07:42
	21:08	20:44		19:57		19:06	82	18:34 (T4)	17:21	34	16:47 (T5)	17:02
7	06:05	06:32		07:03		07:33		17:10 (T5)	07:09		16:14 (T5)	07:43
	21:07	20:43		19:55		19:04	83	18:33 (T4)	17:20	31	16:45 (T5)	17:02
8	06:05	06:33	19:44 (T3)	07:04		07:35		17:10 (T5)	07:10		16:17 (T5)	07:44
	21:07	20:42	3 19:47 (T3)	19:54		19:03	84	18:34 (T4)	17:19	26	16:43 (T5)	17:02
9	06:06	06:34	19:39 (T3)	07:05		07:36		17:08 (T5)	07:11		16:19 (T5)	07:45
	21:07	20:41	12 19:51 (T3)	19:52		19:01	85	18:33 (T4)	17:18	21	16:40 (T5)	17:02
10	06:07	06:35	19:37 (T3)	07:06		07:37		17:07 (T5)	07:13		16:25 (T5)	07:46
	21:06	20:39	17 19:54 (T3)	19:50		18:59	86	18:33 (T4)	17:17	11	16:36 (T5)	17:02
11	06:07	06:36	19:35 (T3)	07:07		07:38		17:06 (T5)	07:14			07:46
	21:06	20:38	20 19:55 (T3)	19:49		18:58	86	18:32 (T4)	17:16			17:02
12	06:08	06:37	19:34 (T3)	07:08		07:39		17:05 (T5)	07:15			07:47
	21:06	20:37	22 19:56 (T3)	19:47		18:56	86	18:31 (T4)	17:15			17:02
13	06:09	06:38	19:33 (T3)	07:09		07:40		17:04 (T5)	07:16			07:48
	21:05	20:35	24 19:57 (T3)	19:45		18:55	86	18:30 (T4)	17:14			17:02
14	06:10	06:39	19:32 (T3)	07:10		07:41		17:03 (T5)	07:17			07:49
	21:05	20:34	26 19:58 (T3)	19:43		18:53	86	18:29 (T4)	17:13			17:02
15	06:10	06:40	19:31 (T3)	07:11		07:42		17:02 (T5)	07:19			07:50
	21:04	20:33	28 19:59 (T3)	19:42		18:51	86	18:28 (T4)	17:12			17:03
16	06:11	06:41	19:30 (T3)	07:12		07:43		17:02 (T5)	07:20			07:50
	21:03	20:31	29 19:59 (T3)	19:40		18:50	85	18:27 (T4)	17:12			17:03
17	06:12	06:42	19:29 (T3)	07:13		07:44		17:02 (T5)	07:21			07:51
	21:03	20:30	30 19:59 (T3)	19:38		18:48	84	18:26 (T4)	17:11			17:03
18	06:13	06:43	19:29 (T3)	07:14		07:46		17:01 (T5)	07:22			07:52
	21:02	20:28	30 19:59 (T3)	19:37		18:47	82	18:23 (T4)	17:10			17:03
19	06:14	06:44	19:28 (T3)	07:15		07:47		17:01 (T5)	07:23			07:52
	21:02	20:27	31 19:59 (T3)	19:35		18:45	79	18:21 (T4)	17:09			17:04
20	06:14	06:45	19:28 (T3)	07:16		07:48		17:00 (T5)	07:25			07:53
	21:01	20:26	31 19:59 (T3)	19:33		18:44	73	18:17 (T4)	17:08			17:04
21	06:15	06:46	19:28 (T3)	07:17		07:49		17:00 (T5)	07:26			07:53
	21:00	20:24	31 19:59 (T3)	19:31		18:42	60	18:00 (T5)	17:08			17:05
22	06:16	06:47	19:28 (T3)	07:18		07:50		17:01 (T5)	07:27			07:54
	20:59	20:23	31 19:59 (T3)	19:30		18:41	60	18:01 (T5)	17:07			17:05
23	06:17	06:48	19:28 (T3)	07:19		07:51		17:01 (T5)	07:28			07:54
	20:58	20:21	30 19:58 (T3)	19:28		18:39	59	18:00 (T5)	17:07			17:06
24	06:18	06:49	19:28 (T3)	07:20		07:52		17:01 (T5)	07:29			07:55
	20:58	20:20	28 19:56 (T3)	19:26		18:38	58	17:59 (T5)	17:06			17:06
25	06:19	06:50	19:28 (T3)	07:21		07:54		17:01 (T5)	07:30			07:55
	20:57	20:18	27 19:55 (T3)	19:25		18:37	58	17:59 (T5)	17:05			17:07
26	06:20	06:51	19:29 (T3)	07:22	18:12 (T4)	07:55		17:02 (T5)	07:32			07:56
	20:56	20:16	24 19:53 (T3)	19:23	13 18:25 (T4)	18:35	57	17:59 (T5)	17:05			17:07
27	06:21	06:52	19:29 (T3)	07:23	18:08 (T4)	07:56		17:02 (T5)	07:33			07:56
	20:55	20:15	23 19:52 (T3)	19:21	20 18:28 (T4)	18:34	56	17:58 (T5)	17:04			17:08
28	06:22	06:53	19:30 (T3)	07:24	18:06 (T4)	07:57		17:02 (T5)	07:34			07:56
	20:54	20:13	20 19:50 (T3)	19:19	24 18:30 (T4)	18:33	55	17:57 (T5)	17:04			17:09
29	06:23	06:54	19:30 (T3)	07:25	17:36 (T5)	07:58		17:03 (T5)	07:35			07:57
	20:53	20:12	18 19:48 (T3)	19:18	31 18:31 (T4)	18:31	53	17:56 (T5)	17:04			17:10
30	06:24	06:55	19:32 (T3)	07:26	17:28 (T5)	07:59		17:04 (T5)	07:36			07:57
	20:52	20:10	14 19:46 (T3)	19:16	49 18:32 (T4)	18:30	52	17:56 (T5)	17:03			17:10
31	06:25	06:56	19:35 (T3)			08:01		17:05 (T5)				07:57
	20:51	20:09	10 19:45 (T3)			18:29	50	17:55 (T5)				17:11
Potential sun hours	460	429		375		345			297		287	
Total, worst case			559		137		2222			340		
Sun reduction			0.61		0.59		0.48			0.30		
Oper. time red.			1.00		1.00		1.00			1.00		
Wind dir. red.			0.57		0.69		0.71			0.72		
Total reduction			0.35		0.41		0.34			0.22		
Total, real			198		56		759			74		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 390 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6504)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		08:09 (T4)	07:07		07:49 (T5)	07:16			06:30		07:14 (T3)	06:01		07:19 (T3)
	17:12			17:47	43	08:52 (T4)	18:21	16	08:05 (T5)	19:56			20:27	78	08:32 (T3)	20:57	64	08:23 (T3)
2	07:57			07:42		08:09 (T4)	07:05		07:53 (T5)	07:14			06:28		07:13 (T3)	06:00		07:20 (T3)
	17:13			17:48	44	08:53 (T4)	18:22	9	08:02 (T5)	19:57			20:28	79	08:32 (T3)	20:58	63	08:23 (T3)
3	07:57			07:41		08:09 (T4)	07:04			07:12			06:27		07:13 (T3)	06:00		07:21 (T3)
	17:14			17:49	44	08:53 (T4)	18:24			19:58			20:29	79	08:32 (T3)	20:58	62	08:23 (T3)
4	07:58			07:40		08:09 (T4)	07:02			07:11			06:26		07:13 (T3)	05:59		07:21 (T3)
	17:15			17:51	45	08:54 (T4)	18:25			19:59			20:30	79	08:32 (T3)	20:59	61	08:22 (T3)
5	07:58			07:39		08:09 (T4)	07:01			07:09			06:25		07:12 (T3)	05:59		07:22 (T3)
	17:16			17:52	45	08:54 (T4)	18:26			20:00			20:31	79	08:31 (T3)	21:00	61	08:23 (T3)
6	07:57			07:38		08:08 (T4)	06:59			07:07			06:23		07:12 (T3)	05:59		07:22 (T3)
	17:17			17:53	46	08:54 (T4)	18:27			20:00			20:32	79	08:31 (T3)	21:01	61	08:23 (T3)
7	07:57			07:37		08:08 (T4)	06:57			07:06			06:22		07:12 (T3)	05:58		07:22 (T3)
	17:18			17:54	46	08:54 (T4)	18:28			20:01			20:33	79	08:31 (T3)	21:01	60	08:22 (T3)
8	07:57			07:36		08:08 (T4)	07:56			07:04		07:52 (T3)	06:21		07:12 (T3)	05:58		07:23 (T3)
	17:19			17:56	46	08:54 (T4)	19:29			20:02	13	08:05 (T3)	20:34	79	08:31 (T3)	21:02	59	08:22 (T3)
9	07:57			07:35		07:55 (T5)	07:54			07:03		07:46 (T3)	06:20		07:12 (T3)	05:58		07:24 (T3)
	17:20			17:57	55	08:54 (T4)	19:30			20:03	26	08:12 (T3)	20:35	79	08:31 (T3)	21:02	58	08:22 (T3)
10	07:57			07:34		07:54 (T5)	07:53			07:01		07:42 (T3)	06:19		07:13 (T3)	05:58		07:24 (T3)
	17:21			17:58	60	08:55 (T4)	19:32			20:04	33	08:15 (T3)	20:36	78	08:31 (T3)	21:03	58	08:22 (T3)
11	07:57			07:32		07:52 (T5)	07:51			06:59		07:38 (T3)	06:18		07:13 (T3)	05:58		07:25 (T3)
	17:22			17:59	62	08:54 (T4)	19:33			20:05	39	08:17 (T3)	20:37	78	08:31 (T3)	21:04	57	08:22 (T3)
12	07:56			07:31		07:51 (T5)	07:49			06:58		07:36 (T3)	06:16		07:13 (T3)	05:58		07:25 (T3)
	17:23			18:01	63	08:54 (T4)	19:34			20:06	44	08:20 (T3)	20:38	77	08:30 (T3)	21:04	57	08:22 (T3)
13	07:56			07:30		07:50 (T5)	07:48			06:56		07:33 (T3)	06:15		07:13 (T3)	05:57		07:26 (T3)
	17:24			18:02	63	08:53 (T4)	19:35			20:08	48	08:21 (T3)	20:40	77	08:30 (T3)	21:05	56	08:22 (T3)
14	07:56			07:29		07:48 (T5)	07:46			06:55		07:32 (T3)	06:14		07:13 (T3)	05:57		07:26 (T3)
	17:25			18:03	64	08:52 (T4)	19:36			20:09	51	08:23 (T3)	20:41	77	08:30 (T3)	21:05	56	08:22 (T3)
15	07:55			07:27		07:47 (T5)	07:44			06:53		07:29 (T3)	06:13		07:13 (T3)	05:57		07:27 (T3)
	17:26			18:04	65	08:52 (T4)	19:37			20:10	55	08:24 (T3)	20:42	76	08:29 (T3)	21:06	55	08:22 (T3)
16	07:55			07:26		07:46 (T5)	07:43			06:51		07:28 (T3)	06:12		07:13 (T3)	05:57		07:27 (T3)
	17:27			18:06	65	08:51 (T4)	19:38			20:11	58	08:26 (T3)	20:43	76	08:29 (T3)	21:06	55	08:22 (T3)
17	07:54			07:25		07:44 (T5)	07:41			06:50		07:26 (T3)	06:11		07:13 (T3)	05:57		07:27 (T3)
	17:29			18:07	66	08:50 (T4)	19:39			20:12	61	08:27 (T3)	20:44	75	08:28 (T3)	21:06	55	08:22 (T3)
18	07:54			07:23		07:43 (T5)	07:39			06:48		07:24 (T3)	06:10		07:13 (T3)	05:58		07:27 (T3)
	17:30			18:08	66	08:49 (T4)	19:41			20:13	63	08:27 (T3)	20:45	75	08:28 (T3)	21:07	55	08:22 (T3)
19	07:53		08:21 (T4)	07:22		07:42 (T5)	07:38			06:47		07:23 (T3)	06:10		07:14 (T3)	05:58		07:27 (T3)
	17:31	13	08:34 (T4)	18:09	65	08:47 (T4)	19:42			20:14	65	08:28 (T3)	20:45	73	08:27 (T3)	21:07	55	08:22 (T3)
20	07:53		08:19 (T4)	07:20		07:43 (T5)	07:36			06:45		07:23 (T3)	06:09		07:15 (T3)	05:58		07:28 (T3)
	17:32	18	08:37 (T4)	18:11	63	08:46 (T4)	19:43			20:15	66	08:29 (T3)	20:46	73	08:28 (T3)	21:07	54	08:22 (T3)
21	07:52		08:17 (T4)	07:19		07:43 (T5)	07:34			06:44		07:21 (T3)	06:08		07:15 (T3)	05:58		07:28 (T3)
	17:33	21	08:38 (T4)	18:12	59	08:45 (T4)	19:44			20:16	69	08:30 (T3)	20:47	72	08:27 (T3)	21:08	54	08:22 (T3)
22	07:52		08:16 (T4)	07:17		07:43 (T5)	07:33			06:42		07:20 (T3)	06:07		07:15 (T3)	05:58		07:29 (T3)
	17:34	25	08:41 (T4)	18:13	54	08:42 (T4)	19:45			20:17	70	08:30 (T3)	20:48	72	08:27 (T3)	21:08	54	08:23 (T3)
23	07:51		08:15 (T4)	07:16		07:44 (T5)	07:31			06:41		07:19 (T3)	06:06		07:15 (T3)	05:58		07:29 (T3)
	17:36	28	08:43 (T4)	18:14	47	08:39 (T4)	19:46			20:18	71	08:30 (T3)	20:49	71	08:26 (T3)	21:08	54	08:23 (T3)
24	07:50		08:14 (T4)	07:15		07:44 (T5)	07:29			06:39		07:18 (T3)	06:06		07:16 (T3)	05:59		07:28 (T3)
	17:37	30	08:44 (T4)	18:15	33	08:32 (T4)	19:47			20:19	73	08:31 (T3)	20:50	70	08:26 (T3)	21:08	55	08:23 (T3)
25	07:49		08:13 (T4)	07:13		07:45 (T5)	07:28			06:38		07:17 (T3)	06:05		07:16 (T3)	05:59		07:29 (T3)
	17:38	32	08:45 (T4)	18:17	28	08:13 (T5)	19:48			20:20	74	08:31 (T3)	20:51	70	08:26 (T3)	21:08	55	08:24 (T3)
26	07:49		08:12 (T4)	07:12		07:45 (T5)	07:26			06:36		07:17 (T3)	06:04		07:16 (T3)	05:59		07:29 (T3)
	17:39	34	08:46 (T4)	18:18	26	08:11 (T5)	19:49			20:22	74	08:31 (T3)	20:52	69	08:25 (T3)	21:09	55	08:24 (T3)
27	07:48		08:12 (T4)	07:10		07:47 (T5)	07:24			06:35		07:16 (T3)	06:03		07:17 (T3)	06:00		07:29 (T3)
	17:41	36	08:48 (T4)	18:19	23	08:10 (T5)	19:50			20:23	76	08:32 (T3)	20:53	68	08:25 (T3)	21:09	55	08:24 (T3)
28	07:47		08:11 (T4)	07:09		07:48 (T5)	07:22			06:34		07:15 (T3)	06:03		07:17 (T3)	06:00		07:29 (T3)
	17:42	38	08:49 (T4)	18:20	20	08:08 (T5)	19:51			20:24	76	08:31 (T3)	20:54	67	08:24 (T3)	21:09	56	08:25 (T3)
29	07:46		08:10 (T4)				07:21			06:32		07:15 (T3)	06:02		07:18 (T3)	06:00		07:29 (T3)
	17:43	40	08:50 (T4)				19:52			20:25	77	08:32 (T3)	20:55	67	08:25 (T3)	21:09	56	08:25 (T3)
30	07:45		08:10 (T4)				07:19			06:31		07:15 (T3)	06:02		07:18 (T3)	06:01		07:29 (T3)
	17:44	41	08:51 (T4)				19:54			20:26	77	08:32 (T3)	20:55	66	08:24 (T3)	21:09	57	08:26 (T3)
31	07:44		08:10 (T4)				07:17						06:01		07:19 (T3)			
	17:46	41	08:51 (T4)				19:55						20:56	65	08:24 (T3)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		397			1406			25			1359			2302			1713	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.54			0.56			0.66			0.66			0.66	
Total reduction		0.16			0.21			0.24			0.34			0.37			0.42	
Total, real		64			299			6			459			852			712	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 390 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6504)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:01		07:29 (T3)	06:26		07:23 (T3)	06:57		07:37 (T3)	07:27			07:02		07:23 (T5)	07:37	
	21:09	57	08:26 (T3)	20:50	78	08:41 (T3)	20:07	39	08:16 (T3)	19:14			17:27	59	08:23 (T4)	17:03	
2	06:02		07:28 (T3)	06:27		07:23 (T3)	06:58		07:40 (T3)	07:28			07:03		07:25 (T5)	07:38	
	21:08	58	08:26 (T3)	20:49	78	08:41 (T3)	20:05	33	08:13 (T3)	19:13			17:26	56	08:24 (T4)	17:03	
3	06:02		07:29 (T3)	06:28		07:22 (T3)	06:59		07:43 (T3)	07:29			07:04		07:38 (T4)	07:39	
	21:08	58	08:27 (T3)	20:48	78	08:40 (T3)	20:04	26	08:09 (T3)	19:11			17:25	46	08:24 (T4)	17:02	
4	06:03		07:29 (T3)	06:29		07:22 (T3)	07:00		07:49 (T3)	07:30			07:05		07:38 (T4)	07:40	
	21:08	59	08:28 (T3)	20:47	79	08:41 (T3)	20:02	13	08:02 (T3)	19:09			17:24	46	08:24 (T4)	17:02	
5	06:04		07:29 (T3)	06:30		07:22 (T3)	07:01			07:31			07:07		07:38 (T4)	07:41	
	21:08	59	08:28 (T3)	20:46	79	08:41 (T3)	20:00			19:08			17:23	45	08:23 (T4)	17:02	
6	06:04		07:29 (T3)	06:31		07:22 (T3)	07:02			07:32			07:08		07:39 (T4)	07:42	
	21:08	60	08:29 (T3)	20:44	79	08:41 (T3)	19:57			19:06			17:21	45	08:24 (T4)	17:02	
7	06:05		07:28 (T3)	06:32		07:22 (T3)	07:03			07:34			07:09		07:39 (T4)	07:43	
	21:07	61	08:29 (T3)	20:43	79	08:41 (T3)	19:55			19:04			17:20	45	08:24 (T4)	17:02	
8	06:05		07:28 (T3)	06:33		07:22 (T3)	07:04			07:35			07:10		07:39 (T4)	07:44	
	21:07	61	08:29 (T3)	20:42	79	08:41 (T3)	19:54			19:03			17:19	44	08:23 (T4)	17:02	
9	06:06		07:28 (T3)	06:34		07:22 (T3)	07:05			07:36			07:12		07:40 (T4)	07:45	
	21:07	62	08:30 (T3)	20:41	79	08:41 (T3)	19:52			19:01			17:18	44	08:24 (T4)	17:02	
10	06:07		07:28 (T3)	06:35		07:22 (T3)	07:06			07:37			07:13		07:40 (T4)	07:46	
	21:06	62	08:30 (T3)	20:39	79	08:41 (T3)	19:50			18:59			17:17	43	08:23 (T4)	17:02	
11	06:07		07:28 (T3)	06:36		07:22 (T3)	07:07			07:38			07:14		07:41 (T4)	07:47	
	21:06	63	08:31 (T3)	20:38	78	08:40 (T3)	19:49			18:58			17:16	41	08:22 (T4)	17:02	
12	06:08		07:28 (T3)	06:37		07:22 (T3)	07:08			07:39		08:25 (T5)	07:15		07:41 (T4)	07:47	
	21:06	64	08:32 (T3)	20:37	78	08:40 (T3)	19:47			18:56	12	08:37 (T5)	17:15	41	08:22 (T4)	17:02	
13	06:09		07:27 (T3)	06:38		07:22 (T3)	07:09			07:40		08:22 (T5)	07:16		07:42 (T4)	07:48	
	21:05	65	08:32 (T3)	20:36	78	08:40 (T3)	19:45			18:55	18	08:40 (T5)	17:14	40	08:22 (T4)	17:02	
14	06:10		07:27 (T3)	06:39		07:23 (T3)	07:10			07:41		08:19 (T5)	07:18		07:43 (T4)	07:49	
	21:05	66	08:33 (T3)	20:34	77	08:40 (T3)	19:44			18:53	22	08:41 (T5)	17:13	38	08:21 (T4)	17:02	
15	06:10		07:27 (T3)	06:40		07:23 (T3)	07:11			07:42		08:18 (T5)	07:19		07:44 (T4)	07:50	
	21:04	67	08:34 (T3)	20:33	76	08:39 (T3)	19:42			18:52	24	08:42 (T5)	17:12	36	08:20 (T4)	17:03	
16	06:11		07:27 (T3)	06:41		07:23 (T3)	07:12			07:43		08:17 (T5)	07:20		07:46 (T4)	07:50	
	21:04	67	08:34 (T3)	20:31	76	08:39 (T3)	19:40			18:50	27	08:44 (T5)	17:12	34	08:20 (T4)	17:03	
17	06:12		07:26 (T3)	06:42		07:23 (T3)	07:13			07:44		08:16 (T5)	07:21		07:47 (T4)	07:51	
	21:03	68	08:34 (T3)	20:30	75	08:38 (T3)	19:38			18:48	29	08:45 (T5)	17:11	32	08:19 (T4)	17:03	
18	06:13		07:26 (T3)	06:43		07:24 (T3)	07:14			07:46		08:15 (T5)	07:22		07:48 (T4)	07:52	
	21:02	69	08:35 (T3)	20:29	73	08:37 (T3)	19:37			18:47	41	09:07 (T4)	17:10	30	08:18 (T4)	17:04	
19	06:14		07:26 (T3)	06:44		07:24 (T3)	07:15			07:47		08:14 (T5)	07:24		07:49 (T4)	07:52	
	21:02	70	08:36 (T3)	20:27	73	08:37 (T3)	19:35			18:45	50	09:11 (T4)	17:09	28	08:17 (T4)	17:04	
20	06:15		07:26 (T3)	06:45		07:25 (T3)	07:16			07:48		08:13 (T5)	07:25		07:51 (T4)	07:53	
	21:01	70	08:36 (T3)	20:26	71	08:36 (T3)	19:33			18:44	56	09:13 (T4)	17:09	25	08:16 (T4)	17:04	
21	06:15		07:26 (T3)	06:46		07:25 (T3)	07:17			07:49		08:14 (T5)	07:26		07:53 (T4)	07:53	
	21:00	71	08:37 (T3)	20:24	70	08:35 (T3)	19:31			18:42	60	09:16 (T4)	17:08	21	08:14 (T4)	17:05	
22	06:16		07:25 (T3)	06:47		07:26 (T3)	07:18			07:50		08:13 (T5)	07:27		07:55 (T4)	07:54	
	20:59	73	08:38 (T3)	20:23	68	08:34 (T3)	19:30			18:41	64	09:17 (T4)	17:07	18	08:13 (T4)	17:05	
23	06:17		07:24 (T3)	06:48		07:26 (T3)	07:19			07:51		08:13 (T5)	07:28		07:57 (T4)	07:54	
	20:59	73	08:37 (T3)	20:21	67	08:33 (T3)	19:28			18:40	65	09:18 (T4)	17:07	13	08:10 (T4)	17:06	
24	06:18		07:24 (T3)	06:49		07:27 (T3)	07:20			07:52		08:13 (T5)	07:29		08:03 (T4)	07:55	
	20:58	74	08:38 (T3)	20:20	65	08:32 (T3)	19:26			18:38	66	09:19 (T4)	17:06	2	08:05 (T4)	17:06	
25	06:19		07:24 (T3)	06:50		07:28 (T3)	07:21			07:54		08:14 (T5)	07:30			07:55	
	20:57	74	08:38 (T3)	20:18	63	08:31 (T3)	19:25			18:37	66	09:20 (T4)	17:05			17:07	
26	06:20		07:24 (T3)	06:51		07:29 (T3)	07:22			07:55		08:16 (T5)	07:32			07:56	
	20:56	75	08:39 (T3)	20:17	60	08:29 (T3)	19:23			18:35	65	09:21 (T4)	17:05			17:08	
27	06:21		07:24 (T3)	06:52		07:30 (T3)	07:23			07:56		08:17 (T5)	07:33			07:56	
	20:55	75	08:39 (T3)	20:15	58	08:28 (T3)	19:21			18:34	65	09:22 (T4)	17:04			17:08	
28	06:22		07:24 (T3)	06:53		07:31 (T3)	07:24			07:57		08:18 (T5)	07:34			07:56	
	20:54	76	08:40 (T3)	20:13	55	08:26 (T3)	19:19			18:33	64	09:22 (T4)	17:04			17:09	
29	06:23		07:24 (T3)	06:54		07:33 (T3)	07:25			07:58		08:19 (T5)	07:35			07:57	
	20:53	76	08:40 (T3)	20:12	51	08:24 (T3)	19:18			18:31	63	09:22 (T4)	17:04			17:10	
30	06:24		07:24 (T3)	06:55		07:34 (T3)	07:26			08:00		08:21 (T5)	07:36			07:57	
	20:52	76	08:40 (T3)	20:10	48	08:22 (T3)	19:16			18:30	62	09:23 (T4)	17:03			17:10	
31	06:25		07:23 (T3)	06:56		07:35 (T3)				08:01		08:22 (T5)				07:57	
	20:51	78	08:41 (T3)	20:09	44	08:19 (T3)				18:29	61	09:23 (T4)				17:11	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		2087			2191			111			980			872			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.66			0.66			0.66			0.54			0.53			
Total reduction		0.43			0.40			0.38			0.26			0.16			
Total, real		895			868			43			252			137			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 399 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6513)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April	May		June	
1	07:57	07:43		07:07		16:57 (T44)	07:16		06:01	06:33 (T76)
	17:13	17:47		18:22	52	17:49 (T44)	19:56		20:57	68 20:29 (T77)
2	07:57	07:42		07:06		16:56 (T44)	07:14		06:01	06:34 (T76)
	17:14	17:49		18:23	53	17:49 (T44)	19:57		20:58	68 20:30 (T77)
3	07:57	07:41		07:04		16:55 (T44)	07:13		06:01	06:34 (T76)
	17:15	17:50		18:24	54	17:49 (T44)	19:58		20:58	68 20:30 (T77)
4	07:57	07:40		07:02		16:56 (T44)	07:11		06:00	06:35 (T76)
	17:16	17:51		18:25	54	17:50 (T44)	19:59		20:59	69 20:31 (T77)
5	07:57	07:39		07:01		16:55 (T44)	07:09		06:00	06:35 (T76)
	17:17	17:52		18:26	54	17:49 (T44)	20:00		21:00	70 20:32 (T77)
6	07:57	07:38		06:59		16:55 (T44)	07:08		06:00	06:35 (T76)
	17:17	17:54		18:27	55	17:50 (T44)	20:00		21:00	70 20:32 (T77)
7	07:57	07:37		06:58		16:55 (T44)	07:06		06:00	06:36 (T76)
	17:18	17:55		18:29	54	17:49 (T44)	20:01		21:01	69 20:33 (T77)
8	07:57	07:36		07:56		17:54 (T44)	07:05		06:00	06:36 (T76)
	17:19	17:56		19:30	54	18:48 (T44)	20:02		21:02	69 20:33 (T77)
9	07:57	07:35		07:54		17:55 (T44)	07:03		06:00	06:37 (T76)
	17:20	17:57		19:31	54	18:49 (T44)	20:03		21:02	69 20:34 (T77)
10	07:57	07:34		07:53		17:54 (T44)	07:01		05:59	06:38 (T76)
	17:21	17:59		19:32	54	18:48 (T44)	20:05		21:03	69 20:34 (T77)
11	07:57	07:32		07:51		17:54 (T44)	07:00		05:58	06:38 (T76)
	17:23	18:00		19:33	53	18:47 (T44)	20:06		21:03	70 20:35 (T77)
12	07:56	07:31		07:50		17:55 (T44)	06:58		05:58	06:38 (T76)
	17:24	18:01		19:34	52	18:47 (T44)	20:07		21:04	69 20:34 (T77)
13	07:56	07:30		07:48		17:55 (T44)	06:57		05:58	06:38 (T76)
	17:25	18:02		19:35	51	18:46 (T44)	20:08		21:05	70 20:35 (T77)
14	07:56	07:29		07:46		17:55 (T44)	06:55		05:58	06:39 (T76)
	17:26	18:04		19:36	50	18:45 (T44)	20:09		21:05	69 20:35 (T77)
15	07:55	07:27		07:45		17:57 (T44)	06:53		05:58	06:39 (T76)
	17:27	18:05		19:38	47	18:44 (T44)	20:10		21:05	68 20:35 (T77)
16	07:55	07:26		07:43		17:57 (T44)	06:52		05:58	06:39 (T76)
	17:28	18:06		19:39	46	18:43 (T44)	20:11		21:06	69 20:36 (T77)
17	07:54	07:25	17:19 (T44)	07:41		17:57 (T44)	06:50		05:58	06:40 (T76)
	17:29	18:07	9 17:28 (T44)	19:40	44	18:41 (T44)	20:12		21:06	69 20:37 (T77)
18	07:54	07:23	17:14 (T44)	07:40		17:59 (T44)	06:49		05:58	06:41 (T76)
	17:30	18:09	20 17:34 (T44)	19:41	42	18:41 (T44)	20:13		21:07	68 20:37 (T77)
19	07:53	07:22	17:11 (T44)	07:38		18:00 (T44)	06:47		05:58	06:41 (T76)
	17:32	18:10	26 17:37 (T44)	19:42	39	18:39 (T44)	20:14		21:07	68 20:37 (T77)
20	07:53	07:20	17:08 (T44)	07:36		18:01 (T44)	06:46		05:59	06:41 (T76)
	17:33	18:11	31 17:39 (T44)	19:43	35	18:36 (T44)	20:15		21:07	68 20:37 (T77)
21	07:52	07:19	17:07 (T44)	07:35		18:04 (T44)	06:44		05:59	06:41 (T76)
	17:34	18:12	34 17:41 (T44)	19:44	31	18:35 (T44)	20:16		21:08	68 20:37 (T77)
22	07:52	07:18	17:05 (T44)	07:33		18:05 (T44)	06:43		05:59	06:41 (T76)
	17:35	18:13	37 17:42 (T44)	19:45	27	18:32 (T44)	20:17		21:08	68 20:37 (T77)
23	07:51	07:16	17:03 (T44)	07:31		18:08 (T44)	06:41		05:59	06:42 (T76)
	17:36	18:15	41 17:44 (T44)	19:46	20	18:28 (T44)	20:18		21:08	68 20:38 (T77)
24	07:50	07:15	17:02 (T44)	07:30		18:14 (T44)	06:40		05:59	06:42 (T76)
	17:38	18:16	43 17:45 (T44)	19:47	10	18:24 (T44)	20:19		21:08	68 20:38 (T77)
25	07:49	07:13	17:01 (T44)	07:28			06:38		06:00	06:42 (T76)
	17:39	18:17	45 17:46 (T44)	19:48			20:21		21:08	68 20:38 (T77)
26	07:49	07:12	16:59 (T44)	07:26			06:37		06:00	06:42 (T76)
	17:40	18:18	48 17:47 (T44)	19:50			20:22		21:08	69 20:39 (T77)
27	07:48	07:10	16:59 (T44)	07:24			06:36		06:00	06:42 (T76)
	17:41	18:19	49 17:48 (T44)	19:51			20:23		21:08	68 20:38 (T77)
28	07:47	07:09	16:58 (T44)	07:23			06:34		06:01	06:42 (T76)
	17:42	18:21	50 17:48 (T44)	19:52			20:24		21:08	69 20:38 (T77)
29	07:46			07:21			06:33		06:01	06:42 (T76)
	17:44			19:53			20:25		21:08	70 20:39 (T77)
30	07:45			07:19			06:32		06:02	06:42 (T76)
	17:45			19:54			20:26		21:08	69 20:38 (T77)
31	07:44			07:18						
	17:46			19:55						
Potential sun hours	297	297		370		399	448		453	
Total, worst case			433		1085			985		2062
Sun reduction			0.40		0.44			0.57		0.64
Oper. time red.			1.00		1.00			1.00		1.00
Wind dir. red.			0.69		0.69			0.66		0.61
Total reduction			0.28		0.31			0.38		0.39
Total, real			121		332			375		806

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 399 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6513)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02	06:42 (T76)	06:26	06:48 (T76)	06:57		07:27	17:34 (T44)	07:02	07:37
	21:08	70 20:39 (T77)	20:50	24 07:12 (T76)	20:07		19:15	51 18:25 (T44)	17:28	17:04
2	06:03	06:42 (T76)	06:27	06:49 (T76)	06:58		07:29	17:33 (T44)	07:03	07:38
	21:08	70 20:39 (T77)	20:49	22 07:11 (T76)	20:06		19:13	52 18:25 (T44)	17:27	17:03
3	06:03	06:42 (T76)	06:28	06:50 (T76)	06:59		07:30	17:32 (T44)	07:04	07:39
	21:08	69 20:39 (T77)	20:48	19 07:09 (T76)	20:04		19:11	53 18:25 (T44)	17:26	17:03
4	06:04	06:42 (T76)	06:29	06:51 (T76)	07:00		07:31	17:31 (T44)	07:06	07:40
	21:08	68 20:38 (T77)	20:47	17 07:08 (T76)	20:02		19:10	54 18:25 (T44)	17:24	17:03
5	06:04	06:42 (T76)	06:30	06:52 (T76)	07:01		07:32	17:32 (T44)	07:07	07:41
	21:08	69 20:39 (T77)	20:46	14 07:06 (T76)	20:01		19:08	54 18:26 (T44)	17:23	17:03
6	06:05	06:41 (T76)	06:31	06:55 (T76)	07:02		07:33	17:31 (T44)	07:08	07:42
	21:08	70 20:38 (T77)	20:44	7 07:02 (T76)	19:57		19:06	55 18:26 (T44)	17:22	17:03
7	06:05	06:42 (T76)	06:32		07:03		07:34	17:31 (T44)	07:09	07:43
	21:07	69 20:38 (T77)	20:43		19:56		19:05	54 18:25 (T44)	17:21	17:03
8	06:06	06:42 (T76)	06:33		07:04		07:35	17:30 (T44)	07:10	07:44
	21:07	70 20:39 (T77)	20:42		19:54		19:03	55 18:25 (T44)	17:20	17:03
9	06:07	06:41 (T76)	06:34		07:05		07:36	17:30 (T44)	07:12	07:45
	21:07	70 20:38 (T77)	20:41		19:52		19:01	54 18:24 (T44)	17:19	17:03
10	06:07	06:42 (T76)	06:35		07:06		07:37	17:30 (T44)	07:13	07:46
	21:06	68 20:38 (T77)	20:39		19:51		19:00	54 18:24 (T44)	17:18	17:03
11	06:08	06:42 (T76)	06:36		07:07		07:38	17:30 (T44)	07:14	07:46
	21:06	68 20:38 (T77)	20:38		19:49		18:58	53 18:23 (T44)	17:17	17:03
12	06:09	06:41 (T76)	06:37		07:08		07:39	17:30 (T44)	07:15	07:47
	21:05	68 20:37 (T77)	20:37		19:47		18:57	52 18:22 (T44)	17:16	17:03
13	06:10	06:41 (T76)	06:38		07:09		07:40	17:30 (T44)	07:16	07:48
	21:05	67 20:37 (T77)	20:36		19:45		18:55	51 18:21 (T44)	17:15	17:03
14	06:10	06:42 (T76)	06:39		07:10		07:41	17:30 (T44)	07:18	07:49
	21:05	65 20:36 (T77)	20:34		19:44		18:54	50 18:20 (T44)	17:14	17:03
15	06:11	06:42 (T76)	06:40		07:11		07:42	17:32 (T44)	07:19	07:50
	21:04	64 20:36 (T77)	20:33		19:42		18:52	48 18:20 (T44)	17:13	17:03
16	06:12	06:41 (T76)	06:41		07:12		07:44	17:32 (T44)	07:20	07:50
	21:03	63 20:34 (T77)	20:31		19:40		18:50	47 18:19 (T44)	17:12	17:04
17	06:13	06:41 (T76)	06:42		07:13		07:45	17:33 (T44)	07:21	07:51
	21:03	61 20:34 (T77)	20:30		19:39		18:49	45 18:18 (T44)	17:11	17:04
18	06:14	06:41 (T76)	06:43		07:14		07:46	17:34 (T44)	07:22	07:52
	21:02	60 20:33 (T77)	20:29		19:37		18:47	42 18:16 (T44)	17:11	17:04
19	06:14	06:42 (T76)	06:44		07:15		18:03 (T44)	07:47	17:34 (T44)	07:23	07:52
	21:01	56 20:32 (T77)	20:27		19:35	4	18:07 (T44)	18:46	40 18:14 (T44)	17:10	17:05
20	06:15	06:42 (T76)	06:45		07:16		17:55 (T44)	07:48	17:36 (T44)	07:25	07:53
	21:01	52 20:30 (T77)	20:26		19:33	19	18:14 (T44)	18:44	36 18:12 (T44)	17:09	17:05
21	06:16	06:41 (T76)	06:46		07:17		17:52 (T44)	07:49	17:38 (T44)	07:26	07:53
	21:00	49 20:28 (T77)	20:24		19:32	25	18:17 (T44)	18:43	33 18:11 (T44)	17:09	17:06
22	06:17	06:41 (T76)	06:47		07:18		17:49 (T44)	07:50	17:40 (T44)	07:27	07:54
	20:59	42 20:24 (T77)	20:23		19:30	30	18:19 (T44)	18:41	29 18:09 (T44)	17:08	17:06
23	06:18	06:42 (T76)	06:48		07:19		17:46 (T44)	07:51	17:42 (T44)	07:28	07:54
	20:58	34 07:16 (T76)	20:21		19:28	34	18:20 (T44)	18:40	24 18:06 (T44)	17:07	17:07
24	06:19	06:42 (T76)	06:49		07:20		17:44 (T44)	07:53	17:45 (T44)	07:29	07:55
	20:58	34 07:16 (T76)	20:20		19:27	37	18:21 (T44)	18:39	17 18:02 (T44)	17:07	17:07
25	06:20	06:42 (T76)	06:50		07:21		17:42 (T44)	07:54		07:30	07:55
	20:57	34 07:16 (T76)	20:18		19:25	41	18:23 (T44)	18:37		17:06	17:08
26	06:21	06:43 (T76)	06:51		07:22		17:40 (T44)	07:55		07:32	07:56
	20:56	33 07:16 (T76)	20:17		19:23	43	18:23 (T44)	18:36		17:06	17:08
27	06:22	06:44 (T76)	06:52		07:23		17:39 (T44)	07:56		07:33	07:56
	20:55	31 07:15 (T76)	20:15		19:21	45	18:24 (T44)	18:34		17:05	17:09
28	06:22	06:45 (T76)	06:53		07:24		17:37 (T44)	07:57		07:34	07:56
	20:54	30 07:15 (T76)	20:14		19:20	48	18:25 (T44)	18:33		17:05	17:10
29	06:23	06:45 (T76)	06:54		07:25		17:36 (T44)	07:58		07:35	07:57
	20:53	29 07:14 (T76)	20:12		19:18	49	18:25 (T44)	18:32		17:04	17:10
30	06:24	06:46 (T76)	06:55		07:26		17:35 (T44)	08:00		07:36	07:57
	20:52	27 07:13 (T76)	20:10		19:16	50	18:25 (T44)	18:31		17:04	17:11
31	06:25	06:47 (T76)	06:56					08:01			07:57
	20:51	25 07:12 (T76)	20:09					18:29			17:12
Potential sun hours	460		429		375			345		297	287
Total, worst case		1685		103		425			1103		
Sun reduction		0.66		0.61		0.59			0.48		
Oper. time red.		1.00		1.00		1.00			1.00		
Wind dir. red.		0.64		0.71		0.69			0.69		
Total reduction		0.42		0.43		0.41			0.33		
Total, real		713		45		175			369		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 404 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6518)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February	March		April		May		June	
1	07:57	08:39 (T71)	07:43	07:07		07:16		17:43 (T69)	06:30	07:03 (T67)	06:02
	17:13	43 09:22 (T71)	17:48	18:22		19:56	82	19:05 (T69)	20:27	111 18:40 (T69)	20:57
2	07:57	08:39 (T71)	07:42	07:06		07:15		17:43 (T69)	06:29	07:06 (T67)	06:01
	17:14	44 09:23 (T71)	17:49	18:23		19:57	83	19:06 (T69)	20:28	100 18:38 (T69)	20:57
3	07:57	08:40 (T71)	07:41	07:04		07:13		07:49 (T68)	06:28	07:20 (T68)	06:01
	17:15	43 09:23 (T71)	17:50	18:24		19:58	94	19:06 (T69)	20:29	84 18:36 (T69)	20:58
4	07:57	08:40 (T71)	07:40	07:02		07:11		07:43 (T68)	06:27	07:20 (T68)	06:01
	17:16	43 09:23 (T71)	17:51	18:25		19:59	104	19:05 (T69)	20:30	76 18:32 (T69)	20:59
5	07:57	08:41 (T71)	07:39	07:01		07:10		07:40 (T68)	06:25	07:21 (T68)	06:00
	17:17	43 09:24 (T71)	17:53	18:26		20:00	111	19:05 (T69)	20:31	66 18:28 (T69)	20:59
6	07:57	08:42 (T71)	07:38	06:59		07:08		07:37 (T68)	06:24	07:22 (T68)	06:00
	17:18	42 09:24 (T71)	17:54	18:28		20:00	116	19:05 (T69)	20:32	48 08:10 (T68)	21:00
7	07:57	08:42 (T71)	07:37	06:58		07:06		07:34 (T68)	06:23	07:22 (T68)	06:00
	17:19	42 09:24 (T71)	17:55	18:29		20:01	120	19:04 (T69)	20:33	47 08:09 (T68)	21:01
8	07:57	08:43 (T71)	07:36	07:56		07:05		07:33 (T68)	06:22	07:23 (T68)	05:59
	17:20	42 09:25 (T71)	17:57	19:30		20:02	122	19:04 (T69)	20:34	45 08:08 (T68)	21:01
9	07:57	08:44 (T71)	07:35	07:54		07:03		07:30 (T68)	06:21	07:24 (T68)	05:59
	17:21	41 09:25 (T71)	17:58	19:31		20:03	125	19:03 (T69)	20:35	43 08:07 (T68)	21:02
10	07:57	08:44 (T71)	07:33	07:53	18:20 (T69)	07:02		07:28 (T68)	06:20	07:25 (T68)	05:59
	17:22	40 09:24 (T71)	17:59	19:32	20 18:40 (T69)	20:04	128	19:03 (T69)	20:36	41 08:06 (T68)	21:03
11	07:56	08:45 (T71)	07:32	07:51	18:14 (T69)	07:00		07:27 (T68)	06:18	07:26 (T68)	05:59
	17:23	40 09:25 (T71)	18:00	19:33	30 18:44 (T69)	20:06	130	19:03 (T69)	20:37	39 08:05 (T68)	21:03
12	07:56	08:46 (T71)	07:31	07:50	18:11 (T69)	06:58		07:17 (T67)	06:17	07:28 (T68)	05:59
	17:24	39 09:25 (T71)	18:01	19:34	38 18:49 (T69)	20:07	135	19:02 (T69)	20:38	35 08:03 (T68)	21:04
13	07:56	08:46 (T71)	07:30	07:48	18:08 (T69)	06:57		07:16 (T67)	06:16	07:29 (T68)	05:59
	17:25	38 09:24 (T71)	18:03	19:35	43 18:51 (T69)	20:08	139	19:01 (T69)	20:39	33 08:02 (T68)	21:04
14	07:55	08:48 (T71)	07:28	07:46	18:05 (T69)	06:55		07:14 (T67)	06:15	07:30 (T68)	05:59
	17:26	37 09:25 (T71)	18:04	19:37	48 18:53 (T69)	20:09	140	19:00 (T69)	20:40	30 08:00 (T68)	21:05
15	07:55	08:48 (T71)	07:27	07:45	18:03 (T69)	06:54		07:13 (T67)	06:14	07:32 (T68)	05:59
	17:27	36 09:24 (T71)	18:05	19:38	52 18:55 (T69)	20:10	141	19:00 (T69)	20:41	26 07:58 (T68)	21:05
16	07:55	08:49 (T71)	07:26	07:43	18:00 (T69)	06:52		07:11 (T67)	06:13	07:34 (T68)	05:59
	17:28	35 09:24 (T71)	18:06	19:39	57 18:57 (T69)	20:11	142	18:59 (T69)	20:42	22 07:56 (T68)	21:06
17	07:54	08:50 (T71)	07:25	07:41	17:58 (T69)	06:51		07:10 (T67)	06:12	07:36 (T68)	05:59
	17:30	33 09:23 (T71)	18:08	19:40	60 18:58 (T69)	20:12	143	18:59 (T69)	20:43	18 07:54 (T68)	21:06
18	07:54	08:52 (T71)	07:23	07:40	17:57 (T69)	06:49		07:08 (T67)	06:11	07:40 (T68)	05:59
	17:31	31 09:23 (T71)	18:09	19:41	63 19:00 (T69)	20:13	142	18:57 (T69)	20:44	10 07:50 (T68)	21:06
19	07:53	08:53 (T71)	07:22	07:38	17:55 (T69)	06:47		07:07 (T67)	06:11		05:59
	17:32	29 09:22 (T71)	18:10	19:42	65 19:00 (T69)	20:14	143	18:57 (T69)	20:45		21:07
20	07:53	08:55 (T71)	07:20	07:36	17:53 (T69)	06:46		07:05 (T67)	06:10		05:59
	17:33	27 09:22 (T71)	18:11	19:43	68 19:01 (T69)	20:15	142	18:55 (T69)	20:46		21:07
21	07:52	08:56 (T71)	07:19	07:35	17:52 (T69)	06:44		07:04 (T67)	06:09		05:59
	17:34	24 09:20 (T71)	18:12	19:44	70 19:02 (T69)	20:16	141	18:55 (T69)	20:47		21:07
22	07:51	08:57 (T71)	07:18	07:33	17:51 (T69)	06:43		07:02 (T67)	06:08		05:59
	17:35	22 09:19 (T71)	18:14	19:45	72 19:03 (T69)	20:17	141	18:53 (T69)	20:48		21:07
23	07:51	09:00 (T71)	07:16	07:31	17:49 (T69)	06:42		07:01 (T67)	06:07		06:00
	17:37	18 09:18 (T71)	18:15	19:46	74 19:03 (T69)	20:18	140	18:52 (T69)	20:49		21:08
24	07:50	09:03 (T71)	07:15	07:30	17:49 (T69)	06:40		06:59 (T67)	06:07		06:00
	17:38	12 09:15 (T71)	18:16	19:47	75 19:04 (T69)	20:19	139	18:51 (T69)	20:50		21:08
25	07:49		07:13	07:28	17:48 (T69)	06:39		06:58 (T67)	06:06		06:00
	17:39		18:17	19:48	77 19:05 (T69)	20:20	138	18:50 (T69)	20:51		21:08
26	07:48		07:12	07:26	17:46 (T69)	06:37		06:59 (T67)	06:05		06:00
	17:40		18:18	19:50	79 19:05 (T69)	20:21	134	18:49 (T69)	20:52		21:08
27	07:48		07:10	07:25	17:46 (T69)	06:36		06:59 (T67)	06:05		06:01
	17:42		18:20	19:51	80 19:06 (T69)	20:23	131	18:47 (T69)	20:52		21:08
28	07:47		07:09	07:23	17:45 (T69)	06:35		07:00 (T67)	06:04		06:01
	17:43		18:21	19:52	81 19:06 (T69)	20:24	126	18:45 (T69)	20:53		21:08
29	07:46			07:21	17:44 (T69)	06:33		07:01 (T67)	06:03		06:02
	17:44			19:53	81 19:05 (T69)	20:25	121	18:44 (T69)	20:54		21:08
30	07:45			07:20	17:44 (T69)	06:32		07:02 (T67)	06:03		06:02
	17:45			19:54	82 19:06 (T69)	20:26	116	18:42 (T69)	20:55		21:08
31	07:44			07:18	17:44 (T69)				06:02		
	17:46			19:55	82 19:06 (T69)				20:56		
Potential sun hours	297		297	370		399			448		452
Total, worst case		844			1397		3809			874	
Sun reduction		0.31			0.44		0.52			0.57	
Oper. time red.		1.00			1.00		1.00			1.00	
Wind dir. red.		0.53			0.66		0.66			0.65	
Total reduction		0.16			0.28		0.34			0.37	
Total, real		136			396		1277			320	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 404 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6518)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:03			06:27		07:37 (T68)	06:57		07:26 (T68)	07:28		17:48 (T69)	07:02			07:37		08:27 (T71)
	21:08			20:50	36	08:13 (T68)	20:07	130	19:02 (T69)	19:15	40	18:28 (T69)	17:28			17:04	40	09:07 (T71)
2	06:03			06:28		07:36 (T68)	06:58		07:27 (T68)	07:29		17:51 (T69)	07:03			07:38		08:27 (T71)
	21:08			20:49	39	08:15 (T68)	20:05	128	19:02 (T69)	19:13	34	18:25 (T69)	17:27			17:04	40	09:07 (T71)
3	06:04			06:29		07:34 (T68)	06:59		07:28 (T68)	07:30		17:55 (T69)	07:04			07:39		08:27 (T71)
	21:08			20:48	42	08:16 (T68)	20:04	125	19:01 (T69)	19:11	25	18:20 (T69)	17:26			17:04	41	09:08 (T71)
4	06:04			06:30		07:34 (T68)	07:00		07:29 (T68)	07:31		18:03 (T69)	07:05			07:40		08:27 (T71)
	21:08			20:47	43	08:17 (T68)	20:02	123	19:01 (T69)	19:10	9	18:12 (T69)	17:25			17:03	42	09:09 (T71)
5	06:05			06:31		07:33 (T68)	07:01		07:31 (T68)	07:32			07:07			07:41		08:27 (T71)
	21:08			20:45	45	08:18 (T68)	20:01	120	19:01 (T69)	19:08			17:23			17:03	42	09:09 (T71)
6	06:05			06:31		07:32 (T68)	07:02		07:33 (T68)	07:33			07:08			07:42		08:28 (T71)
	21:07			20:44	47	08:19 (T68)	19:57	116	19:01 (T69)	19:07			17:22			17:03	42	09:10 (T71)
7	06:06			06:32		07:31 (T68)	07:03		07:35 (T68)	07:34			07:09			07:43		08:28 (T71)
	21:07			20:43	57	18:34 (T69)	19:56	112	19:01 (T69)	19:05			17:21			17:03	43	09:11 (T71)
8	06:07			06:33		07:30 (T68)	07:04		07:38 (T68)	07:35			07:10			07:44		08:28 (T71)
	21:07			20:42	70	18:39 (T69)	19:54	104	19:00 (T69)	19:03			17:20			17:03	43	09:11 (T71)
9	06:07			06:34		07:29 (T68)	07:05		07:43 (T68)	07:36			07:11			07:44		08:29 (T71)
	21:06			20:41	79	18:43 (T69)	19:52	94	19:00 (T69)	19:02			17:19			17:03	43	09:12 (T71)
10	06:08			06:35		07:18 (T67)	07:06		17:36 (T69)	07:37			07:13			07:45		08:29 (T71)
	21:06			20:39	89	18:45 (T69)	19:51	83	18:59 (T69)	19:00			17:18			17:03	44	09:13 (T71)
11	06:09			06:36		07:14 (T67)	07:07		17:36 (T69)	07:38			07:14			07:46		08:30 (T71)
	21:06			20:38	103	18:47 (T69)	19:49	83	18:59 (T69)	18:58			17:17			17:03	43	09:13 (T71)
12	06:09			06:37		07:12 (T67)	07:08		17:35 (T69)	07:39			07:15			07:47		08:29 (T71)
	21:05			20:37	111	18:49 (T69)	19:47	82	18:57 (T69)	18:57			17:16			17:03	44	09:13 (T71)
13	06:10			06:38		07:10 (T67)	07:09		17:35 (T69)	07:40			07:16			07:48		08:30 (T71)
	21:05			20:35	118	18:51 (T69)	19:45	81	18:56 (T69)	18:55			17:15			17:03	44	09:14 (T71)
14	06:11			06:39		07:09 (T67)	07:10		17:34 (T69)	07:41			07:17			07:49		08:30 (T71)
	21:04			20:34	122	18:52 (T69)	19:44	82	18:56 (T69)	18:54			17:14			17:04	44	09:14 (T71)
15	06:12			06:40		07:07 (T67)	07:11		17:34 (T69)	07:42			07:19			07:49		08:31 (T71)
	21:04			20:33	127	18:53 (T69)	19:42	81	18:55 (T69)	18:52			17:13			17:04	44	09:15 (T71)
16	06:12			06:41		07:06 (T67)	07:12		17:34 (T69)	07:44			07:20			07:50		08:31 (T71)
	21:03			20:31	132	18:55 (T69)	19:40	80	18:54 (T69)	18:51			17:13			17:04	44	09:15 (T71)
17	06:13			06:42		07:06 (T67)	07:13		17:35 (T69)	07:45			07:21			07:51		08:32 (T71)
	21:03			20:30	135	18:56 (T69)	19:39	78	18:53 (T69)	18:49			17:12			17:04	44	09:16 (T71)
18	06:14			06:43		07:05 (T67)	07:14		17:35 (T69)	07:46			07:22		08:37 (T71)	07:51		08:32 (T71)
	21:02			20:28	138	18:57 (T69)	19:37	77	18:52 (T69)	18:48			17:11	12	08:49 (T71)	17:05	45	09:17 (T71)
19	06:15			06:44		07:06 (T67)	07:15		17:35 (T69)	07:47			07:23		08:34 (T71)	07:52		08:32 (T71)
	21:01			20:27	140	18:58 (T69)	19:35	76	18:51 (T69)	18:46			17:10	18	08:52 (T71)	17:05	45	09:17 (T71)
20	06:16			06:45		07:07 (T67)	07:16		17:35 (T69)	07:48			07:24		08:32 (T71)	07:53		08:33 (T71)
	21:01			20:26	140	18:58 (T69)	19:34	75	18:50 (T69)	18:45			17:10	22	08:54 (T71)	17:05	45	09:18 (T71)
21	06:16			06:46		07:08 (T67)	07:17		17:36 (T69)	07:49			07:26		08:31 (T71)	07:53		08:33 (T71)
	21:00			20:24	140	18:59 (T69)	19:32	73	18:49 (T69)	18:43			17:09	24	08:55 (T71)	17:06	45	09:18 (T71)
22	06:17			06:47		07:08 (T67)	07:18		17:36 (T69)	07:50			07:27		08:31 (T71)	07:54		08:34 (T71)
	20:59			20:23	142	18:59 (T69)	19:30	71	18:47 (T69)	18:42			17:08	27	08:58 (T71)	17:06	45	09:19 (T71)
23	06:18			06:48		07:09 (T67)	07:19		17:37 (T69)	07:51			07:28		08:30 (T71)	07:54		08:34 (T71)
	20:58			20:21	142	18:59 (T69)	19:28	69	18:46 (T69)	18:40			17:08	29	08:59 (T71)	17:07	45	09:19 (T71)
24	06:19			06:49		07:10 (T67)	07:20		17:38 (T69)	07:53			07:29		08:29 (T71)	07:55		08:35 (T71)
	20:57			20:20	142	19:00 (T69)	19:27	66	18:44 (T69)	18:39			17:07	31	09:00 (T71)	17:07	45	09:20 (T71)
25	06:20			06:50		07:11 (T67)	07:21		17:39 (T69)	07:54			07:30		08:28 (T71)	07:55		08:35 (T71)
	20:57			20:18	142	19:00 (T69)	19:25	63	18:42 (T69)	18:37			17:06	33	09:01 (T71)	17:08	45	09:20 (T71)
26	06:21		07:48 (T68)	06:51		07:12 (T67)	07:22		17:40 (T69)	07:55			07:31		08:28 (T71)	07:55		08:35 (T71)
	20:56	14	08:02 (T68)	20:17	142	19:01 (T69)	19:23	61	18:41 (T69)	18:36			17:06	34	09:02 (T71)	17:09	45	09:20 (T71)
27	06:22		07:46 (T68)	06:52		07:13 (T67)	07:23		17:41 (T69)	07:56			07:32		08:28 (T71)	07:56		08:37 (T71)
	20:55	19	08:05 (T68)	20:15	142	19:01 (T69)	19:22	58	18:39 (T69)	18:35			17:06	36	09:04 (T71)	17:09	44	09:21 (T71)
28	06:23		07:44 (T68)	06:53		07:14 (T67)	07:24		17:43 (T69)	07:57			07:34		08:28 (T71)	07:56		08:37 (T71)
	20:54	24	08:08 (T68)	20:13	141	19:01 (T69)	19:20	53	18:36 (T69)	18:33			17:05	37	09:05 (T71)	17:10	44	09:21 (T71)
29	06:24		07:42 (T68)	06:54		07:15 (T67)	07:25		17:44 (T69)	07:58			07:35		08:27 (T71)	07:56		08:37 (T71)
	20:53	28	08:10 (T68)	20:12	140	19:01 (T69)	19:18	50	18:34 (T69)	18:32			17:05	38	09:05 (T71)	17:11	44	09:21 (T71)
30	06:25		07:40 (T68)	06:55		07:16 (T67)	07:26		17:46 (T69)	07:59			07:36		08:27 (T71)	07:56		08:38 (T71)
	20:52	31	08:11 (T68)	20:10	139	19:01 (T69)	19:17	45	18:31 (T69)	18:31			17:04	39	09:06 (T71)	17:12	44	09:22 (T71)
31	06:26		07:39 (T68)	06:56		07:17 (T67)				08:01						07:57		08:38 (T71)
	20:51	34	08:13 (T68)	20:09	135	19:02 (T69)				18:29						17:12	44	09:22 (T71)
Potential sun hours	459			428			375			345			298			288		
Total, worst case		150			3360			2539			108			380			1352	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.66			0.66			0.66			0.53			0.53	
Total reduction		0.42			0.39			0.38			0.31			0.16			0.11	
Total, real		64			1321			965			33			59			154	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 422 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6530)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		08:21 (T77)	07:44		08:04 (T42)	07:07			07:16		08:06 (T41)	06:30			06:01		06:28 (T40)
	17:13	28	08:49 (T77)	17:48	25	08:29 (T42)	18:22			19:56	45	08:51 (T41)	20:27			20:57	34	07:02 (T40)
2	07:57		08:21 (T77)	07:43		08:03 (T42)	07:06			07:15		08:06 (T41)	06:29			06:01		06:28 (T40)
	17:14	28	08:49 (T77)	17:49	26	08:29 (T42)	18:23			19:57	44	08:50 (T41)	20:28			20:58	35	07:03 (T40)
3	07:57		08:22 (T77)	07:42		08:02 (T42)	07:04			07:13		08:08 (T41)	06:28			06:01		06:27 (T40)
	17:15	28	08:50 (T77)	17:50	28	08:30 (T42)	18:24			19:58	41	08:49 (T41)	20:29			20:58	36	07:03 (T40)
4	07:58		08:22 (T77)	07:40		08:01 (T42)	07:03			07:11		08:08 (T41)	06:26			06:00		06:27 (T40)
	17:16	28	08:50 (T77)	17:51	30	08:31 (T42)	18:25			19:59	39	08:47 (T41)	20:30			20:59	38	07:05 (T40)
5	07:58		08:23 (T77)	07:39		08:00 (T42)	07:01			07:10		08:10 (T41)	06:25			06:00		06:27 (T40)
	17:17	27	08:50 (T77)	17:53	31	08:31 (T42)	18:26			20:00	35	08:45 (T41)	20:31			21:00	39	07:06 (T40)
6	07:57		08:23 (T77)	07:38		07:58 (T42)	06:59		07:32 (T41)	07:08		08:12 (T41)	06:24			06:00		06:26 (T40)
	17:18	28	08:51 (T77)	17:54	33	08:31 (T42)	18:28	11	07:43 (T41)	20:00	31	08:43 (T41)	20:32			21:01	39	07:05 (T40)
7	07:57		08:23 (T77)	07:37		07:59 (T42)	06:58		07:26 (T41)	07:06		08:13 (T41)	06:23			05:59		06:26 (T40)
	17:18	27	08:50 (T77)	17:55	32	08:31 (T42)	18:29	21	07:47 (T41)	20:01	27	08:40 (T41)	20:33			21:01	40	07:06 (T40)
8	07:57		08:24 (T77)	07:36		07:59 (T42)	07:56		08:23 (T41)	07:05		08:16 (T41)	06:22			05:59		06:26 (T40)
	17:19	27	08:51 (T77)	17:56	33	08:32 (T42)	19:30	27	08:50 (T41)	20:02	21	08:37 (T41)	20:34			21:02	41	07:07 (T40)
9	07:57		08:25 (T77)	07:35		07:59 (T42)	07:55		08:21 (T41)	07:03		08:20 (T41)	06:20			05:59		06:26 (T40)
	17:20	26	08:51 (T77)	17:58	33	08:32 (T42)	19:31	32	08:53 (T41)	20:04	12	08:32 (T41)	20:35			21:02	42	07:08 (T40)
10	07:57		08:26 (T77)	07:34		08:00 (T42)	07:53		08:18 (T41)	07:01			06:19			05:59		06:26 (T40)
	17:22	26	08:52 (T77)	17:59	32	08:32 (T42)	19:32	36	08:54 (T41)	20:05			20:37			21:03	42	07:08 (T40)
11	07:57		08:26 (T77)	07:32		07:59 (T42)	07:51		08:17 (T41)	07:00			06:18			05:58		06:26 (T40)
	17:23	25	08:51 (T77)	18:00	32	08:31 (T42)	19:33	39	08:56 (T41)	20:06			20:38			21:04	43	07:09 (T40)
12	07:56		08:27 (T77)	07:31		08:00 (T42)	07:50		08:15 (T41)	06:58			06:17			05:58		06:26 (T40)
	17:24	25	08:52 (T77)	18:01	31	08:31 (T42)	19:34	42	08:57 (T41)	20:07			20:39			21:04	43	07:09 (T40)
13	07:56		08:28 (T77)	07:30		08:01 (T42)	07:48		08:13 (T41)	06:57			06:16			05:58		06:25 (T40)
	17:25	24	08:52 (T77)	18:03	29	08:30 (T42)	19:35	44	08:57 (T41)	20:08			20:40			21:05	44	07:09 (T40)
14	07:56		08:28 (T77)	07:29		08:02 (T42)	07:46		08:12 (T41)	06:55			06:15			05:58		06:25 (T40)
	17:26	23	08:51 (T77)	18:04	28	08:30 (T42)	19:37	47	08:59 (T41)	20:09			20:41			21:05	44	07:09 (T40)
15	07:55		08:29 (T77)	07:27		08:02 (T42)	07:45		08:11 (T41)	06:53			06:14			05:58		06:25 (T40)
	17:27	23	08:52 (T77)	18:05	26	08:28 (T42)	19:38	48	08:59 (T41)	20:10			20:42			21:06	45	07:10 (T40)
16	07:55		08:30 (T77)	07:26		08:04 (T42)	07:43		08:09 (T41)	06:52			06:13			05:58		06:26 (T40)
	17:28	21	08:51 (T77)	18:06	23	08:27 (T42)	19:39	50	08:59 (T41)	20:11			20:43			21:06	45	07:11 (T40)
17	07:55		08:32 (T77)	07:25		08:04 (T42)	07:41		08:08 (T41)	06:50			06:12			05:58		06:26 (T40)
	17:29	19	08:51 (T77)	18:07	21	08:25 (T42)	19:40	51	08:59 (T41)	20:12			20:44			21:06	45	07:11 (T40)
18	07:54		08:32 (T77)	07:23		08:07 (T42)	07:40		08:08 (T41)	06:49			06:11			05:58		06:26 (T40)
	17:30	18	08:50 (T77)	18:09	17	08:24 (T42)	19:41	52	09:00 (T41)	20:13			20:45			21:07	45	07:11 (T40)
19	07:53		08:35 (T77)	07:22		08:10 (T42)	07:38		08:07 (T41)	06:47			06:10			05:58		06:26 (T40)
	17:32	14	08:49 (T77)	18:10	11	08:21 (T42)	19:42	53	09:00 (T41)	20:14			20:46			21:07	45	07:11 (T40)
20	07:53		08:36 (T77)	07:21			07:36		08:06 (T41)	06:46			06:09			05:59		06:26 (T40)
	17:33	11	08:47 (T77)	18:11			19:43	53	08:59 (T41)	20:15			20:46			21:07	46	07:12 (T40)
21	07:52		08:39 (T77)	07:19			07:35		08:06 (T41)	06:44			06:09			05:59		06:26 (T40)
	17:34	5	08:44 (T77)	18:12			19:44	54	09:00 (T41)	20:16			20:47			21:08	46	07:12 (T40)
22	07:52			07:18			07:33		08:05 (T41)	06:43			06:08			05:59		06:26 (T40)
	17:35			18:14			19:45	54	08:59 (T41)	20:17			20:48			21:08	46	07:12 (T40)
23	07:51			07:16			07:31		08:05 (T41)	06:41			06:07			05:59		06:27 (T40)
	17:36			18:15			19:46	54	08:59 (T41)	20:18			20:49			21:08	46	07:13 (T40)
24	07:50			07:15			07:30		08:05 (T41)	06:40			06:06		06:40 (T40)	05:59		06:27 (T40)
	17:38			18:16			19:47	54	08:59 (T41)	20:20			20:50	8	06:48 (T40)	21:08	45	07:12 (T40)
25	07:50		08:12 (T42)	07:13			07:28		08:05 (T41)	06:39			06:06		06:37 (T40)	06:00		06:27 (T40)
	17:39	2	08:14 (T42)	18:17			19:49	53	08:58 (T41)	20:21			20:51	15	06:52 (T40)	21:08	45	07:12 (T40)
26	07:49		08:09 (T42)	07:12			07:26		08:04 (T41)	06:37			06:05		06:34 (T40)	06:00		06:28 (T40)
	17:40	10	08:19 (T42)	18:18			19:50	53	08:57 (T41)	20:22			20:52	20	06:54 (T40)	21:08	45	07:13 (T40)
27	07:48		08:09 (T42)	07:10			07:25		08:05 (T41)	06:36			06:04		06:33 (T40)	06:00		06:28 (T40)
	17:41	13	08:22 (T42)	18:19			19:51	52	08:57 (T41)	20:23			20:53	24	06:57 (T40)	21:09	45	07:13 (T40)
28	07:47		08:08 (T42)	07:09			07:23		08:05 (T41)	06:34			06:04		06:31 (T40)	06:01		06:28 (T40)
	17:43	16	08:24 (T42)	18:21			19:52	51	08:56 (T41)	20:24			20:54	27	06:58 (T40)	21:09	44	07:12 (T40)
29	07:46		08:07 (T42)				07:21		08:05 (T41)	06:33			06:03		06:31 (T40)	06:01		06:29 (T40)
	17:44	18	08:25 (T42)				19:53	50	08:55 (T41)	20:25			20:55	29	07:00 (T40)	21:09	44	07:13 (T40)
30	07:45		08:06 (T42)				07:20		08:06 (T41)	06:32			06:02		06:29 (T40)	06:02		06:29 (T40)
	17:45	21	08:27 (T42)				19:54	48	08:54 (T41)	20:26			20:55	31	07:00 (T40)	21:09	44	07:13 (T40)
31	07:44		08:05 (T42)				07:18		08:06 (T41)				06:02		06:29 (T40)			
	17:46	23	08:28 (T42)				19:55	47	08:53 (T41)				20:56	33	07:02 (T40)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		584			521			1176			295			187			1281	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.54			0.59			0.59			0.72			0.72	
Total reduction		0.16			0.21			0.25			0.30			0.40			0.45	
Total, real		92			109			294			87			74			572	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 422 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6530)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August	September			October			November			December		
1	06:02		06:30 (T40)	06:26	06:57			07:28		07:53 (T41)	07:02		07:28 (T42)	07:37		08:08 (T77)
	21:09	43	07:13 (T40)	20:50	20:07			19:15	43	08:36 (T41)	17:28	33	08:01 (T42)	17:04	25	08:33 (T77)
2	06:03		06:30 (T40)	06:27	06:58			07:29		07:54 (T41)	07:03		07:29 (T42)	07:38		08:09 (T77)
	21:08	43	07:13 (T40)	20:49	20:06			19:13	40	08:34 (T41)	17:27	33	08:02 (T42)	17:03	26	08:35 (T77)
3	06:03		06:31 (T40)	06:28	06:59		08:18 (T41)	07:30		07:55 (T41)	07:04		07:29 (T42)	07:39		08:09 (T77)
	21:08	42	07:13 (T40)	20:48	20:04	12	08:30 (T41)	19:11	37	08:32 (T41)	17:26	32	08:01 (T42)	17:03	26	08:35 (T77)
4	06:04		06:31 (T40)	06:29	07:00		08:13 (T41)	07:31		07:57 (T41)	07:06		07:28 (T42)	07:40		08:09 (T77)
	21:08	41	07:12 (T40)	20:47	20:02	21	08:34 (T41)	19:10	34	08:31 (T41)	17:24	33	08:01 (T42)	17:03	27	08:36 (T77)
5	06:04		06:32 (T40)	06:30	07:01		08:10 (T41)	07:32		07:59 (T41)	07:07		07:28 (T42)	07:41		08:09 (T77)
	21:08	41	07:13 (T40)	20:46	20:01	27	08:37 (T41)	19:08	30	08:29 (T41)	17:23	33	08:01 (T42)	17:03	27	08:36 (T77)
6	06:05		06:32 (T40)	06:31	07:02		08:08 (T41)	07:33		08:01 (T41)	07:08		07:30 (T42)	07:42		08:09 (T77)
	21:08	40	07:12 (T40)	20:45	19:57	31	08:39 (T41)	19:06	25	08:26 (T41)	17:22	31	08:01 (T42)	17:03	28	08:37 (T77)
7	06:06		06:33 (T40)	06:32	07:03		08:06 (T41)	07:34		08:05 (T41)	07:09		07:31 (T42)	07:43		08:10 (T77)
	21:07	39	07:12 (T40)	20:43	19:56	34	08:40 (T41)	19:05	16	08:21 (T41)	17:21	30	08:01 (T42)	17:03	28	08:38 (T77)
8	06:06		06:34 (T40)	06:33	07:04		08:04 (T41)	07:35			07:10		07:32 (T42)	07:44		08:09 (T77)
	21:07	38	07:12 (T40)	20:42	19:54	38	08:42 (T41)	19:03			17:20	28	08:00 (T42)	17:03	28	08:37 (T77)
9	06:07		06:34 (T40)	06:34	07:05		08:02 (T41)	07:36			07:12		07:34 (T42)	07:45		08:10 (T77)
	21:07	37	07:11 (T40)	20:41	19:52	41	08:43 (T41)	19:02			17:19	26	08:00 (T42)	17:03	28	08:38 (T77)
10	06:08		06:35 (T40)	06:35	07:06		08:01 (T41)	07:37			07:13		07:35 (T42)	07:46		08:10 (T77)
	21:06	36	07:11 (T40)	20:40	19:51	43	08:44 (T41)	19:00			17:18	24	07:59 (T42)	17:03	28	08:38 (T77)
11	06:08		06:36 (T40)	06:36	07:07		07:59 (T41)	07:38			07:14		07:36 (T42)	07:47		08:11 (T77)
	21:06	35	07:11 (T40)	20:38	19:49	45	08:44 (T41)	18:58			17:17	22	07:58 (T42)	17:03	28	08:39 (T77)
12	06:09		06:36 (T40)	06:37	07:08		07:57 (T41)	07:39			07:15		07:37 (T42)	07:47		08:11 (T77)
	21:06	33	07:09 (T40)	20:37	19:47	47	08:44 (T41)	18:57			17:16	20	07:57 (T42)	17:03	28	08:39 (T77)
13	06:10		06:37 (T40)	06:38	07:09		07:56 (T41)	07:40			07:16		07:39 (T42)	07:48		08:12 (T77)
	21:05	32	07:09 (T40)	20:36	19:46	49	08:45 (T41)	18:55			17:15	18	07:57 (T42)	17:03	28	08:40 (T77)
14	06:10		06:39 (T40)	06:39	07:10		07:55 (T41)	07:41			07:18		07:40 (T42)	07:49		08:12 (T77)
	21:05	29	07:08 (T40)	20:34	19:44	50	08:45 (T41)	18:54			17:14	16	07:56 (T42)	17:03	28	08:40 (T77)
15	06:11		06:40 (T40)	06:40	07:11		07:54 (T41)	07:43			07:19		07:41 (T42)	07:50		08:13 (T77)
	21:04	28	07:08 (T40)	20:33	19:42	51	08:45 (T41)	18:52			17:13	13	07:54 (T42)	17:03	28	08:41 (T77)
16	06:12		06:41 (T40)	06:41	07:12		07:53 (T41)	07:44			07:20		07:43 (T42)	07:50		08:14 (T77)
	21:04	25	07:06 (T40)	20:32	19:40	52	08:45 (T41)	18:50			17:12	10	07:53 (T42)	17:04	27	08:41 (T77)
17	06:13		06:43 (T40)	06:42	07:13		07:53 (T41)	07:45			07:21		07:46 (T42)	07:51		08:14 (T77)
	21:03	21	07:04 (T40)	20:30	19:39	53	08:46 (T41)	18:49			17:11	1	07:47 (T42)	17:04	27	08:41 (T77)
18	06:14		06:45 (T40)	06:43	07:14		07:52 (T41)	07:46			07:22			07:52		08:15 (T77)
	21:02	18	07:03 (T40)	20:29	19:37	53	08:45 (T41)	18:47			17:11			17:04	27	08:42 (T77)
19	06:14		06:48 (T40)	06:44	07:15		07:52 (T41)	07:47			07:24			07:52		08:16 (T77)
	21:02	12	07:00 (T40)	20:27	19:35	53	08:45 (T41)	18:46			17:10			17:05	27	08:43 (T77)
20	06:15			06:45	07:16		07:51 (T41)	07:48			07:25			07:53		08:16 (T77)
	21:01			20:26	19:34	54	08:45 (T41)	18:44			17:09			17:05	27	08:43 (T77)
21	06:16			06:46	07:17		07:51 (T41)	07:49			07:26		08:15 (T77)	07:53		08:17 (T77)
	21:00			20:24	19:32	54	08:45 (T41)	18:43			17:09	5	08:20 (T77)	17:06	27	08:44 (T77)
22	06:17			06:47	07:18		07:51 (T41)	07:50			07:27		08:12 (T77)	07:54		08:17 (T77)
	20:59			20:23	19:30	53	08:44 (T41)	18:42			17:08	11	08:23 (T77)	17:06	27	08:44 (T77)
23	06:18			06:48	07:19		07:50 (T41)	07:52		08:39 (T42)	07:28		08:11 (T77)	07:54		08:18 (T77)
	20:59			20:21	19:28	54	08:44 (T41)	18:40	13	08:52 (T42)	17:07	14	08:25 (T77)	17:07	27	08:45 (T77)
24	06:19			06:49	07:20		07:50 (T41)	07:53		08:36 (T42)	07:29		08:10 (T77)	07:55		08:18 (T77)
	20:58			20:20	19:27	53	08:43 (T41)	18:39	18	08:54 (T42)	17:07	17	08:27 (T77)	17:07	27	08:45 (T77)
25	06:20			06:50	07:21		07:50 (T41)	07:54		08:35 (T42)	07:31		08:10 (T77)	07:55		08:18 (T77)
	20:57			20:18	19:25	53	08:43 (T41)	18:37	21	08:56 (T42)	17:06	19	08:29 (T77)	17:08	27	08:45 (T77)
26	06:21			06:51	07:22		07:50 (T41)	07:55		08:33 (T42)	07:32		08:09 (T77)	07:56		08:19 (T77)
	20:56			20:17	19:23	52	08:42 (T41)	18:36	24	08:57 (T42)	17:06	21	08:30 (T77)	17:08	27	08:46 (T77)
27	06:22			06:52	07:23		07:51 (T41)	07:56		08:32 (T42)	07:33		08:08 (T77)	07:56		08:19 (T77)
	20:55			20:15	19:22	50	08:41 (T41)	18:35	26	08:58 (T42)	17:05	23	08:31 (T77)	17:09	27	08:46 (T77)
28	06:23			06:53	07:24		07:51 (T41)	07:57		08:30 (T42)	07:34		08:08 (T77)	07:56		08:19 (T77)
	20:54			20:14	19:20	49	08:40 (T41)	18:33	29	08:59 (T42)	17:05	23	08:31 (T77)	17:10	27	08:46 (T77)
29	06:23			06:54	07:26		07:52 (T41)	07:59		08:30 (T42)	07:35		08:08 (T77)	07:57		08:19 (T77)
	20:53			20:12	19:18	47	08:39 (T41)	18:32	30	09:00 (T42)	17:04	24	08:32 (T77)	17:10	28	08:47 (T77)
30	06:24			06:55	07:27		07:52 (T41)	08:00		08:30 (T42)	07:36		08:08 (T77)	07:57		08:20 (T77)
	20:52			20:10	19:16	45	08:37 (T41)	18:31	31	09:01 (T42)	17:04	25	08:33 (T77)	17:11	28	08:48 (T77)
31	06:25			06:56				08:01		08:29 (T42)				07:57		08:20 (T77)
	20:51			20:09				18:29	32	09:01 (T42)				17:12	28	08:48 (T77)
Potential sun hours	460			429	375			345			297			287		
Total, worst case		633				1264			449			585			846	
Sun reduction		0.66				0.59			0.48			0.30			0.22	
Oper. time red.		1.00				1.00			1.00			1.00			1.00	
Wind dir. red.		0.72				0.59			0.56			0.53			0.52	
Total reduction		0.46				0.33			0.26			0.16			0.11	
Total, real		292				423			118			91			94	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 423 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6531)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	15:54 (T77)	07:43	16:08 (T77)	07:07	07:56 (T76)	07:16		06:30	19:27 (T41)	06:01	
	17:13	45 16:39 (T77)	17:47	38 16:46 (T77)	18:22	20 17:52 (T42)	19:56		20:27	34 20:01 (T41)	20:57	
2	07:57	15:54 (T77)	07:42	16:09 (T77)	07:06	17:30 (T42)	07:14		06:29	19:27 (T41)	06:01	
	17:14	45 16:39 (T77)	17:49	36 16:45 (T77)	18:23	25 17:55 (T42)	19:57		20:28	34 20:01 (T41)	20:58	
3	07:57	15:55 (T77)	07:41	16:11 (T77)	07:04	17:27 (T42)	07:13		06:28	19:27 (T41)	06:01	
	17:15	45 16:40 (T77)	17:50	33 16:44 (T77)	18:24	29 17:56 (T42)	19:58		20:29	32 19:59 (T41)	20:58	
4	07:57	15:55 (T77)	07:40	16:13 (T77)	07:02	17:26 (T42)	07:11		06:26	19:27 (T41)	06:00	
	17:16	46 16:41 (T77)	17:51	30 16:43 (T77)	18:25	33 17:59 (T42)	19:59		20:30	32 19:59 (T41)	20:59	
5	07:57	15:55 (T77)	07:39	16:14 (T77)	07:01	17:23 (T42)	07:09		06:25	19:28 (T41)	06:00	
	17:17	46 16:41 (T77)	17:52	28 16:42 (T77)	18:26	37 18:00 (T42)	20:00		20:31	31 19:59 (T41)	21:00	
6	07:57	15:56 (T77)	07:38	16:16 (T77)	06:59	17:22 (T42)	07:08		06:24	19:28 (T41)	05:59	
	17:17	46 16:42 (T77)	17:54	23 16:39 (T77)	18:27	39 18:01 (T42)	20:00		20:32	30 19:58 (T41)	21:00	
7	07:57	15:55 (T77)	07:37	16:19 (T77)	06:58	17:21 (T42)	07:06		06:23	19:29 (T41)	05:59	
	17:18	47 16:42 (T77)	17:55	18 16:37 (T77)	18:29	41 18:02 (T42)	20:01		20:33	29 19:58 (T41)	21:01	
8	07:57	15:55 (T77)	07:36	16:23 (T77)	07:56	18:19 (T42)	07:05		06:22	19:30 (T41)	05:59	
	17:19	48 16:43 (T77)	17:56	10 16:33 (T77)	19:30	43 19:02 (T42)	20:02		20:34	27 19:57 (T41)	21:02	
9	07:57	15:56 (T77)	07:35	07:55 (T76)	07:54	18:19 (T42)	07:03		06:20	19:31 (T41)	05:59	
	17:20	47 16:43 (T77)	17:57	6 08:01 (T76)	19:31	45 19:04 (T42)	20:03		20:35	25 19:56 (T41)	21:02	
10	07:57	15:56 (T77)	07:34	07:54 (T76)	07:53	18:18 (T42)	07:01		06:19	19:31 (T41)	05:59	
	17:21	48 16:44 (T77)	17:59	11 08:05 (T76)	19:32	46 19:04 (T42)	20:05		20:36	23 19:54 (T41)	21:03	
11	07:57	15:56 (T77)	07:32	07:52 (T76)	07:51	18:16 (T42)	07:00		06:18	19:32 (T41)	05:58	
	17:23	48 16:44 (T77)	18:00	14 08:06 (T76)	19:33	48 19:04 (T42)	20:06		20:37	21 19:53 (T41)	21:04	
12	07:56	15:57 (T77)	07:31	07:51 (T76)	07:50	18:16 (T42)	06:58		06:17	19:34 (T41)	05:58	
	17:24	48 16:45 (T77)	18:01	17 08:08 (T76)	19:34	48 19:04 (T42)	20:07		20:38	18 19:52 (T41)	21:04	
13	07:56	15:57 (T77)	07:30	07:50 (T76)	07:48	18:16 (T42)	06:57		06:16	19:35 (T41)	05:58	
	17:25	49 16:46 (T77)	18:02	20 08:10 (T76)	19:35	48 19:04 (T42)	20:08		20:39	15 19:50 (T41)	21:05	
14	07:56	15:57 (T77)	07:29	07:48 (T76)	07:46	18:15 (T42)	06:55		06:15	19:38 (T41)	05:58	
	17:26	49 16:46 (T77)	18:04	22 08:10 (T76)	19:36	49 19:04 (T42)	20:09		20:41	9 19:47 (T41)	21:05	
15	07:55	15:58 (T77)	07:27	07:47 (T76)	07:45	18:15 (T42)	06:53		06:14		05:58	
	17:27	49 16:47 (T77)	18:05	24 08:11 (T76)	19:38	49 19:04 (T42)	20:10		20:42		21:05	
16	07:55	15:58 (T77)	07:26	07:46 (T76)	07:43	18:15 (T42)	06:52		06:13		05:58	
	17:28	48 16:46 (T77)	18:06	26 08:12 (T76)	19:39	49 19:04 (T42)	20:11		20:42		21:06	
17	07:54	15:58 (T77)	07:25	07:44 (T76)	07:41	18:14 (T42)	06:50		06:12		05:58	
	17:29	49 16:47 (T77)	18:07	28 08:12 (T76)	19:40	49 19:03 (T42)	20:12		20:43		21:06	
18	07:54	15:58 (T77)	07:23	07:43 (T76)	07:40	18:15 (T42)	06:49	19:42 (T41)	06:11		05:58	
	17:30	49 16:47 (T77)	18:09	29 08:12 (T76)	19:41	48 19:03 (T42)	20:13	9 19:51 (T41)	20:44		21:07	
19	07:53	15:59 (T77)	07:22	07:43 (T76)	07:38	18:14 (T42)	06:47	19:38 (T41)	06:10		05:58	
	17:32	49 16:48 (T77)	18:10	30 08:13 (T76)	19:42	48 19:02 (T42)	20:14	14 19:52 (T41)	20:45		21:07	
20	07:53	15:59 (T77)	07:20	07:43 (T76)	07:36	18:14 (T42)	06:46	19:36 (T41)	06:09		05:59	
	17:33	49 16:48 (T77)	18:11	29 08:12 (T76)	19:43	47 19:01 (T42)	20:15	18 19:54 (T41)	20:46		21:07	
21	07:52	15:59 (T77)	07:19	07:43 (T76)	07:35	18:15 (T42)	06:44	19:34 (T41)	06:09		05:59	
	17:34	49 16:48 (T77)	18:12	29 08:12 (T76)	19:44	46 19:01 (T42)	20:16	21 19:55 (T41)	20:47		21:08	
22	07:52	16:01 (T77)	07:18	07:43 (T76)	07:33	18:15 (T42)	06:43	19:32 (T41)	06:08		05:59	
	17:35	48 16:49 (T77)	18:13	28 08:11 (T76)	19:45	45 19:00 (T42)	20:17	24 19:56 (T41)	20:48		21:08	
23	07:51	16:01 (T77)	07:16	07:44 (T76)	07:31	18:16 (T42)	06:41	19:31 (T41)	06:07		05:59	
	17:36	48 16:49 (T77)	18:15	27 08:11 (T76)	19:46	43 18:59 (T42)	20:18	26 19:57 (T41)	20:49		21:08	
24	07:50	16:01 (T77)	07:15	07:44 (T76)	07:30	18:17 (T42)	06:40	19:30 (T41)	06:06		05:59	
	17:38	47 16:48 (T77)	18:16	26 08:10 (T76)	19:47	41 18:58 (T42)	20:19	28 19:58 (T41)	20:50		21:08	
25	07:49	16:02 (T77)	07:13	07:45 (T76)	07:28	18:18 (T42)	06:38	19:29 (T41)	06:06		06:00	
	17:39	46 16:48 (T77)	18:17	24 08:09 (T76)	19:48	39 18:57 (T42)	20:21	30 19:59 (T41)	20:51		21:08	
26	07:49	16:02 (T77)	07:12	07:46 (T76)	07:26	18:18 (T42)	06:37	19:28 (T41)	06:05		06:00	
	17:40	46 16:48 (T77)	18:18	21 08:07 (T76)	19:50	37 18:55 (T42)	20:22	31 19:59 (T41)	20:52		21:08	
27	07:48	16:04 (T77)	07:10	07:48 (T76)	07:24	18:19 (T42)	06:36	19:28 (T41)	06:04		06:00	
	17:41	45 16:49 (T77)	18:19	18 08:06 (T76)	19:51	34 18:53 (T42)	20:23	33 20:01 (T41)	20:53		21:08	
28	07:47	16:04 (T77)	07:09	07:50 (T76)	07:23	18:21 (T42)	06:34	19:28 (T41)	06:04		06:01	
	17:42	44 16:48 (T77)	18:21	20 17:46 (T42)	19:52	30 18:51 (T42)	20:24	33 20:01 (T41)	20:54		21:09	
29	07:46	16:05 (T77)			07:21	18:23 (T42)	06:33	19:27 (T41)	06:03		06:01	
	17:44	43 16:48 (T77)			19:53	25 18:48 (T42)	20:25	33 20:00 (T41)	20:54		21:09	
30	07:45	16:06 (T77)			07:19	18:25 (T42)	06:32	19:27 (T41)	06:02		06:02	
	17:45	41 16:47 (T77)			19:54	20 18:45 (T42)	20:26	33 20:00 (T41)	20:55		21:09	
31	07:44	16:07 (T77)			07:18	18:30 (T42)			06:02			
	17:46	40 16:47 (T77)			19:55	11 18:41 (T42)			20:56			
Potential sun hours	297		297		370		399		448		453	
Total, worst case		1447		665		1212		333		360		
Sun reduction		0.31		0.40		0.44		0.52		0.57		
Oper. time red.		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.		0.74		0.62		0.67		0.57		0.57		
Total reduction		0.23		0.25		0.30		0.30		0.33		
Total, real		339		169		365		102		120		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 423 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6531)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		06:26		19:44 (T41)	06:57		07:27		17:55 (T42)	07:02		07:23 (T76)	07:37		15:38 (T77)
	21:08		20:50	19	20:03 (T41)	20:07		19:15	48	18:43 (T42)	17:28	10	07:33 (T76)	17:04	48	16:26 (T77)
2	06:03		06:27		19:42 (T41)	06:58		07:29		17:55 (T42)	07:03		07:25 (T76)	07:38		15:38 (T77)
	21:08		20:49	22	20:04 (T41)	20:06		19:13	47	18:42 (T42)	17:27	5	07:30 (T76)	17:03	48	16:26 (T77)
3	06:03		06:28		19:41 (T41)	06:59		07:30		17:55 (T42)	07:04		15:52 (T77)	07:39		15:40 (T77)
	21:08		20:48	24	20:05 (T41)	20:04		19:11	46	18:41 (T42)	17:26	12	16:04 (T77)	17:03	47	16:27 (T77)
4	06:04		06:29		19:40 (T41)	07:00		07:31		17:55 (T42)	07:06		15:48 (T77)	07:40		15:40 (T77)
	21:08		20:47	26	20:06 (T41)	20:02		19:10	45	18:40 (T42)	17:24	19	16:07 (T77)	17:03	48	16:28 (T77)
5	06:04		06:30		19:39 (T41)	07:01		07:32		17:56 (T42)	07:07		15:45 (T77)	07:41		15:41 (T77)
	21:08		20:46	28	20:07 (T41)	20:01		19:08	44	18:40 (T42)	17:23	24	16:09 (T77)	17:03	47	16:28 (T77)
6	06:05		06:31		19:39 (T41)	07:02		07:33		17:57 (T42)	07:08		15:44 (T77)	07:42		15:42 (T77)
	21:08		20:44	29	20:08 (T41)	19:57		19:06	42	18:39 (T42)	17:22	28	16:12 (T77)	17:03	46	16:28 (T77)
7	06:05		06:32		19:38 (T41)	07:03		07:34		17:58 (T42)	07:09		15:42 (T77)	07:43		15:41 (T77)
	21:07		20:43	30	20:08 (T41)	19:56		19:05	40	18:38 (T42)	17:21	31	16:13 (T77)	17:03	46	16:27 (T77)
8	06:06		06:33		19:37 (T41)	07:04		07:35		17:58 (T42)	07:10		15:41 (T77)	07:44		15:42 (T77)
	21:07		20:42	32	20:09 (T41)	19:54		19:03	38	18:36 (T42)	17:20	33	16:14 (T77)	17:03	46	16:28 (T77)
9	06:07		06:34		19:37 (T41)	07:05		07:36		17:59 (T42)	07:12		15:40 (T77)	07:45		15:43 (T77)
	21:07		20:41	32	20:09 (T41)	19:52		19:01	35	18:34 (T42)	17:19	36	16:16 (T77)	17:03	45	16:28 (T77)
10	06:07		06:35		19:36 (T41)	07:06		07:37		18:01 (T42)	07:13		15:39 (T77)	07:46		15:43 (T77)
	21:06		20:39	33	20:09 (T41)	19:51		19:00	31	18:32 (T42)	17:18	38	16:17 (T77)	17:03	45	16:28 (T77)
11	06:08		06:36		19:36 (T41)	07:07		07:38		18:02 (T42)	07:14		15:38 (T77)	07:46		15:44 (T77)
	21:06		20:38	33	20:09 (T41)	19:49		18:58	28	18:30 (T42)	17:17	40	16:18 (T77)	17:03	45	16:29 (T77)
12	06:09		06:37		19:36 (T41)	07:08	18:22 (T42)	07:39		18:05 (T42)	07:15		15:37 (T77)	07:47		15:45 (T77)
	21:06		20:37	33	20:09 (T41)	19:47	9 18:31 (T42)	18:57	22	18:27 (T42)	17:16	41	16:18 (T77)	17:03	44	16:29 (T77)
13	06:10		06:38		19:36 (T41)	07:09	18:17 (T42)	07:40		08:25 (T76)	07:16		15:37 (T77)	07:48		15:46 (T77)
	21:05		20:36	33	20:09 (T41)	19:45	19 18:36 (T42)	18:55	23	18:23 (T42)	17:15	43	16:20 (T77)	17:03	44	16:30 (T77)
14	06:10		06:39		19:36 (T41)	07:10	18:14 (T42)	07:41		08:21 (T76)	07:18		15:36 (T77)	07:49		15:45 (T77)
	21:05		20:34	33	20:09 (T41)	19:44	24 18:38 (T42)	18:54	15	08:36 (T76)	17:14	44	16:20 (T77)	17:03	44	16:29 (T77)
15	06:11		06:40		19:36 (T41)	07:11	18:11 (T42)	07:42		08:20 (T76)	07:19		15:36 (T77)	07:50		15:46 (T77)
	21:04		20:33	33	20:09 (T41)	19:42	29 18:40 (T42)	18:52	19	08:39 (T76)	17:13	45	16:21 (T77)	17:03	44	16:30 (T77)
16	06:12		06:41		19:35 (T41)	07:12	18:09 (T42)	07:44		08:18 (T76)	07:20		15:35 (T77)	07:50		15:47 (T77)
	21:03		20:31	32	20:07 (T41)	19:40	32 18:41 (T42)	18:50	22	08:40 (T76)	17:12	46	16:21 (T77)	17:04	44	16:31 (T77)
17	06:13		06:42		19:35 (T41)	07:13	18:07 (T42)	07:45		08:16 (T76)	07:21		15:36 (T77)	07:51		15:47 (T77)
	21:03		20:30	31	20:06 (T41)	19:39	36 18:43 (T42)	18:49	25	08:41 (T76)	17:11	46	16:22 (T77)	17:04	43	16:30 (T77)
18	06:14		06:43		19:35 (T41)	07:14	18:05 (T42)	07:46		08:15 (T76)	07:22		15:35 (T77)	07:52		15:48 (T77)
	21:02		20:29	29	20:04 (T41)	19:37	39 18:44 (T42)	18:47	26	08:41 (T76)	17:11	47	16:22 (T77)	17:04	43	16:31 (T77)
19	06:14		06:44		19:36 (T41)	07:15	18:04 (T42)	07:47		08:14 (T76)	07:23		15:35 (T77)	07:52		15:49 (T77)
	21:02		20:27	27	20:03 (T41)	19:35	40 18:44 (T42)	18:46	28	08:42 (T76)	17:10	48	16:23 (T77)	17:05	43	16:32 (T77)
20	06:15		06:45		19:36 (T41)	07:16	18:02 (T42)	07:48		08:13 (T76)	07:25		15:36 (T77)	07:53		15:49 (T77)
	21:01		20:26	26	20:02 (T41)	19:33	43 18:45 (T42)	18:44	29	08:42 (T76)	17:09	48	16:24 (T77)	17:05	43	16:32 (T77)
21	06:16		06:46		19:37 (T41)	07:17	18:01 (T42)	07:49		08:14 (T76)	07:26		15:36 (T77)	07:53		15:50 (T77)
	21:00		20:24	23	20:00 (T41)	19:32	44 18:45 (T42)	18:43	29	08:43 (T76)	17:08	48	16:24 (T77)	17:05	43	16:33 (T77)
22	06:17		06:47		19:38 (T41)	07:18	18:00 (T42)	07:50		08:13 (T76)	07:27		15:35 (T77)	07:54		15:50 (T77)
	20:59		20:23	21	19:59 (T41)	19:30	46 18:46 (T42)	18:41	30	08:43 (T76)	17:08	49	16:24 (T77)	17:06	43	16:33 (T77)
23	06:18		06:48		19:40 (T41)	07:19	17:59 (T42)	07:51		08:13 (T76)	07:28		15:35 (T77)	07:54		15:51 (T77)
	20:59		20:21	17	19:57 (T41)	19:28	47 18:46 (T42)	18:40	29	08:42 (T76)	17:07	49	16:24 (T77)	17:07	43	16:34 (T77)
24	06:19		06:49		19:42 (T41)	07:20	17:58 (T42)	07:53		08:13 (T76)	07:29		15:35 (T77)	07:55		15:51 (T77)
	20:58		20:20	14	19:56 (T41)	19:27	48 18:46 (T42)	18:39	29	08:42 (T76)	17:07	49	16:24 (T77)	17:07	43	16:34 (T77)
25	06:20		06:50		19:45 (T41)	07:21	17:57 (T42)	07:54		08:15 (T76)	07:30		15:36 (T77)	07:55		15:51 (T77)
	20:57		20:18	8	19:53 (T41)	19:25	49 18:46 (T42)	18:37	27	08:42 (T76)	17:06	49	16:25 (T77)	17:08	43	16:34 (T77)
26	06:21		06:51			07:22	17:57 (T42)	07:55		08:16 (T76)	07:32		15:37 (T77)	07:56		15:52 (T77)
	20:56		20:17			19:23	48 18:45 (T42)	18:36	25	08:41 (T76)	17:06	48	16:25 (T77)	17:08	43	16:35 (T77)
27	06:22		06:52			07:23	17:56 (T42)	07:56		08:17 (T76)	07:33		15:37 (T77)	07:56		15:52 (T77)
	20:55		20:15			19:22	49 18:45 (T42)	18:34	24	08:41 (T76)	17:05	49	16:26 (T77)	17:09	43	16:35 (T77)
28	06:22		06:53			07:24	17:56 (T42)	07:57		08:18 (T76)	07:34		15:37 (T77)	07:56		15:52 (T77)
	20:54		20:14			19:20	49 18:45 (T42)	18:33	21	08:39 (T76)	17:05	49	16:26 (T77)	17:10	44	16:36 (T77)
29	06:23	19:51 (T41)	06:54			07:25	17:55 (T42)	07:58		08:19 (T76)	07:35		15:37 (T77)	07:57		15:52 (T77)
	20:53	4 19:55 (T41)	20:12			19:18	49 18:44 (T42)	18:32	19	08:38 (T76)	17:04	49	16:26 (T77)	17:10	44	16:36 (T77)
30	06:24	19:47 (T41)	06:55			07:26	17:55 (T42)	08:00		08:21 (T76)	07:36		15:38 (T77)	07:57		15:54 (T77)
	20:52	12 19:59 (T41)	20:10			19:16	49 18:44 (T42)	18:30	17	08:38 (T76)	17:04	48	16:26 (T77)	17:11	44	16:38 (T77)
31	06:25	19:45 (T41)	06:56					08:01		08:22 (T76)				07:57		15:54 (T77)
	20:51	16 20:01 (T41)	20:09					18:29	14	08:36 (T76)				17:12	44	16:38 (T77)
Potential sun hours	460		429			375		345			297			287		
Total, worst case		32		668			749		917			1171			1380	
Sun reduction		0.66		0.61			0.59		0.48			0.30			0.22	
Oper. time red.		1.00		1.00			1.00		1.00			1.00			1.00	
Wind dir. red.		0.57		0.57			0.67		0.61			0.73			0.74	
Total reduction		0.39		0.36			0.40		0.30			0.23			0.17	
Total, real		12		239			302		278			265			230	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 427 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6534)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		09:13 (T12)	07:44		08:12 (T13)	07:07			07:16		18:33 (T11)	06:30		06:59 (T10)	06:01		07:01 (T10)
	17:13	54	10:07 (T12)	17:47	34	08:46 (T13)	18:22			19:56	51	19:24 (T11)	20:27	49	07:48 (T10)	20:57	44	07:45 (T10)
2	07:58		09:13 (T12)	07:43		08:12 (T13)	07:06			07:14		18:32 (T11)	06:29		06:58 (T10)	06:01		07:01 (T10)
	17:14	54	10:07 (T12)	17:49	34	08:46 (T13)	18:23			19:57	52	19:24 (T11)	20:28	51	07:49 (T10)	20:58	43	07:44 (T10)
3	07:58		09:14 (T12)	07:42		08:13 (T13)	07:04			07:13		18:32 (T11)	06:27		06:57 (T10)	06:00		07:02 (T10)
	17:14	53	10:07 (T12)	17:50	33	08:46 (T13)	18:24			19:58	53	19:25 (T11)	20:29	52	07:49 (T10)	20:59	42	07:44 (T10)
4	07:58		09:15 (T12)	07:41		08:13 (T13)	07:03			07:11		18:31 (T11)	06:26		06:56 (T10)	06:00		07:03 (T10)
	17:15	52	10:07 (T12)	17:51	33	08:46 (T13)	18:25			19:59	53	19:24 (T11)	20:30	53	07:49 (T10)	21:00	41	07:44 (T10)
5	07:58		09:15 (T12)	07:40		08:14 (T13)	07:01			07:09		18:30 (T11)	06:25		06:56 (T10)	06:00		07:03 (T10)
	17:16	52	10:07 (T12)	17:52	32	08:46 (T13)	18:26			20:00	54	19:24 (T11)	20:32	54	07:50 (T10)	21:00	40	07:43 (T10)
6	07:58		09:16 (T12)	07:39		08:15 (T13)	06:59			07:08		18:31 (T11)	06:24		06:56 (T10)	05:59		07:04 (T10)
	17:17	52	10:08 (T12)	17:54	30	08:45 (T13)	18:27			20:00	53	19:24 (T11)	20:33	54	07:50 (T10)	21:01	39	07:43 (T10)
7	07:58		09:17 (T12)	07:37		08:16 (T13)	06:58			07:06		18:30 (T11)	06:23		06:56 (T10)	05:59		07:04 (T10)
	17:18	51	10:08 (T12)	17:55	29	08:45 (T13)	18:29			20:01	53	19:23 (T11)	20:34	54	07:50 (T10)	21:02	39	07:43 (T10)
8	07:58		09:18 (T12)	07:36		08:16 (T13)	07:56			07:05		18:31 (T11)	06:21		06:54 (T10)	05:59		07:05 (T10)
	17:19	50	10:08 (T12)	17:56	27	08:43 (T13)	19:30			20:03	53	19:24 (T11)	20:35	56	07:50 (T10)	21:02	38	07:43 (T10)
9	07:57		09:18 (T12)	07:35		08:18 (T13)	07:55			07:03		18:30 (T11)	06:20		06:54 (T10)	05:58		07:06 (T10)
	17:20	49	10:07 (T12)	17:57	24	08:42 (T13)	19:31			20:04	53	19:23 (T11)	20:36	56	07:50 (T10)	21:03	37	07:43 (T10)
10	07:57		09:20 (T12)	07:34		08:19 (T13)	07:53			07:01		18:30 (T11)	06:19		06:54 (T10)	05:58		07:06 (T10)
	17:21	47	10:07 (T12)	17:59	22	08:41 (T13)	19:32			20:05	52	19:22 (T11)	20:37	56	07:50 (T10)	21:03	36	07:42 (T10)
11	07:57		09:21 (T12)	07:33		08:21 (T13)	07:51			07:00		18:31 (T11)	06:18		06:54 (T10)	05:58		07:06 (T10)
	17:22	46	10:07 (T12)	18:00	18	08:39 (T13)	19:33			20:06	51	19:22 (T11)	20:38	56	07:50 (T10)	21:04	36	07:42 (T10)
12	07:57		08:21 (T13)	07:31		08:23 (T13)	07:50			06:58		18:31 (T11)	06:17		06:54 (T10)	05:58		07:07 (T10)
	17:23	50	10:06 (T12)	18:01	13	08:36 (T13)	19:34			20:07	50	19:21 (T11)	20:39	56	07:50 (T10)	21:04	35	07:42 (T10)
13	07:56		08:18 (T13)	07:30			07:48			06:57		18:32 (T11)	06:16		06:54 (T10)	05:58		07:07 (T10)
	17:24	56	10:06 (T12)	18:02			19:35			20:08	48	19:20 (T11)	20:40	56	07:50 (T10)	21:05	35	07:42 (T10)
14	07:56		08:18 (T13)	07:29			07:46			06:55		18:32 (T11)	06:15		06:54 (T10)	05:58		07:08 (T10)
	17:26	56	10:06 (T12)	18:04			19:37			20:09	47	19:19 (T11)	20:41	56	07:50 (T10)	21:05	34	07:42 (T10)
15	07:56		08:17 (T13)	07:28			07:45			06:53		18:32 (T11)	06:14		06:54 (T10)	05:58		07:08 (T10)
	17:27	56	10:05 (T12)	18:05			19:38			20:10	45	19:17 (T11)	20:42	55	07:49 (T10)	21:06	34	07:42 (T10)
16	07:55		08:17 (T13)	07:26			07:43			06:52		18:33 (T11)	06:13		06:54 (T10)	05:58		07:09 (T10)
	17:28	58	10:05 (T12)	18:06			19:39			20:11	44	19:17 (T11)	20:43	55	07:49 (T10)	21:06	33	07:42 (T10)
17	07:55		08:16 (T13)	07:25			07:41			06:50		18:33 (T11)	06:12		06:55 (T10)	05:58		07:09 (T10)
	17:29	57	10:04 (T12)	18:07			19:40			20:12	42	19:15 (T11)	20:44	55	07:50 (T10)	21:07	33	07:42 (T10)
18	07:54		08:16 (T13)	07:24			07:40			06:49		18:35 (T11)	06:11		06:55 (T10)	05:58		07:09 (T10)
	17:30	56	10:03 (T12)	18:09			19:41			20:13	39	19:14 (T11)	20:45	54	07:49 (T10)	21:07	33	07:42 (T10)
19	07:54		08:15 (T13)	07:22			07:38			06:47		18:35 (T11)	06:10		06:55 (T10)	05:58		07:10 (T10)
	17:31	55	10:02 (T12)	18:10			19:42			20:14	37	19:12 (T11)	20:46	54	07:49 (T10)	21:07	33	07:43 (T10)
20	07:53		08:14 (T13)	07:21			07:36		18:56 (T11)	06:46		07:20 (T10)	06:09		06:55 (T10)	05:58		07:11 (T10)
	17:32	54	10:00 (T12)	18:11			19:43	12	19:08 (T11)	20:15	45	19:11 (T11)	20:47	54	07:49 (T10)	21:08	32	07:43 (T10)
21	07:53		08:14 (T13)	07:19			07:35		18:51 (T11)	06:44		07:14 (T10)	06:08		06:55 (T10)	05:58		07:11 (T10)
	17:34	51	09:59 (T12)	18:12			19:44	22	19:13 (T11)	20:17	51	19:08 (T11)	20:48	53	07:48 (T10)	21:08	32	07:43 (T10)
22	07:52		08:13 (T13)	07:18			07:33		18:48 (T11)	06:43		07:12 (T10)	06:08		06:56 (T10)	05:59		07:11 (T10)
	17:35	47	09:56 (T12)	18:13			19:45	27	19:15 (T11)	20:18	52	19:07 (T11)	20:49	53	07:49 (T10)	21:08	32	07:43 (T10)
23	07:51		08:12 (T13)	07:16			07:31		18:45 (T11)	06:41		07:10 (T10)	06:07		06:57 (T10)	05:59		07:11 (T10)
	17:36	41	09:52 (T12)	18:15			19:46	32	19:17 (T11)	20:19	51	19:04 (T11)	20:50	51	07:48 (T10)	21:08	32	07:43 (T10)
24	07:51		08:11 (T13)	07:15			07:30		18:43 (T11)	06:40		07:07 (T10)	06:06		06:57 (T10)	05:59		07:11 (T10)
	17:37	32	08:43 (T13)	18:16			19:47	36	19:19 (T11)	20:20	47	18:59 (T11)	20:51	50	07:47 (T10)	21:09	33	07:44 (T10)
25	07:50		08:12 (T13)	07:13			07:28		18:41 (T11)	06:38		07:06 (T10)	06:05		06:58 (T10)	05:59		07:11 (T10)
	17:39	33	08:45 (T13)	18:17			19:49	39	19:20 (T11)	20:21	38	07:44 (T10)	20:51	50	07:48 (T10)	21:09	33	07:44 (T10)
26	07:49		08:11 (T13)	07:12			07:26		18:39 (T11)	06:37		07:03 (T10)	06:05		06:58 (T10)	06:00		07:11 (T10)
	17:40	34	08:45 (T13)	18:18			19:50	42	19:21 (T11)	20:22	41	07:44 (T10)	20:52	49	07:47 (T10)	21:09	33	07:44 (T10)
27	07:48		08:11 (T13)	07:10			07:25		18:38 (T11)	06:36		07:02 (T10)	06:04		06:58 (T10)	06:00		07:12 (T10)
	17:41	34	08:45 (T13)	18:19			19:51	45	19:23 (T11)	20:23	44	07:46 (T10)	20:53	48	07:46 (T10)	21:09	33	07:45 (T10)
28	07:47		08:11 (T13)	07:09			07:23		18:37 (T11)	06:34		07:02 (T10)	06:03		06:59 (T10)	06:00		07:11 (T10)
	17:42	35	08:46 (T13)	18:21			19:52	46	19:23 (T11)	20:24	45	07:47 (T10)	20:54	48	07:47 (T10)	21:09	34	07:45 (T10)
29	07:47		08:11 (T13)				07:21		18:35 (T11)	06:33		07:00 (T10)	06:03		06:59 (T10)	06:01		07:12 (T10)
	17:44	35	08:46 (T13)				19:53	48	19:23 (T11)	20:25	47	07:47 (T10)	20:55	47	07:46 (T10)	21:09	34	07:46 (T10)
30	07:46		08:11 (T13)				07:19		18:34 (T11)	06:31		06:59 (T10)	06:02		07:00 (T10)	06:01		07:11 (T10)
	17:45	35	08:46 (T13)				19:54	49	19:23 (T11)	20:26	49	07:48 (T10)	20:56	46	07:46 (T10)	21:09	35	07:46 (T10)
31	07:45		08:12 (T13)				07:18		18:34 (T11)				06:02		07:00 (T10)			
	17:46	34	08:46 (T13)				19:55	50	19:24 (T11)				20:56	45	07:45 (T10)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1469			329			448			1440			1626			1068	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.52			0.63			0.65			0.68			0.68	
Total reduction		0.16			0.20			0.27			0.32			0.37			0.42	
Total, real		231			67			121			468			608			448	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 427 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6534)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October			November		December	
1	06:02		07:11 (T10)	06:26		07:05 (T10)	06:57		18:30 (T11)	07:28		07:02		07:49 (T13)	07:37		09:03 (T12)
	21:09	35	07:46 (T10)	20:50	55	08:00 (T10)	20:07	51	19:21 (T11)	19:15		17:28	22	08:11 (T13)	17:03	46	09:49 (T12)
2	06:02		07:11 (T10)	06:27		07:05 (T10)	06:58		18:29 (T11)	07:29		07:03		07:47 (T13)	07:38		09:03 (T12)
	21:09	36	07:47 (T10)	20:49	55	08:00 (T10)	20:06	52	19:21 (T11)	19:13		17:27	25	08:12 (T13)	17:03	47	09:50 (T12)
3	06:03		07:10 (T10)	06:28		07:05 (T10)	06:59		18:28 (T11)	07:30		07:05		07:46 (T13)	07:39		09:02 (T12)
	21:09	37	07:47 (T10)	20:48	55	08:00 (T10)	20:04	53	19:21 (T11)	19:11		17:25	27	08:13 (T13)	17:03	49	09:51 (T12)
4	06:03		07:10 (T10)	06:29		07:05 (T10)	07:00		18:28 (T11)	07:31		07:06		07:45 (T13)	07:40		09:02 (T12)
	21:09	38	07:48 (T10)	20:47	55	08:00 (T10)	20:02	53	19:21 (T11)	19:10		17:24	29	08:14 (T13)	17:03	50	09:52 (T12)
5	06:04		07:11 (T10)	06:30		07:05 (T10)	07:01		18:27 (T11)	07:32		07:07		07:45 (T13)	07:41		09:02 (T12)
	21:08	38	07:49 (T10)	20:46	55	08:00 (T10)	20:01	53	19:20 (T11)	19:08		17:23	30	08:15 (T13)	17:03	51	09:53 (T12)
6	06:05		07:10 (T10)	06:31		07:05 (T10)	07:02		18:27 (T11)	07:33		07:08		07:44 (T13)	07:42		09:02 (T12)
	21:08	39	07:49 (T10)	20:45	55	08:00 (T10)	19:57	53	19:20 (T11)	19:06		17:22	32	08:16 (T13)	17:02	52	09:54 (T12)
7	06:05		07:10 (T10)	06:32		07:06 (T10)	07:03		18:26 (T11)	07:34		07:09		07:43 (T13)	07:43		09:03 (T12)
	21:08	40	07:50 (T10)	20:44	54	08:00 (T10)	19:56	54	19:20 (T11)	19:05		17:21	33	08:16 (T13)	17:02	51	09:54 (T12)
8	06:06		07:09 (T10)	06:33		07:06 (T10)	07:04		18:26 (T11)	07:35		07:11		07:44 (T13)	07:44		09:03 (T12)
	21:08	41	07:50 (T10)	20:42	53	07:59 (T10)	19:54	53	19:19 (T11)	19:03		17:20	33	08:17 (T13)	17:02	52	09:55 (T12)
9	06:07		07:09 (T10)	06:34		07:06 (T10)	07:05		18:26 (T11)	07:36		07:12		07:43 (T13)	07:45		09:03 (T12)
	21:07	42	07:51 (T10)	20:41	53	07:59 (T10)	19:52	53	19:19 (T11)	19:02		17:19	34	08:17 (T13)	17:02	53	09:56 (T12)
10	06:07		07:09 (T10)	06:35		07:07 (T10)	07:06		18:26 (T11)	07:37		07:13		07:43 (T13)	07:46		09:03 (T12)
	21:07	43	07:52 (T10)	20:40	51	07:58 (T10)	19:51	52	19:18 (T11)	19:00		17:18	34	08:17 (T13)	17:02	54	09:57 (T12)
11	06:08		07:08 (T10)	06:36		07:07 (T10)	07:07		18:25 (T11)	07:38		07:14		07:42 (T13)	07:47		09:03 (T12)
	21:06	44	07:52 (T10)	20:39	51	07:58 (T10)	19:49	52	19:17 (T11)	18:58		17:17	35	08:17 (T13)	17:02	54	09:57 (T12)
12	06:09		07:08 (T10)	06:37		07:07 (T10)	07:08		18:25 (T11)	07:39		07:15		07:43 (T13)	07:48		09:03 (T12)
	21:06	45	07:53 (T10)	20:37	50	07:57 (T10)	19:47	51	19:16 (T11)	18:57		17:16	35	08:18 (T13)	17:03	54	09:57 (T12)
13	06:09		07:08 (T10)	06:38		07:08 (T10)	07:09		18:25 (T11)	07:40		07:17		07:43 (T13)	07:48		09:04 (T12)
	21:05	46	07:54 (T10)	20:36	48	07:56 (T10)	19:46	50	19:15 (T11)	18:55		17:15	35	08:18 (T13)	17:03	54	09:58 (T12)
14	06:10		07:08 (T10)	06:39		07:08 (T10)	07:10		18:25 (T11)	07:42		07:18		07:43 (T13)	07:49		09:04 (T12)
	21:05	47	07:55 (T10)	20:35	46	07:54 (T10)	19:44	49	19:14 (T11)	18:54		17:14	35	08:18 (T13)	17:03	55	09:59 (T12)
15	06:11		07:07 (T10)	06:40		07:09 (T10)	07:11		18:26 (T11)	07:43		07:19		07:44 (T13)	07:50		09:05 (T12)
	21:04	48	07:55 (T10)	20:33	44	07:53 (T10)	19:42	47	19:13 (T11)	18:52		17:13	34	08:18 (T13)	17:03	55	10:00 (T12)
16	06:12		07:07 (T10)	06:41		07:09 (T10)	07:12		18:26 (T11)	07:44		07:20		07:44 (T13)	07:51		09:05 (T12)
	21:04	48	07:55 (T10)	20:32	43	07:52 (T10)	19:40	45	19:11 (T11)	18:50		17:12	34	08:18 (T13)	17:03	55	10:00 (T12)
17	06:12		07:07 (T10)	06:42		07:10 (T10)	07:13		18:27 (T11)	07:45		07:21		07:45 (T13)	07:51		09:05 (T12)
	21:03	49	07:56 (T10)	20:30	41	07:51 (T10)	19:39	43	19:10 (T11)	18:49		17:11	33	08:18 (T13)	17:04	56	10:01 (T12)
18	06:13		07:07 (T10)	06:43		07:12 (T10)	07:14		18:28 (T11)	07:46		07:23		07:45 (T13)	07:52		09:06 (T12)
	21:03	50	07:57 (T10)	20:29	37	07:49 (T10)	19:37	40	19:08 (T11)	18:47		17:10	32	08:17 (T13)	17:04	56	10:02 (T12)
19	06:14		07:07 (T10)	06:44		07:13 (T10)	07:15		18:29 (T11)	07:47		07:24		07:47 (T13)	07:53		09:06 (T12)
	21:02	51	07:58 (T10)	20:27	48	19:06 (T11)	19:35	37	19:06 (T11)	18:46		17:10	41	09:27 (T12)	17:04	56	10:02 (T12)
20	06:15		07:06 (T10)	06:45		07:15 (T10)	07:16		18:31 (T11)	07:48		07:25		07:48 (T13)	07:53		09:07 (T12)
	21:01	51	07:57 (T10)	20:26	51	19:09 (T11)	19:34	33	19:04 (T11)	18:44		17:09	47	09:31 (T12)	17:05	56	10:03 (T12)
21	06:16		07:06 (T10)	06:46		07:17 (T10)	07:17		18:32 (T11)	07:49		07:26		07:49 (T13)	07:54		09:07 (T12)
	21:00	52	07:58 (T10)	20:25	53	19:12 (T11)	19:32	29	19:01 (T11)	18:43		17:08	52	09:34 (T12)	17:05	56	10:03 (T12)
22	06:17		07:06 (T10)	06:47		07:20 (T10)	07:18		18:35 (T11)	07:51		07:27		07:50 (T13)	07:54		09:08 (T12)
	21:00	52	07:58 (T10)	20:23	49	19:13 (T11)	19:30	23	18:58 (T11)	18:41		17:08	54	09:36 (T12)	17:06	56	10:04 (T12)
23	06:18		07:06 (T10)	06:48		07:25 (T10)	07:19		18:38 (T11)	07:52		07:29		07:52 (T13)	07:55		09:08 (T12)
	20:59	53	07:59 (T10)	20:22	43	19:15 (T11)	19:28	16	18:54 (T11)	18:40		17:07	55	09:39 (T12)	17:06	56	10:04 (T12)
24	06:19		07:06 (T10)	06:49		18:39 (T11)	07:20			07:53		07:30		07:53 (T13)	07:55		09:08 (T12)
	20:58	53	07:59 (T10)	20:20	37	19:16 (T11)	19:27			18:39		17:06	56	09:40 (T12)	17:07	56	10:04 (T12)
25	06:19		07:06 (T10)	06:50		18:38 (T11)	07:21			07:54		07:31		07:54 (T13)	07:56		09:09 (T12)
	20:57	54	08:00 (T10)	20:18	39	19:17 (T11)	19:25			18:37		17:06	58	09:42 (T12)	17:07	56	10:05 (T12)
26	06:20		07:06 (T10)	06:51		18:36 (T11)	07:22			07:55		07:32		07:55 (T13)	07:56		09:09 (T12)
	20:56	54	08:00 (T10)	20:17	42	19:18 (T11)	19:23			18:36		17:05	58	09:43 (T12)	17:08	56	10:05 (T12)
27	06:21		07:05 (T10)	06:52		18:35 (T11)	07:23			07:56		07:33		07:56 (T13)	07:56		09:09 (T12)
	20:55	55	08:00 (T10)	20:15	44	19:19 (T11)	19:22			18:34		17:05	57	09:44 (T12)	17:09	56	10:05 (T12)
28	06:22		07:05 (T10)	06:53		18:34 (T11)	07:24			07:58		07:34		07:58 (T13)	07:57		09:11 (T12)
	20:54	55	08:00 (T10)	20:14	45	19:19 (T11)	19:20			18:33		17:05	56	09:46 (T12)	17:09	55	10:06 (T12)
29	06:23		07:05 (T10)	06:54		18:32 (T11)	07:26			07:59	08:58 (T13)	07:35		07:59 (T13)	07:57		09:11 (T12)
	20:54	55	08:00 (T10)	20:12	48	19:20 (T11)	19:18			18:32	4 09:02 (T13)	17:04	55	09:47 (T12)	17:10	55	10:06 (T12)
30	06:24		07:05 (T10)	06:55		18:31 (T11)	07:27			08:00	08:52 (T13)	07:36		08:02 (T13)	07:57		09:11 (T12)
	20:53	55	08:00 (T10)	20:11	49	19:20 (T11)	19:16			18:30	14 09:06 (T13)	17:04	51	09:48 (T12)	17:11	55	10:06 (T12)
31	06:25		07:05 (T10)	06:56		18:30 (T11)				08:01	08:50 (T13)				07:57		09:12 (T12)
	20:51	55	08:00 (T10)	20:09	51	19:21 (T11)				18:29	19 09:09 (T13)				17:12	54	10:06 (T12)
Potential sun hours	460			429			375			345		297			287		
Total, worst case		1461			1500			1042			37		1212			1667	
Sun reduction		0.66			0.61			0.59			0.48		0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00		1.00			1.00	
Wind dir. red.		0.68			0.66			0.63			0.52		0.52			0.53	
Total reduction		0.43			0.39			0.36			0.24		0.15			0.11	
Total, real		632			588			377			9		184			187	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 477 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6572)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:49 (T77)	07:43		08:15 (T76)	07:07		17:04 (T42)	07:16		19:11 (T41)	06:30			06:01		19:57 (T40)
	17:13	34	16:23 (T77)	17:47	28	08:43 (T76)	18:22	28	17:32 (T42)	19:56	23	19:34 (T41)	20:27			20:57	25	20:22 (T40)
2	07:57		15:49 (T77)	07:42		08:16 (T76)	07:06		17:06 (T42)	07:14		19:09 (T41)	06:29			06:01		19:58 (T40)
	17:14	34	16:23 (T77)	17:49	26	08:42 (T76)	18:23	24	17:30 (T42)	19:57	26	19:35 (T41)	20:28			20:58	24	20:22 (T40)
3	07:57		15:50 (T77)	07:41		08:17 (T76)	07:04		17:07 (T42)	07:13		19:09 (T41)	06:28			06:01		19:58 (T40)
	17:15	33	16:23 (T77)	17:50	25	08:42 (T76)	18:24	20	17:27 (T42)	19:58	28	19:37 (T41)	20:29			20:58	24	20:22 (T40)
4	07:57		15:51 (T77)	07:40		08:18 (T76)	07:02		17:11 (T42)	07:11		19:08 (T41)	06:26			06:00		19:59 (T40)
	17:16	32	16:23 (T77)	17:51	23	08:41 (T76)	18:25	12	17:23 (T42)	19:59	29	19:37 (T41)	20:30			20:59	23	20:22 (T40)
5	07:57		15:52 (T77)	07:39		08:19 (T76)	07:01			07:09		19:07 (T41)	06:25			06:00		20:00 (T40)
	17:16	31	16:23 (T77)	17:52	35	17:26 (T42)	18:26			20:00	30	19:37 (T41)	20:31			21:00	22	20:22 (T40)
6	07:57		15:52 (T77)	07:38		08:20 (T76)	06:59			07:08		19:08 (T41)	06:24			05:59		20:00 (T40)
	17:17	32	16:24 (T77)	17:54	37	17:28 (T42)	18:27			20:00	30	19:38 (T41)	20:32			21:00	21	20:21 (T40)
7	07:57		15:53 (T77)	07:37		08:22 (T76)	06:58			07:06		19:07 (T41)	06:23		20:06 (T40)	05:59		20:01 (T40)
	17:18	30	16:23 (T77)	17:55	37	17:30 (T42)	18:29			20:01	30	19:37 (T41)	20:33	5	20:11 (T40)	21:01	20	20:21 (T40)
8	07:57		15:54 (T77)	07:36		08:27 (T76)	07:56			07:05		19:08 (T41)	06:22		20:02 (T40)	05:59		20:01 (T40)
	17:19	29	16:23 (T77)	17:56	31	17:32 (T42)	19:30			20:02	29	19:37 (T41)	20:34	10	20:12 (T40)	21:02	20	20:21 (T40)
9	07:57		08:19 (T76)	07:35		17:04 (T42)	07:54			07:03		19:08 (T41)	06:20		20:00 (T40)	05:59		20:02 (T40)
	17:20	35	16:23 (T77)	17:57	29	17:33 (T42)	19:31			20:03	28	19:36 (T41)	20:35	12	20:12 (T40)	21:02	18	20:20 (T40)
10	07:57		08:19 (T76)	07:34		17:03 (T42)	07:53			07:01		19:07 (T41)	06:19		19:58 (T40)	05:59		20:03 (T40)
	17:21	36	16:23 (T77)	17:59	32	17:35 (T42)	19:32			20:05	28	19:35 (T41)	20:36	15	20:13 (T40)	21:03	17	20:20 (T40)
11	07:57		08:18 (T76)	07:32		17:01 (T42)	07:51			07:00		19:09 (T41)	06:18		19:57 (T40)	05:58		20:04 (T40)
	17:23	36	16:22 (T77)	18:00	34	17:35 (T42)	19:33			20:06	25	19:34 (T41)	20:37	17	20:14 (T40)	21:04	16	20:20 (T40)
12	07:56		08:18 (T76)	07:31		17:01 (T42)	07:50			06:58		19:09 (T41)	06:17		19:56 (T40)	05:58		20:03 (T40)
	17:24	37	16:22 (T77)	18:01	35	17:36 (T42)	19:34			20:07	23	19:32 (T41)	20:38	19	20:15 (T40)	21:04	16	20:19 (T40)
13	07:56		08:18 (T76)	07:30		17:00 (T42)	07:48			06:57		19:11 (T41)	06:16		19:55 (T40)	05:58		20:04 (T40)
	17:25	37	16:22 (T77)	18:02	37	17:37 (T42)	19:35			20:08	20	19:31 (T41)	20:39	21	20:16 (T40)	21:05	15	20:19 (T40)
14	07:56		08:17 (T76)	07:29		16:59 (T42)	07:46			06:55		19:12 (T41)	06:15		19:55 (T40)	05:58		20:05 (T40)
	17:26	36	16:20 (T77)	18:04	38	17:37 (T42)	19:36			20:09	17	19:29 (T41)	20:41	22	20:17 (T40)	21:05	14	20:19 (T40)
15	07:55		08:17 (T76)	07:27		16:59 (T42)	07:45			06:53		19:14 (T41)	06:14		19:54 (T40)	05:58		20:05 (T40)
	17:27	34	16:20 (T77)	18:05	39	17:38 (T42)	19:38			20:10	12	19:26 (T41)	20:42	24	20:18 (T40)	21:05	14	20:19 (T40)
16	07:55		08:16 (T76)	07:26		16:59 (T42)	07:43			06:52			06:13		19:55 (T40)	05:58		20:06 (T40)
	17:28	31	16:17 (T77)	18:06	40	17:39 (T42)	19:39			20:11			20:42	25	20:20 (T40)	21:06	12	20:18 (T40)
17	07:54		08:16 (T76)	07:25		16:58 (T42)	07:41			06:50			06:12		19:54 (T40)	05:58		20:07 (T40)
	17:29	25	16:14 (T77)	18:07	40	17:38 (T42)	19:40			20:12			20:43	26	20:20 (T40)	21:06	12	20:19 (T40)
18	07:54		08:15 (T76)	07:23		16:58 (T42)	07:40			06:49			06:11		19:54 (T40)	05:58		20:08 (T40)
	17:30	23	08:38 (T76)	18:09	41	17:39 (T42)	19:41			20:13			20:44	27	20:21 (T40)	21:07	11	20:19 (T40)
19	07:53		08:15 (T76)	07:22		16:59 (T42)	07:38			06:47			06:10		19:54 (T40)	05:58		20:08 (T40)
	17:31	24	08:39 (T76)	18:10	40	17:39 (T42)	19:42			20:14			20:45	28	20:22 (T40)	21:07	11	20:19 (T40)
20	07:53		08:14 (T76)	07:20		16:58 (T42)	07:36			06:46			06:09		19:53 (T40)	05:58		20:08 (T40)
	17:33	26	08:40 (T76)	18:11	41	17:39 (T42)	19:43			20:15			20:46	30	20:23 (T40)	21:07	11	20:19 (T40)
21	07:52		08:13 (T76)	07:19		16:59 (T42)	07:35			06:44			06:09		19:53 (T40)	05:59		20:08 (T40)
	17:34	27	08:40 (T76)	18:12	40	17:39 (T42)	19:44			20:16			20:47	30	20:23 (T40)	21:08	11	20:19 (T40)
22	07:52		08:13 (T76)	07:18		16:58 (T42)	07:33			06:43			06:08		19:54 (T40)	05:59		20:08 (T40)
	17:35	28	08:41 (T76)	18:13	40	17:38 (T42)	19:45			20:17			20:48	30	20:24 (T40)	21:08	11	20:19 (T40)
23	07:51		08:12 (T76)	07:16		16:59 (T42)	07:31			06:41			06:07		19:54 (T40)	05:59		20:09 (T40)
	17:36	30	08:42 (T76)	18:15	39	17:38 (T42)	19:46			20:18			20:49	29	20:23 (T40)	21:08	11	20:20 (T40)
24	07:50		08:12 (T76)	07:15		16:59 (T42)	07:30			06:40			06:06		19:54 (T40)	05:59		20:09 (T40)
	17:37	30	08:42 (T76)	18:16	38	17:37 (T42)	19:47			20:19			20:50	29	20:23 (T40)	21:08	11	20:20 (T40)
25	07:49		08:11 (T76)	07:13		17:00 (T42)	07:28			06:38			06:06		19:55 (T40)	06:00		20:08 (T40)
	17:39	31	08:42 (T76)	18:17	37	17:37 (T42)	19:48			20:21			20:51	29	20:24 (T40)	21:08	12	20:20 (T40)
26	07:49		08:12 (T76)	07:12		17:00 (T42)	07:26			06:37			06:05		19:55 (T40)	06:00		20:09 (T40)
	17:40	30	08:42 (T76)	18:18	35	17:35 (T42)	19:50			20:22			20:52	28	20:23 (T40)	21:08	12	20:21 (T40)
27	07:48		08:13 (T76)	07:10		17:02 (T42)	07:24		19:23 (T41)	06:36			06:04		19:54 (T40)	06:00		20:09 (T40)
	17:41	30	08:43 (T76)	18:19	33	17:35 (T42)	19:51	5	19:28 (T41)	20:23			20:53	29	20:23 (T40)	21:08	12	20:21 (T40)
28	07:47		08:13 (T76)	07:09		17:02 (T42)	07:23		19:18 (T41)	06:34			06:04		19:55 (T40)	06:01		20:08 (T40)
	17:42	30	08:43 (T76)	18:21	31	17:33 (T42)	19:52	12	19:30 (T41)	20:24			20:54	28	20:23 (T40)	21:09	14	20:22 (T40)
29	07:46		08:13 (T76)				07:21		19:15 (T41)	06:33			06:03		19:55 (T40)	06:01		20:08 (T40)
	17:44	30	08:43 (T76)				19:53	16	19:31 (T41)	20:25			20:54	27	20:22 (T40)	21:09	15	20:23 (T40)
30	07:45		08:14 (T76)				07:19		19:13 (T41)	06:32			06:02		19:56 (T40)	06:02		20:08 (T40)
	17:45	29	08:43 (T76)				19:54	19	19:32 (T41)	20:26			20:55	27	20:23 (T40)	21:09	15	20:23 (T40)
31	07:44		08:14 (T76)				07:18		19:12 (T41)				06:02		19:56 (T40)			
	17:46	29	08:43 (T76)				19:55	22	19:34 (T41)				20:56	26	20:22 (T40)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		959			981			158			378			593			470	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.62			0.68			0.67			0.62			0.55			0.55	
Total reduction		0.20			0.28			0.30			0.33			0.32			0.36	
Total, real		189			273			47			124			191			170	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 477 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6572)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:08 (T40)	06:26		20:07 (T40)	06:57		19:08 (T41)	07:27			07:02		16:32 (T42)	07:37		08:00 (T76)
	21:08	16	20:24 (T40)	20:50	18	20:25 (T40)	20:07	25	19:33 (T41)	19:15			17:28	32	17:04 (T42)	17:04	37	16:04 (T77)
2	06:03		20:07 (T40)	06:27		20:08 (T40)	06:58		19:06 (T41)	07:29			07:03		16:34 (T42)	07:38		08:01 (T76)
	21:08	17	20:24 (T40)	20:49	16	20:24 (T40)	20:06	28	19:34 (T41)	19:13			17:27	29	17:03 (T42)	17:03	37	16:05 (T77)
3	06:03		20:08 (T40)	06:28		20:09 (T40)	06:59		19:06 (T41)	07:30			07:04		07:56 (T76)	07:39		08:03 (T76)
	21:08	17	20:25 (T40)	20:48	14	20:23 (T40)	20:04	28	19:34 (T41)	19:11			17:26	32	17:01 (T42)	17:03	35	16:07 (T77)
4	06:04		20:07 (T40)	06:29		20:11 (T40)	07:00		19:05 (T41)	07:31			07:06		07:52 (T76)	07:40		08:05 (T76)
	21:08	19	20:26 (T40)	20:47	11	20:22 (T40)	20:02	29	19:34 (T41)	19:10			17:24	37	16:59 (T42)	17:03	31	16:08 (T77)
5	06:04		20:07 (T40)	06:30		20:13 (T40)	07:01		19:04 (T41)	07:32			07:07		07:50 (T76)	07:41		15:39 (T77)
	21:08	20	20:27 (T40)	20:46	8	20:21 (T40)	20:01	30	19:34 (T41)	19:08			17:23	36	16:57 (T42)	17:03	30	16:09 (T77)
6	06:05		20:06 (T40)	06:31			07:02		19:04 (T41)	07:33			07:08		07:49 (T76)	07:42		15:39 (T77)
	21:08	21	20:27 (T40)	20:44			19:57	30	19:34 (T41)	19:06			17:22	34	16:55 (T42)	17:03	31	16:10 (T77)
7	06:05		20:06 (T40)	06:32			07:03		19:03 (T41)	07:34			07:09		07:47 (T76)	07:43		15:38 (T77)
	21:07	22	20:28 (T40)	20:43			19:56	31	19:34 (T41)	19:05			17:21	24	08:11 (T76)	17:03	31	16:09 (T77)
8	06:06		20:06 (T40)	06:33			07:04		19:03 (T41)	07:35			07:10		07:46 (T76)	07:44		15:38 (T77)
	21:07	23	20:29 (T40)	20:42			19:54	30	19:33 (T41)	19:03			17:20	26	08:12 (T76)	17:03	32	16:10 (T77)
9	06:07		20:05 (T40)	06:34			07:05		19:03 (T41)	07:36		17:50 (T42)	07:12		07:46 (T76)	07:45		15:38 (T77)
	21:07	24	20:29 (T40)	20:41			19:52	28	19:31 (T41)	19:01	4	17:54 (T42)	17:19	27	08:13 (T76)	17:03	33	16:11 (T77)
10	06:07		20:05 (T40)	06:35			07:06		19:02 (T41)	07:37		17:44 (T42)	07:13		07:46 (T76)	07:46		15:38 (T77)
	21:06	24	20:29 (T40)	20:39			19:51	26	19:28 (T41)	19:00	16	18:00 (T42)	17:18	28	08:14 (T76)	17:03	34	16:12 (T77)
11	06:08		20:06 (T40)	06:36			07:07		19:03 (T41)	07:38		17:41 (T42)	07:14		07:45 (T76)	07:46		15:39 (T77)
	21:06	24	20:30 (T40)	20:38			19:49	24	19:27 (T41)	18:58	21	18:02 (T42)	17:17	29	08:14 (T76)	17:03	34	16:13 (T77)
12	06:09		20:05 (T40)	06:37			07:08		19:03 (T41)	07:39		17:38 (T42)	07:15		07:44 (T76)	07:47		15:39 (T77)
	21:06	25	20:30 (T40)	20:37			19:47	22	19:25 (T41)	18:57	26	18:04 (T42)	17:16	30	08:14 (T76)	17:03	35	16:14 (T77)
13	06:10		20:05 (T40)	06:38			07:09		19:04 (T41)	07:40		17:36 (T42)	07:16		07:45 (T76)	07:48		15:39 (T77)
	21:05	26	20:31 (T40)	20:36			19:45	19	19:23 (T41)	18:55	29	18:05 (T42)	17:15	30	08:15 (T76)	17:03	35	16:14 (T77)
14	06:10		20:05 (T40)	06:39			07:10		19:05 (T41)	07:41		17:34 (T42)	07:18		07:45 (T76)	07:49		15:39 (T77)
	21:05	27	20:32 (T40)	20:34			19:44	17	19:22 (T41)	18:54	32	18:06 (T42)	17:14	30	08:15 (T76)	17:03	35	16:14 (T77)
15	06:11		20:05 (T40)	06:40			07:11		19:07 (T41)	07:42		17:34 (T42)	07:19		07:45 (T76)	07:50		15:40 (T77)
	21:04	27	20:32 (T40)	20:33			19:42	13	19:20 (T41)	18:52	34	18:08 (T42)	17:13	30	08:15 (T76)	17:03	35	16:15 (T77)
16	06:12		20:04 (T40)	06:41			07:12		19:11 (T41)	07:44		17:32 (T42)	07:20		07:44 (T76)	07:50		15:40 (T77)
	21:03	28	20:32 (T40)	20:31			19:40	7	19:18 (T41)	18:50	36	18:08 (T42)	17:12	31	08:15 (T76)	17:04	36	16:16 (T77)
17	06:13		20:04 (T40)	06:42			07:13			07:45		17:31 (T42)	07:21		07:45 (T76)	07:51		15:40 (T77)
	21:03	28	20:32 (T40)	20:30			19:39			18:49	37	18:08 (T42)	17:11	31	08:16 (T76)	17:04	36	16:16 (T77)
18	06:14		20:04 (T40)	06:43			07:14			07:46		17:30 (T42)	07:22		07:46 (T76)	07:52		15:41 (T77)
	21:02	29	20:33 (T40)	20:29			19:37			18:47	39	18:09 (T42)	17:11	30	08:16 (T76)	17:04	36	16:17 (T77)
19	06:14		20:04 (T40)	06:44			07:15			07:47		17:29 (T42)	07:23		07:46 (T76)	07:52		15:42 (T77)
	21:02	29	20:33 (T40)	20:27			19:35			18:46	40	18:09 (T42)	17:10	30	08:16 (T76)	17:05	36	16:18 (T77)
20	06:15		20:04 (T40)	06:45			07:16			07:48		17:29 (T42)	07:25		07:48 (T76)	07:53		15:41 (T77)
	21:01	30	20:34 (T40)	20:26			19:33			18:44	40	18:09 (T42)	17:09	28	08:16 (T76)	17:05	37	16:18 (T77)
21	06:16		20:03 (T40)	06:46			07:17			07:49		17:29 (T42)	07:26		07:49 (T76)	07:53		15:42 (T77)
	21:00	30	20:33 (T40)	20:24			19:32			18:43	41	18:10 (T42)	17:08	27	08:16 (T76)	17:05	37	16:19 (T77)
22	06:17		20:04 (T40)	06:47			07:18			07:50		17:29 (T42)	07:27		07:50 (T76)	07:54		15:42 (T77)
	20:59	29	20:33 (T40)	20:23			19:30			18:41	40	18:09 (T42)	17:08	26	08:16 (T76)	17:06	37	16:19 (T77)
23	06:18		20:04 (T40)	06:48			07:19			07:51		17:28 (T42)	07:28		07:51 (T76)	07:54		15:43 (T77)
	20:59	29	20:33 (T40)	20:21			19:28			18:40	41	18:09 (T42)	17:07	24	08:15 (T76)	17:07	37	16:20 (T77)
24	06:19		20:04 (T40)	06:49			07:20			07:53		17:28 (T42)	07:29		07:52 (T76)	07:55		15:44 (T77)
	20:58	29	20:33 (T40)	20:20			19:27			18:39	41	18:09 (T42)	17:07	23	08:15 (T76)	17:07	36	16:20 (T77)
25	06:20		20:04 (T40)	06:50			07:21			07:54		17:29 (T42)	07:30		07:54 (T76)	07:55		15:44 (T77)
	20:57	28	20:32 (T40)	20:18			19:25			18:37	40	18:09 (T42)	17:06	25	15:52 (T77)	17:08	36	16:20 (T77)
26	06:21		20:05 (T40)	06:51			07:22			07:55		17:29 (T42)	07:32		07:55 (T76)	07:56		15:45 (T77)
	20:56	26	20:31 (T40)	20:17			19:23			18:36	39	18:08 (T42)	17:06	31	15:56 (T77)	17:08	36	16:21 (T77)
27	06:22		20:05 (T40)	06:52			07:23			07:56		17:29 (T42)	07:33		07:56 (T76)	07:56		15:45 (T77)
	20:55	26	20:31 (T40)	20:15			19:21			18:34	39	18:08 (T42)	17:05	34	15:59 (T77)	17:09	36	16:21 (T77)
28	06:22		20:04 (T40)	06:53		19:15 (T41)	07:24			07:57		17:29 (T42)	07:34		07:57 (T76)	07:56		15:45 (T77)
	20:54	25	20:29 (T40)	20:14	13	19:28 (T41)	19:20			18:33	38	18:07 (T42)	17:05	36	16:00 (T77)	17:10	36	16:21 (T77)
29	06:23		20:05 (T40)	06:54		19:13 (T41)	07:25			07:58		17:29 (T42)	07:35		07:58 (T76)	07:57		15:46 (T77)
	20:53	23	20:28 (T40)	20:12	17	19:30 (T41)	19:18			18:32	37	18:06 (T42)	17:04	37	16:02 (T77)	17:10	35	16:21 (T77)
30	06:24		20:06 (T40)	06:55		19:11 (T41)	07:26			08:00		17:31 (T42)	07:36		07:59 (T76)	07:57		15:47 (T77)
	20:52	21	20:27 (T40)	20:10	20	19:31 (T41)	19:16			18:30	35	18:06 (T42)	17:04	37	16:03 (T77)	17:11	35	16:22 (T77)
31	06:25		20:06 (T40)	06:56		19:09 (T41)				08:01		17:31 (T42)				07:57		15:48 (T77)
	20:51	20	20:26 (T40)	20:09	23	19:32 (T41)				18:29	34	18:05 (T42)				17:12	34	16:22 (T77)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		762			140			387			779			904			1081	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.59			0.62			0.71			0.57			0.74	
Total reduction		0.37			0.37			0.37			0.35			0.18			0.17	
Total, real		285			51			144			271			159			179	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 500 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6592)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57 - 15:39 (T35)		07:43 - 08:06 (T36)		07:07 -		07:16 - 07:35 (T31)		06:30 - 18:53 (T30)		06:01 - 20:03 (T27)	
	17:13 - 16:18 (T35)	39	17:47 - 08:35 (T36)	29	18:22 -		19:56 - 07:50 (T31)	15	20:27 - 19:49 (T30)	56	20:57 - 20:33 (T27)	30
2	07:57 - 15:39 (T35)		07:43 - 08:07 (T36)		07:06 -		07:14 - 07:33 (T31)		06:29 - 18:53 (T30)		06:01 - 20:03 (T27)	
	17:14 - 16:18 (T35)	39	17:49 - 08:35 (T36)	28	18:23 -		19:57 - 07:52 (T31)	19	20:28 - 19:49 (T30)	56	20:58 - 20:34 (T27)	31
3	07:58 - 15:40 (T35)		07:41 - 08:08 (T36)		07:04 -		07:13 - 07:32 (T31)		06:28 - 18:52 (T30)		06:00 - 20:02 (T27)	
	17:15 - 16:18 (T35)	38	17:50 - 08:35 (T36)	27	18:24 -		19:58 - 07:54 (T31)	22	20:29 - 19:48 (T30)	56	20:58 - 20:34 (T27)	32
4	07:58 - 15:41 (T35)		07:40 - 08:08 (T36)		07:02 -		07:11 - 07:30 (T31)		06:26 - 18:53 (T30)		06:00 - 20:03 (T27)	
	17:15 - 16:18 (T35)	37	17:51 - 08:34 (T36)	26	18:25 -		19:59 - 07:54 (T31)	24	20:30 - 19:48 (T30)	55	20:59 - 20:35 (T27)	32
5	07:58 - 15:42 (T35)		07:39 - 08:09 (T36)		07:01 -		07:09 - 07:28 (T31)		06:25 - 18:53 (T30)		06:00 - 20:03 (T27)	
	17:16 - 16:18 (T35)	36	17:52 - 08:34 (T36)	25	18:26 -		20:00 - 07:55 (T31)	27	20:31 - 19:48 (T30)	55	21:00 - 20:36 (T27)	33
6	07:58 - 15:43 (T35)		07:38 - 08:10 (T36)		06:59 -		07:08 - 07:27 (T31)		06:24 - 18:54 (T30)		05:59 - 20:02 (T27)	
	17:17 - 16:18 (T35)	35	17:54 - 08:32 (T36)	22	18:27 -		20:00 - 07:56 (T31)	29	20:32 - 19:48 (T30)	54	21:01 - 20:36 (T27)	34
7	07:57 - 15:44 (T35)		07:37 - 08:11 (T36)		06:58 -		07:06 - 07:25 (T31)		06:23 - 18:54 (T30)		05:59 - 20:03 (T27)	
	17:18 - 16:19 (T35)	35	17:55 - 08:31 (T36)	20	18:29 -		20:01 - 07:56 (T31)	31	20:33 - 19:48 (T30)	54	21:01 - 20:36 (T27)	33
8	07:57 - 15:44 (T35)		07:36 - 08:13 (T36)		07:56 -		07:05 - 07:24 (T31)		06:21 - 18:53 (T30)		05:59 - 20:03 (T27)	
	17:19 - 16:18 (T35)	34	17:56 - 08:30 (T36)	17	19:30 -		20:02 - 07:57 (T31)	33	20:34 - 19:46 (T30)	53	21:02 - 20:37 (T27)	34
9	07:57 - 15:45 (T35)		07:35 - 08:15 (T36)		07:54 -		07:03 - 07:22 (T31)		06:20 - 18:54 (T30)		05:59 - 20:03 (T27)	
	17:20 - 16:18 (T35)	33	17:57 - 08:28 (T36)	13	19:31 -		20:03 - 07:56 (T31)	34	20:35 - 19:46 (T30)	52	21:02 - 20:38 (T27)	35
10	07:57 - 15:46 (T35)		07:34 - 08:20 (T36)		07:53 -		07:01 - 07:21 (T31)		06:19 - 18:54 (T30)		05:58 - 20:03 (T27)	
	17:21 - 16:18 (T35)	32	17:59 - 08:24 (T36)	4	19:32 -		20:05 - 07:56 (T31)	35	20:36 - 19:46 (T30)	52	21:03 - 20:37 (T27)	34
11	07:57 - 15:47 (T35)		07:32 -		07:51 -		07:00 - 07:21 (T31)		06:18 - 18:55 (T30)		05:58 - 20:03 (T27)	
	17:22 - 16:17 (T35)	30	18:00 -		19:33 -		20:06 - 19:33 (T30)	50	20:38 - 19:45 (T30)	50	21:04 - 20:37 (T27)	34
12	07:56 - 15:48 (T35)		07:31 -		07:50 -		06:58 - 07:20 (T31)		06:17 - 18:56 (T30)		05:58 - 20:03 (T27)	
	17:23 - 16:17 (T35)	29	18:01 -		19:34 -		20:07 - 19:36 (T30)	58	20:39 - 19:45 (T30)	49	21:04 - 20:38 (T27)	35
13	07:56 - 15:50 (T35)		07:30 -		07:48 -		06:56 - 07:21 (T31)		06:16 - 18:56 (T30)		05:58 - 20:03 (T27)	
	17:25 - 16:17 (T35)	27	18:02 -		19:35 -		20:08 - 19:39 (T30)	63	20:40 - 19:44 (T30)	48	21:05 - 20:38 (T27)	35
14	07:56 - 15:51 (T35)		07:29 -		07:46 -		06:55 - 07:20 (T31)		06:15 - 18:57 (T30)		05:58 - 20:04 (T27)	
	17:26 - 16:16 (T35)	25	18:04 -		19:36 -		20:09 - 19:41 (T30)	68	20:41 - 19:43 (T30)	46	21:05 - 20:38 (T27)	34
15	07:55 - 08:17 (T36)		07:27 -		07:45 -		06:53 - 07:20 (T31)		06:14 - 18:57 (T30)		05:58 - 20:04 (T27)	
	17:27 - 16:15 (T35)	25	18:05 -		19:38 -		20:10 - 19:42 (T30)	70	20:42 - 19:43 (T30)	46	21:06 - 20:38 (T27)	34
16	07:55 - 08:16 (T36)		07:26 -		07:43 -		06:52 - 07:21 (T31)		06:13 - 18:58 (T30)		05:58 - 06:26 (T28)	
	17:28 - 16:14 (T35)	26	18:06 -		19:39 -		20:11 - 19:44 (T30)	72	20:43 - 19:42 (T30)	44	21:06 - 20:38 (T27)	39
17	07:55 - 08:16 (T36)		07:25 -		07:41 -		06:50 - 07:21 (T31)		06:12 - 19:00 (T30)		05:58 - 06:25 (T28)	
	17:29 - 16:13 (T35)	24	18:07 -		19:40 -		20:12 - 19:44 (T30)	73	20:44 - 19:42 (T30)	42	21:06 - 20:39 (T27)	42
18	07:54 - 08:15 (T36)		07:23 -		07:40 -		06:49 - 07:22 (T31)		06:11 - 19:01 (T30)		05:58 - 06:24 (T28)	
	17:30 - 16:10 (T35)	21	18:09 -		19:41 -		20:13 - 19:46 (T30)	74	20:45 - 20:20 (T27)	45	21:07 - 20:39 (T27)	44
19	07:53 - 08:15 (T36)		07:22 -		07:38 -		06:47 - 07:23 (T31)		06:10 - 19:01 (T30)		05:58 - 06:25 (T28)	
	17:31 - 08:28 (T36)	13	18:10 -		19:42 -		20:14 - 19:46 (T30)	73	20:46 - 20:22 (T27)	50	21:07 - 20:40 (T27)	45
20	07:53 - 08:14 (T36)		07:21 -		07:36 -		06:46 - 07:24 (T31)		06:09 - 19:02 (T30)		05:58 - 06:25 (T28)	
	17:33 - 08:28 (T36)	14	18:11 -		19:43 -		20:15 - 19:47 (T30)	73	20:46 - 20:23 (T27)	51	21:07 - 20:40 (T27)	45
21	07:52 - 08:13 (T36)		07:19 -		07:35 -		06:44 - 07:25 (T31)		06:08 - 19:03 (T30)		05:59 - 06:25 (T28)	
	17:34 - 08:29 (T36)	16	18:12 -		19:44 -		20:16 - 19:47 (T30)	70	20:47 - 20:23 (T27)	50	21:08 - 20:40 (T27)	45
22	07:52 - 08:13 (T36)		07:18 -		07:33 -		06:43 - 07:28 (T31)		06:08 - 19:05 (T30)		05:59 - 06:25 (T28)	
	17:35 - 08:31 (T36)	18	18:13 -		19:45 -		20:17 - 19:48 (T30)	67	20:48 - 20:25 (T27)	51	21:08 - 20:40 (T27)	45
23	07:51 - 08:12 (T36)		07:16 -		07:31 -		06:41 - 07:32 (T31)		06:07 - 19:06 (T30)		05:59 - 06:25 (T28)	
	17:36 - 08:32 (T36)	20	18:15 -		19:46 -		20:18 - 19:49 (T30)	60	20:49 - 20:26 (T27)	50	21:08 - 20:40 (T27)	45
24	07:50 - 08:11 (T36)		07:15 -		07:30 -		06:40 - 18:55 (T30)		06:06 - 19:07 (T30)		05:59 - 06:26 (T28)	
	17:37 - 08:32 (T36)	21	18:16 -		19:47 -		20:20 - 19:48 (T30)	53	20:50 - 20:26 (T27)	49	21:08 - 20:41 (T27)	44
25	07:50 - 08:10 (T36)		07:13 -		07:28 -		06:38 - 18:55 (T30)		06:05 - 19:09 (T30)		06:00 - 06:27 (T28)	
	17:39 - 08:33 (T36)	23	18:17 -		19:48 -		20:21 - 19:49 (T30)	54	20:51 - 20:28 (T27)	48	21:08 - 20:41 (T27)	43
26	07:49 - 08:10 (T36)		07:12 -		07:26 -		06:37 - 18:54 (T30)		06:05 - 19:10 (T30)		06:00 - 06:27 (T28)	
	17:40 - 08:34 (T36)	24	18:18 -		19:50 -		20:22 - 19:49 (T30)	55	20:52 - 20:28 (T27)	46	21:09 - 20:41 (T27)	42
27	07:48 - 08:09 (T36)		07:10 -		07:24 -		06:36 - 18:54 (T30)		06:04 - 19:12 (T30)		06:00 - 06:30 (T28)	
	17:41 - 08:34 (T36)	25	18:19 -		19:51 -		20:23 - 19:49 (T30)	55	20:53 - 20:28 (T27)	43	21:09 - 20:41 (T27)	37
28	07:47 - 08:08 (T36)		07:09 -		07:23 -		06:34 - 18:54 (T30)		06:03 - 19:14 (T30)		06:01 - 20:07 (T27)	
	17:42 - 08:35 (T36)	27	18:20 -		19:52 -		20:24 - 19:49 (T30)	55	20:54 - 20:30 (T27)	42	21:09 - 20:41 (T27)	34
29	07:46 - 08:07 (T36)				07:21 -		06:33 - 18:53 (T30)		06:03 - 19:17 (T30)		06:01 - 20:07 (T27)	
	17:44 - 08:35 (T36)	28			19:53 -		20:25 - 19:49 (T30)	56	20:55 - 20:30 (T27)	36	21:09 - 20:42 (T27)	35
30	07:45 - 08:06 (T36)				07:19 -		06:31 - 18:53 (T30)		06:02 - 20:03 (T27)		06:01 - 20:07 (T27)	
	17:45 - 08:35 (T36)	29			19:54 -		20:26 - 19:49 (T30)	56	20:55 - 20:31 (T27)	28	21:09 - 20:42 (T27)	35
31	07:44 - 08:06 (T36)				07:18 - 07:37 (T31)				06:02 - 20:02 (T27)			
	17:46 - 08:35 (T36)	29			19:55 - 07:47 (T31)	10			20:56 - 20:31 (T27)	29		
Potential sun hours	297		297		370		399		449		453	
Total, worst case		852		211		10		1524		1486		1120
Sun reduction		0.31		0.40		0.44		0.52		0.57		0.64
Oper. time red.		1.00		1.00		1.00		1.00		1.00		1.00
Wind dir. red.		0.67		0.53		0.65		0.61		0.57		0.56
Total reduction		0.21		0.22		0.29		0.32		0.33		0.37
Total, real		180		46		3		491		493		409

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 500 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6592)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November		December		
1	06:02		20:08 (T27)	06:26		19:06 (T30)	06:57		07:20 (T31)	07:27		07:47 (T36)	07:37		15:30 (T35)
	21:09	34	20:42 (T27)	20:50	49	19:55 (T30)	20:07	49	19:31 (T30)	19:15	17:28	7	07:54 (T36)	17:04	30	16:00 (T35)
2	06:02		20:08 (T27)	06:27		19:05 (T30)	06:58		07:20 (T31)	07:29	07:03		07:45 (T36)	07:38		15:29 (T35)
	21:08	34	20:42 (T27)	20:49	51	19:56 (T30)	20:06	35	07:55 (T31)	19:13	17:27	13	07:58 (T36)	17:03	32	16:01 (T35)
3	06:03		20:08 (T27)	06:28		19:05 (T30)	06:59		07:20 (T31)	07:30	07:04		07:42 (T36)	07:39		15:29 (T35)
	21:08	35	20:43 (T27)	20:48	51	19:56 (T30)	20:04	34	07:54 (T31)	19:11	17:25	18	08:00 (T36)	17:03	33	16:02 (T35)
4	06:04		20:08 (T27)	06:29		19:04 (T30)	07:00		07:21 (T31)	07:31	07:06		07:41 (T36)	07:40		15:29 (T35)
	21:08	34	20:42 (T27)	20:47	53	19:57 (T30)	20:02	33	07:54 (T31)	19:10	17:24	20	08:01 (T36)	17:03	34	16:03 (T35)
5	06:04		20:09 (T27)	06:30		19:04 (T30)	07:01		07:22 (T31)	07:32	07:07		07:39 (T36)	07:41		15:29 (T35)
	21:08	34	20:43 (T27)	20:46	53	19:57 (T30)	20:01	31	07:53 (T31)	19:08	17:23	23	08:02 (T36)	17:03	35	16:04 (T35)
6	06:05		20:08 (T27)	06:31		19:03 (T30)	07:02		07:23 (T31)	07:33	07:08		07:39 (T36)	07:42		15:29 (T35)
	21:08	34	20:42 (T27)	20:45	54	19:57 (T30)	19:57	29	07:52 (T31)	19:06	17:22	25	08:04 (T36)	17:03	35	16:04 (T35)
7	06:05		20:09 (T27)	06:32		19:03 (T30)	07:03		07:24 (T31)	07:34	07:09		07:38 (T36)	07:43		15:29 (T35)
	21:07	33	20:42 (T27)	20:43	55	19:58 (T30)	19:56	27	07:51 (T31)	19:05	17:21	26	08:04 (T36)	17:02	36	16:05 (T35)
8	06:06		20:09 (T27)	06:33		19:03 (T30)	07:04		07:25 (T31)	07:35	07:10		07:37 (T36)	07:44		15:29 (T35)
	21:07	32	20:41 (T27)	20:42	55	19:58 (T30)	19:54	25	07:50 (T31)	19:03	17:20	28	08:05 (T36)	17:02	37	16:06 (T35)
9	06:07		20:09 (T27)	06:34		19:02 (T30)	07:05		07:25 (T31)	07:36	07:12		07:38 (T36)	07:45		15:28 (T35)
	21:07	32	20:41 (T27)	20:41	56	19:58 (T30)	19:52	22	07:47 (T31)	19:01	17:19	28	08:06 (T36)	17:02	38	16:06 (T35)
10	06:07		20:10 (T27)	06:35		19:02 (T30)	07:06		07:26 (T31)	07:37	07:13		07:37 (T36)	07:46		15:28 (T35)
	21:06	31	20:41 (T27)	20:40	56	19:58 (T30)	19:51	19	07:45 (T31)	19:00	17:18	29	08:06 (T36)	17:02	39	16:07 (T35)
11	06:08		20:10 (T27)	06:36		19:02 (T30)	07:07		07:27 (T31)	07:38	07:14		07:37 (T36)	07:47		15:29 (T35)
	21:06	30	20:40 (T27)	20:38	56	19:58 (T30)	19:49	16	07:43 (T31)	18:58	17:17	29	08:06 (T36)	17:03	39	16:08 (T35)
12	06:09		20:10 (T27)	06:37		19:02 (T30)	07:08		07:28 (T31)	07:39	07:15		07:37 (T36)	07:47		15:29 (T35)
	21:06	30	20:40 (T27)	20:37	56	19:58 (T30)	19:47	11	07:39 (T31)	18:57	17:16	29	08:06 (T36)	17:03	39	16:08 (T35)
13	06:09		20:11 (T27)	06:38		19:01 (T30)	07:09			07:40	07:16		07:39 (T36)	07:48		15:30 (T35)
	21:05	29	20:40 (T27)	20:36	57	19:58 (T30)	19:45			18:55	17:15	28	08:07 (T36)	17:03	39	16:09 (T35)
14	06:10		19:30 (T30)	06:39		19:00 (T30)	07:10			07:41	07:18		07:40 (T36)	07:49		15:29 (T35)
	21:05	30	20:40 (T27)	20:34	56	19:56 (T30)	19:44			18:53	17:14	27	08:07 (T36)	17:03	40	16:09 (T35)
15	06:11		19:24 (T30)	06:40		19:00 (T30)	07:11			07:42	07:19		07:41 (T36)	07:50		15:30 (T35)
	21:04	38	20:38 (T27)	20:33	56	19:56 (T30)	19:42			18:52	17:13	25	08:06 (T36)	17:03	40	16:10 (T35)
16	06:12		19:22 (T30)	06:41		19:00 (T30)	07:12			07:44	07:20		07:43 (T36)	07:50		15:30 (T35)
	21:04	43	20:38 (T27)	20:32	56	19:56 (T30)	19:40			18:50	17:12	24	08:07 (T36)	17:03	41	16:11 (T35)
17	06:13		19:20 (T30)	06:42		19:00 (T30)	07:13			07:45	07:21		07:44 (T36)	07:51		15:31 (T35)
	21:03	46	20:38 (T27)	20:30	55	19:55 (T30)	19:39			18:49	17:11	23	08:07 (T36)	17:04	41	16:12 (T35)
18	06:13		19:19 (T30)	06:43		19:00 (T30)	07:14			07:46	07:22		07:45 (T36)	07:52		15:31 (T35)
	21:02	47	20:37 (T27)	20:29	55	19:55 (T30)	19:37			18:47	17:11	21	08:06 (T36)	17:04	41	16:12 (T35)
19	06:14		19:18 (T30)	06:44		19:01 (T30)	07:15			07:47	07:24		07:46 (T36)	07:52		15:32 (T35)
	21:02	49	20:37 (T27)	20:27	53	19:54 (T30)	19:35			18:46	17:10	20	08:06 (T36)	17:04	40	16:12 (T35)
20	06:15		19:16 (T30)	06:45		07:36 (T31)	07:16			07:48	07:25		07:48 (T36)	07:53		15:32 (T35)
	21:01	49	20:35 (T27)	20:26	61	19:53 (T30)	19:33			18:44	17:09	18	08:06 (T36)	17:05	40	16:12 (T35)
21	06:16		19:15 (T30)	06:46		07:32 (T31)	07:17			07:49	07:26		07:49 (T36)	07:53		15:33 (T35)
	21:00	50	20:35 (T27)	20:24	68	19:53 (T30)	19:32			18:43	17:08	16	08:05 (T36)	17:05	40	16:13 (T35)
22	06:17		19:14 (T30)	06:47		07:30 (T31)	07:18			07:50	07:27		07:50 (T36)	07:54		15:33 (T35)
	20:59	51	20:34 (T27)	20:23	70	19:52 (T30)	19:30			18:41	17:08	15	08:05 (T36)	17:06	40	16:13 (T35)
23	06:18		19:13 (T30)	06:48		07:28 (T31)	07:19			07:51	07:28		07:51 (T36)	07:54		15:34 (T35)
	20:59	51	20:34 (T27)	20:21	73	19:51 (T30)	19:28			18:40	17:07	13	08:04 (T36)	17:06	40	16:14 (T35)
24	06:19		19:12 (T30)	06:49		07:26 (T31)	07:20			07:53	07:29		07:53 (T36)	07:55		15:34 (T35)
	20:58	50	20:33 (T27)	20:20	74	19:50 (T30)	19:27			18:39	17:07	21	15:48 (T35)	17:07	40	16:14 (T35)
25	06:20		19:12 (T30)	06:50		07:25 (T31)	07:21			07:54	07:31		07:54 (T36)	07:55		15:34 (T35)
	20:57	48	20:32 (T27)	20:18	73	19:48 (T30)	19:25			18:37	17:06	25	15:51 (T35)	17:08	41	16:15 (T35)
26	06:20		19:11 (T30)	06:51		07:24 (T31)	07:22			07:55	07:32		07:55 (T36)	07:56		15:35 (T35)
	20:56	41	19:52 (T30)	20:17	73	19:47 (T30)	19:23			18:36	17:05	26	15:53 (T35)	17:08	41	16:16 (T35)
27	06:21		19:09 (T30)	06:52		07:23 (T31)	07:23			07:56	07:33		07:56 (T36)	07:56		15:35 (T35)
	20:55	43	19:52 (T30)	20:15	71	19:45 (T30)	19:21			18:34	17:05	25	15:54 (T35)	17:09	41	16:16 (T35)
28	06:22		19:08 (T30)	06:53		07:22 (T31)	07:24			07:57	07:34		15:31 (T35)	07:56		15:36 (T35)
	20:54	45	19:53 (T30)	20:14	70	19:44 (T30)	19:20			18:33	17:05	25	15:56 (T35)	17:09	40	16:16 (T35)
29	06:23		19:08 (T30)	06:54		07:21 (T31)	07:25			07:58	07:35		15:30 (T35)	07:57		15:37 (T35)
	20:53	46	19:54 (T30)	20:12	67	19:41 (T30)	19:18			18:32	17:04	27	15:57 (T35)	17:10	40	16:17 (T35)
30	06:24		19:07 (T30)	06:55		07:21 (T31)	07:26			08:00	07:36		15:29 (T35)	07:57		15:37 (T35)
	20:52	47	19:54 (T30)	20:10	63	19:39 (T30)	19:16			18:30	17:04	29	15:58 (T35)	17:11	40	16:17 (T35)
31	06:25		19:06 (T30)	06:56		07:20 (T31)				08:01				07:57		15:38 (T35)
	20:51	49	19:55 (T30)	20:09	58	19:36 (T30)				18:29				17:12	39	16:17 (T35)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		1245			1854			331				683			1191	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.56			0.59			0.65				0.58			0.75	
Total reduction		0.38			0.37			0.39				0.18			0.17	
Total, real		469			681			129				121			200	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 501 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6593)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:57	07:43		07:07		07:27 (T31)	07:16			06:30		07:09 (T28)	06:01
	17:13	17:47		18:22	82	17:50 (T30)	19:56			20:27	48	07:57 (T28)	20:57
2	07:57	07:43		07:06		07:25 (T31)	07:14			06:29		07:10 (T28)	06:01
	17:14	17:49		18:23	84	17:49 (T30)	19:57			20:28	47	07:57 (T28)	20:58
3	07:58	07:41		07:04		07:24 (T31)	07:13			06:28		07:10 (T28)	06:00
	17:15	17:50		18:24	85	17:49 (T30)	19:58			20:29	45	07:55 (T28)	20:58
4	07:58	07:40		07:02		07:24 (T31)	07:11			06:26		07:10 (T28)	06:00
	17:15	17:51		18:25	85	17:49 (T30)	19:59			20:30	45	07:55 (T28)	20:59
5	07:58	07:39		07:01		07:24 (T31)	07:09	19:28 (T27)		06:25		07:11 (T28)	06:00
	17:16	17:52		18:26	83	17:48 (T30)	20:00	19:38 (T27)	10	20:31	43	07:54 (T28)	21:00
6	07:58	07:38		06:59		07:24 (T31)	07:08	19:25 (T27)		06:24		07:12 (T28)	05:59
	17:17	17:54		18:27	83	17:48 (T30)	20:00	19:40 (T27)	15	20:32	41	07:53 (T28)	21:01
7	07:57	07:37		06:58		07:24 (T31)	07:06	07:33 (T28)		06:23		07:13 (T28)	05:59
	17:18	17:55		18:29	81	17:47 (T30)	20:01	19:40 (T27)	30	20:33	40	07:53 (T28)	21:01
8	07:57	07:36		07:56		08:24 (T31)	07:05	07:29 (T28)		06:21		07:13 (T28)	05:59
	17:19	17:56		19:30	78	18:46 (T30)	20:02	19:42 (T27)	42	20:34	38	07:51 (T28)	21:02
9	07:57	07:35		07:54		08:25 (T31)	07:03	07:25 (T28)		06:20		07:14 (T28)	05:59
	17:20	17:57		19:31	75	18:45 (T30)	20:03	19:43 (T27)	51	20:35	36	07:50 (T28)	21:02
10	07:57	07:34		07:53		08:25 (T31)	07:01	07:22 (T28)		06:19		07:15 (T28)	05:58
	17:21	17:59		19:32	72	18:44 (T30)	20:05	19:43 (T27)	57	20:37	33	07:48 (T28)	21:03
11	07:57	07:32		07:51		08:26 (T31)	07:00	07:21 (T28)		06:18		07:16 (T28)	05:58
	17:22	18:00		19:33	67	18:42 (T30)	20:06	19:45 (T27)	63	20:38	31	07:47 (T28)	21:04
12	07:56	07:31		07:50		08:28 (T31)	06:58	07:19 (T28)		06:17		07:18 (T28)	05:58
	17:23	18:01		19:34	61	18:41 (T30)	20:07	19:46 (T27)	67	20:39	28	07:46 (T28)	21:04
13	07:56	07:30		07:48		08:29 (T31)	06:56	07:18 (T28)		06:16		07:19 (T28)	05:58
	17:25	18:02		19:35	55	18:39 (T30)	20:08	19:47 (T27)	71	20:40	25	07:44 (T28)	21:05
14	07:56	07:29	17:19 (T30)	07:46		08:30 (T31)	06:55	07:16 (T28)		06:15		07:21 (T28)	05:58
	17:26	18:04	15 17:34 (T30)	19:36	48	18:37 (T30)	20:09	19:48 (T27)	75	20:41	21	07:42 (T28)	21:05
15	07:55	07:27	17:15 (T30)	07:45		08:35 (T31)	06:53	07:14 (T28)		06:14		07:24 (T28)	05:58
	17:27	18:05	22 17:37 (T30)	19:38	34	18:35 (T30)	20:10	19:47 (T27)	78	20:42	15	07:39 (T28)	21:06
16	07:55	07:26	17:13 (T30)	07:43		18:12 (T30)	06:52	07:14 (T28)		06:13		07:28 (T28)	05:58
	17:28	18:06	27 17:40 (T30)	19:39	20	18:32 (T30)	20:11	19:48 (T27)	80	20:43	7	07:35 (T28)	21:06
17	07:55	07:25	17:10 (T30)	07:41		18:16 (T30)	06:50	07:12 (T28)		06:12			05:58
	17:29	18:07	31 17:41 (T30)	19:40	11	18:27 (T30)	20:12	19:47 (T27)	82	20:44			21:06
18	07:54	07:23	17:09 (T30)	07:40			06:49	07:12 (T28)		06:11			05:58
	17:30	18:09	34 17:43 (T30)	19:41			20:13	81 19:47 (T27)		20:45			21:07
19	07:53	07:22	17:08 (T30)	07:38			06:47	07:11 (T28)		06:10			05:58
	17:31	18:10	37 17:45 (T30)	19:42			20:14	81 19:46 (T27)		20:46			21:07
20	07:53	07:21	17:06 (T30)	07:36			06:46	07:11 (T28)		06:09			05:58
	17:33	18:11	39 17:45 (T30)	19:43			20:15	82 19:46 (T27)		20:46			21:07
21	07:52	07:19	07:39 (T31)	07:35			06:44	07:10 (T28)		06:08			05:59
	17:34	18:12	54 17:47 (T30)	19:44			20:16	80 19:44 (T27)		20:47			21:08
22	07:52	07:18	07:37 (T31)	07:33			06:43	07:10 (T28)		06:08			05:59
	17:35	18:13	59 17:47 (T30)	19:45			20:17	79 19:44 (T27)		20:48			21:08
23	07:51	07:16	07:36 (T31)	07:31			06:41	07:10 (T28)		06:07			05:59
	17:36	18:15	63 17:48 (T30)	19:46			20:18	78 19:43 (T27)		20:49			21:08
24	07:50	07:15	07:34 (T31)	07:30			06:40	07:09 (T28)		06:06			05:59
	17:37	18:16	68 17:48 (T30)	19:47			20:20	75 19:41 (T27)		20:50			21:08
25	07:50	07:13	07:33 (T31)	07:28			06:38	07:09 (T28)		06:05			06:00
	17:39	18:17	72 17:49 (T30)	19:48			20:21	73 19:40 (T27)		20:51			21:08
26	07:49	07:12	07:31 (T31)	07:26			06:37	07:08 (T28)		06:05			06:00
	17:40	18:18	75 17:49 (T30)	19:50			20:22	69 19:37 (T27)		20:52			21:09
27	07:48	07:10	07:30 (T31)	07:24			06:36	07:09 (T28)		06:04			06:00
	17:41	18:19	79 17:50 (T30)	19:51			20:23	63 19:35 (T27)		20:53			21:09
28	07:47	07:09	07:28 (T31)	07:23			06:34	07:09 (T28)		06:03			06:01
	17:42	18:20	80 17:49 (T30)	19:52			20:24	53 19:30 (T27)		20:54			21:09
29	07:46			07:21			06:33	07:08 (T28)		06:03			06:01
	17:44			19:53			20:25	50 07:58 (T28)		20:55			21:09
30	07:45			07:19			06:31	07:09 (T28)		06:02			06:01
	17:45			19:54			20:26	49 07:58 (T28)		20:55			21:09
31	07:44			07:18						06:02			
	17:46			19:55						20:56			
Potential sun hours	297	297		370		399		449		453	
Total, worst case		755		1104		1634		543			
Sun reduction		0.40		0.44		0.52		0.57			
Oper. time red.		1.00		1.00		1.00		1.00			
Wind dir. red.		0.67		0.65		0.63		0.66			
Total reduction		0.27		0.28		0.33		0.38			
Total, real		201		314		540		204			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 501 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6593)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		06:26		07:28 (T28)	06:57		07:20 (T28)	07:27		08:07 (T31)	07:02	07:37
	21:09		20:50	29	07:57 (T28)	20:07	63	19:44 (T27)	19:15	59	18:19 (T30)	17:28	17:04
2	06:02		06:27		07:26 (T28)	06:58		07:21 (T28)	07:29		08:05 (T31)	07:03	07:38
	21:08		20:49	32	07:58 (T28)	20:06	57	19:42 (T27)	19:13	65	18:20 (T30)	17:27	17:03
3	06:03		06:28		07:25 (T28)	06:59		07:23 (T28)	07:30		08:03 (T31)	07:04	07:39
	21:08		20:48	34	07:59 (T28)	20:04	51	19:41 (T27)	19:11	70	18:21 (T30)	17:25	17:03
4	06:03		06:29		07:24 (T28)	07:00		07:26 (T28)	07:31		08:02 (T31)	07:06	07:40
	21:08		20:47	37	08:01 (T28)	20:02	42	19:39 (T27)	19:10	74	18:22 (T30)	17:24	17:03
5	06:04		06:30		07:23 (T28)	07:01		07:29 (T28)	07:32		08:02 (T31)	07:07	07:41
	21:08		20:46	39	08:02 (T28)	20:01	33	19:38 (T27)	19:08	77	18:23 (T30)	17:23	17:03
6	06:05		06:31		07:22 (T28)	07:02		19:21 (T27)	07:33		08:01 (T31)	07:08	07:42
	21:08		20:45	41	08:03 (T28)	19:57	15	19:36 (T27)	19:06	79	18:23 (T30)	17:22	17:03
7	06:05		06:32		07:21 (T28)	07:03		19:24 (T27)	07:34		08:00 (T31)	07:09	07:43
	21:07		20:43	42	08:03 (T28)	19:56	10	19:34 (T27)	19:05	81	18:23 (T30)	17:21	17:02
8	06:06		06:33		07:21 (T28)	07:04			07:35		08:00 (T31)	07:10	07:44
	21:07		20:42	43	08:04 (T28)	19:54			19:03	82	18:23 (T30)	17:20	17:02
9	06:07		06:34		07:20 (T28)	07:05			07:36		07:59 (T31)	07:12	07:45
	21:07		20:41	45	08:05 (T28)	19:52			19:01	84	18:23 (T30)	17:19	17:02
10	06:07		06:35		07:19 (T28)	07:06			07:37		07:59 (T31)	07:13	07:46
	21:06		20:40	46	08:05 (T28)	19:51			19:00	83	18:23 (T30)	17:18	17:02
11	06:08		06:36		07:19 (T28)	07:07			07:38		07:58 (T31)	07:14	07:47
	21:06		20:38	47	08:06 (T28)	19:49			18:58	85	18:23 (T30)	17:17	17:02
12	06:09		06:37		07:18 (T28)	07:08			07:39		07:59 (T31)	07:15	07:47
	21:06		20:37	48	08:06 (T28)	19:47			18:57	83	18:23 (T30)	17:16	17:03
13	06:09		06:38		07:17 (T28)	07:09			07:40		08:00 (T31)	07:16	07:48
	21:05		20:36	49	08:06 (T28)	19:45			18:55	82	18:22 (T30)	17:15	17:03
14	06:10		06:39		07:16 (T28)	07:10			07:41		08:02 (T31)	07:18	07:49
	21:05		20:34	50	08:06 (T28)	19:44			18:53	80	18:23 (T30)	17:14	17:03
15	06:11		06:40		07:16 (T28)	07:11			07:42		08:03 (T31)	07:19	07:50
	21:04		20:33	57	19:39 (T27)	19:42			18:52	77	18:22 (T30)	17:13	17:03
16	06:12		06:41		07:15 (T28)	07:12			07:44		08:04 (T31)	07:20	07:50
	21:04		20:32	65	19:42 (T27)	19:40			18:50	73	18:21 (T30)	17:12	17:03
17	06:13		06:42		07:15 (T28)	07:13			07:45		08:05 (T31)	07:21	07:51
	21:03		20:30	69	19:44 (T27)	19:39			18:49	70	18:20 (T30)	17:11	17:04
18	06:13		06:43		07:15 (T28)	07:14			07:46		08:06 (T31)	07:22	07:52
	21:02		20:29	73	19:46 (T27)	19:37			18:47	66	18:19 (T30)	17:11	17:04
19	06:14		06:44		07:15 (T28)	07:15			07:47		08:07 (T31)	07:24	07:52
	21:02		20:27	76	19:47 (T27)	19:35			18:46	62	18:18 (T30)	17:10	17:04
20	06:15		06:45		07:14 (T28)	07:16			07:48		08:09 (T31)	07:25	07:53
	21:01		20:26	79	19:48 (T27)	19:33			18:44	57	18:18 (T30)	17:09	17:05
21	06:16		06:46		07:14 (T28)	07:17			07:49		08:10 (T31)	07:26	07:53
	21:00		20:24	80	19:49 (T27)	19:32			18:43	51	18:17 (T30)	17:08	17:05
22	06:17		06:47		07:14 (T28)	07:18			07:50		17:37 (T30)	07:27	07:54
	20:59		20:23	81	19:49 (T27)	19:30			18:41	39	18:16 (T30)	17:08	17:06
23	06:18		06:48		07:14 (T28)	07:19			07:51		17:38 (T30)	07:28	07:54
	20:59		20:21	81	19:49 (T27)	19:28			18:40	36	18:14 (T30)	17:07	17:06
24	06:19		06:49		07:15 (T28)	07:20			07:53		17:39 (T30)	07:29	07:55
	20:58		20:20	82	19:50 (T27)	19:27			18:39	33	18:12 (T30)	17:07	17:07
25	06:20		06:50		07:15 (T28)	07:21			07:54		17:41 (T30)	07:31	07:55
	20:57		20:18	81	19:50 (T27)	19:25			18:37	30	18:11 (T30)	17:06	17:07
26	06:20		06:51		07:15 (T28)	07:22		18:02 (T30)	07:55		17:43 (T30)	07:32	07:56
	20:56		20:17	81	19:50 (T27)	19:23	4	18:06 (T30)	18:36	26	18:09 (T30)	17:05	17:08
27	06:21		06:52		07:16 (T28)	07:23		17:55 (T30)	07:56		17:45 (T30)	07:33	07:56
	20:55		20:15	79	19:50 (T27)	19:21	17	18:12 (T30)	18:34	21	18:06 (T30)	17:05	17:09
28	06:22	07:36 (T28)	06:53		07:16 (T28)	07:24		08:18 (T31)	07:57		17:49 (T30)	07:34	07:56
	20:54	12 07:48 (T28)	20:14	77	19:49 (T27)	19:20	28	18:15 (T30)	18:33	13	18:02 (T30)	17:05	17:09
29	06:23	07:33 (T28)	06:54		07:17 (T28)	07:25		08:12 (T31)	07:58			07:35	07:57
	20:53	18 07:51 (T28)	20:12	75	19:49 (T27)	19:18	44	18:17 (T30)	18:32			17:04	17:10
30	06:24	07:31 (T28)	06:55		07:18 (T28)	07:26		08:09 (T31)	08:00			07:36	07:57
	20:52	22 07:53 (T28)	20:10	71	19:47 (T27)	19:16	52	18:18 (T30)	18:30			17:04	17:11
31	06:25	07:29 (T28)	06:56		07:19 (T28)				08:01				07:57
	20:51	26 07:55 (T28)	20:09	66	19:45 (T27)				18:29				17:12
Potential sun hours	460		429			375			345			297	287
Total, worst case		78		1855			416			1738			
Sun reduction		0.66		0.61			0.59			0.48			
Oper. time red.		1.00		1.00			1.00			1.00			
Wind dir. red.		0.66		0.64			0.64			0.65			
Total reduction		0.44		0.39			0.38			0.31			
Total, real		34		728			156			545			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 510 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6600)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		16:01 (T79)	07:07		15:57 (T79)	07:16			06:30			06:02		19:38 (T60)
	17:13			17:48	61	17:02 (T79)	18:22	115	17:52 (T62)	19:56			20:27			20:56	46	20:24 (T60)
2	07:57			07:42		16:01 (T79)	07:05		15:59 (T79)	07:14			06:29			06:01		19:38 (T60)
	17:14			17:49	62	17:03 (T79)	18:23	114	17:53 (T62)	19:57			20:28			20:57	47	20:25 (T60)
3	07:57			07:41		16:00 (T79)	07:04		15:59 (T79)	07:13			06:28			06:01		19:38 (T60)
	17:15			17:50	64	17:04 (T79)	18:24	114	17:53 (T62)	19:58			20:29			20:58	47	20:25 (T60)
4	07:57			07:40		15:59 (T79)	07:02		16:00 (T79)	07:11			06:26			06:00		19:38 (T60)
	17:16			17:51	66	17:05 (T79)	18:25	113	17:53 (T62)	19:59			20:30			20:59	47	20:25 (T60)
5	07:57			07:39		15:59 (T79)	07:01		16:01 (T79)	07:09			06:25			06:00		19:39 (T60)
	17:17			17:53	67	17:06 (T79)	18:26	111	17:53 (T62)	20:00			20:31			20:59	47	20:26 (T60)
6	07:57			07:38		15:58 (T79)	06:59		16:01 (T79)	07:08			06:24			06:00		19:38 (T60)
	17:18			17:54	69	17:07 (T79)	18:27	109	17:52 (T62)	20:00			20:32			21:00	47	20:25 (T60)
7	07:57			07:37		15:58 (T79)	06:58		16:03 (T79)	07:06			06:23			05:59		19:38 (T60)
	17:19			17:55	70	17:08 (T79)	18:29	105	17:52 (T62)	20:01			20:33			21:01	48	20:26 (T60)
8	07:57			07:36		15:58 (T79)	07:56		17:04 (T79)	07:05			06:22			05:59		19:39 (T60)
	17:20			17:56	71	17:09 (T79)	19:30	102	18:51 (T62)	20:02			20:34			21:01	47	20:26 (T60)
9	07:57			07:35		15:56 (T79)	07:54		17:06 (T79)	07:03			06:20			05:59		19:39 (T60)
	17:21			17:58	73	17:09 (T79)	19:31	98	18:51 (T62)	20:03			20:35			21:02	48	20:27 (T60)
10	07:56			07:33		15:56 (T79)	07:53		17:07 (T79)	07:01			06:19		19:55 (T60)	05:59		19:39 (T60)
	17:22			17:59	74	17:10 (T79)	19:32	94	18:50 (T62)	20:04			20:36	9	20:04 (T60)	21:03	48	20:27 (T60)
11	07:56			07:32		15:56 (T79)	07:51		17:09 (T79)	07:00			06:18		19:51 (T60)	05:59		19:40 (T60)
	17:23			18:00	74	17:10 (T79)	19:33	89	18:49 (T62)	20:05			20:37	17	20:08 (T60)	21:03	47	20:27 (T60)
12	07:56			07:31		15:56 (T79)	07:49		17:11 (T79)	06:58			06:17		19:49 (T60)	05:58		19:40 (T60)
	17:24			18:01	75	17:11 (T79)	19:34	85	18:49 (T62)	20:06			20:38	21	20:10 (T60)	21:04	47	20:27 (T60)
13	07:56			07:30		15:55 (T79)	07:48		17:13 (T79)	06:57			06:16		19:47 (T60)	05:58		19:40 (T60)
	17:25			18:02	76	17:11 (T79)	19:35	77	18:47 (T62)	20:07			20:39	25	20:12 (T60)	21:04	48	20:28 (T60)
14	07:55			07:28		15:55 (T79)	07:46		17:15 (T79)	06:55			06:15		19:45 (T60)	05:58		19:40 (T60)
	17:26			18:04	77	17:12 (T79)	19:36	71	18:46 (T62)	20:09			20:40	29	20:14 (T60)	21:05	47	20:27 (T60)
15	07:55			07:27		15:55 (T79)	07:44		17:19 (T79)	06:53			06:14		19:45 (T60)	05:58		19:41 (T60)
	17:27			18:05	77	17:12 (T79)	19:37	61	18:45 (T62)	20:10			20:41	31	20:16 (T60)	21:05	47	20:28 (T60)
16	07:54			07:26		15:54 (T79)	07:43		17:24 (T79)	06:52			06:13		19:44 (T60)	05:58		19:41 (T60)
	17:28			18:06	78	17:12 (T79)	19:39	48	18:43 (T62)	20:11			20:42	33	20:17 (T60)	21:05	47	20:28 (T60)
17	07:54			07:24		15:55 (T79)	07:41		18:13 (T62)	06:50			06:12		19:43 (T60)	05:58		19:41 (T60)
	17:29			18:07	77	17:12 (T79)	19:40	27	18:40 (T62)	20:12			20:43	35	20:18 (T60)	21:06	47	20:28 (T60)
18	07:54			07:23		15:55 (T79)	07:39		18:16 (T62)	06:49			06:11		19:42 (T60)	05:58		19:41 (T60)
	17:30			18:09	86	17:36 (T62)	19:41	22	18:38 (T62)	20:13			20:44	36	20:18 (T60)	21:06	48	20:29 (T60)
19	07:53		16:23 (T79)	07:22		15:54 (T79)	07:38		18:19 (T62)	06:47			06:10		19:41 (T60)	05:59		19:41 (T60)
	17:32	12	16:35 (T79)	18:10	96	17:40 (T62)	19:42	15	18:34 (T62)	20:14			20:45	38	20:19 (T60)	21:07	48	20:29 (T60)
20	07:52		16:19 (T79)	07:20		15:55 (T79)	07:36			06:46			06:09		19:40 (T60)	05:59		19:41 (T60)
	17:33	21	16:40 (T79)	18:11	100	17:43 (T62)	19:43			20:15			20:46	39	20:19 (T60)	21:07	48	20:29 (T60)
21	07:52		16:16 (T79)	07:19		15:54 (T79)	07:34			06:44			06:09		19:40 (T60)	05:59		19:41 (T60)
	17:34	27	16:43 (T79)	18:12	106	17:45 (T62)	19:44			20:16			20:47	41	20:21 (T60)	21:07	48	20:29 (T60)
22	07:51		16:14 (T79)	07:17		15:55 (T79)	07:33			06:43			06:08		19:40 (T60)	05:59		19:41 (T60)
	17:35	31	16:45 (T79)	18:13	109	17:47 (T62)	19:45			20:17			20:48	41	20:21 (T60)	21:07	48	20:29 (T60)
23	07:51		16:12 (T79)	07:16		15:55 (T79)	07:31			06:41			06:07		19:39 (T60)	05:59		19:42 (T60)
	17:36	35	16:47 (T79)	18:15	111	17:48 (T62)	19:46			20:18			20:49	42	20:21 (T60)	21:08	48	20:30 (T60)
24	07:50		16:11 (T79)	07:14		15:55 (T79)	07:29			06:40			06:06		19:38 (T60)	06:00		19:42 (T60)
	17:38	39	16:50 (T79)	18:16	114	17:49 (T62)	19:47			20:19			20:50	43	20:21 (T60)	21:08	48	20:30 (T60)
25	07:49		16:09 (T79)	07:13		15:55 (T79)	07:28			06:38			06:06		19:39 (T60)	06:00		19:42 (T60)
	17:39	43	16:52 (T79)	18:17	115	17:50 (T62)	19:48			20:20			20:51	44	20:23 (T60)	21:08	47	20:29 (T60)
26	07:48		16:08 (T79)	07:11		15:56 (T79)	07:26			06:37			06:05		19:38 (T60)	06:00		19:43 (T60)
	17:40	46	16:54 (T79)	18:18	115	17:51 (T62)	19:49			20:21			20:51	45	20:23 (T60)	21:08	47	20:30 (T60)
27	07:48		16:07 (T79)	07:10		15:56 (T79)	07:24			06:36			06:04		19:39 (T60)	06:01		19:43 (T60)
	17:41	48	16:55 (T79)	18:19	115	17:51 (T62)	19:50			20:22			20:52	44	20:23 (T60)	21:08	47	20:30 (T60)
28	07:47		16:05 (T79)	07:08		15:57 (T79)	07:23			06:34			06:04		19:38 (T60)	06:01		19:43 (T60)
	17:43	52	16:57 (T79)	18:20	115	17:52 (T62)	19:51			20:23			20:53	45	20:23 (T60)	21:08	47	20:30 (T60)
29	07:46		16:04 (T79)				07:21			06:33			06:03		19:38 (T60)	06:01		19:43 (T60)
	17:44	54	16:58 (T79)				19:53			20:25			20:54	46	20:24 (T60)	21:08	48	20:31 (T60)
30	07:45		16:03 (T79)				07:19			06:32			06:03		19:38 (T60)	06:02		19:43 (T60)
	17:45	56	16:59 (T79)				19:54			20:26			20:55	46	20:24 (T60)	21:08	48	20:31 (T60)
31	07:44		16:02 (T79)				07:18						06:02		19:38 (T60)			
	17:46	59	17:01 (T79)				19:55						20:56	47	20:25 (T60)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case		523			2393			1570						797			1422	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.73			0.72			0.71						0.55			0.55	
Total reduction		0.23			0.29			0.32						0.32			0.36	
Total, real		120			706			501						256			514	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 510 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6600)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December
1	06:02	19:44 (T60)	06:26	20:00 (T60)	06:57		07:27	16:51 (T79)	07:02	15:26 (T79)	07:37
	21:08	47 20:31 (T60)	20:50	20 20:20 (T60)	20:07		19:15	81 18:27 (T62)	17:28	73 16:39 (T79)	17:04
2	06:03	19:44 (T60)	06:27	20:03 (T60)	06:58		07:28	16:48 (T79)	07:03	15:26 (T79)	07:38
	21:08	47 20:31 (T60)	20:49	14 20:17 (T60)	20:05		19:13	87 18:27 (T62)	17:27	73 16:39 (T79)	17:04
3	06:03	19:44 (T60)	06:28	20:09 (T60)	06:59		07:29	16:46 (T79)	07:04	15:26 (T79)	07:39
	21:08	48 20:32 (T60)	20:48	3 20:12 (T60)	20:04		19:11	92 18:28 (T62)	17:26	72 16:38 (T79)	17:03
4	06:04	19:44 (T60)	06:29		07:00		07:30	16:43 (T79)	07:05	15:28 (T79)	07:40
	21:08	47 20:31 (T60)	20:46		20:02		19:10	97 18:28 (T62)	17:24	70 16:38 (T79)	17:03
5	06:04	19:45 (T60)	06:30		07:01		07:32	16:41 (T79)	07:06	15:28 (T79)	07:41
	21:07	47 20:32 (T60)	20:45		20:00		19:08	101 18:28 (T62)	17:23	69 16:37 (T79)	17:03
6	06:05	19:44 (T60)	06:31		07:02		07:33	16:40 (T79)	07:08	15:29 (T79)	07:42
	21:07	48 20:32 (T60)	20:44		19:57		19:06	104 18:28 (T62)	17:22	67 16:36 (T79)	17:03
7	06:06	19:45 (T60)	06:32		07:03		07:34	16:38 (T79)	07:09	15:30 (T79)	07:43
	21:07	47 20:32 (T60)	20:43		19:55		19:05	107 18:28 (T62)	17:21	66 16:36 (T79)	17:03
8	06:06	19:45 (T60)	06:33		07:04		07:35	16:37 (T79)	07:10	15:31 (T79)	07:43
	21:07	48 20:33 (T60)	20:42		19:54		19:03	110 18:28 (T62)	17:20	64 16:35 (T79)	17:03
9	06:07	19:45 (T60)	06:34		07:05		07:36	16:36 (T79)	07:11	15:32 (T79)	07:44
	21:06	47 20:32 (T60)	20:40		19:52		19:01	111 18:28 (T62)	17:19	62 16:34 (T79)	17:03
10	06:08	19:45 (T60)	06:35		07:06		07:37	16:34 (T79)	07:12	15:32 (T79)	07:45
	21:06	47 20:32 (T60)	20:39		19:50		19:00	113 18:27 (T62)	17:18	61 16:33 (T79)	17:03
11	06:08	19:46 (T60)	06:36		07:07		07:38	16:33 (T79)	07:14	15:34 (T79)	07:46
	21:06	47 20:33 (T60)	20:38		19:49		18:58	114 18:27 (T62)	17:17	58 16:32 (T79)	17:03
12	06:09	19:46 (T60)	06:37		07:08		07:39	16:32 (T79)	07:15	15:35 (T79)	07:47
	21:05	46 20:32 (T60)	20:37		19:47		18:57	114 18:26 (T62)	17:16	56 16:31 (T79)	17:03
13	06:10	19:46 (T60)	06:38		07:09		07:40	16:30 (T79)	07:16	15:36 (T79)	07:48
	21:05	46 20:32 (T60)	20:35		19:45		18:55	115 18:25 (T62)	17:15	54 16:30 (T79)	17:03
14	06:11	19:47 (T60)	06:39		07:10		07:41	16:29 (T79)	07:17	15:38 (T79)	07:48
	21:04	46 20:33 (T60)	20:34		19:44		18:53	115 18:24 (T62)	17:14	51 16:29 (T79)	17:03
15	06:11	19:47 (T60)	06:40		07:11		07:42	16:28 (T79)	07:18	15:40 (T79)	07:49
	21:04	46 20:33 (T60)	20:33		19:42		18:52	115 18:23 (T62)	17:13	48 16:28 (T79)	17:03
16	06:12	19:47 (T60)	06:41		07:12		07:43	16:28 (T79)	07:20	15:41 (T79)	07:50
	21:03	45 20:32 (T60)	20:31		19:40		18:50	115 18:23 (T62)	17:12	46 16:27 (T79)	17:04
17	06:13	19:47 (T60)	06:42		07:13		07:44	16:28 (T79)	07:21	15:42 (T79)	07:51
	21:02	45 20:32 (T60)	20:30		19:38		18:49	113 18:22 (T62)	17:12	43 16:25 (T79)	17:04
18	06:14	19:48 (T60)	06:43		07:14		07:46	16:27 (T79)	07:22	15:45 (T79)	07:51
	21:02	44 20:32 (T60)	20:28		19:37		18:47	112 18:20 (T62)	17:11	39 16:24 (T79)	17:04
19	06:15	19:48 (T60)	06:44		07:15		07:47	16:26 (T79)	07:23	15:47 (T79)	07:52
	21:01	44 20:32 (T60)	20:27		19:35		18:46	111 18:19 (T62)	17:10	35 16:22 (T79)	17:05
20	06:15	19:49 (T60)	06:45		07:16		07:48	16:25 (T79)	07:24	15:49 (T79)	07:52
	21:00	43 20:32 (T60)	20:25		19:33		18:44	109 18:17 (T62)	17:09	31 16:20 (T79)	17:05
21	06:16	19:49 (T60)	06:46		07:17		07:49	16:25 (T79)	07:25	15:51 (T79)	07:53
	21:00	42 20:31 (T60)	20:24		19:32		18:43	104 18:15 (T62)	17:09	27 16:18 (T79)	17:06
22	06:17	19:49 (T60)	06:47		07:18		07:50	16:25 (T79)	07:27	15:55 (T79)	07:53
	20:59	41 20:30 (T60)	20:22		19:30		18:41	100 18:13 (T62)	17:08	21 16:16 (T79)	17:06
23	06:18	19:50 (T60)	06:48		07:19		07:51	16:25 (T79)	07:28	16:00 (T79)	07:54
	20:58	40 20:30 (T60)	20:21		19:28		18:40	94 18:10 (T62)	17:07	12 16:12 (T79)	17:07
24	06:19	19:51 (T60)	06:49		07:20	18:04 (T62)	07:52	16:25 (T79)	07:29		07:54
	20:57	39 20:30 (T60)	20:19		19:26	12 18:16 (T62)	18:39	77 17:42 (T79)	17:07		17:07
25	06:20	19:52 (T60)	06:50		07:21	18:00 (T62)	07:53	16:24 (T79)	07:30		07:55
	20:56	37 20:29 (T60)	20:18		19:25	20 18:20 (T62)	18:37	78 17:42 (T79)	17:06		17:08
26	06:21	19:53 (T60)	06:51		07:22	17:57 (T62)	07:55	16:24 (T79)	07:31		07:55
	20:56	36 20:29 (T60)	20:16		19:23	25 18:22 (T62)	18:36	77 17:41 (T79)	17:06		17:08
27	06:22	19:54 (T60)	06:52		07:23	17:08 (T79)	07:56	16:25 (T79)	07:32		07:56
	20:55	34 20:28 (T60)	20:15		19:21	42 18:24 (T62)	18:34	77 17:42 (T79)	17:05		17:09
28	06:23	19:55 (T60)	06:53		07:24	17:01 (T79)	07:57	16:25 (T79)	07:33		07:56
	20:54	32 20:27 (T60)	20:13		19:20	57 18:25 (T62)	18:33	76 17:41 (T79)	17:05		17:10
29	06:23	19:55 (T60)	06:54		07:25	16:57 (T79)	07:58	16:25 (T79)	07:34		07:56
	20:53	30 20:25 (T60)	20:12		19:18	67 18:26 (T62)	18:32	75 17:40 (T79)	17:04		17:11
30	06:24	19:56 (T60)	06:55		07:26	16:54 (T79)	07:59	16:25 (T79)	07:36		07:56
	20:52	28 20:24 (T60)	20:10		19:16	74 18:26 (T62)	18:31	75 17:40 (T79)	17:04		17:11
31	06:25	19:58 (T60)	06:56				08:00	16:26 (T79)			07:57
	20:51	24 20:22 (T60)	20:09				18:29	74 17:40 (T79)			17:12
Potential sun hours	459		428		375		345		298		288
Total, worst case		1308		37		297		3043		1198	
Sun reduction		0.66		0.61		0.59		0.48		0.30	
Oper. time red.		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.		0.55		0.55		0.70		0.71		0.73	
Total reduction		0.37		0.34		0.42		0.35		0.22	
Total, real		487		13		126		1068		267	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 518 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6605)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16	06:30		06:02		06:39 (T46)	06:02	06:43 (T46)	06:26	07:06 (T46)	06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27		20:57	68	07:47 (T46)	21:08 72	07:55 (T46)	20:50 33	07:39 (T46)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:15	06:29		06:01		06:39 (T46)	06:03	06:43 (T46)	06:27	07:08 (T46)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28		20:58	69	07:48 (T46)	21:08 72	07:55 (T46)	20:49 29	07:37 (T46)	20:06	19:13	17:27	17:04
3	07:57	07:41	07:04	07:13	06:28		06:01		06:39 (T46)	06:03	06:44 (T46)	06:28	07:11 (T46)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58	20:29		20:58	69	07:48 (T46)	21:08 72	07:56 (T46)	20:48 22	07:33 (T46)	20:04	19:11	17:26	17:03
4	07:57	07:40	07:03	07:11	06:26		06:00		06:39 (T46)	06:04	06:44 (T46)	06:29	07:16 (T46)	07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59	20:30		20:59	69	07:48 (T46)	21:08 71	07:55 (T46)	20:47 13	07:29 (T46)	20:02	19:10	17:24	17:03
5	07:57	07:39	07:01	07:10	06:25		06:00		06:39 (T46)	06:04	06:45 (T46)	06:30		07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00	20:31		21:00	70	07:49 (T46)	21:08 71	07:56 (T46)	20:46		20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08	06:24		06:00		06:39 (T46)	06:05	06:44 (T46)	06:31		07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00	20:32		21:00	71	07:50 (T46)	21:08 71	07:55 (T46)	20:44		19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06	06:23		05:59		06:39 (T46)	06:06	06:45 (T46)	06:32		07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:01	20:33		21:01	70	07:49 (T46)	21:07 70	07:55 (T46)	20:43		19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22		05:59		06:39 (T46)	06:06	06:46 (T46)	06:33		07:04	07:35	07:10	07:44
	17:20	17:56	19:30	20:02	20:34		21:02	71	07:50 (T46)	21:07 70	07:56 (T46)	20:42		19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03	06:20	07:04 (T46)	05:59		06:39 (T46)	06:07	06:46 (T46)	06:34		07:05	07:36	07:12	07:45
	17:21	17:58	19:31	20:04	20:35 17	07:21 (T46)	21:02	71	07:50 (T46)	21:07 69	07:55 (T46)	20:41		19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01	06:19	07:00 (T46)	05:59		06:39 (T46)	06:08	06:46 (T46)	06:35		07:06	07:37	07:13	07:46
	17:22	17:59	19:32	20:05	20:36 25	07:25 (T46)	21:03	72	07:51 (T46)	21:06 69	07:55 (T46)	20:40		19:51	19:00	17:18	17:03
11	07:57	07:32	07:51	07:00	06:18	06:58 (T46)	05:59		06:39 (T46)	06:08	06:47 (T46)	06:36		07:07	07:38	07:14	07:46
	17:23	18:00	19:33	20:06	20:37 30	07:28 (T46)	21:04	72	07:51 (T46)	21:06 69	07:56 (T46)	20:38		19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58	06:17	06:55 (T46)	05:58		06:40 (T46)	06:09	06:47 (T46)	06:37		07:08	07:39	07:15	07:47
	17:24	18:01	19:34	20:07	20:38 35	07:30 (T46)	21:04	72	07:52 (T46)	21:06 68	07:55 (T46)	20:37		19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57	06:16	06:53 (T46)	05:58		06:40 (T46)	06:10	06:48 (T46)	06:38		07:09	07:40	07:16	07:48
	17:25	18:03	19:35	20:08	20:40 39	07:32 (T46)	21:05	72	07:52 (T46)	21:05 67	07:55 (T46)	20:36		19:46	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55	06:15	06:52 (T46)	05:58		06:40 (T46)	06:11	06:48 (T46)	06:39		07:10	07:41	07:18	07:49
	17:26	18:04	19:37	20:09	20:41 42	07:34 (T46)	21:05	72	07:52 (T46)	21:05 67	07:55 (T46)	20:34		19:44	18:54	17:14	17:03
15	07:55	07:27	07:45	06:54	06:14	06:50 (T46)	05:58		06:40 (T46)	06:11	06:49 (T46)	06:40		07:11	07:43	07:19	07:50
	17:27	18:05	19:38	20:10	20:42 45	07:35 (T46)	21:05	72	07:52 (T46)	21:04 66	07:55 (T46)	20:33		19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	06:13	06:49 (T46)	05:58		06:40 (T46)	06:12	06:49 (T46)	06:41		07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11	20:43 47	07:36 (T46)	21:06	73	07:53 (T46)	21:03 65	07:54 (T46)	20:31		19:40	18:51	17:12	17:04
17	07:54	07:25	07:41	06:50	06:12	06:47 (T46)	05:58		06:40 (T46)	06:13	06:50 (T46)	06:42		07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12	20:43 50	07:37 (T46)	21:06	73	07:53 (T46)	21:03 64	07:54 (T46)	20:30		19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49	06:11	06:46 (T46)	05:58		06:40 (T46)	06:14	06:51 (T46)	06:43		07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13	20:44 52	07:38 (T46)	21:07	73	07:53 (T46)	21:02 63	07:54 (T46)	20:29		19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47	06:10	06:45 (T46)	05:59		06:40 (T46)	06:15	06:51 (T46)	06:44		07:15	07:47	07:24	07:52
	17:32	18:10	19:42	20:14	20:45 54	07:39 (T46)	21:07	73	07:53 (T46)	21:02 62	07:53 (T46)	20:27		19:35	18:46	17:10	17:05
20	07:53	07:21	07:36	06:46	06:10	06:44 (T46)	05:59		06:40 (T46)	06:15	06:52 (T46)	06:45		07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	20:46 56	07:40 (T46)	21:07	73	07:53 (T46)	21:01 61	07:53 (T46)	20:26		19:34	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	06:09	06:44 (T46)	05:59		06:40 (T46)	06:16	06:52 (T46)	06:46		07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	20:47 57	07:41 (T46)	21:08	73	07:53 (T46)	21:00 60	07:52 (T46)	20:24		19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43	06:08	06:43 (T46)	05:59		06:40 (T46)	06:17	06:53 (T46)	06:47		07:18	07:50	07:27	07:54
	17:35	18:14	19:45	20:17	20:48 59	07:42 (T46)	21:08	73	07:53 (T46)	20:59 58	07:51 (T46)	20:23		19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41	06:07	06:42 (T46)	05:59		06:41 (T46)	06:18	06:54 (T46)	06:48		07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18	20:49 60	07:42 (T46)	21:08	73	07:54 (T46)	20:59 57	07:51 (T46)	20:21		19:28	18:40	17:07	17:07
24	07:50	07:15	07:30	06:40	06:06	06:41 (T46)	06:00		06:41 (T46)	06:19	06:55 (T46)	06:49		07:20	07:53	07:29	07:55
	17:38	18:16	19:47	20:20	20:50 62	07:43 (T46)	21:08	73	07:54 (T46)	20:58 55	07:50 (T46)	20:20		19:27	18:39	17:07	17:07
25	07:49	07:13	07:28	06:39	06:06	06:41 (T46)	06:00		06:41 (T46)	06:20	06:56 (T46)	06:50		07:21	07:54	07:30	07:55
	17:39	18:17	19:49	20:21	20:51 63	07:44 (T46)	21:08	73	07:54 (T46)	20:57 53	07:49 (T46)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:05	06:41 (T46)	06:00		06:42 (T46)	06:21	06:57 (T46)	06:51		07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	20:52 63	07:44 (T46)	21:08	73	07:55 (T46)	20:56 51	07:48 (T46)	20:17		19:23	18:36	17:06	17:08
27	07:48	07:10	07:25	06:36	06:04	06:41 (T46)	06:01		06:42 (T46)	06:22	06:58 (T46)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	20:53 64	07:45 (T46)	21:08	73	07:55 (T46)	20:55 49	07:47 (T46)	20:15		19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:34	06:04	06:40 (T46)	06:01		06:42 (T46)	06:23	07:00 (T46)	06:53		07:24	07:57	07:34	07:56
	17:43	18:21	19:52	20:24	20:54 65	07:45 (T46)	21:09	72	07:54 (T46)	20:54 46	07:46 (T46)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:03	06:40 (T46)	06:01		06:43 (T46)	06:24	07:01 (T46)	06:54		07:25	07:58	07:35	07:57
	17:44		19:53	20:25	20:54 66	07:46 (T46)	21:09	72	07:55 (T46)	20:53 44	07:45 (T46)	20:12		19:18	18:32	17:04	17:11
30	07:45		07:20	06:32	06:03	06:40 (T46)	06:02		06:43 (T46)	06:24	07:02 (T46)	06:55		07:27	08:00	07:36	07:57
	17:45		19:54	20:26	20:55 66	07:46 (T46)	21:09	72	07:55 (T46)	20:52 41	07:43 (T46)	20:10		19:16	18:31	17:04	17:11
31	07:44		07:18		06:02	06:40 (T46)				06:25	07:04 (T46)	06:56			08:01		07:57
	17:46		19:55		20:56 67	07:47 (T46)				20:51 37	07:41 (T46)	20:09			18:29		17:12
Potential sun hours	297	297	370	399	448		453			460		429		375	345	297	287
Total, worst case					1184		2152			1910		97					
Sun reduction					0.57		0.64			0.66		0.61					
Oper. time red.					1.00		1.00			1.00		1.00					
Wind dir. red.					0.71		0.71			0.71		0.71					
Total reduction					0.40		0.45			0.47		0.43					
Total, real					478		975			892		42					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 569 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6649)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:58 (T36)	06:01		19:27 (T35)	06:02		19:37 (T35)	06:26		07:19 (T36)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	68	20:02 (T35)	20:57	38	20:05 (T35)	21:09	31	20:08 (T35)	20:50	58	20:18 (T35)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:14		06:29		06:59 (T36)	06:01		19:28 (T35)	06:02		19:37 (T35)	06:27		07:16 (T36)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	69	20:03 (T35)	20:58	38	20:06 (T35)	21:08	31	20:08 (T35)	20:49	63	20:18 (T35)	20:06	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:28		06:58 (T36)	06:00		19:28 (T35)	06:03		19:37 (T35)	06:28		07:15 (T36)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58		20:29	71	20:04 (T35)	20:58	37	20:05 (T35)	21:08	32	20:09 (T35)	20:48	65	20:17 (T35)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		06:59 (T36)	06:00		19:29 (T35)	06:04		19:36 (T35)	06:29		07:13 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	72	20:05 (T35)	20:59	36	20:05 (T35)	21:08	33	20:09 (T35)	20:47	69	20:17 (T35)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		07:00 (T36)	06:00		19:30 (T35)	06:04		19:37 (T35)	06:30		07:12 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	71	20:05 (T35)	21:00	35	20:05 (T35)	21:08	33	20:10 (T35)	20:46	70	20:17 (T35)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		07:01 (T36)	05:59		19:29 (T35)	06:05		19:36 (T35)	06:31		07:11 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	71	20:06 (T35)	21:01	35	20:04 (T35)	21:08	34	20:10 (T35)	20:44	71	20:16 (T35)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06		06:23		07:02 (T36)	05:59		19:30 (T35)	06:05		19:36 (T35)	06:32		07:10 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:33	71	20:07 (T35)	21:01	34	20:04 (T35)	21:07	35	20:11 (T35)	20:43	71	20:15 (T35)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:05		06:21		07:03 (T36)	05:59		19:31 (T35)	06:06		19:35 (T35)	06:33		07:09 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	69	20:07 (T35)	21:02	33	20:04 (T35)	21:07	36	20:11 (T35)	20:42	72	20:15 (T35)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		07:03 (T36)	05:59		19:32 (T35)	06:07		19:35 (T35)	06:34		07:08 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	67	20:07 (T35)	21:02	32	20:04 (T35)	21:07	37	20:12 (T35)	20:41	72	20:14 (T35)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		07:04 (T36)	05:58		19:31 (T35)	06:07		19:35 (T35)	06:35		07:08 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	66	20:07 (T35)	21:03	32	20:03 (T35)	21:06	38	20:13 (T35)	20:40	70	20:13 (T35)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		07:06 (T36)	05:58		19:32 (T35)	06:08		19:34 (T35)	06:36		07:07 (T36)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	62	20:07 (T35)	21:04	31	20:03 (T35)	21:06	39	20:13 (T35)	20:38	70	20:12 (T35)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58		06:17		07:09 (T36)	05:58		19:33 (T35)	06:09		19:34 (T35)	06:37		07:07 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:39	56	20:07 (T35)	21:04	30	20:03 (T35)	21:06	39	20:13 (T35)	20:37	68	20:11 (T35)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16		19:21 (T35)	05:58		19:33 (T35)	06:09		19:34 (T35)	06:38		07:06 (T36)	07:09	07:40	07:16	07:48
	17:25	18:02	19:35	20:08		20:40	46	20:07 (T35)	21:05	30	20:03 (T35)	21:05	40	20:14 (T35)	20:36	66	20:09 (T35)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		19:21 (T35)	05:58		19:34 (T35)	06:10		19:34 (T35)	06:39		07:05 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:41	47	20:08 (T35)	21:05	29	20:03 (T35)	21:05	41	20:15 (T35)	20:34	63	20:06 (T35)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53	07:12 (T36)	06:14		19:21 (T35)	05:58		19:34 (T35)	06:11		19:33 (T35)	06:40		07:05 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:38	20:10	13 07:25 (T36)	20:42	47	20:08 (T35)	21:06	29	20:03 (T35)	21:04	42	20:15 (T35)	20:33	59	20:04 (T35)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	07:11 (T36)	06:13		19:21 (T35)	05:58		19:35 (T35)	06:12		19:33 (T35)	06:41		07:05 (T36)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11	17 07:28 (T36)	20:43	46	20:07 (T35)	21:06	28	20:03 (T35)	21:04	42	20:15 (T35)	20:31	53	20:01 (T35)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	07:09 (T36)	06:12		19:22 (T35)	05:58		19:35 (T35)	06:13		19:33 (T35)	06:42		07:05 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12	20 07:29 (T36)	20:44	46	20:08 (T35)	21:06	28	20:03 (T35)	21:03	43	20:16 (T35)	20:30	44	19:56 (T35)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49	07:08 (T36)	06:11		19:22 (T35)	05:58		19:35 (T35)	06:13		19:33 (T35)	06:43		07:05 (T36)	07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13	23 07:31 (T36)	20:45	46	20:08 (T35)	21:07	28	20:03 (T35)	21:02	44	20:17 (T35)	20:29	35	07:40 (T36)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47	07:06 (T36)	06:10		19:22 (T35)	05:58		19:36 (T35)	06:14		19:33 (T35)	06:44		07:05 (T36)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14	26 07:32 (T36)	20:45	46	20:08 (T35)	21:07	28	20:04 (T35)	21:02	44	20:17 (T35)	20:27	35	07:40 (T36)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	07:05 (T36)	06:09		19:22 (T35)	05:58		19:37 (T35)	06:15		19:32 (T35)	06:45		07:06 (T36)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	28 07:33 (T36)	20:46	46	20:08 (T35)	21:07	27	20:04 (T35)	21:01	45	20:17 (T35)	20:26	33	07:39 (T36)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	07:03 (T36)	06:08		19:22 (T35)	05:59		19:37 (T35)	06:16		19:32 (T35)	06:46		07:07 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	30 07:33 (T36)	20:47	45	20:07 (T35)	21:08	27	20:04 (T35)	21:00	45	20:17 (T35)	20:24	32	07:39 (T36)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	07:02 (T36)	06:08		19:23 (T35)	05:59		19:37 (T35)	06:17		19:32 (T35)	06:47		07:08 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17	32 07:34 (T36)	20:48	45	20:08 (T35)	21:08	27	20:04 (T35)	20:59	46	20:18 (T35)	20:23	30	07:38 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	07:01 (T36)	06:07		19:23 (T35)	05:59		19:36 (T35)	06:18		19:32 (T35)	06:48		07:09 (T36)	07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18	34 07:35 (T36)	20:49	44	20:07 (T35)	21:08	28	20:04 (T35)	20:59	46	20:18 (T35)	20:21	28	07:37 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	06:59 (T36)	06:06		19:23 (T35)	05:59		19:37 (T35)	06:19		19:32 (T35)	06:49		07:10 (T36)	07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20	35 07:34 (T36)	20:50	44	20:07 (T35)	21:08	28	20:05 (T35)	20:58	46	20:18 (T35)	20:20	25	07:35 (T36)	19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	06:59 (T36)	06:05		19:24 (T35)	06:00		19:37 (T35)	06:20		19:32 (T35)	06:50		07:11 (T36)	07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21	36 07:35 (T36)	20:51	43	20:07 (T35)	21:08	28	20:05 (T35)	20:57	47	20:19 (T35)	20:18	23	07:34 (T36)	19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:58 (T36)	06:05		19:24 (T35)	06:00		19:37 (T35)	06:20		19:32 (T35)	06:51		07:12 (T36)	07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	47 19:51 (T35)	20:52	43	20:07 (T35)	21:08	28	20:05 (T35)	20:56	47	20:19 (T35)	20:17	20	07:32 (T36)	19:23	18:36	17:06	17:08
27	07:48	07:10	07:24	06:36	06:58 (T36)	06:04		19:24 (T35)	06:00		19:37 (T35)	06:21		19:31 (T35)	06:52		07:13 (T36)	07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	55 19:55 (T35)	20:53	42	20:06 (T35)	21:09	29	20:06 (T35)	20:55	47	20:18 (T35)	20:15	17	07:30 (T36)	19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	06:58 (T36)	06:03		19:25 (T35)	06:01		19:37 (T35)	06:22		19:31 (T35)	06:53		07:14 (T36)	07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24	60 19:58 (T35)	20:54	42	20:07 (T35)	21:09	29	20:06 (T35)	20:54	47	20:18 (T35)	20:14	12	07:26 (T36)	19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:57 (T36)	06:03		19:25 (T35)	06:01		19:38 (T35)	06:23		19:31 (T35)	06:54			07:25	07:58	07:35	07:57
	17:44		19:53	20:25	64 19:59 (T35)	20:55	41	20:06 (T35)	21:09	29	20:07 (T35)	20:53	47	20:18 (T35)	20:12			19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	06:58 (T36)	06:02		19:26 (T35)	06:01		19:37 (T35)	06:24		19:31 (T35)	06:55			07:26	08:00	07:36	07:57
	17:45		19:54	20:26	66 20:01 (T35)	20:55	40	20:06 (T35)	21:09	30	20:07 (T35)	20:52	47	20:18 (T35)	20:10			19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:26 (T35)				06:25		07:23 (T36)	06:56				08:01		07:57
	17:46		19:55			20:56	39	20:05 (T35)				20:51	51	20:18 (T35)	20:09				18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				586		1651		921		1275		1394					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.65		0.59		0.57		0.57		0.62					
Total reduction				0.34		0.33		0.36		0.37		0.38					
Total, real				198		552		334		477		532					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 570 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6650)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:58			07:44		16:35 (T37)	07:07	07:16			06:30			06:01		19:44 (T87)
	17:13			17:48	43	17:18 (T37)	18:22	19:56			20:27			20:57	45	20:29 (T87)
2	07:58			07:43		16:34 (T37)	07:06	07:15			06:29			06:01		19:44 (T87)
	17:14			17:49	44	17:18 (T37)	18:23	19:57			20:28			20:58	46	20:30 (T87)
3	07:58			07:42		16:34 (T37)	07:04	07:13			06:28			06:01		19:44 (T87)
	17:15			17:50	45	17:19 (T37)	18:24	19:58			20:29			20:59	46	20:30 (T87)
4	07:58			07:41		16:34 (T37)	07:03	07:11		19:30 (T34)	06:26			06:00		19:44 (T87)
	17:16			17:51	46	17:20 (T37)	18:25	19:59	7	19:37 (T34)	20:30			20:59	46	20:30 (T87)
5	07:58			07:40		16:34 (T37)	07:01	07:10		19:27 (T34)	06:25			06:00		19:44 (T87)
	17:17			17:53	46	17:20 (T37)	18:26	20:00	12	19:39 (T34)	20:31			21:00	47	20:31 (T87)
6	07:58			07:38		16:34 (T37)	07:00	07:08		19:24 (T34)	06:24			06:00		19:44 (T87)
	17:18			17:54	47	17:21 (T37)	18:28	20:00	16	19:40 (T34)	20:33			21:01	46	20:30 (T87)
7	07:58			07:37		16:33 (T37)	06:58	07:06		19:22 (T34)	06:23			05:59		19:44 (T87)
	17:19			17:55	47	17:20 (T37)	18:29	20:02	18	19:40 (T34)	20:34			21:01	47	20:31 (T87)
8	07:58			07:36		16:33 (T37)	07:56	07:05		19:21 (T34)	06:22			05:59		19:44 (T87)
	17:20			17:56	48	17:21 (T37)	19:30	20:03	21	19:42 (T34)	20:35			21:02	47	20:31 (T87)
9	07:57			07:35		16:33 (T37)	07:55	07:03		19:19 (T34)	06:20			05:59		19:45 (T87)
	17:21			17:58	48	17:21 (T37)	19:31	20:04	24	19:43 (T34)	20:36			21:03	47	20:32 (T87)
10	07:57			07:34		16:34 (T37)	07:53	07:02		19:19 (T34)	06:19			05:59		19:45 (T87)
	17:22			17:59	54	17:36 (T38)	19:32	20:05	25	19:44 (T34)	20:37			21:03	47	20:32 (T87)
11	07:57			07:33		16:34 (T37)	07:51	07:00		19:18 (T34)	06:18			05:58		19:45 (T87)
	17:23			18:00	58	17:37 (T38)	19:33	20:06	27	19:45 (T34)	20:38			21:04	48	20:33 (T87)
12	07:57			07:31		16:34 (T37)	07:50	06:58		19:17 (T34)	06:17			05:58		19:46 (T87)
	17:24			18:01	60	17:38 (T38)	19:34	20:07	29	19:46 (T34)	20:39			21:04	47	20:33 (T87)
13	07:56			07:30		16:34 (T37)	07:48	06:57		19:17 (T34)	06:16		20:04 (T87)	05:58		19:45 (T87)
	17:25			18:03	63	17:40 (T38)	19:36	20:08	30	19:47 (T34)	20:40	3	20:07 (T87)	21:05	47	20:32 (T87)
14	07:56			07:29		16:35 (T37)	07:46	06:55		19:16 (T34)	06:15		19:59 (T87)	05:58		19:45 (T87)
	17:26			18:04	63	17:41 (T38)	19:37	20:09	31	19:47 (T34)	20:41	14	20:13 (T87)	21:05	47	20:32 (T87)
15	07:56			07:28		16:35 (T37)	07:45	06:54		19:17 (T34)	06:14		19:56 (T87)	05:58		19:45 (T87)
	17:27			18:05	65	17:42 (T38)	19:38	20:10	30	19:47 (T34)	20:42	20	20:16 (T87)	21:06	48	20:33 (T87)
16	07:55			07:26		16:36 (T37)	07:43	06:52		19:16 (T34)	06:13		19:54 (T87)	05:58		19:46 (T87)
	17:28			18:06	65	17:43 (T38)	19:39	20:11	30	19:46 (T34)	20:43	23	20:17 (T87)	21:06	48	20:34 (T87)
17	07:55			07:25		16:37 (T37)	07:41	06:50		19:17 (T34)	06:12		19:52 (T87)	05:58		19:46 (T87)
	17:29			18:08	65	17:45 (T38)	19:40	20:12	29	19:46 (T34)	20:44	27	20:19 (T87)	21:07	48	20:34 (T87)
18	07:54			07:24		16:37 (T37)	07:40	06:49		19:17 (T34)	06:11		19:51 (T87)	05:58		19:47 (T87)
	17:30			18:09	66	17:46 (T38)	19:41	20:13	28	19:45 (T34)	20:45	29	20:20 (T87)	21:07	47	20:34 (T87)
19	07:54			07:22		16:38 (T37)	07:38	06:47		19:18 (T34)	06:10		19:50 (T87)	05:58		19:47 (T87)
	17:32			18:10	65	17:48 (T38)	19:42	20:14	26	19:44 (T34)	20:46	31	20:21 (T87)	21:07	47	20:34 (T87)
20	07:53		16:48 (T37)	07:21		16:39 (T37)	07:36	06:46		19:18 (T34)	06:09		19:48 (T87)	05:59		19:47 (T87)
	17:33	10	16:58 (T37)	18:11	63	17:47 (T38)	19:43	20:15	25	19:43 (T34)	20:47	34	20:22 (T87)	21:08	47	20:34 (T87)
21	07:53		16:46 (T37)	07:19		16:40 (T37)	07:35	06:44		19:19 (T34)	06:09		19:48 (T87)	05:59		19:47 (T87)
	17:34	16	17:02 (T37)	18:12	60	17:47 (T38)	19:44	20:17	23	19:42 (T34)	20:48	36	20:24 (T87)	21:08	47	20:34 (T87)
22	07:52		16:43 (T37)	07:18		16:41 (T37)	07:33	06:43		19:20 (T34)	06:08		19:47 (T87)	05:59		19:47 (T87)
	17:35	22	17:05 (T37)	18:14	56	17:46 (T38)	19:45	20:18	20	19:40 (T34)	20:49	37	20:24 (T87)	21:08	47	20:34 (T87)
23	07:51		16:42 (T37)	07:16		16:44 (T37)	07:31	06:41		19:22 (T34)	06:07		19:47 (T87)	05:59		19:48 (T87)
	17:36	24	17:06 (T37)	18:15	49	17:45 (T38)	19:46	20:19	16	19:38 (T34)	20:49	38	20:25 (T87)	21:08	47	20:35 (T87)
24	07:50		16:40 (T37)	07:15		16:46 (T37)	07:30	06:40		19:24 (T34)	06:06		19:46 (T87)	05:59		19:48 (T87)
	17:38	28	17:08 (T37)	18:16	43	17:44 (T38)	19:48	20:20	10	19:34 (T34)	20:50	39	20:25 (T87)	21:08	47	20:35 (T87)
25	07:50		16:40 (T37)	07:13		16:49 (T37)	07:28	06:39			06:06		19:46 (T87)	06:00		19:47 (T87)
	17:39	30	17:10 (T37)	18:17	33	17:42 (T38)	19:49	20:21			20:51	40	20:26 (T87)	21:09	48	20:35 (T87)
26	07:49		16:39 (T37)	07:12		16:54 (T37)	07:26	06:37			06:05		19:45 (T87)	06:00		19:48 (T87)
	17:40	33	17:12 (T37)	18:18	18	17:40 (T38)	19:50	20:22			20:52	41	20:26 (T87)	21:09	48	20:36 (T87)
27	07:48		16:38 (T37)	07:10		17:32 (T38)	07:25	06:36			06:04		19:45 (T87)	06:00		19:48 (T87)
	17:41	35	17:13 (T37)	18:20	3	17:35 (T38)	19:51	20:23			20:53	42	20:27 (T87)	21:09	48	20:36 (T87)
28	07:47		16:37 (T37)	07:09			07:23	06:34			06:04		19:45 (T87)	06:01		19:48 (T87)
	17:43	37	17:14 (T37)	18:21			19:52	20:24			20:54	43	20:28 (T87)	21:09	48	20:36 (T87)
29	07:46		16:36 (T37)				07:21	06:33			06:03		19:45 (T87)	06:01		19:49 (T87)
	17:44	39	17:15 (T37)				19:53	20:25			20:55	44	20:29 (T87)	21:09	47	20:36 (T87)
30	07:46		16:36 (T37)				07:20	06:32			06:03		19:44 (T87)	06:02		19:49 (T87)
	17:45	40	17:16 (T37)				19:54	20:26			20:56	44	20:28 (T87)	21:09	47	20:36 (T87)
31	07:45		16:35 (T37)				07:18				06:02		19:45 (T87)			
	17:46	42	17:17 (T37)				19:55				20:56	44	20:29 (T87)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		356			1363				477			629			1412	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.72			0.72				0.59			0.55			0.55	
Total reduction		0.23			0.30				0.32			0.32			0.36	
Total, real		82			404				152			202			510	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 570 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6650)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August			September			October			November			December	
1	06:02		19:49 (T87)	06:26			06:57		19:17 (T34)	07:28			07:02		16:03 (T37)	07:37
	21:09	48	20:37 (T87)	20:50			20:07	27	19:44 (T34)	19:15			17:28	53	17:05 (T38)	17:04
2	06:03		19:49 (T87)	06:27			06:58		19:17 (T34)	07:29			07:03		16:03 (T37)	07:38
	21:09	47	20:36 (T87)	20:49			20:06	25	19:42 (T34)	19:13			17:27	48	16:51 (T37)	17:03
3	06:03		19:50 (T87)	06:28			06:59		19:17 (T34)	07:30			07:05		16:03 (T37)	07:39
	21:09	47	20:37 (T87)	20:48			20:04	24	19:41 (T34)	19:12			17:26	47	16:50 (T37)	17:03
4	06:04		19:50 (T87)	06:29			07:00		19:18 (T34)	07:31			07:06		16:03 (T37)	07:40
	21:08	47	20:37 (T87)	20:47			20:02	21	19:39 (T34)	19:10			17:24	47	16:50 (T37)	17:03
5	06:04		19:50 (T87)	06:30			07:01		19:19 (T34)	07:32			07:07		16:04 (T37)	07:41
	21:08	47	20:37 (T87)	20:46			20:01	18	19:37 (T34)	19:08			17:23	47	16:51 (T37)	17:03
6	06:05		19:50 (T87)	06:31			07:02		19:20 (T34)	07:33			07:08		16:04 (T37)	07:42
	21:08	47	20:37 (T87)	20:45			19:58	16	19:36 (T34)	19:07			17:22	46	16:50 (T37)	17:03
7	06:06		19:51 (T87)	06:32			07:03		19:22 (T34)	07:34			07:09		16:04 (T37)	07:43
	21:08	46	20:37 (T87)	20:44			19:56	12	19:34 (T34)	19:05			17:21	45	16:49 (T37)	17:03
8	06:06		19:51 (T87)	06:33			07:04		19:25 (T34)	07:35			07:11		16:05 (T37)	07:44
	21:07	47	20:38 (T87)	20:42			19:54	8	19:33 (T34)	19:03			17:20	45	16:50 (T37)	17:03
9	06:07		19:51 (T87)	06:34			07:05			07:36			07:12		16:05 (T37)	07:45
	21:07	46	20:37 (T87)	20:41			19:52			19:02			17:19	44	16:49 (T37)	17:03
10	06:08		19:52 (T87)	06:35			07:06			07:37			07:13		16:06 (T37)	07:46
	21:07	45	20:37 (T87)	20:40			19:51			19:00			17:18	42	16:48 (T37)	17:03
11	06:08		19:52 (T87)	06:36			07:07			07:38			07:14		16:06 (T37)	07:47
	21:06	45	20:37 (T87)	20:38			19:49			18:58			17:17	42	16:48 (T37)	17:03
12	06:09		19:52 (T87)	06:37			07:08			07:39			07:15		16:08 (T37)	07:48
	21:06	45	20:37 (T87)	20:37			19:47			18:57			17:16	40	16:48 (T37)	17:03
13	06:10		19:53 (T87)	06:38			07:09			07:40			07:17		16:08 (T37)	07:48
	21:05	44	20:37 (T87)	20:36			19:46			18:55			17:15	39	16:47 (T37)	17:03
14	06:10		19:53 (T87)	06:39			07:10			07:42			07:18		16:09 (T37)	07:49
	21:05	44	20:37 (T87)	20:34			19:44			18:54			17:14	37	16:46 (T37)	17:03
15	06:11		19:54 (T87)	06:40			07:11			07:43		18:02 (T38)	07:19		16:11 (T37)	07:50
	21:04	43	20:37 (T87)	20:33			19:42			18:52	8	18:10 (T38)	17:13	35	16:46 (T37)	17:03
16	06:12		19:54 (T87)	06:41			07:12			07:44		17:24 (T37)	07:20		16:12 (T37)	07:51
	21:04	42	20:36 (T87)	20:32			19:41			18:51	25	18:13 (T38)	17:12	33	16:45 (T37)	17:04
17	06:13		19:54 (T87)	06:42			07:13			07:45		17:19 (T37)	07:21		16:13 (T37)	07:51
	21:03	42	20:36 (T87)	20:30			19:39			18:49	37	18:14 (T38)	17:12	30	16:43 (T37)	17:04
18	06:14		19:55 (T87)	06:43			07:14			07:46		17:16 (T37)	07:23		16:14 (T37)	07:52
	21:02	41	20:36 (T87)	20:29			19:37			18:48	45	18:15 (T38)	17:11	28	16:42 (T37)	17:04
19	06:14		19:56 (T87)	06:44		19:30 (T34)	07:15			07:47		17:14 (T37)	07:24		16:17 (T37)	07:53
	21:02	40	20:36 (T87)	20:27	12	19:42 (T34)	19:35			18:46	53	18:17 (T38)	17:10	24	16:41 (T37)	17:05
20	06:15		19:57 (T87)	06:45		19:26 (T34)	07:16			07:48		17:12 (T37)	07:25		16:18 (T37)	07:53
	21:01	38	20:35 (T87)	20:26	17	19:43 (T34)	19:34			18:45	57	18:17 (T38)	17:09	22	16:40 (T37)	17:05
21	06:16		19:56 (T87)	06:46		19:24 (T34)	07:17			07:49		17:11 (T37)	07:26		16:21 (T37)	07:54
	21:00	38	20:34 (T87)	20:25	21	19:45 (T34)	19:32			18:43	59	18:17 (T38)	17:09	16	16:37 (T37)	17:06
22	06:17		19:57 (T87)	06:47		19:23 (T34)	07:18			07:51		17:09 (T37)	07:27		16:24 (T37)	07:54
	21:00	36	20:33 (T87)	20:23	23	19:46 (T34)	19:30			18:42	63	18:17 (T38)	17:08	10	16:34 (T37)	17:06
23	06:18		19:58 (T87)	06:48		19:21 (T34)	07:19			07:52		17:07 (T37)	07:28			07:55
	20:59	35	20:33 (T87)	20:22	26	19:47 (T34)	19:29			18:40	66	18:17 (T38)	17:07			17:07
24	06:19		19:59 (T87)	06:49		19:20 (T34)	07:20			07:53		17:07 (T37)	07:30			07:55
	20:58	33	20:32 (T87)	20:20	27	19:47 (T34)	19:27			18:39	66	18:16 (T38)	17:07			17:07
25	06:20		20:01 (T87)	06:50		19:19 (T34)	07:22			07:54		17:06 (T37)	07:31			07:56
	20:57	30	20:31 (T87)	20:18	29	19:48 (T34)	19:25			18:37	65	18:14 (T38)	17:06			17:08
26	06:21		20:02 (T87)	06:51		19:19 (T34)	07:23			07:55		17:05 (T37)	07:32			07:56
	20:56	28	20:30 (T87)	20:17	29	19:48 (T34)	19:23			18:36	65	18:13 (T38)	17:06			17:08
27	06:22		20:03 (T87)	06:52		19:18 (T34)	07:24			07:56		17:04 (T37)	07:33			07:56
	20:55	26	20:29 (T87)	20:15	30	19:48 (T34)	19:22			18:35	65	18:11 (T38)	17:05			17:09
28	06:23		20:05 (T87)	06:53		19:18 (T34)	07:25			07:58		17:04 (T37)	07:34			07:57
	20:54	22	20:27 (T87)	20:14	30	19:48 (T34)	19:20			18:33	65	18:11 (T38)	17:05			17:10
29	06:23		20:08 (T87)	06:54		19:17 (T34)	07:26			07:59		17:04 (T37)	07:35			07:57
	20:53	17	20:25 (T87)	20:12	31	19:48 (T34)	19:18			18:32	62	18:09 (T38)	17:04			17:10
30	06:24		20:10 (T87)	06:55		19:17 (T34)	07:27			08:00		17:03 (T37)	07:36			07:57
	20:52	11	20:21 (T87)	20:11	30	19:47 (T34)	19:17			18:31	59	18:07 (T38)	17:04			17:11
31	06:25			06:56		19:17 (T34)				08:01		17:03 (T37)				07:57
	20:51			20:09	28	19:45 (T34)				18:29	57	18:06 (T38)				17:12
Potential sun hours	460			429			375			345			297			287
Total, worst case		1167			333			151			917			820		
Sun reduction		0.66			0.61			0.59			0.48			0.30		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.55			0.59			0.59			0.72			0.72		
Total reduction		0.37			0.37			0.36			0.35			0.22		
Total, real		434			124			54			325			183		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 580 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6660)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May	June
1	07:57			07:43		08:28 (T63)	07:07		08:10 (T63)	07:16	06:31	06:02
	17:13			17:48	53	09:21 (T63)	18:22	86	09:36 (T63)	19:56	20:27	20:57
2	07:57			07:42		08:27 (T63)	07:06		08:10 (T63)	07:15	06:29	06:01
	17:14			17:49	55	09:22 (T63)	18:23	85	09:35 (T63)	19:57	20:28	20:57
3	07:57			07:41		08:25 (T63)	07:04		08:10 (T63)	07:13	06:28	06:01
	17:15			17:50	59	09:24 (T63)	18:24	85	09:35 (T63)	19:58	20:29	20:58
4	07:57			07:40		08:24 (T63)	07:03		08:10 (T63)	07:11	06:27	06:01
	17:16			17:52	61	09:25 (T63)	18:25	84	09:34 (T63)	19:59	20:30	20:59
5	07:57			07:39		08:22 (T63)	07:01		08:09 (T63)	07:10	06:25	06:00
	17:17			17:53	64	09:26 (T63)	18:27	84	09:33 (T63)	20:00	20:31	21:00
6	07:57			07:38		08:21 (T63)	06:59		08:10 (T63)	07:08	06:24	06:00
	17:18			17:54	66	09:27 (T63)	18:28	82	09:32 (T63)	20:00	20:32	21:00
7	07:57			07:37		08:20 (T63)	06:58		08:10 (T63)	07:06	06:23	06:00
	17:19			17:55	69	09:29 (T63)	18:29	81	09:31 (T63)	20:01	20:33	21:01
8	07:57			07:36		08:20 (T63)	07:56		09:10 (T63)	07:05	06:22	05:59
	17:20			17:57	70	09:30 (T63)	19:30	80	10:30 (T63)	20:02	20:34	21:02
9	07:57			07:35		08:19 (T63)	07:55		09:11 (T63)	07:03	06:21	05:59
	17:21			17:58	72	09:31 (T63)	19:31	78	10:29 (T63)	20:04	20:35	21:02
10	07:57			07:34		08:18 (T63)	07:53		09:11 (T63)	07:02	06:20	05:59
	17:22			17:59	74	09:32 (T63)	19:32	77	10:28 (T63)	20:05	20:36	21:03
11	07:57			07:32		08:17 (T63)	07:51		09:12 (T63)	07:00	06:19	05:59
	17:23			18:00	75	09:32 (T63)	19:33	75	10:27 (T63)	20:06	20:37	21:03
12	07:56			07:31		08:16 (T63)	07:50		09:12 (T63)	06:58	06:17	05:59
	17:24			18:02	77	09:33 (T63)	19:34	73	10:25 (T63)	20:07	20:38	21:04
13	07:56			07:30		08:16 (T63)	07:48		09:12 (T63)	06:57	06:16	05:59
	17:25			18:03	78	09:34 (T63)	19:36	71	10:23 (T63)	20:08	20:39	21:04
14	07:56			07:29		08:15 (T63)	07:46		09:14 (T63)	06:55	06:15	05:59
	17:26			18:04	79	09:34 (T63)	19:37	69	10:23 (T63)	20:09	20:40	21:05
15	07:55			07:27		08:14 (T63)	07:45		09:14 (T63)	06:54	06:14	05:59
	17:27			18:05	81	09:35 (T63)	19:38	67	10:21 (T63)	20:10	20:41	21:05
16	07:55			07:26		08:14 (T63)	07:43		09:15 (T63)	06:52	06:13	05:59
	17:28			18:06	82	09:36 (T63)	19:39	63	10:18 (T63)	20:11	20:42	21:06
17	07:54			07:25		08:13 (T63)	07:41		09:16 (T63)	06:51	06:12	05:59
	17:30			18:08	83	09:36 (T63)	19:40	61	10:17 (T63)	20:12	20:43	21:06
18	07:54			07:23		08:13 (T63)	07:40		09:17 (T63)	06:49	06:12	05:59
	17:31			18:09	84	09:37 (T63)	19:41	58	10:15 (T63)	20:13	20:44	21:06
19	07:53			07:22		08:13 (T63)	07:38		09:18 (T63)	06:48	06:11	05:59
	17:32			18:10	84	09:37 (T63)	19:42	54	10:12 (T63)	20:14	20:45	21:07
20	07:53			07:21		08:12 (T63)	07:36		09:19 (T63)	06:46	06:10	05:59
	17:33			18:11	85	09:37 (T63)	19:43	51	10:10 (T63)	20:15	20:46	21:07
21	07:52			07:19		08:12 (T63)	07:35		09:21 (T63)	06:45	06:09	05:59
	17:34			18:13	85	09:37 (T63)	19:44	47	10:08 (T63)	20:16	20:47	21:07
22	07:52			07:18		08:11 (T63)	07:33		09:23 (T63)	06:43	06:08	05:59
	17:35			18:14	86	09:37 (T63)	19:45	41	10:04 (T63)	20:17	20:48	21:08
23	07:51			07:16		08:11 (T63)	07:31		09:25 (T63)	06:42	06:07	06:00
	17:37			18:15	86	09:37 (T63)	19:46	36	10:01 (T63)	20:18	20:49	21:08
24	07:50			07:15		08:10 (T63)	07:30		09:28 (T63)	06:40	06:07	06:00
	17:38			18:16	87	09:37 (T63)	19:48	30	09:58 (T63)	20:19	20:50	21:08
25	07:49		08:43 (T63)	07:13		08:10 (T63)	07:28		09:32 (T63)	06:39	06:06	06:00
	17:39	18	09:01 (T63)	18:17	87	09:37 (T63)	19:49	20	09:52 (T63)	20:21	20:51	21:08
26	07:49		08:39 (T63)	07:12		08:10 (T63)	07:26			06:37	06:05	06:01
	17:40	26	09:05 (T63)	18:18	86	09:36 (T63)	19:50			20:22	20:52	21:08
27	07:48		08:36 (T63)	07:10		08:10 (T63)	07:25			06:36	06:05	06:01
	17:42	32	09:08 (T63)	18:20	87	09:37 (T63)	19:51			20:23	20:53	21:08
28	07:47		08:35 (T63)	07:09		08:10 (T63)	07:23			06:35	06:04	06:01
	17:43	37	09:12 (T63)	18:21	86	09:36 (T63)	19:52			20:24	20:53	21:08
29	07:46		08:33 (T63)				07:21			06:33	06:03	06:02
	17:44	42	09:15 (T63)				19:53			20:25	20:54	21:08
30	07:45		08:31 (T63)				07:20			06:32	06:03	06:02
	17:45	46	09:17 (T63)				19:54			20:26	20:55	21:08
31	07:44		08:29 (T63)				07:18				06:02	
	17:47	50	09:19 (T63)				19:55				20:56	
Potential sun hours	297			297			370			399	448	452
Total, worst case		251			2141			1638				
Sun reduction		0.31			0.40			0.44				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.53			0.53			0.53				
Total reduction		0.16			0.21			0.23				
Total, real		41			455			383				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 580 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6660)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September			October			November			December
1	06:03	06:27	06:58			07:28		08:51 (T63)	07:02		07:47 (T63)	07:37
	21:08	20:50	20:07			19:15	72	10:03 (T63)	17:28	74	09:01 (T63)	17:04
2	06:03	06:28	06:59			07:29		08:50 (T63)	07:03		07:49 (T63)	07:38
	21:08	20:49	20:06			19:13	74	10:04 (T63)	17:27	72	09:01 (T63)	17:04
3	06:04	06:29	07:00			07:30		08:50 (T63)	07:04		07:50 (T63)	07:39
	21:08	20:48	20:04			19:12	76	10:06 (T63)	17:26	70	09:00 (T63)	17:04
4	06:04	06:30	07:01			07:31		08:49 (T63)	07:06		07:50 (T63)	07:40
	21:08	20:47	20:02			19:10	77	10:06 (T63)	17:25	68	08:58 (T63)	17:03
5	06:05	06:31	07:02			07:32		08:48 (T63)	07:07		07:51 (T63)	07:41
	21:08	20:46	20:01			19:08	79	10:07 (T63)	17:24	66	08:57 (T63)	17:03
6	06:05	06:32	07:03			07:33		08:47 (T63)	07:08		07:53 (T63)	07:42
	21:07	20:44	19:57			19:07	80	10:07 (T63)	17:22	64	08:57 (T63)	17:03
7	06:06	06:33	07:04			07:34		08:46 (T63)	07:09		07:54 (T63)	07:43
	21:07	20:43	19:56			19:05	82	10:08 (T63)	17:21	61	08:55 (T63)	17:03
8	06:07	06:34	07:05			07:35		08:45 (T63)	07:10		07:55 (T63)	07:44
	21:07	20:42	19:54			19:03	83	10:08 (T63)	17:20	59	08:54 (T63)	17:03
9	06:07	06:35	07:06			07:36		08:45 (T63)	07:12		07:57 (T63)	07:45
	21:07	20:41	19:52			19:02	83	10:08 (T63)	17:19	55	08:52 (T63)	17:03
10	06:08	06:36	07:06			07:37		08:44 (T63)	07:13		07:59 (T63)	07:45
	21:06	20:39	19:51			19:00	84	10:08 (T63)	17:18	52	08:51 (T63)	17:03
11	06:09	06:37	07:07			07:38		08:43 (T63)	07:14		08:00 (T63)	07:46
	21:06	20:38	19:49			18:59	85	10:08 (T63)	17:17	49	08:49 (T63)	17:03
12	06:09	06:38	07:08			07:39		08:43 (T63)	07:15		08:02 (T63)	07:47
	21:05	20:37	19:47			18:57	85	10:08 (T63)	17:16	45	08:47 (T63)	17:03
13	06:10	06:39	07:09			07:40		08:42 (T63)	07:16		08:05 (T63)	07:48
	21:05	20:36	19:46			18:55	86	10:08 (T63)	17:15	41	08:46 (T63)	17:03
14	06:11	06:40	07:10			07:41		08:43 (T63)	07:18		08:07 (T63)	07:49
	21:04	20:34	19:44			18:54	86	10:09 (T63)	17:14	37	08:44 (T63)	17:04
15	06:12	06:41	07:11			07:43		08:43 (T63)	07:19		08:09 (T63)	07:49
	21:04	20:33	19:42			18:52	86	10:09 (T63)	17:13	32	08:41 (T63)	17:04
16	06:12	06:42	07:12			07:44		08:42 (T63)	07:20		08:12 (T63)	07:50
	21:03	20:31	19:40			18:51	87	10:09 (T63)	17:13	26	08:38 (T63)	17:04
17	06:13	06:43	07:13			07:45		08:42 (T63)	07:21		08:17 (T63)	07:51
	21:03	20:30	19:39			18:49	87	10:09 (T63)	17:12	18	08:35 (T63)	17:04
18	06:14	06:44	07:14		09:21 (T63)	07:46		08:42 (T63)	07:22			07:51
	21:02	20:29	19:37	17	09:38 (T63)	18:48	86	10:08 (T63)	17:11			17:05
19	06:15	06:45	07:15		09:16 (T63)	07:47		08:42 (T63)	07:23			07:52
	21:01	20:27	19:35	27	09:43 (T63)	18:46	86	10:08 (T63)	17:10			17:05
20	06:16	06:46	07:16		09:12 (T63)	07:48		08:42 (T63)	07:25			07:53
	21:01	20:26	19:34	34	09:46 (T63)	18:45	87	10:09 (T63)	17:10			17:06
21	06:17	06:47	07:17		09:09 (T63)	07:49		08:42 (T63)	07:26			07:53
	21:00	20:24	19:32	40	09:49 (T63)	18:43	86	10:08 (T63)	17:09			17:06
22	06:17	06:48	07:18		09:06 (T63)	07:50		08:42 (T63)	07:27			07:54
	20:59	20:23	19:30	45	09:51 (T63)	18:42	85	10:07 (T63)	17:08			17:06
23	06:18	06:49	07:19		09:04 (T63)	07:51		08:42 (T63)	07:28			07:54
	20:58	20:21	19:28	49	09:53 (T63)	18:40	85	10:07 (T63)	17:08			17:07
24	06:19	06:50	07:20		09:02 (T63)	07:53		08:42 (T63)	07:29			07:55
	20:58	20:20	19:27	53	09:55 (T63)	18:39	84	10:06 (T63)	17:07			17:08
25	06:20	06:51	07:21		09:00 (T63)	07:54		08:44 (T63)	07:30			07:55
	20:57	20:18	19:25	57	09:57 (T63)	18:38	82	10:06 (T63)	17:07			17:08
26	06:21	06:52	07:23		08:58 (T63)	07:55		08:44 (T63)	07:31			07:55
	20:56	20:17	19:23	60	09:58 (T63)	18:36	82	10:06 (T63)	17:06			17:09
27	06:22	06:53	07:24		08:57 (T63)	07:56		08:44 (T63)	07:33			07:56
	20:55	20:15	19:22	62	09:59 (T63)	18:35	81	10:05 (T63)	17:06			17:09
28	06:23	06:54	07:25		08:55 (T63)	07:57		08:44 (T63)	07:34			07:56
	20:54	20:14	19:20	65	10:00 (T63)	18:33	80	10:04 (T63)	17:05			17:10
29	06:24	06:55	07:26		08:54 (T63)	07:58		08:45 (T63)	07:35			07:56
	20:53	20:12	19:18	68	10:02 (T63)	18:32	78	10:03 (T63)	17:05			17:11
30	06:25	06:56	07:27		08:52 (T63)	08:00		08:46 (T63)	07:36			07:57
	20:52	20:10	19:17	70	10:02 (T63)	18:31	77	10:03 (T63)	17:04			17:12
31	06:26	06:57				08:01		08:47 (T63)				07:57
	20:51	20:09				18:30	75	10:02 (T63)				17:12
Potential sun hours	459	428	375			345			298			288
Total, worst case				647			2546			889		
Sun reduction				0.59			0.48			0.30		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.53			0.53			0.53		
Total reduction				0.31			0.25			0.16		
Total, real				203			649			142		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 596 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6673)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:58			07:44		16:29 (T13)	07:07		17:32 (T12)	07:16	06:30			06:01		19:44 (T10)
	17:13			17:47	46	17:15 (T13)	18:22	28	18:00 (T12)	19:56	20:27			20:57	38	20:22 (T10)
2	07:58			07:43		16:29 (T13)	07:06		17:31 (T12)	07:14	06:29			06:01		19:44 (T10)
	17:13			17:48	47	17:16 (T13)	18:23	30	18:01 (T12)	19:57	20:28			20:58	37	20:21 (T10)
3	07:58			07:42		16:28 (T13)	07:04		17:31 (T12)	07:13	06:27			06:00		19:45 (T10)
	17:14			17:50	48	17:16 (T13)	18:24	30	18:01 (T12)	19:58	20:29			20:59	37	20:22 (T10)
4	07:58			07:41		16:28 (T13)	07:03		17:31 (T12)	07:11	06:26			06:00		19:45 (T10)
	17:15			17:51	49	17:17 (T13)	18:25	30	18:01 (T12)	19:59	20:30			20:59	37	20:22 (T10)
5	07:58			07:40		16:28 (T13)	07:01		17:30 (T12)	07:09	06:25			05:59		19:45 (T10)
	17:16			17:52	50	17:18 (T13)	18:26	30	18:00 (T12)	20:00	20:31			21:00	36	20:21 (T10)
6	07:58			07:38		16:28 (T13)	06:59		17:31 (T12)	07:08	06:24		19:57 (T10)	05:59		19:46 (T10)
	17:17			17:54	50	17:18 (T13)	18:27	29	18:00 (T12)	20:00	20:33	10	20:07 (T10)	21:01	36	20:22 (T10)
7	07:58			07:37		16:27 (T13)	06:58		17:31 (T12)	07:06	06:22		19:54 (T10)	05:59		19:46 (T10)
	17:18			17:55	51	17:18 (T13)	18:29	28	17:59 (T12)	20:01	20:34	16	20:10 (T10)	21:01	40	20:37 (T9)
8	07:58			07:36		16:27 (T13)	07:56		18:31 (T12)	07:05	06:21		19:51 (T10)	05:59		19:47 (T10)
	17:19			17:56	51	17:18 (T13)	19:30	27	18:58 (T12)	20:02	20:35	20	20:11 (T10)	21:02	41	20:38 (T9)
9	07:57			07:35		16:28 (T13)	07:55		18:33 (T12)	07:03	06:20		19:49 (T10)	05:58		19:46 (T10)
	17:20			17:57	50	17:18 (T13)	19:31	24	18:57 (T12)	20:04	20:36	24	20:13 (T10)	21:03	41	20:37 (T9)
10	07:57			07:34		16:28 (T13)	07:53		18:34 (T12)	07:01	06:19		19:48 (T10)	05:58		19:47 (T10)
	17:21			17:59	51	17:19 (T13)	19:32	21	18:55 (T12)	20:05	20:37	26	20:14 (T10)	21:03	42	20:38 (T9)
11	07:57			07:33		16:29 (T13)	07:51		18:36 (T12)	07:00	06:18		19:47 (T10)	05:58		19:47 (T10)
	17:22			18:00	50	17:19 (T13)	19:33	18	18:54 (T12)	20:06	20:38	28	20:15 (T10)	21:04	43	20:39 (T9)
12	07:57			07:31		16:28 (T13)	07:50		18:38 (T12)	06:58	06:17		19:46 (T10)	05:58		19:48 (T10)
	17:23			18:01	50	17:18 (T13)	19:34	13	18:51 (T12)	20:07	20:39	30	20:16 (T10)	21:04	43	20:39 (T9)
13	07:56			07:30		16:29 (T13)	07:48			06:56	06:16		19:45 (T10)	05:58		19:48 (T10)
	17:24			18:02	49	17:18 (T13)	19:35			20:08	20:40	31	20:16 (T10)	21:05	44	20:40 (T9)
14	07:56			07:29		16:29 (T13)	07:46			06:55	06:15		19:44 (T10)	05:58		19:49 (T10)
	17:25			18:04	49	17:18 (T13)	19:36			20:09	20:41	33	20:17 (T10)	21:05	44	20:40 (T9)
15	07:56			07:27		16:29 (T13)	07:45			06:53	06:14		19:44 (T10)	05:58		19:49 (T10)
	17:27			18:05	48	17:17 (T13)	19:38			20:10	20:42	34	20:18 (T10)	21:06	44	20:40 (T9)
16	07:55			07:26		16:30 (T13)	07:43			06:52	06:13		19:43 (T10)	05:58		19:49 (T10)
	17:28			18:06	47	17:17 (T13)	19:39			20:11	20:43	36	20:19 (T10)	21:06	45	20:41 (T9)
17	07:55			07:25		16:31 (T13)	07:41			06:50	06:12		19:43 (T10)	05:58		19:49 (T10)
	17:29			18:07	46	17:17 (T13)	19:40			20:12	20:44	36	20:19 (T10)	21:07	45	20:41 (T9)
18	07:54		16:46 (T13)	07:23		16:31 (T13)	07:40			06:49	06:11		19:43 (T10)	05:58		19:50 (T10)
	17:30	6	16:52 (T13)	18:08	44	17:15 (T13)	19:41			20:13	20:45	37	20:20 (T10)	21:07	44	20:41 (T9)
19	07:54		16:42 (T13)	07:22		16:33 (T13)	07:38			06:47	06:10		19:43 (T10)	05:58		19:50 (T10)
	17:31	14	16:56 (T13)	18:10	42	17:15 (T13)	19:42			20:14	20:46	37	20:20 (T10)	21:07	44	20:41 (T9)
20	07:53		16:39 (T13)	07:21		16:33 (T13)	07:36			06:46	06:09		19:42 (T10)	05:58		19:51 (T10)
	17:32	20	16:59 (T13)	18:11	40	17:13 (T13)	19:43			20:15	20:47	38	20:20 (T10)	21:08	45	20:43 (T9)
21	07:53		16:38 (T13)	07:19		16:35 (T13)	07:35			06:44	06:08		19:42 (T10)	05:58		19:51 (T10)
	17:34	24	17:02 (T13)	18:12	38	17:13 (T13)	19:44			20:16	20:48	38	20:20 (T10)	21:08	45	20:43 (T9)
22	07:52		16:36 (T13)	07:18		16:35 (T13)	07:33			06:43	06:07		19:42 (T10)	05:59		19:51 (T10)
	17:35	27	17:03 (T13)	18:13	46	17:51 (T12)	19:45			20:18	20:49	38	20:20 (T10)	21:08	45	20:43 (T9)
23	07:51		16:35 (T13)	07:16		16:37 (T13)	07:31			06:41	06:07		19:43 (T10)	05:59		19:51 (T10)
	17:36	30	17:05 (T13)	18:15	45	17:52 (T12)	19:46			20:19	20:50	38	20:21 (T10)	21:08	45	20:43 (T9)
24	07:50		16:34 (T13)	07:15		16:39 (T13)	07:30			06:40	06:06		19:42 (T10)	05:59		19:52 (T10)
	17:37	32	17:06 (T13)	18:16	45	17:53 (T12)	19:47			20:20	20:50	39	20:21 (T10)	21:09	44	20:43 (T9)
25	07:50		16:34 (T13)	07:13		16:42 (T13)	07:28			06:38	06:05		19:42 (T10)	05:59		19:51 (T10)
	17:38	34	17:08 (T13)	18:17	43	17:55 (T12)	19:48			20:21	20:51	39	20:21 (T10)	21:09	45	20:43 (T9)
26	07:49		16:33 (T13)	07:12		16:45 (T13)	07:26			06:37	06:05		19:43 (T10)	06:00		19:51 (T10)
	17:40	37	17:10 (T13)	18:18	38	17:56 (T12)	19:50			20:22	20:52	39	20:22 (T10)	21:09	45	20:43 (T9)
27	07:48		16:32 (T13)	07:10		17:33 (T12)	07:24			06:35	06:04		19:42 (T10)	06:00		19:52 (T10)
	17:41	39	17:11 (T13)	18:19	24	17:57 (T12)	19:51			20:23	20:53	39	20:21 (T10)	21:09	45	20:44 (T9)
28	07:47		16:31 (T13)	07:09		17:32 (T12)	07:23			06:34	06:03		19:43 (T10)	06:00		19:52 (T10)
	17:42	41	17:12 (T13)	18:20	26	17:58 (T12)	19:52			20:24	20:54	39	20:22 (T10)	21:09	44	20:43 (T9)
29	07:46		16:30 (T13)				07:21			06:33	06:03		19:43 (T10)	06:01		19:51 (T10)
	17:43	43	17:13 (T13)				19:53			20:25	20:55	38	20:21 (T10)	21:09	45	20:43 (T9)
30	07:46		16:30 (T13)				07:19			06:31	06:02		19:44 (T10)	06:01		19:52 (T10)
	17:45	43	17:13 (T13)				19:54			20:26	20:56	38	20:22 (T10)	21:09	43	20:43 (T9)
31	07:45		16:29 (T13)				07:18				06:02		19:43 (T10)			
	17:46	45	17:14 (T13)				19:55				20:56	38	20:21 (T10)			
Potential sun hours	297			297			370			399	449			453		
Total, worst case		435			1263			308				859			1272	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.72			0.72			0.68				0.56			0.55	
Total reduction		0.23			0.30			0.31				0.33			0.36	
Total, real		101			375			95				281			461	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 596 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6673)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September	October		November		December
1	06:02		19:52 (T10)	06:26	19:57 (T10)	06:57	07:28	18:18 (T12)	07:02	15:58 (T13)	07:37
	21:09	43	20:43 (T9)	20:50 29	20:26 (T10)	20:07	19:15 10	18:28 (T12)	17:28 50	16:48 (T13)	17:03
2	06:02		19:52 (T10)	06:27	19:58 (T10)	06:58	07:29	18:14 (T12)	07:03	15:58 (T13)	07:38
	21:09	42	20:43 (T9)	20:49 27	20:25 (T10)	20:06	19:13 16	18:30 (T12)	17:27 50	16:48 (T13)	17:03
3	06:03		19:52 (T10)	06:28	19:59 (T10)	06:59	07:30	18:13 (T12)	07:05	15:57 (T13)	07:39
	21:09	42	20:43 (T9)	20:48 25	20:24 (T10)	20:04	19:11 20	18:33 (T12)	17:25 51	16:48 (T13)	17:03
4	06:03		19:52 (T10)	06:29	20:00 (T10)	07:00	07:31	18:11 (T12)	07:06	15:57 (T13)	07:40
	21:08	41	20:43 (T9)	20:47 23	20:23 (T10)	20:02	19:10 23	18:34 (T12)	17:24 50	16:47 (T13)	17:03
5	06:04		19:51 (T10)	06:30	20:02 (T10)	07:01	07:32	18:09 (T12)	07:07	15:58 (T13)	07:41
	21:08	40	20:42 (T9)	20:46 20	20:22 (T10)	20:01	19:08 26	18:35 (T12)	17:23 50	16:48 (T13)	17:03
6	06:05		19:52 (T10)	06:31	20:04 (T10)	07:02	07:33	18:08 (T12)	07:08	15:58 (T13)	07:42
	21:08	38	20:42 (T9)	20:45 15	20:19 (T10)	19:57	19:06 27	18:35 (T12)	17:22 49	16:47 (T13)	17:02
7	06:05		19:52 (T10)	06:32	20:08 (T10)	07:03	07:34	18:07 (T12)	07:09	15:58 (T13)	07:43
	21:08	36	20:28 (T10)	20:43 7	20:15 (T10)	19:56	19:05 29	18:36 (T12)	17:21 49	16:47 (T13)	17:02
8	06:06		19:52 (T10)	06:33		07:04	07:35	18:06 (T12)	07:11	15:59 (T13)	07:44
	21:07	36	20:28 (T10)	20:42		19:54	19:03 30	18:36 (T12)	17:20 48	16:47 (T13)	17:02
9	06:06		19:52 (T10)	06:34		07:05	07:36	18:06 (T12)	07:12	16:00 (T13)	07:45
	21:07	37	20:29 (T10)	20:41		19:52	19:01 29	18:35 (T12)	17:19 47	16:47 (T13)	17:02
10	06:07		19:52 (T10)	06:35		07:06	07:37	18:05 (T12)	07:13	16:00 (T13)	07:46
	21:07	37	20:29 (T10)	20:40		19:51	19:00 30	18:35 (T12)	17:18 46	16:46 (T13)	17:02
11	06:08		19:52 (T10)	06:36		07:07	07:38	18:05 (T12)	07:14	16:00 (T13)	07:47
	21:06	37	20:29 (T10)	20:38		19:49	18:58 30	18:35 (T12)	17:17 45	16:45 (T13)	17:02
12	06:09		19:52 (T10)	06:37		07:08	07:39	18:04 (T12)	07:15	16:02 (T13)	07:48
	21:06	38	20:30 (T10)	20:37		19:47	18:57 30	18:34 (T12)	17:16 43	16:45 (T13)	17:02
13	06:09		19:52 (T10)	06:38		07:09	07:40	18:05 (T12)	07:17	16:02 (T13)	07:48
	21:05	38	20:30 (T10)	20:36		19:46	18:55 28	18:33 (T12)	17:15 42	16:44 (T13)	17:03
14	06:10		19:52 (T10)	06:39		07:10	07:41	18:06 (T12)	07:18	16:03 (T13)	07:49
	21:05	39	20:31 (T10)	20:34		19:44	18:53 25	18:31 (T12)	17:14 40	16:43 (T13)	17:03
15	06:11		19:52 (T10)	06:40		07:11	07:43	17:21 (T13)	07:19	16:05 (T13)	07:50
	21:04	38	20:30 (T10)	20:33		19:42	18:52 33	18:29 (T12)	17:13 39	16:44 (T13)	17:03
16	06:12		19:52 (T10)	06:41		07:12	07:44	17:16 (T13)	07:20	16:06 (T13)	07:51
	21:04	39	20:31 (T10)	20:32		19:40	18:50 41	18:28 (T12)	17:12 36	16:42 (T13)	17:03
17	06:12		19:52 (T10)	06:42		07:13	07:45	17:12 (T13)	07:21	16:07 (T13)	07:51
	21:03	39	20:31 (T10)	20:30		19:39	18:49 44	18:26 (T12)	17:11 34	16:41 (T13)	17:04
18	06:13		19:52 (T10)	06:43		07:14	07:46	17:10 (T13)	07:23	16:08 (T13)	07:52
	21:03	39	20:31 (T10)	20:29		19:37	18:47 45	18:24 (T12)	17:10 32	16:40 (T13)	17:04
19	06:14		19:52 (T10)	06:44		07:15	07:47	17:07 (T13)	07:24	16:10 (T13)	07:53
	21:02	38	20:30 (T10)	20:27		19:35	18:46 46	18:22 (T12)	17:10 30	16:40 (T13)	17:04
20	06:15		19:52 (T10)	06:45		07:16	07:48	17:06 (T13)	07:25	16:11 (T13)	07:53
	21:01	39	20:31 (T10)	20:26		19:34	18:44 45	18:22 (T12)	17:09 27	16:38 (T13)	17:05
21	06:16		19:52 (T10)	06:46		07:17	07:49	17:05 (T13)	07:26	16:13 (T13)	07:54
	21:00	39	20:31 (T10)	20:24		19:32	18:43 39	17:44 (T13)	17:08 24	16:37 (T13)	17:05
22	06:17		19:52 (T10)	06:47		07:18	07:50	17:03 (T13)	07:27	16:15 (T13)	07:54
	21:00	39	20:31 (T10)	20:23		19:30	18:41 41	17:44 (T13)	17:08 20	16:35 (T13)	17:06
23	06:18		19:53 (T10)	06:48		07:19	07:52	17:02 (T13)	07:28	16:19 (T13)	07:55
	20:59	38	20:31 (T10)	20:21		19:28	18:40 43	17:45 (T13)	17:07 14	16:33 (T13)	17:06
24	06:18		19:53 (T10)	06:49		07:20	07:53	17:02 (T13)	07:30	16:23 (T13)	07:55
	20:58	38	20:31 (T10)	20:20		19:27	18:38 44	17:46 (T13)	17:06 6	16:29 (T13)	17:07
25	06:19		19:54 (T10)	06:50		07:21	07:54	17:01 (T13)	07:31		07:56
	20:57	37	20:31 (T10)	20:18		19:25	18:37 46	17:47 (T13)	17:06		17:07
26	06:20		19:53 (T10)	06:51		07:22	07:55	17:00 (T13)	07:32		07:56
	20:56	37	20:30 (T10)	20:17		19:23	18:36 47	17:47 (T13)	17:05		17:08
27	06:21		19:53 (T10)	06:52		07:23	07:56	16:59 (T13)	07:33		07:56
	20:55	36	20:29 (T10)	20:15		19:22	18:34 48	17:47 (T13)	17:05		17:09
28	06:22		19:54 (T10)	06:53		07:24	07:57	16:58 (T13)	07:34		07:57
	20:54	35	20:29 (T10)	20:14		19:20	18:33 49	17:47 (T13)	17:04		17:09
29	06:23		19:55 (T10)	06:54		07:25	07:59	16:58 (T13)	07:35		07:57
	20:53	33	20:28 (T10)	20:12		19:18	18:32 50	17:48 (T13)	17:04		17:10
30	06:24		19:55 (T10)	06:55		07:27	08:00	16:58 (T13)	07:36		07:57
	20:52	33	20:28 (T10)	20:11		19:16	18:30 50	17:48 (T13)	17:04		17:11
31	06:25		19:56 (T10)	06:56			08:01	16:57 (T13)			07:57
	20:51	31	20:27 (T10)	20:09			18:29 51	17:48 (T13)			17:12
Potential sun hours	460			429		375	345		297		287
Total, worst case		1172			146			1115		922	
Sun reduction		0.66			0.61			0.48		0.30	
Oper. time red.		1.00			1.00			1.00		1.00	
Wind dir. red.		0.55			0.56			0.71		0.72	
Total reduction		0.38			0.35			0.35		0.22	
Total, real		443			51			390		207	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 611 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6686)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57 - 17:12	07:43 - 17:47	07:07 - 18:21	07:16 - 19:56	06:30 - 20:27 (31)	06:54 (T5) - 07:25 (T5) (45)	06:01 - 06:37 (T4) - 20:57 (46)	06:01 - 06:45 (T4) - 21:09 (43)	06:26 - 06:50 (T4) - 07:28 (T4) (40)	06:57 - 07:30 (T4) - 20:07	07:27 - 19:14	07:02 - 17:27	07:37 - 17:03
2	07:57 - 17:13	07:42 - 17:48	07:05 - 18:22	07:14 - 19:57	06:28 - 20:28 (31)	06:54 (T5) - 07:25 (T5) (45)	06:00 - 06:38 (T4) - 20:58 (45)	06:02 - 06:44 (T4) - 21:08 (43)	06:27 - 06:51 (T4) - 07:27 (T4) (38)	06:58 - 07:29 (T4) - 20:05	07:28 - 19:13	07:03 - 17:26	07:38 - 17:03
3	07:57 - 17:14	07:41 - 17:49	07:04 - 18:24	07:12 - 19:58	06:27 - 20:29 (31)	06:54 (T4) - 07:25 (T5) (45)	06:00 - 06:38 (T4) - 20:58 (46)	06:02 - 06:45 (T4) - 21:08 (43)	06:28 - 06:52 (T4) - 07:28 (T5) (36)	06:59 - 07:28 (T5) - 20:04	07:29 - 19:11	07:04 - 17:25	07:39 - 17:02
4	07:58 - 17:15	07:40 - 17:51	07:02 - 18:25	07:11 - 19:59	06:26 - 20:30 (33)	06:51 (T4) - 07:24 (T5) (45)	05:59 - 06:38 (T4) - 20:59 (45)	06:03 - 06:45 (T4) - 21:08 (44)	06:29 - 06:52 (T4) - 07:29 (T5) (37)	07:00 - 07:29 (T5) - 20:02	07:30 - 19:09	07:05 - 17:24	07:40 - 17:02
5	07:58 - 17:16	07:39 - 17:52	07:01 - 18:26	07:09 - 20:00	06:25 - 20:31 (35)	06:47 (T4) - 07:22 (T5) (44)	05:59 - 06:39 (T4) - 21:00 (44)	06:04 - 06:45 (T4) - 21:08 (44)	06:30 - 06:53 (T4) - 07:29 (T4) (37)	07:01 - 07:30 (T5) - 20:00	07:31 - 19:08	07:07 - 17:23	07:41 - 17:02
6	07:57 - 17:17	07:38 - 17:53	06:59 - 18:27	07:07 - 20:00	06:23 - 20:32 (36)	06:46 (T4) - 07:22 (T5) (44)	05:59 - 06:39 (T4) - 21:01 (44)	06:04 - 06:45 (T4) - 21:08 (45)	06:31 - 06:54 (T4) - 07:30 (T4) (37)	07:02 - 07:31 (T5) - 19:57	07:32 - 19:06	07:08 - 17:21	07:42 - 17:02
7	07:57 - 17:18	07:37 - 17:54	06:57 - 18:28	07:06 - 20:01	06:22 - 20:33 (37)	06:44 (T4) - 07:21 (T5) (44)	05:58 - 06:39 (T4) - 21:01 (44)	06:05 - 06:45 (T4) - 21:07 (44)	06:32 - 06:56 (T4) - 07:29 (T4) (36)	07:03 - 07:32 (T5) - 19:55	07:34 - 19:04	07:09 - 17:20	07:43 - 17:02
8	07:57 - 17:19	07:36 - 17:56	07:56 - 19:29	07:04 - 20:02	06:21 - 20:34 (37)	06:43 (T4) - 07:20 (T5) (44)	05:58 - 06:39 (T4) - 21:02 (44)	06:05 - 06:45 (T4) - 21:07 (45)	06:33 - 06:58 (T4) - 07:30 (T4) (34)	07:04 - 07:32 (T5) - 19:54	07:35 - 19:03	07:10 - 17:19	07:44 - 17:02
9	07:57 - 17:20	07:35 - 17:57	07:54 - 19:31	07:03 - 20:03	06:20 - 20:35 (37)	06:42 (T4) - 07:19 (T5) (43)	05:58 - 06:40 (T4) - 21:02 (43)	06:06 - 06:46 (T4) - 21:07 (45)	06:34 - 07:00 (T4) - 07:31 (T4) (33)	07:05 - 07:33 (T5) - 19:52	07:36 - 19:01	07:12 - 17:18	07:45 - 17:02
10	07:57 - 17:21	07:34 - 17:58	07:53 - 19:32	07:01 - 20:04	06:19 - 20:36 (37)	06:41 (T4) - 07:18 (T4) (43)	05:58 - 06:40 (T4) - 21:03 (43)	06:07 - 06:45 (T4) - 21:06 (45)	06:35 - 07:03 (T5) - 07:30 (T4) (30)	07:06 - 07:33 (T5) - 19:50	07:37 - 18:59	07:13 - 17:17	07:46 - 17:02
11	07:57 - 17:22	07:32 - 17:59	07:51 - 19:33	06:59 - 20:05	06:18 - 20:37 (39)	06:40 (T4) - 07:19 (T4) (43)	05:58 - 06:41 (T4) - 21:04 (43)	06:07 - 06:45 (T4) - 21:06 (46)	06:36 - 07:03 (T5) - 07:31 (T4) (31)	07:07 - 07:34 (T5) - 19:49	07:38 - 18:58	07:14 - 17:16	07:47 - 17:02
12	07:56 - 17:23	07:31 - 18:01	07:49 - 19:34	06:58 - 20:06	06:16 - 20:38 (39)	06:40 (T4) - 07:19 (T4) (43)	05:58 - 06:41 (T4) - 21:04 (43)	06:08 - 06:46 (T4) - 21:06 (45)	06:37 - 07:02 (T5) - 07:31 (T4) (32)	07:08 - 07:34 (T5) - 19:47	07:39 - 18:56	07:15 - 17:15	07:47 - 17:02
13	07:56 - 17:24	07:30 - 18:02	07:48 - 19:35	06:56 - 20:08	06:15 - 20:39 (41)	06:39 (T4) - 07:20 (T4) (43)	05:57 - 06:41 (T4) - 21:05 (43)	06:09 - 06:45 (T4) - 21:05 (46)	06:38 - 07:02 (T5) - 07:31 (T4) (32)	07:09 - 07:34 (T5) - 19:45	07:40 - 18:55	07:16 - 17:14	07:48 - 17:02
14	07:56 - 17:25	07:28 - 18:03	07:46 - 19:36	06:55 - 20:09	06:14 - 20:41 (42)	06:38 (T4) - 07:20 (T4) (43)	05:57 - 06:42 (T4) - 21:05 (42)	06:10 - 06:45 (T4) - 21:05 (47)	06:39 - 07:02 (T5) - 07:32 (T4) (32)	07:10 - 07:34 (T5) - 19:44	07:41 - 18:53	07:18 - 17:13	07:49 - 17:02
15	07:55 - 17:26	07:27 - 18:04	07:44 - 19:37	06:53 - 20:10	06:13 - 20:42 (43)	06:38 (T4) - 07:21 (T4) (42)	05:57 - 06:42 (T4) - 21:06 (42)	06:10 - 06:46 (T4) - 21:04 (46)	06:40 - 07:02 (T5) - 07:32 (T4) (32)	07:11 - 07:34 (T5) - 19:42	07:42 - 18:52	07:19 - 17:12	07:50 - 17:03
16	07:55 - 17:27	07:26 - 18:06	07:43 - 19:38	06:51 - 20:11	06:12 - 20:43 (44)	06:37 (T4) - 07:21 (T4) (42)	05:57 - 06:42 (T4) - 21:06 (42)	06:11 - 06:46 (T4) - 21:03 (46)	06:41 - 07:02 (T5) - 07:32 (T4) (31)	07:12 - 07:33 (T5) - 19:40	07:43 - 18:50	07:20 - 17:12	07:50 - 17:03
17	07:54 - 17:29	07:25 - 18:07	07:41 - 19:39	06:50 - 07:09 (T5) - 20:12 (7)	06:11 - 07:16 (T5) - 20:44 (44)	06:37 (T4) - 07:21 (T4) (42)	05:57 - 06:42 (T4) - 21:06 (42)	06:12 - 06:45 (T4) - 21:03 (47)	06:42 (T4) - 07:03 (T5) - 07:32 (T4) (30)	07:13 - 07:33 (T5) - 19:38	07:44 - 18:48	07:21 - 17:11	07:51 - 17:03
18	07:54 - 17:30	07:23 - 18:08	07:39 - 19:41	06:48 - 07:07 (T5) - 20:13 (12)	06:10 - 07:19 (T5) - 20:44 (45)	06:36 (T4) - 07:21 (T4) (41)	05:58 - 06:43 (T4) - 21:07 (41)	06:13 - 06:45 (T4) - 21:02 (47)	06:43 (T4) - 07:04 (T5) - 07:32 (T4) (29)	07:14 - 07:33 (T5) - 19:37	07:46 - 18:47	07:22 - 17:10	07:52 - 17:04
19	07:53 - 17:31	07:22 - 18:09	07:38 - 19:42	06:47 - 07:06 (T5) - 20:14 (16)	06:10 - 07:22 (T5) - 20:45 (45)	06:36 (T4) - 07:21 (T4) (41)	05:58 - 06:43 (T4) - 21:07 (41)	06:14 - 06:46 (T4) - 21:02 (46)	06:44 - 07:05 (T5) - 07:32 (T4) (27)	07:15 - 07:32 (T5) - 19:35	07:47 - 18:45	07:23 - 17:09	07:52 - 17:04
20	07:53 - 17:32	07:20 - 18:11	07:36 - 19:43	06:45 - 07:05 (T5) - 20:15 (19)	06:09 - 07:24 (T5) - 20:46 (46)	06:37 (T4) - 07:23 (T4) (41)	05:58 - 06:43 (T4) - 21:07 (41)	06:15 - 06:46 (T4) - 21:01 (47)	06:45 - 07:06 (T5) - 07:33 (T4) (25)	07:16 - 07:31 (T5) - 19:33	07:48 - 18:44	07:25 - 17:09	07:53 - 17:04
21	07:52 - 17:33	07:19 - 18:12	07:34 - 19:44	06:44 - 07:03 (T5) - 20:16 (21)	06:08 - 07:24 (T5) - 20:47 (46)	06:36 (T4) - 07:22 (T4) (41)	05:58 - 06:43 (T4) - 21:08 (41)	06:15 - 06:46 (T4) - 21:00 (47)	06:46 - 07:07 (T5) - 07:33 (T4) (23)	07:17 - 07:30 (T5) - 19:31	07:49 - 18:42	07:26 - 17:08	07:53 - 17:05
22	07:52 - 17:34	07:17 - 18:13	07:33 - 19:45	06:42 - 07:02 (T5) - 20:17 (23)	06:07 - 07:25 (T5) - 20:48 (46)	06:36 (T4) - 07:22 (T4) (41)	05:58 - 06:44 (T4) - 21:08 (41)	06:16 - 06:47 (T4) - 20:59 (46)	06:47 - 07:08 (T5) - 07:33 (T4) (21)	07:18 - 07:29 (T5) - 19:30	07:50 - 18:41	07:27 - 17:07	07:54 - 17:05
23	07:51 - 17:36	07:16 - 18:14	07:31 - 19:46	06:41 - 07:00 (T5) - 20:18 (25)	06:06 - 07:25 (T5) - 20:49 (46)	06:36 (T4) - 07:22 (T4) (41)	05:58 - 06:44 (T4) - 21:08 (41)	06:17 - 06:46 (T4) - 20:59 (46)	06:48 - 07:09 (T5) - 07:32 (T4) (18)	07:19 - 07:27 (T5) - 19:28	07:51 - 18:40	07:28 - 17:07	07:54 - 17:06
24	07:50 - 17:37	07:15 - 18:15	07:29 - 19:47	06:39 - 06:59 (T5) - 20:19 (27)	06:06 - 07:26 (T5) - 20:50 (47)	06:36 (T4) - 07:23 (T4) (41)	05:59 - 06:44 (T4) - 21:08 (41)	06:18 - 06:46 (T4) - 20:58 (46)	07:21 (T4) - 07:10 (T5) - 07:32 (T4) (15)	07:20 - 07:25 (T5) - 19:26	07:52 - 18:38	07:29 - 17:06	07:55 - 17:06
25	07:49 - 17:38	07:13 - 18:17	07:28 - 19:48	06:38 - 06:57 (T5) - 20:20 (29)	06:05 - 07:26 (T5) - 20:51 (47)	06:36 (T4) - 07:23 (T4) (41)	05:59 - 06:45 (T4) - 21:08 (41)	06:19 - 06:47 (T4) - 20:57 (45)	06:50 - 07:11 (T5) - 07:32 (T4) (12)	07:21 - 07:23 (T5) - 19:25	07:54 - 18:37	07:30 - 17:05	07:55 - 17:07
26	07:49 - 17:39	07:12 - 18:18	07:26 - 19:49	06:36 - 06:56 (T5) - 20:22 (30)	06:04 - 07:26 (T5) - 20:52 (46)	06:36 (T4) - 07:22 (T4) (42)	05:59 - 06:44 (T4) - 21:09 (42)	06:20 - 06:47 (T4) - 20:56 (45)	06:51 - 07:13 (T5) - 07:32 (T4) (5)	07:22 - 07:18 (T5) - 19:23	07:55 - 18:35	07:32 - 17:05	07:56 - 17:08
27	07:48 - 17:41	07:10 - 18:19	07:24 - 19:50	06:35 - 06:55 (T5) - 20:23 (32)	06:04 - 07:27 (T5) - 20:53 (46)	06:37 (T4) - 07:23 (T4) (42)	06:00 - 06:44 (T4) - 21:09 (42)	06:21 - 06:48 (T4) - 20:55 (44)	06:52 - 07:23 - 19:21	07:56 - 18:34	07:33 - 17:05	07:56 - 17:08	
28	07:47 - 17:42	07:08 - 18:20	07:22 - 19:51	06:34 - 06:54 (T5) - 20:24 (32)	06:03 - 07:26 (T5) - 20:54 (47)	06:36 (T4) - 07:23 (T4) (42)	06:00 - 06:45 (T4) - 21:09 (42)	06:22 - 06:48 (T4) - 20:54 (43)	06:53 - 07:24 - 19:19	07:57 - 18:33	07:34 - 17:04	07:56 - 17:09	
29	07:46 - 17:43		07:21 - 19:52	06:32 - 06:54 (T5) - 20:25 (32)	06:02 - 07:26 (T5) - 20:55 (46)	06:37 (T4) - 07:23 (T4) (42)	06:00 - 06:45 (T4) - 21:09 (42)	06:23 - 06:49 (T4) - 20:53 (42)	06:54 - 07:25 - 19:18	07:58 - 18:31	07:35 - 17:04	07:57 - 17:10	
30	07:45 - 17:44		07:19 - 19:54	06:31 - 06:54 (T5) - 20:26 (32)	06:02 - 07:26 (T5) - 20:55 (46)	06:37 (T4) - 07:23 (T4) (42)	06:01 - 06:45 (T4) - 21:09 (43)	06:24 - 06:49 (T4) - 20:52 (42)	06:55 - 07:26 - 19:16	08:00 - 18:30	07:36 - 17:03	07:57 - 17:10	
31	07:44 - 17:46		07:17 - 19:55		06:01 - 20:56 (46)	06:37 (T4) - 07:23 (T4)		06:25 - 20:51 (40)	06:56 (T4) - 07:30 (T4) - 20:09		08:01 - 18:29		07:57 - 17:11
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287	
Total, worst case				337	1282	1280	1390	753					
Sun reduction				0.52	0.57	0.64	0.66	0.61					
Oper. time red.				1.00	1.00	1.00	1.00	1.00					
Wind dir. red.				0.67	0.70	0.70	0.70	0.68					
Total reduction				0.35	0.40	0.45	0.46	0.42					
Total, real				118	509	575	644	313					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 614 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6689)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May	June
1	07:57	15:35 (T59)	07:43		07:07	16:54 (T78)	07:16	18:55 (T57)	06:31	06:02
	17:13 39	16:14 (T59)	17:48		18:22 46	17:40 (T78)	19:56 37	19:32 (T57)	20:27	20:57
2	07:57	15:36 (T59)	07:42		07:06	16:54 (T78)	07:15	18:55 (T57)	06:29	06:01
	17:14 38	16:14 (T59)	17:49		18:23 45	17:39 (T78)	19:57 38	19:33 (T57)	20:28	20:58
3	07:57	15:37 (T59)	07:41		07:04	16:55 (T78)	07:13	18:54 (T57)	06:28	06:01
	17:15 37	16:14 (T59)	17:50		18:24 43	17:38 (T78)	19:58 39	19:33 (T57)	20:29	20:58
4	07:57	15:37 (T59)	07:40		07:03	16:55 (T78)	07:11	18:53 (T57)	06:27	06:01
	17:16 38	16:15 (T59)	17:52		18:25 42	17:37 (T78)	19:59 39	19:32 (T57)	20:30	20:59
5	07:57	15:38 (T59)	07:39		07:01	16:56 (T78)	07:10	18:53 (T57)	06:25	06:00
	17:17 37	16:15 (T59)	17:53		18:27 39	17:35 (T78)	20:00 40	19:33 (T57)	20:31	21:00
6	07:57	15:39 (T59)	07:38		06:59	16:57 (T78)	07:08	18:53 (T57)	06:24	06:00
	17:18 36	16:15 (T59)	17:54		18:28 38	17:35 (T78)	20:00 39	19:32 (T57)	20:32	21:00
7	07:57	15:39 (T59)	07:37		06:58	16:58 (T78)	07:06	18:52 (T57)	06:23	06:00
	17:19 35	16:14 (T59)	17:55		18:29 35	17:33 (T78)	20:01 39	19:31 (T57)	20:33	21:01
8	07:57	15:40 (T59)	07:36	17:11 (T78)	07:56	17:59 (T78)	07:05	18:53 (T57)	06:22	05:59
	17:20 34	16:14 (T59)	17:57 12	17:23 (T78)	19:30 32	18:31 (T78)	20:03 38	19:31 (T57)	20:34	21:02
9	07:57	15:42 (T59)	07:35	17:08 (T78)	07:55	18:02 (T78)	07:03	18:52 (T57)	06:21	05:59
	17:21 32	16:14 (T59)	17:58 19	17:27 (T78)	19:31 27	18:29 (T78)	20:04 38	19:30 (T57)	20:35	21:02
10	07:57	15:43 (T59)	07:34	17:06 (T78)	07:53	18:04 (T78)	07:02	18:53 (T57)	06:20	05:59
	17:22 31	16:14 (T59)	17:59 24	17:30 (T78)	19:32 22	18:26 (T78)	20:05 37	19:30 (T57)	20:36	21:03
11	07:57	15:43 (T59)	07:32	17:03 (T78)	07:51	18:07 (T78)	07:00	18:53 (T57)	06:18	05:59
	17:23 30	16:13 (T59)	18:00 29	17:32 (T78)	19:33 16	18:23 (T78)	20:06 36	19:29 (T57)	20:37	21:03
12	07:56	15:45 (T59)	07:31	17:02 (T78)	07:50		06:58	18:53 (T57)	06:17	05:59
	17:24 28	16:13 (T59)	18:02 31	17:33 (T78)	19:34		20:07 34	19:27 (T57)	20:38	21:04
13	07:56	15:47 (T59)	07:30	17:00 (T78)	07:48		06:57	18:55 (T57)	06:16	05:59
	17:25 26	16:13 (T59)	18:03 35	17:35 (T78)	19:36		20:08 36	19:47 (T53)	20:40	21:05
14	07:56	15:48 (T59)	07:29	16:59 (T78)	07:46		06:55	18:55 (T57)	06:15	05:59
	17:26 24	16:12 (T59)	18:04 37	17:36 (T78)	19:37		20:09 38	19:48 (T53)	20:41	21:05
15	07:55	15:50 (T59)	07:27	16:58 (T78)	07:45		06:54	18:57 (T57)	06:14	05:59
	17:27 21	16:11 (T59)	18:05 39	17:37 (T78)	19:38		20:10 38	19:49 (T53)	20:42	21:05
16	07:55	15:52 (T59)	07:26	16:57 (T78)	07:43		06:52	18:58 (T57)	06:13	05:59
	17:28 18	16:10 (T59)	18:06 41	17:38 (T78)	19:39		20:11 37	19:50 (T53)	20:43	21:06
17	07:54	15:55 (T59)	07:25	16:56 (T78)	07:41		06:51	19:00 (T57)	06:12	05:59
	17:30 13	16:08 (T59)	18:08 43	17:39 (T78)	19:40		20:12 34	19:51 (T53)	20:43	21:06
18	07:54	15:59 (T59)	07:23	16:55 (T78)	07:40		06:49	19:02 (T57)	06:11	05:59
	17:31 5	16:04 (T59)	18:09 45	17:40 (T78)	19:41		20:13 32	19:52 (T53)	20:44	21:07
19	07:53		07:22	16:55 (T78)	07:38		06:48	19:34 (T53)	06:11	05:59
	17:32		18:10 46	17:41 (T78)	19:42		20:14 19	19:53 (T53)	20:45	21:07
20	07:53		07:21	16:54 (T78)	07:36		06:46	19:33 (T53)	06:10	05:59
	17:33		18:11 46	17:40 (T78)	19:43		20:15 21	19:54 (T53)	20:46	21:07
21	07:52		07:19	16:54 (T78)	07:35		06:45	19:33 (T53)	06:09	05:59
	17:34		18:12 47	17:41 (T78)	19:44		20:16 22	19:55 (T53)	20:47	21:07
22	07:52		07:18	16:53 (T78)	07:33		06:43	19:33 (T53)	06:08	05:59
	17:35		18:14 48	17:41 (T78)	19:45		20:17 22	19:55 (T53)	20:48	21:08
23	07:51		07:16	16:54 (T78)	07:31		06:42	19:33 (T53)	06:07	06:00
	17:37		18:15 47	17:41 (T78)	19:46		20:18 23	19:56 (T53)	20:49	21:08
24	07:50		07:15	16:53 (T78)	07:30	19:12 (T57)	06:40	19:34 (T53)	06:07	06:00
	17:38		18:16 48	17:41 (T78)	19:48 9	19:21 (T57)	20:20 22	19:56 (T53)	20:50	21:08
25	07:49		07:13	16:53 (T78)	07:28	19:07 (T57)	06:39	19:34 (T53)	06:06	06:00
	17:39		18:17 48	17:41 (T78)	19:49 18	19:25 (T57)	20:21 21	19:55 (T53)	20:51	21:08
26	07:49		07:12	16:53 (T78)	07:26	19:04 (T57)	06:37	19:35 (T53)	06:05	06:00
	17:40		18:18 47	17:40 (T78)	19:50 23	19:27 (T57)	20:22 19	19:54 (T53)	20:52	21:08
27	07:48		07:10	16:54 (T78)	07:25	19:02 (T57)	06:36	19:35 (T53)	06:05	06:01
	17:42		18:20 47	17:41 (T78)	19:51 27	19:29 (T57)	20:23 17	19:52 (T53)	20:53	21:08
28	07:47		07:09	16:53 (T78)	07:23	19:00 (T57)	06:35	19:37 (T53)	06:04	06:01
	17:43		18:21 47	17:40 (T78)	19:52 30	19:30 (T57)	20:24 14	19:51 (T53)	20:54	21:08
29	07:46				07:21	18:58 (T57)	06:33	19:39 (T53)	06:03	06:02
	17:44				19:53 32	19:30 (T57)	20:25 9	19:48 (T53)	20:54	21:08
30	07:45				07:20	18:58 (T57)	06:32		06:03	06:02
	17:45				19:54 34	19:32 (T57)	20:26		20:55	21:08
31	07:44				07:18	18:56 (T57)			06:02	
	17:47				19:55 36	19:32 (T57)			20:56	
Potential sun hours	297		297		370		399		448	452
Total, worst case		522		826		594		878		
Sun reduction		0.31		0.40		0.44		0.52		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.75		0.71		0.68		0.61		
Total reduction		0.24		0.29		0.30		0.32		
Total, real		123		238		181		283		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 614 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6689)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December		
1	06:03	06:27			06:58		18:52 (T57)	07:28			07:02		16:35 (T78)	07:37		15:26 (T59)
	21:08	20:50			20:07	36	19:28 (T57)	19:15			17:28	24	16:59 (T78)	17:04	29	15:55 (T59)
2	06:03	06:28			06:59		18:51 (T57)	07:29		17:47 (T78)	07:03		16:38 (T78)	07:38		15:25 (T59)
	21:08	20:49			20:06	37	19:28 (T57)	19:13	12	17:59 (T78)	17:27	19	16:57 (T78)	17:04	31	15:56 (T59)
3	06:04	06:29			07:00		18:50 (T57)	07:30		17:44 (T78)	07:04		16:42 (T78)	07:39		15:25 (T59)
	21:08	20:48			20:04	38	19:28 (T57)	19:12	20	18:04 (T78)	17:26	10	16:52 (T78)	17:04	32	15:57 (T59)
4	06:04	06:30			07:01		18:50 (T57)	07:31		17:40 (T78)	07:06			07:40		15:24 (T59)
	21:08	20:47			20:02	38	19:28 (T57)	19:10	26	18:06 (T78)	17:25			17:03	34	15:58 (T59)
5	06:05	06:31			07:02		18:49 (T57)	07:32		17:38 (T78)	07:07			07:41		15:24 (T59)
	21:08	20:46			20:01	39	19:28 (T57)	19:08	30	18:08 (T78)	17:23			17:03	35	15:59 (T59)
6	06:05	06:32			07:03		18:49 (T57)	07:33		17:36 (T78)	07:08			07:42		15:24 (T59)
	21:08	20:44			19:57	39	19:28 (T57)	19:07	33	18:09 (T78)	17:22			17:03	36	16:00 (T59)
7	06:06	06:33			07:04		18:48 (T57)	07:34		17:34 (T78)	07:09			07:43		15:24 (T59)
	21:07	20:43			19:56	40	19:28 (T57)	19:05	36	18:10 (T78)	17:21			17:03	37	16:01 (T59)
8	06:06	06:33			07:05		18:48 (T57)	07:35		17:32 (T78)	07:10			07:44		15:24 (T59)
	21:07	20:42			19:54	39	19:27 (T57)	19:03	39	18:11 (T78)	17:20			17:03	38	16:02 (T59)
9	06:07	06:34			07:06		18:48 (T57)	07:36		17:31 (T78)	07:12			07:45		15:25 (T59)
	21:07	20:41			19:52	39	19:27 (T57)	19:02	40	18:11 (T78)	17:19			17:03	38	16:03 (T59)
10	06:08	06:35			07:06		18:48 (T57)	07:37		17:29 (T78)	07:13			07:46		15:25 (T59)
	21:06	20:40			19:51	38	19:26 (T57)	19:00	43	18:12 (T78)	17:18			17:03	38	16:03 (T59)
11	06:09	06:36			07:07		18:48 (T57)	07:38		17:28 (T78)	07:14			07:46		15:25 (T59)
	21:06	20:38			19:49	37	19:25 (T57)	18:59	44	18:12 (T78)	17:17			17:03	39	16:04 (T59)
12	06:09	06:37			07:08		18:48 (T57)	07:39		17:27 (T78)	07:15			07:47		15:26 (T59)
	21:05	20:37			19:47	36	19:24 (T57)	18:57	45	18:12 (T78)	17:16			17:03	39	16:05 (T59)
13	06:10	06:38		19:51 (T53)	07:09		18:49 (T57)	07:40		17:26 (T78)	07:16			07:48		15:26 (T59)
	21:05	20:36	1	19:52 (T53)	19:46	34	19:23 (T57)	18:55	46	18:12 (T78)	17:15			17:03	40	16:06 (T59)
14	06:11	06:39		19:46 (T53)	07:10		18:49 (T57)	07:41		17:27 (T78)	07:18			07:49		15:26 (T59)
	21:05	20:34	11	19:57 (T53)	19:44	33	19:22 (T57)	18:54	46	18:13 (T78)	17:14			17:04	40	16:06 (T59)
15	06:12	06:40		19:44 (T53)	07:11		18:49 (T57)	07:43		17:26 (T78)	07:19			07:50		15:26 (T59)
	21:04	20:33	15	19:59 (T53)	19:42	30	19:19 (T57)	18:52	47	18:13 (T78)	17:13			17:04	41	16:07 (T59)
16	06:12	06:41		19:43 (T53)	07:12		18:50 (T57)	07:44		17:25 (T78)	07:20			07:50		15:27 (T59)
	21:03	20:32	17	20:00 (T53)	19:40	28	19:18 (T57)	18:51	48	18:13 (T78)	17:13			17:04	40	16:07 (T59)
17	06:13	06:42		19:41 (T53)	07:13		18:52 (T57)	07:45		17:25 (T78)	07:21			07:51		15:27 (T59)
	21:03	20:30	20	20:01 (T53)	19:39	23	19:15 (T57)	18:49	48	18:13 (T78)	17:12			17:04	40	16:07 (T59)
18	06:14	06:44		19:40 (T53)	07:14		18:54 (T57)	07:46		17:24 (T78)	07:22			07:52		15:27 (T59)
	21:02	20:29	21	20:01 (T53)	19:37	19	19:13 (T57)	18:48	48	18:12 (T78)	17:11			17:05	41	16:08 (T59)
19	06:15	06:45		19:40 (T53)	07:15		18:57 (T57)	07:47		17:24 (T78)	07:24			07:52		15:28 (T59)
	21:01	20:27	22	20:02 (T53)	19:35	12	19:09 (T57)	18:46	48	18:12 (T78)	17:10			17:05	41	16:09 (T59)
20	06:16	06:46		19:39 (T53)	07:16			07:48		17:25 (T78)	07:25			07:53		15:28 (T59)
	21:01	20:26	23	20:02 (T53)	19:34			18:45	47	18:12 (T78)	17:10			17:05	41	16:09 (T59)
21	06:16	06:47		19:39 (T53)	07:17			07:49		17:25 (T78)	07:26			07:53		15:29 (T59)
	21:00	20:24	22	20:01 (T53)	19:32			18:43	47	18:12 (T78)	17:09			17:06	41	16:10 (T59)
22	06:17	06:48		19:38 (T53)	07:18			07:50		17:25 (T78)	07:27			07:54		15:29 (T59)
	20:59	20:23	22	20:00 (T53)	19:30			18:42	46	18:11 (T78)	17:08			17:06	41	16:10 (T59)
23	06:18	06:49		19:37 (T53)	07:19			07:52		17:25 (T78)	07:28			07:54		15:29 (T59)
	20:59	20:21	20	19:57 (T53)	19:29			18:40	45	18:10 (T78)	17:08			17:07	41	16:10 (T59)
24	06:19	06:50		19:37 (T53)	07:20			07:53		17:25 (T78)	07:29		15:36 (T59)	07:55		15:30 (T59)
	20:58	20:20	19	19:56 (T53)	19:27			18:39	44	18:09 (T78)	17:07	5	15:41 (T59)	17:07	41	16:11 (T59)
25	06:20	06:51		19:05 (T57)	07:22			07:54		17:27 (T78)	07:30		15:33 (T59)	07:55		15:30 (T59)
	20:57	20:18	31	19:54 (T53)	19:25			18:37	42	18:09 (T78)	17:06	13	15:46 (T59)	17:08	41	16:11 (T59)
26	06:21	06:52		19:02 (T57)	07:23			07:55		17:27 (T78)	07:32		15:31 (T59)	07:56		15:31 (T59)
	20:56	20:17	35	19:53 (T53)	19:23			18:36	41	18:08 (T78)	17:06	18	15:49 (T59)	17:09	41	16:12 (T59)
27	06:22	06:53		18:59 (T57)	07:24			07:56		17:28 (T78)	07:33		15:29 (T59)	07:56		15:32 (T59)
	20:55	20:15	37	19:51 (T53)	19:22			18:35	39	18:07 (T78)	17:06	21	15:50 (T59)	17:09	40	16:12 (T59)
28	06:23	06:54		18:58 (T57)	07:25			07:57		17:28 (T78)	07:34		15:28 (T59)	07:56		15:32 (T59)
	20:54	20:14	38	19:50 (T53)	19:20			18:33	37	18:05 (T78)	17:05	24	15:52 (T59)	17:10	41	16:13 (T59)
29	06:24	06:55		18:56 (T57)	07:26			07:58		17:30 (T78)	07:35		15:27 (T59)	07:57		15:32 (T59)
	20:53	20:12	37	19:48 (T53)	19:18			18:32	35	18:05 (T78)	17:05	26	15:53 (T59)	17:11	41	16:13 (T59)
30	06:25	06:56		18:55 (T57)	07:27			08:00		17:32 (T78)	07:36		15:26 (T59)	07:57		15:33 (T59)
	20:52	20:10	36	19:47 (T53)	19:17			18:31	31	18:03 (T78)	17:04	28	15:54 (T59)	17:12	40	16:13 (T59)
31	06:26	06:57		18:53 (T57)				08:01		17:33 (T78)				07:57		15:34 (T59)
	20:51	20:09	34	19:27 (T57)				18:30	28	18:01 (T78)				17:12	40	16:14 (T59)
Potential sun hours	459	428			375			345			297			287		
Total, worst case			461			635			1181			188			1198	
Sun reduction			0.61			0.59			0.48			0.30			0.22	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.59			0.62			0.71			0.73			0.75	
Total reduction			0.37			0.38			0.35			0.23			0.17	
Total, real			170			239			409			42			201	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 653 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6714)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March	April	May			June		
1	07:57		09:03 (T21)	07:44	07:07	07:16	06:30			06:01		06:33 (T18)
	17:13	27	09:30 (T21)	17:47	18:22	19:56	20:27			20:57	49	07:22 (T18)
2	07:58		09:04 (T21)	07:43	07:06	07:14	06:29			06:01		06:32 (T18)
	17:13	25	09:29 (T21)	17:48	18:23	19:57	20:28			20:58	49	07:21 (T18)
3	07:58		09:05 (T21)	07:42	07:04	07:13	06:27			06:00		06:33 (T18)
	17:14	24	09:29 (T21)	17:50	18:24	19:58	20:29			20:59	49	07:22 (T18)
4	07:58		09:06 (T21)	07:41	07:03	07:11	06:26			06:00		06:33 (T18)
	17:15	23	09:29 (T21)	17:51	18:25	19:59	20:30			20:59	49	07:22 (T18)
5	07:58		09:07 (T21)	07:39	07:01	07:09	06:25		06:53 (T18)	05:59		06:33 (T18)
	17:16	22	09:29 (T21)	17:52	18:26	20:00	20:31	8	07:01 (T18)	21:00	49	07:22 (T18)
6	07:58		09:08 (T21)	07:38	06:59	07:08	06:24		06:48 (T18)	05:59		06:33 (T18)
	17:17	20	09:28 (T21)	17:54	18:27	20:00	20:32	17	07:05 (T18)	21:01	49	07:22 (T18)
7	07:58		09:10 (T21)	07:37	06:58	07:06	06:22		06:46 (T18)	05:59		06:34 (T18)
	17:18	18	09:28 (T21)	17:55	18:29	20:01	20:33	22	07:08 (T18)	21:01	48	07:22 (T18)
8	07:57		09:11 (T21)	07:36	07:56	07:04	06:21		06:43 (T18)	05:59		06:34 (T18)
	17:19	15	09:26 (T21)	17:56	19:30	20:02	20:35	26	07:09 (T18)	21:02	49	07:23 (T18)
9	07:57		09:14 (T21)	07:35	07:54	07:03	06:20		06:41 (T18)	05:58		06:34 (T18)
	17:20	11	09:25 (T21)	17:57	19:31	20:04	20:36	30	07:11 (T18)	21:03	48	07:22 (T18)
10	07:57		09:18 (T21)	07:34	07:53	07:01	06:19		06:40 (T18)	05:58		06:34 (T18)
	17:21	4	09:22 (T21)	17:59	19:32	20:05	20:37	32	07:12 (T18)	21:03	48	07:22 (T18)
11	07:57			07:33	07:51	07:00	06:18		06:39 (T18)	05:58		06:35 (T18)
	17:22			18:00	19:33	20:06	20:38	34	07:13 (T18)	21:04	48	07:23 (T18)
12	07:57			07:31	07:50	06:58	06:17		06:38 (T18)	05:58		06:35 (T18)
	17:23			18:01	19:34	20:07	20:39	36	07:14 (T18)	21:04	48	07:23 (T18)
13	07:56			07:30	07:48	06:56	06:16		06:37 (T18)	05:58		06:35 (T18)
	17:24			18:02	19:35	20:08	20:40	38	07:15 (T18)	21:05	48	07:23 (T18)
14	07:56			07:29	07:46	06:55	06:15		06:36 (T18)	05:58		06:35 (T18)
	17:25			18:04	19:36	20:09	20:41	40	07:16 (T18)	21:05	48	07:23 (T18)
15	07:56			07:27	07:45	06:53	06:14		06:35 (T18)	05:58		06:36 (T18)
	17:27			18:05	19:38	20:10	20:42	41	07:16 (T18)	21:06	47	07:23 (T18)
16	07:55			07:26	07:43	06:52	06:13		06:34 (T18)	05:58		06:36 (T18)
	17:28			18:06	19:39	20:11	20:43	43	07:17 (T18)	21:06	47	07:23 (T18)
17	07:55			07:25	07:41	06:50	06:12		06:34 (T18)	05:58		06:36 (T18)
	17:29			18:07	19:40	20:12	20:44	43	07:17 (T18)	21:07	48	07:24 (T18)
18	07:54			07:23	07:40	06:49	06:11		06:34 (T18)	05:58		06:36 (T18)
	17:30			18:08	19:41	20:13	20:45	45	07:19 (T18)	21:07	48	07:24 (T18)
19	07:54			07:22	07:38	06:47	06:10		06:33 (T18)	05:58		06:36 (T18)
	17:31			18:10	19:42	20:14	20:46	46	07:19 (T18)	21:07	48	07:24 (T18)
20	07:53			07:21	07:36	06:46	06:09		06:33 (T18)	05:58		06:37 (T18)
	17:32			18:11	19:43	20:15	20:47	46	07:19 (T18)	21:08	48	07:25 (T18)
21	07:52			07:19	07:35	06:44	06:08		06:32 (T18)	05:58		06:37 (T18)
	17:34			18:12	19:44	20:16	20:48	47	07:19 (T18)	21:08	48	07:25 (T18)
22	07:52			07:18	07:33	06:43	06:07		06:32 (T18)	05:59		06:37 (T18)
	17:35			18:13	19:45	20:17	20:48	47	07:19 (T18)	21:08	48	07:25 (T18)
23	07:51			07:16	07:31	06:41	06:07		06:33 (T18)	05:59		06:37 (T18)
	17:36			18:14	19:46	20:19	20:49	47	07:20 (T18)	21:08	48	07:25 (T18)
24	07:50			07:15	07:29	06:40	06:06		06:32 (T18)	05:59		06:38 (T18)
	17:37			18:16	19:47	20:20	20:50	48	07:20 (T18)	21:08	48	07:26 (T18)
25	07:50			07:13	07:28	06:38	06:05		06:32 (T18)	05:59		06:38 (T18)
	17:38			18:17	19:48	20:21	20:51	48	07:20 (T18)	21:09	48	07:26 (T18)
26	07:49			07:12	07:26	06:37	06:05		06:32 (T18)	06:00		06:38 (T18)
	17:40			18:18	19:50	20:22	20:52	49	07:21 (T18)	21:09	47	07:25 (T18)
27	07:48			07:10	07:24	06:35	06:04		06:32 (T18)	06:00		06:39 (T18)
	17:41			18:19	19:51	20:23	20:53	49	07:21 (T18)	21:09	47	07:26 (T18)
28	07:47			07:09	07:23	06:34	06:03		06:32 (T18)	06:00		06:39 (T18)
	17:42			18:20	19:52	20:24	20:54	49	07:21 (T18)	21:09	47	07:26 (T18)
29	07:46				07:21	06:33	06:03		06:32 (T18)	06:01		06:38 (T18)
	17:43				19:53	20:25	20:55	49	07:21 (T18)	21:09	48	07:26 (T18)
30	07:45				07:19	06:31	06:02		06:33 (T18)	06:01		06:39 (T18)
	17:45				19:54	20:26	20:56	49	07:22 (T18)	21:09	48	07:27 (T18)
31	07:45				07:18		06:02		06:32 (T18)			
	17:46				19:55		20:56	49	07:21 (T18)			
Potential sun hours	297			297	370	399	449			453		
Total, worst case		189						1078			1442	
Sun reduction		0.31						0.57			0.64	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.53						0.71			0.71	
Total reduction		0.16						0.39			0.44	
Total, real		30						422			633	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 653 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6714)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October	November	December		
1	06:02		06:39 (T18)	06:26		06:49 (T18)	06:57	07:27	07:02	07:37		
	21:09	48	07:27 (T18)	20:50	35	07:24 (T18)	20:07	19:15	17:28	17:03		
2	06:02		06:39 (T18)	06:27		06:50 (T18)	06:58	07:29	07:03	07:38		09:02 (T21)
	21:09	48	07:27 (T18)	20:49	33	07:23 (T18)	20:06	19:13	17:27	17:03	2	09:04 (T21)
3	06:03		06:39 (T18)	06:28		06:51 (T18)	06:59	07:30	07:04	07:39		08:58 (T21)
	21:08	48	07:27 (T18)	20:48	31	07:22 (T18)	20:04	19:11	17:25	17:03	11	09:09 (T21)
4	06:03		06:40 (T18)	06:29		06:52 (T18)	07:00	07:31	07:06	07:40		08:56 (T21)
	21:08	48	07:28 (T18)	20:47	29	07:21 (T18)	20:02	19:10	17:24	17:03	15	09:11 (T21)
5	06:04		06:39 (T18)	06:30		06:54 (T18)	07:01	07:32	07:07	07:41		08:55 (T21)
	21:08	49	07:28 (T18)	20:46	25	07:19 (T18)	20:01	19:08	17:23	17:03	18	09:13 (T21)
6	06:05		06:40 (T18)	06:31		06:56 (T18)	07:02	07:33	07:08	07:42		08:55 (T21)
	21:08	48	07:28 (T18)	20:45	21	07:17 (T18)	19:57	19:06	17:22	17:02	19	09:14 (T21)
7	06:05		06:40 (T18)	06:32		06:59 (T18)	07:03	07:34	07:09	07:43		08:54 (T21)
	21:08	49	07:29 (T18)	20:43	15	07:14 (T18)	19:56	19:05	17:21	17:02	22	09:16 (T21)
8	06:06		06:40 (T18)	06:33			07:04	07:35	07:11	07:44		08:54 (T21)
	21:07	49	07:29 (T18)	20:42			19:54	19:03	17:20	17:02	23	09:17 (T21)
9	06:06		06:40 (T18)	06:34			07:05	07:36	07:12	07:45		08:54 (T21)
	21:07	49	07:29 (T18)	20:41			19:52	19:01	17:19	17:02	24	09:18 (T21)
10	06:07		06:41 (T18)	06:35			07:06	07:37	07:13	07:46		08:53 (T21)
	21:07	49	07:30 (T18)	20:40			19:51	19:00	17:18	17:02	25	09:18 (T21)
11	06:08		06:40 (T18)	06:36			07:07	07:38	07:14	07:47		08:53 (T21)
	21:06	49	07:29 (T18)	20:38			19:49	18:58	17:17	17:02	27	09:20 (T21)
12	06:09		06:41 (T18)	06:37			07:08	07:39	07:15	07:48		08:53 (T21)
	21:06	49	07:30 (T18)	20:37			19:47	18:57	17:16	17:02	28	09:21 (T21)
13	06:09		06:41 (T18)	06:38			07:09	07:40	07:17	07:48		08:53 (T21)
	21:05	49	07:30 (T18)	20:36			19:45	18:55	17:15	17:03	29	09:22 (T21)
14	06:10		06:41 (T18)	06:39			07:10	07:41	07:18	07:49		08:54 (T21)
	21:05	49	07:30 (T18)	20:34			19:44	18:53	17:14	17:03	29	09:23 (T21)
15	06:11		06:41 (T18)	06:40			07:11	07:43	07:19	07:50		08:53 (T21)
	21:04	49	07:30 (T18)	20:33			19:42	18:52	17:13	17:03	30	09:23 (T21)
16	06:12		06:41 (T18)	06:41			07:12	07:44	07:20	07:51		08:54 (T21)
	21:04	49	07:30 (T18)	20:32			19:40	18:50	17:12	17:03	30	09:24 (T21)
17	06:12		06:42 (T18)	06:42			07:13	07:45	07:21	07:51		08:54 (T21)
	21:03	48	07:30 (T18)	20:30			19:39	18:49	17:11	17:04	31	09:25 (T21)
18	06:13		06:42 (T18)	06:43			07:14	07:46	07:23	07:52		08:54 (T21)
	21:02	49	07:31 (T18)	20:29			19:37	18:47	17:10	17:04	31	09:25 (T21)
19	06:14		06:41 (T18)	06:44			07:15	07:47	07:24	07:52		08:55 (T21)
	21:02	49	07:30 (T18)	20:27			19:35	18:46	17:10	17:04	31	09:26 (T21)
20	06:15		06:42 (T18)	06:45			07:16	07:48	07:25	07:53		08:55 (T21)
	21:01	48	07:30 (T18)	20:26			19:33	18:44	17:09	17:05	31	09:26 (T21)
21	06:16		06:42 (T18)	06:46			07:17	07:49	07:26	07:54		08:55 (T21)
	21:00	48	07:30 (T18)	20:24			19:32	18:43	17:08	17:05	32	09:27 (T21)
22	06:17		06:43 (T18)	06:47			07:18	07:50	07:27	07:54		08:55 (T21)
	21:00	47	07:30 (T18)	20:23			19:30	18:41	17:08	17:06	32	09:27 (T21)
23	06:18		06:43 (T18)	06:48			07:19	07:52	07:28	07:55		08:57 (T21)
	20:59	47	07:30 (T18)	20:21			19:28	18:40	17:07	17:06	31	09:28 (T21)
24	06:18		06:44 (T18)	06:49			07:20	07:53	07:30	07:55		08:57 (T21)
	20:58	46	07:30 (T18)	20:20			19:27	18:38	17:06	17:07	31	09:28 (T21)
25	06:19		06:44 (T18)	06:50			07:21	07:54	07:31	07:56		08:58 (T21)
	20:57	45	07:29 (T18)	20:18			19:25	18:37	17:06	17:07	31	09:29 (T21)
26	06:20		06:44 (T18)	06:51			07:22	07:55	07:32	07:56		08:58 (T21)
	20:56	44	07:28 (T18)	20:17			19:23	18:36	17:05	17:08	31	09:29 (T21)
27	06:21		06:44 (T18)	06:52			07:23	07:56	07:33	07:56		08:58 (T21)
	20:55	44	07:28 (T18)	20:15			19:21	18:34	17:05	17:09	31	09:29 (T21)
28	06:22		06:45 (T18)	06:53			07:24	07:57	07:34	07:57		08:59 (T21)
	20:54	42	07:27 (T18)	20:14			19:20	18:33	17:04	17:09	30	09:29 (T21)
29	06:23		06:46 (T18)	06:54			07:25	07:59	07:35	07:57		09:00 (T21)
	20:53	41	07:27 (T18)	20:12			19:18	18:32	17:04	17:10	30	09:30 (T21)
30	06:24		06:47 (T18)	06:55			07:26	08:00	07:36	07:57		09:01 (T21)
	20:52	39	07:26 (T18)	20:10			19:16	18:30	17:04	17:11	29	09:30 (T21)
31	06:25		06:48 (T18)	06:56				08:01		07:57		09:02 (T21)
	20:51	37	07:25 (T18)	20:09				18:29		17:12	28	09:30 (T21)
Potential sun hours	460			429			375	345	297	287		
Total, worst case		1453			189						792	
Sun reduction		0.66			0.61						0.22	
Oper. time red.		1.00			1.00						1.00	
Wind dir. red.		0.71			0.71						0.53	
Total reduction		0.45			0.42						0.11	
Total, real		658			79						90	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 688 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6741)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58			07:44		16:28 (T13)	07:07		16:31 (T13)	07:16			06:30			06:01		20:02 (T10)
	17:13			17:47	45	17:13 (T13)	18:22	63	18:00 (T12)	19:56			20:27			20:57	31	20:33 (T10)
2	07:58			07:43		16:27 (T13)	07:06		16:32 (T13)	07:14			06:29			06:01		20:01 (T10)
	17:14			17:48	47	17:14 (T13)	18:23	62	18:01 (T12)	19:57			20:28			20:58	32	20:33 (T10)
3	07:58			07:42		16:27 (T13)	07:04		16:35 (T13)	07:13			06:27			06:00		20:01 (T10)
	17:14			17:50	48	17:15 (T13)	18:24	61	18:03 (T12)	19:58			20:29			20:59	33	20:34 (T10)
4	07:58			07:41		16:26 (T13)	07:03		16:36 (T13)	07:11			06:26			06:00		20:01 (T10)
	17:15			17:51	50	17:16 (T13)	18:25	58	18:03 (T12)	19:59			20:30			20:59	34	20:35 (T10)
5	07:58			07:40		16:26 (T13)	07:01		16:39 (T13)	07:09			06:25			05:59		20:00 (T10)
	17:16			17:52	51	17:17 (T13)	18:26	55	18:04 (T12)	20:00			20:31			21:00	35	20:35 (T10)
6	07:58			07:38		16:25 (T13)	06:59		16:43 (T13)	07:08			06:24			05:59		20:01 (T10)
	17:17			17:54	53	17:18 (T13)	18:27	48	18:06 (T12)	20:00			20:33			21:01	35	20:36 (T10)
7	07:58			07:37		16:24 (T13)	06:58		17:33 (T12)	07:06			06:22			05:59		20:01 (T10)
	17:18			17:55	54	17:18 (T13)	18:29	32	18:05 (T12)	20:01			20:34			21:01	35	20:36 (T10)
8	07:58			07:36		16:24 (T13)	07:56		18:32 (T12)	07:05			06:21			05:59		20:01 (T10)
	17:19			17:56	55	17:19 (T13)	19:30	33	19:05 (T12)	20:03			20:35			21:02	36	20:37 (T10)
9	07:57			07:35		16:24 (T13)	07:55		18:32 (T12)	07:03			06:20			05:58		20:00 (T10)
	17:20			17:57	56	17:20 (T13)	19:31	33	19:05 (T12)	20:04			20:36			21:03	37	20:37 (T10)
10	07:57			07:34		16:24 (T13)	07:53		18:32 (T12)	07:01			06:19			05:58		20:00 (T10)
	17:21			17:59	56	17:20 (T13)	19:32	32	19:04 (T12)	20:05			20:37			21:03	37	20:37 (T10)
11	07:57			07:33		16:24 (T13)	07:51		18:33 (T12)	07:00			06:18			05:58		20:00 (T10)
	17:22			18:00	57	17:21 (T13)	19:33	31	19:04 (T12)	20:06			20:38			21:04	38	20:38 (T10)
12	07:57			07:31		16:23 (T13)	07:50		18:33 (T12)	06:58			06:17			05:58		20:00 (T10)
	17:23			18:01	57	17:20 (T13)	19:34	30	19:03 (T12)	20:07			20:39			21:04	38	20:38 (T10)
13	07:56			07:30		16:23 (T13)	07:48		18:33 (T12)	06:56			06:16			05:58		20:01 (T10)
	17:24			18:02	58	17:21 (T13)	19:35	29	19:02 (T12)	20:08			20:40			21:05	37	20:38 (T10)
14	07:56			07:29		16:23 (T13)	07:46		18:34 (T12)	06:55			06:15			05:58		20:01 (T10)
	17:26			18:04	58	17:21 (T13)	19:36	27	19:01 (T12)	20:09			20:41			21:05	38	20:39 (T10)
15	07:56			07:27		16:22 (T13)	07:45		18:35 (T12)	06:53			06:14			05:58		20:01 (T10)
	17:27			18:05	59	17:21 (T13)	19:38	25	19:00 (T12)	20:10			20:42			21:06	38	20:39 (T10)
16	07:55			07:26		16:23 (T13)	07:43		18:36 (T12)	06:52			06:13			05:58		20:01 (T10)
	17:28			18:06	58	17:21 (T13)	19:39	21	18:57 (T12)	20:11			20:43			21:06	38	20:39 (T10)
17	07:55			07:25		16:23 (T13)	07:41		18:38 (T12)	06:50			06:12			05:58		20:01 (T10)
	17:29			18:07	59	17:22 (T13)	19:40	17	18:55 (T12)	20:12			20:44			21:07	39	20:40 (T10)
18	07:54			07:23		16:23 (T13)	07:40		18:41 (T12)	06:49			06:11			05:58		20:01 (T10)
	17:30			18:08	58	17:21 (T13)	19:41	11	18:52 (T12)	20:13			20:45			21:07	39	20:40 (T10)
19	07:54			07:22		16:24 (T13)	07:38			06:47			06:10			05:58		20:01 (T10)
	17:31			18:10	57	17:21 (T13)	19:42			20:14			20:46			21:07	39	20:40 (T10)
20	07:53			07:21		16:23 (T13)	07:36			06:46			06:09			05:58		20:02 (T10)
	17:32			18:11	57	17:20 (T13)	19:43			20:15			20:47			21:08	39	20:41 (T10)
21	07:53			07:19		16:24 (T13)	07:35			06:44			06:08			05:58		20:02 (T10)
	17:34			18:12	56	17:20 (T13)	19:44			20:16			20:48			21:08	39	20:41 (T10)
22	07:52			07:18		16:24 (T13)	07:33			06:43			06:07			05:59		20:02 (T10)
	17:35			18:13	55	17:19 (T13)	19:45			20:18			20:49			21:08	39	20:41 (T10)
23	07:51		16:42 (T13)	07:16		16:25 (T13)	07:31			06:41			06:07		20:13 (T10)	05:59		20:02 (T10)
	17:36	13	16:55 (T13)	18:15	54	17:19 (T13)	19:46			20:19			20:50	7	20:20 (T10)	21:08	39	20:41 (T10)
24	07:50		16:39 (T13)	07:15		16:25 (T13)	07:30			06:40			06:06		20:10 (T10)	05:59		20:03 (T10)
	17:37	19	16:58 (T13)	18:16	52	17:17 (T13)	19:47			20:20			20:50	13	20:23 (T10)	21:09	39	20:42 (T10)
25	07:50		16:37 (T13)	07:13		16:27 (T13)	07:28			06:38			06:05		20:07 (T10)	05:59		20:03 (T10)
	17:38	25	17:02 (T13)	18:17	50	17:17 (T13)	19:48			20:21			20:51	18	20:25 (T10)	21:09	39	20:42 (T10)
26	07:49		16:35 (T13)	07:12		16:27 (T13)	07:26			06:37			06:05		20:07 (T10)	06:00		20:03 (T10)
	17:40	29	17:04 (T13)	18:18	59	17:55 (T12)	19:50			20:22			20:52	20	20:27 (T10)	21:09	38	20:41 (T10)
27	07:48		16:34 (T13)	07:10		16:29 (T13)	07:24			06:35			06:04		20:05 (T10)	06:00		20:04 (T10)
	17:41	32	17:06 (T13)	18:19	61	17:57 (T12)	19:51			20:23			20:53	23	20:28 (T10)	21:09	38	20:42 (T10)
28	07:47		16:32 (T13)	07:09		16:29 (T13)	07:23			06:34			06:03		20:05 (T10)	06:00		20:04 (T10)
	17:42	36	17:08 (T13)	18:20	62	17:58 (T12)	19:52			20:24			20:54	25	20:30 (T10)	21:09	38	20:42 (T10)
29	07:46		16:31 (T13)				07:21			06:33			06:03		20:03 (T10)	06:01		20:04 (T10)
	17:43	38	17:09 (T13)				19:53			20:25			20:55	27	20:30 (T10)	21:09	38	20:42 (T10)
30	07:46		16:30 (T13)				07:19			06:31			06:02		20:03 (T10)	06:01		20:04 (T10)
	17:45	40	17:10 (T13)				19:54			20:26			20:56	29	20:32 (T10)	21:09	38	20:42 (T10)
31	07:45		16:29 (T13)				07:18						06:02		20:02 (T10)			
	17:46	43	17:12 (T13)				19:55						20:56	30	20:32 (T10)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		275			1542			668						192			1113	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.72			0.72			0.68						0.54			0.54	
Total reduction		0.23			0.30			0.31						0.31			0.35	
Total, real		63			457			206						60			393	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 688 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6741)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December
1	06:02		20:04 (T10)	06:26	06:57		07:28		18:12 (T12)	07:02	15:53 (T13)	07:37
	21:09	38	20:42 (T10)	20:50	20:07		19:15	30	18:42 (T12)	17:28	16:50 (T13)	17:03
2	06:02		20:05 (T10)	06:27	06:58		07:29		18:11 (T12)	07:03	15:53 (T13)	07:38
	21:09	37	20:42 (T10)	20:49	20:06		19:13	31	18:42 (T12)	17:27	16:49 (T13)	17:03
3	06:03		20:05 (T10)	06:28	06:59		07:30		18:11 (T12)	07:05	15:54 (T13)	07:39
	21:09	37	20:42 (T10)	20:48	20:04		19:11	32	18:43 (T12)	17:25	16:49 (T13)	17:03
4	06:03		20:06 (T10)	06:29	07:00		07:31		18:10 (T12)	07:06	15:54 (T13)	07:40
	21:08	36	20:42 (T10)	20:47	20:02		19:10	33	18:43 (T12)	17:24	16:48 (T13)	17:03
5	06:04		20:07 (T10)	06:30	07:01		07:32		18:10 (T12)	07:07	15:55 (T13)	07:41
	21:08	36	20:43 (T10)	20:46	20:01		19:08	32	18:42 (T12)	17:23	16:48 (T13)	17:03
6	06:05		20:07 (T10)	06:31	07:02		07:33		18:09 (T12)	07:08	15:56 (T13)	07:42
	21:08	35	20:42 (T10)	20:45	19:57		19:06	33	18:42 (T12)	17:22	16:47 (T13)	17:02
7	06:05		20:08 (T10)	06:32	07:03		07:34		17:22 (T13)	07:09	15:56 (T13)	07:43
	21:08	34	20:42 (T10)	20:43	19:56		19:05	42	18:41 (T12)	17:21	16:46 (T13)	17:02
8	06:06		20:07 (T10)	06:33	07:04		07:35		17:16 (T13)	07:11	15:58 (T13)	07:44
	21:07	34	20:41 (T10)	20:42	19:54		19:03	53	18:41 (T12)	17:20	16:46 (T13)	17:02
9	06:06		20:08 (T10)	06:34	07:05		07:36		17:13 (T13)	07:12	15:58 (T13)	07:45
	21:07	33	20:41 (T10)	20:41	19:52		19:01	57	18:39 (T12)	17:19	16:45 (T13)	17:02
10	06:07		20:09 (T10)	06:35	07:06		07:37		17:10 (T13)	07:13	15:59 (T13)	07:46
	21:07	33	20:42 (T10)	20:40	19:51		19:00	60	18:37 (T12)	17:18	16:44 (T13)	17:02
11	06:08		20:09 (T10)	06:36	07:07		07:38		17:07 (T13)	07:14	16:00 (T13)	07:47
	21:06	31	20:40 (T10)	20:38	19:49		18:58	61	18:35 (T12)	17:17	16:43 (T13)	17:02
12	06:09		20:10 (T10)	06:37	07:08		07:39		17:05 (T13)	07:15	16:02 (T13)	07:48
	21:06	30	20:40 (T10)	20:37	19:47		18:57	63	18:34 (T12)	17:16	16:42 (T13)	17:02
13	06:09		20:11 (T10)	06:38	07:09		07:40		17:04 (T13)	07:17	16:03 (T13)	07:48
	21:05	29	20:40 (T10)	20:36	19:46		18:55	62	18:33 (T12)	17:15	16:41 (T13)	17:03
14	06:10		20:12 (T10)	06:39	07:10		07:41		17:02 (T13)	07:18	16:04 (T13)	07:49
	21:05	28	20:40 (T10)	20:34	19:44		18:53	62	18:31 (T12)	17:14	16:39 (T13)	17:03
15	06:11		20:13 (T10)	06:40	07:11		07:43		17:01 (T13)	07:19	16:07 (T13)	07:50
	21:04	25	20:38 (T10)	20:33	19:42		18:52	60	18:29 (T12)	17:13	16:39 (T13)	17:03
16	06:12		20:14 (T10)	06:41	07:12		07:44		16:59 (T13)	07:20	16:08 (T13)	07:51
	21:04	24	20:38 (T10)	20:32	19:40		18:50	53	18:25 (T12)	17:12	16:37 (T13)	17:03
17	06:12		20:15 (T10)	06:42	07:13		07:45		16:58 (T13)	07:21	16:10 (T13)	07:51
	21:03	22	20:37 (T10)	20:30	19:39		18:49	51	17:49 (T13)	17:11	16:35 (T13)	17:04
18	06:13		20:17 (T10)	06:43	07:14		07:46		16:57 (T13)	07:23	16:13 (T13)	07:52
	21:03	19	20:36 (T10)	20:29	19:37		18:47	52	17:49 (T13)	17:10	16:32 (T13)	17:04
19	06:14		20:18 (T10)	06:44	07:15		07:47		16:56 (T13)	07:24	16:17 (T13)	07:53
	21:02	15	20:33 (T10)	20:27	19:35		18:46	53	17:49 (T13)	17:10	16:30 (T13)	17:04
20	06:15		20:21 (T10)	06:45	07:16		07:48		16:56 (T13)	07:25		07:53
	21:01	10	20:31 (T10)	20:26	19:34		18:44	55	17:51 (T13)	17:09		17:05
21	06:16			06:46	07:17		07:49		16:55 (T13)	07:26		07:54
	21:00			20:24	19:32		18:43	56	17:51 (T13)	17:08		17:05
22	06:17			06:47	07:18		07:50		16:54 (T13)	07:27		07:54
	21:00			20:23	19:30		18:41	57	17:51 (T13)	17:08		17:06
23	06:18			06:48	07:19		07:52		16:53 (T13)	07:28		07:55
	20:59			20:21	19:28		18:40	58	17:51 (T13)	17:07		17:06
24	06:18			06:49	07:20		07:53		16:53 (T13)	07:30		07:55
	20:58			20:20	19:27		18:38	58	17:51 (T13)	17:06		17:07
25	06:19			06:50	07:21	18:26 (T12)	07:54		16:53 (T13)	07:31		07:56
	20:57			20:18	19:25	6 18:32 (T12)	18:37	58	17:51 (T13)	17:06		17:07
26	06:20			06:51	07:22	18:21 (T12)	07:55		16:52 (T13)	07:32		07:56
	20:56			20:17	19:23	15 18:36 (T12)	18:36	59	17:51 (T13)	17:05		17:08
27	06:21			06:52	07:23	18:18 (T12)	07:56		16:52 (T13)	07:33		07:56
	20:55			20:15	19:22	20 18:38 (T12)	18:34	59	17:51 (T13)	17:05		17:09
28	06:22			06:53	07:24	18:16 (T12)	07:57		16:52 (T13)	07:34		07:57
	20:54			20:14	19:20	24 18:40 (T12)	18:33	58	17:50 (T13)	17:04		17:09
29	06:23			06:54	07:25	18:14 (T12)	07:59		16:53 (T13)	07:35		07:57
	20:53			20:12	19:18	27 18:41 (T12)	18:32	58	17:51 (T13)	17:04		17:10
30	06:24			06:55	07:27	18:13 (T12)	08:00		16:52 (T13)	07:36		07:57
	20:52			20:11	19:16	28 18:41 (T12)	18:30	58	17:50 (T13)	17:04		17:11
31	06:25			06:56			08:01		16:52 (T13)			07:57
	20:51			20:09			18:29	58	17:50 (T13)			17:12
Potential sun hours	460			429	375		345			297		287
Total, worst case		586				120		1612			790	
Sun reduction		0.66				0.59		0.48			0.30	
Oper. time red.		1.00				1.00		1.00			1.00	
Wind dir. red.		0.54				0.67		0.71			0.72	
Total reduction		0.36				0.40		0.35			0.22	
Total, real		214				49		563			176	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 693 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6746)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June		
1	07:58	07:44			07:07		17:07 (T37)	07:16		17:58 (T37)	06:30			06:02		19:49 (T34)
	17:13	17:48			18:22	53	18:00 (T38)	19:56	44	18:42 (T37)	20:27			20:57	29	20:18 (T34)
2	07:58	07:43			07:06		17:05 (T37)	07:15		18:00 (T37)	06:29			06:01		19:50 (T34)
	17:14	17:49			18:23	56	18:01 (T38)	19:57	41	18:41 (T37)	20:28			20:58	28	20:18 (T34)
3	07:58	07:42			07:04		17:04 (T37)	07:13		18:02 (T37)	06:28			06:01		19:50 (T34)
	17:15	17:50			18:24	59	18:03 (T38)	19:58	36	18:38 (T37)	20:29			20:59	28	20:18 (T34)
4	07:58	07:41			07:03		17:02 (T37)	07:11		18:03 (T37)	06:26		19:57 (T34)	06:00		19:51 (T34)
	17:16	17:51			18:25	62	18:04 (T38)	19:59	32	18:35 (T37)	20:30	11	20:08 (T34)	20:59	27	20:18 (T34)
5	07:58	07:40			07:01		17:00 (T37)	07:10		18:07 (T37)	06:25		19:55 (T34)	06:00		19:52 (T34)
	17:17	17:53			18:26	64	18:04 (T38)	20:00	26	18:33 (T37)	20:31	14	20:09 (T34)	21:00	26	20:18 (T34)
6	07:58	07:39			07:00		16:59 (T37)	07:08		18:10 (T37)	06:24		19:53 (T34)	06:00		19:52 (T34)
	17:18	17:54			18:28	67	18:06 (T38)	20:00	19	18:29 (T37)	20:33	17	20:10 (T34)	21:01	25	20:17 (T34)
7	07:58	07:37			06:58		16:58 (T37)	07:06		18:16 (T37)	06:23		19:51 (T34)	05:59		19:53 (T34)
	17:19	17:55			18:29	69	18:07 (T38)	20:02	5	18:21 (T37)	20:34	20	20:11 (T34)	21:01	24	20:17 (T34)
8	07:58	07:36			07:56		17:57 (T37)	07:05			06:22		19:50 (T34)	05:59		19:54 (T34)
	17:20	17:56			19:30	70	19:07 (T38)	20:03			20:35	22	20:12 (T34)	21:02	23	20:17 (T34)
9	07:57	07:35			07:55		17:56 (T37)	07:03			06:20		19:49 (T34)	05:59		19:55 (T34)
	17:21	17:58			19:31	71	19:07 (T38)	20:04			20:36	24	20:13 (T34)	21:03	22	20:17 (T34)
10	07:57	07:34			07:53		17:55 (T37)	07:02			06:19		19:49 (T34)	05:59		19:55 (T34)
	17:22	17:59			19:32	71	19:06 (T38)	20:05			20:37	25	20:14 (T34)	21:03	22	20:17 (T34)
11	07:57	07:33			07:51		17:55 (T37)	07:00			06:18		19:48 (T34)	05:58		19:56 (T34)
	17:23	18:00			19:33	71	19:06 (T38)	20:06			20:38	27	20:15 (T34)	21:04	20	20:16 (T34)
12	07:57	07:31			07:50		17:54 (T37)	06:58			06:17		19:47 (T34)	05:58		19:57 (T34)
	17:24	18:01			19:34	71	19:05 (T38)	20:07			20:39	29	20:16 (T34)	21:04	19	20:16 (T34)
13	07:56	07:30			07:48		17:53 (T37)	06:57			06:16		19:47 (T34)	05:58		19:56 (T34)
	17:25	18:03			19:36	70	19:03 (T38)	20:08			20:40	30	20:17 (T34)	21:05	19	20:15 (T34)
14	07:56	07:29			07:46		17:53 (T37)	06:55			06:15		19:47 (T34)	05:58		19:57 (T34)
	17:26	18:04			19:37	70	19:03 (T38)	20:09			20:41	31	20:18 (T34)	21:05	18	20:15 (T34)
15	07:56	07:28			07:45		17:52 (T37)	06:54			06:14		19:46 (T34)	05:58		19:57 (T34)
	17:27	18:05			19:38	69	19:01 (T38)	20:10			20:42	33	20:19 (T34)	21:06	18	20:15 (T34)
16	07:55	07:26			07:43		17:52 (T37)	06:52			06:13		19:46 (T34)	05:58		19:59 (T34)
	17:28	18:06			19:39	66	18:58 (T38)	20:11			20:43	34	20:20 (T34)	21:06	17	20:16 (T34)
17	07:55	07:25			07:41		17:52 (T37)	06:50			06:12		19:46 (T34)	05:58		19:59 (T34)
	17:29	18:08			19:40	65	18:57 (T37)	20:12			20:44	34	20:20 (T34)	21:07	17	20:16 (T34)
18	07:54	07:24			07:40		17:52 (T37)	06:49			06:11		19:45 (T34)	05:58		20:00 (T34)
	17:30	18:09			19:41	64	18:56 (T37)	20:13			20:45	35	20:20 (T34)	21:07	16	20:16 (T34)
19	07:54	07:22			07:38		17:51 (T37)	06:47			06:10		19:45 (T34)	05:58		20:00 (T34)
	17:32	18:10			19:42	64	18:55 (T37)	20:14			20:46	35	20:20 (T34)	21:07	16	20:16 (T34)
20	07:53	07:21			07:36		17:52 (T37)	06:46			06:09		19:45 (T34)	05:59		20:00 (T34)
	17:33	18:11			19:43	63	18:55 (T37)	20:15			20:47	35	20:20 (T34)	21:08	16	20:16 (T34)
21	07:53	07:19			07:35		17:52 (T37)	06:44			06:09		19:46 (T34)	05:59		20:00 (T34)
	17:34	18:12			19:44	63	18:55 (T37)	20:17			20:48	34	20:20 (T34)	21:08	16	20:16 (T34)
22	07:52	07:18			07:33		17:51 (T37)	06:43			06:08		19:46 (T34)	05:59		20:00 (T34)
	17:35	18:14			19:45	63	18:54 (T37)	20:18			20:49	34	20:20 (T34)	21:08	16	20:16 (T34)
23	07:51	07:16			07:31		17:51 (T37)	06:41			06:07		19:46 (T34)	05:59		20:01 (T34)
	17:36	18:15			19:46	62	18:53 (T37)	20:19			20:49	34	20:20 (T34)	21:08	16	20:17 (T34)
24	07:50	07:15			07:30		17:52 (T37)	06:40			06:06		19:46 (T34)	05:59		20:01 (T34)
	17:38	18:16			19:48	61	18:53 (T37)	20:20			20:50	33	20:19 (T34)	21:08	16	20:17 (T34)
25	07:50	07:13		17:20 (T37)	07:28		17:52 (T37)	06:39			06:06		19:47 (T34)	06:00		20:00 (T34)
	17:39	18:17	16	17:36 (T37)	19:49	59	18:51 (T37)	20:21			20:51	33	20:20 (T34)	21:09	17	20:17 (T34)
26	07:49	07:12		17:15 (T37)	07:26		17:53 (T37)	06:37			06:05		19:47 (T34)	06:00		20:01 (T34)
	17:40	18:18	25	17:40 (T37)	19:50	57	18:50 (T37)	20:22			20:52	32	20:19 (T34)	21:09	17	20:18 (T34)
27	07:48	07:10		17:12 (T37)	07:25		17:54 (T37)	06:36			06:04		19:48 (T34)	06:00		20:01 (T34)
	17:41	18:20	39	17:58 (T38)	19:51	56	18:50 (T37)	20:23			20:53	32	20:20 (T34)	21:09	17	20:18 (T34)
28	07:47	07:09		17:09 (T37)	07:23		17:54 (T37)	06:34			06:04		19:48 (T34)	06:01		20:00 (T34)
	17:43	18:21	48	17:58 (T38)	19:52	54	18:48 (T37)	20:24			20:54	31	20:19 (T34)	21:09	18	20:18 (T34)
29	07:46				07:21		17:55 (T37)	06:33			06:03		19:49 (T34)	06:01		20:01 (T34)
	17:44				19:53	52	18:47 (T37)	20:25			20:55	31	20:20 (T34)	21:09	18	20:19 (T34)
30	07:46				07:20		17:56 (T37)	06:32			06:03		19:49 (T34)	06:02		20:00 (T34)
	17:45				19:54	50	18:46 (T37)	20:26			20:56	30	20:19 (T34)	21:09	19	20:19 (T34)
31	07:45				07:18		17:57 (T37)				06:02		19:50 (T34)			
	17:46				19:55	47	18:44 (T37)				20:56	29	20:19 (T34)			
Potential sun hours	297	297			370			399			449			453		
Total, worst case			128			1939			203			809			600	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.67			0.67			0.67			0.56			0.56	
Total reduction			0.27			0.30			0.35			0.32			0.36	
Total, real			35			580			72			260			216	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 693 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6746)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		20:00 (T34)	06:26		19:57 (T34)	06:57		07:28	17:33 (T37)	07:02	07:37
	21:09	20	20:20 (T34)	20:50	28	20:25 (T34)	20:07		19:15	71	18:44 (T38)	17:28	07:04
2	06:03		20:00 (T34)	06:27		19:58 (T34)	06:58		07:29	17:33 (T37)	07:03	07:38
	21:09	21	20:21 (T34)	20:49	27	20:25 (T34)	20:06		19:13	71	18:44 (T38)	17:27	07:04
3	06:03		20:00 (T34)	06:28		19:59 (T34)	06:59		07:30	17:33 (T37)	07:05	07:39
	21:09	22	20:22 (T34)	20:48	25	20:24 (T34)	20:04		19:12	71	18:44 (T38)	17:26	07:03
4	06:04		19:59 (T34)	06:29		19:59 (T34)	07:00		07:31	17:33 (T37)	07:06	07:40
	21:08	23	20:22 (T34)	20:47	23	20:22 (T34)	20:02		19:10	71	18:44 (T38)	17:24	07:03
5	06:04		19:59 (T34)	06:30		20:00 (T34)	07:01		18:14 (T37)	07:32	17:34 (T37)	07:07	07:41
	21:08	24	20:23 (T34)	20:46	21	20:21 (T34)	20:01	4	18:18 (T37)	19:08	70	18:44 (T38)	17:23	07:03
6	06:05		19:58 (T34)	06:31		20:02 (T34)	07:02		18:06 (T37)	07:33	17:34 (T37)	07:08	07:42
	21:08	25	20:23 (T34)	20:45	18	20:20 (T34)	19:58	19	18:25 (T37)	19:07	70	18:44 (T38)	17:22	07:03
7	06:06		19:59 (T34)	06:32		20:03 (T34)	07:03		18:02 (T37)	07:34	17:34 (T37)	07:09	07:43
	21:08	25	20:24 (T34)	20:44	16	20:19 (T34)	19:56	26	18:28 (T37)	19:05	69	18:43 (T38)	17:21	07:03
8	06:06		19:59 (T34)	06:33		20:05 (T34)	07:04		17:59 (T37)	07:35	17:35 (T37)	07:11	07:44
	21:07	26	20:25 (T34)	20:42	13	20:18 (T34)	19:54	31	18:30 (T37)	19:03	66	18:41 (T38)	17:20	07:03
9	06:07		19:58 (T34)	06:34		20:08 (T34)	07:05		17:56 (T37)	07:36	17:36 (T37)	07:12	07:45
	21:07	27	20:25 (T34)	20:41	9	20:17 (T34)	19:52	36	18:32 (T37)	19:02	63	18:39 (T38)	17:19	07:03
10	06:08		19:58 (T34)	06:35			07:06		17:54 (T37)	07:37	17:37 (T37)	07:13	07:46
	21:07	28	20:26 (T34)	20:40			19:51	40	18:34 (T37)	19:00	60	18:37 (T38)	17:18	07:03
11	06:08		19:58 (T34)	06:36			07:07		17:52 (T37)	07:38	17:38 (T37)	07:14	07:47
	21:06	28	20:26 (T34)	20:38			19:49	43	18:35 (T37)	18:58	58	18:36 (T38)	17:17	07:03
12	06:09		19:57 (T34)	06:37			07:08		17:50 (T37)	07:39	17:39 (T37)	07:15	07:48
	21:06	29	20:26 (T34)	20:37			19:47	46	18:36 (T37)	18:57	55	18:34 (T38)	17:16	07:03
13	06:10		19:57 (T34)	06:38			07:09		17:48 (T37)	07:40	17:41 (T37)	07:17	07:48
	21:05	30	20:27 (T34)	20:36			19:46	49	18:37 (T37)	18:55	52	18:33 (T38)	17:15	07:03
14	06:10		19:57 (T34)	06:39			07:10		17:46 (T37)	07:42	17:43 (T37)	07:18	07:49
	21:05	31	20:28 (T34)	20:34			19:44	52	18:38 (T37)	18:54	46	18:31 (T38)	17:14	07:03
15	06:11		19:57 (T34)	06:40			07:11		17:44 (T37)	07:43	17:46 (T37)	07:19	07:50
	21:04	31	20:28 (T34)	20:33			19:42	53	18:37 (T37)	18:52	30	18:27 (T38)	17:13	07:03
16	06:12		19:56 (T34)	06:41			07:12		17:42 (T37)	07:44	17:49 (T37)	07:20	07:51
	21:04	32	20:28 (T34)	20:32			19:41	56	18:38 (T37)	18:51	22	18:11 (T37)	17:12	07:04
17	06:13		19:56 (T34)	06:42			07:13		17:41 (T37)	07:45	17:54 (T37)	07:21	07:51
	21:03	33	20:29 (T34)	20:30			19:39	57	18:38 (T37)	18:49	10	18:04 (T37)	17:12	07:04
18	06:14		19:56 (T34)	06:43			07:14		17:40 (T37)	07:46			07:23	07:52
	21:02	33	20:29 (T34)	20:29			19:37	59	18:39 (T37)	18:48			17:11	07:04
19	06:14		19:56 (T34)	06:44			07:15		17:39 (T37)	07:47			07:24	07:53
	21:02	34	20:30 (T34)	20:27			19:35	60	18:39 (T37)	18:46			17:10	07:05
20	06:15		19:56 (T34)	06:45			07:16		17:38 (T37)	07:48			07:25	07:53
	21:01	34	20:30 (T34)	20:26			19:34	61	18:39 (T37)	18:45			17:09	07:05
21	06:16		19:55 (T34)	06:46			07:17		17:37 (T37)	07:49			07:26	07:54
	21:00	34	20:29 (T34)	20:25			19:32	62	18:39 (T37)	18:43			17:09	07:06
22	06:17		19:55 (T34)	06:47			07:18		17:36 (T37)	07:51			07:27	07:54
	21:00	35	20:30 (T34)	20:23			19:30	63	18:39 (T37)	18:42			17:08	07:06
23	06:18		19:56 (T34)	06:48			07:19		17:35 (T37)	07:52			07:28	07:55
	20:59	34	20:30 (T34)	20:22			19:29	64	18:39 (T37)	18:40			17:07	07:07
24	06:19		19:56 (T34)	06:49			07:21		17:35 (T37)	07:53			07:30	07:55
	20:58	34	20:30 (T34)	20:20			19:27	64	18:39 (T37)	18:39			17:07	07:07
25	06:20		19:56 (T34)	06:50			07:22		17:34 (T37)	07:54			07:31	07:56
	20:57	34	20:30 (T34)	20:18			19:25	64	18:38 (T37)	18:37			17:06	07:08
26	06:21		19:56 (T34)	06:51			07:23		17:34 (T37)	07:55			07:32	07:56
	20:56	34	20:30 (T34)	20:17			19:23	64	18:38 (T37)	18:36			17:06	07:08
27	06:22		19:56 (T34)	06:52			07:24		17:33 (T37)	07:56			07:33	07:56
	20:55	34	20:30 (T34)	20:15			19:22	66	18:39 (T38)	18:35			17:05	07:09
28	06:23		19:57 (T34)	06:53			07:25		17:33 (T37)	07:58			07:34	07:57
	20:54	33	20:30 (T34)	20:14			19:20	68	18:41 (T38)	18:33			17:05	07:10
29	06:24		19:57 (T34)	06:54			07:26		17:32 (T37)	07:59			07:35	07:57
	20:53	32	20:29 (T34)	20:12			19:18	70	18:42 (T38)	18:32			17:04	07:10
30	06:24		19:56 (T34)	06:55			07:27		17:32 (T37)	08:00			07:36	07:57
	20:52	31	20:27 (T34)	20:11			19:17	71	18:43 (T38)	18:31			17:04	07:11
31	06:25		19:57 (T34)	06:56						08:01				07:57
	20:51	29	20:26 (T34)	20:09						18:29				07:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		920			180			1348			955			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.56			0.56			0.67			0.67			
Total reduction		0.37			0.34			0.40			0.33			
Total, real		342			62			542			311			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 718 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6764)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June		
1	07:57	07:43			07:07		17:27 (T77)	07:16			06:30		19:11 (T42)	06:01		20:07 (T41)
	17:13	17:47			18:22	28	17:55 (T77)	19:56			20:27	43	19:54 (T42)	20:57	25	20:32 (T41)
2	07:57	07:42			07:06		17:24 (T77)	07:14			06:29		19:11 (T42)	06:01		20:08 (T41)
	17:14	17:49			18:23	32	17:56 (T77)	19:57			20:28	43	19:54 (T42)	20:58	25	20:33 (T41)
3	07:57	07:41			07:04		17:22 (T77)	07:13			06:28		19:11 (T42)	06:01		20:07 (T41)
	17:15	17:50			18:24	35	17:57 (T77)	19:58			20:29	42	19:53 (T42)	20:58	26	20:33 (T41)
4	07:57	07:40			07:02		17:21 (T77)	07:11			06:26		19:11 (T42)	06:00		20:07 (T41)
	17:16	17:51			18:25	38	17:59 (T77)	19:59			20:30	42	19:53 (T42)	20:59	27	20:34 (T41)
5	07:57	07:39			07:01		17:19 (T77)	07:09			06:25		19:12 (T42)	06:00		20:08 (T41)
	17:17	17:52			18:26	40	17:59 (T77)	20:00			20:31	40	19:52 (T42)	21:00	27	20:35 (T41)
6	07:57	07:38			06:59		17:19 (T77)	07:08			06:24		19:12 (T42)	05:59		20:07 (T41)
	17:17	17:54			18:27	42	18:01 (T77)	20:00			20:32	40	19:52 (T42)	21:00	28	20:35 (T41)
7	07:57	07:37			06:58		17:18 (T77)	07:06			06:23		19:13 (T42)	05:59		20:08 (T41)
	17:18	17:55			18:29	43	18:01 (T77)	20:01			20:33	39	19:52 (T42)	21:01	28	20:36 (T41)
8	07:57	07:36			07:56		18:16 (T77)	07:05			06:22		19:13 (T42)	05:59		20:08 (T41)
	17:19	17:56			19:30	45	19:01 (T77)	20:02			20:34	38	19:51 (T42)	21:02	29	20:37 (T41)
9	07:57	07:35			07:54		08:18 (T76)	07:03			06:20		19:14 (T42)	05:59		20:08 (T41)
	17:20	17:57			19:31	51	19:02 (T77)	20:03			20:35	36	19:50 (T42)	21:02	30	20:38 (T41)
10	07:57	07:34			07:53		08:12 (T76)	07:01			06:19		19:14 (T42)	05:59		20:09 (T41)
	17:21	17:59			19:32	63	19:02 (T77)	20:05			20:36	35	19:49 (T42)	21:03	29	20:38 (T41)
11	07:57	07:32			07:51		08:10 (T76)	07:00			06:18		19:15 (T42)	05:58		20:09 (T41)
	17:23	18:00			19:33	65	19:01 (T77)	20:06			20:37	33	19:48 (T42)	21:03	29	20:38 (T41)
12	07:56	07:31			07:50		08:09 (T76)	06:58			06:17		19:16 (T42)	05:58		20:08 (T41)
	17:24	18:01			19:34	70	19:02 (T77)	20:07			20:38	31	19:47 (T42)	21:04	29	20:37 (T41)
13	07:56	07:30			07:48		08:07 (T76)	06:57			06:16		19:17 (T42)	05:58		20:09 (T41)
	17:25	18:02			19:35	73	19:01 (T77)	20:08			20:39	29	19:46 (T42)	21:05	29	20:38 (T41)
14	07:56	07:29			07:46		08:05 (T76)	06:55		19:30 (T42)	06:15		19:18 (T42)	05:58		20:09 (T41)
	17:26	18:04			19:36	75	19:01 (T77)	20:09	11	19:41 (T42)	20:40	27	19:45 (T42)	21:05	29	20:38 (T41)
15	07:55	07:27			07:45		08:04 (T76)	06:53		19:26 (T42)	06:14		19:19 (T42)	05:58		20:09 (T41)
	17:27	18:05			19:38	77	19:01 (T77)	20:10	18	19:44 (T42)	20:41	24	19:43 (T42)	21:05	29	20:38 (T41)
16	07:55	07:26			07:43		08:02 (T76)	06:52		19:23 (T42)	06:13		19:22 (T42)	05:58		20:09 (T41)
	17:28	18:06			19:39	78	19:00 (T77)	20:11	24	19:47 (T42)	20:42	21	19:43 (T42)	21:06	29	20:38 (T41)
17	07:54	07:25			07:41		08:01 (T76)	06:50		19:21 (T42)	06:12		19:24 (T42)	05:58		20:10 (T41)
	17:29	18:07			19:40	78	18:59 (T77)	20:12	27	19:48 (T42)	20:43	17	19:41 (T42)	21:06	29	20:39 (T41)
18	07:54	07:23			07:40		08:01 (T76)	06:49		19:19 (T42)	06:11		19:26 (T42)	05:58		20:10 (T41)
	17:30	18:09			19:41	78	18:59 (T77)	20:13	31	19:50 (T42)	20:44	12	19:38 (T42)	21:07	29	20:39 (T41)
19	07:53	07:22			07:38		08:01 (T76)	06:47		19:17 (T42)	06:10		20:15 (T41)	05:58		20:11 (T41)
	17:32	18:10			19:42	76	18:58 (T77)	20:14	34	19:51 (T42)	20:45	7	20:22 (T41)	21:07	29	20:40 (T41)
20	07:53	07:20			07:36		08:00 (T76)	06:46		19:16 (T42)	06:09		20:13 (T41)	05:59		20:11 (T41)
	17:33	18:11			19:43	75	18:56 (T77)	20:15	36	19:52 (T42)	20:46	10	20:23 (T41)	21:07	29	20:40 (T41)
21	07:52	07:19			07:35		08:00 (T76)	06:44		19:16 (T42)	06:09		20:11 (T41)	05:59		20:11 (T41)
	17:34	18:12			19:44	73	18:56 (T77)	20:16	37	19:53 (T42)	20:47	12	20:23 (T41)	21:08	29	20:40 (T41)
22	07:52	07:18			07:33		08:00 (T76)	06:43		19:14 (T42)	06:08		20:11 (T41)	05:59		20:11 (T41)
	17:35	18:13			19:45	70	18:54 (T77)	20:17	39	19:53 (T42)	20:48	14	20:25 (T41)	21:08	29	20:40 (T41)
23	07:51	07:16			07:31		08:00 (T76)	06:41		19:14 (T42)	06:07		20:10 (T41)	05:59		20:12 (T41)
	17:36	18:15			19:46	66	18:52 (T77)	20:18	40	19:54 (T42)	20:49	15	20:25 (T41)	21:08	29	20:41 (T41)
24	07:50	07:15			07:30		08:01 (T76)	06:40		19:13 (T42)	06:06		20:09 (T41)	05:59		20:12 (T41)
	17:38	18:16			19:47	62	18:51 (T77)	20:19	41	19:54 (T42)	20:50	17	20:26 (T41)	21:08	29	20:41 (T41)
25	07:49	07:13			07:28		08:01 (T76)	06:38		19:12 (T42)	06:06		20:09 (T41)	06:00		20:11 (T41)
	17:39	18:17			19:48	57	18:49 (T77)	20:21	42	19:54 (T42)	20:51	18	20:27 (T41)	21:08	29	20:40 (T41)
26	07:49	07:12		17:38 (T77)	07:26		08:01 (T76)	06:37		19:11 (T42)	06:05		20:08 (T41)	06:00		20:12 (T41)
	17:40	18:18	6	17:44 (T77)	19:50	51	18:46 (T77)	20:22	43	19:54 (T42)	20:52	20	20:28 (T41)	21:08	29	20:41 (T41)
27	07:48	07:10		17:32 (T77)	07:24		08:02 (T76)	06:36		19:11 (T42)	06:04		20:08 (T41)	06:00		20:12 (T41)
	17:41	18:19	18	17:50 (T77)	19:51	42	18:42 (T77)	20:23	43	19:54 (T42)	20:53	21	20:29 (T41)	21:08	29	20:41 (T41)
28	07:47	07:09		17:28 (T77)	07:23		08:04 (T76)	06:34		19:11 (T42)	06:04		20:08 (T41)	06:01		20:12 (T41)
	17:42	18:21	24	17:52 (T77)	19:52	25	18:36 (T77)	20:24	44	19:55 (T42)	20:54	21	20:29 (T41)	21:09	29	20:41 (T41)
29	07:46				07:21		08:06 (T76)	06:33		19:11 (T42)	06:03		20:07 (T41)	06:01		20:13 (T41)
	17:44				19:53	17	08:23 (T76)	20:25	43	19:54 (T42)	20:54	23	20:30 (T41)	21:09	29	20:42 (T41)
30	07:45				07:19		08:08 (T76)	06:32		19:11 (T42)	06:02		20:07 (T41)	06:02		20:12 (T41)
	17:45				19:54	11	08:19 (T76)	20:26	43	19:54 (T42)	20:55	24	20:31 (T41)	21:08	30	20:42 (T41)
31	07:44				07:18						06:02		20:07 (T41)			
	17:46				19:55						20:56	24	20:31 (T41)			
Potential sun hours	297	297			370			399			448			453		
Total, worst case			48			1636			596			818			855	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.67			0.64			0.57			0.57			0.54	
Total reduction			0.27			0.29			0.30			0.32			0.35	
Total, real			13			467			179			266			299	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 718 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6764)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		20:13 (T41)	06:26		19:26 (T42)	06:57		07:27	07:47 (T76)	07:02	07:37
	21:08	29	20:42 (T41)	20:50	32	19:58 (T42)	20:07		19:15	71	18:40 (T77)	17:28	17:04
2	06:03		20:13 (T41)	06:27		19:25 (T42)	06:58		07:29	07:48 (T76)	07:03	07:38
	21:08	29	20:42 (T41)	20:49	34	19:59 (T42)	20:06		19:13	68	18:40 (T77)	17:27	17:03
3	06:03		20:13 (T41)	06:28		19:24 (T42)	06:59		07:30	07:49 (T76)	07:04	07:39
	21:08	30	20:43 (T41)	20:48	36	20:00 (T42)	20:04		19:11	63	18:39 (T77)	17:26	17:03
4	06:04		20:13 (T41)	06:29		19:24 (T42)	07:00		07:31	07:52 (T76)	07:06	07:40
	21:08	29	20:42 (T41)	20:47	36	20:00 (T42)	20:02		19:10	57	18:39 (T77)	17:24	17:03
5	06:04		20:14 (T41)	06:30		19:23 (T42)	07:01		07:32	17:54 (T77)	07:07	07:41
	21:08	29	20:43 (T41)	20:46	38	20:01 (T42)	20:01		19:08	45	18:39 (T77)	17:23	17:03
6	06:05		20:13 (T41)	06:31		19:22 (T42)	07:02		07:33	17:54 (T77)	07:08	07:42
	21:08	29	20:42 (T41)	20:44	39	20:01 (T42)	19:57		19:06	44	18:38 (T77)	17:22	17:03
7	06:05		20:14 (T41)	06:32		19:22 (T42)	07:03		07:34	17:54 (T77)	07:09	07:43
	21:07	28	20:42 (T41)	20:43	40	20:02 (T42)	19:56		19:05	43	18:37 (T77)	17:21	17:03
8	06:06		20:15 (T41)	06:33		19:21 (T42)	07:04		07:35	17:55 (T77)	07:10	07:44
	21:07	27	20:42 (T41)	20:42	41	20:02 (T42)	19:54		19:03	41	18:36 (T77)	17:20	17:03
9	06:07		20:14 (T41)	06:34		19:21 (T42)	07:05		07:36	17:55 (T77)	07:12	07:45
	21:07	27	20:41 (T41)	20:41	41	20:02 (T42)	19:52		19:01	39	18:34 (T77)	17:19	17:03
10	06:07		20:15 (T41)	06:35		19:20 (T42)	07:06		07:37	17:56 (T77)	07:13	07:46
	21:06	26	20:41 (T41)	20:39	43	20:03 (T42)	19:51		19:00	37	18:33 (T77)	17:18	17:03
11	06:08		20:15 (T41)	06:36		19:20 (T42)	07:07		07:38	17:57 (T77)	07:14	07:46
	21:06	26	20:41 (T41)	20:38	43	20:03 (T42)	19:49		18:58	34	18:31 (T77)	17:17	17:03
12	06:09		20:15 (T41)	06:37		19:20 (T42)	07:08		07:39	17:58 (T77)	07:15	07:47
	21:06	25	20:40 (T41)	20:37	43	20:03 (T42)	19:47		18:57	31	18:29 (T77)	17:16	17:03
13	06:10		20:16 (T41)	06:38		19:19 (T42)	07:09		08:00 (T76)	07:40	18:00 (T77)	07:16	07:48
	21:05	24	20:40 (T41)	20:36	44	20:03 (T42)	19:45	9	08:09 (T76)	18:55	27	18:27 (T77)	17:15	17:03
14	06:10		20:16 (T41)	06:39		19:19 (T42)	07:10		07:56 (T76)	07:41	18:02 (T77)	07:18	07:49
	21:05	23	20:39 (T41)	20:34	44	20:03 (T42)	19:44	16	08:12 (T76)	18:54	22	18:24 (T77)	17:14	17:03
15	06:11		20:17 (T41)	06:40		19:19 (T42)	07:11		07:54 (T76)	07:42	18:06 (T77)	07:19	07:50
	21:04	22	20:39 (T41)	20:33	43	20:02 (T42)	19:42	20	08:14 (T76)	18:52	15	18:21 (T77)	17:13	17:03
16	06:12		20:17 (T41)	06:41		19:18 (T42)	07:12		07:52 (T76)	07:44			07:20	07:50
	21:03	21	20:38 (T41)	20:31	43	20:01 (T42)	19:40	40	18:31 (T77)	18:50			17:12	17:04
17	06:13		20:17 (T41)	06:42		19:18 (T42)	07:13		07:50 (T76)	07:45			07:21	07:51
	21:03	20	20:37 (T41)	20:30	43	20:01 (T42)	19:39	49	18:34 (T77)	18:49			17:11	17:04
18	06:14		20:18 (T41)	06:43		19:18 (T42)	07:14		07:48 (T76)	07:46			07:22	07:52
	21:02	19	20:37 (T41)	20:29	42	20:00 (T42)	19:37	56	18:36 (T77)	18:47			17:11	17:04
19	06:14		20:19 (T41)	06:44		19:18 (T42)	07:15		07:47 (T76)	07:47			07:23	07:52
	21:01	18	20:37 (T41)	20:27	41	19:59 (T42)	19:35	62	18:37 (T77)	18:46			17:10	17:05
20	06:15		20:20 (T41)	06:45		19:19 (T42)	07:16		07:46 (T76)	07:48			07:25	07:53
	21:01	16	20:36 (T41)	20:26	40	19:59 (T42)	19:33	65	18:38 (T77)	18:44			17:09	17:05
21	06:16		20:20 (T41)	06:46		19:19 (T42)	07:17		07:46 (T76)	07:49			07:26	07:53
	21:00	15	20:35 (T41)	20:24	39	19:58 (T42)	19:32	68	18:39 (T77)	18:43			17:08	17:06
22	06:17		20:21 (T41)	06:47		19:20 (T42)	07:18		07:45 (T76)	07:50			07:27	07:54
	20:59	13	20:34 (T41)	20:23	37	19:57 (T42)	19:30	72	18:40 (T77)	18:41			17:08	17:06
23	06:18		20:22 (T41)	06:48		19:20 (T42)	07:19		07:44 (T76)	07:51			07:28	07:54
	20:58	11	20:33 (T41)	20:21	36	19:56 (T42)	19:28	75	18:41 (T77)	18:40			17:07	17:07
24	06:19		20:24 (T41)	06:49		19:21 (T42)	07:20		07:44 (T76)	07:53			07:29	07:55
	20:58	9	20:33 (T41)	20:20	33	19:54 (T42)	19:27	76	18:41 (T77)	18:39			17:07	17:07
25	06:20		19:39 (T42)	06:50		19:22 (T42)	07:21		07:44 (T76)	07:54			07:30	07:55
	20:57	12	20:32 (T41)	20:18	31	19:53 (T42)	19:25	76	18:41 (T77)	18:37			17:06	17:08
26	06:21		19:35 (T42)	06:51		19:24 (T42)	07:22		07:44 (T76)	07:55			07:32	07:56
	20:56	15	19:50 (T42)	20:17	27	19:51 (T42)	19:23	77	18:41 (T77)	18:36			17:06	17:08
27	06:22		19:33 (T42)	06:52		19:25 (T42)	07:23		07:44 (T76)	07:56			07:33	07:56
	20:55	19	19:52 (T42)	20:15	24	19:49 (T42)	19:21	77	18:41 (T77)	18:34			17:05	17:09
28	06:22		19:32 (T42)	06:53		19:28 (T42)	07:24		07:44 (T76)	07:57			07:34	07:56
	20:54	22	19:54 (T42)	20:14	18	19:46 (T42)	19:20	77	18:41 (T77)	18:33			17:05	17:10
29	06:23		19:29 (T42)	06:54		19:32 (T42)	07:25		07:45 (T76)	07:58			07:35	07:57
	20:53	25	19:54 (T42)	20:12	10	19:42 (T42)	19:18	76	18:41 (T77)	18:32			17:04	17:10
30	06:24		19:28 (T42)	06:55			07:26		07:46 (T76)	08:00			07:36	07:57
	20:52	28	19:56 (T42)	20:10			19:16	74	18:41 (T77)	18:30			17:04	17:11
31	06:25		19:27 (T42)	06:56						08:01				07:57
	20:51	30	19:57 (T42)	20:09						18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		696			1061			1065			637			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.55			0.57			0.63			0.66			
Total reduction		0.37			0.35			0.38			0.32			
Total, real		254			374			402			204			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 728 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6771)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May	June
1	07:57	07:43		07:07	07:39 (T31)	07:16	07:39 (T28)	06:30	06:01
	17:13	17:47		18:22	69 17:30 (T30)	19:56	64 19:34 (T27)	20:27	20:57
2	07:57	07:43		07:06	07:40 (T31)	07:14	07:37 (T28)	06:29	06:01
	17:14	17:49		18:23	64 17:28 (T30)	19:57	68 19:35 (T27)	20:28	20:58
3	07:58	07:41	17:04 (T30)	07:04	07:40 (T31)	07:13	07:36 (T28)	06:28	06:00
	17:15	17:50	15 17:19 (T30)	18:24	59 17:26 (T30)	19:58	74 19:37 (T27)	20:29	20:58
4	07:58	07:40	17:02 (T30)	07:02	07:42 (T31)	07:11	07:35 (T28)	06:26	06:00
	17:15	17:51	20 17:22 (T30)	18:25	53 17:25 (T30)	19:59	76 19:37 (T27)	20:30	20:59
5	07:58	07:39	17:00 (T30)	07:01	07:43 (T31)	07:09	07:33 (T28)	06:25	06:00
	17:16	17:52	25 17:25 (T30)	18:26	45 17:22 (T30)	20:00	80 19:38 (T27)	20:31	21:00
6	07:58	07:38	16:57 (T30)	06:59	07:46 (T31)	07:08	07:33 (T28)	06:24	05:59
	17:17	17:54	29 17:26 (T30)	18:27	33 17:19 (T30)	20:00	82 19:39 (T27)	20:32	21:01
7	07:57	07:37	16:56 (T30)	06:58	07:49 (T31)	07:06	07:32 (T28)	06:23	05:59
	17:18	17:55	32 17:28 (T30)	18:29	9 07:58 (T31)	20:01	83 19:38 (T27)	20:33	21:01
8	07:57	07:36	16:55 (T30)	07:56		07:05	07:32 (T28)	06:21	05:59
	17:19	17:56	34 17:29 (T30)	19:30		20:02	83 19:39 (T27)	20:34	21:02
9	07:57	07:35	16:54 (T30)	07:54		07:03	07:31 (T28)	06:20	05:59
	17:20	17:57	37 17:31 (T30)	19:31		20:03	84 19:38 (T27)	20:35	21:02
10	07:57	07:34	16:53 (T30)	07:53		07:01	07:30 (T28)	06:19	05:58
	17:21	17:59	39 17:32 (T30)	19:32		20:05	83 19:37 (T27)	20:37	21:03
11	07:57	07:32	16:52 (T30)	07:51		07:00	07:30 (T28)	06:18	05:58
	17:22	18:00	40 17:32 (T30)	19:33		20:06	84 19:37 (T27)	20:38	21:04
12	07:56	07:31	07:51 (T31)	07:50		06:58	07:29 (T28)	06:17	05:58
	17:23	18:01	53 17:33 (T30)	19:34		20:07	83 19:36 (T27)	20:39	21:04
13	07:56	07:30	07:50 (T31)	07:48		06:56	07:30 (T28)	06:16	05:58
	17:25	18:02	58 17:34 (T30)	19:35		20:08	80 19:35 (T27)	20:40	21:05
14	07:56	07:29	07:49 (T31)	07:46		06:55	07:29 (T28)	06:15	05:58
	17:26	18:04	63 17:35 (T30)	19:36		20:09	78 19:34 (T27)	20:41	21:05
15	07:55	07:27	07:47 (T31)	07:45		06:53	07:28 (T28)	06:14	05:58
	17:27	18:05	67 17:35 (T30)	19:38		20:10	76 19:32 (T27)	20:42	21:06
16	07:55	07:26	07:46 (T31)	07:43		06:52	07:29 (T28)	06:13	05:58
	17:28	18:06	70 17:36 (T30)	19:39		20:11	72 19:31 (T27)	20:43	21:06
17	07:55	07:25	07:44 (T31)	07:41		06:50	07:29 (T28)	06:12	05:58
	17:29	18:07	73 17:35 (T30)	19:40		20:12	67 19:28 (T27)	20:44	21:06
18	07:54	07:23	07:43 (T31)	07:40		06:49	07:29 (T28)	06:11	05:58
	17:30	18:09	76 17:36 (T30)	19:41		20:13	62 19:26 (T27)	20:45	21:07
19	07:53	07:22	07:42 (T31)	07:38		06:47	07:29 (T28)	06:10	05:58
	17:31	18:10	78 17:36 (T30)	19:42		20:14	47 08:16 (T28)	20:46	21:07
20	07:53	07:21	07:40 (T31)	07:36		06:46	07:30 (T28)	06:09	05:58
	17:33	18:11	79 17:35 (T30)	19:43		20:15	46 08:16 (T28)	20:46	21:07
21	07:52	07:19	07:39 (T31)	07:35		06:44	07:30 (T28)	06:08	05:59
	17:34	18:12	82 17:36 (T30)	19:44		20:16	44 08:14 (T28)	20:47	21:08
22	07:52	07:18	07:38 (T31)	07:33		06:43	07:31 (T28)	06:08	05:59
	17:35	18:13	81 17:35 (T30)	19:45		20:17	43 08:14 (T28)	20:48	21:08
23	07:51	07:16	07:38 (T31)	07:31		06:41	07:32 (T28)	06:07	05:59
	17:36	18:15	82 17:35 (T30)	19:46		20:18	41 08:13 (T28)	20:49	21:08
24	07:50	07:15	07:38 (T31)	07:30		06:40	07:33 (T28)	06:06	05:59
	17:37	18:16	80 17:34 (T30)	19:47		20:20	38 08:11 (T28)	20:50	21:08
25	07:50	07:13	07:38 (T31)	07:28		06:38	07:34 (T28)	06:05	06:00
	17:39	18:17	80 17:34 (T30)	19:48		20:21	36 08:10 (T28)	20:51	21:08
26	07:49	07:12	07:38 (T31)	07:26	07:57 (T28)	06:37	07:35 (T28)	06:05	06:00
	17:40	18:18	78 17:33 (T30)	19:50	7 08:04 (T28)	20:22	32 08:07 (T28)	20:52	21:09
27	07:48	07:10	07:38 (T31)	07:24	07:50 (T28)	06:36	07:36 (T28)	06:04	06:00
	17:41	18:19	76 17:32 (T30)	19:51	19 08:09 (T28)	20:23	30 08:06 (T28)	20:53	21:09
28	07:47	07:09	07:38 (T31)	07:23	07:48 (T28)	06:34	07:39 (T28)	06:03	06:01
	17:42	18:20	73 17:31 (T30)	19:52	32 19:29 (T27)	20:24	25 08:04 (T28)	20:54	21:09
29	07:46			07:21	07:44 (T28)	06:33	07:40 (T28)	06:03	06:01
	17:44			19:53	45 19:31 (T27)	20:25	21 08:01 (T28)	20:55	21:09
30	07:45			07:19	07:42 (T28)	06:31	07:44 (T28)	06:02	06:01
	17:45			19:54	52 19:32 (T27)	20:26	13 07:57 (T28)	20:55	21:09
31	07:44			07:18	07:41 (T28)			06:02	
	17:46			19:55	59 19:34 (T27)			20:56	
Potential sun hours	297	297		370		399		449	453
Total, worst case			1520		546		1795		
Sun reduction			0.40		0.44		0.52		
Oper. time red.			1.00		1.00		1.00		
Wind dir. red.			0.66		0.64		0.63		
Total reduction			0.27		0.28		0.33		
Total, real			405		153		592		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 728 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6771)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December
1	06:02	06:26		06:57	07:29 (T28)	07:27		07:02	16:22 (T30)	07:37
	21:09	20:50		20:07 84	19:36 (T27)	19:15		17:28 39	17:01 (T30)	17:04
2	06:02	06:27		06:58	07:29 (T28)	07:29		07:03	16:24 (T30)	07:38
	21:08	20:49		20:06 83	19:36 (T27)	19:13		17:27 36	17:00 (T30)	17:03
3	06:03	06:28		06:59	07:29 (T28)	07:30		07:04	16:25 (T30)	07:39
	21:08	20:48		20:04 84	19:36 (T27)	19:11		17:25 34	16:59 (T30)	17:03
4	06:03	06:29		07:00	07:29 (T28)	07:31		07:06	16:26 (T30)	07:40
	21:08	20:47		20:02 83	19:36 (T27)	19:10		17:24 31	16:57 (T30)	17:03
5	06:04	06:30		07:01	07:29 (T28)	07:32		07:07	16:27 (T30)	07:41
	21:08	20:46		20:01 83	19:35 (T27)	19:08		17:23 28	16:55 (T30)	17:03
6	06:05	06:31		07:02	07:29 (T28)	07:33		07:08	16:30 (T30)	07:42
	21:08	20:45		19:57 82	19:35 (T27)	19:06		17:22 24	16:54 (T30)	17:03
7	06:05	06:32		07:03	07:29 (T28)	07:34	08:23 (T31)	07:09	16:32 (T30)	07:43
	21:07	20:43		19:56 80	19:34 (T27)	19:05 26	17:53 (T30)	17:21 20	16:52 (T30)	17:02
8	06:06	06:33		07:04	07:30 (T28)	07:35	08:20 (T31)	07:10	16:35 (T30)	07:44
	21:07	20:42		19:54 77	19:33 (T27)	19:03 39	17:56 (T30)	17:20 14	16:49 (T30)	17:02
9	06:07	06:34		07:05	07:29 (T28)	07:36	08:17 (T31)	07:12		07:45
	21:07	20:41		19:52 74	19:30 (T27)	19:01 50	17:59 (T30)	17:19		17:02
10	06:07	06:35		07:06	07:30 (T28)	07:37	08:16 (T31)	07:13		07:46
	21:06	20:40		19:51 69	19:28 (T27)	19:00 55	18:00 (T30)	17:18		17:02
11	06:08	06:36		07:07	07:31 (T28)	07:38	08:14 (T31)	07:14		07:47
	21:06	20:38		19:49 64	19:27 (T27)	18:58 61	18:01 (T30)	17:17		17:02
12	06:09	06:37	07:57 (T28)	07:08	07:32 (T28)	07:39	08:13 (T31)	07:15		07:47
	21:06	20:37 4	08:01 (T28)	19:47 60	19:25 (T27)	18:57 66	18:02 (T30)	17:16		17:03
13	06:09	06:38	07:51 (T28)	07:09	07:33 (T28)	07:40	08:11 (T31)	07:16		07:48
	21:05	20:36 16	08:07 (T28)	19:45 53	19:23 (T27)	18:55 71	18:03 (T30)	17:15		17:03
14	06:10	06:39	07:47 (T28)	07:10	07:34 (T28)	07:41	08:12 (T31)	07:18		07:49
	21:05	20:34 22	08:09 (T28)	19:44 46	19:22 (T27)	18:53 73	18:05 (T30)	17:14		17:03
15	06:11	06:40	07:45 (T28)	07:11	07:36 (T28)	07:42	08:11 (T31)	07:19		07:50
	21:04	20:33 26	08:11 (T28)	19:42 36	19:19 (T27)	18:52 75	18:05 (T30)	17:13		17:03
16	06:12	06:41	07:43 (T28)	07:12	07:39 (T28)	07:44	08:10 (T31)	07:20		07:50
	21:04	20:32 30	08:13 (T28)	19:40 20	07:59 (T28)	18:50 78	18:05 (T30)	17:12		17:03
17	06:13	06:42	07:41 (T28)	07:13	07:44 (T28)	07:45	08:10 (T31)	07:21		07:51
	21:03	20:30 33	08:14 (T28)	19:39 10	07:54 (T28)	18:49 80	18:06 (T30)	17:11		17:04
18	06:13	06:43	07:39 (T28)	07:14		07:46	08:09 (T31)	07:22		07:52
	21:02	20:29 37	08:16 (T28)	19:37		18:47 81	18:06 (T30)	17:10		17:04
19	06:14	06:44	07:38 (T28)	07:15		07:47	08:09 (T31)	07:24		07:52
	21:02	20:27 39	08:17 (T28)	19:35		18:46 81	18:06 (T30)	17:10		17:04
20	06:15	06:45	07:37 (T28)	07:16		07:48	08:10 (T31)	07:25		07:53
	21:01	20:26 41	08:18 (T28)	19:33		18:44 82	18:07 (T30)	17:09		17:05
21	06:16	06:46	07:36 (T28)	07:17		07:49	08:10 (T31)	07:26		07:53
	21:00	20:24 43	08:19 (T28)	19:32		18:43 80	18:06 (T30)	17:08		17:05
22	06:17	06:47	07:35 (T28)	07:18		07:50	08:11 (T31)	07:27		07:54
	20:59	20:23 44	08:19 (T28)	19:30		18:41 79	18:06 (T30)	17:08		17:06
23	06:18	06:48	07:34 (T28)	07:19		07:51	08:12 (T31)	07:28		07:54
	20:59	20:21 46	08:20 (T28)	19:28		18:40 78	18:06 (T30)	17:07		17:06
24	06:19	06:49	07:33 (T28)	07:20		07:53	08:13 (T31)	07:29		07:55
	20:58	20:20 50	19:24 (T27)	19:27		18:39 74	18:05 (T30)	17:07		17:07
25	06:20	06:50	07:32 (T28)	07:21		07:54	08:15 (T31)	07:31		07:55
	20:57	20:18 63	19:29 (T27)	19:25		18:37 73	18:06 (T30)	17:06		17:07
26	06:20	06:51	07:31 (T28)	07:22		07:55	08:16 (T31)	07:32		07:56
	20:56	20:17 68	19:31 (T27)	19:23		18:36 70	18:05 (T30)	17:05		17:08
27	06:21	06:52	07:31 (T28)	07:23		07:56	08:17 (T31)	07:33		07:56
	20:55	20:15 72	19:33 (T27)	19:21		18:34 66	18:04 (T30)	17:05		17:09
28	06:22	06:53	07:30 (T28)	07:24		07:57	08:18 (T31)	07:34		07:56
	20:54	20:14 76	19:34 (T27)	19:20		18:33 63	18:04 (T30)	17:05		17:09
29	06:23	06:54	07:30 (T28)	07:25		07:58	08:20 (T31)	07:35		07:57
	20:53	20:12 79	19:35 (T27)	19:18		18:32 58	18:04 (T30)	17:04		17:10
30	06:24	06:55	07:29 (T28)	07:26		08:00	08:21 (T31)	07:36		07:57
	20:52	20:10 81	19:35 (T27)	19:16		18:30 52	18:03 (T30)	17:04		17:11
31	06:25	06:56	07:29 (T28)			08:01	17:22 (T30)			07:57
	20:51	20:09 83	19:36 (T27)			18:29 40	18:02 (T30)			17:12
Potential sun hours	460	429		375		345		297		287
Total, worst case		953		1088		1651		226		
Sun reduction		0.61		0.59		0.48		0.30		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.64		0.63		0.65		0.71		
Total reduction		0.39		0.37		0.31		0.21		
Total, real		370		406		519		48		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 740 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6781)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:50 (T36)	06:01	19:34 (T35)	06:02	19:42 (T35)	06:26	06:58 (T36)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	34	07:24 (T36)	20:57 44	20:18 (T35)	21:09 41	20:23 (T35)	20:50 72	20:23 (T35)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:14		06:29		06:49 (T36)	06:01	19:35 (T35)	06:02	19:42 (T35)	06:27	06:58 (T36)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	35	07:24 (T36)	20:58 44	20:19 (T35)	21:08 41	20:23 (T35)	20:49 72	20:23 (T35)	20:06	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:28		06:48 (T36)	06:00	19:34 (T35)	06:03	19:42 (T35)	06:28	06:57 (T36)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58		20:29	36	07:24 (T36)	20:58 44	20:18 (T35)	21:08 42	20:24 (T35)	20:48 71	20:22 (T35)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		06:47 (T36)	06:00	19:35 (T35)	06:04	19:42 (T35)	06:29	06:57 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	51	20:02 (T35)	20:59 43	20:18 (T35)	21:08 42	20:24 (T35)	20:47 69	20:21 (T35)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		06:47 (T36)	06:00	19:36 (T35)	06:04	19:42 (T35)	06:30	06:57 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	57	20:05 (T35)	21:00 43	20:19 (T35)	21:08 42	20:24 (T35)	20:46 66	20:19 (T35)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		06:47 (T36)	05:59	19:35 (T35)	06:05	19:42 (T35)	06:31	06:57 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	62	20:07 (T35)	21:01 43	20:18 (T35)	21:08 42	20:24 (T35)	20:44 63	20:18 (T35)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06		06:23		06:47 (T36)	05:59	19:36 (T35)	06:05	19:42 (T35)	06:32	06:57 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:33	66	20:09 (T35)	21:01 42	20:18 (T35)	21:07 43	20:25 (T35)	20:43 60	20:16 (T35)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:05		06:21		06:47 (T36)	05:59	19:36 (T35)	06:06	19:41 (T35)	06:33	06:57 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	68	20:10 (T35)	21:02 43	20:19 (T35)	21:07 43	20:24 (T35)	20:42 55	20:14 (T35)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		06:47 (T36)	05:59	19:37 (T35)	06:07	19:42 (T35)	06:34	06:57 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	68	20:10 (T35)	21:02 42	20:19 (T35)	21:07 43	20:25 (T35)	20:41 48	20:10 (T35)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		06:47 (T36)	05:58	19:36 (T35)	06:07	19:42 (T35)	06:35	06:57 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	70	20:11 (T35)	21:03 42	20:18 (T35)	21:06 44	20:26 (T35)	20:40 37	07:34 (T36)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		06:47 (T36)	05:58	19:37 (T35)	06:08	19:41 (T35)	06:36	06:58 (T36)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	72	20:12 (T35)	21:04 41	20:18 (T35)	21:06 44	20:25 (T35)	20:38 35	07:33 (T36)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58		06:17		06:47 (T36)	05:58	19:37 (T35)	06:09	19:42 (T35)	06:37	06:59 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:39	74	20:13 (T35)	21:04 41	20:18 (T35)	21:06 44	20:26 (T35)	20:37 34	07:33 (T36)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16		06:48 (T36)	05:58	19:38 (T35)	06:09	19:42 (T35)	06:38	07:00 (T36)	07:09	07:40	07:16	07:48
	17:25	18:02	19:35	20:08		20:40	73	20:14 (T35)	21:05 40	20:18 (T35)	21:05 44	20:26 (T35)	20:36 32	07:32 (T36)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		06:48 (T36)	05:58	19:38 (T35)	06:10	19:42 (T35)	06:39	07:00 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:41	74	20:14 (T35)	21:05 41	20:19 (T35)	21:05 45	20:27 (T35)	20:34 30	07:30 (T36)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53		06:14		06:49 (T36)	05:58	19:38 (T35)	06:11	19:42 (T35)	06:40	07:01 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:38	20:10		20:42	73	20:15 (T35)	21:06 41	20:19 (T35)	21:04 44	20:26 (T35)	20:33 28	07:29 (T36)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13		06:49 (T36)	05:58	19:38 (T35)	06:12	19:42 (T35)	06:41	07:02 (T36)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11		20:43	73	20:15 (T35)	21:06 41	20:19 (T35)	21:03 45	20:27 (T35)	20:31 26	07:28 (T36)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50		06:12		06:51 (T36)	05:58	19:39 (T35)	06:13	19:42 (T35)	06:42	07:03 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12		20:44	72	20:16 (T35)	21:06 40	20:19 (T35)	21:03 45	20:27 (T35)	20:30 23	07:26 (T36)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49		06:11		06:51 (T36)	05:58	19:39 (T35)	06:13	07:12 (T36)	06:43	07:04 (T36)	07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13		20:45	72	20:16 (T35)	21:07 40	20:19 (T35)	21:02 52	20:27 (T35)	20:29 21	07:25 (T36)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47		06:10		06:52 (T36)	05:58	19:40 (T35)	06:14	07:09 (T36)	06:44	07:05 (T36)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14		20:45	71	20:17 (T35)	21:07 40	20:20 (T35)	21:02 58	20:28 (T35)	20:27 18	07:23 (T36)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46		06:09		06:53 (T36)	05:58	19:40 (T35)	06:15	07:07 (T36)	06:45	07:06 (T36)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15		20:46	70	20:17 (T35)	21:07 40	20:20 (T35)	21:01 61	20:27 (T35)	20:26 13	07:19 (T36)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44		06:08		06:54 (T36)	05:59	19:40 (T35)	06:16	07:06 (T36)	06:46		07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16		20:47	67	20:17 (T35)	21:08 40	20:20 (T35)	21:00 64	20:27 (T35)	20:24		19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	07:06 (T36)	06:08		06:55 (T36)	05:59	19:40 (T35)	06:17	07:05 (T36)	06:47		07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17 3	07:09 (T36)	20:48	65	20:17 (T35)	21:08 40	20:20 (T35)	20:59 66	20:27 (T35)	20:23		19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	07:01 (T36)	06:07		06:57 (T36)	05:59	19:40 (T35)	06:18	07:04 (T36)	06:48		07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18 14	07:15 (T36)	20:49	61	20:17 (T35)	21:08 40	20:20 (T35)	20:59 68	20:27 (T35)	20:21		19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	06:59 (T36)	06:06		06:58 (T36)	05:59	19:41 (T35)	06:19	07:03 (T36)	06:49		07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20 18	07:17 (T36)	20:50	60	20:17 (T35)	21:08 40	20:21 (T35)	20:58 70	20:27 (T35)	20:20		19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	06:58 (T36)	06:05		07:01 (T36)	06:00	19:41 (T35)	06:20	07:02 (T36)	06:50		07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21 21	07:19 (T36)	20:51	55	20:18 (T35)	21:08 40	20:21 (T35)	20:57 72	20:27 (T35)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:56 (T36)	06:05		07:05 (T36)	06:00	19:41 (T35)	06:20	07:02 (T36)	06:51		07:22	07:55	07:32	07:56
	17:40	18:18	19:49	20:22 24	07:20 (T36)	20:52	46	20:18 (T35)	21:08 40	20:21 (T35)	20:56 72	20:27 (T35)	20:17		19:23	18:36	17:06	17:08
27	07:48	07:10	07:24	06:36	06:55 (T36)	06:04		19:32 (T35)	06:00	19:41 (T35)	06:21	07:00 (T36)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23 26	07:21 (T36)	20:53	45	20:17 (T35)	21:09 41	20:22 (T35)	20:55 73	20:26 (T35)	20:15		19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	06:54 (T36)	06:03		19:33 (T35)	06:01	19:41 (T35)	06:22	06:59 (T36)	06:53		07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24 28	07:22 (T36)	20:54	45	20:18 (T35)	21:09 41	20:22 (T35)	20:54 73	20:25 (T35)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:52 (T36)	06:03		19:33 (T35)	06:01	19:42 (T35)	06:23	06:59 (T36)	06:54		07:25	07:58	07:35	07:57
	17:44		19:53	20:25 30	07:22 (T36)	20:55	45	20:18 (T35)	21:09 40	20:22 (T35)	20:53 74	20:25 (T35)	20:12		19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	06:51 (T36)	06:02		19:34 (T35)	06:01	19:41 (T35)	06:24	06:59 (T36)	06:55		07:26	08:00	07:36	07:57
	17:45		19:54	20:26 32	07:23 (T36)	20:55	44	20:18 (T35)	21:09 41	20:22 (T35)	20:52 73	20:25 (T35)	20:10		19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:33 (T35)			06:25	06:58 (T36)	06:56			08:01		07:57
	17:46		19:55			20:56	45	20:18 (T35)			20:51 73	20:24 (T35)	20:09			18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287	
Total, worst case				196		1849		1238		1683		873						
Sun reduction				0.52		0.57		0.64		0.66		0.61						
Oper. time red.				1.00		1.00		1.00		1.00		1.00						
Wind dir. red.				0.69		0.61		0.56		0.58		0.65						
Total reduction				0.36		0.35		0.36		0.39		0.40						
Total, real				70		645		443		651		347						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 752 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6791)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		15:40 (T45)	07:43		07:07			07:16		18:47 (T44)	06:30		18:31 (T44)	06:01		
	17:13	49	16:29 (T45)	17:47		18:22			19:56	35	19:22 (T44)	20:27	55	19:26 (T44)	20:57		
2	07:57		15:40 (T45)	07:42		07:06			07:14		18:45 (T44)	06:29		18:32 (T44)	06:01		
	17:14	50	16:30 (T45)	17:49		18:23			19:57	38	19:23 (T44)	20:28	53	19:25 (T44)	20:58		
3	07:57		15:41 (T45)	07:41		07:04			07:13		18:43 (T44)	06:28		18:32 (T44)	06:01		
	17:15	49	16:30 (T45)	17:50		18:24			19:58	42	19:25 (T44)	20:29	51	19:23 (T44)	20:58		
4	07:57		15:41 (T45)	07:40		07:02			07:11		18:41 (T44)	06:26		18:33 (T44)	06:00		
	17:16	49	16:30 (T45)	17:51		18:25			19:59	45	19:26 (T44)	20:30	50	19:23 (T44)	20:59		
5	07:57		15:42 (T45)	07:39		07:01			07:09		18:39 (T44)	06:25		18:34 (T44)	06:00		
	17:17	49	16:31 (T45)	17:52		18:26			20:00	48	19:27 (T44)	20:31	48	19:22 (T44)	21:00		
6	07:57		15:43 (T45)	07:38		06:59			07:08		18:38 (T44)	06:24		18:36 (T44)	06:00		
	17:17	48	16:31 (T45)	17:54		18:27			20:00	51	19:29 (T44)	20:32	45	19:21 (T44)	21:00		
7	07:57		15:42 (T45)	07:37		06:58			07:06		18:36 (T44)	06:23		18:37 (T44)	05:59		
	17:18	49	16:31 (T45)	17:55		18:29			20:01	53	19:29 (T44)	20:33	43	19:20 (T44)	21:01		
8	07:57		15:43 (T45)	07:36		07:56			07:05		18:35 (T44)	06:22		18:38 (T44)	05:59		06:22 (T76)
	17:19	48	16:31 (T45)	17:56		19:30			20:02	55	19:30 (T44)	20:34	41	19:19 (T44)	21:02	1	06:23 (T76)
9	07:57		15:44 (T45)	07:35		07:54			07:03		18:34 (T44)	06:20		18:39 (T44)	05:59		06:21 (T76)
	17:20	48	16:32 (T45)	17:58		19:31			20:03	57	19:31 (T44)	20:35	39	19:18 (T44)	21:02	6	06:27 (T76)
10	07:57		15:45 (T45)	07:34		07:53			07:01		18:33 (T44)	06:19		18:40 (T44)	05:59		06:21 (T76)
	17:21	48	16:33 (T45)	17:59		19:32			20:05	58	19:31 (T44)	20:36	35	19:15 (T44)	21:03	7	06:28 (T76)
11	07:57		15:44 (T45)	07:32		07:51			07:00		18:32 (T44)	06:18		18:42 (T44)	05:58		06:21 (T76)
	17:23	48	16:32 (T45)	18:00		19:33			20:06	60	19:32 (T44)	20:37	32	19:14 (T44)	21:03	9	06:30 (T76)
12	07:56		15:45 (T45)	07:31		07:50			06:58		18:31 (T44)	06:17		18:43 (T44)	05:58		06:20 (T76)
	17:24	48	16:33 (T45)	18:01		19:34			20:07	61	19:32 (T44)	20:38	29	19:12 (T44)	21:04	9	06:29 (T76)
13	07:56		15:46 (T45)	07:30		07:48			06:57		18:31 (T44)	06:16		18:46 (T44)	05:58		06:20 (T76)
	17:25	47	16:33 (T45)	18:02		19:35			20:08	61	19:32 (T44)	20:39	24	19:10 (T44)	21:05	10	06:30 (T76)
14	07:56		15:46 (T45)	07:29		07:46			06:55		18:30 (T44)	06:15		18:48 (T44)	05:58		06:20 (T76)
	17:26	47	16:33 (T45)	18:04		19:36			20:09	62	19:32 (T44)	20:40	19	19:07 (T44)	21:05	11	06:31 (T76)
15	07:55		15:48 (T45)	07:27		07:45			06:53		18:29 (T44)	06:14		18:53 (T44)	05:58		06:20 (T76)
	17:27	45	16:33 (T45)	18:05		19:38			20:10	63	19:32 (T44)	20:41	11	19:04 (T44)	21:05	12	06:32 (T76)
16	07:55		15:48 (T45)	07:26		07:43			06:52		18:29 (T44)	06:13			05:58		06:20 (T76)
	17:28	45	16:33 (T45)	18:06		19:39			20:11	63	19:32 (T44)	20:42			21:06	12	06:32 (T76)
17	07:54		15:49 (T45)	07:25		07:41			06:50		18:28 (T44)	06:12			05:58		06:21 (T76)
	17:29	44	16:33 (T45)	18:07		19:40			20:12	64	19:32 (T44)	20:43			21:06	12	06:33 (T76)
18	07:54		15:49 (T45)	07:23		07:40			06:49		18:28 (T44)	06:11			05:58		06:21 (T76)
	17:30	44	16:33 (T45)	18:09		19:41			20:13	64	19:32 (T44)	20:44			21:07	13	06:34 (T76)
19	07:53		15:51 (T45)	07:22		07:38			06:47		18:28 (T44)	06:10			05:58		06:21 (T76)
	17:32	42	16:33 (T45)	18:10		19:42			20:14	63	19:31 (T44)	20:45			21:07	13	06:34 (T76)
20	07:53		15:51 (T45)	07:20		07:36			06:46		18:28 (T44)	06:09			05:59		06:21 (T76)
	17:33	42	16:33 (T45)	18:11		19:43			20:15	64	19:32 (T44)	20:46			21:07	13	06:34 (T76)
21	07:52		15:52 (T45)	07:19		07:35			06:44		18:29 (T44)	06:09			05:59		06:21 (T76)
	17:34	40	16:32 (T45)	18:12		19:44			20:16	63	19:32 (T44)	20:47			21:08	13	06:34 (T76)
22	07:52		15:54 (T45)	07:18		07:33			06:43		18:28 (T44)	06:08			05:59		06:21 (T76)
	17:35	38	16:32 (T45)	18:13		19:45			20:17	63	19:31 (T44)	20:48			21:08	13	06:34 (T76)
23	07:51		15:55 (T45)	07:16		07:31			06:41		18:28 (T44)	06:07			05:59		06:22 (T76)
	17:36	37	16:32 (T45)	18:15		19:46			20:18	63	19:31 (T44)	20:49			21:08	13	06:35 (T76)
24	07:50		15:56 (T45)	07:15		07:30			06:40		18:28 (T44)	06:06			05:59		06:22 (T76)
	17:38	35	16:31 (T45)	18:16		19:47			20:19	62	19:30 (T44)	20:50			21:08	13	06:35 (T76)
25	07:49		15:57 (T45)	07:13		07:28			06:38		18:29 (T44)	06:06			06:00		06:22 (T76)
	17:39	33	16:30 (T45)	18:17		19:48			20:21	61	19:30 (T44)	20:51			21:08	12	06:34 (T76)
26	07:49		15:58 (T45)	07:12		07:26			06:37		18:28 (T44)	06:05			06:00		06:23 (T76)
	17:40	31	16:29 (T45)	18:18		19:50			20:22	61	19:29 (T44)	20:52			21:08	12	06:35 (T76)
27	07:48		16:01 (T45)	07:10		07:24			06:36		18:29 (T44)	06:04			06:00		06:23 (T76)
	17:41	27	16:28 (T45)	18:19		19:51			20:23	59	19:28 (T44)	20:53			21:08	12	06:35 (T76)
28	07:47		16:03 (T45)	07:09		07:23			06:34		18:30 (T44)	06:04			06:01		06:23 (T76)
	17:42	24	16:27 (T45)	18:21		19:52			20:24	58	19:28 (T44)	20:54			21:08	11	06:34 (T76)
29	07:46		16:05 (T45)			07:21		19:01 (T44)	06:33		18:30 (T44)	06:03			06:01		06:24 (T76)
	17:44	20	16:25 (T45)			19:53	9	19:10 (T44)	20:25	57	19:27 (T44)	20:54			21:08	11	06:35 (T76)
30	07:45		16:08 (T45)			07:19		18:54 (T44)	06:32		18:30 (T44)	06:02			06:02		06:24 (T76)
	17:45	14	16:22 (T45)			19:54	21	19:15 (T44)	20:26	56	19:26 (T44)	20:55			21:08	10	06:34 (T76)
31	07:44					07:18		18:51 (T44)				06:02					
	17:46					19:55	29	19:20 (T44)				20:56					
Potential sun hours	297			297		370			399			448			453		
Total, worst case		1238					59			1710			575			248	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.74					0.61			0.61			0.61			0.73	
Total reduction		0.24					0.28			0.33			0.36			0.48	
Total, real		294					16			561			207			119	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 752 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6791)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		06:25 (T76)	06:26		18:53 (T44)	06:57		18:31 (T44)	07:27	07:02			07:37		15:27 (T45)
	21:08	9	06:34 (T76)	20:50	30	19:23 (T44)	20:07	60	19:31 (T44)	19:15	17:28			17:04	47	16:14 (T45)
2	06:03		06:25 (T76)	06:27		18:52 (T44)	06:58		18:31 (T44)	07:29	07:03			07:38		15:27 (T45)
	21:08	8	06:33 (T76)	20:49	33	19:25 (T44)	20:06	59	19:30 (T44)	19:13	17:27			17:03	48	16:15 (T45)
3	06:03		06:26 (T76)	06:28		18:50 (T44)	06:59		18:32 (T44)	07:30	07:04			07:39		15:27 (T45)
	21:08	6	06:32 (T76)	20:48	36	19:26 (T44)	20:04	57	19:29 (T44)	19:11	17:26			17:03	48	16:15 (T45)
4	06:04		06:26 (T76)	06:29		18:49 (T44)	07:00		18:32 (T44)	07:31	07:06			07:40		15:27 (T45)
	21:08	4	06:30 (T76)	20:47	39	19:28 (T44)	20:02	56	19:28 (T44)	19:10	17:24			17:03	48	16:15 (T45)
5	06:04			06:30		18:47 (T44)	07:01		18:33 (T44)	07:32	07:07			07:41		15:27 (T45)
	21:08			20:46	42	19:29 (T44)	20:01	53	19:26 (T44)	19:08	17:23			17:03	49	16:16 (T45)
6	06:05			06:31		18:46 (T44)	07:02		18:34 (T44)	07:33	07:08			07:42		15:28 (T45)
	21:08			20:44	44	19:30 (T44)	19:57	51	19:25 (T44)	19:06	17:22			17:03	48	16:16 (T45)
7	06:05			06:32		18:45 (T44)	07:03		18:35 (T44)	07:34	07:09			07:43		15:28 (T45)
	21:07			20:43	46	19:31 (T44)	19:56	48	19:23 (T44)	19:05	17:21			17:03	49	16:17 (T45)
8	06:06			06:33		18:44 (T44)	07:04		18:36 (T44)	07:35	07:10			07:44		15:28 (T45)
	21:07			20:42	48	19:32 (T44)	19:54	46	19:22 (T44)	19:03	17:20			17:03	49	16:17 (T45)
9	06:07			06:34		18:43 (T44)	07:05		18:37 (T44)	07:36	07:12			07:45		15:29 (T45)
	21:07			20:41	50	19:33 (T44)	19:52	43	19:20 (T44)	19:02	17:19			17:03	49	16:18 (T45)
10	06:07			06:35		18:42 (T44)	07:06		18:37 (T44)	07:37	07:13			07:46		15:30 (T45)
	21:06			20:39	51	19:33 (T44)	19:51	40	19:17 (T44)	19:00	17:18			17:03	49	16:19 (T45)
11	06:08			06:36		18:41 (T44)	07:07		18:39 (T44)	07:38	07:14			07:46		15:30 (T45)
	21:06			20:38	53	19:34 (T44)	19:49	35	19:14 (T44)	18:58	17:17			17:03	49	16:19 (T45)
12	06:09			06:37		18:40 (T44)	07:08		18:42 (T44)	07:39	07:15		15:39 (T45)	07:47		15:31 (T45)
	21:05			20:37	55	19:35 (T44)	19:47	29	19:11 (T44)	18:57	17:16	14	15:53 (T45)	17:03	49	16:20 (T45)
13	06:10			06:38		18:39 (T44)	07:09		18:45 (T44)	07:40	07:16		15:37 (T45)	07:48		15:31 (T45)
	21:05			20:36	56	19:35 (T44)	19:45	22	19:07 (T44)	18:55	17:15	20	15:57 (T45)	17:03	49	16:20 (T45)
14	06:10			06:39		18:38 (T44)	07:10		18:50 (T44)	07:41	07:18		15:35 (T45)	07:49		15:31 (T45)
	21:05			20:34	58	19:36 (T44)	19:44	11	19:01 (T44)	18:54	17:14	24	15:59 (T45)	17:03	49	16:20 (T45)
15	06:11			06:40		18:37 (T44)	07:11			07:42	07:19		15:33 (T45)	07:50		15:32 (T45)
	21:04			20:33	59	19:36 (T44)	19:42			18:52	17:13	28	16:01 (T45)	17:03	49	16:21 (T45)
16	06:12			06:41		18:37 (T44)	07:12			07:44	07:20		15:31 (T45)	07:50		15:33 (T45)
	21:03			20:31	59	19:36 (T44)	19:40			18:50	17:12	31	16:02 (T45)	17:04	49	16:22 (T45)
17	06:13			06:42		18:35 (T44)	07:13			07:45	07:21		15:31 (T45)	07:51		15:32 (T45)
	21:03			20:30	60	19:35 (T44)	19:39			18:49	17:11	33	16:04 (T45)	17:04	49	16:21 (T45)
18	06:14			06:43		18:34 (T44)	07:14			07:46	07:22		15:30 (T45)	07:52		15:33 (T45)
	21:02			20:29	62	19:36 (T44)	19:37			18:47	17:11	35	16:05 (T45)	17:04	49	16:22 (T45)
19	06:14			06:44		18:34 (T44)	07:15			07:47	07:23		15:29 (T45)	07:52		15:34 (T45)
	21:01			20:27	62	19:36 (T44)	19:35			18:46	17:10	37	16:06 (T45)	17:05	49	16:23 (T45)
20	06:15			06:45		18:33 (T44)	07:16			07:48	07:25		15:28 (T45)	07:53		15:34 (T45)
	21:01			20:26	63	19:36 (T44)	19:33			18:44	17:09	38	16:06 (T45)	17:05	49	16:23 (T45)
21	06:16			06:46		18:33 (T44)	07:17			07:49	07:26		15:28 (T45)	07:53		15:35 (T45)
	21:00			20:24	63	19:36 (T44)	19:32			18:43	17:09	40	16:08 (T45)	17:06	49	16:24 (T45)
22	06:17			06:47		18:32 (T44)	07:18			07:50	07:27		15:27 (T45)	07:54		15:35 (T45)
	20:59			20:23	64	19:36 (T44)	19:30			18:41	17:08	42	16:09 (T45)	17:06	49	16:24 (T45)
23	06:18			06:48		18:32 (T44)	07:19			07:51	07:28		15:27 (T45)	07:54		15:36 (T45)
	20:58			20:21	63	19:35 (T44)	19:28			18:40	17:07	42	16:09 (T45)	17:07	49	16:25 (T45)
24	06:19			06:49		18:32 (T44)	07:20			07:53	07:29		15:27 (T45)	07:55		15:36 (T45)
	20:58			20:20	63	19:35 (T44)	19:27			18:39	17:07	43	16:10 (T45)	17:07	49	16:25 (T45)
25	06:20			06:50		18:31 (T44)	07:21			07:54	07:30		15:27 (T45)	07:55		15:36 (T45)
	20:57			20:18	64	19:35 (T44)	19:25			18:37	17:06	44	16:11 (T45)	17:08	49	16:25 (T45)
26	06:21			06:51		18:31 (T44)	07:22			07:55	07:32		15:27 (T45)	07:56		15:37 (T45)
	20:56			20:17	63	19:34 (T44)	19:23			18:36	17:06	45	16:12 (T45)	17:08	49	16:26 (T45)
27	06:22			06:52		18:31 (T44)	07:23			07:56	07:33		15:27 (T45)	07:56		15:37 (T45)
	20:55			20:15	63	19:34 (T44)	19:22			18:34	17:05	45	16:12 (T45)	17:09	50	16:27 (T45)
28	06:22		19:09 (T44)	06:53		18:31 (T44)	07:24			07:57	07:34		15:27 (T45)	07:56		15:38 (T45)
	20:54	1	19:10 (T44)	20:14	63	19:34 (T44)	19:20			18:33	17:05	46	16:13 (T45)	17:10	49	16:27 (T45)
29	06:23		19:01 (T44)	06:54		18:31 (T44)	07:25			07:58	07:35		15:26 (T45)	07:57		15:38 (T45)
	20:53	15	19:16 (T44)	20:12	62	19:33 (T44)	19:18			18:32	17:04	47	16:13 (T45)	17:10	49	16:27 (T45)
30	06:24		18:58 (T44)	06:55		18:31 (T44)	07:26			08:00	07:36		15:26 (T45)	07:57		15:38 (T45)
	20:52	21	19:19 (T44)	20:10	61	19:32 (T44)	19:16			18:31	17:04	48	16:14 (T45)	17:11	49	16:27 (T45)
31	06:25		18:55 (T44)	06:56		18:31 (T44)				08:01				07:57		15:40 (T45)
	20:51	26	19:21 (T44)	20:09	60	19:31 (T44)				18:29				17:12	49	16:29 (T45)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		90			1695			610				702			1514	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.65			0.61			0.61				0.74			0.74	
Total reduction		0.44			0.38			0.37				0.23			0.17	
Total, real		40			652			227				161			255	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 770 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6804)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May	June
1	07:57			07:43		08:22 (T68)	07:07		08:12 (T68)	07:16		07:49 (T67)	06:30	06:02
	17:13			17:48	101	17:09 (T69)	18:22	64	09:16 (T68)	19:56	24	08:13 (T67)	20:27	20:57
2	07:57			07:42		08:21 (T68)	07:06		08:12 (T68)	07:15		07:52 (T67)	06:29	06:01
	17:14			17:49	103	17:09 (T69)	18:23	63	09:15 (T68)	19:57	20	08:12 (T67)	20:28	20:57
3	07:57			07:41		08:19 (T68)	07:04		08:12 (T68)	07:13		07:53 (T67)	06:28	06:01
	17:15			17:50	106	17:09 (T69)	18:24	61	09:13 (T68)	19:58	15	08:08 (T67)	20:29	20:58
4	07:57			07:40		08:18 (T68)	07:02		08:13 (T68)	07:11		07:58 (T67)	06:27	06:01
	17:16			17:51	108	17:09 (T69)	18:25	60	09:13 (T68)	19:59	5	08:03 (T67)	20:30	20:59
5	07:57			07:39		08:17 (T68)	07:01		08:13 (T68)	07:10			06:25	06:00
	17:17			17:53	110	17:09 (T69)	18:26	58	09:11 (T68)	20:00			20:31	20:59
6	07:57			07:38		08:16 (T68)	06:59		08:14 (T68)	07:08			06:24	06:00
	17:18			17:54	113	17:10 (T69)	18:28	56	09:10 (T68)	20:00			20:32	21:00
7	07:57			07:37		08:16 (T68)	06:58		08:15 (T68)	07:06			06:23	06:00
	17:19			17:55	114	17:10 (T69)	18:29	53	09:08 (T68)	20:01			20:33	21:01
8	07:57			07:36		08:15 (T68)	07:56		09:16 (T68)	07:05			06:22	05:59
	17:20			17:56	115	17:10 (T69)	19:30	50	10:06 (T68)	20:02			20:34	21:01
9	07:57			07:35		08:15 (T68)	07:54		09:17 (T68)	07:03			06:21	05:59
	17:21			17:58	116	17:10 (T69)	19:31	48	10:05 (T68)	20:03			20:35	21:02
10	07:57		16:29 (T69)	07:33		08:13 (T68)	07:53		09:18 (T68)	07:02			06:20	05:59
	17:22	11	16:40 (T69)	17:59	117	17:09 (T69)	19:32	44	10:02 (T68)	20:04			20:36	21:03
11	07:56		16:27 (T69)	07:32		08:13 (T68)	07:51		09:20 (T68)	07:00			06:18	05:59
	17:23	17	16:44 (T69)	18:00	117	17:09 (T69)	19:33	40	10:00 (T68)	20:06			20:37	21:03
12	07:56		16:26 (T69)	07:31		08:13 (T68)	07:50		09:22 (T68)	06:58			06:17	05:59
	17:24	20	16:46 (T69)	18:01	118	17:09 (T69)	19:34	36	09:58 (T68)	20:07			20:38	21:04
13	07:56		16:24 (T69)	07:30		08:13 (T68)	07:48		09:24 (T68)	06:57			06:16	05:59
	17:25	24	16:48 (T69)	18:03	118	17:09 (T69)	19:35	30	09:54 (T68)	20:08			20:39	21:04
14	07:55		16:24 (T69)	07:28		08:11 (T68)	07:46		08:05 (T67)	06:55			06:15	05:59
	17:26	26	16:50 (T69)	18:04	118	17:08 (T69)	19:37	32	09:50 (T68)	20:09			20:40	21:05
15	07:55		16:22 (T69)	07:27		08:11 (T68)	07:45		08:04 (T67)	06:54			06:14	05:59
	17:27	29	16:51 (T69)	18:05	117	17:07 (T69)	19:38	24	09:44 (T68)	20:10			20:41	21:05
16	07:55		16:22 (T69)	07:26		08:11 (T68)	07:43		08:02 (T67)	06:52			06:13	05:59
	17:28	31	16:53 (T69)	18:06	117	17:07 (T69)	19:39	16	08:18 (T67)	20:11			20:42	21:06
17	07:54		16:20 (T69)	07:25		08:11 (T68)	07:41		08:00 (T67)	06:51			06:12	05:59
	17:30	34	16:54 (T69)	18:08	114	17:06 (T69)	19:40	19	08:19 (T67)	20:12			20:43	21:06
18	07:54		16:20 (T69)	07:23		08:11 (T68)	07:40		07:59 (T67)	06:49			06:11	05:59
	17:31	36	16:56 (T69)	18:09	113	17:05 (T69)	19:41	22	08:21 (T67)	20:13			20:44	21:06
19	07:53		16:19 (T69)	07:22		08:10 (T68)	07:38		07:57 (T67)	06:47			06:11	05:59
	17:32	38	16:57 (T69)	18:10	110	17:03 (T69)	19:42	24	08:21 (T67)	20:14			20:45	21:07
20	07:53		16:19 (T69)	07:20		08:10 (T68)	07:36		07:55 (T67)	06:46			06:10	05:59
	17:33	40	16:59 (T69)	18:11	107	17:02 (T69)	19:43	26	08:21 (T67)	20:15			20:46	21:07
21	07:52		16:18 (T69)	07:19		08:10 (T68)	07:35		07:54 (T67)	06:44			06:09	05:59
	17:34	42	17:00 (T69)	18:12	105	17:01 (T69)	19:44	28	08:22 (T67)	20:16			20:47	21:07
22	07:51		16:18 (T69)	07:18		08:10 (T68)	07:33		07:52 (T67)	06:43			06:08	05:59
	17:35	42	17:00 (T69)	18:14	100	16:58 (T69)	19:45	30	08:22 (T67)	20:17			20:48	21:07
23	07:51		16:18 (T69)	07:16		08:10 (T68)	07:31		07:50 (T67)	06:42			06:07	06:00
	17:37	44	17:02 (T69)	18:15	96	16:57 (T69)	19:46	31	08:21 (T67)	20:18			20:49	21:08
24	07:50		16:17 (T69)	07:15		08:10 (T68)	07:30		07:49 (T67)	06:40			06:07	06:00
	17:38	46	17:03 (T69)	18:16	89	16:53 (T69)	19:47	33	08:22 (T67)	20:19			20:50	21:08
25	07:49		08:35 (T68)	07:13		08:10 (T68)	07:28		07:47 (T67)	06:39			06:06	06:00
	17:39	63	17:04 (T69)	18:17	78	16:48 (T69)	19:48	34	08:21 (T67)	20:20			20:51	21:08
26	07:48		08:32 (T68)	07:12		08:10 (T68)	07:26		07:46 (T67)	06:37			06:05	06:00
	17:40	71	17:04 (T69)	18:18	68	09:18 (T68)	19:50	34	08:20 (T67)	20:21			20:52	21:08
27	07:48		08:29 (T68)	07:10		08:11 (T68)	07:25		07:47 (T67)	06:36			06:05	06:01
	17:42	78	17:05 (T69)	18:20	67	09:18 (T68)	19:51	33	08:20 (T67)	20:23			20:52	21:08
28	07:47		08:27 (T68)	07:09		08:11 (T68)	07:23		07:47 (T67)	06:34			06:04	06:01
	17:43	84	17:06 (T69)	18:21	65	09:16 (T68)	19:52	32	08:19 (T67)	20:24			20:53	21:08
29	07:46		08:26 (T68)				07:21		07:47 (T67)	06:33			06:03	06:02
	17:44	88	17:07 (T69)				19:53	31	08:18 (T67)	20:25			20:54	21:08
30	07:45		08:25 (T68)				07:20		07:48 (T67)	06:32			06:03	06:02
	17:45	92	17:08 (T69)				19:54	29	08:17 (T67)	20:26			20:55	21:08
31	07:44		08:23 (T68)				07:18		07:49 (T67)				06:02	
	17:46	96	17:08 (T69)				19:55	26	08:15 (T67)				20:56	
Potential sun hours	297			297			370			399			448	452
Total, worst case		1052			2920			1167			64			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.69			0.61			0.56			0.61			
Total reduction		0.21			0.25			0.25			0.32			
Total, real		226			717			293			21			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 770 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6804)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September			October			November			December		
1	06:03	06:27	06:57			07:28		09:02 (T68)	07:02		07:43 (T69)	07:37		16:09 (T69)
	21:08	20:50	20:07			19:15	33	09:35 (T68)	17:28	117	16:39 (T69)	17:04	17	16:26 (T69)
2	06:03	06:28	06:58			07:29		08:59 (T68)	07:03		07:44 (T68)	07:38		16:12 (T69)
	21:08	20:49	20:05			19:13	38	09:37 (T68)	17:27	116	16:39 (T69)	17:04	12	16:24 (T69)
3	06:04	06:29	06:59			07:30		08:57 (T68)	07:04		07:45 (T68)	07:39		16:18 (T69)
	21:08	20:48	20:04			19:11	42	09:39 (T68)	17:26	115	16:40 (T69)	17:04	1	16:19 (T69)
4	06:04	06:30	07:00			07:31		08:55 (T68)	07:05		07:46 (T68)	07:40		
	21:08	20:47	20:02			19:10	46	09:41 (T68)	17:25	114	16:40 (T69)	17:03		
5	06:05	06:30	07:01			07:32		08:54 (T68)	07:07		07:46 (T68)	07:41		
	21:08	20:45	20:01			19:08	49	09:43 (T68)	17:23	112	16:39 (T69)	17:03		
6	06:05	06:31	07:02			07:33		08:52 (T68)	07:08		07:47 (T68)	07:42		
	21:07	20:44	19:57			19:07	52	09:44 (T68)	17:22	110	16:39 (T69)	17:03		
7	06:06	06:32	07:03			07:34		08:51 (T68)	07:09		07:49 (T68)	07:43		
	21:07	20:43	19:56			19:05	54	09:45 (T68)	17:21	108	16:40 (T69)	17:03		
8	06:06	06:33	07:04		07:53 (T67)	07:35		08:49 (T68)	07:10		07:50 (T68)	07:44		
	21:07	20:42	19:54	4	07:57 (T67)	19:03	57	09:46 (T68)	17:20	105	16:39 (T69)	17:03		
9	06:07	06:34	07:05		07:48 (T67)	07:36		08:48 (T68)	07:11		07:51 (T68)	07:44		
	21:06	20:41	19:52	14	08:02 (T67)	19:02	59	09:47 (T68)	17:19	103	16:39 (T69)	17:03		
10	06:08	06:35	07:06		07:45 (T67)	07:37		08:47 (T68)	07:13		07:53 (T68)	07:45		
	21:06	20:39	19:51	20	08:05 (T67)	19:00	60	09:47 (T68)	17:18	100	16:40 (T69)	17:03		
11	06:09	06:36	07:07		07:43 (T67)	07:38		08:46 (T68)	07:14		07:54 (T68)	07:46		
	21:06	20:38	19:49	23	08:06 (T67)	18:58	62	09:48 (T68)	17:17	97	16:39 (T69)	17:03		
12	06:09	06:37	07:08		07:40 (T67)	07:39		08:45 (T68)	07:15		07:56 (T68)	07:47		
	21:05	20:37	19:47	26	08:06 (T67)	18:57	64	09:49 (T68)	17:16	92	16:39 (T69)	17:03		
13	06:10	06:38	07:09		07:39 (T67)	07:40		08:44 (T68)	07:16		07:57 (T68)	07:48		
	21:05	20:35	19:45	28	08:07 (T67)	18:55	65	09:49 (T68)	17:15	88	16:38 (T69)	17:03		
14	06:11	06:39	07:10		07:37 (T67)	07:41		08:43 (T68)	07:17		08:00 (T68)	07:49		
	21:04	20:34	19:44	31	08:08 (T67)	18:54	66	09:49 (T68)	17:14	84	16:39 (T69)	17:04		
15	06:12	06:40	07:11		07:36 (T67)	07:42		08:43 (T68)	07:19		08:02 (T68)	07:49		
	21:04	20:33	19:42	32	08:08 (T67)	18:52	67	09:50 (T68)	17:13	78	16:38 (T69)	17:04		
16	06:12	06:41	07:12		07:35 (T67)	07:43		08:42 (T68)	07:20		08:05 (T68)	07:50		
	21:03	20:31	19:40	33	08:08 (T67)	18:51	69	09:51 (T68)	17:13	71	16:37 (T69)	17:04		
17	06:13	06:42	07:13		07:35 (T67)	07:45		08:42 (T68)	07:21		08:08 (T68)	07:51		
	21:03	20:30	19:39	34	08:09 (T67)	18:49	83	17:22 (T69)	17:12	63	16:37 (T69)	17:04		
18	06:14	06:43	07:14		07:34 (T67)	07:46		08:41 (T68)	07:22		15:51 (T69)	07:51		
	21:02	20:28	19:37	34	08:08 (T67)	18:48	92	17:26 (T69)	17:11	46	16:37 (T69)	17:05		
19	06:15	06:44	07:15		07:35 (T67)	07:47		08:41 (T68)	07:23		15:52 (T69)	07:52		
	21:01	20:27	19:35	33	08:08 (T67)	18:46	97	17:28 (T69)	17:10	44	16:36 (T69)	17:05		
20	06:16	06:45	07:16		07:36 (T67)	07:48		08:40 (T68)	07:24		15:53 (T69)	07:53		
	21:01	20:26	19:34	32	08:08 (T67)	18:45	102	17:30 (T69)	17:10	42	16:35 (T69)	17:05		
21	06:16	06:46	07:17		07:37 (T67)	07:49		08:41 (T68)	07:26		15:53 (T69)	07:53		
	21:00	20:24	19:32	30	08:07 (T67)	18:43	105	17:32 (T69)	17:09	42	16:35 (T69)	17:06		
22	06:17	06:47	07:18		07:38 (T67)	07:50		08:41 (T68)	07:27		15:55 (T69)	07:54		
	20:59	20:23	19:30	29	08:07 (T67)	18:42	108	17:33 (T69)	17:08	40	16:35 (T69)	17:06		
23	06:18	06:48	07:19		07:39 (T67)	07:51		08:41 (T68)	07:28		15:56 (T69)	07:54		
	20:58	20:21	19:28	27	08:06 (T67)	18:40	111	17:34 (T69)	17:08	38	16:34 (T69)	17:07		
24	06:19	06:49	07:20		07:40 (T67)	07:52		08:40 (T68)	07:29		15:57 (T69)	07:55		
	20:57	20:20	19:27	25	08:05 (T67)	18:39	114	17:35 (T69)	17:07	36	16:33 (T69)	17:07		
25	06:20	06:50	07:21		07:41 (T67)	07:54		08:40 (T68)	07:30		15:58 (T69)	07:55		
	20:57	20:18	19:25	23	08:04 (T67)	18:37	115	17:35 (T69)	17:06	34	16:32 (T69)	17:08		
26	06:21	06:51	07:22		07:42 (T67)	07:55		08:41 (T68)	07:31		16:00 (T69)	07:55		
	20:56	20:17	19:23	20	08:02 (T67)	18:36	116	17:37 (T69)	17:06	31	16:31 (T69)	17:09		
27	06:22	06:52	07:23		07:43 (T67)	07:56		08:41 (T68)	07:32		16:02 (T69)	07:56		
	20:55	20:15	19:22	17	08:00 (T67)	18:35	117	17:37 (T69)	17:06	29	16:31 (T69)	17:09		
28	06:23	06:53	07:24		07:44 (T67)	07:57		08:41 (T68)	07:34		16:04 (T69)	07:56		
	20:54	20:13	19:20	14	07:58 (T67)	18:33	118	17:38 (T69)	17:05	26	16:30 (T69)	17:10		
29	06:24	06:54	07:25		07:45 (T67)	07:58		08:41 (T68)	07:35		16:05 (T69)	07:56		
	20:53	20:12	19:18	30	09:28 (T68)	18:32	118	17:38 (T69)	17:05	24	16:29 (T69)	17:11		
30	06:25	06:55	07:26		07:46 (T67)	07:59		08:43 (T68)	07:36		16:07 (T69)	07:56		
	20:52	20:10	19:17	32	09:32 (T68)	18:31	118	17:39 (T69)	17:04	20	16:27 (T69)	17:12		
31	06:26	06:56				08:01		08:43 (T68)				07:57		
	20:51	20:09				18:29	118	17:39 (T69)				17:12		
Potential sun hours	459	428	375			345			298			288		
Total, worst case				591			2515			2125			30	
Sun reduction				0.59			0.48			0.30			0.22	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.61			0.58			0.66			0.73	
Total reduction				0.36			0.28			0.20			0.16	
Total, real				214			705			422			5	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 779 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6811)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:41 (T77)	07:43		08:04 (T76)	07:07		16:58 (T42)	07:16		19:21 (T41)	06:30			06:01		20:01 (T40)
	17:13	35	16:16 (T77)	17:47	29	08:33 (T76)	18:22	37	17:35 (T42)	19:56	13	19:34 (T41)	20:27			20:57	31	20:32 (T40)
2	07:57		15:41 (T77)	07:42		08:04 (T76)	07:06		16:58 (T42)	07:14		19:18 (T41)	06:29			06:01		20:02 (T40)
	17:14	36	16:17 (T77)	17:49	30	08:34 (T76)	18:23	36	17:34 (T42)	19:57	17	19:35 (T41)	20:28			20:58	31	20:33 (T40)
3	07:57		15:42 (T77)	07:41		08:04 (T76)	07:04		16:59 (T42)	07:13		19:16 (T41)	06:28			06:01		20:01 (T40)
	17:15	35	16:17 (T77)	17:50	30	08:34 (T76)	18:24	33	17:32 (T42)	19:58	21	19:37 (T41)	20:29			20:58	32	20:33 (T40)
4	07:57		15:43 (T77)	07:40		08:05 (T76)	07:02		17:01 (T42)	07:11		19:14 (T41)	06:26			06:00		20:02 (T40)
	17:16	34	16:17 (T77)	17:51	29	08:34 (T76)	18:25	30	17:31 (T42)	19:59	23	19:37 (T41)	20:30			20:59	31	20:33 (T40)
5	07:57		15:44 (T77)	07:39		08:05 (T76)	07:01		17:02 (T42)	07:09		19:13 (T41)	06:25			06:00		20:02 (T40)
	17:16	33	16:17 (T77)	17:52	29	08:34 (T76)	18:26	27	17:29 (T42)	20:00	25	19:38 (T41)	20:31			21:00	32	20:34 (T40)
6	07:57		15:45 (T77)	07:38		08:05 (T76)	06:59		17:05 (T42)	07:08		19:12 (T41)	06:24			05:59		20:02 (T40)
	17:17	32	16:17 (T77)	17:54	43	17:24 (T42)	18:27	22	17:27 (T42)	20:00	28	19:40 (T41)	20:32			21:00	31	20:33 (T40)
7	07:57		15:45 (T77)	07:37		08:06 (T76)	06:58		17:08 (T42)	07:06		19:11 (T41)	06:23			05:59		20:02 (T40)
	17:18	31	16:16 (T77)	17:55	48	17:27 (T42)	18:29	15	17:23 (T42)	20:01	29	19:40 (T41)	20:33			21:01	31	20:33 (T40)
8	07:57		15:46 (T77)	07:36		08:06 (T76)	07:56			07:05		19:11 (T41)	06:22			05:59		20:03 (T40)
	17:19	30	16:16 (T77)	17:56	51	17:29 (T42)	19:30			20:02	31	19:42 (T41)	20:34			21:02	31	20:34 (T40)
9	07:57		15:47 (T77)	07:35		08:07 (T76)	07:54			07:03		19:10 (T41)	06:20			05:59		20:03 (T40)
	17:20	29	16:16 (T77)	17:57	53	17:31 (T42)	19:31			20:03	32	19:42 (T41)	20:35			21:02	31	20:34 (T40)
10	07:57		15:49 (T77)	07:34		08:09 (T76)	07:53			07:01		19:09 (T41)	06:19			05:59		20:03 (T40)
	17:21	27	16:16 (T77)	17:59	53	17:33 (T42)	19:32			20:05	32	19:41 (T41)	20:36			21:03	31	20:34 (T40)
11	07:57		15:49 (T77)	07:32		08:09 (T76)	07:51			07:00		19:09 (T41)	06:18			05:58		20:04 (T40)
	17:23	26	16:15 (T77)	18:00	54	17:34 (T42)	19:33			20:06	33	19:42 (T41)	20:37			21:04	31	20:35 (T40)
12	07:56		15:51 (T77)	07:31		08:12 (T76)	07:50			06:58		19:09 (T41)	06:17			05:58		20:03 (T40)
	17:24	24	16:15 (T77)	18:01	51	17:35 (T42)	19:34			20:07	32	19:41 (T41)	20:38			21:04	31	20:34 (T40)
13	07:56		15:53 (T77)	07:30		08:15 (T76)	07:48			06:57		19:09 (T41)	06:16			05:58		20:03 (T40)
	17:25	22	16:15 (T77)	18:02	48	17:36 (T42)	19:35			20:08	32	19:41 (T41)	20:39			21:05	31	20:34 (T40)
14	07:56		15:54 (T77)	07:29		16:57 (T42)	07:46			06:55		19:09 (T41)	06:15			05:58		20:04 (T40)
	17:26	19	16:13 (T77)	18:04	40	17:37 (T42)	19:36			20:09	31	19:40 (T41)	20:41			21:05	30	20:34 (T40)
15	07:55		15:57 (T77)	07:27		16:57 (T42)	07:45			06:53		19:09 (T41)	06:14		20:13 (T40)	05:58		20:04 (T40)
	17:27	15	16:12 (T77)	18:05	41	17:38 (T42)	19:38			20:10	29	19:38 (T41)	20:42	4	20:17 (T40)	21:05	30	20:34 (T40)
16	07:55		15:59 (T77)	07:26		16:56 (T42)	07:43			06:52		19:10 (T41)	06:13		20:10 (T40)	05:58		20:04 (T40)
	17:28	11	16:10 (T77)	18:06	42	17:38 (T42)	19:39			20:11	28	19:38 (T41)	20:43	10	20:20 (T40)	21:06	31	20:35 (T40)
17	07:54			07:25		16:55 (T42)	07:41			06:50		19:10 (T41)	06:12		20:08 (T40)	05:58		20:05 (T40)
	17:29			18:07	43	17:38 (T42)	19:40			20:12	26	19:36 (T41)	20:43	12	20:20 (T40)	21:06	31	20:36 (T40)
18	07:54			07:23		16:55 (T42)	07:40			06:49		19:12 (T41)	06:11		20:06 (T40)	05:58		20:05 (T40)
	17:30			18:09	44	17:39 (T42)	19:41			20:13	23	19:35 (T41)	20:44	15	20:21 (T40)	21:07	31	20:36 (T40)
19	07:53			07:22		16:55 (T42)	07:38			06:47		19:13 (T41)	06:10		20:05 (T40)	05:58		20:06 (T40)
	17:32			18:10	45	17:40 (T42)	19:42			20:14	20	19:33 (T41)	20:45	17	20:22 (T40)	21:07	30	20:36 (T40)
20	07:53		08:14 (T76)	07:20		16:55 (T42)	07:36			06:46		19:15 (T41)	06:09		20:04 (T40)	05:59		20:06 (T40)
	17:33	4	08:18 (T76)	18:11	44	17:39 (T42)	19:43			20:15	16	19:31 (T41)	20:46	19	20:23 (T40)	21:07	30	20:36 (T40)
21	07:52		08:13 (T76)	07:19		16:55 (T42)	07:35			06:44		19:18 (T41)	06:09		20:03 (T40)	05:59		20:06 (T40)
	17:34	8	08:21 (T76)	18:12	45	17:40 (T42)	19:44			20:16	11	19:29 (T41)	20:47	20	20:23 (T40)	21:08	30	20:36 (T40)
22	07:52		08:13 (T76)	07:18		16:54 (T42)	07:33			06:43			06:08		20:03 (T40)	05:59		20:06 (T40)
	17:35	11	08:24 (T76)	18:13	45	17:39 (T42)	19:45			20:17			20:48	22	20:25 (T40)	21:08	30	20:36 (T40)
23	07:51		08:12 (T76)	07:16		16:55 (T42)	07:31			06:41			06:07		20:02 (T40)	05:59		20:07 (T40)
	17:36	14	08:26 (T76)	18:15	44	17:39 (T42)	19:46			20:18			20:49	23	20:25 (T40)	21:08	30	20:37 (T40)
24	07:50		08:11 (T76)	07:15		16:55 (T42)	07:30			06:40			06:06		20:02 (T40)	05:59		20:06 (T40)
	17:38	16	08:27 (T76)	18:16	43	17:38 (T42)	19:47			20:19			20:50	24	20:26 (T40)	21:08	31	20:37 (T40)
25	07:49		08:10 (T76)	07:13		16:55 (T42)	07:28			06:38			06:06		20:02 (T40)	06:00		20:06 (T40)
	17:39	18	08:28 (T76)	18:17	43	17:38 (T42)	19:48			20:21			20:51	25	20:27 (T40)	21:08	31	20:37 (T40)
26	07:49		08:09 (T76)	07:12		16:55 (T42)	07:26			06:37			06:05		20:01 (T40)	06:00		20:07 (T40)
	17:40	20	08:29 (T76)	18:18	42	17:37 (T42)	19:50			20:22			20:52	27	20:28 (T40)	21:08	31	20:38 (T40)
27	07:48		08:09 (T76)	07:10		16:56 (T42)	07:24			06:36			06:04		20:02 (T40)	06:00		20:07 (T40)
	17:41	22	08:31 (T76)	18:19	41	17:37 (T42)	19:51			20:23			20:53	27	20:29 (T40)	21:08	30	20:37 (T40)
28	07:47		08:08 (T76)	07:09		16:56 (T42)	07:23			06:34			06:04		20:01 (T40)	06:01		20:07 (T40)
	17:42	23	08:31 (T76)	18:21	40	17:36 (T42)	19:52			20:24			20:54	29	20:30 (T40)	21:09	30	20:37 (T40)
29	07:46		08:07 (T76)				07:21			06:33			06:03		20:01 (T40)	06:01		20:08 (T40)
	17:44	25	08:32 (T76)				19:53			20:25			20:54	29	20:30 (T40)	21:09	30	20:38 (T40)
30	07:45		08:06 (T76)				07:19			06:32			06:02		20:01 (T40)	06:02		20:07 (T40)
	17:45	26	08:32 (T76)				19:54			20:26			20:55	30	20:31 (T40)	21:09	31	20:38 (T40)
31	07:44		08:05 (T76)				07:18		19:26 (T41)				06:02		20:01 (T40)			
	17:46	28	08:33 (T76)				19:55	6	19:32 (T41)				20:56	30	20:31 (T40)			
Potential sun hours	297			297			370			399			448			453		
Total, worst case		654			1190			206			532			363			922	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.68			0.66			0.71			0.60			0.55			0.55	
Total reduction		0.22			0.27			0.32			0.32			0.32			0.36	
Total, real		141			324			66			172			116			331	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 779 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6811)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August			September			October			November			December		
1	06:02		20:08 (T40)	06:26			06:57		19:08 (T41)	07:27			07:02		07:37 (T76)	07:37		15:32 (T77)
	21:08	31	20:39 (T40)	20:50			20:07	33	19:41 (T41)	19:15			17:28	54	17:02 (T42)	17:04	25	15:57 (T77)
2	06:03		20:08 (T40)	06:27			06:58		19:08 (T41)	07:29			07:03		07:37 (T76)	07:38		15:31 (T77)
	21:08	30	20:38 (T40)	20:49			20:06	32	19:40 (T41)	19:13			17:27	53	17:01 (T42)	17:03	27	15:58 (T77)
3	06:03		20:08 (T40)	06:28			06:59		19:08 (T41)	07:30			07:04		07:36 (T76)	07:39		15:32 (T77)
	21:08	31	20:39 (T40)	20:48			20:04	32	19:40 (T41)	19:11			17:26	51	16:59 (T42)	17:03	28	16:00 (T77)
4	06:04		20:08 (T40)	06:29			07:00		19:08 (T41)	07:31			07:06		07:35 (T76)	07:40		15:31 (T77)
	21:08	31	20:39 (T40)	20:47			20:02	31	19:39 (T41)	19:10			17:24	47	16:56 (T42)	17:03	30	16:01 (T77)
5	06:04		20:08 (T40)	06:30			07:01		19:08 (T41)	07:32			07:07		07:35 (T76)	07:41		15:31 (T77)
	21:08	32	20:40 (T40)	20:46			20:01	29	19:37 (T41)	19:08			17:23	42	16:53 (T42)	17:03	31	16:02 (T77)
6	06:05		20:08 (T40)	06:31			07:02		19:08 (T41)	07:33		17:47 (T42)	07:08		07:35 (T76)	07:42		15:31 (T77)
	21:08	31	20:39 (T40)	20:44			19:57	28	19:36 (T41)	19:06	10	17:57 (T42)	17:22	29	08:04 (T76)	17:03	32	16:03 (T77)
7	06:05		20:08 (T40)	06:32			07:03		19:09 (T41)	07:34		17:42 (T42)	07:09		07:35 (T76)	07:43		15:30 (T77)
	21:07	32	20:40 (T40)	20:43			19:56	25	19:34 (T41)	19:05	19	18:01 (T42)	17:21	29	08:04 (T76)	17:03	33	16:03 (T77)
8	06:06		20:09 (T40)	06:33			07:04		19:09 (T41)	07:35		17:39 (T42)	07:10		07:34 (T76)	07:44		15:30 (T77)
	21:07	31	20:40 (T40)	20:42			19:54	24	19:33 (T41)	19:03	24	18:03 (T42)	17:20	30	08:04 (T76)	17:03	34	16:04 (T77)
9	06:07		20:09 (T40)	06:34			07:05		19:10 (T41)	07:36		17:37 (T42)	07:12		07:35 (T76)	07:45		15:30 (T77)
	21:07	31	20:40 (T40)	20:41			19:52	21	19:31 (T41)	19:01	28	18:05 (T42)	17:19	29	08:04 (T76)	17:03	35	16:05 (T77)
10	06:07		20:09 (T40)	06:35			07:06		19:11 (T41)	07:37		17:34 (T42)	07:13		07:35 (T76)	07:46		15:30 (T77)
	21:06	31	20:40 (T40)	20:39			19:51	17	19:28 (T41)	19:00	32	18:06 (T42)	17:18	29	08:04 (T76)	17:03	36	16:06 (T77)
11	06:08		20:10 (T40)	06:36			07:07		19:12 (T41)	07:38		17:33 (T42)	07:14		07:36 (T76)	07:46		15:31 (T77)
	21:06	31	20:41 (T40)	20:38			19:49	15	19:27 (T41)	18:58	34	18:07 (T42)	17:17	28	08:04 (T76)	17:03	35	16:06 (T77)
12	06:09		20:09 (T40)	06:37			07:08		19:16 (T41)	07:39		17:31 (T42)	07:15		07:37 (T76)	07:47		15:31 (T77)
	21:06	31	20:40 (T40)	20:37			19:47	8	19:24 (T41)	18:57	37	18:08 (T42)	17:16	26	08:03 (T76)	17:03	36	16:07 (T77)
13	06:10		20:10 (T40)	06:38			07:09			07:40		17:30 (T42)	07:16		07:39 (T76)	07:48		15:32 (T77)
	21:05	30	20:40 (T40)	20:36			19:45			18:55	38	18:08 (T42)	17:15	25	08:04 (T76)	17:03	36	16:08 (T77)
14	06:10		20:10 (T40)	06:39			07:10			07:41		17:28 (T42)	07:18		07:40 (T76)	07:49		15:31 (T77)
	21:05	29	20:39 (T40)	20:34			19:44			18:54	41	18:09 (T42)	17:14	23	08:03 (T76)	17:03	37	16:08 (T77)
15	06:11		20:11 (T40)	06:40			07:11			07:42		17:28 (T42)	07:19		07:41 (T76)	07:50		15:32 (T77)
	21:04	28	20:39 (T40)	20:33			19:42			18:52	42	18:10 (T42)	17:13	22	08:03 (T76)	17:03	37	16:09 (T77)
16	06:12		20:10 (T40)	06:41			07:12			07:44		17:27 (T42)	07:20		07:42 (T76)	07:50		15:32 (T77)
	21:03	28	20:38 (T40)	20:31			19:40			18:50	43	18:10 (T42)	17:12	20	08:02 (T76)	17:04	38	16:10 (T77)
17	06:13		20:11 (T40)	06:42			07:13			07:45		17:27 (T42)	07:21		07:44 (T76)	07:51		15:32 (T77)
	21:03	26	20:37 (T40)	20:30			19:39			18:49	43	18:10 (T42)	17:11	18	08:02 (T76)	17:04	38	16:10 (T77)
18	06:14		20:11 (T40)	06:43			07:14			07:46		17:26 (T42)	07:22		07:45 (T76)	07:52		15:33 (T77)
	21:02	26	20:37 (T40)	20:29			19:37			18:47	44	18:10 (T42)	17:11	16	08:01 (T76)	17:04	38	16:11 (T77)
19	06:14		20:12 (T40)	06:44			07:15			07:47		17:25 (T42)	07:23		07:46 (T76)	07:52		15:34 (T77)
	21:02	25	20:37 (T40)	20:27			19:35			18:46	45	18:10 (T42)	17:10	14	08:00 (T76)	17:05	38	16:12 (T77)
20	06:15		20:13 (T40)	06:45			07:16			07:48		17:25 (T42)	07:25		07:48 (T76)	07:53		15:33 (T77)
	21:01	23	20:36 (T40)	20:26			19:33			18:44	45	18:10 (T42)	17:09	11	07:59 (T76)	17:05	39	16:12 (T77)
21	06:16		20:12 (T40)	06:46			07:17			07:49		17:25 (T42)	07:26		07:49 (T76)	07:53		15:34 (T77)
	21:00	23	20:35 (T40)	20:24			19:32			18:43	45	18:10 (T42)	17:08	8	07:57 (T76)	17:05	38	16:12 (T77)
22	06:17		20:13 (T40)	06:47		19:21 (T41)	07:18			07:50		17:25 (T42)	07:27		07:50 (T76)	07:54		15:34 (T77)
	20:59	21	20:34 (T40)	20:23	12	19:33 (T41)	19:30			18:41	45	18:10 (T42)	17:08	4	07:54 (T76)	17:06	38	16:12 (T77)
23	06:18		20:14 (T40)	06:48		19:18 (T41)	07:19			07:51		17:25 (T42)	07:28			07:54		15:35 (T77)
	20:59	19	20:33 (T40)	20:21	17	19:35 (T41)	19:28			18:40	44	18:09 (T42)	17:07			17:07	39	16:14 (T77)
24	06:19		20:15 (T40)	06:49		19:16 (T41)	07:20			07:53		17:25 (T42)	07:29			07:55		15:36 (T77)
	20:58	18	20:33 (T40)	20:20	21	19:37 (T41)	19:27			18:39	44	18:09 (T42)	17:07			17:07	38	16:14 (T77)
25	06:20		20:16 (T40)	06:50		19:15 (T41)	07:21			07:54		17:26 (T42)	07:30			07:55		15:36 (T77)
	20:57	16	20:32 (T40)	20:18	23	19:38 (T41)	19:25			18:37	43	18:09 (T42)	17:06			17:08	38	16:14 (T77)
26	06:21		20:18 (T40)	06:51		19:13 (T41)	07:22			07:55		17:26 (T42)	07:32		15:38 (T77)	07:56		15:37 (T77)
	20:56	13	20:31 (T40)	20:17	26	19:39 (T41)	19:23			18:36	42	18:08 (T42)	17:06	11	15:49 (T77)	17:08	38	16:15 (T77)
27	06:22		20:19 (T40)	06:52		19:12 (T41)	07:23			07:56		17:26 (T42)	07:33		15:36 (T77)	07:56		15:37 (T77)
	20:55	12	20:31 (T40)	20:15	28	19:40 (T41)	19:22			18:34	41	18:07 (T42)	17:05	15	15:51 (T77)	17:09	38	16:15 (T77)
28	06:22		20:21 (T40)	06:53		19:11 (T41)	07:24			07:57		17:27 (T42)	07:34		15:34 (T77)	07:56		15:38 (T77)
	20:54	8	20:29 (T40)	20:14	29	19:40 (T41)	19:20			18:33	39	18:06 (T42)	17:05	19	15:53 (T77)	17:10	37	16:15 (T77)
29	06:23			06:54		19:10 (T41)	07:25			07:58		08:43 (T76)	07:35		15:33 (T77)	07:57		15:38 (T77)
	20:53			20:12	31	19:41 (T41)	19:18			18:32	49	18:05 (T42)	17:04	22	15:55 (T77)	17:10	37	16:15 (T77)
30	06:24			06:55		19:09 (T41)	07:26			08:00		08:41 (T76)	07:36		15:32 (T77)	07:57		15:39 (T77)
	20:52			20:10	32	19:41 (T41)	19:16			18:30	52	18:05 (T42)	17:04	24	15:56 (T77)	17:11	37	16:16 (T77)
31	06:25			06:56		19:09 (T41)				08:01		08:39 (T76)				07:57		15:40 (T77)
	20:51			20:09	32	19:41 (T41)				18:29	53	18:03 (T42)				17:12	36	16:16 (T77)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		718			251			295			1022			699			1097	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.60			0.60			0.70			0.59			0.75	
Total reduction		0.37			0.38			0.37			0.35			0.18			0.17	
Total, real		266			95			108			354			127			185	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 785 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6817)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		15:29 (T44)	07:43		07:07			07:16		07:35 (T76)	06:30		18:48 (T77)	06:01		19:53 (T42)
	17:13	50	16:19 (T44)	17:47		18:22			19:56	58	19:27 (T77)	20:27	28	19:16 (T77)	20:57	37	20:30 (T42)
2	07:57		15:29 (T44)	07:42		07:06			07:14		07:33 (T76)	06:29		18:50 (T77)	06:01		19:54 (T42)
	17:14	50	16:19 (T44)	17:49		18:23			19:57	64	19:27 (T77)	20:28	24	19:14 (T77)	20:58	37	20:31 (T42)
3	07:57		15:30 (T44)	07:41		07:04			07:13		07:32 (T76)	06:28		18:52 (T77)	06:01		19:53 (T42)
	17:15	50	16:20 (T44)	17:50		18:24			19:58	69	19:29 (T77)	20:29	18	19:10 (T77)	20:58	38	20:31 (T42)
4	07:57		15:30 (T44)	07:40		07:02			07:11		07:30 (T76)	06:26		18:57 (T77)	06:00		19:53 (T42)
	17:16	50	16:20 (T44)	17:51		18:25			19:59	73	19:30 (T77)	20:30	9	19:06 (T77)	20:59	39	20:32 (T42)
5	07:57		15:31 (T44)	07:39		07:01			07:09		07:28 (T76)	06:25			06:00		19:53 (T42)
	17:17	49	16:20 (T44)	17:52		18:26			20:00	77	19:30 (T77)	20:31			21:00	40	20:33 (T42)
6	07:57		15:32 (T44)	07:38		06:59			07:08		07:28 (T76)	06:24			05:59		19:52 (T42)
	17:17	49	16:21 (T44)	17:54		18:27			20:00	79	19:31 (T77)	20:32			21:00	41	20:33 (T42)
7	07:57		15:31 (T44)	07:37		06:58			07:06		07:27 (T76)	06:23			05:59		19:52 (T42)
	17:18	49	16:20 (T44)	17:55		18:29			20:01	82	19:31 (T77)	20:33			21:01	41	20:33 (T42)
8	07:57		15:32 (T44)	07:36		07:56			07:05		07:27 (T76)	06:22			05:59		19:52 (T42)
	17:19	49	16:21 (T44)	17:56		19:30			20:02	83	19:32 (T77)	20:34			21:02	42	20:34 (T42)
9	07:57		15:33 (T44)	07:35		07:54			07:03		07:26 (T76)	06:20			05:59		19:53 (T42)
	17:20	48	16:21 (T44)	17:57		19:31			20:03	84	19:32 (T77)	20:35			21:02	41	20:34 (T42)
10	07:57		15:34 (T44)	07:34		07:53			07:01		07:26 (T76)	06:19			05:59		19:53 (T42)
	17:21	47	16:21 (T44)	17:59		19:32			20:05	84	19:32 (T77)	20:36			21:03	42	20:35 (T42)
11	07:57		15:34 (T44)	07:32		07:51			07:00		07:26 (T76)	06:18			05:58		19:53 (T42)
	17:23	47	16:21 (T44)	18:00		19:33			20:06	84	19:32 (T77)	20:37			21:03	42	20:35 (T42)
12	07:56		15:35 (T44)	07:31		07:50			06:58		07:26 (T76)	06:17			05:58		19:52 (T42)
	17:24	46	16:21 (T44)	18:01		19:34			20:07	84	19:32 (T77)	20:38			21:04	43	20:35 (T42)
13	07:56		15:37 (T44)	07:30		07:48			06:57		07:27 (T76)	06:16			05:58		19:52 (T42)
	17:25	45	16:22 (T44)	18:02		19:35			20:08	83	19:32 (T77)	20:39			21:05	43	20:35 (T42)
14	07:56		15:37 (T44)	07:29		07:46			06:55		07:27 (T76)	06:15			05:58		19:52 (T42)
	17:26	44	16:21 (T44)	18:04		19:36			20:09	81	19:32 (T77)	20:40			21:05	44	20:36 (T42)
15	07:55		15:38 (T44)	07:27		07:45			06:53		07:27 (T76)	06:14			05:58		19:52 (T42)
	17:27	43	16:21 (T44)	18:05		19:38			20:10	79	19:31 (T77)	20:41			21:05	44	20:36 (T42)
16	07:55		15:39 (T44)	07:26		07:43			06:52		07:29 (T76)	06:13			05:58		19:53 (T42)
	17:28	42	16:21 (T44)	18:06		19:39			20:11	76	19:31 (T77)	20:42			21:06	43	20:36 (T42)
17	07:54		15:40 (T44)	07:25		07:41			06:50		07:30 (T76)	06:12			05:58		19:54 (T42)
	17:29	41	16:21 (T44)	18:07		19:40			20:12	72	19:30 (T77)	20:43			21:06	43	20:37 (T42)
18	07:54		15:41 (T44)	07:23		07:40			06:49		07:32 (T76)	06:11			05:58		19:54 (T42)
	17:30	39	16:20 (T44)	18:09		19:41			20:13	67	19:30 (T77)	20:44			21:07	43	20:37 (T42)
19	07:53		15:43 (T44)	07:22		07:38			06:47		07:35 (T76)	06:10			05:58		19:54 (T42)
	17:32	37	16:20 (T44)	18:10		19:42			20:14	60	19:29 (T77)	20:45			21:07	43	20:37 (T42)
20	07:53		15:43 (T44)	07:20		07:36			06:46		18:38 (T77)	06:09		20:08 (T42)	05:59		19:54 (T42)
	17:33	36	16:19 (T44)	18:11		19:43			20:15	51	19:29 (T77)	20:46	5	20:13 (T42)	21:07	44	20:38 (T42)
21	07:52		15:44 (T44)	07:19		07:35			06:44		18:39 (T77)	06:09		20:04 (T42)	05:59		19:54 (T42)
	17:34	34	16:18 (T44)	18:12		19:44			20:16	50	19:29 (T77)	20:47	13	20:17 (T42)	21:08	44	20:38 (T42)
22	07:52		15:47 (T44)	07:18		07:33			06:43		18:39 (T77)	06:08		20:02 (T42)	05:59		19:54 (T42)
	17:35	31	16:18 (T44)	18:13		19:45			20:17	48	19:27 (T77)	20:48	18	20:20 (T42)	21:08	44	20:38 (T42)
23	07:51		15:48 (T44)	07:16		07:31			06:41		18:40 (T77)	06:07		20:00 (T42)	05:59		19:55 (T42)
	17:36	29	16:17 (T44)	18:15		19:46			20:18	47	19:27 (T77)	20:49	22	20:22 (T42)	21:08	44	20:39 (T42)
24	07:50		15:50 (T44)	07:15		07:30			06:40		18:40 (T77)	06:06		19:58 (T42)	05:59		19:55 (T42)
	17:38	26	16:16 (T44)	18:16		19:47			20:19	45	19:25 (T77)	20:50	25	20:23 (T42)	21:08	43	20:38 (T42)
25	07:49		15:52 (T44)	07:13		07:28			06:38		18:41 (T77)	06:06		19:58 (T42)	06:00		19:55 (T42)
	17:39	22	16:14 (T44)	18:17		19:48			20:21	44	19:25 (T77)	20:51	27	20:25 (T42)	21:08	43	20:38 (T42)
26	07:49		15:55 (T44)	07:12		07:26			06:37		18:41 (T77)	06:05		19:57 (T42)	06:00		19:56 (T42)
	17:40	16	16:11 (T44)	18:18		19:50			20:22	42	19:23 (T77)	20:52	29	20:26 (T42)	21:08	43	20:39 (T42)
27	07:48		16:00 (T44)	07:10		07:24			06:36		18:42 (T77)	06:04		19:56 (T42)	06:00		19:56 (T42)
	17:41	8	16:08 (T44)	18:19		19:51			20:23	40	19:22 (T77)	20:53	31	20:27 (T42)	21:08	43	20:39 (T42)
28	07:47			07:09		07:23		19:02 (T77)	06:34		18:44 (T77)	06:04		19:55 (T42)	06:01		19:55 (T42)
	17:42			18:21		19:52	15	19:17 (T77)	20:24	37	19:21 (T77)	20:54	33	20:28 (T42)	21:09	44	20:39 (T42)
29	07:46					07:21		07:42 (T76)	06:33		18:44 (T77)	06:03		19:54 (T42)	06:01		19:56 (T42)
	17:44					19:53	31	19:21 (T77)	20:25	35	19:19 (T77)	20:54	34	20:28 (T42)	21:09	43	20:39 (T42)
30	07:45					07:19		07:38 (T76)	06:32		18:46 (T77)	06:02		19:54 (T42)	06:02		19:56 (T42)
	17:45					19:54	43	19:23 (T77)	20:26	31	19:17 (T77)	20:55	35	20:29 (T42)	21:08	43	20:39 (T42)
31	07:44					07:18		07:37 (T76)				06:02		19:53 (T42)			
	17:46					19:55	51	19:25 (T77)				20:56	36	20:29 (T42)			
Potential sun hours	297			297		370			399			448			453		
Total, worst case		1077					140			1909			387			1264	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.75					0.62			0.62			0.56			0.54	
Total reduction		0.24					0.29			0.34			0.33			0.36	
Total, real		259					40			643			128			455	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 785 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6817)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		19:57 (T42)	06:26			06:57		07:25 (T76)	07:27	07:02			07:37		15:16 (T44)
	21:08	43	20:40 (T42)	20:50			20:07	84	19:31 (T77)	19:15	17:28			17:04	47	16:03 (T44)
2	06:03		19:57 (T42)	06:27			06:58		07:25 (T76)	07:29	07:03			07:38		15:16 (T44)
	21:08	42	20:39 (T42)	20:49			20:06	84	19:31 (T77)	19:13	17:27			17:03	47	16:03 (T44)
3	06:03		19:58 (T42)	06:28			06:59		07:24 (T76)	07:30	07:04			07:39		15:16 (T44)
	21:08	42	20:40 (T42)	20:48			20:04	84	19:30 (T77)	19:11	17:26			17:03	48	16:04 (T44)
4	06:04		19:58 (T42)	06:29			07:00		07:24 (T76)	07:31	07:06			07:40		15:17 (T44)
	21:08	41	20:39 (T42)	20:47			20:02	83	19:29 (T77)	19:10	17:24			17:03	49	16:06 (T44)
5	06:04		19:58 (T42)	06:30			07:01		07:24 (T76)	07:32	07:07			07:41		15:18 (T44)
	21:08	42	20:40 (T42)	20:46			20:01	82	19:28 (T77)	19:08	17:23			17:03	48	16:06 (T44)
6	06:05		19:58 (T42)	06:31			07:02		07:24 (T76)	07:33	07:08			07:42		15:17 (T44)
	21:08	41	20:39 (T42)	20:44			19:57	79	19:27 (T77)	19:06	17:22			17:03	49	16:06 (T44)
7	06:05		19:59 (T42)	06:32			07:03		07:24 (T76)	07:34	07:09			07:43		15:17 (T44)
	21:07	40	20:39 (T42)	20:43			19:56	77	19:26 (T77)	19:05	17:21			17:03	49	16:06 (T44)
8	06:06		20:00 (T42)	06:33			07:04		07:25 (T76)	07:35	07:10			07:44		15:17 (T44)
	21:07	39	20:39 (T42)	20:42			19:54	74	19:25 (T77)	19:03	17:20			17:03	50	16:07 (T44)
9	06:07		20:00 (T42)	06:34		19:05 (T77)	07:05		07:26 (T76)	07:36	07:12			07:45		15:18 (T44)
	21:07	39	20:39 (T42)	20:41	12	19:17 (T77)	19:52	68	19:23 (T77)	19:01	17:19			17:03	50	16:08 (T44)
10	06:07		20:01 (T42)	06:35		19:01 (T77)	07:06		07:26 (T76)	07:37	07:13			07:46		15:18 (T44)
	21:06	38	20:39 (T42)	20:39	20	19:21 (T77)	19:51	65	19:21 (T77)	19:00	17:18			17:03	50	16:08 (T44)
11	06:08		20:01 (T42)	06:36		18:58 (T77)	07:07		07:27 (T76)	07:38	07:14			07:46		15:19 (T44)
	21:06	38	20:39 (T42)	20:38	25	19:23 (T77)	19:49	59	19:19 (T77)	18:58	17:17			17:03	50	16:09 (T44)
12	06:09		20:01 (T42)	06:37		18:56 (T77)	07:08		07:28 (T76)	07:39	07:15			07:47		15:19 (T44)
	21:05	37	20:38 (T42)	20:37	29	19:25 (T77)	19:47	53	19:17 (T77)	18:57	17:16			17:03	51	16:10 (T44)
13	06:10		20:02 (T42)	06:38		18:54 (T77)	07:09		07:29 (T76)	07:40	07:16			07:48		15:20 (T44)
	21:05	36	20:38 (T42)	20:36	33	19:27 (T77)	19:45	44	19:14 (T77)	18:55	17:15			17:03	50	16:10 (T44)
14	06:10		20:03 (T42)	06:39		18:53 (T77)	07:10		07:31 (T76)	07:41	07:18			07:49		15:19 (T44)
	21:05	34	20:37 (T42)	20:34	35	19:28 (T77)	19:44	33	19:11 (T77)	18:54	17:14			17:03	51	16:10 (T44)
15	06:11		20:04 (T42)	06:40		18:51 (T77)	07:11		18:51 (T77)	07:42	07:19		15:32 (T44)	07:50		15:20 (T44)
	21:04	33	20:37 (T42)	20:33	38	19:29 (T77)	19:42	16	19:07 (T77)	18:52	17:13	8	15:40 (T44)	17:03	51	16:11 (T44)
16	06:12		20:04 (T42)	06:41		18:49 (T77)	07:12			07:44	07:20		15:27 (T44)	07:50		15:21 (T44)
	21:03	32	20:36 (T42)	20:31	40	19:29 (T77)	19:40			18:50	17:12	17	15:44 (T44)	17:04	51	16:12 (T44)
17	06:13		20:05 (T42)	06:42		18:48 (T77)	07:13			07:45	07:21		15:26 (T44)	07:51		15:21 (T44)
	21:03	30	20:35 (T42)	20:30	42	19:30 (T77)	19:39			18:49	17:11	22	15:48 (T44)	17:04	51	16:12 (T44)
18	06:14		20:07 (T42)	06:43		18:46 (T77)	07:14			07:46	07:22		15:24 (T44)	07:52		15:21 (T44)
	21:02	28	20:35 (T42)	20:29	45	19:31 (T77)	19:37			18:47	17:11	26	15:50 (T44)	17:04	51	16:12 (T44)
19	06:14		20:08 (T42)	06:44		18:45 (T77)	07:15			07:47	07:23		15:22 (T44)	07:52		15:22 (T44)
	21:01	26	20:34 (T42)	20:27	46	19:31 (T77)	19:35			18:46	17:10	29	15:51 (T44)	17:05	51	16:13 (T44)
20	06:15		20:10 (T42)	06:45		18:44 (T77)	07:16			07:48	07:25		15:21 (T44)	07:53		15:22 (T44)
	21:01	23	20:33 (T42)	20:26	48	19:32 (T77)	19:33			18:44	17:09	31	15:52 (T44)	17:05	51	16:13 (T44)
21	06:16		20:10 (T42)	06:46		18:43 (T77)	07:17			07:49	07:26		15:21 (T44)	07:53		15:23 (T44)
	21:00	21	20:31 (T42)	20:24	49	19:32 (T77)	19:32			18:43	17:09	33	15:54 (T44)	17:06	51	16:14 (T44)
22	06:17		20:13 (T42)	06:47		18:43 (T77)	07:18			07:50	07:27		15:19 (T44)	07:54		15:23 (T44)
	20:59	16	20:29 (T42)	20:23	49	19:32 (T77)	19:30			18:41	17:08	36	15:55 (T44)	17:06	51	16:14 (T44)
23	06:18		20:16 (T42)	06:48		18:42 (T77)	07:19			07:51	07:28		15:19 (T44)	07:54		15:24 (T44)
	20:58	10	20:26 (T42)	20:21	51	19:33 (T77)	19:28			18:40	17:07	37	15:56 (T44)	17:07	51	16:15 (T44)
24	06:19			06:49		07:38 (T76)	07:20			07:53	07:29		15:18 (T44)	07:55		15:24 (T44)
	20:58			20:20	61	19:33 (T77)	19:27			18:39	17:07	39	15:57 (T44)	17:07	51	16:15 (T44)
25	06:20			06:50		07:35 (T76)	07:21			07:54	07:30		15:18 (T44)	07:55		15:24 (T44)
	20:57			20:18	68	19:33 (T77)	19:25			18:37	17:06	41	15:59 (T44)	17:08	51	16:15 (T44)
26	06:21			06:51		07:32 (T76)	07:22			07:55	07:32		15:18 (T44)	07:56		15:25 (T44)
	20:56			20:17	73	19:33 (T77)	19:23			18:36	17:06	42	16:00 (T44)	17:08	51	16:16 (T44)
27	06:22			06:52		07:31 (T76)	07:23			07:56	07:33		15:17 (T44)	07:56		15:26 (T44)
	20:55			20:15	76	19:33 (T77)	19:22			18:34	17:05	43	16:00 (T44)	17:09	51	16:17 (T44)
28	06:22			06:53		07:29 (T76)	07:24			07:57	07:34		15:17 (T44)	07:56		15:26 (T44)
	20:54			20:14	79	19:33 (T77)	19:20			18:33	17:05	44	16:01 (T44)	17:10	51	16:17 (T44)
29	06:23			06:54		07:28 (T76)	07:25			07:58	07:35		15:17 (T44)	07:57		15:26 (T44)
	20:53			20:12	80	19:32 (T77)	19:18			18:32	17:04	45	16:02 (T44)	17:10	51	16:17 (T44)
30	06:24			06:55		07:27 (T76)	07:26			08:00	07:36		15:16 (T44)	07:57		15:28 (T44)
	20:52			20:10	83	19:32 (T77)	19:16			18:31	17:04	46	16:02 (T44)	17:11	50	16:18 (T44)
31	06:25			06:56		07:26 (T76)				08:01				07:57		15:28 (T44)
	20:51			20:09	84	19:32 (T77)				18:29				17:12	51	16:19 (T44)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		771			1166			985				539			1555	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.54			0.62			0.63				0.75			0.75	
Total reduction		0.37			0.39			0.38				0.23			0.17	
Total, real		286			459			378				125			265	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 824 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6849)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:57	07:43	07:07			07:16		18:30 (T5)	06:30			06:01		19:57 (T3)
	17:12	17:47	18:21			19:56	61	19:31 (T4)	20:27			20:57	18	20:15 (T3)
2	07:57	07:42	07:05			07:14		18:29 (T5)	06:28			06:00		19:58 (T3)
	17:13	17:48	18:22			19:57	61	19:30 (T4)	20:28			20:58	17	20:15 (T3)
3	07:57	07:41	07:04			07:12		18:28 (T5)	06:27			06:00		19:59 (T3)
	17:14	17:49	18:24			19:58	62	19:30 (T4)	20:29			20:58	15	20:14 (T3)
4	07:57	07:40	07:02			07:11		18:27 (T5)	06:26		20:03 (T3)	05:59		20:00 (T3)
	17:15	17:51	18:25			19:59	63	19:30 (T4)	20:30	5	20:08 (T3)	20:59	13	20:13 (T3)
5	07:57	07:39	07:01			07:09		18:27 (T5)	06:24		19:58 (T3)	05:59		20:01 (T3)
	17:16	17:52	18:26			20:00	62	19:29 (T4)	20:31	10	20:08 (T3)	21:00	11	20:12 (T3)
6	07:57	07:38	06:59			07:07		18:26 (T5)	06:23		19:56 (T3)	05:59		20:03 (T3)
	17:17	17:53	18:27			20:00	62	19:28 (T4)	20:32	13	20:09 (T3)	21:00	8	20:11 (T3)
7	07:57	07:37	06:57			07:06		18:26 (T5)	06:22		19:55 (T3)	05:58		20:05 (T3)
	17:18	17:54	18:28			20:01	62	19:28 (T4)	20:33	15	20:10 (T3)	21:01	4	20:09 (T3)
8	07:57	07:36	07:56			07:04		18:25 (T5)	06:21		19:54 (T3)	05:58		
	17:19	17:56	19:29			20:02	62	19:27 (T4)	20:34	18	20:12 (T3)	21:02		
9	07:57	07:35	07:54			07:02		18:25 (T5)	06:20		19:53 (T3)	05:58		
	17:20	17:57	19:30			20:03	60	19:25 (T4)	20:35	20	20:13 (T3)	21:02		
10	07:57	07:33	07:53			07:01		18:25 (T5)	06:19		19:52 (T3)	05:58		
	17:21	17:58	19:32			20:04	60	19:25 (T4)	20:36	22	20:14 (T3)	21:03		
11	07:57	07:32	07:51			06:59		18:25 (T5)	06:17		19:52 (T3)	05:58		
	17:22	17:59	19:33			20:05	58	19:23 (T5)	20:37	23	20:15 (T3)	21:04		
12	07:56	07:31	07:49			06:58		18:25 (T5)	06:16		19:51 (T3)	05:57		
	17:23	18:01	19:34			20:06	58	19:23 (T5)	20:38	25	20:16 (T3)	21:04		
13	07:56	07:30	07:48			06:56		18:25 (T5)	06:15		19:51 (T3)	05:57		
	17:24	18:02	19:35			20:07	57	19:22 (T5)	20:39	26	20:17 (T3)	21:05		
14	07:56	07:28	07:46			06:54		18:26 (T5)	06:14		19:51 (T3)	05:57		
	17:25	18:03	19:36			20:09	56	19:22 (T5)	20:40	26	20:17 (T3)	21:05		
15	07:55	07:27	07:44			06:53		18:25 (T5)	06:13		19:50 (T3)	05:57		
	17:26	18:04	19:37			20:10	56	19:21 (T5)	20:41	28	20:18 (T3)	21:06		
16	07:55	07:26	07:43			06:51		18:25 (T5)	06:12		19:50 (T3)	05:57		
	17:27	18:06	19:38			20:11	54	19:19 (T5)	20:42	29	20:19 (T3)	21:06		
17	07:54	07:24	07:41			06:50		18:26 (T5)	06:11		19:50 (T3)	05:57		
	17:28	18:07	19:39			20:12	53	19:19 (T5)	20:43	29	20:19 (T3)	21:06		
18	07:54	07:23	07:39			06:48		18:26 (T5)	06:10		19:50 (T3)	05:57		
	17:30	18:08	19:40			20:13	52	19:18 (T5)	20:44	29	20:19 (T3)	21:07		
19	07:53	07:22	07:38			06:47		18:27 (T5)	06:10		19:50 (T3)	05:58		
	17:31	18:09	19:42			20:14	50	19:17 (T5)	20:45	29	20:19 (T3)	21:07		
20	07:53	07:20	07:36			06:45		18:28 (T5)	06:09		19:51 (T3)	05:58		
	17:32	18:10	19:43			20:15	48	19:16 (T5)	20:46	29	20:20 (T3)	21:07		
21	07:52	07:19	07:34		18:56 (T5)	06:44		18:29 (T5)	06:08		19:51 (T3)	05:58		
	17:33	18:12	19:44	7	19:03 (T5)	20:16	46	19:15 (T5)	20:47	28	20:19 (T3)	21:08		
22	07:52	07:17	07:33		18:50 (T5)	06:42		18:30 (T5)	06:07		19:51 (T3)	05:58		
	17:34	18:13	19:45	23	19:17 (T4)	20:17	44	19:14 (T5)	20:48	28	20:19 (T3)	21:08		
23	07:51	07:16	07:31		18:46 (T5)	06:41		18:31 (T5)	06:06		19:51 (T3)	05:58		
	17:36	18:14	19:46	36	19:22 (T4)	20:18	41	19:12 (T5)	20:49	27	20:18 (T3)	21:08		
24	07:50	07:14	07:29		18:42 (T5)	06:39		18:32 (T5)	06:05		19:52 (T3)	05:59		
	17:37	18:15	19:47	43	19:25 (T4)	20:19	39	19:11 (T5)	20:50	27	20:19 (T3)	21:08		
25	07:49	07:13	07:27		18:40 (T5)	06:38		18:33 (T5)	06:05		19:52 (T3)	05:59		
	17:38	18:16	19:48	46	19:26 (T4)	20:20	36	19:09 (T5)	20:51	26	20:18 (T3)	21:08		
26	07:49	07:11	07:26		18:38 (T5)	06:36		18:35 (T5)	06:04		19:52 (T3)	05:59		
	17:39	18:18	19:49	50	19:28 (T4)	20:21	32	19:07 (T5)	20:52	25	20:17 (T3)	21:08		
27	07:48	07:10	07:24		18:36 (T5)	06:35		18:37 (T5)	06:03		19:54 (T3)	06:00		
	17:41	18:19	19:50	53	19:29 (T4)	20:23	28	19:05 (T5)	20:53	24	20:18 (T3)	21:09		
28	07:47	07:08	07:22		18:34 (T5)	06:34		18:39 (T5)	06:03		19:54 (T3)	06:00		
	17:42	18:20	19:51	55	19:29 (T4)	20:24	23	19:02 (T5)	20:54	23	20:17 (T3)	21:09		
29	07:46		07:21		18:33 (T5)	06:32		18:43 (T5)	06:02		19:55 (T3)	06:00		
	17:43		19:52	57	19:30 (T4)	20:25	16	18:59 (T5)	20:54	22	20:17 (T3)	21:09		
30	07:45		07:19		18:32 (T5)	06:31			06:02		19:55 (T3)	06:01		
	17:44		19:53	58	19:30 (T4)	20:26			20:55	21	20:16 (T3)	21:09		
31	07:44		07:17		18:30 (T5)				06:01		19:56 (T3)			
	17:46		19:55	60	19:30 (T4)				20:56	20	20:16 (T3)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				488			1462			647			86	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.63			0.63			0.56			0.56	
Total reduction				0.28			0.33			0.32			0.36	
Total, real				136			481			206			31	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 824 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6849)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November	December
1	06:01			06:26		20:02 (T3)	06:57		18:24 (T5)	07:27	07:02	07:37
	21:08			20:50	24	20:26 (T3)	20:07	58	19:22 (T4)	19:14	17:27	17:03
2	06:02			06:27		20:02 (T3)	06:58		18:23 (T5)	07:28	07:03	07:38
	21:08			20:49	22	20:24 (T3)	20:05	60	19:23 (T4)	19:13	17:26	17:03
3	06:02			06:28		20:02 (T3)	06:59		18:23 (T5)	07:29	07:04	07:39
	21:08			20:48	21	20:23 (T3)	20:04	60	19:23 (T4)	19:11	17:25	17:02
4	06:03			06:29		20:03 (T3)	07:00		18:22 (T5)	07:30	07:05	07:40
	21:08			20:47	19	20:22 (T3)	20:02	62	19:24 (T4)	19:09	17:24	17:02
5	06:03			06:30		20:04 (T3)	07:01		18:22 (T5)	07:31	07:07	07:41
	21:08			20:46	17	20:21 (T3)	20:00	62	19:24 (T4)	19:08	17:23	17:02
6	06:04		20:10 (T3)	06:31		20:05 (T3)	07:02		18:22 (T5)	07:32	07:08	07:42
	21:08	7	20:17 (T3)	20:44	15	20:20 (T3)	19:57	62	19:24 (T4)	19:06	17:21	17:02
7	06:05		20:08 (T3)	06:32		20:07 (T3)	07:03		18:22 (T5)	07:33	07:09	07:43
	21:07	10	20:18 (T3)	20:43	12	20:19 (T3)	19:55	62	19:24 (T4)	19:04	17:20	17:02
8	06:05		20:08 (T3)	06:33		20:09 (T3)	07:04		18:22 (T5)	07:35	07:10	07:44
	21:07	12	20:20 (T3)	20:42	8	20:17 (T3)	19:54	62	19:24 (T4)	19:03	17:19	17:02
9	06:06		20:07 (T3)	06:34			07:05		18:22 (T5)	07:36	07:11	07:45
	21:07	14	20:21 (T3)	20:41			19:52	62	19:24 (T4)	19:01	17:18	17:02
10	06:07		20:06 (T3)	06:35			07:06		18:22 (T5)	07:37	07:13	07:46
	21:06	15	20:21 (T3)	20:39			19:50	61	19:23 (T4)	18:59	17:17	17:02
11	06:07		20:05 (T3)	06:36			07:07		18:22 (T5)	07:38	07:14	07:46
	21:06	18	20:23 (T3)	20:38			19:49	61	19:23 (T4)	18:58	17:16	17:02
12	06:08		20:05 (T3)	06:37			07:08		18:22 (T5)	07:39	07:15	07:47
	21:06	19	20:24 (T3)	20:37			19:47	60	19:22 (T4)	18:56	17:15	17:02
13	06:09		20:04 (T3)	06:38		18:55 (T5)	07:09		18:23 (T5)	07:40	07:16	07:48
	21:05	20	20:24 (T3)	20:35	8	19:03 (T5)	19:45	58	19:21 (T4)	18:55	17:14	17:02
14	06:10		20:04 (T3)	06:39		18:49 (T5)	07:10		18:23 (T5)	07:41	07:17	07:49
	21:05	21	20:25 (T3)	20:34	19	19:08 (T5)	19:43	58	19:21 (T4)	18:53	17:13	17:02
15	06:10		20:03 (T3)	06:40		18:46 (T5)	07:11		18:24 (T5)	07:42	07:19	07:50
	21:04	23	20:26 (T3)	20:33	24	19:10 (T5)	19:42	55	19:19 (T4)	18:51	17:12	17:03
16	06:11		20:03 (T3)	06:41		18:44 (T5)	07:12		18:25 (T5)	07:43	07:20	07:50
	21:03	24	20:27 (T3)	20:31	29	19:13 (T5)	19:40	53	19:18 (T4)	18:50	17:12	17:03
17	06:12		20:02 (T3)	06:42		18:41 (T5)	07:13		18:26 (T5)	07:44	07:21	07:51
	21:03	25	20:27 (T3)	20:30	33	19:14 (T5)	19:38	51	19:17 (T4)	18:48	17:11	17:03
18	06:13		20:02 (T3)	06:43		18:40 (T5)	07:14		18:28 (T5)	07:46	07:22	07:52
	21:02	25	20:27 (T3)	20:28	36	19:16 (T5)	19:37	47	19:15 (T4)	18:47	17:10	17:03
19	06:14		20:02 (T3)	06:44		18:38 (T5)	07:15		18:29 (T5)	07:47	07:23	07:52
	21:01	26	20:28 (T3)	20:27	39	19:17 (T5)	19:35	44	19:13 (T4)	18:45	17:09	17:04
20	06:14		20:02 (T3)	06:45		18:36 (T5)	07:16		18:31 (T5)	07:48	07:25	07:53
	21:01	27	20:29 (T3)	20:26	42	19:18 (T5)	19:33	39	19:10 (T4)	18:44	17:08	17:04
21	06:15		20:02 (T3)	06:46		18:35 (T5)	07:17		18:34 (T5)	07:49	07:26	07:53
	21:00	27	20:29 (T3)	20:24	44	19:19 (T5)	19:31	30	19:05 (T4)	18:42	17:08	17:05
22	06:16		20:01 (T3)	06:47		18:33 (T5)	07:18		18:39 (T5)	07:50	07:27	07:54
	20:59	29	20:30 (T3)	20:23	47	19:20 (T5)	19:30	12	18:51 (T5)	18:41	17:07	17:05
23	06:17		20:00 (T3)	06:48		18:32 (T5)	07:19			07:51	07:28	07:54
	20:58	29	20:29 (T3)	20:21	48	19:20 (T5)	19:28			18:39	17:07	17:06
24	06:18		20:00 (T3)	06:49		18:31 (T5)	07:20			07:52	07:29	07:55
	20:58	29	20:29 (T3)	20:20	50	19:21 (T5)	19:26			18:38	17:06	17:06
25	06:19		20:00 (T3)	06:50		18:30 (T5)	07:21			07:54	07:30	07:55
	20:57	30	20:30 (T3)	20:18	52	19:22 (T5)	19:25			18:37	17:05	17:07
26	06:20		20:01 (T3)	06:51		18:29 (T5)	07:22			07:55	07:32	07:56
	20:56	29	20:30 (T3)	20:16	53	19:22 (T5)	19:23			18:35	17:05	17:08
27	06:21		20:01 (T3)	06:52		18:28 (T5)	07:23			07:56	07:33	07:56
	20:55	29	20:30 (T3)	20:15	54	19:22 (T5)	19:21			18:34	17:04	17:08
28	06:22		20:01 (T3)	06:53		18:27 (T5)	07:24			07:57	07:34	07:56
	20:54	28	20:29 (T3)	20:13	55	19:22 (T5)	19:19			18:33	17:04	17:09
29	06:23		20:01 (T3)	06:54		18:25 (T5)	07:25			07:58	07:35	07:57
	20:53	28	20:29 (T3)	20:12	57	19:22 (T5)	19:18			18:31	17:04	17:10
30	06:24		20:01 (T3)	06:55		18:25 (T5)	07:26			07:59	07:36	07:57
	20:52	27	20:28 (T3)	20:10	57	19:22 (T5)	19:16			18:30	17:03	17:10
31	06:25		20:02 (T3)	06:56		18:24 (T5)				08:01		07:57
	20:51	25	20:27 (T3)	20:09	58	19:22 (T5)				18:29		17:11
Potential sun hours	460			429			375			345	297	287
Total, worst case		596			943			1179				
Sun reduction		0.66			0.61			0.59				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.56			0.62			0.63				
Total reduction		0.37			0.38			0.37				
Total, real		220			358			440				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 827 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6852)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:58	08:38 (T25)	07:44	08:04 (T26)	07:07	08:52 (T25)	07:16		06:30		06:01	06:37 (T24)
	17:13 32	09:10 (T25)	17:48 84	09:38 (T25)	18:22 19	09:11 (T25)	19:56		20:27		20:57 60	07:37 (T24)
2	07:58	08:38 (T25)	07:43	08:03 (T26)	07:06		07:15	07:34 (T75)	06:29		06:01	06:37 (T24)
	17:14 33	09:11 (T25)	17:49 87	09:39 (T25)	18:23		19:57 12	07:46 (T75)	20:28		20:58 60	07:37 (T24)
3	07:58	08:37 (T25)	07:42	08:02 (T26)	07:04		07:13	07:32 (T75)	06:28		06:01	06:37 (T24)
	17:15 35	09:12 (T25)	17:50 90	09:39 (T25)	18:24		19:58 16	07:48 (T75)	20:29		20:59 60	07:37 (T24)
4	07:58	08:37 (T25)	07:41	08:01 (T26)	07:03		07:11	07:30 (T75)	06:26		06:00	06:37 (T24)
	17:16 36	09:13 (T25)	17:51 92	09:39 (T25)	18:25		19:59 19	07:49 (T75)	20:30		20:59 61	07:38 (T24)
5	07:58	08:37 (T25)	07:40	08:00 (T26)	07:01		07:10	07:29 (T75)	06:25		06:00	06:37 (T24)
	17:17 38	09:15 (T25)	17:53 96	09:40 (T25)	18:26		20:00 22	07:51 (T75)	20:32		21:00 61	07:38 (T24)
6	07:58	08:37 (T25)	07:39	07:59 (T26)	07:00		07:08	07:27 (T75)	06:24		05:59	06:37 (T24)
	17:17 39	09:16 (T25)	17:54 98	09:40 (T25)	18:28		20:00 24	07:51 (T75)	20:33		21:01 61	07:38 (T24)
7	07:58	08:36 (T25)	07:37	07:58 (T26)	06:58		07:06	07:25 (T75)	06:23		05:59	06:37 (T24)
	17:18 41	09:17 (T25)	17:55 100	09:40 (T25)	18:29		20:02 26	07:51 (T75)	20:34		21:01 61	07:38 (T24)
8	07:58	08:36 (T25)	07:36	07:56 (T26)	07:56		07:05	07:24 (T75)	06:22	06:58 (T24)	05:59	06:37 (T24)
	17:19 43	09:19 (T25)	17:56 100	09:39 (T25)	19:30		20:03 28	07:52 (T75)	20:35 16	07:14 (T24)	21:02 62	07:39 (T24)
9	07:57	08:35 (T25)	07:35	07:56 (T26)	07:55		07:03	07:22 (T75)	06:20	06:55 (T24)	05:59	06:38 (T24)
	17:20 44	09:19 (T25)	17:58 101	09:39 (T25)	19:31		20:04 30	07:52 (T75)	20:36 23	07:18 (T24)	21:03 61	07:39 (T24)
10	07:57	08:35 (T25)	07:34	07:56 (T26)	07:53		07:01	07:21 (T75)	06:19	06:52 (T24)	05:59	06:38 (T24)
	17:21 46	09:21 (T25)	17:59 101	09:39 (T25)	19:32		20:05 31	07:52 (T75)	20:37 28	07:20 (T24)	21:03 62	07:40 (T24)
11	07:57	08:35 (T25)	07:33	07:56 (T26)	07:51		07:00	07:21 (T75)	06:18	06:49 (T24)	05:58	06:38 (T24)
	17:23 47	09:22 (T25)	18:00 101	09:39 (T25)	19:33		20:06 31	07:52 (T75)	20:38 32	07:21 (T24)	21:04 62	07:40 (T24)
12	07:57	08:34 (T25)	07:31	07:55 (T26)	07:50		06:58	07:20 (T75)	06:17	06:48 (T24)	05:58	06:37 (T24)
	17:24 48	09:22 (T25)	18:01 100	09:38 (T25)	19:34		20:07 31	07:51 (T75)	20:39 35	07:23 (T24)	21:04 62	07:39 (T24)
13	07:56	08:34 (T25)	07:30	07:55 (T26)	07:48		06:57	07:20 (T75)	06:16	06:46 (T24)	05:58	06:38 (T24)
	17:25 50	09:24 (T25)	18:03 101	09:38 (T25)	19:36		20:08 31	07:51 (T75)	20:40 38	07:24 (T24)	21:05 61	07:39 (T24)
14	07:56	08:34 (T25)	07:29	07:56 (T26)	07:46		06:55	07:20 (T75)	06:15	06:45 (T24)	05:58	06:38 (T24)
	17:26 51	09:25 (T25)	18:04 98	09:37 (T25)	19:37		20:09 30	07:50 (T75)	20:41 41	07:26 (T24)	21:05 62	07:40 (T24)
15	07:56	08:33 (T25)	07:28	07:55 (T26)	07:45		06:54	07:21 (T75)	06:14	06:45 (T24)	05:58	06:38 (T24)
	17:27 53	09:26 (T25)	18:05 97	09:36 (T25)	19:38		20:10 29	07:50 (T75)	20:42 43	07:28 (T24)	21:06 62	07:40 (T24)
16	07:55	08:33 (T25)	07:26	07:56 (T26)	07:43		06:52	07:21 (T75)	06:13	06:44 (T24)	05:58	06:38 (T24)
	17:28 55	09:28 (T25)	18:06 95	09:36 (T25)	19:39		20:11 28	07:49 (T75)	20:43 45	07:29 (T24)	21:06 62	07:40 (T24)
17	07:55	08:33 (T25)	07:25	07:57 (T26)	07:41		06:50	07:22 (T75)	06:12	06:43 (T24)	05:58	06:39 (T24)
	17:29 55	09:28 (T25)	18:07 91	09:35 (T25)	19:40		20:12 26	07:48 (T75)	20:44 46	07:29 (T24)	21:07 62	07:41 (T24)
18	07:54	08:33 (T25)	07:24	07:57 (T26)	07:40		06:49	07:22 (T75)	06:11	06:42 (T24)	05:58	06:39 (T24)
	17:30 57	09:30 (T25)	18:09 89	09:34 (T25)	19:41		20:13 25	07:47 (T75)	20:45 48	07:30 (T24)	21:07 62	07:41 (T24)
19	07:54	08:32 (T25)	07:22	07:59 (T26)	07:38		06:47	07:23 (T75)	06:10	06:41 (T24)	05:58	06:39 (T24)
	17:32 58	09:30 (T25)	18:10 84	09:33 (T25)	19:42		20:14 23	07:46 (T75)	20:46 50	07:31 (T24)	21:07 62	07:41 (T24)
20	07:53	08:32 (T25)	07:21	07:59 (T26)	07:36		06:46	07:24 (T75)	06:09	06:40 (T24)	05:58	06:39 (T24)
	17:33 59	09:31 (T25)	18:11 81	09:31 (T25)	19:43		20:15 19	07:43 (T75)	20:47 51	07:31 (T24)	21:08 62	07:41 (T24)
21	07:53	08:32 (T25)	07:19	08:01 (T26)	07:35		06:44	07:26 (T75)	06:09	06:40 (T24)	05:59	06:39 (T24)
	17:34 60	09:32 (T25)	18:12 74	09:30 (T25)	19:44		20:17 15	07:41 (T75)	20:48 53	07:33 (T24)	21:08 62	07:41 (T24)
22	07:52	08:31 (T25)	07:18	08:03 (T26)	07:33		06:43	07:29 (T75)	06:08	06:39 (T24)	05:59	06:39 (T24)
	17:35 62	09:33 (T25)	18:14 69	09:29 (T25)	19:45		20:18 8	07:37 (T75)	20:49 54	07:33 (T24)	21:08 62	07:41 (T24)
23	07:51	08:31 (T25)	07:16	08:06 (T26)	07:31		06:41		06:07	06:39 (T24)	05:59	06:40 (T24)
	17:36 62	09:33 (T25)	18:15 59	09:27 (T25)	19:46		20:19		20:50 54	07:33 (T24)	21:08 62	07:42 (T24)
24	07:51	08:30 (T25)	07:15	08:41 (T25)	07:30		06:40		06:06	06:38 (T24)	05:59	06:40 (T24)
	17:38 64	09:34 (T25)	18:16 45	09:26 (T25)	19:48		20:20		20:50 55	07:33 (T24)	21:09 62	07:42 (T24)
25	07:50	08:31 (T25)	07:13	08:42 (T25)	07:28		06:39		06:06	06:38 (T24)	06:00	06:40 (T24)
	17:39 64	09:35 (T25)	18:17 41	09:23 (T25)	19:49		20:21		20:51 56	07:34 (T24)	21:09 62	07:42 (T24)
26	07:49	08:31 (T25)	07:12	08:44 (T25)	07:26		06:37		06:05	06:38 (T24)	06:00	06:41 (T24)
	17:40 65	09:36 (T25)	18:18 38	09:22 (T25)	19:50		20:22		20:52 57	07:35 (T24)	21:09 62	07:43 (T24)
27	07:48	08:30 (T25)	07:10	08:46 (T25)	07:25		06:36		06:04	06:38 (T24)	06:00	06:41 (T24)
	17:41 66	09:36 (T25)	18:19 32	09:18 (T25)	19:51		20:23		20:53 58	07:36 (T24)	21:09 62	07:43 (T24)
28	07:47	08:30 (T25)	07:09	08:48 (T25)	07:23		06:34		06:04	06:37 (T24)	06:01	06:41 (T24)
	17:42 67	09:37 (T25)	18:21 26	09:14 (T25)	19:52		20:24		20:54 58	07:35 (T24)	21:09 62	07:43 (T24)
29	07:47	08:30 (T25)			07:21		06:33		06:03	06:37 (T24)	06:01	06:42 (T24)
	17:44 67	09:37 (T25)			19:53		20:25		20:55 58	07:35 (T24)	21:09 62	07:44 (T24)
30	07:46	08:09 (T26)			07:20		06:32		06:02	06:37 (T24)	06:02	06:41 (T24)
	17:45 71	09:38 (T25)			19:54		20:26		20:56 59	07:36 (T24)	21:09 62	07:43 (T24)
31	07:45	08:05 (T26)			07:18				06:02	06:37 (T24)		
	17:46 80	09:38 (T25)			19:55				20:56 60	07:37 (T24)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case	1648		2270		19		504		1118		1848	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.52		0.53		0.52		0.65		0.71		0.71	
Total reduction	0.15		0.20		0.22		0.32		0.39		0.43	
Total, real	255		459		4		164		432		802	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 827 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6852)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02	06:42 (T24)	06:26	06:59 (T24)	06:57	07:20 (T75)	07:28		07:02	07:25 (T26)	07:37	08:17 (T25)
	21:09 62	07:44 (T24)	20:50 34	07:33 (T24)	20:07 31	07:51 (T75)	19:15		17:28 102	09:09 (T25)	17:04 47	09:04 (T25)
2	06:03	06:42 (T24)	06:27	07:01 (T24)	06:58	07:20 (T75)	07:29		07:03	07:26 (T26)	07:38	08:18 (T25)
	21:09 62	07:44 (T24)	20:49 30	07:31 (T24)	20:06 31	07:51 (T75)	19:13		17:27 101	09:09 (T25)	17:03 46	09:04 (T25)
3	06:03	06:43 (T24)	06:28	07:03 (T24)	06:59	07:20 (T75)	07:30		07:05	07:26 (T26)	07:39	08:19 (T25)
	21:09 61	07:44 (T24)	20:48 26	07:29 (T24)	20:04 30	07:50 (T75)	19:12		17:26 100	09:09 (T25)	17:03 44	09:03 (T25)
4	06:04	06:42 (T24)	06:29	07:06 (T24)	07:00	07:21 (T75)	07:31		07:06	07:27 (T26)	07:40	08:20 (T25)
	21:08 62	07:44 (T24)	20:47 20	07:26 (T24)	20:03 28	07:49 (T75)	19:10		17:24 99	09:09 (T25)	17:03 43	09:03 (T25)
5	06:04	06:43 (T24)	06:30	07:10 (T24)	07:01	07:22 (T75)	07:32		07:07	07:29 (T26)	07:41	08:21 (T25)
	21:08 61	07:44 (T24)	20:46 12	07:22 (T24)	20:01 26	07:48 (T75)	19:08		17:23 97	09:10 (T25)	17:03 41	09:02 (T25)
6	06:05	06:43 (T24)	06:31		07:02	07:23 (T75)	07:33		07:08	07:30 (T26)	07:42	08:23 (T25)
	21:08 61	07:44 (T24)	20:45		19:58 24	07:47 (T75)	19:07		17:22 94	09:09 (T25)	17:03 39	09:02 (T25)
7	06:05	06:43 (T24)	06:32		07:03	07:24 (T75)	07:34		07:09	07:31 (T26)	07:43	08:24 (T25)
	21:08 61	07:44 (T24)	20:44		19:56 22	07:46 (T75)	19:05		17:21 92	09:09 (T25)	17:03 38	09:02 (T25)
8	06:06	06:44 (T24)	06:33		07:04	07:25 (T75)	07:35		07:11	07:33 (T26)	07:44	08:25 (T25)
	21:07 61	07:45 (T24)	20:42		19:54 19	07:44 (T75)	19:03		17:20 90	09:10 (T25)	17:03 37	09:02 (T25)
9	06:07	06:44 (T24)	06:34		07:05	07:26 (T75)	07:36		07:12	07:34 (T26)	07:45	08:26 (T25)
	21:07 60	07:44 (T24)	20:41		19:52 16	07:42 (T75)	19:02		17:19 87	09:10 (T25)	17:03 35	09:01 (T25)
10	06:07	06:44 (T24)	06:35		07:06	07:27 (T75)	07:37		07:13	07:35 (T26)	07:46	08:28 (T25)
	21:07 61	07:45 (T24)	20:40		19:51 12	07:39 (T75)	19:00		17:18 83	09:09 (T25)	17:03 33	09:01 (T25)
11	06:08	06:45 (T24)	06:36		07:07	07:32 (T75)	07:38		07:14	07:36 (T26)	07:47	08:28 (T25)
	21:06 60	07:45 (T24)	20:39		19:49 1	07:33 (T75)	18:58		17:17 80	09:09 (T25)	17:03 32	09:00 (T25)
12	06:09	06:45 (T24)	06:37		07:08		07:39	09:29 (T25)	07:15	07:42 (T26)	07:48	08:29 (T25)
	21:06 59	07:44 (T24)	20:37		19:47		18:57 10	09:39 (T25)	17:16 69	09:10 (T25)	17:03 31	09:00 (T25)
13	06:10	06:45 (T24)	06:38		07:09		07:40	09:24 (T25)	07:17	08:02 (T25)	07:48	08:30 (T25)
	21:05 60	07:45 (T24)	20:36		19:46		18:55 22	09:46 (T25)	17:15 67	09:09 (T25)	17:03 30	09:00 (T25)
14	06:10	06:46 (T24)	06:39		07:10		07:42	09:20 (T25)	07:18	08:02 (T25)	07:49	08:32 (T25)
	21:05 59	07:45 (T24)	20:35		19:44		18:54 29	09:49 (T25)	17:14 67	09:09 (T25)	17:03 28	09:00 (T25)
15	06:11	06:47 (T24)	06:40		07:11		07:43	09:17 (T25)	07:19	08:03 (T25)	07:50	08:32 (T25)
	21:04 58	07:45 (T24)	20:33		19:42		18:52 35	09:52 (T25)	17:13 66	09:09 (T25)	17:03 27	08:59 (T25)
16	06:12	06:46 (T24)	06:41		07:12		07:44	09:15 (T25)	07:20	08:04 (T25)	07:51	08:33 (T25)
	21:04 58	07:44 (T24)	20:32		19:41		18:51 39	09:54 (T25)	17:12 65	09:09 (T25)	17:04 26	08:59 (T25)
17	06:13	06:47 (T24)	06:42		07:13		07:45	09:13 (T25)	07:21	08:04 (T25)	07:51	08:35 (T25)
	21:03 57	07:44 (T24)	20:30		19:39		18:49 43	09:56 (T25)	17:11 64	09:08 (T25)	17:04 25	09:00 (T25)
18	06:14	06:47 (T24)	06:43		07:14		07:46	08:41 (T26)	07:23	08:04 (T25)	07:52	08:35 (T25)
	21:03 57	07:44 (T24)	20:29		19:37		18:47 49	09:57 (T25)	17:11 64	09:08 (T25)	17:04 24	08:59 (T25)
19	06:14	06:48 (T24)	06:44		07:15		07:47	08:36 (T26)	07:24	08:06 (T25)	07:53	08:36 (T25)
	21:02 56	07:44 (T24)	20:27		19:35		18:46 63	09:59 (T25)	17:10 62	09:08 (T25)	17:05 24	09:00 (T25)
20	06:15	06:49 (T24)	06:45		07:16		07:48	08:33 (T26)	07:25	08:06 (T25)	07:53	08:37 (T25)
	21:01 55	07:44 (T24)	20:26		19:34		18:44 71	10:00 (T25)	17:09 62	09:08 (T25)	17:05 24	09:01 (T25)
21	06:16	06:48 (T24)	06:46	07:33 (T75)	07:17		07:49	08:31 (T26)	07:26	08:07 (T25)	07:54	08:37 (T25)
	21:00 55	07:43 (T24)	20:25 10	07:43 (T75)	19:32		18:43 76	10:01 (T25)	17:09 60	09:07 (T25)	17:06 23	09:00 (T25)
22	06:17	06:49 (T24)	06:47	07:30 (T75)	07:18		07:51	08:29 (T26)	07:27	08:08 (T25)	07:54	08:38 (T25)
	21:00 53	07:42 (T24)	20:23 16	07:46 (T75)	19:30		18:42 82	10:02 (T25)	17:08 59	09:07 (T25)	17:06 23	09:01 (T25)
23	06:18	06:50 (T24)	06:48	07:28 (T75)	07:19		07:52	08:28 (T26)	07:28	08:09 (T25)	07:55	08:38 (T25)
	20:59 52	07:42 (T24)	20:22 19	07:47 (T75)	19:29		18:40 86	10:03 (T25)	17:07 58	09:07 (T25)	17:07 24	09:02 (T25)
24	06:19	06:51 (T24)	06:49	07:26 (T75)	07:20		07:53	08:28 (T26)	07:30	08:10 (T25)	07:55	08:38 (T25)
	20:58 50	07:41 (T24)	20:20 23	07:49 (T75)	19:27		18:39 90	10:05 (T25)	17:07 57	09:07 (T25)	17:07 24	09:02 (T25)
25	06:20	06:52 (T24)	06:50	07:25 (T75)	07:22		07:54	08:27 (T26)	07:31	08:11 (T25)	07:56	08:39 (T25)
	20:57 49	07:41 (T24)	20:18 25	07:50 (T75)	19:25		18:37 92	10:05 (T25)	17:06 55	09:06 (T25)	17:08 24	09:03 (T25)
26	06:21	06:53 (T24)	06:51	07:23 (T75)	07:23		07:55	08:26 (T26)	07:32	08:11 (T25)	07:56	08:39 (T25)
	20:56 47	07:40 (T24)	20:17 27	07:50 (T75)	19:23		18:36 95	10:06 (T25)	17:06 55	09:06 (T25)	17:08 25	09:04 (T25)
27	06:22	06:54 (T24)	06:52	07:22 (T75)	07:24		07:56	08:25 (T26)	07:33	08:12 (T25)	07:56	08:38 (T25)
	20:55 46	07:40 (T24)	20:15 29	07:51 (T75)	19:22		18:35 97	10:06 (T25)	17:05 53	09:05 (T25)	17:09 26	09:04 (T25)
28	06:22	06:55 (T24)	06:53	07:22 (T75)	07:25		07:58	08:26 (T26)	07:34	08:13 (T25)	07:57	08:39 (T25)
	20:54 44	07:39 (T24)	20:14 29	07:51 (T75)	19:20		18:33 98	10:07 (T25)	17:05 52	09:05 (T25)	17:10 27	09:06 (T25)
29	06:23	06:55 (T24)	06:54	07:21 (T75)	07:26		07:59	08:25 (T26)	07:35	08:15 (T25)	07:57	08:39 (T25)
	20:53 42	07:37 (T24)	20:12 30	07:51 (T75)	19:18		18:32 99	10:07 (T25)	17:04 50	09:05 (T25)	17:10 28	09:07 (T25)
30	06:24	06:56 (T24)	06:55	07:20 (T75)	07:27		08:00	08:25 (T26)	07:36	08:16 (T25)	07:57	08:39 (T25)
	20:52 40	07:36 (T24)	20:11 31	07:51 (T75)	19:17		18:31 101	10:08 (T25)	17:04 49	09:05 (T25)	17:11 29	09:08 (T25)
31	06:25	06:57 (T24)	06:56	07:20 (T75)			08:01	08:25 (T26)			07:57	08:38 (T25)
	20:51 37	07:34 (T24)	20:09 31	07:51 (T75)			18:29 101	10:08 (T25)			17:12 31	09:09 (T25)
Potential sun hours	460		429		375		345		297		287	
Total, worst case	1706		392		240		1378		2159		958	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.71		0.67		0.65		0.53		0.52		0.52	
Total reduction	0.45		0.39		0.37		0.24		0.15		0.11	
Total, real	763		153		88		335		325		105	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 834 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6858)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43	08:04 (T44)	07:07		07:16	07:36 (T77)	06:30		06:02	06:28 (T42)
	17:13		17:48 24	08:28 (T44)	18:22		19:56 34	08:10 (T77)	20:27		20:57 41	07:09 (T42)
2	07:57		07:42	08:03 (T44)	07:06		07:15	07:35 (T77)	06:29		06:01	06:28 (T42)
	17:14		17:49 26	08:29 (T44)	18:23		19:57 35	08:10 (T77)	20:28		20:58 41	07:09 (T42)
3	07:57		07:41	08:02 (T44)	07:04		07:13	07:35 (T77)	06:28		06:01	06:27 (T42)
	17:15		17:50 27	08:29 (T44)	18:24		19:58 36	08:11 (T77)	20:29		20:58 42	07:09 (T42)
4	07:57		07:40	08:01 (T44)	07:03		07:11	07:34 (T77)	06:26		06:00	06:28 (T42)
	17:16		17:51 29	08:30 (T44)	18:25		19:59 37	08:11 (T77)	20:30		20:59 42	07:10 (T42)
5	07:57		07:39	08:00 (T44)	07:01		07:10	07:34 (T77)	06:25		06:00	06:28 (T42)
	17:17		17:53 31	08:31 (T44)	18:26		20:00 38	08:12 (T77)	20:31		21:00 42	07:10 (T42)
6	07:57		07:38	07:59 (T44)	06:59		07:08	07:33 (T77)	06:24		06:00	06:28 (T42)
	17:18		17:54 31	08:30 (T44)	18:28		20:00 38	08:11 (T77)	20:32		21:01 42	07:10 (T42)
7	07:57		07:37	07:59 (T44)	06:58		07:06	07:32 (T77)	06:23		05:59	06:28 (T42)
	17:19		17:55 31	08:30 (T44)	18:29		20:01 38	08:10 (T77)	20:33		21:01 42	07:10 (T42)
8	07:57		07:36	07:59 (T44)	07:56		07:05	07:33 (T77)	06:22		05:59	06:28 (T42)
	17:19		17:56 32	08:31 (T44)	19:30		20:02 37	08:10 (T77)	20:34		21:02 42	07:10 (T42)
9	07:57		07:35	08:00 (T44)	07:55		07:03	07:32 (T77)	06:20		05:59	06:29 (T42)
	17:21		17:58 31	08:31 (T44)	19:31		20:04 37	08:09 (T77)	20:35		21:02 42	07:11 (T42)
10	07:57		07:34	08:00 (T44)	07:53		07:01	07:32 (T77)	06:19		05:59	06:29 (T42)
	17:22		17:59 31	08:31 (T44)	19:32		20:05 36	08:08 (T77)	20:36		21:03 42	07:11 (T42)
11	07:57		07:32	08:00 (T44)	07:51		07:00	07:33 (T77)	06:18		05:58	06:30 (T42)
	17:23		18:00 30	08:30 (T44)	19:33		20:06 35	08:08 (T77)	20:38		21:04 41	07:11 (T42)
12	07:56		07:31	08:01 (T44)	07:50		06:58	07:33 (T77)	06:17	06:41 (T42)	05:58	06:30 (T42)
	17:24		18:01 28	08:29 (T44)	19:34		20:07 34	08:07 (T77)	20:39 11	06:52 (T42)	21:04 42	07:12 (T42)
13	07:56		07:30	08:02 (T44)	07:48		06:57	07:34 (T77)	06:16	06:38 (T42)	05:58	06:29 (T42)
	17:25		18:03 27	08:29 (T44)	19:35		20:08 32	08:06 (T77)	20:40 17	06:55 (T42)	21:05 42	07:11 (T42)
14	07:56		07:29	08:03 (T44)	07:46		06:55	07:34 (T77)	06:15	06:37 (T42)	05:58	06:29 (T42)
	17:26		18:04 25	08:28 (T44)	19:37		20:09 30	08:04 (T77)	20:41 21	06:58 (T42)	21:05 42	07:11 (T42)
15	07:55		07:27	08:04 (T44)	07:45		06:53	07:35 (T77)	06:14	06:35 (T42)	05:58	06:30 (T42)
	17:27		18:05 23	08:27 (T44)	19:38		20:10 28	08:03 (T77)	20:42 24	06:59 (T42)	21:06 41	07:11 (T42)
16	07:55		07:26	08:05 (T44)	07:43		06:52	07:36 (T77)	06:13	06:34 (T42)	05:58	06:31 (T42)
	17:28		18:06 20	08:25 (T44)	19:39		20:11 25	08:01 (T77)	20:43 27	07:01 (T42)	21:06 41	07:12 (T42)
17	07:54		07:25	08:07 (T44)	07:41		06:50	07:38 (T77)	06:12	06:33 (T42)	05:58	06:31 (T42)
	17:29		18:07 16	08:23 (T44)	19:40		20:12 22	08:00 (T77)	20:44 29	07:02 (T42)	21:06 41	07:12 (T42)
18	07:54		07:23	08:10 (T44)	07:40		06:49	07:40 (T77)	06:11	06:32 (T42)	05:58	06:31 (T42)
	17:30		18:09 10	08:20 (T44)	19:41		20:13 16	07:56 (T77)	20:45 30	07:02 (T42)	21:07 42	07:13 (T42)
19	07:53		07:22		07:38		06:47	07:44 (T77)	06:10	06:31 (T42)	05:58	06:31 (T42)
	17:32		18:10		19:42		20:14 9	07:53 (T77)	20:45 32	07:03 (T42)	21:07 42	07:13 (T42)
20	07:53		07:21		07:36		06:46		06:09	06:30 (T42)	05:59	06:31 (T42)
	17:33		18:11		19:43		20:15		20:46 34	07:04 (T42)	21:07 42	07:13 (T42)
21	07:52		07:19		07:35		06:44		06:09	06:30 (T42)	05:59	06:31 (T42)
	17:34		18:12		19:44		20:16		20:47 35	07:05 (T42)	21:08 42	07:13 (T42)
22	07:52		07:18		07:33		06:43		06:08	06:29 (T42)	05:59	06:31 (T42)
	17:35		18:14		19:45		20:17		20:48 36	07:05 (T42)	21:08 42	07:13 (T42)
23	07:51		07:16		07:31		06:41		06:07	06:29 (T42)	05:59	06:32 (T42)
	17:36		18:15		19:46		20:18		20:49 37	07:06 (T42)	21:08 42	07:14 (T42)
24	07:50		07:15		07:30		06:40		06:06	06:28 (T42)	05:59	06:32 (T42)
	17:38		18:16		19:47		20:20		20:50 38	07:06 (T42)	21:08 42	07:14 (T42)
25	07:50		07:13		07:28		06:39		06:06	06:28 (T42)	06:00	06:32 (T42)
	17:39		18:17		19:49		20:21		20:51 39	07:07 (T42)	21:08 41	07:13 (T42)
26	07:49	08:09 (T44)	07:12		07:26	07:48 (T77)	06:37		06:05	06:28 (T42)	06:00	06:33 (T42)
	17:40 9	08:18 (T44)	18:18		19:50 14	08:02 (T77)	20:22		20:52 39	07:07 (T42)	21:08 41	07:14 (T42)
27	07:48	08:09 (T44)	07:10		07:25	07:45 (T77)	06:36		06:04	06:28 (T42)	06:00	06:33 (T42)
	17:41 12	08:21 (T44)	18:19		19:51 21	08:06 (T77)	20:23		20:53 40	07:08 (T42)	21:09 41	07:14 (T42)
28	07:47	08:08 (T44)	07:09		07:23	07:42 (T77)	06:34		06:04	06:28 (T42)	06:01	06:32 (T42)
	17:43 15	08:23 (T44)	18:21		19:52 25	08:07 (T77)	20:24		20:54 40	07:08 (T42)	21:09 42	07:14 (T42)
29	07:46	08:07 (T44)			07:21	07:40 (T77)	06:33		06:03	06:28 (T42)	06:01	06:33 (T42)
	17:44 17	08:24 (T44)			19:53 28	08:08 (T77)	20:25		20:54 41	07:09 (T42)	21:09 42	07:15 (T42)
30	07:45	08:06 (T44)			07:20	07:38 (T77)	06:32		06:03	06:28 (T42)	06:02	06:33 (T42)
	17:45 20	08:26 (T44)			19:54 31	08:09 (T77)	20:26		20:55 40	07:08 (T42)	21:09 42	07:15 (T42)
31	07:44	08:05 (T44)			07:18	07:38 (T77)			06:02	06:28 (T42)		
	17:46 22	08:27 (T44)			19:55 32	08:10 (T77)			20:56 41	07:09 (T42)		
Potential sun hours	297		297		370		399		448		453	
Total, worst case	95		472		151		597		651		1251	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.54		0.54		0.64		0.64		0.71		0.71	
Total reduction	0.16		0.21		0.28		0.33		0.40		0.45	
Total, real	16		100		42		194		260		560	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 834 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6858)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:34 (T42)	06:26		06:54 (T42)	06:57		07:32 (T77)	07:28			07:02		07:29 (T44)	07:37	
	21:08	41	07:15 (T42)	20:50	7	07:01 (T42)	20:07	35	08:07 (T77)	19:15			17:28	31	08:00 (T44)	17:04	
2	06:03		06:33 (T42)	06:27			06:58		07:31 (T77)	07:29			07:03		07:30 (T44)	07:38	
	21:08	42	07:15 (T42)	20:49			20:06	36	08:07 (T77)	19:13			17:27	31	08:01 (T44)	17:03	
3	06:03		06:34 (T42)	06:28			06:59		07:30 (T77)	07:30			07:04		07:29 (T44)	07:39	
	21:08	42	07:16 (T42)	20:48			20:04	37	08:07 (T77)	19:11			17:26	31	08:00 (T44)	17:03	
4	06:04		06:34 (T42)	06:29			07:00		07:30 (T77)	07:31			07:06		07:29 (T44)	07:40	
	21:08	41	07:15 (T42)	20:47			20:02	37	08:07 (T77)	19:10			17:24	31	08:00 (T44)	17:03	
5	06:04		06:34 (T42)	06:30			07:01		07:29 (T77)	07:32			07:07		07:29 (T44)	07:41	
	21:08	42	07:16 (T42)	20:46			20:01	38	08:07 (T77)	19:08			17:23	31	08:00 (T44)	17:03	
6	06:05		06:34 (T42)	06:31			07:02		07:29 (T77)	07:33			07:08		07:30 (T44)	07:42	
	21:08	42	07:16 (T42)	20:44			19:57	38	08:07 (T77)	19:06			17:22	30	08:00 (T44)	17:03	
7	06:06		06:34 (T42)	06:32			07:03		07:29 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	42	07:16 (T42)	20:43			19:56	38	08:07 (T77)	19:05			17:21	29	08:00 (T44)	17:03	
8	06:06		06:35 (T42)	06:33			07:04		07:29 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	42	07:17 (T42)	20:42			19:54	37	08:06 (T77)	19:03			17:20	27	07:59 (T44)	17:03	
9	06:07		06:35 (T42)	06:34			07:05		07:29 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	41	07:16 (T42)	20:41			19:52	36	08:05 (T77)	19:02			17:19	25	07:59 (T44)	17:03	
10	06:08		06:35 (T42)	06:35			07:06		07:29 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	42	07:17 (T42)	20:40			19:51	36	08:05 (T77)	19:00			17:18	24	07:59 (T44)	17:03	
11	06:08		06:36 (T42)	06:36			07:07		07:29 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	41	07:17 (T42)	20:38			19:49	35	08:04 (T77)	18:58			17:17	22	07:58 (T44)	17:03	
12	06:09		06:35 (T42)	06:37			07:08		07:29 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	41	07:16 (T42)	20:37			19:47	33	08:02 (T77)	18:57			17:16	20	07:57 (T44)	17:03	
13	06:10		06:36 (T42)	06:38			07:09		07:29 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	41	07:17 (T42)	20:36			19:46	31	08:00 (T77)	18:55			17:15	17	07:56 (T44)	17:03	
14	06:10		06:36 (T42)	06:39			07:10		07:30 (T77)	07:41			07:18		07:40 (T44)	07:49	
	21:05	41	07:17 (T42)	20:34			19:44	29	07:59 (T77)	18:54			17:14	15	07:55 (T44)	17:03	
15	06:11		06:37 (T42)	06:40			07:11		07:31 (T77)	07:43			07:19		07:41 (T44)	07:50	
	21:04	40	07:17 (T42)	20:33			19:42	26	07:57 (T77)	18:52			17:13	12	07:53 (T44)	17:03	
16	06:12		06:36 (T42)	06:41			07:12		07:33 (T77)	07:44			07:20		07:43 (T44)	07:50	
	21:03	40	07:16 (T42)	20:32			19:40	22	07:55 (T77)	18:50			17:12	8	07:51 (T44)	17:04	
17	06:13		06:37 (T42)	06:42			07:13		07:35 (T77)	07:45			07:21			07:51	
	21:03	39	07:16 (T42)	20:30			19:39	16	07:51 (T77)	18:49			17:11			17:04	
18	06:14		06:38 (T42)	06:43			07:14		07:40 (T77)	07:46			07:22			07:52	
	21:02	38	07:16 (T42)	20:29			19:37	6	07:46 (T77)	18:47			17:11			17:04	
19	06:14		06:38 (T42)	06:44			07:15			07:47			07:24			07:52	
	21:02	38	07:16 (T42)	20:27			19:35			18:46			17:10			17:05	
20	06:15		06:39 (T42)	06:45			07:16			07:48			07:25			07:53	
	21:01	37	07:16 (T42)	20:26			19:34			18:44			17:09			17:05	
21	06:16		06:39 (T42)	06:46			07:17			07:49			07:26			07:53	
	21:00	36	07:15 (T42)	20:24			19:32			18:43			17:09			17:06	
22	06:17		06:39 (T42)	06:47			07:18			07:50			07:27			07:54	
	20:59	36	07:15 (T42)	20:23			19:30			18:42			17:08			17:06	
23	06:18		06:40 (T42)	06:48			07:19			07:52			07:28			07:54	
	20:59	34	07:14 (T42)	20:21			19:28			18:40			17:07			17:07	
24	06:19		06:41 (T42)	06:49		07:46 (T77)	07:20			07:53		08:38 (T44)	07:29			07:55	
	20:58	33	07:14 (T42)	20:20	10	07:56 (T77)	19:27			18:39	13	08:51 (T44)	17:07			17:07	
25	06:20		06:42 (T42)	06:50		07:42 (T77)	07:21			07:54		08:37 (T44)	07:30			07:55	
	20:57	31	07:13 (T42)	20:18	18	08:00 (T77)	19:25			18:37	17	08:54 (T44)	17:06			17:08	
26	06:21		06:43 (T42)	06:51		07:40 (T77)	07:22			07:55		08:35 (T44)	07:32			07:56	
	20:56	30	07:13 (T42)	20:17	22	08:02 (T77)	19:23			18:36	21	08:56 (T44)	17:06			17:08	
27	06:22		06:44 (T42)	06:52		07:38 (T77)	07:23			07:56		08:33 (T44)	07:33			07:56	
	20:55	28	07:12 (T42)	20:15	25	08:03 (T77)	19:22			18:35	24	08:57 (T44)	17:05			17:09	
28	06:23		06:45 (T42)	06:53		07:36 (T77)	07:24			07:57		08:32 (T44)	07:34			07:56	
	20:54	26	07:11 (T42)	20:14	28	08:04 (T77)	19:20			18:33	25	08:57 (T44)	17:05			17:10	
29	06:23		06:46 (T42)	06:54		07:35 (T77)	07:25			07:58		08:31 (T44)	07:35			07:57	
	20:53	22	07:08 (T42)	20:12	30	08:05 (T77)	19:18			18:32	28	08:59 (T44)	17:04			17:10	
30	06:24		06:47 (T42)	06:55		07:34 (T77)	07:27			08:00		08:31 (T44)	07:36			07:57	
	20:52	20	07:07 (T42)	20:10	32	08:06 (T77)	19:16			18:31	28	08:59 (T44)	17:04			17:11	
31	06:25		06:50 (T42)	06:56		07:33 (T77)				08:01		08:30 (T44)				07:57	
	20:51	15	07:05 (T42)	20:09	34	08:07 (T77)				18:29	29	08:59 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1124			206			566			185			384			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.71			0.64			0.64			0.54			0.54			
Total reduction		0.46			0.38			0.37			0.25			0.16			
Total, real		519			79			209			47			61			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 855 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6876)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	14:38 (T20)	07:43		07:07		17:14 (T19)	07:16	18:02 (T19)	06:30	19:16 (T17)	06:01
	17:13	41 15:19 (T20)	17:47		18:21	33	17:47 (T19)	19:56	43 18:45 (T19)	20:27	41 19:57 (T17)	20:57
2	07:57	14:39 (T20)	07:42		07:06		17:11 (T19)	07:14	18:03 (T19)	06:29	19:15 (T17)	06:01
	17:13	40 15:19 (T20)	17:48		18:23	38	17:49 (T19)	19:57	40 18:43 (T19)	20:28	41 19:56 (T17)	20:58
3	07:58	14:40 (T20)	07:41		07:04		17:09 (T19)	07:13	18:05 (T19)	06:27	19:15 (T17)	06:00
	17:14	39 15:19 (T20)	17:50		18:24	41	17:50 (T19)	19:58	36 18:41 (T19)	20:29	41 19:56 (T17)	20:59
4	07:58	14:42 (T20)	07:40		07:02		17:08 (T19)	07:11	18:07 (T19)	06:26	19:16 (T17)	06:00
	17:15	36 15:18 (T20)	17:51		18:25	44	17:52 (T19)	19:59	31 18:38 (T19)	20:30	40 19:56 (T17)	20:59
5	07:58	14:43 (T20)	07:39		07:01		17:06 (T19)	07:09	18:09 (T19)	06:25	19:16 (T17)	05:59
	17:16	35 15:18 (T20)	17:52		18:26	47	17:53 (T19)	20:00	26 18:35 (T19)	20:31	39 19:55 (T17)	21:00
6	07:58	14:44 (T20)	07:38		06:59		17:05 (T19)	07:08	18:13 (T19)	06:24	19:17 (T17)	05:59
	17:17	34 15:18 (T20)	17:53		18:27	50	17:55 (T19)	20:00	19 18:32 (T19)	20:32	38 19:55 (T17)	21:01
7	07:57	14:46 (T20)	07:37		06:58		17:03 (T19)	07:06	18:21 (T19)	06:22	19:16 (T17)	05:59
	17:18	32 15:18 (T20)	17:55		18:28	52	17:55 (T19)	20:01	2 18:23 (T19)	20:33	38 19:54 (T17)	21:01
8	07:57	14:47 (T20)	07:36		07:56		18:02 (T19)	07:04		06:21	19:17 (T17)	05:58
	17:19	29 15:16 (T20)	17:56		19:30	54	18:56 (T19)	20:02		20:34	36 19:53 (T17)	21:02
9	07:57	14:49 (T20)	07:35		07:54		18:01 (T19)	07:03		06:20	19:18 (T17)	05:58
	17:20	27 15:16 (T20)	17:57		19:31	56	18:57 (T19)	20:03		20:35	35 19:53 (T17)	21:03
10	07:57	14:51 (T20)	07:34		07:53		18:00 (T19)	07:01		06:19	19:18 (T17)	05:58
	17:21	24 15:15 (T20)	17:58		19:32	57	18:57 (T19)	20:04		20:36	34 19:52 (T17)	21:03
11	07:57	14:54 (T20)	07:32		07:51		17:59 (T19)	06:59		06:18	19:19 (T17)	05:58
	17:22	20 15:14 (T20)	18:00		19:33	58	18:57 (T19)	20:06		20:38	32 19:51 (T17)	21:04
12	07:56	14:57 (T20)	07:31		07:49		17:59 (T19)	06:58		06:17	19:20 (T17)	05:58
	17:23	14 15:11 (T20)	18:01		19:34	59	18:58 (T19)	20:07		20:39	30 19:50 (T17)	21:04
13	07:56	15:04 (T20)	07:30		07:48		17:58 (T19)	06:56		06:16	19:21 (T17)	05:58
	17:24	1 15:05 (T20)	18:02		19:35	60	18:58 (T19)	20:08		20:40	28 19:49 (T17)	21:05
14	07:56		07:29		07:46		17:57 (T19)	06:55		06:15	19:22 (T17)	05:58
	17:25		18:03		19:36	61	18:58 (T19)	20:09		20:41	26 19:48 (T17)	21:05
15	07:55		07:27		07:44		17:57 (T19)	06:53		06:14	19:23 (T17)	05:58
	17:26		18:05		19:37	62	18:59 (T19)	20:10		20:42	24 19:47 (T17)	21:06
16	07:55		07:26		07:43		17:56 (T19)	06:52	19:31 (T17)	06:13	19:25 (T17)	05:58
	17:28		18:06		19:38	62	18:58 (T19)	20:11	15 19:46 (T17)	20:43	20 19:45 (T17)	21:06
17	07:55		07:25		07:41		17:56 (T19)	06:50	19:28 (T17)	06:12	19:27 (T17)	05:58
	17:29		18:07		19:40	62	18:58 (T19)	20:12	21 19:49 (T17)	20:44	16 19:43 (T17)	21:06
18	07:54		07:23		07:39		17:56 (T19)	06:48	19:26 (T17)	06:11	19:29 (T17)	05:58
	17:30		18:08		19:41	62	18:58 (T19)	20:13	25 19:51 (T17)	20:45	11 19:40 (T17)	21:07
19	07:53		07:22		07:38		17:56 (T19)	06:47	19:24 (T17)	06:10		05:58
	17:31		18:10		19:42	62	18:58 (T19)	20:14	28 19:52 (T17)	20:46		21:07
20	07:53		07:20		07:36		17:55 (T19)	06:45	19:22 (T17)	06:09		05:58
	17:32		18:11		19:43	62	18:57 (T19)	20:15	31 19:53 (T17)	20:46		21:07
21	07:52		07:19		07:34		17:55 (T19)	06:44	19:21 (T17)	06:08		05:58
	17:33		18:12		19:44	61	18:56 (T19)	20:16	33 19:54 (T17)	20:47		21:08
22	07:52		07:18		07:33		17:56 (T19)	06:42	19:20 (T17)	06:07		05:58
	17:35		18:13		19:45	60	18:56 (T19)	20:17	35 19:55 (T17)	20:48		21:08
23	07:51		07:16		07:31		17:56 (T19)	06:41	19:18 (T17)	06:07		05:59
	17:36		18:14		19:46	59	18:55 (T19)	20:18	37 19:55 (T17)	20:49		21:08
24	07:50		07:15		07:29		17:56 (T19)	06:40	19:18 (T17)	06:06		05:59
	17:37		18:16		19:47	58	18:54 (T19)	20:19	38 19:56 (T17)	20:50		21:08
25	07:50		07:13		07:28		17:57 (T19)	06:38	19:18 (T17)	06:05		05:59
	17:38		18:17		19:48	57	18:54 (T19)	20:21	39 19:57 (T17)	20:51		21:08
26	07:49		07:12	17:27 (T19)	07:26		17:57 (T19)	06:37	19:16 (T17)	06:04		06:00
	17:40		18:18	7 17:34 (T19)	19:49	56	18:53 (T19)	20:22	40 19:56 (T17)	20:52		21:09
27	07:48		07:10	17:21 (T19)	07:24		17:57 (T19)	06:35	19:16 (T17)	06:04		06:00
	17:41		18:19	20 17:41 (T19)	19:50	54	18:51 (T19)	20:23	41 19:57 (T17)	20:53		21:09
28	07:47		07:09	17:17 (T19)	07:23		17:58 (T19)	06:34	19:15 (T17)	06:03		06:00
	17:42		18:20	27 17:44 (T19)	19:52	53	18:51 (T19)	20:24	41 19:56 (T17)	20:54		21:09
29	07:46				07:21		17:59 (T19)	06:33	19:15 (T17)	06:03		06:01
	17:43				19:53	50	18:49 (T19)	20:25	41 19:56 (T17)	20:55		21:09
30	07:45				07:19		17:59 (T19)	06:31	19:15 (T17)	06:02		06:01
	17:45				19:54	49	18:48 (T19)	20:26	42 19:57 (T17)	20:55		21:09
31	07:44				07:18		18:01 (T19)			06:01		
	17:46				19:55	46	18:47 (T19)			20:56		
Potential sun hours	297		297		370			399		449		453
Total, worst case		372		54		1685			704		570	
Sun reduction		0.31		0.40		0.44			0.52		0.57	
Oper. time red.		1.00		1.00		1.00			1.00		1.00	
Wind dir. red.		0.73		0.67		0.67			0.60		0.57	
Total reduction		0.23		0.27		0.30			0.32		0.33	
Total, real		86		15		508			224		190	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 855 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6876)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:26	19:30 (T17)	06:57		07:27	17:37 (T19)	07:02		07:37	14:36 (T20)
	21:09		20:50 31	20:01 (T17)	20:07		19:15 60	18:37 (T19)	17:28		17:03 19	14:55 (T20)
2	06:02		06:27	19:29 (T17)	06:58		07:28	17:37 (T19)	07:03		07:38	14:34 (T20)
	21:09		20:49 33	20:02 (T17)	20:05		19:13 59	18:36 (T19)	17:26		17:03 24	14:58 (T20)
3	06:03		06:28	19:29 (T17)	06:59		07:29	17:37 (T19)	07:04		07:39	14:33 (T20)
	21:08		20:48 34	20:03 (T17)	20:04		19:11 58	18:35 (T19)	17:25		17:03 27	15:00 (T20)
4	06:03		06:29	19:28 (T17)	07:00		07:31	17:37 (T19)	07:06		07:40	14:32 (T20)
	21:08		20:47 35	20:03 (T17)	20:02		19:10 57	18:34 (T19)	17:24		17:03 29	15:01 (T20)
5	06:04		06:30	19:27 (T17)	07:01		07:32	17:38 (T19)	07:07		07:41	14:31 (T20)
	21:08		20:46 37	20:04 (T17)	20:01		19:08 55	18:33 (T19)	17:23		17:02 32	15:03 (T20)
6	06:04		06:31	19:27 (T17)	07:02		18:09 (T19)	07:33	17:39 (T19)	07:08	07:42	14:31 (T20)
	21:08		20:45 37	20:04 (T17)	19:57 18		18:27 (T19)	19:06 54	18:33 (T19)	17:22	17:02 33	15:04 (T20)
7	06:05		06:32	19:26 (T17)	07:03		18:05 (T19)	07:34	17:40 (T19)	07:09	07:43	14:30 (T20)
	21:08		20:43 39	20:05 (T17)	19:56 25		18:30 (T19)	19:05 51	18:31 (T19)	17:21	17:02 35	15:05 (T20)
8	06:06		06:33	19:25 (T17)	07:04		18:01 (T19)	07:35	17:41 (T19)	07:10	07:44	14:30 (T20)
	21:07		20:42 39	20:04 (T17)	19:54 31		18:32 (T19)	19:03 49	18:30 (T19)	17:20	17:02 36	15:06 (T20)
9	06:06		06:34	19:24 (T17)	07:05		17:59 (T19)	07:36	17:42 (T19)	07:12	07:45	14:28 (T20)
	21:07		20:41 40	20:04 (T17)	19:52 35		18:34 (T19)	19:01 46	18:28 (T19)	17:18	17:02 39	15:07 (T20)
10	06:07		06:35	19:24 (T17)	07:06		17:56 (T19)	07:37	17:43 (T19)	07:13	07:46	14:28 (T20)
	21:07		20:40 40	20:04 (T17)	19:50 40		18:36 (T19)	19:00 43	18:26 (T19)	17:17	17:02 40	15:08 (T20)
11	06:08		06:36	19:24 (T17)	07:07		17:54 (T19)	07:38	17:44 (T19)	07:14	07:47	14:28 (T20)
	21:06		20:38 40	20:04 (T17)	19:49 43		18:37 (T19)	18:58 40	18:24 (T19)	17:16	17:02 41	15:09 (T20)
12	06:08		06:37	19:23 (T17)	07:08		17:53 (T19)	07:39	17:46 (T19)	07:15	07:47	14:28 (T20)
	21:06		20:37 41	20:04 (T17)	19:47 45		18:38 (T19)	18:56 36	18:22 (T19)	17:15	17:02 42	15:10 (T20)
13	06:09		06:38	19:23 (T17)	07:09		17:51 (T19)	07:40	17:48 (T19)	07:16	07:48	14:29 (T20)
	21:05		20:36 41	20:04 (T17)	19:45 48		18:39 (T19)	18:55 31	18:19 (T19)	17:14	17:02 42	15:11 (T20)
14	06:10		06:39	19:23 (T17)	07:10		17:49 (T19)	07:41	17:50 (T19)	07:18	07:49	14:29 (T20)
	21:05		20:34 41	20:04 (T17)	19:44 50		18:39 (T19)	18:53 25	18:15 (T19)	17:14	17:03 43	15:12 (T20)
15	06:11		06:40	19:23 (T17)	07:11		17:48 (T19)	07:42	17:55 (T19)	07:19	07:50	14:28 (T20)
	21:04		20:33 41	20:04 (T17)	19:42 52		18:40 (T19)	18:52 17	18:12 (T19)	17:13	17:03 44	15:12 (T20)
16	06:11		06:41	19:23 (T17)	07:12		17:46 (T19)	07:43		07:20	07:50	14:29 (T20)
	21:04		20:31 40	20:03 (T17)	19:40 55		18:41 (T19)	18:50		17:12	17:03 44	15:13 (T20)
17	06:12		06:42	19:23 (T17)	07:13		17:45 (T19)	07:45		07:21	07:51	14:29 (T20)
	21:03		20:30 40	20:03 (T17)	19:38 56		18:41 (T19)	18:49		17:11	17:03 45	15:14 (T20)
18	06:13		06:43	19:23 (T17)	07:14		17:44 (T19)	07:46		07:22	07:52	14:29 (T20)
	21:02		20:29 39	20:02 (T17)	19:37 57		18:41 (T19)	18:47		17:10	17:04 45	15:14 (T20)
19	06:14		06:44	19:24 (T17)	07:15		17:43 (T19)	07:47		07:24	07:52	14:30 (T20)
	21:02		20:27 38	20:02 (T17)	19:35 58		18:41 (T19)	18:46		17:09	17:04 45	15:15 (T20)
20	06:15		06:45	19:24 (T17)	07:16		17:42 (T19)	07:48		07:25	07:53	14:30 (T20)
	21:01		20:26 37	20:01 (T17)	19:33 59		18:41 (T19)	18:44		17:09	17:05 45	15:15 (T20)
21	06:16		06:46	19:25 (T17)	07:17		17:41 (T19)	07:49		07:26	07:54	14:31 (T20)
	21:00		20:24 35	20:00 (T17)	19:32 60		18:41 (T19)	18:43		17:08	17:05 45	15:16 (T20)
22	06:17		06:47	19:25 (T17)	07:18		17:40 (T19)	07:50		07:27	07:54	14:31 (T20)
	20:59		20:23 33	19:58 (T17)	19:30 61		18:41 (T19)	18:41		17:07	17:06 45	15:16 (T20)
23	06:17		06:48	19:26 (T17)	07:19		17:40 (T19)	07:51		07:28	07:55	14:32 (T20)
	20:59		20:21 31	19:57 (T17)	19:28 61		18:41 (T19)	18:40		17:07	17:06 45	15:17 (T20)
24	06:18		06:49	19:28 (T17)	07:20		17:39 (T19)	07:53		07:29	07:55	14:32 (T20)
	20:58		20:20 28	19:56 (T17)	19:26 62		18:41 (T19)	18:38		17:06	17:07 45	15:17 (T20)
25	06:19	19:42 (T17)	06:50	19:29 (T17)	07:21		17:39 (T19)	07:54		07:31	07:55	14:33 (T20)
	20:57 7	19:49 (T17)	20:18 25	19:54 (T17)	19:25 62		18:41 (T19)	18:37		17:06	17:07 45	15:18 (T20)
26	06:20	19:39 (T17)	06:51	19:31 (T17)	07:22		17:38 (T19)	07:55		07:32	07:56	14:33 (T20)
	20:56 13	19:52 (T17)	20:17 20	19:51 (T17)	19:23 62		18:40 (T19)	18:36		17:05	17:08 45	15:18 (T20)
27	06:21	19:36 (T17)	06:52	19:34 (T17)	07:23		17:38 (T19)	07:56		07:33	07:56	14:34 (T20)
	20:55 18	19:54 (T17)	20:15 14	19:48 (T17)	19:21 62		18:40 (T19)	18:34		17:05	17:08 44	15:18 (T20)
28	06:22	19:35 (T17)	06:53		07:24		17:37 (T19)	07:57		07:34	07:56	14:34 (T20)
	20:54 21	19:56 (T17)	20:14		19:20 62		18:39 (T19)	18:33		17:04	17:09 44	15:18 (T20)
29	06:23	19:33 (T17)	06:54		07:25		17:37 (T19)	07:58		07:35	07:57	14:36 (T20)
	20:53 25	19:58 (T17)	20:12		19:18 62		18:39 (T19)	18:31		17:04	17:10 43	15:19 (T20)
30	06:24	19:32 (T17)	06:55		07:26		17:37 (T19)	08:00		07:36	14:38 (T20)	07:57	14:36 (T20)
	20:52 27	19:59 (T17)	20:10		19:16 61		18:38 (T19)	18:30		17:04 13	14:51 (T20)	17:11 43	15:19 (T20)
31	06:25	19:31 (T17)	06:56					08:01				07:57	14:37 (T20)
	20:51 29	20:00 (T17)	20:09					18:29				17:11 42	15:19 (T20)
Potential sun hours	460		429		375			345		297		287	
Total, worst case	140		949		1287			681		13		1236	
Sun reduction	0.66		0.61		0.59			0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00			1.00		1.00		1.00	
Wind dir. red.	0.57		0.57		0.67			0.67		0.73		0.73	
Total reduction	0.39		0.36		0.40			0.33		0.22		0.16	
Total, real	54		338		520			224		3		204	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 857 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6877)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:58		15:50 (T26)	07:44		07:07		17:27 (T25)	07:16		18:39 (T75)	06:30		18:21 (T75)	06:01	
	17:13	45	16:35 (T26)	17:47		18:22	25	17:52 (T25)	19:56	40	19:19 (T75)	20:27	64	19:25 (T75)	20:57	
2	07:58		15:50 (T26)	07:43		07:06		17:28 (T25)	07:15		18:37 (T75)	06:29		18:22 (T75)	06:01	
	17:14	46	16:36 (T26)	17:49		18:23	22	17:50 (T25)	19:57	44	19:21 (T75)	20:28	63	19:25 (T75)	20:58	
3	07:58		15:51 (T26)	07:42		07:04		17:30 (T25)	07:13		18:35 (T75)	06:28		18:22 (T75)	06:00	
	17:15	45	16:36 (T26)	17:50		18:24	19	17:49 (T25)	19:58	48	19:23 (T75)	20:29	61	19:23 (T75)	20:59	
4	07:58		15:51 (T26)	07:41		07:03		17:31 (T25)	07:11		18:32 (T75)	06:26		18:23 (T75)	06:00	
	17:16	45	16:36 (T26)	17:51		18:25	16	17:47 (T25)	19:59	52	19:24 (T75)	20:30	60	19:23 (T75)	20:59	
5	07:58		15:52 (T26)	07:40		07:01		17:33 (T25)	07:10		18:31 (T75)	06:25		18:24 (T75)	06:00	
	17:16	45	16:37 (T26)	17:52		18:26	11	17:44 (T25)	20:00	65	19:39 (T24)	20:31	58	19:22 (T75)	21:00	
6	07:58		15:52 (T26)	07:38		06:59			07:08		18:30 (T75)	06:24		18:25 (T75)	05:59	
	17:17	46	16:38 (T26)	17:54		18:28			20:00	70	19:40 (T24)	20:32	56	19:21 (T75)	21:01	
7	07:58		15:53 (T26)	07:37		06:58			07:06		18:28 (T75)	06:23		18:26 (T75)	05:59	
	17:18	45	16:38 (T26)	17:55		18:29			20:01	72	19:40 (T24)	20:34	55	19:21 (T75)	21:01	
8	07:57		15:53 (T26)	07:36		07:56			07:05		18:27 (T75)	06:22		18:27 (T75)	05:59	
	17:19	46	16:39 (T26)	17:56		19:30			20:03	75	19:42 (T24)	20:35	53	19:20 (T75)	21:02	
9	07:57		15:53 (T26)	07:35		07:55			07:03		18:26 (T75)	06:20		18:28 (T75)	05:59	
	17:20	45	16:38 (T26)	17:57		19:31			20:04	77	19:43 (T24)	20:36	51	19:19 (T75)	21:03	
10	07:57		15:54 (T26)	07:34		07:53			07:01		18:24 (T75)	06:19		18:28 (T75)	05:58	
	17:21	45	16:39 (T26)	17:59		19:32			20:05	79	19:43 (T24)	20:37	49	19:17 (T75)	21:03	
11	07:57		15:55 (T26)	07:33		07:51			07:00		18:24 (T75)	06:18		18:29 (T75)	05:58	
	17:22	45	16:40 (T26)	18:00		19:33			20:06	81	19:45 (T24)	20:38	47	19:16 (T75)	21:04	
12	07:57		15:55 (T26)	07:31		07:50			06:58		18:23 (T75)	06:17		18:30 (T75)	05:58	
	17:24	44	16:39 (T26)	18:01		19:34			20:07	83	19:46 (T24)	20:39	45	19:15 (T75)	21:04	
13	07:56		15:55 (T26)	07:30		07:48			06:57		18:23 (T75)	06:16		18:31 (T75)	05:58	
	17:25	45	16:40 (T26)	18:02		19:35			20:08	84	19:47 (T24)	20:40	43	19:14 (T75)	21:05	
14	07:56		15:56 (T26)	07:29		07:46			06:55		18:22 (T75)	06:15		18:33 (T75)	05:58	
	17:26	44	16:40 (T26)	18:04		19:37			20:09	85	19:47 (T24)	20:41	40	19:13 (T75)	21:05	
15	07:56		15:57 (T26)	07:28	17:38 (T25)	07:45			06:53		18:22 (T75)	06:14		18:34 (T75)	05:58	
	17:27	43	16:40 (T26)	18:05	4 17:42 (T25)	19:38			20:10	85	19:47 (T24)	20:42	37	19:11 (T75)	21:06	
16	07:55		15:58 (T26)	07:26	17:34 (T25)	07:43			06:52		18:21 (T75)	06:13		18:36 (T75)	05:58	
	17:28	43	16:41 (T26)	18:06	9 17:43 (T25)	19:39			20:11	85	19:46 (T24)	20:43	35	19:11 (T75)	21:06	
17	07:55		15:58 (T26)	07:25	17:32 (T25)	07:41			06:50		18:20 (T75)	06:12		18:38 (T75)	05:58	
	17:29	42	16:40 (T26)	18:07	13 17:45 (T25)	19:40			20:12	85	19:45 (T24)	20:44	31	19:09 (T75)	21:07	
18	07:54		15:58 (T26)	07:23	17:30 (T25)	07:40			06:49		18:20 (T75)	06:11		18:40 (T75)	05:58	
	17:30	42	16:40 (T26)	18:09	16 17:46 (T25)	19:41			20:13	85	19:45 (T24)	20:45	27	19:07 (T75)	21:07	
19	07:54		15:59 (T26)	07:22	17:29 (T25)	07:38			06:47		18:19 (T75)	06:10		18:42 (T75)	05:58	
	17:31	41	16:40 (T26)	18:10	19 17:48 (T25)	19:42			20:14	85	19:44 (T24)	20:46	23	19:05 (T75)	21:07	
20	07:53		16:00 (T26)	07:21	17:28 (T25)	07:36			06:46		18:19 (T75)	06:09		18:44 (T75)	05:58	
	17:33	40	16:40 (T26)	18:11	20 17:48 (T25)	19:43			20:15	85	19:44 (T24)	20:47	18	19:02 (T75)	21:08	
21	07:52		16:01 (T26)	07:19	17:27 (T25)	07:35			06:44		18:20 (T75)	06:08		18:48 (T75)	05:59	
	17:34	39	16:40 (T26)	18:12	23 17:50 (T25)	19:44			20:16	84	19:44 (T24)	20:48	10	18:58 (T75)	21:08	
22	07:52		16:02 (T26)	07:18	17:26 (T25)	07:33			06:43		18:19 (T75)	06:08			05:59	
	17:35	38	16:40 (T26)	18:13	25 17:51 (T25)	19:45			20:18	83	19:42 (T24)	20:49			21:08	
23	07:51		16:03 (T26)	07:16	17:26 (T25)	07:31			06:41		18:20 (T75)	06:07			05:59	
	17:36	36	16:39 (T26)	18:15	27 17:53 (T25)	19:46			20:19	81	19:41 (T24)	20:49			21:08	
24	07:50		16:04 (T26)	07:15	17:26 (T25)	07:30			06:40		18:19 (T75)	06:06			05:59	
	17:37	35	16:39 (T26)	18:16	27 17:53 (T25)	19:47			20:20	80	19:39 (T24)	20:50			21:08	
25	07:50		16:06 (T26)	07:13	17:26 (T25)	07:28			06:38		18:20 (T75)	06:05			06:00	
	17:39	33	16:39 (T26)	18:17	28 17:54 (T25)	19:49			20:21	78	19:38 (T24)	20:51			21:09	
26	07:49		16:07 (T26)	07:12	17:26 (T25)	07:26			06:37		18:19 (T75)	06:05			06:00	
	17:40	31	16:38 (T26)	18:18	27 17:53 (T25)	19:50			20:22	76	19:35 (T24)	20:52			21:09	
27	07:48		16:08 (T26)	07:10	17:26 (T25)	07:25			06:36		18:20 (T75)	06:04			06:00	
	17:41	29	16:37 (T26)	18:19	27 17:53 (T25)	19:51			20:23	73	19:33 (T24)	20:53			21:09	
28	07:47		16:10 (T26)	07:09	17:26 (T25)	07:23			06:34		18:20 (T75)	06:03			06:01	
	17:42	25	16:35 (T26)	18:21	26 17:52 (T25)	19:52			20:24	67	19:27 (T75)	20:54			21:09	
29	07:46		16:12 (T26)			07:21		18:50 (T75)	06:33		18:20 (T75)	06:03			06:01	
	17:44	22	16:34 (T26)			19:53	20	19:10 (T75)	20:25	66	19:26 (T75)	20:55			21:09	
30	07:46		16:14 (T26)			07:20		18:46 (T75)	06:32		18:21 (T75)	06:02			06:02	
	17:45	18	16:32 (T26)			19:54	29	19:15 (T75)	20:26	64	19:25 (T75)	20:56			21:09	
31	07:45		16:18 (T26)			07:18		18:42 (T75)				06:02				
	17:46	11	16:29 (T26)			19:55	35	19:17 (T75)				20:56				
Potential sun hours	297			297		370			399			449			453	
Total, worst case		1199			291		177			2217			926			
Sun reduction		0.31			0.40		0.44			0.52			0.57			
Oper. time red.		1.00			1.00		1.00			1.00			1.00			
Wind dir. red.		0.74			0.69		0.66			0.61			0.61			
Total reduction		0.24			0.28		0.30			0.33			0.36			
Total, real		283			83		52			722			333			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 857 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6877)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:26	18:40 (T75)	06:57	18:23 (T75)	07:28		07:02		07:37	15:37 (T26)
	21:09		20:50 46	19:26 (T75)	20:07 81	19:44 (T24)	19:15		17:28		17:04 45	16:22 (T26)
2	06:03		06:27	18:39 (T75)	06:58	18:23 (T75)	07:29		07:03		07:38	15:37 (T26)
	21:09		20:49 48	19:27 (T75)	20:06 79	19:42 (T24)	19:13		17:27		17:03 45	16:22 (T26)
3	06:03		06:28	18:38 (T75)	06:59	18:24 (T75)	07:30		07:05		07:39	15:37 (T26)
	21:09		20:48 50	19:28 (T75)	20:04 77	19:41 (T24)	19:11		17:26		17:03 45	16:22 (T26)
4	06:04		06:29	18:37 (T75)	07:00	18:24 (T75)	07:31		07:06		07:40	15:38 (T26)
	21:08		20:47 52	19:29 (T75)	20:02 75	19:39 (T24)	19:10		17:24		17:03 45	16:23 (T26)
5	06:04		06:30	18:36 (T75)	07:01	18:25 (T75)	07:32		07:07		07:41	15:38 (T26)
	21:08		20:46 54	19:30 (T75)	20:01 73	19:38 (T24)	19:08		17:23		17:03 45	16:23 (T26)
6	06:05		06:31	18:35 (T75)	07:02	18:26 (T75)	07:33		07:08		07:42	15:38 (T26)
	21:08		20:45 56	19:31 (T75)	19:57 70	19:36 (T24)	19:06		17:22		17:03 46	16:24 (T26)
7	06:05		06:32	18:34 (T75)	07:03	18:26 (T75)	07:34		07:09		07:43	15:39 (T26)
	21:08		20:43 57	19:31 (T75)	19:56 66	19:34 (T24)	19:05		17:21		17:03 45	16:24 (T26)
8	06:06		06:33	18:33 (T75)	07:04	18:27 (T75)	07:35	18:11 (T25)	07:11		07:44	15:39 (T26)
	21:07		20:42 59	19:32 (T75)	19:54 52	19:19 (T75)	19:03 6	18:17 (T25)	17:20		17:02 46	16:25 (T26)
9	06:07		06:34	18:32 (T75)	07:05	18:29 (T75)	07:36	18:07 (T25)	07:12		07:45	15:40 (T26)
	21:07		20:41 61	19:33 (T75)	19:52 48	19:17 (T75)	19:02 14	18:21 (T25)	17:19		17:02 45	16:25 (T26)
10	06:07		06:35	18:32 (T75)	07:06	18:30 (T75)	07:37	18:04 (T25)	07:13		07:46	15:39 (T26)
	21:07		20:40 61	19:33 (T75)	19:51 45	19:15 (T75)	19:00 18	18:22 (T25)	17:18		17:03 46	16:25 (T26)
11	06:08		06:36	18:31 (T75)	07:07	18:32 (T75)	07:38	18:02 (T25)	07:14	15:48 (T26)	07:47	15:40 (T26)
	21:06		20:38 62	19:33 (T75)	19:49 40	19:12 (T75)	18:58 21	18:23 (T25)	17:17 12	16:00 (T26)	17:03 45	16:25 (T26)
12	06:09		06:37	18:30 (T75)	07:08	18:33 (T75)	07:39	18:01 (T25)	07:15	15:46 (T26)	07:48	15:41 (T26)
	21:06		20:37 64	19:34 (T75)	19:47 36	19:09 (T75)	18:57 23	18:24 (T25)	17:16 18	16:04 (T26)	17:03 45	16:26 (T26)
13	06:10		06:38	18:29 (T75)	07:09	18:35 (T75)	07:40	18:00 (T25)	07:17	15:44 (T26)	07:48	15:41 (T26)
	21:05		20:36 65	19:34 (T75)	19:46 30	19:05 (T75)	18:55 26	18:26 (T25)	17:15 22	16:06 (T26)	17:03 45	16:26 (T26)
14	06:10		06:39	18:29 (T75)	07:10	18:39 (T75)	07:42	17:59 (T25)	07:18	15:42 (T26)	07:49	15:42 (T26)
	21:05		20:34 65	19:34 (T75)	19:44 22	19:01 (T75)	18:54 27	18:26 (T25)	17:14 25	16:07 (T26)	17:03 45	16:27 (T26)
15	06:11		06:40	18:28 (T75)	07:11	18:46 (T75)	07:43	17:59 (T25)	07:19	15:40 (T26)	07:50	15:42 (T26)
	21:04		20:33 67	19:35 (T75)	19:42 8	18:54 (T75)	18:52 27	18:26 (T25)	17:13 29	16:09 (T26)	17:03 45	16:27 (T26)
16	06:12		06:41	18:27 (T75)	07:12		07:44	17:58 (T25)	07:20	15:40 (T26)	07:51	15:42 (T26)
	21:04		20:32 74	19:41 (T24)	19:40		18:50 28	18:26 (T25)	17:12 31	16:11 (T26)	17:04 45	16:27 (T26)
17	06:13		06:42	18:26 (T75)	07:13		07:45	17:57 (T25)	07:21	15:39 (T26)	07:51	15:43 (T26)
	21:03		20:30 76	19:42 (T24)	19:39		18:49 29	18:26 (T25)	17:11 33	16:12 (T26)	17:04 45	16:28 (T26)
18	06:13		06:43	18:25 (T75)	07:14		07:46	17:57 (T25)	07:23	15:38 (T26)	07:52	15:43 (T26)
	21:02		20:29 79	19:44 (T24)	19:37		18:47 27	18:24 (T25)	17:11 35	16:13 (T26)	17:04 45	16:28 (T26)
19	06:14		06:44	18:25 (T75)	07:15		07:47	17:57 (T25)	07:24	15:38 (T26)	07:53	15:44 (T26)
	21:02		20:27 80	19:45 (T24)	19:35		18:46 26	18:23 (T25)	17:10 36	16:14 (T26)	17:05 45	16:29 (T26)
20	06:15		06:45	18:24 (T75)	07:16		07:48	17:58 (T25)	07:25	15:37 (T26)	07:53	15:44 (T26)
	21:01		20:26 82	19:46 (T24)	19:34		18:44 24	18:22 (T25)	17:09 38	16:15 (T26)	17:05 45	16:29 (T26)
21	06:16		06:46	18:24 (T75)	07:17		07:49	17:58 (T25)	07:26	15:36 (T26)	07:54	15:45 (T26)
	21:00		20:24 83	19:47 (T24)	19:32		18:43 22	18:20 (T25)	17:08 39	16:15 (T26)	17:05 45	16:30 (T26)
22	06:17		06:47	18:24 (T75)	07:18		07:50	17:59 (T25)	07:27	15:36 (T26)	07:54	15:45 (T26)
	21:00		20:23 84	19:48 (T24)	19:30		18:41 19	18:18 (T25)	17:08 40	16:16 (T26)	17:06 45	16:30 (T26)
23	06:18	18:57 (T75)	06:48	18:23 (T75)	07:19		07:52	17:59 (T25)	07:28	15:35 (T26)	07:55	15:46 (T26)
	20:59 14	19:11 (T75)	20:21 85	19:48 (T24)	19:28		18:40 18	18:17 (T25)	17:07 41	16:16 (T26)	17:06 45	16:31 (T26)
24	06:19	18:54 (T75)	06:49	18:23 (T75)	07:20		07:53	18:01 (T25)	07:30	15:36 (T26)	07:55	15:46 (T26)
	20:58 20	19:14 (T75)	20:20 85	19:48 (T24)	19:27		18:39 15	18:16 (T25)	17:07 42	16:18 (T26)	17:07 45	16:31 (T26)
25	06:20	18:51 (T75)	06:50	18:23 (T75)	07:21		07:54	18:02 (T25)	07:31	15:36 (T26)	07:56	15:47 (T26)
	20:57 25	19:16 (T75)	20:18 85	19:48 (T24)	19:25		18:37 12	18:14 (T25)	17:06 42	16:18 (T26)	17:08 45	16:32 (T26)
26	06:21	18:50 (T75)	06:51	18:23 (T75)	07:22		07:55	18:04 (T25)	07:32	15:36 (T26)	07:56	15:47 (T26)
	20:56 28	19:18 (T75)	20:17 85	19:48 (T24)	19:23		18:36 9	18:13 (T25)	17:06 43	16:19 (T26)	17:08 45	16:32 (T26)
27	06:21	18:48 (T75)	06:52	18:23 (T75)	07:23		07:56		07:33	15:36 (T26)	07:56	15:47 (T26)
	20:55 32	19:20 (T75)	20:15 85	19:48 (T24)	19:22		18:34		17:05 43	16:19 (T26)	17:09 45	16:32 (T26)
28	06:22	18:45 (T75)	06:53	18:22 (T75)	07:25		07:57		07:34	15:36 (T26)	07:57	15:48 (T26)
	20:54 36	19:21 (T75)	20:14 86	19:48 (T24)	19:20		18:33		17:05 44	16:20 (T26)	17:10 45	16:33 (T26)
29	06:23	18:44 (T75)	06:54	18:23 (T75)	07:26		07:59		07:35	15:36 (T26)	07:57	15:49 (T26)
	20:53 38	19:22 (T75)	20:12 85	19:48 (T24)	19:18		18:32		17:04 44	16:20 (T26)	17:10 45	16:34 (T26)
30	06:24	18:43 (T75)	06:55	18:23 (T75)	07:27		08:00		07:36	15:37 (T26)	07:57	15:49 (T26)
	20:52 41	19:24 (T75)	20:11 84	19:47 (T24)	19:17		18:31		17:04 44	16:21 (T26)	17:11 45	16:34 (T26)
31	06:25	18:41 (T75)	06:56	18:23 (T75)			08:01				07:57	15:49 (T26)
	20:51 44	19:25 (T75)	20:09 82	19:45 (T24)			18:29				17:12 46	16:35 (T26)
Potential sun hours	460		429		375		345		297		287	
Total, worst case	278		2187		802		391		701		1399	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.61		0.61		0.61		0.69		0.74		0.74	
Total reduction	0.42		0.38		0.37		0.34		0.23		0.17	
Total, real	116		837		297		133		160		234	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 860 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6878)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April	May	June
1	07:57	15:18 (T23)	07:43	15:19 (T23)	07:07	15:48 (T23)	07:16	06:30	06:01
	17:13	63 16:21 (T23)	17:47	83 16:42 (T23)	18:22	32 16:20 (T23)	19:56	20:27	20:57
2	07:57	15:18 (T23)	07:43	15:19 (T23)	07:06	15:52 (T23)	07:14	06:29	06:01
	17:14	64 16:22 (T23)	17:48	83 16:42 (T23)	18:23	24 16:16 (T23)	19:57	20:28	20:58
3	07:58	15:18 (T23)	07:41	15:19 (T23)	07:04	15:59 (T23)	07:13	06:27	06:00
	17:14	65 16:23 (T23)	17:50	83 16:42 (T23)	18:24	10 16:09 (T23)	19:58	20:29	20:58
4	07:58	15:18 (T23)	07:40	15:20 (T23)	07:02		07:11	06:26	06:00
	17:15	66 16:24 (T23)	17:51	82 16:42 (T23)	18:25		19:59	20:30	20:59
5	07:58	15:19 (T23)	07:39	15:20 (T23)	07:01		07:09	06:25	06:00
	17:16	66 16:25 (T23)	17:52	83 16:43 (T23)	18:26		20:00	20:31	21:00
6	07:58	15:19 (T23)	07:38	15:20 (T23)	06:59		07:08	06:24	05:59
	17:17	66 16:25 (T23)	17:54	82 16:42 (T23)	18:27		20:00	20:32	21:01
7	07:57	15:19 (T23)	07:37	15:20 (T23)	06:58		07:06	06:22	05:59
	17:18	67 16:26 (T23)	17:55	82 16:42 (T23)	18:29		20:01	20:33	21:01
8	07:57	15:18 (T23)	07:36	15:21 (T23)	07:56		07:04	06:21	05:59
	17:19	68 16:26 (T23)	17:56	81 16:42 (T23)	19:30		20:02	20:34	21:02
9	07:57	15:18 (T23)	07:35	15:22 (T23)	07:54		07:03	06:20	05:58
	17:20	70 16:28 (T23)	17:57	80 16:42 (T23)	19:31		20:03	20:35	21:03
10	07:57	15:19 (T23)	07:34	15:22 (T23)	07:53		07:01	06:19	05:58
	17:21	70 16:29 (T23)	17:59	80 16:42 (T23)	19:32		20:05	20:37	21:03
11	07:57	15:19 (T23)	07:32	15:22 (T23)	07:51		07:00	06:18	05:58
	17:22	71 16:30 (T23)	18:00	79 16:41 (T23)	19:33		20:06	20:38	21:04
12	07:56	15:18 (T23)	07:31	15:23 (T23)	07:50		06:58	06:17	05:58
	17:23	72 16:30 (T23)	18:01	78 16:41 (T23)	19:34		20:07	20:39	21:04
13	07:56	15:19 (T23)	07:30	15:24 (T23)	07:48		06:56	06:16	05:58
	17:24	72 16:31 (T23)	18:02	77 16:41 (T23)	19:35		20:08	20:40	21:05
14	07:56	15:18 (T23)	07:29	15:25 (T23)	07:46		06:55	06:15	05:58
	17:26	73 16:31 (T23)	18:04	76 16:41 (T23)	19:36		20:09	20:41	21:05
15	07:55	15:18 (T23)	07:27	15:25 (T23)	07:45		06:53	06:14	05:58
	17:27	75 16:33 (T23)	18:05	75 16:40 (T23)	19:37		20:10	20:42	21:06
16	07:55	15:18 (T23)	07:26	15:26 (T23)	07:43		06:52	06:13	05:58
	17:28	75 16:33 (T23)	18:06	73 16:39 (T23)	19:39		20:11	20:43	21:06
17	07:55	15:18 (T23)	07:25	15:27 (T23)	07:41		06:50	06:12	05:58
	17:29	76 16:34 (T23)	18:07	71 16:38 (T23)	19:40		20:12	20:44	21:06
18	07:54	15:18 (T23)	07:23	15:28 (T23)	07:40		06:49	06:11	05:58
	17:30	76 16:34 (T23)	18:08	70 16:38 (T23)	19:41		20:13	20:45	21:07
19	07:53	15:18 (T23)	07:22	15:30 (T23)	07:38		06:47	06:10	05:58
	17:31	78 16:36 (T23)	18:10	67 16:37 (T23)	19:42		20:14	20:46	21:07
20	07:53	15:18 (T23)	07:20	15:30 (T23)	07:36		06:46	06:09	05:58
	17:32	78 16:36 (T23)	18:11	66 16:36 (T23)	19:43		20:15	20:46	21:07
21	07:52	15:18 (T23)	07:19	15:32 (T23)	07:35		06:44	06:08	05:58
	17:34	78 16:36 (T23)	18:12	63 16:35 (T23)	19:44		20:16	20:47	21:08
22	07:52	15:18 (T23)	07:18	15:33 (T23)	07:33		06:43	06:07	05:59
	17:35	80 16:38 (T23)	18:13	60 16:33 (T23)	19:45		20:17	20:48	21:08
23	07:51	15:18 (T23)	07:16	15:35 (T23)	07:31		06:41	06:07	05:59
	17:36	80 16:38 (T23)	18:14	57 16:32 (T23)	19:46		20:18	20:49	21:08
24	07:50	15:18 (T23)	07:15	15:36 (T23)	07:29		06:40	06:06	05:59
	17:37	80 16:38 (T23)	18:16	54 16:30 (T23)	19:47		20:20	20:50	21:08
25	07:50	15:18 (T23)	07:13	15:38 (T23)	07:28		06:38	06:05	05:59
	17:39	81 16:39 (T23)	18:17	51 16:29 (T23)	19:48		20:21	20:51	21:08
26	07:49	15:19 (T23)	07:12	15:40 (T23)	07:26		06:37	06:05	06:00
	17:40	81 16:40 (T23)	18:18	47 16:27 (T23)	19:49		20:22	20:52	21:09
27	07:48	15:19 (T23)	07:10	15:43 (T23)	07:24		06:35	06:04	06:00
	17:41	81 16:40 (T23)	18:19	42 16:25 (T23)	19:51		20:23	20:53	21:09
28	07:47	15:19 (T23)	07:09	15:45 (T23)	07:23		06:34	06:03	06:00
	17:42	82 16:41 (T23)	18:20	37 16:22 (T23)	19:52		20:24	20:54	21:09
29	07:46	15:19 (T23)			07:21		06:33	06:03	06:01
	17:43	82 16:41 (T23)			19:53		20:25	20:55	21:09
30	07:45	15:19 (T23)			07:19		06:31	06:02	06:01
	17:45	82 16:41 (T23)			19:54		20:26	20:55	21:09
31	07:44	15:19 (T23)			07:18			06:02	
	17:46	82 16:41 (T23)			19:55			20:56	
Potential sun hours	297		297		370		399	449	453
Total, worst case		2300		1962		66			
Sun reduction		0.31		0.40		0.44			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.74		0.74		0.74			
Total reduction		0.23		0.30		0.33			
Total, real		529		582		22			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 860 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6878)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September	October			November			December		
1	06:02	06:26	06:57	07:27			07:02		14:51 (T23)	07:37		15:01 (T23)
	21:09	20:50	20:07	19:15			17:28	80	16:11 (T23)	17:03	71	16:12 (T23)
2	06:02	06:27	06:58	07:28			07:03		14:51 (T23)	07:38		15:02 (T23)
	21:09	20:49	20:06	19:13			17:27	81	16:12 (T23)	17:03	70	16:12 (T23)
3	06:03	06:28	06:59	07:30			07:04		14:51 (T23)	07:39		15:02 (T23)
	21:08	20:48	20:04	19:11			17:25	81	16:12 (T23)	17:03	70	16:12 (T23)
4	06:03	06:29	07:00	07:31			07:06		14:50 (T23)	07:40		15:03 (T23)
	21:08	20:47	20:02	19:10			17:24	82	16:12 (T23)	17:03	69	16:12 (T23)
5	06:04	06:30	07:01	07:32			07:07		14:50 (T23)	07:41		15:04 (T23)
	21:08	20:46	20:01	19:08			17:23	82	16:12 (T23)	17:03	68	16:12 (T23)
6	06:05	06:31	07:02	07:33			07:08		14:50 (T23)	07:42		15:05 (T23)
	21:08	20:45	19:57	19:06			17:22	82	16:12 (T23)	17:02	67	16:12 (T23)
7	06:05	06:32	07:03	07:34			07:09		14:50 (T23)	07:43		15:06 (T23)
	21:08	20:43	19:56	19:05			17:21	82	16:12 (T23)	17:02	66	16:12 (T23)
8	06:06	06:33	07:04	07:35			07:10		14:49 (T23)	07:44		15:06 (T23)
	21:07	20:42	19:54	19:03			17:20	83	16:12 (T23)	17:02	66	16:12 (T23)
9	06:06	06:34	07:05	07:36			07:12		14:50 (T23)	07:45		15:06 (T23)
	21:07	20:41	19:52	19:01			17:19	83	16:13 (T23)	17:02	65	16:11 (T23)
10	06:07	06:35	07:06	07:37			07:13		14:50 (T23)	07:46		15:07 (T23)
	21:07	20:40	19:51	19:00			17:18	83	16:13 (T23)	17:02	64	16:11 (T23)
11	06:08	06:36	07:07	07:38		16:29 (T23)	07:14		14:50 (T23)	07:47		15:08 (T23)
	21:06	20:38	19:49	18:58	18	16:47 (T23)	17:17	82	16:12 (T23)	17:02	63	16:11 (T23)
12	06:09	06:37	07:08	07:39		16:24 (T23)	07:15		14:50 (T23)	07:47		15:09 (T23)
	21:06	20:37	19:47	18:57	27	16:51 (T23)	17:16	82	16:12 (T23)	17:03	63	16:12 (T23)
13	06:09	06:38	07:09	07:40		16:19 (T23)	07:16		14:50 (T23)	07:48		15:10 (T23)
	21:05	20:36	19:45	18:55	35	16:54 (T23)	17:15	83	16:13 (T23)	17:03	62	16:12 (T23)
14	06:10	06:39	07:10	07:41		16:17 (T23)	07:18		14:50 (T23)	07:49		15:11 (T23)
	21:05	20:34	19:44	18:53	40	16:57 (T23)	17:14	83	16:13 (T23)	17:03	62	16:13 (T23)
15	06:11	06:40	07:11	07:42		16:14 (T23)	07:19		14:51 (T23)	07:50		15:11 (T23)
	21:04	20:33	19:42	18:52	45	16:59 (T23)	17:13	81	16:12 (T23)	17:03	61	16:12 (T23)
16	06:12	06:41	07:12	07:44		16:11 (T23)	07:20		14:52 (T23)	07:50		15:12 (T23)
	21:04	20:32	19:40	18:50	49	17:00 (T23)	17:12	81	16:13 (T23)	17:03	61	16:13 (T23)
17	06:12	06:42	07:13	07:45		16:09 (T23)	07:21		14:52 (T23)	07:51		15:13 (T23)
	21:03	20:30	19:39	18:49	52	17:01 (T23)	17:11	81	16:13 (T23)	17:04	60	16:13 (T23)
18	06:13	06:43	07:14	07:46		16:07 (T23)	07:22		14:52 (T23)	07:52		15:13 (T23)
	21:02	20:29	19:37	18:47	55	17:02 (T23)	17:10	80	16:12 (T23)	17:04	60	16:13 (T23)
19	06:14	06:44	07:15	07:47		16:05 (T23)	07:24		14:52 (T23)	07:52		15:14 (T23)
	21:02	20:27	19:35	18:46	58	17:03 (T23)	17:10	80	16:12 (T23)	17:04	60	16:14 (T23)
20	06:15	06:45	07:16	07:48		16:04 (T23)	07:25		14:53 (T23)	07:53		15:14 (T23)
	21:01	20:26	19:33	18:44	61	17:05 (T23)	17:09	80	16:13 (T23)	17:05	60	16:14 (T23)
21	06:16	06:46	07:17	07:49		16:02 (T23)	07:26		14:54 (T23)	07:54		15:15 (T23)
	21:00	20:24	19:32	18:43	64	17:06 (T23)	17:08	78	16:12 (T23)	17:05	59	16:14 (T23)
22	06:17	06:47	07:18	07:50		16:00 (T23)	07:27		14:54 (T23)	07:54		15:15 (T23)
	20:59	20:23	19:30	18:41	67	17:07 (T23)	17:08	78	16:12 (T23)	17:06	59	16:14 (T23)
23	06:18	06:48	07:19	07:51		15:59 (T23)	07:28		14:54 (T23)	07:55		15:16 (T23)
	20:59	20:21	19:28	18:40	68	17:07 (T23)	17:07	78	16:12 (T23)	17:06	59	16:15 (T23)
24	06:19	06:49	07:20	07:53		15:57 (T23)	07:29		14:56 (T23)	07:55		15:16 (T23)
	20:58	20:20	19:27	18:38	71	17:08 (T23)	17:06	76	16:12 (T23)	17:07	60	16:16 (T23)
25	06:19	06:50	07:21	07:54		15:57 (T23)	07:31		14:56 (T23)	07:55		15:16 (T23)
	20:57	20:18	19:25	18:37	72	17:09 (T23)	17:06	76	16:12 (T23)	17:07	60	16:16 (T23)
26	06:20	06:51	07:22	07:55		15:56 (T23)	07:32		14:57 (T23)	07:56		15:17 (T23)
	20:56	20:17	19:23	18:36	73	17:09 (T23)	17:05	75	16:12 (T23)	17:08	60	16:17 (T23)
27	06:21	06:52	07:23	07:56		15:55 (T23)	07:33		14:57 (T23)	07:56		15:17 (T23)
	20:55	20:15	19:21	18:34	74	17:09 (T23)	17:05	75	16:12 (T23)	17:09	60	16:17 (T23)
28	06:22	06:53	07:24	07:57		15:54 (T23)	07:34		14:58 (T23)	07:56		15:17 (T23)
	20:54	20:14	19:20	18:33	76	17:10 (T23)	17:04	73	16:11 (T23)	17:09	61	16:18 (T23)
29	06:23	06:54	07:25	07:58		15:54 (T23)	07:35		14:59 (T23)	07:57		15:18 (T23)
	20:53	20:12	19:18	18:32	77	17:11 (T23)	17:04	72	16:11 (T23)	17:10	61	16:19 (T23)
30	06:24	06:55	07:26	08:00		15:53 (T23)	07:36		14:59 (T23)	07:57		15:18 (T23)
	20:52	20:10	19:16	18:30	78	17:11 (T23)	17:04	72	16:11 (T23)	17:11	62	16:20 (T23)
31	06:25	06:56		08:01		15:52 (T23)				07:57		15:18 (T23)
	20:51	20:09		18:29	79	17:11 (T23)				17:12	62	16:20 (T23)
Potential sun hours	460	429	375	345			297			287		
Total, worst case					1239			2385			1951	
Sun reduction					0.48			0.30			0.22	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.74			0.74			0.74	
Total reduction					0.36			0.22			0.16	
Total, real					441			530			318	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 861 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6879)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43	08:04 (T44)	07:07		07:16	07:42 (T77)	06:30	06:51 (T42)	06:02	06:43 (T42)
	17:13		17:48 25	08:29 (T44)	18:22		19:56 35	08:17 (T77)	20:27 16	07:07 (T42)	20:57 31	07:14 (T42)
2	07:57		07:43	08:03 (T44)	07:06		07:15	07:41 (T77)	06:29	06:49 (T42)	06:01	06:44 (T42)
	17:14		17:49 27	08:30 (T44)	18:23		19:57 35	08:16 (T77)	20:28 21	07:10 (T42)	20:58 30	07:14 (T42)
3	07:57		07:41	08:02 (T44)	07:04		07:13	07:42 (T77)	06:28	06:47 (T42)	06:01	06:44 (T42)
	17:15		17:50 28	08:30 (T44)	18:24		19:58 34	08:16 (T77)	20:29 23	07:10 (T42)	20:58 30	07:14 (T42)
4	07:58		07:40	08:01 (T44)	07:03		07:11	07:42 (T77)	06:26	06:46 (T42)	06:00	06:45 (T42)
	17:16		17:51 29	08:30 (T44)	18:25		19:59 32	08:14 (T77)	20:30 26	07:12 (T42)	20:59 29	07:14 (T42)
5	07:57		07:39	08:01 (T44)	07:01		07:10	07:43 (T77)	06:25	06:45 (T42)	06:00	06:46 (T42)
	17:17		17:53 30	08:31 (T44)	18:26		20:00 31	08:14 (T77)	20:31 28	07:13 (T42)	21:00 28	07:14 (T42)
6	07:57		07:38	08:01 (T44)	06:59		07:08	07:43 (T77)	06:24	06:44 (T42)	06:00	06:46 (T42)
	17:18		17:54 29	08:30 (T44)	18:28		20:00 29	08:12 (T77)	20:32 30	07:14 (T42)	21:01 27	07:13 (T42)
7	07:57		07:37	08:01 (T44)	06:58		07:06	07:44 (T77)	06:23	06:43 (T42)	05:59	06:47 (T42)
	17:19		17:55 29	08:30 (T44)	18:29		20:01 26	08:10 (T77)	20:33 32	07:15 (T42)	21:01 25	07:12 (T42)
8	07:57		07:36	08:02 (T44)	07:56		07:05	07:46 (T77)	06:22	06:42 (T42)	05:59	06:48 (T42)
	17:20		17:56 28	08:30 (T44)	19:30		20:02 23	08:09 (T77)	20:34 34	07:16 (T42)	21:02 24	07:12 (T42)
9	07:57		07:35	08:02 (T44)	07:55		07:03	07:47 (T77)	06:20	06:41 (T42)	05:59	06:49 (T42)
	17:21		17:58 28	08:30 (T44)	19:31		20:04 20	08:07 (T77)	20:35 35	07:16 (T42)	21:02 23	07:12 (T42)
10	07:57		07:34	08:03 (T44)	07:53		07:01	07:49 (T77)	06:19	06:40 (T42)	05:59	06:50 (T42)
	17:22		17:59 26	08:29 (T44)	19:32		20:05 14	08:03 (T77)	20:36 37	07:17 (T42)	21:03 22	07:12 (T42)
11	07:57		07:32	08:03 (T44)	07:51		07:00	07:54 (T77)	06:18	06:39 (T42)	05:58	06:50 (T42)
	17:23		18:00 25	08:28 (T44)	19:33		20:06 5	07:59 (T77)	20:38 37	07:16 (T42)	21:04 22	07:12 (T42)
12	07:56		07:31	08:05 (T44)	07:50		06:58		06:17	06:39 (T42)	05:58	06:51 (T42)
	17:24		18:01 22	08:27 (T44)	19:34		20:07		20:39 37	07:16 (T42)	21:04 21	07:12 (T42)
13	07:56		07:30	08:06 (T44)	07:48		06:57		06:16	06:38 (T42)	05:58	06:51 (T42)
	17:25		18:03 20	08:26 (T44)	19:35		20:08		20:40 39	07:17 (T42)	21:05 20	07:11 (T42)
14	07:56		07:29	08:08 (T44)	07:46		06:55		06:15	06:39 (T42)	05:58	06:51 (T42)
	17:26		18:04 16	08:24 (T44)	19:37		20:09		20:41 39	07:18 (T42)	21:05 19	07:10 (T42)
15	07:55		07:27	08:10 (T44)	07:45		06:53		06:14	06:39 (T42)	05:58	06:52 (T42)
	17:27		18:05 11	08:21 (T44)	19:38		20:10		20:42 39	07:18 (T42)	21:06 18	07:10 (T42)
16	07:55		07:26		07:43		06:52		06:13	06:39 (T42)	05:58	06:53 (T42)
	17:28		18:06		19:39		20:11		20:43 39	07:18 (T42)	21:06 18	07:11 (T42)
17	07:54		07:25		07:41		06:50		06:12	06:39 (T42)	05:58	06:54 (T42)
	17:29		18:07		19:40		20:12		20:44 39	07:18 (T42)	21:06 17	07:11 (T42)
18	07:54		07:23		07:40		06:49		06:11	06:39 (T42)	05:58	06:54 (T42)
	17:30		18:09		19:41		20:13		20:45 38	07:17 (T42)	21:07 17	07:11 (T42)
19	07:53		07:22		07:38		06:47		06:10	06:38 (T42)	05:58	06:54 (T42)
	17:32		18:10		19:42		20:14		20:45 39	07:17 (T42)	21:07 17	07:11 (T42)
20	07:53		07:21		07:36	07:56 (T77)	06:46		06:09	06:38 (T42)	05:59	06:55 (T42)
	17:33		18:11		19:43 14	08:10 (T77)	20:15		20:46 39	07:17 (T42)	21:07 16	07:11 (T42)
21	07:52		07:19		07:35	07:54 (T77)	06:44		06:09	06:39 (T42)	05:59	06:55 (T42)
	17:34		18:12		19:44 19	08:13 (T77)	20:16		20:47 39	07:18 (T42)	21:08 16	07:11 (T42)
22	07:52		07:18		07:33	07:52 (T77)	06:43		06:08	06:39 (T42)	05:59	06:55 (T42)
	17:35		18:14		19:45 22	08:14 (T77)	20:17		20:48 38	07:17 (T42)	21:08 16	07:11 (T42)
23	07:51	08:12 (T44)	07:16		07:31	07:50 (T77)	06:41		06:07	06:39 (T42)	05:59	06:55 (T42)
	17:36 2	08:14 (T44)	18:15		19:46 25	08:15 (T77)	20:18		20:49 38	07:17 (T42)	21:08 17	07:12 (T42)
24	07:50	08:11 (T44)	07:15		07:30	07:49 (T77)	06:40		06:06	06:39 (T42)	05:59	06:55 (T42)
	17:38 8	08:19 (T44)	18:16		19:47 28	08:17 (T77)	20:20		20:50 37	07:16 (T42)	21:08 17	07:12 (T42)
25	07:50	08:10 (T44)	07:13		07:28	07:47 (T77)	06:39		06:06	06:40 (T42)	06:00	06:55 (T42)
	17:39 11	08:21 (T44)	18:17		19:49 30	08:17 (T77)	20:21		20:51 37	07:17 (T42)	21:08 17	07:12 (T42)
26	07:49	08:09 (T44)	07:12		07:26	07:45 (T77)	06:37		06:05	06:40 (T42)	06:00	06:56 (T42)
	17:40 13	08:22 (T44)	18:18		19:50 33	08:18 (T77)	20:22		20:52 36	07:16 (T42)	21:08 17	07:13 (T42)
27	07:48	08:09 (T44)	07:10		07:25	07:45 (T77)	06:36		06:04	06:41 (T42)	06:00	06:55 (T42)
	17:41 16	08:25 (T44)	18:19		19:51 33	08:18 (T77)	20:23		20:53 35	07:16 (T42)	21:09 18	07:13 (T42)
28	07:47	08:08 (T44)	07:09		07:23	07:44 (T77)	06:34		06:04	06:41 (T42)	06:01	06:55 (T42)
	17:43 18	08:26 (T44)	18:21		19:52 34	08:18 (T77)	20:24		20:54 35	07:16 (T42)	21:09 18	07:13 (T42)
29	07:46	08:07 (T44)			07:21	07:43 (T77)	06:33		06:03	06:42 (T42)	06:01	06:55 (T42)
	17:44 20	08:27 (T44)			19:53 35	08:18 (T77)	20:25		20:54 34	07:16 (T42)	21:09 20	07:15 (T42)
30	07:45	08:06 (T44)			07:20	07:42 (T77)	06:32	06:54 (T42)	06:03	06:42 (T42)	06:02	06:54 (T42)
	17:45 22	08:28 (T44)			19:54 35	08:17 (T77)	20:26 9	07:03 (T42)	20:55 33	07:15 (T42)	21:09 21	07:15 (T42)
31	07:44	08:05 (T44)			07:18	07:42 (T77)			06:02	06:43 (T42)		
	17:46 23	08:28 (T44)			19:55 36	08:18 (T77)			20:56 32	07:15 (T42)		
Potential sun hours	297		297		370		399		448		453	
Total, worst case	133		373		344		293		1061		631	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.54		0.54		0.62		0.63		0.70		0.70	
Total reduction	0.16		0.21		0.27		0.32		0.39		0.44	
Total, real	22		79		93		94		415		277	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 861 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6879)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:55 (T42)		06:26		06:49 (T42)		06:57		07:53 (T77)	
	21:09	21	07:16 (T42)		20:50	38	07:27 (T42)		20:07	5	07:58 (T77)	
2	06:03		06:54 (T42)		06:27		06:50 (T42)		06:58		07:48 (T77)	
	21:08	22	07:16 (T42)		20:49	37	07:27 (T42)		20:06	14	08:02 (T77)	
3	06:03		06:54 (T42)		06:28		06:50 (T42)		06:59		07:45 (T77)	
	21:08	23	07:17 (T42)		20:48	36	07:26 (T42)		20:04	20	08:05 (T77)	
4	06:04		06:53 (T42)		06:29		06:51 (T42)		07:00		07:43 (T77)	
	21:08	24	07:17 (T42)		20:47	35	07:26 (T42)		20:02	23	08:06 (T77)	
5	06:04		06:54 (T42)		06:30		06:52 (T42)		07:01		07:41 (T77)	
	21:08	24	07:18 (T42)		20:46	33	07:25 (T42)		20:01	26	08:07 (T77)	
6	06:05		06:53 (T42)		06:31		06:53 (T42)		07:02		07:40 (T77)	
	21:08	25	07:18 (T42)		20:44	31	07:24 (T42)		19:57	28	08:08 (T77)	
7	06:06		06:53 (T42)		06:32		06:54 (T42)		07:03		07:38 (T77)	
	21:07	27	07:20 (T42)		20:43	29	07:23 (T42)		19:56	31	08:09 (T77)	
8	06:06		06:53 (T42)		06:33		06:55 (T42)		07:04		07:37 (T77)	
	21:07	28	07:21 (T42)		20:42	27	07:22 (T42)		19:54	32	08:09 (T77)	
9	06:07		06:52 (T42)		06:34		06:56 (T42)		07:05		07:36 (T77)	
	21:07	29	07:21 (T42)		20:41	25	07:21 (T42)		19:52	34	08:10 (T77)	
10	06:08		06:52 (T42)		06:35		06:57 (T42)		07:06		07:36 (T77)	
	21:06	30	07:22 (T42)		20:40	23	07:20 (T42)		19:51	34	08:10 (T77)	
11	06:08		06:52 (T42)		06:36		06:58 (T42)		07:07		07:35 (T77)	
	21:06	30	07:22 (T42)		20:38	20	07:18 (T42)		19:49	35	08:10 (T77)	
12	06:09		06:51 (T42)		06:37		07:00 (T42)		07:08		07:33 (T77)	
	21:06	31	07:22 (T42)		20:37	15	07:15 (T42)		19:47	36	08:09 (T77)	
13	06:10		06:51 (T42)		06:38		07:05 (T42)		07:09		07:33 (T77)	
	21:05	32	07:23 (T42)		20:36	5	07:10 (T42)		19:46	36	08:09 (T77)	
14	06:10		06:51 (T42)		06:39				07:10		07:33 (T77)	
	21:05	33	07:24 (T42)		20:34				19:44	35	08:08 (T77)	
15	06:11		06:51 (T42)		06:40				07:11		07:33 (T77)	
	21:04	34	07:25 (T42)		20:33				19:42	35	08:08 (T77)	
16	06:12		06:50 (T42)		06:41				07:12		07:33 (T77)	
	21:03	35	07:25 (T42)		20:32				19:40	34	08:07 (T77)	
17	06:13		06:50 (T42)		06:42				07:13		07:33 (T77)	
	21:03	35	07:25 (T42)		20:30				19:39	33	08:06 (T77)	
18	06:14		06:50 (T42)		06:43				07:14		07:34 (T77)	
	21:02	36	07:26 (T42)		20:29				19:37	31	08:05 (T77)	
19	06:14		06:50 (T42)		06:44				07:15		07:35 (T77)	
	21:02	36	07:26 (T42)		20:27				19:35	29	08:04 (T77)	
20	06:15		06:50 (T42)		06:45				07:16		07:36 (T77)	
	21:01	37	07:27 (T42)		20:26				19:34	26	08:02 (T77)	
21	06:16		06:49 (T42)		06:46				07:17		07:37 (T77)	
	21:00	37	07:26 (T42)		20:24				19:32	23	08:00 (T77)	
22	06:17		06:49 (T42)		06:47				07:18		07:38 (T77)	
	20:59	38	07:27 (T42)		20:23				19:30	20	07:58 (T77)	
23	06:18		06:49 (T42)		06:48				07:19		07:40 (T77)	
	20:59	38	07:27 (T42)		20:21				19:28	15	07:55 (T77)	
24	06:19		06:49 (T42)		06:49				07:20		07:44 (T77)	
	20:58	39	07:28 (T42)		20:20				19:27	6	07:50 (T77)	
25	06:20		06:49 (T42)		06:50				07:21			
	20:57	39	07:28 (T42)		20:18				19:25			
26	06:21		06:49 (T42)		06:51				07:22			
	20:56	39	07:28 (T42)		20:17				19:23			
27	06:22		06:49 (T42)		06:52				07:23			
	20:55	39	07:28 (T42)		20:15				19:22			
28	06:23		06:49 (T42)		06:53				07:24			
	20:54	39	07:28 (T42)		20:14				19:20			
29	06:23		06:49 (T42)		06:54				07:25			
	20:53	38	07:27 (T42)		20:12				19:18			
30	06:24		06:49 (T42)		06:55				07:27			
	20:52	38	07:27 (T42)		20:10				19:16			
31	06:25		06:49 (T42)		06:56							
	20:51	38	07:27 (T42)		20:09							
Potential sun hours	460				429				375			
Total, worst case		1014				354				641		
Sun reduction		0.66				0.61				0.59		
Oper. time red.		1.00				1.00				1.00		
Wind dir. red.		0.70				0.70				0.62		
Total reduction		0.45				0.42				0.36		
Total, real		459				148				232		

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 869 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6886)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	08:20 (T76)	07:43	08:29 (T76)	07:07		07:16	18:52 (T41)	06:30	19:47 (T40)	06:01	19:54 (T40)
	17:13 32	16:44 (T42)	17:47 48	17:04 (T42)	18:22		19:56 27	19:19 (T41)	20:27 18	20:05 (T40)	20:57 7	20:01 (T40)
2	07:57	08:20 (T76)	07:42	16:22 (T42)	07:06		07:14	18:52 (T41)	06:29	19:45 (T40)	06:01	
	17:14 34	16:45 (T42)	17:49 42	17:04 (T42)	18:23		19:57 25	19:17 (T41)	20:28 21	20:06 (T40)	20:58	
3	07:57	08:20 (T76)	07:41	16:22 (T42)	07:04		07:13	18:54 (T41)	06:28	19:43 (T40)	06:01	
	17:15 36	16:46 (T42)	17:50 42	17:04 (T42)	18:24		19:58 21	19:15 (T41)	20:29 23	20:06 (T40)	20:58	
4	07:57	08:20 (T76)	07:40	16:23 (T42)	07:02		07:11	18:56 (T41)	06:26	19:42 (T40)	06:00	
	17:16 39	16:47 (T42)	17:51 41	17:04 (T42)	18:25		19:59 16	19:12 (T41)	20:30 26	20:08 (T40)	20:59	
5	07:57	08:20 (T76)	07:39	16:24 (T42)	07:01		07:09	18:59 (T41)	06:25	19:42 (T40)	06:00	
	17:16 41	16:48 (T42)	17:52 39	17:03 (T42)	18:26		20:00 9	19:08 (T41)	20:31 27	20:09 (T40)	21:00	
6	07:57	08:20 (T76)	07:38	16:24 (T42)	06:59		07:08		06:24	19:41 (T40)	05:59	
	17:17 43	16:49 (T42)	17:54 38	17:02 (T42)	18:27		20:00		20:32 29	20:10 (T40)	21:00	
7	07:57	08:19 (T76)	07:37	16:25 (T42)	06:58		07:06		06:23	19:41 (T40)	05:59	
	17:18 45	16:49 (T42)	17:55 36	17:01 (T42)	18:29		20:01		20:33 30	20:11 (T40)	21:01	
8	07:57	08:19 (T76)	07:36	16:27 (T42)	07:56		07:05		06:22	19:40 (T40)	05:59	
	17:19 47	16:50 (T42)	17:56 33	17:00 (T42)	19:30		20:02		20:34 32	20:12 (T40)	21:02	
9	07:57	08:19 (T76)	07:35	16:28 (T42)	07:54		07:03		06:20	19:40 (T40)	05:59	
	17:20 50	16:52 (T42)	17:57 31	16:59 (T42)	19:31		20:03		20:35 33	20:13 (T40)	21:02	
10	07:57	08:19 (T76)	07:34	16:30 (T42)	07:53		07:01		06:19	19:39 (T40)	05:59	
	17:21 52	16:53 (T42)	17:59 28	16:58 (T42)	19:32		20:05		20:36 33	20:12 (T40)	21:03	
11	07:57	08:18 (T76)	07:32	16:31 (T42)	07:51		07:00		06:18	19:39 (T40)	05:58	
	17:23 53	16:53 (T42)	18:00 25	16:56 (T42)	19:33		20:06		20:37 33	20:12 (T40)	21:04	
12	07:56	08:18 (T76)	07:31	16:34 (T42)	07:50		06:58		06:17	19:39 (T40)	05:58	
	17:24 57	16:55 (T42)	18:01 20	16:54 (T42)	19:34		20:07		20:38 33	20:12 (T40)	21:04	
13	07:56	08:18 (T76)	07:30	16:38 (T42)	07:48		06:57		06:16	19:39 (T40)	05:58	
	17:25 59	16:56 (T42)	18:02 13	16:51 (T42)	19:35		20:08		20:39 33	20:12 (T40)	21:05	
14	07:56	08:17 (T76)	07:29		07:46		06:55		06:15	19:39 (T40)	05:58	
	17:26 61	16:56 (T42)	18:04		19:36		20:09		20:41 33	20:12 (T40)	21:05	
15	07:55	08:17 (T76)	07:27		07:45	19:09 (T41)	06:53		06:14	19:39 (T40)	05:58	
	17:27 62	16:57 (T42)	18:05		19:38 3	19:12 (T41)	20:10		20:42 33	20:12 (T40)	21:05	
16	07:55	08:16 (T76)	07:26		07:43	19:03 (T41)	06:52		06:13	19:40 (T40)	05:58	
	17:28 65	16:58 (T42)	18:06		19:39 14	19:17 (T41)	20:11		20:43 32	20:12 (T40)	21:06	
17	07:54	08:16 (T76)	07:25		07:41	18:59 (T41)	06:50		06:12	19:40 (T40)	05:58	
	17:29 66	16:59 (T42)	18:07		19:40 19	19:18 (T41)	20:12		20:43 32	20:12 (T40)	21:06	
18	07:54	08:15 (T76)	07:23		07:40	18:58 (T41)	06:49		06:11	19:40 (T40)	05:58	
	17:30 68	16:59 (T42)	18:09		19:41 22	19:20 (T41)	20:13		20:44 32	20:12 (T40)	21:07	
19	07:53	08:15 (T76)	07:22		07:38	18:56 (T41)	06:47		06:10	19:41 (T40)	05:58	
	17:32 70	17:01 (T42)	18:10		19:42 25	19:21 (T41)	20:14		20:45 30	20:11 (T40)	21:07	
20	07:53	08:15 (T76)	07:20		07:36	18:54 (T41)	06:46		06:09	19:41 (T40)	05:58	
	17:33 71	17:01 (T42)	18:11		19:43 27	19:21 (T41)	20:15		20:46 30	20:11 (T40)	21:07	
21	07:52	08:15 (T76)	07:19		07:35	18:54 (T41)	06:44		06:09	19:41 (T40)	05:59	
	17:34 71	17:01 (T42)	18:12		19:44 29	19:23 (T41)	20:16		20:47 29	20:10 (T40)	21:08	
22	07:52	08:17 (T76)	07:18		07:33	18:52 (T41)	06:43		06:08	19:43 (T40)	05:59	
	17:35 69	17:02 (T42)	18:13		19:45 32	19:24 (T41)	20:17		20:48 27	20:10 (T40)	21:08	
23	07:51	08:17 (T76)	07:16		07:31	18:51 (T41)	06:41		06:07	19:43 (T40)	05:59	
	17:36 70	17:03 (T42)	18:15		19:46 33	19:24 (T41)	20:18		20:49 26	20:09 (T40)	21:08	
24	07:50	08:17 (T76)	07:15		07:30	18:51 (T41)	06:40		06:06	19:43 (T40)	05:59	
	17:38 71	17:03 (T42)	18:16		19:47 34	19:25 (T41)	20:19		20:50 26	20:09 (T40)	21:08	
25	07:49	08:18 (T76)	07:13		07:28	18:51 (T41)	06:38		06:06	19:45 (T40)	06:00	
	17:39 70	17:03 (T42)	18:17		19:48 33	19:24 (T41)	20:21		20:51 24	20:09 (T40)	21:08	
26	07:49	08:18 (T76)	07:12		07:26	18:50 (T41)	06:37		06:05	19:45 (T40)	06:00	
	17:40 69	17:03 (T42)	18:18		19:50 34	19:24 (T41)	20:22		20:52 23	20:08 (T40)	21:08	
27	07:48	08:20 (T76)	07:10		07:24	18:50 (T41)	06:36		06:04	19:47 (T40)	06:00	
	17:41 66	17:04 (T42)	18:19		19:51 33	19:23 (T41)	20:23		20:53 20	20:07 (T40)	21:08	
28	07:47	08:21 (T76)	07:09		07:23	18:50 (T41)	06:34		06:04	19:48 (T40)	06:01	
	17:42 65	17:04 (T42)	18:21		19:52 33	19:23 (T41)	20:24		20:54 18	20:06 (T40)	21:09	
29	07:46	08:22 (T76)			07:21	18:50 (T41)	06:33	19:51 (T40)	06:03	19:48 (T40)	06:01	
	17:44 63	17:04 (T42)			19:53 32	19:22 (T41)	20:25 11	20:02 (T40)	20:54 17	20:05 (T40)	21:09	
30	07:45	08:24 (T76)			07:19	18:50 (T41)	06:32	19:48 (T40)	06:02	19:50 (T40)	06:02	
	17:45 60	17:04 (T42)			19:54 31	19:21 (T41)	20:26 16	20:04 (T40)	20:55 14	20:04 (T40)	21:09	
31	07:44	08:26 (T76)			07:18	18:51 (T41)			06:02	19:51 (T40)		
	17:46 55	17:04 (T42)			19:55 29	19:20 (T41)			20:56 11	20:02 (T40)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case	1780		436		463		125		828		7	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.65		0.73		0.64		0.63		0.56		0.56	
Total reduction	0.21		0.30		0.29		0.33		0.33		0.37	
Total, real	368		129		134		41		271		3	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 869 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6886)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		19:49 (T40)	06:57			07:27			07:02		15:59 (T42)	07:37		08:00 (T76)
	21:08			20:50	34	20:23 (T40)	20:07			19:15			17:28	28	16:27 (T42)	17:04	54	16:35 (T42)
2	06:03			06:27		19:49 (T40)	06:58			07:29			07:03		15:58 (T42)	07:38		08:01 (T76)
	21:08			20:49	34	20:23 (T40)	20:06			19:13			17:27	31	16:29 (T42)	17:03	52	16:35 (T42)
3	06:03			06:28		19:50 (T40)	06:59			07:30			07:04		15:56 (T42)	07:39		08:03 (T76)
	21:08			20:48	32	20:22 (T40)	20:04			19:11			17:26	34	16:30 (T42)	17:03	50	16:36 (T42)
4	06:04			06:29		19:50 (T40)	07:00			07:31			07:06		15:55 (T42)	07:40		08:04 (T76)
	21:08			20:47	32	20:22 (T40)	20:02			19:10			17:24	36	16:31 (T42)	17:03	48	16:36 (T42)
5	06:04			06:30		19:50 (T40)	07:01			07:32			07:07		15:54 (T42)	07:41		08:05 (T76)
	21:08			20:46	31	20:21 (T40)	20:01			19:08			17:23	38	16:32 (T42)	17:03	45	16:35 (T42)
6	06:05			06:31		19:51 (T40)	07:02			07:33			07:08		15:54 (T42)	07:42		08:06 (T76)
	21:08			20:44	29	20:20 (T40)	19:57			19:06			17:22	39	16:33 (T42)	17:03	43	16:35 (T42)
7	06:05			06:32		19:51 (T40)	07:03		18:55 (T41)	07:34			07:09		15:53 (T42)	07:43		08:06 (T76)
	21:07			20:43	28	20:19 (T40)	19:56	9	19:04 (T41)	19:05			17:21	40	16:33 (T42)	17:03	41	16:34 (T42)
8	06:06			06:33		19:52 (T40)	07:04		18:51 (T41)	07:35			07:10		15:52 (T42)	07:44		08:07 (T76)
	21:07			20:42	26	20:18 (T40)	19:54	16	19:07 (T41)	19:03			17:20	42	16:34 (T42)	17:03	39	16:34 (T42)
9	06:07			06:34		19:52 (T40)	07:05		18:49 (T41)	07:36			07:12		15:53 (T42)	07:45		08:08 (T76)
	21:07			20:41	25	20:17 (T40)	19:52	20	19:09 (T41)	19:01			17:19	42	16:35 (T42)	17:03	36	16:34 (T42)
10	06:07			06:35		19:53 (T40)	07:06		18:46 (T41)	07:37			07:13		08:00 (T76)	07:46		08:09 (T76)
	21:06			20:40	23	20:16 (T40)	19:51	24	19:10 (T41)	19:00			17:18	49	16:35 (T42)	17:03	34	16:34 (T42)
11	06:08		20:04 (T40)	06:36		19:54 (T40)	07:07		18:44 (T41)	07:38			07:14		07:57 (T76)	07:46		08:10 (T76)
	21:06	3	20:07 (T40)	20:38	20	20:14 (T40)	19:49	27	19:11 (T41)	18:58			17:17	55	16:35 (T42)	17:03	32	16:34 (T42)
12	06:09		20:00 (T40)	06:37		19:56 (T40)	07:08		18:43 (T41)	07:39			07:15		07:55 (T76)	07:47		08:11 (T76)
	21:06	10	20:10 (T40)	20:37	17	20:13 (T40)	19:47	28	19:11 (T41)	18:57			17:16	60	16:35 (T42)	17:03	30	16:34 (T42)
13	06:10		19:59 (T40)	06:38		19:58 (T40)	07:09		18:41 (T41)	07:40			07:16		07:54 (T76)	07:48		08:12 (T76)
	21:05	13	20:12 (T40)	20:36	14	20:12 (T40)	19:45	31	19:12 (T41)	18:55			17:15	63	16:36 (T42)	17:03	28	16:34 (T42)
14	06:10		19:58 (T40)	06:39		20:00 (T40)	07:10		18:40 (T41)	07:41			07:18		07:53 (T76)	07:49		08:12 (T76)
	21:05	15	20:13 (T40)	20:34	10	20:10 (T40)	19:44	32	19:12 (T41)	18:54			17:14	65	16:36 (T42)	17:03	25	16:33 (T42)
15	06:11		19:57 (T40)	06:40			07:11		18:40 (T41)	07:42			07:19		07:52 (T76)	07:50		08:13 (T76)
	21:04	18	20:15 (T40)	20:33			19:42	32	19:12 (T41)	18:52			17:13	67	16:36 (T42)	17:03	23	16:33 (T42)
16	06:12		19:56 (T40)	06:41			07:12		18:39 (T41)	07:44			07:20		07:51 (T76)	07:50		08:14 (T76)
	21:03	19	20:15 (T40)	20:31			19:40	33	19:12 (T41)	18:50			17:12	69	16:36 (T42)	17:04	21	16:33 (T42)
17	06:13		19:55 (T40)	06:42			07:13		18:38 (T41)	07:45			07:21		07:52 (T76)	07:51		08:14 (T76)
	21:03	21	20:16 (T40)	20:30			19:39	34	19:12 (T41)	18:49			17:11	70	16:37 (T42)	17:04	21	16:33 (T42)
18	06:14		19:55 (T40)	06:43			07:14		18:38 (T41)	07:46			07:22		07:51 (T76)	07:52		08:15 (T76)
	21:02	23	20:18 (T40)	20:29			19:37	34	19:12 (T41)	18:47			17:11	71	16:37 (T42)	17:04	18	16:33 (T42)
19	06:14		19:54 (T40)	06:44			07:15		18:38 (T41)	07:47			07:23		07:51 (T76)	07:52		08:16 (T76)
	21:02	25	20:19 (T40)	20:27			19:35	33	19:11 (T41)	18:46			17:10	70	16:37 (T42)	17:05	17	16:34 (T42)
20	06:15		19:54 (T40)	06:45			07:16		18:38 (T41)	07:48			07:25		07:52 (T76)	07:53		08:16 (T76)
	21:01	26	20:20 (T40)	20:26			19:33	32	19:10 (T41)	18:44			17:09	69	16:37 (T42)	17:05	15	16:33 (T42)
21	06:16		19:52 (T40)	06:46			07:17		18:38 (T41)	07:49			07:26		07:51 (T76)	07:53		08:17 (T76)
	21:00	27	20:19 (T40)	20:24			19:32	32	19:10 (T41)	18:43			17:08	71	16:37 (T42)	17:05	15	16:34 (T42)
22	06:17		19:52 (T40)	06:47			07:18		18:38 (T41)	07:50			07:27		07:51 (T76)	07:54		08:17 (T76)
	20:59	28	20:20 (T40)	20:23			19:30	30	19:08 (T41)	18:41			17:08	71	16:37 (T42)	17:06	15	16:34 (T42)
23	06:18		19:52 (T40)	06:48			07:19		18:38 (T41)	07:51			07:28		07:51 (T76)	07:54		08:18 (T76)
	20:59	29	20:21 (T40)	20:21			19:28	28	19:06 (T41)	18:40			17:07	70	16:37 (T42)	17:07	15	16:35 (T42)
24	06:19		19:51 (T40)	06:49			07:20		18:39 (T41)	07:53			07:29		07:52 (T76)	07:55		08:18 (T76)
	20:58	30	20:21 (T40)	20:20			19:27	25	19:04 (T41)	18:39			17:07	68	16:36 (T42)	17:07	17	16:36 (T42)
25	06:20		19:51 (T40)	06:50			07:21		18:40 (T41)	07:54			07:30		07:54 (T76)	07:55		08:18 (T76)
	20:57	31	20:22 (T40)	20:18			19:25	23	19:03 (T41)	18:37			17:06	66	16:37 (T42)	17:08	17	16:36 (T42)
26	06:21		19:51 (T40)	06:51			07:22		18:41 (T41)	07:55			07:32		07:55 (T76)	07:56		08:19 (T76)
	20:56	31	20:22 (T40)	20:17			19:23	20	19:01 (T41)	18:36			17:06	65	16:37 (T42)	17:08	19	16:38 (T42)
27	06:22		19:51 (T40)	06:52			07:23		18:43 (T41)	07:56			07:33		07:56 (T76)	07:56		08:19 (T76)
	20:55	32	20:23 (T40)	20:15			19:22	16	18:59 (T41)	18:34			17:05	62	16:36 (T42)	17:09	21	16:38 (T42)
28	06:22		19:50 (T40)	06:53			07:24		18:47 (T41)	07:57			07:34		07:57 (T76)	07:56		08:19 (T76)
	20:54	32	20:22 (T40)	20:14			19:20	9	18:56 (T41)	18:33			17:05	61	16:36 (T42)	17:10	23	16:39 (T42)
29	06:23		19:49 (T40)	06:54			07:25			07:58		17:06 (T42)	07:35		07:58 (T76)	07:57		08:19 (T76)
	20:53	33	20:22 (T40)	20:12			19:18			18:32	14	17:20 (T42)	17:04	59	16:36 (T42)	17:10	25	16:40 (T42)
30	06:24		19:49 (T40)	06:55			07:26			08:00		17:03 (T42)	07:36		07:59 (T76)	07:57		08:20 (T76)
	20:52	34	20:23 (T40)	20:10			19:16			18:30	21	17:24 (T42)	17:04	57	16:36 (T42)	17:11	26	16:41 (T42)
31	06:25		19:49 (T40)	06:56						08:01		17:01 (T42)				07:57		08:20 (T76)
	20:51	34	20:23 (T40)	20:09						18:29	25	17:26 (T42)				17:12	29	16:42 (T42)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		514			355			568			60			1688			894	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.56			0.56			0.64			0.73			0.67			0.67	
Total reduction		0.38			0.35			0.39			0.36			0.20			0.15	
Total, real		195			124			220			21			345			135	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 870 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6887)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June		
1	07:57	07:44			07:07		16:46 (T32)	07:16			06:30		06:52 (T27)	06:01		18:56 (T29)
	17:13	17:47			18:22	44	17:30 (T32)	19:56			20:27	82	19:52 (T29)	20:57	60	19:56 (T29)
2	07:58	07:43			07:06		16:46 (T32)	07:15			06:29		06:52 (T27)	06:01		18:57 (T29)
	17:14	17:49			18:23	43	17:29 (T32)	19:57			20:28	84	19:53 (T29)	20:58	59	19:56 (T29)
3	07:58	07:42		17:01 (T32)	07:04		16:48 (T32)	07:13			06:28		06:52 (T27)	06:00		18:56 (T29)
	17:15	17:50	14	17:15 (T32)	18:24	40	17:28 (T32)	19:58			20:29	83	19:53 (T29)	20:59	60	19:56 (T29)
4	07:58	07:41		16:58 (T32)	07:03		16:48 (T32)	07:11			06:26		06:53 (T27)	06:00		18:57 (T29)
	17:16	17:51	21	17:19 (T32)	18:25	38	17:26 (T32)	19:59			20:30	84	19:54 (T29)	20:59	59	19:56 (T29)
5	07:58	07:39		16:55 (T32)	07:01		16:49 (T32)	07:10			06:25		06:54 (T27)	06:00		18:58 (T29)
	17:16	17:52	26	17:21 (T32)	18:26	35	17:24 (T32)	20:00			20:31	82	19:54 (T29)	21:00	58	19:56 (T29)
6	07:58	07:38		16:54 (T32)	06:59		16:52 (T32)	07:08			06:24		06:54 (T27)	05:59		18:58 (T29)
	17:17	17:54	29	17:23 (T32)	18:28	31	17:23 (T32)	20:00			20:32	83	19:55 (T29)	21:01	57	19:55 (T29)
7	07:58	07:37		16:51 (T32)	06:58		16:53 (T32)	07:06			06:23		06:56 (T27)	05:59		18:58 (T29)
	17:18	17:55	33	17:24 (T32)	18:29	27	17:20 (T32)	20:01			20:33	81	19:56 (T29)	21:01	58	19:56 (T29)
8	07:57	07:36		16:50 (T32)	07:56		17:55 (T32)	07:05			06:22		06:57 (T27)	05:59		18:59 (T29)
	17:19	17:56	36	17:26 (T32)	19:30	22	18:17 (T32)	20:03			20:35	79	19:56 (T29)	21:02	57	19:56 (T29)
9	07:57	07:35		16:49 (T32)	07:55		18:00 (T32)	07:03			06:20		06:59 (T27)	05:59		18:59 (T29)
	17:20	17:57	39	17:28 (T32)	19:31	14	18:14 (T32)	20:04			20:36	75	19:56 (T29)	21:03	57	19:56 (T29)
10	07:57	07:34		16:48 (T32)	07:53			07:01			06:19		07:01 (T27)	05:58		19:00 (T29)
	17:21	17:59	41	17:29 (T32)	19:32			20:05			20:37	71	19:56 (T29)	21:03	56	19:56 (T29)
11	07:57	07:33		16:48 (T32)	07:51			07:00			06:18		18:51 (T29)	05:58		19:00 (T29)
	17:22	18:00	42	17:30 (T32)	19:33			20:06			20:38	65	19:56 (T29)	21:04	55	19:55 (T29)
12	07:57	07:31		16:46 (T32)	07:50			06:58			06:17		18:51 (T29)	05:58		19:00 (T29)
	17:24	18:01	44	17:30 (T32)	19:34			20:07			20:39	65	19:56 (T29)	21:04	55	19:55 (T29)
13	07:56	07:30		16:46 (T32)	07:48			06:57			06:16		18:51 (T29)	05:58		19:00 (T29)
	17:25	18:02	45	17:31 (T32)	19:35			20:08			20:40	65	19:56 (T29)	21:05	56	19:56 (T29)
14	07:56	07:29		16:45 (T32)	07:46			06:55			06:15		18:51 (T29)	05:58		19:01 (T29)
	17:26	18:04	47	17:32 (T32)	19:37			20:09			20:41	65	19:56 (T29)	21:05	55	19:56 (T29)
15	07:56	07:27		16:44 (T32)	07:45			06:53			06:14		18:51 (T29)	05:58		19:01 (T29)
	17:27	18:05	48	17:32 (T32)	19:38			20:10			20:42	65	19:56 (T29)	21:06	55	19:56 (T29)
16	07:55	07:26		16:44 (T32)	07:43			06:52			06:13		18:52 (T29)	05:58		19:01 (T29)
	17:28	18:06	49	17:33 (T32)	19:39			20:11			20:43	65	19:57 (T29)	21:06	55	19:56 (T29)
17	07:55	07:25		16:44 (T32)	07:41			06:50			06:12		18:52 (T29)	05:58		19:02 (T29)
	17:29	18:07	50	17:34 (T32)	19:40			20:12			20:44	65	19:57 (T29)	21:07	54	19:56 (T29)
18	07:54	07:23		16:43 (T32)	07:40			06:49			06:11		18:52 (T29)	05:58		19:03 (T29)
	17:30	18:09	51	17:34 (T32)	19:41			20:13			20:45	65	19:57 (T29)	21:07	54	19:57 (T29)
19	07:54	07:22		16:43 (T32)	07:38			06:47		07:06 (T27)	06:10		18:52 (T29)	05:58		19:03 (T29)
	17:31	18:10	51	17:34 (T32)	19:42			20:14	5	07:11 (T27)	20:46	65	19:57 (T29)	21:07	54	19:57 (T29)
20	07:53	07:21		16:43 (T32)	07:36			06:46		07:05 (T27)	06:09		18:52 (T29)	05:58		19:03 (T29)
	17:33	18:11	51	17:34 (T32)	19:43			20:15	22	19:33 (T29)	20:47	65	19:57 (T29)	21:08	54	19:57 (T29)
21	07:52	07:19		16:43 (T32)	07:35			06:44		07:04 (T27)	06:09		18:52 (T29)	05:59		19:03 (T29)
	17:34	18:12	51	17:34 (T32)	19:44			20:16	35	19:38 (T29)	20:48	64	19:56 (T29)	21:08	54	19:57 (T29)
22	07:52	07:18		16:43 (T32)	07:33			06:43		07:02 (T27)	06:08		18:53 (T29)	05:59		19:03 (T29)
	17:35	18:13	50	17:33 (T32)	19:45			20:18	45	19:41 (T29)	20:48	64	19:57 (T29)	21:08	54	19:57 (T29)
23	07:51	07:16		16:43 (T32)	07:31			06:41		07:01 (T27)	06:07		18:53 (T29)	05:59		19:04 (T29)
	17:36	18:15	51	17:34 (T32)	19:46			20:19	51	19:43 (T29)	20:49	64	19:57 (T29)	21:08	54	19:58 (T29)
24	07:50	07:15		16:43 (T32)	07:30			06:40		06:59 (T27)	06:06		18:53 (T29)	05:59		19:04 (T29)
	17:37	18:16	50	17:33 (T32)	19:47			20:20	58	19:45 (T29)	20:50	63	19:56 (T29)	21:08	54	19:58 (T29)
25	07:50	07:13		16:44 (T32)	07:28			06:38		06:58 (T27)	06:05		18:54 (T29)	06:00		19:04 (T29)
	17:39	18:17	49	17:33 (T32)	19:49			20:21	63	19:47 (T29)	20:51	63	19:57 (T29)	21:09	54	19:58 (T29)
26	07:49	07:12		16:43 (T32)	07:26			06:37		06:56 (T27)	06:05		18:53 (T29)	06:00		19:05 (T29)
	17:40	18:18	49	17:32 (T32)	19:50			20:22	68	19:47 (T29)	20:52	63	19:56 (T29)	21:09	54	19:59 (T29)
27	07:48	07:10		16:44 (T32)	07:25			06:36		06:55 (T27)	06:04		18:53 (T29)	06:00		19:04 (T29)
	17:41	18:19	48	17:32 (T32)	19:51			20:23	72	19:49 (T29)	20:53	63	19:56 (T29)	21:09	55	19:59 (T29)
28	07:47	07:09		16:45 (T32)	07:23			06:34		06:54 (T27)	06:04		18:54 (T29)	06:01		19:04 (T29)
	17:42	18:21	46	17:31 (T32)	19:52			20:24	76	19:50 (T29)	20:54	62	19:56 (T29)	21:09	55	19:59 (T29)
29	07:46				07:21			06:33		06:52 (T27)	06:03		18:54 (T29)	06:01		19:05 (T29)
	17:44				19:53			20:25	79	19:50 (T29)	20:55	62	19:56 (T29)	21:09	55	20:00 (T29)
30	07:45				07:20			06:32		06:52 (T27)	06:02		18:55 (T29)	06:02		19:04 (T29)
	17:45				19:54			20:26	81	19:51 (T29)	20:55	61	19:56 (T29)	21:09	55	19:59 (T29)
31	07:45				07:18						06:02		18:55 (T29)			
	17:46				19:55						20:56	61	19:56 (T29)			
Potential sun hours	297	297			370			399			449			453		
Total, worst case			1111			294			655			2144			1672	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.71			0.71			0.61			0.58			0.57	
Total reduction			0.29			0.32			0.32			0.34			0.37	
Total, real			322			94			210			720			619	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 870 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6887)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September	October		November		December
1	06:02		19:05 (T29)	06:26	19:02 (T29)	06:57	07:28	07:02	16:17 (T32)	07:37
	21:09	55	20:00 (T29)	20:50 65	20:07 (T29)	20:07	19:15	17:28 41	16:58 (T32)	17:04
2	06:03		19:04 (T29)	06:27	19:02 (T29)	06:58	07:29	07:03	16:19 (T32)	07:38
	21:09	56	20:00 (T29)	20:49 64	20:06 (T29)	20:06	19:13	17:27 38	16:57 (T32)	17:03
3	06:03		19:05 (T29)	06:28	07:10 (T27)	06:59	07:30	07:05	16:20 (T32)	07:39
	21:08	56	20:01 (T29)	20:48 73	20:06 (T29)	20:04	19:11	17:26 36	16:56 (T32)	17:03
4	06:04		19:04 (T29)	06:29	07:08 (T27)	07:00	07:31 17:41 (T32)	07:06	16:21 (T32)	07:40
	21:08	57	20:01 (T29)	20:47 77	20:06 (T29)	20:02	19:10 7 17:48 (T32)	17:24 33	16:54 (T32)	17:03
5	06:04		19:05 (T29)	06:30	07:06 (T27)	07:01	07:32 17:35 (T32)	07:07	16:24 (T32)	07:41
	21:08	57	20:02 (T29)	20:46 79	20:05 (T29)	20:01	19:08 18 17:53 (T32)	17:23 29	16:53 (T32)	17:03
6	06:05		19:04 (T29)	06:31	07:05 (T27)	07:02	07:33 17:31 (T32)	07:08	16:25 (T32)	07:42
	21:08	58	20:02 (T29)	20:45 81	20:05 (T29)	19:57	19:06 25 17:56 (T32)	17:22 26	16:51 (T32)	17:03
7	06:05		19:04 (T29)	06:32	07:04 (T27)	07:03	07:34 17:28 (T32)	07:09	16:28 (T32)	07:43
	21:08	58	20:02 (T29)	20:43 83	20:05 (T29)	19:56	19:05 30 17:58 (T32)	17:21 20	16:48 (T32)	17:03
8	06:06		19:05 (T29)	06:33	07:03 (T27)	07:04	07:35 17:26 (T32)	07:11	16:31 (T32)	07:44
	21:07	58	20:03 (T29)	20:42 83	20:04 (T29)	19:54	19:03 33 17:59 (T32)	17:20 13	16:44 (T32)	17:03
9	06:07		19:04 (T29)	06:34	07:02 (T27)	07:05	07:36 17:24 (T32)	07:12		07:45
	21:07	59	20:03 (T29)	20:41 84	20:03 (T29)	19:52	19:02 36 18:00 (T32)	17:19		17:03
10	06:07		19:04 (T29)	06:35	07:02 (T27)	07:06	07:37 17:22 (T32)	07:13		07:46
	21:07	59	20:03 (T29)	20:40 84	20:03 (T29)	19:51	19:00 39 18:01 (T32)	17:18		17:03
11	06:08		19:04 (T29)	06:36	07:01 (T27)	07:07	07:38 17:21 (T32)	07:14		07:47
	21:06	60	20:04 (T29)	20:38 83	20:02 (T29)	19:49	18:58 41 18:02 (T32)	17:17		17:03
12	06:09		19:03 (T29)	06:37	07:01 (T27)	07:08	07:39 17:19 (T32)	07:15		07:47
	21:06	61	20:04 (T29)	20:37 82	20:01 (T29)	19:47	18:57 44 18:03 (T32)	17:16		17:03
13	06:10		19:04 (T29)	06:38	07:00 (T27)	07:09	07:40 17:18 (T32)	07:17		07:48
	21:05	60	20:04 (T29)	20:36 82	20:00 (T29)	19:46	18:55 45 18:03 (T32)	17:15		17:03
14	06:10		19:04 (T29)	06:39	07:01 (T27)	07:10	07:41 17:18 (T32)	07:18		07:49
	21:05	61	20:05 (T29)	20:34 79	19:59 (T29)	19:44	18:54 46 18:04 (T32)	17:14		17:03
15	06:11		19:04 (T29)	06:40	07:02 (T27)	07:11	07:43 17:17 (T32)	07:19		07:50
	21:04	62	20:06 (T29)	20:33 75	19:58 (T29)	19:42	18:52 47 18:04 (T32)	17:13		17:03
16	06:12		19:03 (T29)	06:41	07:03 (T27)	07:12	07:44 17:16 (T32)	07:20		07:50
	21:04	62	20:05 (T29)	20:32 71	19:56 (T29)	19:40	18:50 49 18:05 (T32)	17:12		17:04
17	06:13		19:03 (T29)	06:42	07:03 (T27)	07:13	07:45 17:15 (T32)	07:21		07:51
	21:03	63	20:06 (T29)	20:30 68	19:54 (T29)	19:39	18:49 49 18:04 (T32)	17:11		17:04
18	06:14		19:03 (T29)	06:43	07:04 (T27)	07:14	07:46 17:14 (T32)	07:23		07:52
	21:02	63	20:06 (T29)	20:29 62	19:52 (T29)	19:37	18:47 50 18:04 (T32)	17:11		17:04
19	06:14		19:03 (T29)	06:44	07:05 (T27)	07:15	07:47 17:14 (T32)	07:24		07:52
	21:02	64	20:07 (T29)	20:27 57	19:50 (T29)	19:35	18:46 50 18:04 (T32)	17:10		17:05
20	06:15		19:03 (T29)	06:45	07:06 (T27)	07:16	07:48 17:14 (T32)	07:25		07:53
	21:01	64	20:07 (T29)	20:26 51	19:48 (T29)	19:34	18:44 51 18:05 (T32)	17:09		17:05
21	06:16		19:02 (T29)	06:46	07:07 (T27)	07:17	07:49 17:14 (T32)	07:26		07:54
	21:00	64	20:06 (T29)	20:24 44	19:45 (T29)	19:32	18:43 51 18:05 (T32)	17:08		17:05
22	06:17		19:02 (T29)	06:47	07:08 (T27)	07:18	07:50 17:13 (T32)	07:27		07:54
	21:00	65	20:07 (T29)	20:23 34	19:41 (T29)	19:30	18:41 51 18:04 (T32)	17:08		17:06
23	06:18		19:02 (T29)	06:48	07:09 (T27)	07:19	07:52 17:13 (T32)	07:28		07:55
	20:59	65	20:07 (T29)	20:21 20	19:36 (T29)	19:28	18:40 51 18:04 (T32)	17:07		17:06
24	06:19		19:02 (T29)	06:49	07:10 (T27)	07:20	07:53 17:13 (T32)	07:29		07:55
	20:58	65	20:07 (T29)	20:20 4	07:14 (T27)	19:27	18:39 50 18:03 (T32)	17:07		17:07
25	06:20		19:02 (T29)	06:50		07:21	07:54 17:14 (T32)	07:31		07:55
	20:57	65	20:07 (T29)	20:18		19:25	18:37 49 18:03 (T32)	17:06		17:08
26	06:21		19:02 (T29)	06:51		07:22	07:55 17:14 (T32)	07:32		07:56
	20:56	66	20:08 (T29)	20:17		19:23	18:36 49 18:03 (T32)	17:06		17:08
27	06:21		19:02 (T29)	06:52		07:23	07:56 17:14 (T32)	07:33		07:56
	20:55	66	20:08 (T29)	20:15		19:22	18:34 48 18:02 (T32)	17:05		17:09
28	06:22		19:01 (T29)	06:53		07:24	07:57 17:14 (T32)	07:34		07:56
	20:54	66	20:07 (T29)	20:14		19:20	18:33 47 18:01 (T32)	17:05		17:10
29	06:23		19:02 (T29)	06:54		07:26	07:59 17:16 (T32)	07:35		07:57
	20:53	65	20:07 (T29)	20:12		19:18	18:32 45 18:01 (T32)	17:04		17:10
30	06:24		19:02 (T29)	06:55		07:27	08:00 17:16 (T32)	07:36		07:57
	20:52	65	20:07 (T29)	20:11		19:16	18:31 44 18:00 (T32)	17:04		17:11
31	06:25		19:02 (T29)	06:56			08:01 17:17 (T32)			07:57
	20:51	65	20:07 (T29)	20:09			18:29 42 17:59 (T32)			17:12
Potential sun hours	460			429		375	345	297		287
Total, worst case		1910		1585			1187	236		
Sun reduction		0.66		0.61			0.48	0.30		
Oper. time red.		1.00		1.00			1.00	1.00		
Wind dir. red.		0.57		0.60			0.71	0.71		
Total reduction		0.38		0.37			0.35	0.22		
Total, real		730		588			412	51		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 879 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6895)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March	April		May		June
1	07:57	08:29 (T42)	07:44		08:18 (T41)	07:07		06:30		07:18 (T40)	06:01
	17:13	31 09:00 (T42)	17:48	55	09:13 (T41)	18:22		20:27	62	08:20 (T40)	20:57
2	07:57	08:29 (T42)	07:43		08:18 (T41)	07:06		06:29		07:18 (T40)	06:01
	17:14	31 09:00 (T42)	17:49	55	09:13 (T41)	18:23		20:28	61	08:19 (T40)	20:58
3	07:57	08:30 (T42)	07:42		08:18 (T41)	07:04		06:28		07:18 (T40)	06:01
	17:15	30 09:00 (T42)	17:50	55	09:13 (T41)	18:24		20:29	60	08:18 (T40)	20:58
4	07:58	08:30 (T42)	07:40		08:18 (T41)	07:03		06:26		07:18 (T40)	06:00
	17:16	31 09:01 (T42)	17:51	55	09:13 (T41)	18:25		20:30	60	08:18 (T40)	20:59
5	07:58	08:31 (T42)	07:39		08:18 (T41)	07:01		06:25		07:19 (T40)	06:00
	17:17	30 09:01 (T42)	17:53	56	09:14 (T41)	18:26		20:31	58	08:17 (T40)	21:00
6	07:57	08:32 (T42)	07:38		08:18 (T41)	06:59		06:24		07:19 (T40)	06:00
	17:18	29 09:01 (T42)	17:54	55	09:13 (T41)	18:28		20:32	58	08:17 (T40)	21:01
7	07:57	08:30 (T41)	07:37		08:18 (T41)	06:58		06:23		07:20 (T40)	05:59
	17:18	31 09:01 (T42)	17:55	55	09:13 (T41)	18:29		20:33	56	08:16 (T40)	21:01
8	07:57	08:29 (T41)	07:36		08:19 (T41)	07:56		06:22		07:20 (T40)	05:59
	17:19	32 09:01 (T42)	17:56	54	09:13 (T41)	19:30		20:34	55	08:15 (T40)	21:02
9	07:57	08:28 (T41)	07:35		08:19 (T41)	07:55		06:20		07:21 (T40)	05:59
	17:20	33 09:01 (T42)	17:58	54	09:13 (T41)	19:31		20:35	54	08:15 (T40)	21:02
10	07:57	08:27 (T41)	07:34		08:20 (T41)	07:53		06:19		07:22 (T40)	05:59
	17:22	35 09:02 (T42)	17:59	53	09:13 (T41)	19:32		20:37	52	08:14 (T40)	21:03
11	07:57	08:25 (T41)	07:32		08:19 (T41)	07:51		06:18		07:21 (T40)	05:58
	17:23	36 09:01 (T42)	18:00	53	09:12 (T41)	19:33		20:38	51	08:12 (T40)	21:04
12	07:56	08:25 (T41)	07:31		08:20 (T41)	07:50		06:17		07:22 (T40)	05:58
	17:24	36 09:01 (T42)	18:01	51	09:11 (T41)	19:34		20:39	49	08:11 (T40)	21:04
13	07:56	08:25 (T41)	07:30		08:21 (T41)	07:48		06:16		07:23 (T40)	05:58
	17:25	36 09:01 (T42)	18:03	50	09:11 (T41)	19:35		20:40	47	08:10 (T40)	21:05
14	07:56	08:23 (T41)	07:29		08:22 (T41)	07:46		06:15		07:24 (T40)	05:58
	17:26	37 09:00 (T42)	18:04	49	09:11 (T41)	19:37		20:41	45	08:09 (T40)	21:05
15	07:55	08:23 (T41)	07:27		08:22 (T41)	07:45		06:14		07:26 (T40)	05:58
	17:27	37 09:00 (T42)	18:05	47	09:09 (T41)	19:38		20:42	43	08:09 (T40)	21:06
16	07:55	08:22 (T41)	07:26		08:23 (T41)	07:43		06:13		07:27 (T40)	05:58
	17:28	37 08:59 (T41)	18:06	45	09:08 (T41)	19:39		20:43	41	08:08 (T40)	21:06
17	07:55	08:22 (T41)	07:25		08:24 (T41)	07:41		06:12		07:28 (T40)	05:58
	17:29	39 09:01 (T41)	18:07	43	09:07 (T41)	19:40		20:44	39	08:07 (T40)	21:06
18	07:54	08:21 (T41)	07:23		08:25 (T41)	07:40		06:11		07:29 (T40)	05:58
	17:30	41 09:02 (T41)	18:09	41	09:06 (T41)	19:41		20:45	36	08:05 (T40)	21:07
19	07:53	08:21 (T41)	07:22		08:27 (T41)	07:38		06:10		07:30 (T40)	05:58
	17:32	43 09:04 (T41)	18:10	37	09:04 (T41)	19:42		20:46	34	08:04 (T40)	21:07
20	07:53	08:21 (T41)	07:21		08:28 (T41)	07:36		06:09		07:31 (T40)	05:59
	17:33	43 09:04 (T41)	18:11	34	09:02 (T41)	19:43		20:46	31	08:02 (T40)	21:07
21	07:52	08:20 (T41)	07:19		08:30 (T41)	07:35		06:09		07:33 (T40)	05:59
	17:34	45 09:05 (T41)	18:12	30	09:00 (T41)	19:44		20:47	29	08:02 (T40)	21:08
22	07:52	08:20 (T41)	07:18		08:32 (T41)	07:33		06:08		07:35 (T40)	05:59
	17:35	47 09:07 (T41)	18:13	25	08:57 (T41)	19:45		20:48	25	08:00 (T40)	21:08
23	07:51	08:20 (T41)	07:16		08:35 (T41)	07:31		06:07		07:37 (T40)	05:59
	17:36	47 09:07 (T41)	18:15	20	08:55 (T41)	19:46		20:49	20	07:57 (T40)	21:08
24	07:50	08:19 (T41)	07:15		08:40 (T41)	07:30		06:06		07:39 (T40)	05:59
	17:38	49 09:08 (T41)	18:16	8	08:48 (T41)	19:47		20:50	16	07:55 (T40)	21:08
25	07:50	08:19 (T41)	07:13			07:28		06:06		07:43 (T40)	06:00
	17:39	49 09:08 (T41)	18:17			19:49		20:51	9	07:52 (T40)	21:08
26	07:49	08:19 (T41)	07:12			07:26		06:05			06:00
	17:40	51 09:10 (T41)	18:18			19:50		20:52			21:08
27	07:48	08:19 (T41)	07:10			07:25		06:04			06:00
	17:41	51 09:10 (T41)	18:19			19:51		20:53			21:09
28	07:47	08:19 (T41)	07:09			07:23		06:04			06:01
	17:43	52 09:11 (T41)	18:21			19:52		20:54			21:09
29	07:46	08:18 (T41)				07:21		06:03			06:01
	17:44	53 09:11 (T41)				19:53		20:55			21:09
30	07:45	08:18 (T41)				07:20		06:02			06:02
	17:45	54 09:12 (T41)				19:54		20:55			21:09
31	07:44	08:18 (T41)				07:18		06:02			
	17:46	54 09:12 (T41)				19:55		20:56			
Potential sun hours	297		297		370	399		449			453
Total, worst case		1250		1080			1465		1091		
Sun reduction		0.31		0.40			0.52		0.57		
Oper. time red.		1.00		1.00			1.00		1.00		
Wind dir. red.		0.52		0.52			0.65		0.65		
Total reduction		0.16		0.20			0.33		0.36		
Total, real		195		216			482		394		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 879 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6895)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		07:33 (T40)	06:57		07:28 (T40)	07:28			07:02		07:48 (T41)	07:37		08:07 (T41)
	21:09			20:50	49	08:22 (T40)	20:07	50	08:18 (T40)	19:15			17:28	54	08:42 (T41)	17:04	36	08:43 (T42)
2	06:03			06:27		07:32 (T40)	06:58		07:29 (T40)	07:29			07:03		07:49 (T41)	07:38		08:10 (T41)
	21:08			20:49	51	08:23 (T40)	20:06	48	08:17 (T40)	19:13			17:27	54	08:43 (T41)	17:03	35	08:45 (T42)
3	06:03			06:28		07:31 (T40)	06:59		07:30 (T40)	07:30			07:04		07:48 (T41)	07:39		08:12 (T41)
	21:08			20:48	53	08:24 (T40)	20:04	45	08:15 (T40)	19:11			17:26	55	08:43 (T41)	17:03	33	08:45 (T42)
4	06:04			06:29		07:30 (T40)	07:00		07:31 (T40)	07:31			07:06		07:48 (T41)	07:40		08:14 (T41)
	21:08			20:47	55	08:25 (T40)	20:02	42	08:13 (T40)	19:10			17:24	55	08:43 (T41)	17:03	32	08:46 (T42)
5	06:04			06:30		07:30 (T40)	07:01		07:33 (T40)	07:32			07:07		07:48 (T41)	07:41		08:16 (T41)
	21:08			20:46	55	08:25 (T40)	20:01	38	08:11 (T40)	19:08			17:23	55	08:43 (T41)	17:03	31	08:47 (T42)
6	06:05			06:31		07:29 (T40)	07:02		07:35 (T40)	07:33			07:08		07:48 (T41)	07:42		08:18 (T41)
	21:08			20:45	57	08:26 (T40)	19:57	33	08:08 (T40)	19:06			17:22	56	08:44 (T41)	17:03	29	08:47 (T42)
7	06:06			06:32		07:29 (T40)	07:03		07:37 (T40)	07:34			07:09		07:48 (T41)	07:43		08:18 (T42)
	21:07			20:43	57	08:26 (T40)	19:56	28	08:05 (T40)	19:05			17:21	55	08:43 (T41)	17:03	30	08:48 (T42)
8	06:06			06:33		07:28 (T40)	07:04		07:41 (T40)	07:35			07:10		07:48 (T41)	07:44		08:17 (T42)
	21:07			20:42	59	08:27 (T40)	19:54	20	08:01 (T40)	19:03			17:20	55	08:43 (T41)	17:03	31	08:48 (T42)
9	06:07			06:34		07:28 (T40)	07:05		07:48 (T40)	07:36			07:12		07:49 (T41)	07:45		08:18 (T42)
	21:07			20:41	59	08:27 (T40)	19:52	5	07:53 (T40)	19:02			17:19	55	08:44 (T41)	17:03	30	08:48 (T42)
10	06:08			06:35		07:27 (T40)	07:06			07:37			07:13		07:49 (T41)	07:46		08:18 (T42)
	21:06			20:40	61	08:28 (T40)	19:51			19:00			17:18	55	08:44 (T41)	17:03	31	08:49 (T42)
11	06:08			06:36		07:27 (T40)	07:07			07:38			07:14		07:49 (T41)	07:47		08:19 (T42)
	21:06			20:38	61	08:28 (T40)	19:49			18:58			17:17	54	08:43 (T41)	17:03	31	08:50 (T42)
12	06:09			06:37		07:26 (T40)	07:08			07:39			07:15		07:49 (T41)	07:47		08:19 (T42)
	21:06			20:37	62	08:28 (T40)	19:47			18:57			17:16	54	08:43 (T41)	17:03	32	08:51 (T42)
13	06:10			06:38		07:26 (T40)	07:09			07:40			07:16		07:50 (T41)	07:48		08:20 (T42)
	21:05			20:36	63	08:29 (T40)	19:46			18:55			17:15	53	08:43 (T41)	17:03	31	08:51 (T42)
14	06:10			06:39		07:26 (T40)	07:10			07:41			07:18		07:50 (T41)	07:49		08:19 (T42)
	21:05			20:34	63	08:29 (T40)	19:44			18:54			17:14	53	08:43 (T41)	17:03	32	08:51 (T42)
15	06:11			06:40		07:25 (T40)	07:11			07:43			07:19		07:51 (T41)	07:50		08:20 (T42)
	21:04			20:33	64	08:29 (T40)	19:42			18:52			17:13	51	08:42 (T41)	17:03	32	08:52 (T42)
16	06:12			06:41		07:25 (T40)	07:12			07:44			07:20		07:52 (T41)	07:50		08:21 (T42)
	21:04			20:32	64	08:29 (T40)	19:40			18:50			17:12	51	08:43 (T41)	17:04	32	08:53 (T42)
17	06:13			06:42		07:25 (T40)	07:13			07:45			07:21		07:53 (T41)	07:51		08:20 (T42)
	21:03			20:30	64	08:29 (T40)	19:39			18:49			17:11	49	08:42 (T41)	17:04	33	08:53 (T42)
18	06:14			06:43		07:24 (T40)	07:14			07:46		09:09 (T41)	07:22		07:53 (T41)	07:52		08:21 (T42)
	21:02			20:29	64	08:28 (T40)	19:37			18:47	13	09:22 (T41)	17:11	49	08:42 (T41)	17:04	32	08:53 (T42)
19	06:14		07:51 (T40)	06:44		07:24 (T40)	07:15			07:47		09:05 (T41)	07:24		07:54 (T41)	07:52		08:22 (T42)
	21:02	12	08:03 (T40)	20:27	64	08:28 (T40)	19:35			18:46	21	09:26 (T41)	17:10	47	08:41 (T41)	17:05	32	08:54 (T42)
20	06:15		07:48 (T40)	06:45		07:24 (T40)	07:16			07:48		09:02 (T41)	07:25		07:55 (T41)	07:53		08:22 (T42)
	21:01	18	08:06 (T40)	20:26	63	08:27 (T40)	19:34			18:44	28	09:30 (T41)	17:09	47	08:42 (T41)	17:05	32	08:54 (T42)
21	06:16		07:45 (T40)	06:46		07:24 (T40)	07:17			07:49		09:00 (T41)	07:26		07:56 (T41)	07:53		08:23 (T42)
	21:00	23	08:08 (T40)	20:24	63	08:27 (T40)	19:32			18:43	32	09:32 (T41)	17:09	45	08:41 (T41)	17:06	32	08:55 (T42)
22	06:17		07:44 (T40)	06:47		07:24 (T40)	07:18			07:50		08:58 (T41)	07:27		07:57 (T41)	07:54		08:23 (T42)
	20:59	26	08:10 (T40)	20:23	63	08:27 (T40)	19:30			18:42	35	09:33 (T41)	17:08	43	08:40 (T41)	17:06	32	08:55 (T42)
23	06:18		07:42 (T40)	06:48		07:24 (T40)	07:19			07:52		08:56 (T41)	07:28		07:57 (T41)	07:54		08:24 (T42)
	20:59	30	08:12 (T40)	20:21	62	08:26 (T40)	19:28			18:40	39	09:35 (T41)	17:07	43	08:40 (T41)	17:07	32	08:56 (T42)
24	06:19		07:41 (T40)	06:49		07:24 (T40)	07:20			07:53		08:54 (T41)	07:29		07:58 (T41)	07:55		08:24 (T42)
	20:58	33	08:14 (T40)	20:20	62	08:26 (T40)	19:27			18:39	42	09:36 (T41)	17:07	41	08:39 (T41)	17:07	32	08:56 (T42)
25	06:20		07:40 (T40)	06:50		07:24 (T40)	07:21			07:54		08:54 (T41)	07:31		08:00 (T41)	07:55		08:24 (T42)
	20:57	35	08:15 (T40)	20:18	61	08:25 (T40)	19:25			18:37	44	09:38 (T41)	17:06	39	08:39 (T41)	17:08	32	08:56 (T42)
26	06:21		07:39 (T40)	06:51		07:24 (T40)	07:22			07:55		08:53 (T41)	07:32		08:01 (T41)	07:56		08:25 (T42)
	20:56	38	08:17 (T40)	20:17	60	08:24 (T40)	19:23			18:36	45	09:38 (T41)	17:06	37	08:38 (T41)	17:08	32	08:57 (T42)
27	06:22		07:38 (T40)	06:52		07:25 (T40)	07:23			07:56		08:52 (T41)	07:33		08:02 (T41)	07:56		08:26 (T42)
	20:55	40	08:18 (T40)	20:15	59	08:24 (T40)	19:22			18:35	47	09:39 (T41)	17:05	37	08:39 (T42)	17:09	32	08:58 (T42)
28	06:23		07:37 (T40)	06:53		07:25 (T40)	07:24			07:57		08:51 (T41)	07:34		08:03 (T41)	07:56		08:26 (T42)
	20:54	42	08:19 (T40)	20:14	58	08:23 (T40)	19:20			18:33	48	09:39 (T41)	17:05	37	08:40 (T42)	17:10	32	08:58 (T42)
29	06:23		07:35 (T40)	06:54		07:26 (T40)	07:25			07:59		08:51 (T41)	07:35		08:05 (T41)	07:57		08:26 (T42)
	20:53	44	08:19 (T40)	20:12	56	08:22 (T40)	19:18			18:32	50	09:41 (T41)	17:04	36	08:41 (T42)	17:10	32	08:58 (T42)
30	06:24		07:34 (T40)	06:55		07:26 (T40)	07:27			08:00		08:50 (T41)	07:36		08:06 (T41)	07:57		08:28 (T42)
	20:52	46	08:20 (T40)	20:10	55	08:21 (T40)	19:16			18:31	51	09:41 (T41)	17:04	36	08:42 (T42)	17:11	31	08:59 (T42)
31	06:25		07:33 (T40)	06:56		07:27 (T40)				08:01		08:49 (T41)				07:57		08:28 (T42)
	20:51	48	08:21 (T40)	20:09	52	08:19 (T40)				18:29	52	09:41 (T41)				17:12	31	08:59 (T42)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		435			1839			309			547			1451			987	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.65			0.65			0.52			0.52			0.52	
Total reduction		0.42			0.39			0.37			0.24			0.15			0.11	
Total, real		182			710			115			131			218			110	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 880 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6896)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June		
1	07:57	07:43			07:07		17:28 (T77)	07:16			06:30		19:11 (T42)	06:01		20:07 (T41)
	17:13	17:47			18:22	27	17:55 (T77)	19:56			20:27	42	19:53 (T42)	20:57	25	20:32 (T41)
2	07:57	07:42			07:06		17:25 (T77)	07:14			06:29		19:12 (T42)	06:01		20:07 (T41)
	17:14	17:49			18:23	31	17:56 (T77)	19:57			20:28	41	19:53 (T42)	20:58	26	20:33 (T41)
3	07:57	07:41			07:04		17:23 (T77)	07:13			06:28		19:11 (T42)	06:01		20:06 (T41)
	17:15	17:50			18:24	34	17:57 (T77)	19:58			20:29	41	19:52 (T42)	20:58	27	20:33 (T41)
4	07:57	07:40			07:02		17:22 (T77)	07:11			06:26		19:11 (T42)	06:00		20:07 (T41)
	17:16	17:51			18:25	37	17:59 (T77)	19:59			20:30	41	19:52 (T42)	20:59	27	20:34 (T41)
5	07:57	07:39			07:01		17:21 (T77)	07:09			06:25		19:12 (T42)	06:00		20:07 (T41)
	17:17	17:52			18:26	39	18:00 (T77)	20:00			20:31	40	19:52 (T42)	21:00	28	20:35 (T41)
6	07:57	07:38			06:59		17:20 (T77)	07:08			06:24		19:13 (T42)	05:59		20:07 (T41)
	17:17	17:54			18:27	41	18:01 (T77)	20:00			20:32	38	19:51 (T42)	21:00	28	20:35 (T41)
7	07:57	07:37			06:58		17:19 (T77)	07:06			06:23		19:13 (T42)	05:59		20:07 (T41)
	17:18	17:55			18:29	42	18:01 (T77)	20:01			20:33	38	19:51 (T42)	21:01	29	20:36 (T41)
8	07:57	07:36			07:56		18:17 (T77)	07:05			06:22		19:14 (T42)	05:59		20:08 (T41)
	17:19	17:56			19:30	44	19:01 (T77)	20:02			20:34	36	19:50 (T42)	21:02	29	20:37 (T41)
9	07:57	07:35			07:54		08:17 (T76)	07:03			06:20		19:15 (T42)	05:59		20:08 (T41)
	17:20	17:57			19:31	53	19:02 (T77)	20:03			20:35	34	19:49 (T42)	21:02	29	20:37 (T41)
10	07:57	07:34			07:53		08:12 (T76)	07:01			06:19		19:15 (T42)	05:59		20:08 (T41)
	17:21	17:59			19:32	63	19:02 (T77)	20:05			20:36	33	19:48 (T42)	21:03	29	20:37 (T41)
11	07:57	07:32			07:51		08:10 (T76)	07:00			06:18		19:16 (T42)	05:58		20:09 (T41)
	17:23	18:00			19:33	66	19:02 (T77)	20:06			20:37	31	19:47 (T42)	21:03	29	20:38 (T41)
12	07:56	07:31			07:50		08:09 (T76)	06:58			06:17		19:17 (T42)	05:58		20:08 (T41)
	17:24	18:01			19:34	70	19:02 (T77)	20:07			20:38	29	19:46 (T42)	21:04	29	20:37 (T41)
13	07:56	07:30			07:48		08:07 (T76)	06:57			06:16		19:18 (T42)	05:58		20:08 (T41)
	17:25	18:02			19:35	73	19:02 (T77)	20:08			20:39	26	19:44 (T42)	21:05	29	20:37 (T41)
14	07:56	07:29			07:46		08:05 (T76)	06:55		19:28 (T42)	06:15		19:19 (T42)	05:58		20:08 (T41)
	17:26	18:04			19:36	75	19:01 (T77)	20:09	15	19:43 (T42)	20:40	24	19:43 (T42)	21:05	29	20:37 (T41)
15	07:55	07:27			07:45		08:04 (T76)	06:53		19:24 (T42)	06:14		19:21 (T42)	05:58		20:09 (T41)
	17:27	18:05			19:38	77	19:01 (T77)	20:10	21	19:45 (T42)	20:41	20	19:41 (T42)	21:05	28	20:37 (T41)
16	07:55	07:26			07:43		08:03 (T76)	06:52		19:22 (T42)	06:13		19:24 (T42)	05:58		20:09 (T41)
	17:28	18:06			19:39	77	19:00 (T77)	20:11	26	19:48 (T42)	20:42	16	19:40 (T42)	21:06	29	20:38 (T41)
17	07:54	07:25			07:41		08:02 (T76)	06:50		19:20 (T42)	06:12		19:27 (T42)	05:58		20:10 (T41)
	17:29	18:07			19:40	78	19:00 (T77)	20:12	29	19:49 (T42)	20:43	10	19:37 (T42)	21:06	29	20:39 (T41)
18	07:54	07:23			07:40		08:02 (T76)	06:49		19:19 (T42)	06:11		20:15 (T41)	05:58		20:10 (T41)
	17:30	18:09			19:41	77	18:59 (T77)	20:13	31	19:50 (T42)	20:44	6	20:21 (T41)	21:07	29	20:39 (T41)
19	07:53	07:22			07:38		08:01 (T76)	06:47		19:17 (T42)	06:10		20:13 (T41)	05:58		20:10 (T41)
	17:32	18:10			19:42	76	18:58 (T77)	20:14	34	19:51 (T42)	20:45	9	20:22 (T41)	21:07	29	20:39 (T41)
20	07:53	07:20			07:36		08:00 (T76)	06:46		19:16 (T42)	06:09		20:11 (T41)	05:59		20:10 (T41)
	17:33	18:11			19:43	76	18:57 (T77)	20:15	36	19:52 (T42)	20:46	12	20:23 (T41)	21:07	29	20:39 (T41)
21	07:52	07:19			07:35		08:01 (T76)	06:44		19:15 (T42)	06:09		20:10 (T41)	05:59		20:10 (T41)
	17:34	18:12			19:44	72	18:56 (T77)	20:16	38	19:53 (T42)	20:47	13	20:23 (T41)	21:08	29	20:39 (T41)
22	07:52	07:18			07:33		08:00 (T76)	06:43		19:14 (T42)	06:08		20:10 (T41)	05:59		20:10 (T41)
	17:35	18:13			19:45	71	18:55 (T77)	20:17	39	19:53 (T42)	20:48	15	20:25 (T41)	21:08	29	20:39 (T41)
23	07:51	07:16			07:31		08:00 (T76)	06:41		19:14 (T42)	06:07		20:09 (T41)	05:59		20:11 (T41)
	17:36	18:15			19:46	67	18:53 (T77)	20:18	40	19:54 (T42)	20:49	16	20:25 (T41)	21:08	29	20:40 (T41)
24	07:50	07:15			07:30		08:01 (T76)	06:40		19:12 (T42)	06:06		20:08 (T41)	05:59		20:11 (T41)
	17:38	18:16			19:47	62	18:52 (T77)	20:19	42	19:54 (T42)	20:50	18	20:26 (T41)	21:08	29	20:40 (T41)
25	07:49	07:13			07:28		08:01 (T76)	06:38		19:12 (T42)	06:06		20:08 (T41)	06:00		20:11 (T41)
	17:39	18:17			19:48	57	18:49 (T77)	20:21	42	19:54 (T42)	20:51	19	20:27 (T41)	21:08	29	20:40 (T41)
26	07:49	07:12			07:26		08:02 (T76)	06:37		19:11 (T42)	06:05		20:07 (T41)	06:00		20:12 (T41)
	17:40	18:18			19:50	49	18:46 (T77)	20:22	43	19:54 (T42)	20:52	21	20:28 (T41)	21:08	29	20:41 (T41)
27	07:48	07:10		17:34 (T77)	07:24		08:02 (T76)	06:36		19:11 (T42)	06:04		20:08 (T41)	06:00		20:12 (T41)
	17:41	18:19	16	17:50 (T77)	19:51	40	18:42 (T77)	20:23	43	19:54 (T42)	20:53	21	20:29 (T41)	21:08	28	20:40 (T41)
28	07:47	07:09		17:30 (T77)	07:23		08:04 (T76)	06:34		19:11 (T42)	06:04		20:07 (T41)	06:01		20:12 (T41)
	17:42	18:21	22	17:52 (T77)	19:52	22	08:26 (T76)	20:24	43	19:54 (T42)	20:54	22	20:29 (T41)	21:09	28	20:40 (T41)
29	07:46				07:21		08:06 (T76)	06:33		19:11 (T42)	06:03		20:06 (T41)	06:01		20:12 (T41)
	17:44				19:53	17	08:23 (T76)	20:25	42	19:53 (T42)	20:54	24	20:30 (T41)	21:09	29	20:41 (T41)
30	07:45				07:19		08:09 (T76)	06:32		19:11 (T42)	06:02		20:07 (T41)	06:02		20:12 (T41)
	17:45				19:54	10	08:19 (T76)	20:26	42	19:53 (T42)	20:55	24	20:31 (T41)	21:08	29	20:41 (T41)
31	07:44				07:18						06:02		20:06 (T41)			
	17:46				19:55						20:56	25	20:31 (T41)			
Potential sun hours	297	297			370			399			448			453		
Total, worst case			38			1623			606			785			854	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.67			0.64			0.57			0.56			0.54	
Total reduction			0.27			0.28			0.30			0.32			0.35	
Total, real			10			462			182			254			299	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 880 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6896)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		20:13 (T41)	06:26		19:27 (T42)	06:57		07:27	07:47 (T76)	07:02	07:37
	21:08	29	20:42 (T41)	20:50	30	19:57 (T42)	20:07		19:15	72	18:41 (T77)	17:28	17:04
2	06:03		20:12 (T41)	06:27		19:26 (T42)	06:58		07:29	07:48 (T76)	07:03	07:38
	21:08	29	20:41 (T41)	20:49	32	19:58 (T42)	20:06		19:13	68	18:40 (T77)	17:27	17:03
3	06:03		20:13 (T41)	06:28		19:25 (T42)	06:59		07:30	07:49 (T76)	07:04	07:39
	21:08	29	20:42 (T41)	20:48	33	19:58 (T42)	20:04		19:11	64	18:40 (T77)	17:26	17:03
4	06:04		20:13 (T41)	06:29		19:24 (T42)	07:00		07:31	07:51 (T76)	07:06	07:40
	21:08	29	20:42 (T41)	20:47	35	19:59 (T42)	20:02		19:10	58	18:39 (T77)	17:24	17:03
5	06:04		20:13 (T41)	06:30		19:23 (T42)	07:01		07:32	17:55 (T77)	07:07	07:41
	21:08	29	20:42 (T41)	20:46	37	20:00 (T42)	20:01		19:08	44	18:39 (T77)	17:23	17:03
6	06:05		20:13 (T41)	06:31		19:23 (T42)	07:02		07:33	17:55 (T77)	07:08	07:42
	21:08	29	20:42 (T41)	20:44	38	20:01 (T42)	19:57		19:06	43	18:38 (T77)	17:22	17:03
7	06:05		20:13 (T41)	06:32		19:22 (T42)	07:03		07:34	17:55 (T77)	07:09	07:43
	21:07	29	20:42 (T41)	20:43	39	20:01 (T42)	19:56		19:05	42	18:37 (T77)	17:21	17:03
8	06:06		20:14 (T41)	06:33		19:22 (T42)	07:04		07:35	17:56 (T77)	07:10	07:44
	21:07	28	20:42 (T41)	20:42	39	20:01 (T42)	19:54		19:03	40	18:36 (T77)	17:20	17:03
9	06:07		20:14 (T41)	06:34		19:21 (T42)	07:05		07:36	17:56 (T77)	07:12	07:45
	21:07	27	20:41 (T41)	20:41	41	20:02 (T42)	19:52		19:01	39	18:35 (T77)	17:19	17:03
10	06:07		20:14 (T41)	06:35		19:21 (T42)	07:06		07:37	17:57 (T77)	07:13	07:46
	21:06	27	20:41 (T41)	20:39	41	20:02 (T42)	19:51		19:00	36	18:33 (T77)	17:18	17:03
11	06:08		20:15 (T41)	06:36		19:20 (T42)	07:07		07:38	17:58 (T77)	07:14	07:46
	21:06	26	20:41 (T41)	20:38	42	20:02 (T42)	19:49		18:58	33	18:31 (T77)	17:17	17:03
12	06:09		20:14 (T41)	06:37		19:20 (T42)	07:08		07:39	17:59 (T77)	07:15	07:47
	21:06	26	20:40 (T41)	20:37	42	20:02 (T42)	19:47		18:57	30	18:29 (T77)	17:16	17:03
13	06:10		20:15 (T41)	06:38		19:20 (T42)	07:09		08:01 (T76)	07:40	18:01 (T77)	07:16	07:48
	21:05	25	20:40 (T41)	20:36	42	20:02 (T42)	19:45	9	08:10 (T76)	18:55	26	18:27 (T77)	17:15	17:03
14	06:10		20:15 (T41)	06:39		19:19 (T42)	07:10		07:57 (T76)	07:41	18:03 (T77)	07:18	07:49
	21:05	24	20:39 (T41)	20:34	43	20:02 (T42)	19:44	16	08:13 (T76)	18:54	21	18:24 (T77)	17:14	17:03
15	06:11		20:16 (T41)	06:40		19:19 (T42)	07:11		07:54 (T76)	07:42	18:08 (T77)	07:19	07:50
	21:04	23	20:39 (T41)	20:33	43	20:02 (T42)	19:42	21	08:15 (T76)	18:52	12	18:20 (T77)	17:13	17:03
16	06:12		20:16 (T41)	06:41		19:18 (T42)	07:12		07:52 (T76)	07:44			07:20	07:50
	21:03	22	20:38 (T41)	20:31	43	20:01 (T42)	19:40	38	18:31 (T77)	18:50			17:12	17:04
17	06:13		20:16 (T41)	06:42		19:18 (T42)	07:13		07:50 (T76)	07:45			07:21	07:51
	21:03	21	20:37 (T41)	20:30	42	20:00 (T42)	19:39	48	18:34 (T77)	18:49			17:11	17:04
18	06:14		20:17 (T41)	06:43		19:18 (T42)	07:14		07:49 (T76)	07:46			07:22	07:52
	21:02	20	20:37 (T41)	20:29	42	20:00 (T42)	19:37	55	18:36 (T77)	18:47			17:11	17:04
19	06:14		20:18 (T41)	06:44		19:18 (T42)	07:15		07:48 (T76)	07:47			07:23	07:52
	21:01	19	20:37 (T41)	20:27	41	19:59 (T42)	19:35	61	18:38 (T77)	18:46			17:10	17:05
20	06:15		20:19 (T41)	06:45		19:19 (T42)	07:16		07:47 (T76)	07:48			07:25	07:53
	21:01	17	20:36 (T41)	20:26	40	19:59 (T42)	19:33	65	18:39 (T77)	18:44			17:09	17:05
21	06:16		20:19 (T41)	06:46		19:19 (T42)	07:17		07:46 (T76)	07:49			07:26	07:53
	21:00	16	20:35 (T41)	20:24	39	19:58 (T42)	19:32	69	18:40 (T77)	18:43			17:08	17:06
22	06:17		20:20 (T41)	06:47		19:19 (T42)	07:18		07:45 (T76)	07:50			07:27	07:54
	20:59	14	20:34 (T41)	20:23	38	19:57 (T42)	19:30	72	18:40 (T77)	18:41			17:08	17:06
23	06:18		20:21 (T41)	06:48		19:20 (T42)	07:19		07:45 (T76)	07:51			07:28	07:54
	20:58	12	20:33 (T41)	20:21	36	19:56 (T42)	19:28	74	18:41 (T77)	18:40			17:07	17:07
24	06:19		20:22 (T41)	06:49		19:21 (T42)	07:20		07:44 (T76)	07:53			07:29	07:55
	20:58	11	20:33 (T41)	20:20	34	19:55 (T42)	19:27	76	18:41 (T77)	18:39			17:07	17:07
25	06:20		20:24 (T41)	06:50		19:22 (T42)	07:21		07:44 (T76)	07:54			07:30	07:55
	20:57	8	20:32 (T41)	20:18	31	19:53 (T42)	19:25	77	18:42 (T77)	18:37			17:06	17:08
26	06:21		19:40 (T42)	06:51		19:23 (T42)	07:22		07:44 (T76)	07:55			07:32	07:56
	20:56	9	20:31 (T41)	20:17	28	19:51 (T42)	19:23	78	18:42 (T77)	18:36			17:06	17:08
27	06:22		19:36 (T42)	06:52		19:24 (T42)	07:23		07:44 (T76)	07:56			07:33	07:56
	20:55	13	19:49 (T42)	20:15	25	19:49 (T42)	19:21	78	18:42 (T77)	18:34			17:05	17:09
28	06:22		19:34 (T42)	06:53		19:26 (T42)	07:24		07:44 (T76)	07:57			07:34	07:56
	20:54	18	19:52 (T42)	20:14	21	19:47 (T42)	19:20	78	18:42 (T77)	18:33			17:05	17:10
29	06:23		19:31 (T42)	06:54		19:30 (T42)	07:25		07:45 (T76)	07:58			07:35	07:57
	20:53	22	19:53 (T42)	20:12	13	19:43 (T42)	19:18	77	18:42 (T77)	18:32			17:04	17:10
30	06:24		19:29 (T42)	06:55			07:26		07:46 (T76)	08:00			07:36	07:57
	20:52	25	19:54 (T42)	20:10			19:16	73	18:41 (T77)	18:30			17:04	17:11
31	06:25		19:28 (T42)	06:56						08:01				07:57
	20:51	27	19:55 (T42)	20:09						18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		683			1050			1065			628			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.55			0.57			0.63			0.66			
Total reduction		0.36			0.35			0.38			0.32			
Total, real		249			371			401			201			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 923 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6930)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:38 (T38)	07:44		08:45 (T38)	07:07		07:27 (T37)	07:16			06:30			06:02		06:26 (T87)
	17:13	55	09:33 (T38)	17:48	61	09:46 (T38)	18:22	23	07:50 (T37)	19:56			20:27			20:57	58	07:24 (T34)
2	07:58		08:38 (T38)	07:43		08:45 (T38)	07:06		07:25 (T37)	07:15			06:29			06:01		06:27 (T87)
	17:14	56	09:34 (T38)	17:49	61	09:46 (T38)	18:23	25	07:50 (T37)	19:57			20:28			20:58	58	07:25 (T34)
3	07:58		08:38 (T38)	07:42		08:46 (T38)	07:04		07:24 (T37)	07:13			06:28			06:01		06:27 (T87)
	17:15	57	09:35 (T38)	17:50	59	09:45 (T38)	18:24	28	07:52 (T37)	19:58			20:29			20:59	57	07:24 (T34)
4	07:58		08:39 (T38)	07:41		08:47 (T38)	07:03		07:22 (T37)	07:11			06:27			06:00		06:27 (T87)
	17:16	56	09:35 (T38)	17:51	58	09:45 (T38)	18:25	30	07:52 (T37)	19:59			20:30			20:59	58	07:25 (T34)
5	07:58		08:39 (T38)	07:40		08:47 (T38)	07:01		07:21 (T37)	07:10			06:25			06:00		06:28 (T87)
	17:17	57	09:36 (T38)	17:53	58	09:45 (T38)	18:27	31	07:52 (T37)	20:01			20:32			21:00	58	07:26 (T34)
6	07:58		08:39 (T38)	07:39		08:48 (T38)	07:00		07:21 (T37)	07:08			06:24			06:00		06:28 (T87)
	17:18	58	09:37 (T38)	17:54	56	09:44 (T38)	18:28	31	07:52 (T37)	20:01			20:33			21:01	58	07:26 (T34)
7	07:58		08:39 (T38)	07:37		08:49 (T38)	06:58		07:20 (T37)	07:06			06:23			05:59		06:28 (T87)
	17:19	59	09:38 (T38)	17:55	54	09:43 (T38)	18:29	32	07:52 (T37)	20:02			20:34			21:02	58	07:26 (T34)
8	07:58		08:40 (T38)	07:36		08:49 (T38)	07:56		08:20 (T37)	07:05			06:22			05:59		06:28 (T87)
	17:20	59	09:39 (T38)	17:56	53	09:42 (T38)	19:30	32	08:52 (T37)	20:03			20:35			21:02	59	07:27 (T34)
9	07:57		08:39 (T38)	07:35		08:51 (T38)	07:55		08:20 (T37)	07:03			06:21			05:59		06:29 (T87)
	17:21	60	09:39 (T38)	17:58	50	09:41 (T38)	19:31	31	08:51 (T37)	20:04			20:36			21:03	58	07:27 (T34)
10	07:57		08:40 (T38)	07:34		08:52 (T38)	07:53		08:20 (T37)	07:02			06:19			05:59		06:29 (T87)
	17:22	59	09:39 (T38)	17:59	48	09:40 (T38)	19:32	30	08:50 (T37)	20:05			20:37			21:03	59	07:28 (T34)
11	07:57		08:40 (T38)	07:33		08:53 (T38)	07:52		08:21 (T37)	07:00			06:18			05:59		06:30 (T87)
	17:23	60	09:40 (T38)	18:00	46	09:39 (T38)	19:33	29	08:50 (T37)	20:06			20:38			21:04	58	07:28 (T34)
12	07:57		08:40 (T38)	07:31		08:54 (T38)	07:50		08:21 (T37)	06:58			06:17		06:38 (T87)	05:58		06:30 (T87)
	17:24	60	09:40 (T38)	18:01	43	09:37 (T38)	19:35	28	08:49 (T37)	20:07			20:39	11	06:49 (T87)	21:04	58	07:28 (T34)
13	07:56		08:40 (T38)	07:30		08:56 (T38)	07:48		08:21 (T37)	06:57			06:16		06:37 (T87)	05:58		06:30 (T87)
	17:25	61	09:41 (T38)	18:03	39	09:35 (T38)	19:36	26	08:47 (T37)	20:08			20:40	14	06:51 (T87)	21:05	59	07:29 (T34)
14	07:56		08:41 (T38)	07:29		08:58 (T38)	07:47		08:23 (T37)	06:55			06:15		06:36 (T87)	05:58		06:31 (T87)
	17:26	61	09:42 (T38)	18:04	36	09:34 (T38)	19:37	23	08:46 (T37)	20:09			20:41	27	07:03 (T34)	21:05	58	07:29 (T34)
15	07:56		08:40 (T38)	07:28		08:59 (T38)	07:45		08:24 (T37)	06:54			06:14		06:35 (T87)	05:58		06:31 (T87)
	17:27	62	09:42 (T38)	18:05	32	09:31 (T38)	19:38	20	08:44 (T37)	20:10			20:42	32	07:07 (T34)	21:06	58	07:29 (T34)
16	07:55		08:41 (T38)	07:26		09:02 (T38)	07:43		08:25 (T37)	06:52			06:13		06:34 (T87)	05:58		06:31 (T87)
	17:28	62	09:43 (T38)	18:06	26	09:28 (T38)	19:39	16	08:41 (T37)	20:11			20:43	35	07:09 (T34)	21:06	58	07:29 (T34)
17	07:55		08:41 (T38)	07:25		09:06 (T38)	07:42		08:29 (T37)	06:51			06:12		06:33 (T87)	05:58		06:31 (T87)
	17:29	62	09:43 (T38)	18:08	19	09:25 (T38)	19:40	9	08:38 (T37)	20:12			20:44	38	07:11 (T34)	21:07	59	07:30 (T34)
18	07:54		08:41 (T38)	07:24		09:11 (T38)	07:40			06:49			06:11		06:32 (T87)	05:58		06:31 (T87)
	17:31	64	09:45 (T38)	18:09	7	09:18 (T38)	19:41			20:13			20:45	40	07:12 (T34)	21:07	59	07:30 (T34)
19	07:54		08:41 (T38)	07:22			07:38			06:47			06:10		06:31 (T87)	05:59		06:32 (T87)
	17:32	64	09:45 (T38)	18:10			19:42			20:14			20:46	43	07:14 (T34)	21:07	58	07:30 (T34)
20	07:53		08:41 (T38)	07:21			07:37			06:46			06:10		06:30 (T87)	05:59		06:32 (T87)
	17:33	64	09:45 (T38)	18:11			19:43			20:16			20:47	45	07:15 (T34)	21:08	58	07:30 (T34)
21	07:53		08:42 (T38)	07:19			07:35			06:44			06:09		06:30 (T87)	05:59		06:32 (T87)
	17:34	64	09:46 (T38)	18:12			19:44			20:17			20:48	47	07:17 (T34)	21:08	58	07:30 (T34)
22	07:52		08:42 (T38)	07:18			07:33			06:43			06:08		06:29 (T87)	05:59		06:33 (T87)
	17:35	64	09:46 (T38)	18:14			19:45			20:18			20:49	48	07:17 (T34)	21:08	58	07:31 (T34)
23	07:51		08:42 (T38)	07:16			07:31			06:42			06:07		06:28 (T87)	05:59		06:33 (T87)
	17:36	64	09:46 (T38)	18:15			19:47			20:19			20:50	50	07:18 (T34)	21:08	58	07:31 (T34)
24	07:51		08:42 (T38)	07:15			07:30			06:40			06:06		06:28 (T87)	06:00		06:32 (T87)
	17:38	64	09:46 (T38)	18:16			19:48			20:20			20:50	51	07:19 (T34)	21:09	59	07:31 (T34)
25	07:50		08:43 (T38)	07:14		07:37 (T37)	07:28			06:39			06:06		06:27 (T87)	06:00		06:32 (T87)
	17:39	64	09:47 (T38)	18:17	2	07:39 (T37)	19:49			20:21			20:51	53	07:20 (T34)	21:09	59	07:31 (T34)
26	07:49		08:43 (T38)	07:12		07:32 (T37)	07:26			06:37			06:05		06:26 (T87)	06:00		06:33 (T87)
	17:40	64	09:47 (T38)	18:18	13	07:45 (T37)	19:50			20:22			20:52	54	07:20 (T34)	21:09	58	07:31 (T34)
27	07:48		08:43 (T38)	07:11		07:30 (T37)	07:25			06:36			06:04		06:27 (T87)	06:01		06:33 (T87)
	17:41	64	09:47 (T38)	18:20	17	07:47 (T37)	19:51			20:23			20:53	55	07:22 (T34)	21:09	58	07:31 (T34)
28	07:47		08:43 (T38)	07:09		07:28 (T37)	07:23			06:34			06:04		06:26 (T87)	06:01		06:33 (T87)
	17:43	64	09:47 (T38)	18:21	20	07:48 (T37)	19:52			20:24			20:54	56	07:22 (T34)	21:09	58	07:31 (T34)
29	07:47		08:44 (T38)				07:21			06:33			06:03		06:27 (T87)	06:01		06:33 (T87)
	17:44	62	09:46 (T38)				19:53			20:25			20:55	56	07:23 (T34)	21:09	59	07:32 (T34)
30	07:46		08:44 (T38)				07:20			06:32			06:03		06:26 (T87)	06:02		06:33 (T87)
	17:45	62	09:46 (T38)				19:54			20:26			20:56	57	07:23 (T34)	21:09	58	07:31 (T34)
31	07:45		08:44 (T38)				07:18						06:02		06:27 (T87)			
	17:46	62	09:46 (T38)				19:55						20:56	57	07:24 (T34)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1894			858			444						869			1747	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.53			0.53			0.57						0.71			0.71	
Total reduction		0.16			0.20			0.24						0.39			0.43	
Total, real		294			173			106						336			758	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 923 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6930)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:34 (T87)	06:26		06:48 (T87)	06:58		07:28		08:01 (T37)	07:02		08:21 (T38)	07:37		08:22 (T38)
	21:09	58	07:32 (T34)	20:50	9	06:57 (T87)	20:07		19:15	27	08:28 (T37)	17:28	49	09:10 (T38)	17:04	60	09:22 (T38)
2	06:03		06:33 (T87)	06:27			06:59		07:29		07:59 (T37)	07:04		08:20 (T38)	07:38		08:23 (T38)
	21:09	59	07:32 (T34)	20:49			20:06		19:13	29	08:28 (T37)	17:27	51	09:11 (T38)	17:04	60	09:23 (T38)
3	06:03		06:34 (T87)	06:28			07:00		07:30		07:58 (T37)	07:05		08:19 (T38)	07:39		08:23 (T38)
	21:09	58	07:32 (T34)	20:48			20:04		19:12	30	08:28 (T37)	17:26	53	09:12 (T38)	17:03	60	09:23 (T38)
4	06:04		06:33 (T87)	06:29			07:01		07:31		07:58 (T37)	07:06		08:18 (T38)	07:40		08:24 (T38)
	21:08	59	07:32 (T34)	20:47			20:03		19:10	31	08:29 (T37)	17:25	54	09:12 (T38)	17:03	59	09:23 (T38)
5	06:04		06:34 (T87)	06:30			07:02		07:32		07:57 (T37)	07:07		08:18 (T38)	07:41		08:24 (T38)
	21:08	58	07:32 (T34)	20:46			20:01		19:08	31	08:28 (T37)	17:23	56	09:14 (T38)	17:03	59	09:23 (T38)
6	06:05		06:34 (T87)	06:31			07:03		07:33		07:57 (T37)	07:08		08:17 (T38)	07:42		08:25 (T38)
	21:08	59	07:33 (T34)	20:45			19:58		19:07	31	08:28 (T37)	17:22	57	09:14 (T38)	17:03	58	09:23 (T38)
7	06:06		06:34 (T87)	06:32			07:04		07:34		07:56 (T37)	07:10		08:16 (T38)	07:43		08:26 (T38)
	21:08	58	07:32 (T34)	20:44			19:56		19:05	32	08:28 (T37)	17:21	59	09:15 (T38)	17:03	57	09:23 (T38)
8	06:06		06:34 (T87)	06:33			07:05		07:35		07:56 (T37)	07:11		08:17 (T38)	07:44		08:27 (T38)
	21:07	58	07:32 (T34)	20:42			19:54		19:03	31	08:27 (T37)	17:20	59	09:16 (T38)	17:03	56	09:23 (T38)
9	06:07		06:34 (T87)	06:34			07:06		07:36		07:56 (T37)	07:12		08:16 (T38)	07:45		08:27 (T38)
	21:07	58	07:32 (T34)	20:41			19:53		19:02	31	08:27 (T37)	17:19	61	09:17 (T38)	17:03	57	09:24 (T38)
10	06:08		06:34 (T87)	06:35			07:07		07:37		07:57 (T37)	07:13		08:16 (T38)	07:46		08:28 (T38)
	21:07	58	07:32 (T34)	20:40			19:51		19:00	29	08:26 (T37)	17:18	61	09:17 (T38)	17:03	56	09:24 (T38)
11	06:08		06:35 (T87)	06:36			07:08		07:38		07:58 (T37)	07:14		08:15 (T38)	07:47		08:28 (T38)
	21:06	57	07:32 (T34)	20:39			19:49		18:59	27	08:25 (T37)	17:17	62	09:17 (T38)	17:03	55	09:23 (T38)
12	06:09		06:34 (T87)	06:37			07:09		07:39		08:00 (T37)	07:16		08:16 (T38)	07:48		08:29 (T38)
	21:06	57	07:31 (T34)	20:37			19:47		18:57	24	08:24 (T37)	17:16	62	09:18 (T38)	17:03	55	09:24 (T38)
13	06:10		06:35 (T87)	06:38			07:10		07:41		08:01 (T37)	07:17		08:16 (T38)	07:48		08:30 (T38)
	21:05	56	07:31 (T34)	20:36			19:46		18:55	22	08:23 (T37)	17:15	62	09:18 (T38)	17:03	54	09:24 (T38)
14	06:11		06:35 (T87)	06:39			07:11		07:42		08:02 (T37)	07:18		08:15 (T38)	07:49		08:31 (T38)
	21:05	56	07:31 (T34)	20:35			19:44		18:54	19	08:21 (T37)	17:14	64	09:19 (T38)	17:03	54	09:25 (T38)
15	06:11		06:35 (T87)	06:40			07:12		07:43		08:03 (T37)	07:19		08:16 (T38)	07:50		08:30 (T38)
	21:04	56	07:31 (T34)	20:33			19:42		18:52	16	08:19 (T37)	17:13	64	09:20 (T38)	17:04	54	09:24 (T38)
16	06:12		06:35 (T87)	06:41			07:13		07:44		08:04 (T37)	07:20		08:16 (T38)	07:51		08:31 (T38)
	21:04	55	07:30 (T34)	20:32			19:41		18:51	11	08:15 (T37)	17:12	64	09:20 (T38)	17:04	54	09:25 (T38)
17	06:13		06:35 (T87)	06:42			07:14		07:45			07:21		08:16 (T38)	07:51		08:32 (T38)
	21:03	55	07:30 (T34)	20:30			19:39		18:49			17:12	64	09:20 (T38)	17:04	54	09:26 (T38)
18	06:14		06:36 (T87)	06:43			07:15		07:46			07:23		08:16 (T38)	07:52		08:32 (T38)
	21:03	54	07:30 (T34)	20:29			19:37		18:48			17:11	64	09:20 (T38)	17:04	53	09:25 (T38)
19	06:15		06:37 (T87)	06:44			07:16		07:47			07:24		08:17 (T38)	07:53		08:33 (T38)
	21:02	52	07:29 (T34)	20:28			19:35		18:46			17:10	64	09:21 (T38)	17:05	53	09:26 (T38)
20	06:15		06:38 (T87)	06:45			07:17		07:48			07:25		08:17 (T38)	07:53		08:34 (T38)
	21:01	51	07:29 (T34)	20:26			19:34		18:45			17:09	64	09:21 (T38)	17:05	53	09:27 (T38)
21	06:16		06:39 (T87)	06:46			07:18		07:49			07:26		08:17 (T38)	07:54		08:34 (T38)
	21:00	49	07:28 (T34)	20:25			19:32		18:43			17:09	64	09:21 (T38)	17:06	53	09:27 (T38)
22	06:17		06:39 (T87)	06:47			07:19		07:51			07:27		08:17 (T38)	07:54		08:35 (T38)
	21:00	48	07:27 (T34)	20:23			19:30		18:42			17:08	64	09:21 (T38)	17:06	53	09:28 (T38)
23	06:18		06:40 (T87)	06:48			07:20		07:52			07:29		08:18 (T38)	07:55		08:35 (T38)
	20:59	46	07:26 (T34)	20:22			19:29		18:40			17:07	64	09:22 (T38)	17:07	53	09:28 (T38)
24	06:19		06:41 (T87)	06:49			07:21		07:53		09:39 (T38)	07:30		08:18 (T38)	07:55		08:35 (T38)
	20:58	44	07:25 (T34)	20:20			19:27		18:39	12	09:51 (T38)	17:07	64	09:22 (T38)	17:07	53	09:28 (T38)
25	06:20		06:42 (T87)	06:50			07:22		07:54		09:34 (T38)	07:31		08:19 (T38)	07:56		08:36 (T38)
	20:57	42	07:24 (T34)	20:19			19:25		18:37	22	09:56 (T38)	17:06	63	09:22 (T38)	17:08	53	09:29 (T38)
26	06:21		06:43 (T87)	06:51			07:23		07:55		09:31 (T38)	07:32		08:19 (T38)	07:56		08:36 (T38)
	20:56	39	07:22 (T34)	20:17			19:23	2	08:16 (T37)	18:36	28	09:59 (T38)	17:06	62	09:21 (T38)	17:08	54	09:30 (T38)
27	06:22		06:44 (T87)	06:52			07:24		08:08 (T37)	07:56		09:28 (T38)	07:33		08:19 (T38)	07:56		08:36 (T38)
	20:55	37	07:21 (T34)	20:15			19:22	14	08:22 (T37)	18:35	33	10:01 (T38)	17:05	62	09:21 (T38)	17:09	54	09:30 (T38)
28	06:23		06:45 (T87)	06:53			07:25		08:06 (T37)	07:58		09:27 (T38)	07:34		08:20 (T38)	07:57		08:37 (T38)
	20:54	34	07:19 (T34)	20:14			19:20	19	08:25 (T37)	18:33	37	10:04 (T38)	17:05	61	09:21 (T38)	17:10	54	09:31 (T38)
29	06:24		06:46 (T87)	06:55			07:26		08:04 (T37)	07:59		09:25 (T38)	07:35		08:21 (T38)	07:57		08:37 (T38)
	20:54	30	07:16 (T34)	20:12			19:18	22	08:26 (T37)	18:32	40	10:05 (T38)	17:05	61	09:22 (T38)	17:11	55	09:32 (T38)
30	06:25		06:47 (T87)	06:56			07:27		08:02 (T37)	08:00		09:23 (T38)	07:36		08:22 (T38)	07:57		08:38 (T38)
	20:53	23	07:11 (T34)	20:11			19:17	25	08:27 (T37)	18:31	44	10:07 (T38)	17:04	60	09:22 (T38)	17:11	54	09:32 (T38)
31	06:25		06:47 (T87)	06:57						08:01		09:22 (T38)				07:57		08:38 (T38)
	20:51	13	07:00 (T87)	20:09						18:29	46	10:08 (T38)				17:12	55	09:33 (T38)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		1537			9			82			683			1819			1712	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.71			0.71			0.57			0.55			0.53			0.53	
Total reduction		0.45			0.41			0.32			0.25			0.15			0.11	
Total, real		687			4			26			173			273			188	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 932 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6939)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43		16:21 (T77)	07:07	07:37 (T76)	07:16	18:29 (T42)	06:30	19:38 (T41)	06:01
	17:13		17:47	48	17:09 (T77)	18:22	28	08:05 (T76)	19:56	43	19:12 (T42)	20:27	27	20:05 (T41)	20:57
2	07:57		07:42		16:21 (T77)	07:06	07:37 (T76)	07:14	18:30 (T42)	06:29	19:37 (T41)	06:01
	17:14		17:49	49	17:10 (T77)	18:23	26	08:03 (T76)	19:57	41	19:11 (T42)	20:28	29	20:06 (T41)	20:58
3	07:57		07:41		16:22 (T77)	07:04	07:38 (T76)	07:13	18:31 (T42)	06:28	19:36 (T41)	06:01
	17:15		17:50	48	17:10 (T77)	18:24	23	08:01 (T76)	19:58	39	19:10 (T42)	20:29	30	20:06 (T41)	20:58
4	07:57		07:40		16:22 (T77)	07:02	07:40 (T76)	07:11	18:31 (T42)	06:26	19:36 (T41)	06:00
	17:16		17:51	48	17:10 (T77)	18:25	20	08:00 (T76)	19:59	38	19:09 (T42)	20:30	32	20:08 (T41)	20:59
5	07:57		07:39		16:22 (T77)	07:01	07:41 (T76)	07:09	18:32 (T42)	06:25	19:36 (T41)	06:00
	17:17		17:52	48	17:10 (T77)	18:26	17	07:58 (T76)	20:00	35	19:07 (T42)	20:31	32	20:08 (T41)	21:00
6	07:57	16:37 (T77)	07:38		16:22 (T77)	06:59	07:45 (T76)	07:08	18:34 (T42)	06:24	19:36 (T41)	05:59
	17:17	1	16:38 (T77)	17:54	47	17:09 (T77)	18:27	10	07:55 (T76)	20:00	32	19:06 (T42)	20:32	32	20:08 (T41)	21:00
7	07:57	16:32 (T77)	07:37		16:23 (T77)	06:58			07:06		18:35 (T42)	06:23		19:36 (T41)	05:59
	17:18	10	16:42 (T77)	17:55	46	17:09 (T77)	18:29			20:01	28	19:03 (T42)	20:33	32	20:08 (T41)	21:01
8	07:57	16:30 (T77)	07:36		16:23 (T77)	07:56			07:05		18:37 (T42)	06:22		19:36 (T41)	05:59
	17:19	15	16:45 (T77)	17:56	46	17:09 (T77)	19:30			20:02	25	19:02 (T42)	20:34	32	20:08 (T41)	21:02
9	07:57	16:29 (T77)	07:35		16:24 (T77)	07:54			07:03		18:40 (T42)	06:20		19:36 (T41)	05:59
	17:20	18	16:47 (T77)	17:57	45	17:09 (T77)	19:31			20:03	18	18:58 (T42)	20:35	32	20:08 (T41)	21:02
10	07:57	16:28 (T77)	07:34		16:25 (T77)	07:53			07:01		18:44 (T42)	06:19		19:36 (T41)	05:59
	17:21	21	16:49 (T77)	17:59	43	17:08 (T77)	19:32			20:05	9	18:53 (T42)	20:36	31	20:07 (T41)	21:03
11	07:57	16:27 (T77)	07:32		16:25 (T77)	07:51	18:53 (T42)	07:00			06:18		19:36 (T41)	05:58
	17:23	23	16:50 (T77)	18:00	42	17:07 (T77)	19:33	7	19:00 (T42)	20:06			20:37	31	20:07 (T41)	21:04
12	07:56	16:26 (T77)	07:31		16:26 (T77)	07:50	18:48 (T42)	06:58			06:17		19:36 (T41)	05:58
	17:24	26	16:52 (T77)	18:01	40	17:06 (T77)	19:34	18	19:06 (T42)	20:07			20:38	30	20:06 (T41)	21:04
13	07:56	16:26 (T77)	07:30		16:28 (T77)	07:48	18:44 (T42)	06:57			06:16		19:37 (T41)	05:58
	17:25	28	16:54 (T77)	18:02	38	17:06 (T77)	19:35	25	19:09 (T42)	20:08			20:39	29	20:06 (T41)	21:05
14	07:56	16:25 (T77)	07:29		16:28 (T77)	07:46	18:41 (T42)	06:55			06:15		19:37 (T41)	05:58
	17:26	30	16:55 (T77)	18:04	36	17:04 (T77)	19:36	29	19:10 (T42)	20:09			20:40	28	20:05 (T41)	21:05
15	07:55	16:25 (T77)	07:27		07:47 (T76)	07:45	18:40 (T42)	06:53			06:14		19:38 (T41)	05:58
	17:27	31	16:56 (T77)	18:05	44	17:03 (T77)	19:38	32	19:12 (T42)	20:10			20:42	26	20:04 (T41)	21:05
16	07:55	16:24 (T77)	07:26		07:46 (T76)	07:43	18:37 (T42)	06:52			06:13		19:40 (T41)	05:58
	17:28	33	16:57 (T77)	18:06	45	17:02 (T77)	19:39	36	19:13 (T42)	20:11			20:42	24	20:04 (T41)	21:06
17	07:54	16:24 (T77)	07:25		07:44 (T76)	07:41	18:36 (T42)	06:50			06:12		19:40 (T41)	05:58
	17:29	35	16:59 (T77)	18:07	45	17:00 (T77)	19:40	38	19:14 (T42)	20:12			20:43	24	20:04 (T41)	21:06
18	07:54	16:23 (T77)	07:23		07:43 (T76)	07:40	18:35 (T42)	06:49			06:11		19:41 (T41)	05:58
	17:30	37	17:00 (T77)	18:09	43	16:58 (T77)	19:41	40	19:15 (T42)	20:13			20:44	21	20:02 (T41)	21:07
19	07:53	16:23 (T77)	07:22		07:42 (T76)	07:38	18:33 (T42)	06:47			06:10		19:42 (T41)	05:58
	17:32	38	17:01 (T77)	18:10	38	16:55 (T77)	19:42	43	19:16 (T42)	20:14			20:45	19	20:01 (T41)	21:07
20	07:53	16:22 (T77)	07:20		07:40 (T76)	07:36	18:32 (T42)	06:46			06:09		19:43 (T41)	05:59
	17:33	40	17:02 (T77)	18:11	25	08:05 (T76)	19:43	44	19:16 (T42)	20:15			20:46	17	20:00 (T41)	21:07
21	07:52	16:22 (T77)	07:19		07:39 (T76)	07:35	18:32 (T42)	06:44			06:09		19:45 (T41)	05:59
	17:34	40	17:02 (T77)	18:12	27	08:06 (T76)	19:44	45	19:17 (T42)	20:16			20:47	13	19:58 (T41)	21:08
22	07:52	16:22 (T77)	07:18		07:37 (T76)	07:33	18:31 (T42)	06:43			06:08		19:48 (T41)	05:59
	17:35	42	17:04 (T77)	18:13	29	08:06 (T76)	19:45	46	19:17 (T42)	20:17			20:48	8	19:56 (T41)	21:08
23	07:51	16:22 (T77)	07:16		07:36 (T76)	07:31	18:30 (T42)	06:41			06:07			05:59
	17:36	43	17:05 (T77)	18:15	31	08:07 (T76)	19:46	47	19:17 (T42)	20:18			20:49			21:08
24	07:50	16:21 (T77)	07:15		07:36 (T76)	07:30	18:30 (T42)	06:40	19:50 (T41)	06:06				05:59
	17:38	44	17:05 (T77)	18:16	30	08:06 (T76)	19:47	47	19:17 (T42)	20:19	6	19:56 (T41)	20:50			21:08
25	07:49	16:21 (T77)	07:13		07:36 (T76)	07:28	18:29 (T42)	06:38	19:46 (T41)	06:06				06:00
	17:39	45	17:06 (T77)	18:17	31	08:07 (T76)	19:48	48	19:17 (T42)	20:21	13	19:59 (T41)	20:51			21:08
26	07:49	16:20 (T77)	07:12		07:36 (T76)	07:26	18:29 (T42)	06:37	19:43 (T41)	06:05				06:00
	17:40	46	17:06 (T77)	18:18	30	08:06 (T76)	19:50	47	19:16 (T42)	20:22	16	19:59 (T41)	20:52			21:08
27	07:48	16:21 (T77)	07:10		07:36 (T76)	07:24	18:28 (T42)	06:36	19:42 (T41)	06:04				06:00
	17:41	47	17:08 (T77)	18:19	30	08:06 (T76)	19:51	47	19:15 (T42)	20:23	19	20:01 (T41)	20:53			21:08
28	07:47	16:21 (T77)	07:09		07:36 (T76)	07:23	18:29 (T42)	06:34	19:41 (T41)	06:04				06:01
	17:42	47	17:08 (T77)	18:21	29	08:05 (T76)	19:52	47	19:16 (T42)	20:24	21	20:02 (T41)	20:54			21:09
29	07:46	16:21 (T77)				07:21	18:29 (T42)	06:33	19:39 (T41)	06:03				06:01
	17:44	47	17:08 (T77)				19:53	46	19:15 (T42)	20:25	23	20:02 (T41)	20:54			21:09
30	07:45	16:21 (T77)				07:19	18:28 (T42)	06:32	19:38 (T41)	06:02				06:02
	17:45	48	17:09 (T77)				19:54	46	19:14 (T42)	20:26	26	20:04 (T41)	20:55			21:08
31	07:44	16:21 (T77)				07:18	18:29 (T42)			06:02				
	17:46	48	17:09 (T77)				19:55	45	19:14 (T42)				20:56			
Potential sun hours	297		297			370		399			448			453		
Total, worst case		883			1101			947			432			579		
Sun reduction		0.31			0.40			0.44			0.52			0.57		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.73			0.68			0.64			0.63			0.57		
Total reduction		0.23			0.28			0.29			0.33			0.33		
Total, real		203			303			272			144			191		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 932 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6939)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:26	19:47 (T41)	06:57		07:27	18:25 (T42)	07:02	15:54 (T77)	07:37	16:09 (T77)
	21:08		20:50 30	20:17 (T41)	20:07		19:15 21	18:46 (T42)	17:28 43	16:37 (T77)	17:04 23	16:32 (T77)
2	06:03		06:27	19:46 (T41)	06:58	18:43 (T42)	07:29	18:28 (T42)	07:03	15:54 (T77)	07:38	16:10 (T77)
	21:08		20:49 31	20:17 (T41)	20:06 9	18:52 (T42)	19:13 14	18:42 (T42)	17:27 44	16:38 (T77)	17:03 21	16:31 (T77)
3	06:03		06:28	19:46 (T41)	06:59	18:38 (T42)	07:30		07:04	15:53 (T77)	07:39	16:13 (T77)
	21:08		20:48 32	20:18 (T41)	20:04 18	18:56 (T42)	19:11		17:26 46	16:39 (T77)	17:03 18	16:31 (T77)
4	06:04		06:29	19:46 (T41)	07:00	18:35 (T42)	07:31		07:06	15:52 (T77)	07:40	16:15 (T77)
	21:08		20:47 32	20:18 (T41)	20:02 24	18:59 (T42)	19:10		17:24 47	16:39 (T77)	17:03 15	16:30 (T77)
5	06:04		06:30	19:46 (T41)	07:01	18:32 (T42)	07:32		07:07	15:52 (T77)	07:41	16:18 (T77)
	21:08		20:46 32	20:18 (T41)	20:01 28	19:00 (T42)	19:08		17:23 47	16:39 (T77)	17:03 10	16:28 (T77)
6	06:05		06:31	19:46 (T41)	07:02	18:30 (T42)	07:33		07:08	15:52 (T77)	07:42	16:22 (T77)
	21:08		20:44 32	20:18 (T41)	19:57 32	19:02 (T42)	19:06		17:22 48	16:40 (T77)	17:03 3	16:25 (T77)
7	06:05		06:32	19:46 (T41)	07:03	18:28 (T42)	07:34	08:23 (T76)	07:09	15:52 (T77)	07:43	
	21:07		20:43 32	20:18 (T41)	19:56 35	19:03 (T42)	19:05 4	08:27 (T76)	17:21 48	16:40 (T77)	17:03	
8	06:06		06:33	19:46 (T41)	07:04	18:27 (T42)	07:35	08:18 (T76)	07:10	15:51 (T77)	07:44	
	21:07		20:42 32	20:18 (T41)	19:54 37	19:04 (T42)	19:03 14	08:32 (T76)	17:20 49	16:40 (T77)	17:03	
9	06:07		06:34	19:46 (T41)	07:05	18:25 (T42)	07:36	08:15 (T76)	07:12	15:52 (T77)	07:45	
	21:07		20:41 31	20:17 (T41)	19:52 39	19:04 (T42)	19:01 19	08:34 (T76)	17:19 48	16:40 (T77)	17:03	
10	06:07		06:35	19:46 (T41)	07:06	18:23 (T42)	07:37	08:13 (T76)	07:13	15:52 (T77)	07:46	
	21:06		20:39 30	20:16 (T41)	19:51 41	19:04 (T42)	19:00 22	08:35 (T76)	17:18 48	16:40 (T77)	17:03	
11	06:08		06:36	19:46 (T41)	07:07	18:22 (T42)	07:38	08:12 (T76)	07:14	15:52 (T77)	07:46	
	21:06		20:38 28	20:14 (T41)	19:49 42	19:04 (T42)	18:58 24	08:36 (T76)	17:17 48	16:40 (T77)	17:03	
12	06:09		06:37	19:47 (T41)	07:08	18:21 (T42)	07:39	08:10 (T76)	07:15	15:52 (T77)	07:47	
	21:06		20:37 26	20:13 (T41)	19:47 44	19:05 (T42)	18:57 27	08:37 (T76)	17:16 48	16:40 (T77)	17:03	
13	06:10		06:38	19:47 (T41)	07:09	18:20 (T42)	07:40	08:09 (T76)	07:16	15:53 (T77)	07:48	
	21:05		20:36 25	20:12 (T41)	19:45 45	19:05 (T42)	18:55 28	08:37 (T76)	17:15 47	16:40 (T77)	17:03	
14	06:10		06:39	19:48 (T41)	07:10	18:19 (T42)	07:41	08:08 (T76)	07:18	15:53 (T77)	07:49	
	21:05		20:34 23	20:11 (T41)	19:44 46	19:05 (T42)	18:54 29	08:37 (T76)	17:14 47	16:40 (T77)	17:03	
15	06:11		06:40	19:49 (T41)	07:11	18:18 (T42)	07:42	08:09 (T76)	07:19	15:53 (T77)	07:50	
	21:04		20:33 20	20:09 (T41)	19:42 47	19:05 (T42)	18:52 30	08:39 (T76)	17:13 46	16:39 (T77)	17:03	
16	06:12		06:41	19:49 (T41)	07:12	18:18 (T42)	07:44	08:08 (T76)	07:20	15:53 (T77)	07:50	
	21:03		20:31 18	20:07 (T41)	19:40 47	19:05 (T42)	18:50 30	08:38 (T76)	17:12 46	16:39 (T77)	17:04	
17	06:13		06:42	19:51 (T41)	07:13	18:17 (T42)	07:45	08:08 (T76)	07:21	15:55 (T77)	07:51	
	21:03		20:30 15	20:06 (T41)	19:39 47	19:04 (T42)	18:49 30	08:38 (T76)	17:11 45	16:40 (T77)	17:04	
18	06:14		06:43	19:53 (T41)	07:14	18:17 (T42)	07:46	08:07 (T76)	07:22	15:55 (T77)	07:52	
	21:02		20:29 11	20:04 (T41)	19:37 47	19:04 (T42)	18:47 31	08:38 (T76)	17:11 44	16:39 (T77)	17:04	
19	06:14		06:44	19:58 (T41)	07:15	18:16 (T42)	07:47	08:07 (T76)	07:23	15:56 (T77)	07:52	
	21:02		20:27 2	20:00 (T41)	19:35 48	19:04 (T42)	18:46 30	08:37 (T76)	17:10 43	16:39 (T77)	17:05	
20	06:15		06:45		07:16	18:16 (T42)	07:48	08:08 (T76)	07:25	15:57 (T77)	07:53	
	21:01		20:26		19:33 47	19:03 (T42)	18:44 28	08:36 (T76)	17:09 42	16:39 (T77)	17:05	
21	06:16	20:00 (T41)	06:46		07:17	18:16 (T42)	07:49	08:10 (T76)	07:26	15:58 (T77)	07:53	
	21:00 3	20:03 (T41)	20:24		19:32 46	19:02 (T42)	18:43 27	08:37 (T76)	17:08 40	16:38 (T77)	17:05	
22	06:17	19:57 (T41)	06:47		07:18	18:16 (T42)	07:50	08:11 (T76)	07:27	15:58 (T77)	07:54	
	20:59 10	20:07 (T41)	20:23		19:30 45	19:01 (T42)	18:41 31	17:20 (T77)	17:08 40	16:38 (T77)	17:06	
23	06:18	19:55 (T41)	06:48		07:19	18:16 (T42)	07:51	08:12 (T76)	07:28	15:59 (T77)	07:54	
	20:59 14	20:09 (T41)	20:21		19:28 45	19:01 (T42)	18:40 39	17:25 (T77)	17:07 38	16:37 (T77)	17:07	
24	06:19	19:53 (T41)	06:49		07:20	18:17 (T42)	07:53	08:13 (T76)	07:29	16:00 (T77)	07:55	
	20:58 18	20:11 (T41)	20:20		19:27 42	18:59 (T42)	18:39 43	17:28 (T77)	17:07 37	16:37 (T77)	17:07	
25	06:20	19:52 (T41)	06:50		07:21	18:17 (T42)	07:54	08:15 (T76)	07:30	16:02 (T77)	07:55	
	20:57 20	20:12 (T41)	20:18		19:25 41	18:58 (T42)	18:37 45	17:31 (T77)	17:06 35	16:37 (T77)	17:08	
26	06:21	19:51 (T41)	06:51		07:22	18:18 (T42)	07:55	08:16 (T76)	07:32	16:03 (T77)	07:56	
	20:56 22	20:13 (T41)	20:17		19:23 39	18:57 (T42)	18:36 45	17:32 (T77)	17:06 33	16:36 (T77)	17:08	
27	06:22	19:51 (T41)	06:52		07:23	18:18 (T42)	07:56	08:17 (T76)	07:33	16:04 (T77)	07:56	
	20:55 24	20:15 (T41)	20:15		19:22 37	18:55 (T42)	18:34 44	17:33 (T77)	17:05 31	16:35 (T77)	17:09	
28	06:22	19:50 (T41)	06:53		07:24	18:19 (T42)	07:57	16:58 (T77)	07:34	16:05 (T77)	07:56	
	20:54 25	20:15 (T41)	20:14		19:20 35	18:54 (T42)	18:33 36	17:34 (T77)	17:05 30	16:35 (T77)	17:10	
29	06:23	19:48 (T41)	06:54		07:25	18:21 (T42)	07:58	16:56 (T77)	07:35	16:06 (T77)	07:57	
	20:53 27	20:15 (T41)	20:12		19:18 30	18:51 (T42)	18:32 39	17:35 (T77)	17:04 28	16:34 (T77)	17:10	
30	06:24	19:48 (T41)	06:55		07:26	18:22 (T42)	08:00	16:56 (T77)	07:36	16:07 (T77)	07:57	
	20:52 28	20:16 (T41)	20:10		19:16 27	18:49 (T42)	18:30 40	17:36 (T77)	17:04 26	16:33 (T77)	17:11	
31	06:25	19:47 (T41)	06:56				08:01	16:55 (T77)			07:57	
	20:51 29	20:16 (T41)	20:09				18:29 42	17:37 (T77)			17:12	
Potential sun hours	460		429		375		345		297		287	
Total, worst case	220		482		1110		812		1262		90	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.57		0.57		0.65		0.63		0.73		0.73	
Total reduction	0.38		0.35		0.39		0.31		0.22		0.16	
Total, real	84		170		435		249		281		15	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 938 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6944)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:33 (T77)	07:43		08:04 (T76)	07:07		16:45 (T42)	07:16		19:23 (T41)	06:30			06:01		20:08 (T40)
	17:13	8	15:41 (T77)	17:47	50	17:17 (T42)	18:22	35	17:20 (T42)	19:56	8	19:31 (T41)	20:27			20:57	24	20:32 (T40)
2	07:57			07:42		08:03 (T76)	07:06		16:46 (T42)	07:14		19:18 (T41)	06:29			06:01		20:08 (T40)
	17:14			17:49	55	17:19 (T42)	18:23	32	17:18 (T42)	19:57	16	19:34 (T41)	20:28			20:58	25	20:33 (T40)
3	07:57			07:41		08:02 (T76)	07:04		16:48 (T42)	07:13		19:16 (T41)	06:28			06:01		20:08 (T40)
	17:15			17:50	58	17:20 (T42)	18:24	27	17:15 (T42)	19:58	21	19:37 (T41)	20:29			20:58	26	20:34 (T40)
4	07:57			07:40		08:01 (T76)	07:02		16:51 (T42)	07:11		19:14 (T41)	06:26			06:00		20:08 (T40)
	17:16			17:51	63	17:22 (T42)	18:25	22	17:13 (T42)	19:59	23	19:37 (T41)	20:30			20:59	27	20:35 (T40)
5	07:57			07:39		08:00 (T76)	07:01		16:55 (T42)	07:09		19:11 (T41)	06:25			06:00		20:08 (T40)
	17:17			17:52	66	17:23 (T42)	18:26	13	17:08 (T42)	20:00	27	19:38 (T41)	20:31			21:00	27	20:35 (T40)
6	07:57			07:38		07:58 (T76)	06:59			07:08		19:11 (T41)	06:24			05:59		20:07 (T40)
	17:17			17:54	69	17:23 (T42)	18:27			20:00	29	19:40 (T41)	20:32			21:00	28	20:35 (T40)
7	07:57			07:37		07:58 (T76)	06:58			07:06		19:09 (T41)	06:23			05:59		20:07 (T40)
	17:18			17:55	71	17:24 (T42)	18:29			20:01	31	19:40 (T41)	20:33			21:01	29	20:36 (T40)
8	07:57			07:36		07:58 (T76)	07:56			07:05		19:09 (T41)	06:22			05:59		20:07 (T40)
	17:19			17:56	72	17:25 (T42)	19:30			20:02	33	19:42 (T41)	20:34			21:02	30	20:37 (T40)
9	07:57			07:35		07:59 (T76)	07:54			07:03		19:07 (T41)	06:20			05:59		20:08 (T40)
	17:20			17:57	73	17:26 (T42)	19:31			20:03	35	19:42 (T41)	20:35			21:02	30	20:38 (T40)
10	07:57			07:34		08:00 (T76)	07:53			07:01		19:06 (T41)	06:19			05:59		20:08 (T40)
	17:21			17:59	73	17:27 (T42)	19:32			20:05	36	19:42 (T41)	20:36			21:03	30	20:38 (T40)
11	07:57			07:32		07:59 (T76)	07:51			07:00		19:06 (T41)	06:18			05:58		20:08 (T40)
	17:23			18:00	74	17:27 (T42)	19:33			20:06	36	19:42 (T41)	20:37			21:04	31	20:39 (T40)
12	07:56			07:31		08:01 (T76)	07:50			06:58		19:06 (T41)	06:17			05:58		20:07 (T40)
	17:24			18:01	72	17:28 (T42)	19:34			20:07	36	19:42 (T41)	20:38			21:04	32	20:39 (T40)
13	07:56			07:30		08:02 (T76)	07:48			06:57		19:06 (T41)	06:16			05:58		20:07 (T40)
	17:25			18:02	70	17:28 (T42)	19:35			20:08	36	19:42 (T41)	20:39			21:05	32	20:39 (T40)
14	07:56			07:29		08:03 (T76)	07:46			06:55		19:05 (T41)	06:15			05:58		20:07 (T40)
	17:26			18:04	68	17:28 (T42)	19:36			20:09	36	19:41 (T41)	20:41			21:05	32	20:39 (T40)
15	07:55			07:27		08:05 (T76)	07:45			06:53		19:05 (T41)	06:14			05:58		20:08 (T40)
	17:27			18:05	65	17:28 (T42)	19:38			20:10	35	19:40 (T41)	20:42			21:05	32	20:40 (T40)
16	07:55			07:26		08:08 (T76)	07:43			06:52		19:06 (T41)	06:13			05:58		20:08 (T40)
	17:28			18:06	60	17:29 (T42)	19:39			20:11	34	19:40 (T41)	20:43			21:06	32	20:40 (T40)
17	07:54			07:25		16:37 (T42)	07:41			06:50		19:05 (T41)	06:12			05:58		20:09 (T40)
	17:29			18:07	51	17:28 (T42)	19:40			20:12	34	19:39 (T41)	20:43			21:06	32	20:41 (T40)
18	07:54			07:23		16:37 (T42)	07:40			06:49		19:06 (T41)	06:11			05:58		20:09 (T40)
	17:30			18:09	51	17:28 (T42)	19:41			20:13	32	19:38 (T41)	20:44			21:07	33	20:42 (T40)
19	07:53			07:22		16:38 (T42)	07:38			06:47		19:06 (T41)	06:10			05:58		20:09 (T40)
	17:32			18:10	51	17:29 (T42)	19:42			20:14	31	19:37 (T41)	20:45			21:07	33	20:42 (T40)
20	07:53			07:20		16:38 (T42)	07:36			06:46		19:08 (T41)	06:09			05:59		20:09 (T40)
	17:33			18:11	50	17:28 (T42)	19:43			20:15	28	19:36 (T41)	20:46			21:07	33	20:42 (T40)
21	07:52			07:19		16:38 (T42)	07:35			06:44		19:09 (T41)	06:09			05:59		20:09 (T40)
	17:34			18:12	50	17:28 (T42)	19:44			20:16	26	19:35 (T41)	20:47			21:08	33	20:42 (T40)
22	07:52			07:18		16:38 (T42)	07:33			06:43		19:10 (T41)	06:08			05:59		20:09 (T40)
	17:35			18:13	49	17:27 (T42)	19:45			20:17	23	19:33 (T41)	20:48			21:08	33	20:42 (T40)
23	07:51			07:16		16:39 (T42)	07:31			06:41		19:11 (T41)	06:07		20:19 (T40)	05:59		20:10 (T40)
	17:36			18:15	48	17:27 (T42)	19:46			20:18	21	19:32 (T41)	20:49	4	20:23 (T40)	21:08	33	20:43 (T40)
24	07:50			07:15		16:39 (T42)	07:30			06:40		19:13 (T41)	06:06		20:15 (T40)	05:59		20:10 (T40)
	17:38			18:16	46	17:25 (T42)	19:47			20:19	16	19:29 (T41)	20:50	11	20:26 (T40)	21:08	33	20:43 (T40)
25	07:49			07:13		16:41 (T42)	07:28			06:38		19:17 (T41)	06:06		20:14 (T40)	06:00		20:10 (T40)
	17:39			18:17	44	17:25 (T42)	19:48			20:21	8	19:25 (T41)	20:51	13	20:27 (T40)	21:08	33	20:43 (T40)
26	07:49			07:12		16:41 (T42)	07:26			06:37			06:05		20:12 (T40)	06:00		20:11 (T40)
	17:40			18:18	42	17:23 (T42)	19:50			20:22			20:52	16	20:28 (T40)	21:08	32	20:43 (T40)
27	07:48		08:09 (T76)	07:10		16:42 (T42)	07:24			06:36			06:04		20:12 (T40)	06:00		20:11 (T40)
	17:41	7	08:16 (T76)	18:19	41	17:23 (T42)	19:51			20:23			20:53	17	20:29 (T40)	21:08	32	20:43 (T40)
28	07:47		08:08 (T76)	07:09		16:43 (T42)	07:23			06:34			06:04		20:10 (T40)	06:01		20:11 (T40)
	17:42	21	17:07 (T42)	18:21	38	17:21 (T42)	19:52			20:24			20:54	20	20:30 (T40)	21:09	32	20:43 (T40)
29	07:46		08:07 (T76)				07:21			06:33			06:03		20:09 (T40)	06:01		20:11 (T40)
	17:44	31	17:11 (T42)				19:53			20:25			20:54	21	20:30 (T40)	21:09	32	20:43 (T40)
30	07:45		08:06 (T76)				07:19			06:32			06:02		20:09 (T40)	06:02		20:11 (T40)
	17:45	38	17:13 (T42)				19:54			20:26			20:55	22	20:31 (T40)	21:09	32	20:43 (T40)
31	07:44		08:05 (T76)				07:18						06:02		20:08 (T40)			
	17:46	44	17:15 (T42)				19:55						20:56	23	20:31 (T40)			
Potential sun hours	297			297			370			399			448			453		
Total, worst case		149			1620			129			691			147			923	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.68			0.72			0.60			0.54			0.54	
Total reduction		0.21			0.28			0.32			0.32			0.31			0.35	
Total, real		31			451			42			221			46			325	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 938 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6944)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August			September		October			November		December		
1	06:02		20:12 (T40)	06:26		06:57		19:05 (T41)	07:27		07:02		07:28 (T76)	07:37	
	21:08	31	20:43 (T40)	20:50		20:07	36	19:41 (T41)	19:15		17:28	74	16:56 (T42)	17:04	
2	06:03		20:12 (T40)	06:27		06:58		19:05 (T41)	07:29		07:03		07:29 (T76)	07:38	
	21:08	31	20:43 (T40)	20:49		20:06	36	19:41 (T41)	19:13		17:27	73	16:56 (T42)	17:03	
3	06:03		20:13 (T40)	06:28		06:59		19:05 (T41)	07:30		07:04		07:28 (T76)	07:39	
	21:08	30	20:43 (T40)	20:48		20:04	35	19:40 (T41)	19:11		17:26	73	16:55 (T42)	17:03	
4	06:04		20:13 (T40)	06:29		07:00		19:06 (T41)	07:31		07:06		07:28 (T76)	07:40	
	21:08	29	20:42 (T40)	20:47		20:02	33	19:39 (T41)	19:10		17:24	71	16:54 (T42)	17:03	
5	06:04		20:13 (T40)	06:30		07:01		19:06 (T41)	07:32		07:07		07:28 (T76)	07:41	
	21:08	30	20:43 (T40)	20:46		20:01	31	19:37 (T41)	19:08		17:23	69	16:53 (T42)	17:03	
6	06:05		20:13 (T40)	06:31		07:02		19:07 (T41)	07:33		07:08		07:30 (T76)	07:42	
	21:08	29	20:42 (T40)	20:44		19:57	29	19:36 (T41)	19:06		17:22	66	16:53 (T42)	17:03	
7	06:05		20:14 (T40)	06:32		07:03		19:07 (T41)	07:34		07:09		07:31 (T76)	07:43	
	21:07	28	20:42 (T40)	20:43		19:56	27	19:34 (T41)	19:05		17:21	63	16:52 (T42)	17:03	
8	06:06		20:15 (T40)	06:33		07:04		19:09 (T41)	07:35	17:34 (T42)	07:10		07:32 (T76)	07:44	
	21:07	27	20:42 (T40)	20:42		19:54	24	19:33 (T41)	19:03	6 17:40 (T42)	17:20	58	16:50 (T42)	17:03	
9	06:07		20:15 (T40)	06:34		07:05		19:10 (T41)	07:36	17:28 (T42)	07:12		07:34 (T76)	07:45	
	21:07	26	20:41 (T40)	20:41		19:52	21	19:31 (T41)	19:02	18 17:46 (T42)	17:19	54	16:50 (T42)	17:03	
10	06:07		20:15 (T40)	06:35		07:06		19:11 (T41)	07:37	17:24 (T42)	07:13		07:35 (T76)	07:46	
	21:06	26	20:41 (T40)	20:40		19:51	17	19:28 (T41)	19:00	24 17:48 (T42)	17:18	50	16:48 (T42)	17:03	
11	06:08		20:16 (T40)	06:36		07:07		19:15 (T41)	07:38	17:21 (T42)	07:14		07:36 (T76)	07:46	15:23 (T77)
	21:06	25	20:41 (T40)	20:38		19:49	9	19:24 (T41)	18:58	29 17:50 (T42)	17:17	44	16:46 (T42)	17:03	8 15:31 (T77)
12	06:09		20:16 (T40)	06:37		07:08			07:39	17:19 (T42)	07:15		07:37 (T76)	07:47	15:22 (T77)
	21:06	24	20:40 (T40)	20:37		19:47			18:57	33 17:52 (T42)	17:16	38	16:44 (T42)	17:03	11 15:33 (T77)
13	06:10		20:17 (T40)	06:38		07:09			07:40	17:17 (T42)	07:16		07:39 (T76)	07:48	15:22 (T77)
	21:05	23	20:40 (T40)	20:36		19:45			18:55	36 17:53 (T42)	17:15	30	16:42 (T42)	17:03	13 15:35 (T77)
14	06:10		20:18 (T40)	06:39		07:10			07:41	17:15 (T42)	07:18		07:40 (T76)	07:49	15:20 (T77)
	21:05	21	20:39 (T40)	20:34		19:44			18:54	39 17:54 (T42)	17:14	20	16:38 (T42)	17:03	15 15:35 (T77)
15	06:11		20:19 (T40)	06:40		07:11			07:42	17:14 (T42)	07:19		07:41 (T76)	07:50	15:20 (T77)
	21:04	20	20:39 (T40)	20:33		19:42			18:52	42 17:56 (T42)	17:13	6	07:47 (T76)	17:03	17 15:37 (T77)
16	06:12		20:20 (T40)	06:41		07:12			07:44	17:13 (T42)	07:20			07:50	15:21 (T77)
	21:03	18	20:38 (T40)	20:31		19:40			18:50	43 17:56 (T42)	17:12			17:04	17 15:38 (T77)
17	06:13		20:21 (T40)	06:42		07:13			07:45	17:12 (T42)	07:21			07:51	15:20 (T77)
	21:03	16	20:37 (T40)	20:30		19:39			18:49	45 17:57 (T42)	17:11			17:04	18 15:38 (T77)
18	06:14		20:22 (T40)	06:43	19:22 (T41)	07:14			07:46	17:11 (T42)	07:22			07:52	15:21 (T77)
	21:02	15	20:37 (T40)	20:29	10 19:32 (T41)	19:37			18:47	46 17:57 (T42)	17:11			17:04	18 15:39 (T77)
19	06:14		20:24 (T40)	06:44	19:18 (T41)	07:15			07:47	17:10 (T42)	07:23			07:52	15:21 (T77)
	21:02	13	20:37 (T40)	20:27	17 19:35 (T41)	19:35			18:46	47 17:57 (T42)	17:10			17:05	20 15:41 (T77)
20	06:15		20:27 (T40)	06:45	19:16 (T41)	07:16			07:48	17:09 (T42)	07:25			07:53	15:21 (T77)
	21:01	9	20:36 (T40)	20:26	21 19:37 (T41)	19:33			18:44	48 17:57 (T42)	17:09			17:05	20 15:41 (T77)
21	06:16			06:46	19:14 (T41)	07:17			07:49	17:09 (T42)	07:26			07:53	15:22 (T77)
	21:00			20:24	24 19:38 (T41)	19:32			18:43	49 17:58 (T42)	17:08			17:05	20 15:42 (T77)
22	06:17			06:47	19:13 (T41)	07:18			07:50	17:08 (T42)	07:27			07:54	15:22 (T77)
	20:59			20:23	26 19:39 (T41)	19:30			18:41	50 17:58 (T42)	17:08			17:06	20 15:42 (T77)
23	06:18			06:48	19:11 (T41)	07:19			07:51	17:07 (T42)	07:28			07:54	15:23 (T77)
	20:59			20:21	29 19:40 (T41)	19:28			18:40	51 17:58 (T42)	17:07			17:07	20 15:43 (T77)
24	06:19			06:49	19:10 (T41)	07:20			07:53	17:07 (T42)	07:29			07:55	15:23 (T77)
	20:58			20:20	31 19:41 (T41)	19:27			18:39	51 17:58 (T42)	17:07			17:07	20 15:43 (T77)
25	06:20			06:50	19:09 (T41)	07:21			07:54	17:07 (T42)	07:30			07:55	15:23 (T77)
	20:57			20:18	32 19:41 (T41)	19:25			18:37	52 17:59 (T42)	17:06			17:08	20 15:43 (T77)
26	06:21			06:51	19:08 (T41)	07:22			07:55	08:37 (T76)	07:32			07:56	15:25 (T77)
	20:56			20:17	34 19:42 (T41)	19:23			18:36	61 17:58 (T42)	17:06			17:08	18 15:43 (T77)
27	06:22			06:52	19:07 (T41)	07:23			07:56	08:34 (T76)	07:33			07:56	15:25 (T77)
	20:55			20:15	35 19:42 (T41)	19:22			18:34	66 17:58 (T42)	17:05			17:09	18 15:43 (T77)
28	06:22			06:53	19:07 (T41)	07:24			07:57	08:32 (T76)	07:34			07:56	15:26 (T77)
	20:54			20:14	35 19:42 (T41)	19:20			18:33	68 17:57 (T42)	17:05			17:10	17 15:43 (T77)
29	06:23			06:54	19:06 (T41)	07:25			07:58	08:30 (T76)	07:35			07:57	15:27 (T77)
	20:53			20:12	36 19:42 (T41)	19:18			18:32	71 17:57 (T42)	17:04			17:10	16 15:43 (T77)
30	06:24			06:55	19:06 (T41)	07:26			08:00	08:30 (T76)	07:36			07:57	15:29 (T77)
	20:52			20:10	36 19:42 (T41)	19:16			18:30	72 17:57 (T42)	17:04			17:11	14 15:43 (T77)
31	06:25			06:56	19:06 (T41)				08:01	08:29 (T76)				07:57	15:31 (T77)
	20:51			20:09	35 19:41 (T41)				18:29	73 17:57 (T42)				17:12	11 15:42 (T77)
Potential sun hours	460			429		375			345		297			287	
Total, worst case		471			401		298			1120		789			351
Sun reduction		0.66			0.61		0.59			0.48		0.30			0.22
Oper. time red.		1.00			1.00		1.00			1.00		1.00			1.00
Wind dir. red.		0.54			0.60		0.60			0.70		0.65			0.74
Total reduction		0.36			0.38		0.36			0.34		0.20			0.17
Total, real		171			151		108			385		157			59

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 940 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6945)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:16 (T53)	07:44			07:07		16:45 (T52)	07:16		17:55 (T52)	06:31			06:02		06:26 (T51)
	17:13	49	16:05 (T53)	17:48			18:22	60	17:45 (T52)	19:56	27	18:22 (T52)	20:27			20:57	24	06:50 (T51)
2	07:57		15:17 (T53)	07:43			07:06		16:44 (T52)	07:15		17:59 (T52)	06:29			06:01		06:27 (T51)
	17:14	48	16:05 (T53)	17:49			18:23	61	17:45 (T52)	19:57	20	18:19 (T52)	20:28			20:58	23	06:50 (T51)
3	07:57		15:18 (T53)	07:42			07:04		16:43 (T52)	07:13			06:28			06:01		06:28 (T51)
	17:15	48	16:06 (T53)	17:50			18:24	64	17:47 (T52)	19:58			20:29			20:58	23	06:51 (T51)
4	07:57		15:18 (T53)	07:40			07:03		16:42 (T52)	07:11			06:27			06:01		06:28 (T51)
	17:16	48	16:06 (T53)	17:52			18:25	65	17:47 (T52)	19:59			20:30			20:59	22	06:50 (T51)
5	07:57		15:19 (T53)	07:39			07:01		16:41 (T52)	07:10			06:25			06:00		06:28 (T51)
	17:17	47	16:06 (T53)	17:53			18:27	66	17:47 (T52)	20:00			20:31			21:00	22	06:50 (T51)
6	07:57		15:20 (T53)	07:38			06:59		16:41 (T52)	07:08			06:24			06:00		06:29 (T51)
	17:18	46	16:06 (T53)	17:54			18:28	67	17:48 (T52)	20:00			20:32			21:01	21	06:50 (T51)
7	07:57		15:20 (T53)	07:37			06:58		16:40 (T52)	07:06			06:23			06:00		06:30 (T51)
	17:19	46	16:06 (T53)	17:55			18:29	67	17:47 (T52)	20:01			20:33			21:01	20	06:50 (T51)
8	07:57		15:21 (T53)	07:36			07:56		17:40 (T52)	07:05			06:22			05:59		06:30 (T51)
	17:20	45	16:06 (T53)	17:57			19:30	68	18:48 (T52)	20:03			20:34			21:02	19	06:49 (T51)
9	07:57		15:22 (T53)	07:35			07:55		17:40 (T52)	07:03			06:21			05:59		06:30 (T51)
	17:21	44	16:06 (T53)	17:58			19:31	68	18:48 (T52)	20:04			20:35			21:02	19	06:49 (T51)
10	07:57		15:24 (T53)	07:34			07:53		17:39 (T52)	07:02			06:20			05:59		06:31 (T51)
	17:22	42	16:06 (T53)	17:59			19:32	68	18:47 (T52)	20:05			20:37			21:03	18	06:49 (T51)
11	07:57		15:24 (T53)	07:33			07:51		17:39 (T52)	07:00			06:19		06:39 (T51)	05:59		06:32 (T51)
	17:23	41	16:05 (T53)	18:00			19:33	69	18:48 (T52)	20:06			20:38	2	06:41 (T51)	21:04	17	06:49 (T51)
12	07:56		15:25 (T53)	07:31			07:50		17:39 (T52)	06:58			06:17		06:38 (T51)	05:59		06:32 (T51)
	17:24	41	16:06 (T53)	18:02			19:34	68	18:47 (T52)	20:07			20:39	6	06:44 (T51)	21:04	17	06:49 (T51)
13	07:56		15:27 (T53)	07:30			07:48		17:38 (T52)	06:57			06:16		06:37 (T51)	05:59		06:33 (T51)
	17:25	39	16:06 (T53)	18:03			19:36	69	18:47 (T52)	20:08			20:40	8	06:45 (T51)	21:05	16	06:49 (T51)
14	07:56		15:27 (T53)	07:29			07:46		17:39 (T52)	06:55			06:15		06:36 (T51)	05:59		06:33 (T51)
	17:26	38	16:05 (T53)	18:04			19:37	68	18:47 (T52)	20:09			20:41	11	06:47 (T51)	21:05	16	06:49 (T51)
15	07:55		15:29 (T53)	07:27			07:45		17:39 (T52)	06:54			06:14		06:35 (T51)	05:59		06:34 (T51)
	17:27	36	16:05 (T53)	18:05			19:38	67	18:46 (T52)	20:10			20:42	12	06:47 (T51)	21:06	15	06:49 (T51)
16	07:55		15:30 (T53)	07:26			07:43		17:38 (T52)	06:52			06:13		06:34 (T51)	05:59		06:34 (T51)
	17:28	34	16:04 (T53)	18:06			19:39	67	18:45 (T52)	20:11			20:43	14	06:48 (T51)	21:06	15	06:49 (T51)
17	07:54		15:32 (T53)	07:25			07:42		17:39 (T52)	06:51			06:12		06:33 (T51)	05:59		06:35 (T51)
	17:30	31	16:03 (T53)	18:08			19:40	66	18:45 (T52)	20:12			20:44	16	06:49 (T51)	21:06	14	06:49 (T51)
18	07:54		15:33 (T53)	07:23		17:08 (T52)	07:40		17:39 (T52)	06:49			06:12		06:32 (T51)	05:59		06:35 (T51)
	17:31	29	16:02 (T53)	18:09	16	17:24 (T52)	19:41	66	18:45 (T52)	20:13			20:45	17	06:49 (T51)	21:07	14	06:49 (T51)
19	07:53		15:36 (T53)	07:22		17:04 (T52)	07:38		17:39 (T52)	06:48			06:11		06:31 (T51)	05:59		06:35 (T51)
	17:32	26	16:02 (T53)	18:10	25	17:29 (T52)	19:42	64	18:43 (T52)	20:14			20:46	18	06:49 (T51)	21:07	14	06:49 (T51)
20	07:53		15:38 (T53)	07:21		17:00 (T52)	07:36		17:40 (T52)	06:46			06:10		06:31 (T51)	05:59		06:35 (T51)
	17:33	22	16:00 (T53)	18:11	32	17:32 (T52)	19:43	63	18:43 (T52)	20:15			20:46	19	06:50 (T51)	21:07	14	06:49 (T51)
21	07:52		15:40 (T53)	07:19		16:58 (T52)	07:35		17:41 (T52)	06:45			06:09		06:30 (T51)	05:59		06:36 (T51)
	17:34	17	15:57 (T53)	18:13	37	17:35 (T52)	19:44	61	18:42 (T52)	20:16			20:47	20	06:50 (T51)	21:08	14	06:50 (T51)
22	07:52		15:45 (T53)	07:18		16:55 (T52)	07:33		17:41 (T52)	06:43			06:08		06:29 (T51)	05:59		06:36 (T51)
	17:35	10	15:55 (T53)	18:14	41	17:36 (T52)	19:45	60	18:41 (T52)	20:17			20:48	21	06:50 (T51)	21:08	14	06:50 (T51)
23	07:51			07:16		16:53 (T52)	07:31		17:41 (T52)	06:42			06:07		06:28 (T51)	06:00		06:36 (T51)
	17:37			18:15	45	17:38 (T52)	19:47	58	18:39 (T52)	20:19			20:49	22	06:50 (T51)	21:08	14	06:50 (T51)
24	07:50			07:15		16:51 (T52)	07:30		17:43 (T52)	06:40			06:07		06:28 (T51)	06:00		06:36 (T51)
	17:38			18:16	48	17:39 (T52)	19:48	56	18:39 (T52)	20:20			20:50	23	06:51 (T51)	21:08	14	06:50 (T51)
25	07:50			07:13		16:50 (T52)	07:28		17:43 (T52)	06:39			06:06		06:27 (T51)	06:00		06:37 (T51)
	17:39			18:17	51	17:41 (T52)	19:49	54	18:37 (T52)	20:21			20:51	24	06:51 (T51)	21:08	14	06:51 (T51)
26	07:49			07:12		16:48 (T52)	07:26		17:44 (T52)	06:37			06:05		06:26 (T51)	06:00		06:36 (T51)
	17:40			18:18	54	17:42 (T52)	19:50	51	18:35 (T52)	20:22			20:52	24	06:50 (T51)	21:08	15	06:51 (T51)
27	07:48			07:10		16:47 (T52)	07:25		17:46 (T52)	06:36			06:05		06:26 (T51)	06:01		06:36 (T51)
	17:42			18:20	56	17:43 (T52)	19:51	48	18:34 (T52)	20:23			20:53	25	06:51 (T51)	21:09	15	06:51 (T51)
28	07:47			07:09		16:46 (T52)	07:23		17:47 (T52)	06:35			06:04		06:25 (T51)	06:01		06:37 (T51)
	17:43			18:21	58	17:44 (T52)	19:52	45	18:32 (T52)	20:24			20:54	26	06:51 (T51)	21:09	15	06:52 (T51)
29	07:46						07:21		17:48 (T52)	06:33			06:03		06:26 (T51)	06:02		06:36 (T51)
	17:44						19:53	42	18:30 (T52)	20:25			20:54	25	06:51 (T51)	21:09	16	06:52 (T51)
30	07:45						07:20		17:51 (T52)	06:32			06:03		06:26 (T51)	06:02		06:36 (T51)
	17:45						19:54	37	18:28 (T52)	20:26			20:55	25	06:51 (T51)	21:09	17	06:53 (T51)
31	07:44						07:18		17:53 (T52)				06:02		06:26 (T51)			
	17:47						19:55	32	18:25 (T52)				20:56	25	06:51 (T51)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case		827			463			1865			47			383			511	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.75			0.69			0.69			0.69			0.71			0.71	
Total reduction		0.23			0.28			0.31			0.36			0.41			0.46	
Total, real		193			129			571			17			157			235	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 940 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6945)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:03	06:36 (T51)	06:27	06:49 (T51)	06:58		07:28	17:18 (T52)	07:02		07:37	15:06 (T53)
	21:08 17	06:53 (T51)	20:50 5	06:54 (T51)	20:07		19:15 69	18:27 (T52)	17:28		17:04 41	15:47 (T53)
2	06:03	06:36 (T51)	06:28		06:59		07:29	17:18 (T52)	07:03		07:38	15:06 (T53)
	21:08 18	06:54 (T51)	20:49		20:06		19:13 68	18:26 (T52)	17:27		17:04 42	15:48 (T53)
3	06:04	06:36 (T51)	06:29		07:00		07:30	17:17 (T52)	07:04		07:39	15:06 (T53)
	21:08 18	06:54 (T51)	20:48		20:04		19:12 69	18:26 (T52)	17:26		17:04 44	15:50 (T53)
4	06:04	06:36 (T51)	06:30		07:01		07:31	17:17 (T52)	07:06		07:40	15:06 (T53)
	21:08 19	06:55 (T51)	20:47		20:02		19:10 68	18:25 (T52)	17:25		17:03 45	15:51 (T53)
5	06:05	06:35 (T51)	06:31		07:02		07:32	17:17 (T52)	07:07		07:41	15:06 (T53)
	21:08 20	06:55 (T51)	20:46		20:01		19:08 68	18:25 (T52)	17:24		17:03 46	15:52 (T53)
6	06:05	06:35 (T51)	06:32		07:03		07:33	17:17 (T52)	07:08		07:42	15:06 (T53)
	21:08 21	06:56 (T51)	20:45		19:57		19:07 67	18:24 (T52)	17:22		17:03 46	15:52 (T53)
7	06:06	06:35 (T51)	06:33		07:04		07:34	17:17 (T52)	07:09		07:43	15:05 (T53)
	21:07 21	06:56 (T51)	20:43		19:56		19:05 66	18:23 (T52)	17:21		17:03 47	15:52 (T53)
8	06:07	06:35 (T51)	06:34		07:05		07:35	17:17 (T52)	07:10		07:44	15:06 (T53)
	21:07 22	06:57 (T51)	20:42		19:54		19:03 66	18:23 (T52)	17:20		17:03 47	15:53 (T53)
9	06:07	06:35 (T51)	06:35		07:06		07:36	17:17 (T52)	07:12		07:45	15:06 (T53)
	21:07 23	06:58 (T51)	20:41		19:52		19:02 65	18:22 (T52)	17:19		17:03 48	15:54 (T53)
10	06:08	06:34 (T51)	06:36		07:07	17:53 (T52)	07:37	17:17 (T52)	07:13		07:46	15:06 (T53)
	21:06 24	06:58 (T51)	20:40		19:51 18	18:11 (T52)	19:00 64	18:21 (T52)	17:18		17:03 49	15:55 (T53)
11	06:09	06:35 (T51)	06:37		07:08	17:49 (T52)	07:38	17:17 (T52)	07:14		07:46	15:06 (T53)
	21:06 23	06:58 (T51)	20:38		19:49 26	18:15 (T52)	18:59 63	18:20 (T52)	17:17		17:03 49	15:55 (T53)
12	06:09	06:35 (T51)	06:38		07:09	17:45 (T52)	07:39	17:17 (T52)	07:15		07:47	15:07 (T53)
	21:06 24	06:59 (T51)	20:37		19:47 32	18:17 (T52)	18:57 61	18:18 (T52)	17:16		17:03 49	15:56 (T53)
13	06:10	06:34 (T51)	06:39		07:10	17:42 (T52)	07:40	17:19 (T52)	07:16		07:48	15:07 (T53)
	21:05 25	06:59 (T51)	20:36		19:46 37	18:19 (T52)	18:55 59	18:18 (T52)	17:15		17:03 50	15:57 (T53)
14	06:11	06:34 (T51)	06:40		07:11	17:40 (T52)	07:42	17:20 (T52)	07:18		07:49	15:07 (T53)
	21:05 25	06:59 (T51)	20:34		19:44 41	18:21 (T52)	18:54 57	18:17 (T52)	17:14		17:04 50	15:57 (T53)
15	06:12	06:34 (T51)	06:41		07:12	17:38 (T52)	07:43	17:20 (T52)	07:19		07:50	15:07 (T53)
	21:04 26	07:00 (T51)	20:33		19:42 44	18:22 (T52)	18:52 55	18:15 (T52)	17:13		17:04 51	15:58 (T53)
16	06:12	06:35 (T51)	06:42		07:13	17:36 (T52)	07:44	17:21 (T52)	07:20		07:50	15:08 (T53)
	21:03 25	07:00 (T51)	20:32		19:41 47	18:23 (T52)	18:51 53	18:14 (T52)	17:13		17:04 50	15:58 (T53)
17	06:13	06:35 (T51)	06:43		07:14	17:33 (T52)	07:45	17:22 (T52)	07:21		07:51	15:08 (T53)
	21:03 25	07:00 (T51)	20:30		19:39 50	18:23 (T52)	18:49 50	18:12 (T52)	17:12		17:04 50	15:58 (T53)
18	06:14	06:36 (T51)	06:44		07:15	17:31 (T52)	07:46	17:23 (T52)	07:22		07:52	15:09 (T53)
	21:02 24	07:00 (T51)	20:29		19:37 53	18:24 (T52)	18:48 47	18:10 (T52)	17:11		17:05 50	15:59 (T53)
19	06:15	06:37 (T51)	06:45		07:16	17:29 (T52)	07:47	17:24 (T52)	07:24		07:52	15:09 (T53)
	21:02 23	07:00 (T51)	20:27		19:35 56	18:25 (T52)	18:46 44	18:08 (T52)	17:10		17:05 51	16:00 (T53)
20	06:16	06:38 (T51)	06:46		07:17	17:28 (T52)	07:48	17:27 (T52)	07:25	15:20 (T53)	07:53	15:09 (T53)
	21:01 23	07:01 (T51)	20:26		19:34 57	18:25 (T52)	18:45 40	18:07 (T52)	17:10 10	15:30 (T53)	17:05 51	16:00 (T53)
21	06:17	06:39 (T51)	06:47		07:18	17:26 (T52)	07:49	17:29 (T52)	07:26	15:16 (T53)	07:53	15:10 (T53)
	21:00 22	07:01 (T51)	20:24		19:32 60	18:26 (T52)	18:43 35	18:04 (T52)	17:09 17	15:33 (T53)	17:06 51	16:01 (T53)
22	06:17	06:40 (T51)	06:48		07:19	17:25 (T52)	07:50	17:31 (T52)	07:27	15:14 (T53)	07:54	15:10 (T53)
	20:59 21	07:01 (T51)	20:23		19:30 61	18:26 (T52)	18:42 30	18:01 (T52)	17:08 22	15:36 (T53)	17:06 51	16:01 (T53)
23	06:18	06:40 (T51)	06:49		07:20	17:24 (T52)	07:52	17:34 (T52)	07:28	15:12 (T53)	07:54	15:11 (T53)
	20:59 20	07:00 (T51)	20:21		19:29 63	18:27 (T52)	18:40 24	17:58 (T52)	17:08 26	15:38 (T53)	17:07 51	16:02 (T53)
24	06:19	06:41 (T51)	06:50		07:21	17:23 (T52)	07:53	17:40 (T52)	07:29	15:10 (T53)	07:55	15:11 (T53)
	20:58 19	07:00 (T51)	20:20		19:27 64	18:27 (T52)	18:39 12	17:52 (T52)	17:07 29	15:39 (T53)	17:07 51	16:02 (T53)
25	06:20	06:42 (T51)	06:51		07:22	17:22 (T52)	07:54		07:30	15:10 (T53)	07:55	15:12 (T53)
	20:57 18	07:00 (T51)	20:18		19:25 65	18:27 (T52)	18:38		17:07 31	15:41 (T53)	17:08 50	16:02 (T53)
26	06:21	06:43 (T51)	06:52		07:23	17:21 (T52)	07:55		07:32	15:09 (T53)	07:56	15:13 (T53)
	20:56 16	06:59 (T51)	20:17		19:23 66	18:27 (T52)	18:36		17:06 34	15:43 (T53)	17:09 50	16:03 (T53)
27	06:22	06:44 (T51)	06:53		07:24	17:20 (T52)	07:56		07:33	15:08 (T53)	07:56	15:13 (T53)
	20:55 15	06:59 (T51)	20:15		19:22 67	18:27 (T52)	18:35		17:06 36	15:44 (T53)	17:09 50	16:03 (T53)
28	06:23	06:45 (T51)	06:54		07:25	17:19 (T52)	07:57		07:34	15:07 (T53)	07:56	15:13 (T53)
	20:54 13	06:58 (T51)	20:14		19:20 68	18:27 (T52)	18:33		17:05 38	15:45 (T53)	17:10 51	16:04 (T53)
29	06:24	06:46 (T51)	06:55		07:26	17:19 (T52)	07:59		07:35	15:07 (T53)	07:57	15:14 (T53)
	20:53 12	06:58 (T51)	20:12		19:18 67	18:26 (T52)	18:32		17:05 39	15:46 (T53)	17:11 50	16:04 (T53)
30	06:25	06:47 (T51)	06:56		07:27	17:18 (T52)	08:00		07:36	15:06 (T53)	07:57	15:15 (T53)
	20:52 10	06:57 (T51)	20:11		19:17 68	18:26 (T52)	18:31		17:04 41	15:47 (T53)	17:12 50	16:05 (T53)
31	06:26	06:48 (T51)	06:57				08:01				07:57	15:16 (T53)
	20:51 7	06:55 (T51)	20:09				18:30				17:12 49	16:05 (T53)
Potential sun hours	459		428		375		345		297		287	
Total, worst case	619		5		1110		1300		323		1510	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.71		0.71		0.69		0.69		0.75		0.75	
Total reduction	0.47		0.44		0.41		0.33		0.23		0.17	
Total, real	293		2		456		434		73		250	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 941 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6946)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:23 (T53)	07:44			07:07		16:49 (T52)	07:16			06:31			06:02		06:25 (T51)
	17:13	49	16:12 (T53)	17:48			18:22	58	17:47 (T52)	19:56			20:27			20:57	26	06:51 (T51)
2	07:57		15:24 (T53)	07:43			07:06		16:48 (T52)	07:15			06:29			06:01		06:26 (T51)
	17:14	48	16:12 (T53)	17:49			18:23	59	17:47 (T52)	19:57			20:28			20:58	25	06:51 (T51)
3	07:57		15:25 (T53)	07:42			07:04		16:48 (T52)	07:13			06:28			06:01		06:27 (T51)
	17:15	47	16:12 (T53)	17:50			18:24	60	17:48 (T52)	19:58			20:29			20:58	25	06:52 (T51)
4	07:57		15:25 (T53)	07:40			07:03		16:47 (T52)	07:11			06:27			06:01		06:27 (T51)
	17:16	47	16:12 (T53)	17:52			18:25	61	17:48 (T52)	19:59			20:30			20:59	24	06:51 (T51)
5	07:57		15:26 (T53)	07:39			07:01		16:46 (T52)	07:10			06:25			06:00		06:27 (T51)
	17:17	47	16:13 (T53)	17:53			18:27	62	17:48 (T52)	20:00			20:31			21:00	24	06:51 (T51)
6	07:57		15:27 (T53)	07:38			06:59		16:46 (T52)	07:08			06:24			06:00		06:28 (T51)
	17:18	46	16:13 (T53)	17:54			18:28	63	17:49 (T52)	20:00			20:32			21:01	23	06:51 (T51)
7	07:57		15:27 (T53)	07:37			06:58		16:45 (T52)	07:06			06:23			06:00		06:29 (T51)
	17:19	45	16:12 (T53)	17:55			18:29	63	17:48 (T52)	20:01			20:33			21:01	22	06:51 (T51)
8	07:57		15:28 (T53)	07:36			07:56		17:45 (T52)	07:05			06:22			05:59		06:28 (T51)
	17:20	44	16:12 (T53)	17:57			19:30	64	18:49 (T52)	20:03			20:34			21:02	22	06:50 (T51)
9	07:57		15:29 (T53)	07:35			07:55		17:45 (T52)	07:03			06:21			05:59		06:29 (T51)
	17:21	44	16:13 (T53)	17:58			19:31	63	18:48 (T52)	20:04			20:35			21:02	21	06:50 (T51)
10	07:57		15:30 (T53)	07:34			07:53		17:44 (T52)	07:02			06:20			05:59		06:30 (T51)
	17:22	43	16:13 (T53)	17:59			19:32	64	18:48 (T52)	20:05			20:37			21:03	21	06:51 (T51)
11	07:57		15:30 (T53)	07:33			07:51		17:44 (T52)	07:00			06:19			05:59		06:30 (T51)
	17:23	42	16:12 (T53)	18:00			19:33	64	18:48 (T52)	20:06			20:38			21:04	21	06:51 (T51)
12	07:56		15:32 (T53)	07:31			07:50		17:44 (T52)	06:58			06:17		06:38 (T51)	05:59		06:31 (T51)
	17:24	40	16:12 (T53)	18:02			19:34	64	18:48 (T52)	20:07			20:39	5	06:43 (T51)	21:04	20	06:51 (T51)
13	07:56		15:33 (T53)	07:30			07:48		17:44 (T52)	06:57			06:16		06:37 (T51)	05:59		06:31 (T51)
	17:25	40	16:13 (T53)	18:03			19:36	63	18:47 (T52)	20:08			20:40	8	06:45 (T51)	21:05	20	06:51 (T51)
14	07:56		15:34 (T53)	07:29			07:46		17:45 (T52)	06:55			06:15		06:36 (T51)	05:59		06:32 (T51)
	17:26	38	16:12 (T53)	18:04			19:37	62	18:47 (T52)	20:09			20:41	10	06:46 (T51)	21:05	19	06:51 (T51)
15	07:55		15:35 (T53)	07:27			07:45		17:44 (T52)	06:54			06:14		06:35 (T51)	05:59		06:32 (T51)
	17:27	37	16:12 (T53)	18:05			19:38	62	18:46 (T52)	20:10			20:42	12	06:47 (T51)	21:06	19	06:51 (T51)
16	07:55		15:36 (T53)	07:26			07:43		17:44 (T52)	06:52			06:13		06:34 (T51)	05:59		06:32 (T51)
	17:28	35	16:11 (T53)	18:06			19:39	61	18:45 (T52)	20:11			20:43	14	06:48 (T51)	21:06	19	06:51 (T51)
17	07:54		15:38 (T53)	07:25		17:17 (T52)	07:42		17:45 (T52)	06:51			06:12		06:33 (T51)	05:59		06:33 (T51)
	17:30	33	16:11 (T53)	18:08	3	17:20 (T52)	19:40	60	18:45 (T52)	20:12			20:44	15	06:48 (T51)	21:06	18	06:51 (T51)
18	07:54		15:39 (T53)	07:23		17:09 (T52)	07:40		17:45 (T52)	06:49			06:12		06:32 (T51)	05:59		06:33 (T51)
	17:31	31	16:10 (T53)	18:09	19	17:28 (T52)	19:41	59	18:44 (T52)	20:13			20:45	17	06:49 (T51)	21:07	18	06:51 (T51)
19	07:53		15:41 (T53)	07:22		17:06 (T52)	07:38		17:46 (T52)	06:48			06:11		06:31 (T51)	05:59		06:33 (T51)
	17:32	28	16:09 (T53)	18:10	27	17:33 (T52)	19:42	57	18:43 (T52)	20:14			20:45	18	06:49 (T51)	21:07	18	06:51 (T51)
20	07:53		15:43 (T53)	07:21		17:02 (T52)	07:36		17:47 (T52)	06:46			06:10		06:31 (T51)	05:59		06:33 (T51)
	17:33	25	16:08 (T53)	18:11	33	17:35 (T52)	19:43	55	18:42 (T52)	20:15			20:46	19	06:50 (T51)	21:07	18	06:51 (T51)
21	07:52		15:45 (T53)	07:19		17:00 (T52)	07:35		17:47 (T52)	06:45			06:09		06:30 (T51)	05:59		06:34 (T51)
	17:34	21	16:06 (T53)	18:13	37	17:37 (T52)	19:44	54	18:41 (T52)	20:16			20:47	21	06:51 (T51)	21:08	18	06:52 (T51)
22	07:52		15:48 (T53)	07:18		16:58 (T52)	07:33		17:48 (T52)	06:43			06:08		06:29 (T51)	05:59		06:34 (T51)
	17:35	16	16:04 (T53)	18:14	41	17:39 (T52)	19:45	51	18:39 (T52)	20:17			20:48	22	06:51 (T51)	21:08	18	06:52 (T51)
23	07:51		15:52 (T53)	07:16		16:57 (T52)	07:31		17:49 (T52)	06:42			06:07		06:28 (T51)	06:00		06:34 (T51)
	17:37	9	16:01 (T53)	18:15	44	17:41 (T52)	19:47	48	18:37 (T52)	20:19			20:49	23	06:51 (T51)	21:08	18	06:52 (T51)
24	07:50			07:15		16:54 (T52)	07:30		17:51 (T52)	06:40			06:07		06:28 (T51)	06:00		06:34 (T51)
	17:38			18:16	48	17:42 (T52)	19:48	45	18:36 (T52)	20:20			20:50	23	06:51 (T51)	21:08	18	06:52 (T51)
25	07:50			07:13		16:53 (T52)	07:28		17:52 (T52)	06:39			06:06		06:27 (T51)	06:00		06:35 (T51)
	17:39			18:17	50	17:43 (T52)	19:49	42	18:34 (T52)	20:21			20:51	24	06:51 (T51)	21:08	18	06:53 (T51)
26	07:49			07:12		16:52 (T52)	07:26		17:53 (T52)	06:37			06:05		06:26 (T51)	06:00		06:35 (T51)
	17:40			18:18	52	17:44 (T52)	19:50	39	18:32 (T52)	20:22			20:52	25	06:51 (T51)	21:08	18	06:53 (T51)
27	07:48			07:10		16:51 (T52)	07:25		17:55 (T52)	06:36			06:05		06:26 (T51)	06:01		06:34 (T51)
	17:42			18:20	54	17:45 (T52)	19:51	35	18:30 (T52)	20:23			20:53	25	06:51 (T51)	21:09	19	06:53 (T51)
28	07:47			07:09		16:50 (T52)	07:23		17:57 (T52)	06:35			06:04		06:25 (T51)	06:01		06:35 (T51)
	17:43			18:21	56	17:46 (T52)	19:52	30	18:27 (T52)	20:24			20:54	26	06:51 (T51)	21:09	19	06:54 (T51)
29	07:46						07:21		18:00 (T52)	06:33			06:03		06:25 (T51)	06:02		06:34 (T51)
	17:44						19:53	24	18:24 (T52)	20:25			20:54	27	06:52 (T51)	21:09	20	06:54 (T51)
30	07:45						07:20		18:05 (T52)	06:32			06:03		06:25 (T51)	06:02		06:35 (T51)
	17:45						19:54	15	18:20 (T52)	20:26			20:55	26	06:51 (T51)	21:09	20	06:55 (T51)
31	07:44						07:18						06:02		06:26 (T51)			
	17:47						19:55						20:56	26	06:52 (T51)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case		855			464			1607						386			609	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.75			0.69			0.69						0.71			0.71	
Total reduction		0.23			0.28			0.31						0.41			0.46	
Total, real		199			129			492						158			280	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 941 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6946)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:03	06:34 (T51)	06:27	06:49 (T51)	06:58		07:28	17:24 (T52)	07:02		07:37	15:12 (T53)
	21:08 21	06:55 (T51)	20:50 3	06:52 (T51)	20:07		19:15 63	18:27 (T52)	17:28		17:04 42	15:54 (T53)
2	06:03	06:35 (T51)	06:28		06:59		07:29	17:23 (T52)	07:03		07:38	15:12 (T53)
	21:08 21	06:56 (T51)	20:49		20:06		19:13 64	18:27 (T52)	17:27		17:04 43	15:55 (T53)
3	06:04	06:34 (T51)	06:29		07:00		07:30	17:23 (T52)	07:04		07:39	15:13 (T53)
	21:08 22	06:56 (T51)	20:48		20:04		19:12 64	18:27 (T52)	17:26		17:04 44	15:57 (T53)
4	06:04	06:35 (T51)	06:30		07:01		07:31	17:22 (T52)	07:06		07:40	15:13 (T53)
	21:08 21	06:56 (T51)	20:47		20:02		19:10 64	18:26 (T52)	17:25		17:03 44	15:57 (T53)
5	06:05	06:34 (T51)	06:31		07:02		07:32	17:22 (T52)	07:07		07:41	15:13 (T53)
	21:08 22	06:56 (T51)	20:46		20:01		19:08 64	18:26 (T52)	17:24		17:03 45	15:58 (T53)
6	06:05	06:34 (T51)	06:32		07:03		07:33	17:21 (T52)	07:08		07:42	15:13 (T53)
	21:08 23	06:57 (T51)	20:45		19:57		19:07 64	18:25 (T52)	17:22		17:03 46	15:59 (T53)
7	06:06	06:34 (T51)	06:33		07:04		07:34	17:21 (T52)	07:09		07:43	15:12 (T53)
	21:07 23	06:57 (T51)	20:43		19:56		19:05 63	18:24 (T52)	17:21		17:03 47	15:59 (T53)
8	06:07	06:34 (T51)	06:34		07:05		07:35	17:21 (T52)	07:10		07:44	15:13 (T53)
	21:07 24	06:58 (T51)	20:42		19:54		19:03 63	18:24 (T52)	17:20		17:03 46	15:59 (T53)
9	06:07	06:34 (T51)	06:35		07:06		07:36	17:21 (T52)	07:12		07:45	15:13 (T53)
	21:07 25	06:59 (T51)	20:41		19:52		19:02 62	18:23 (T52)	17:19		17:03 47	16:00 (T53)
10	06:08	06:33 (T51)	06:36		07:07		07:37	17:21 (T52)	07:13		07:46	15:13 (T53)
	21:06 25	06:58 (T51)	20:40		19:51		19:00 61	18:22 (T52)	17:18		17:03 48	16:01 (T53)
11	06:09	06:34 (T51)	06:37		07:08		07:38	17:21 (T52)	07:14		07:46	15:14 (T53)
	21:06 25	06:59 (T51)	20:38		19:49		18:59 60	18:21 (T52)	17:17		17:03 48	16:02 (T53)
12	06:09	06:34 (T51)	06:38		07:09		07:39	17:22 (T52)	07:15		07:47	15:14 (T53)
	21:06 26	07:00 (T51)	20:37		19:47		18:57 58	18:20 (T52)	17:16		17:03 48	16:02 (T53)
13	06:10	06:33 (T51)	06:39		07:10	17:57 (T52)	07:40	17:23 (T52)	07:16		07:48	15:14 (T53)
	21:05 26	06:59 (T51)	20:36		19:46 13	18:10 (T52)	18:55 57	18:20 (T52)	17:15		17:03 49	16:03 (T53)
14	06:11	06:33 (T51)	06:40		07:11	17:52 (T52)	07:42	17:23 (T52)	07:18		07:49	15:14 (T53)
	21:05 27	07:00 (T51)	20:34		19:44 22	18:14 (T52)	18:54 56	18:19 (T52)	17:14		17:04 49	16:03 (T53)
15	06:12	06:34 (T51)	06:41		07:12	17:48 (T52)	07:43	17:24 (T52)	07:19		07:50	15:15 (T53)
	21:04 26	07:00 (T51)	20:33		19:42 29	18:17 (T52)	18:52 53	18:17 (T52)	17:13		17:04 49	16:04 (T53)
16	06:12	06:35 (T51)	06:42		07:13	17:45 (T52)	07:44	17:25 (T52)	07:20		07:50	15:15 (T53)
	21:03 26	07:01 (T51)	20:32		19:41 34	18:19 (T52)	18:51 51	18:16 (T52)	17:13		17:04 50	16:05 (T53)
17	06:13	06:35 (T51)	06:43		07:13	17:42 (T52)	07:45	17:25 (T52)	07:21		07:51	15:15 (T53)
	21:03 25	07:00 (T51)	20:30		19:39 38	18:20 (T52)	18:49 49	18:14 (T52)	17:12		17:04 49	16:04 (T53)
18	06:14	06:36 (T51)	06:44		07:14	17:39 (T52)	07:46	17:26 (T52)	07:22		07:52	15:16 (T53)
	21:02 25	07:01 (T51)	20:29		19:37 42	18:21 (T52)	18:48 47	18:13 (T52)	17:11		17:05 49	16:05 (T53)
19	06:15	06:37 (T51)	06:45		07:15	17:37 (T52)	07:47	17:28 (T52)	07:24	15:26 (T53)	07:52	15:17 (T53)
	21:02 24	07:01 (T51)	20:27		19:35 45	18:22 (T52)	18:46 43	18:11 (T52)	17:10 9	15:35 (T53)	17:05 49	16:06 (T53)
20	06:16	06:38 (T51)	06:46		07:17	17:35 (T52)	07:48	17:30 (T52)	07:25	15:23 (T53)	07:53	15:17 (T53)
	21:01 23	07:01 (T51)	20:26		19:34 48	18:23 (T52)	18:45 40	18:10 (T52)	17:10 16	15:39 (T53)	17:05 49	16:06 (T53)
21	06:16	06:39 (T51)	06:47		07:18	17:34 (T52)	07:49	17:32 (T52)	07:26	15:21 (T53)	07:53	15:18 (T53)
	21:00 22	07:01 (T51)	20:24		19:32 50	18:24 (T52)	18:43 35	18:07 (T52)	17:09 21	15:42 (T53)	17:06 49	16:07 (T53)
22	06:17	06:40 (T51)	06:48		07:19	17:32 (T52)	07:50	17:34 (T52)	07:27	15:19 (T53)	07:54	15:18 (T53)
	20:59 21	07:01 (T51)	20:23		19:30 53	18:25 (T52)	18:42 31	18:05 (T52)	17:08 25	15:44 (T53)	17:06 49	16:07 (T53)
23	06:18	06:40 (T51)	06:49		07:20	17:31 (T52)	07:52	17:36 (T52)	07:28	15:17 (T53)	07:54	15:19 (T53)
	20:59 20	07:00 (T51)	20:21		19:29 54	18:25 (T52)	18:40 25	18:01 (T52)	17:08 28	15:45 (T53)	17:07 49	16:08 (T53)
24	06:19	06:41 (T51)	06:50		07:21	17:29 (T52)	07:53	17:40 (T52)	07:29	15:16 (T53)	07:55	15:19 (T53)
	20:58 19	07:00 (T51)	20:20		19:27 57	18:26 (T52)	18:39 17	17:57 (T52)	17:07 31	15:47 (T53)	17:07 49	16:08 (T53)
25	06:20	06:42 (T51)	06:51		07:22	17:28 (T52)	07:54		07:30	15:16 (T53)	07:55	15:19 (T53)
	20:57 18	07:00 (T51)	20:18		19:25 58	18:26 (T52)	18:38		17:07 33	15:49 (T53)	17:08 49	16:08 (T53)
26	06:21	06:43 (T51)	06:52		07:23	17:27 (T52)	07:55		07:32	15:15 (T53)	07:56	15:20 (T53)
	20:56 16	06:59 (T51)	20:17		19:23 59	18:26 (T52)	18:36		17:06 35	15:50 (T53)	17:09 49	16:09 (T53)
27	06:22	06:44 (T51)	06:53		07:24	17:26 (T52)	07:56		07:33	15:14 (T53)	07:56	15:20 (T53)
	20:55 15	06:59 (T51)	20:15		19:22 60	18:26 (T52)	18:35		17:06 37	15:51 (T53)	17:09 50	16:10 (T53)
28	06:23	06:45 (T51)	06:54		07:25	17:25 (T52)	07:57		07:34	15:14 (T53)	07:56	15:21 (T53)
	20:54 13	06:58 (T51)	20:14		19:20 62	18:27 (T52)	18:33		17:05 38	15:52 (T53)	17:10 49	16:10 (T53)
29	06:24	06:46 (T51)	06:55		07:26	17:24 (T52)	07:59		07:35	15:13 (T53)	07:57	15:21 (T53)
	20:53 11	06:57 (T51)	20:12		19:18 62	18:26 (T52)	18:32		17:05 40	15:53 (T53)	17:11 49	16:10 (T53)
30	06:25	06:47 (T51)	06:56		07:27	17:23 (T52)	08:00		07:36	15:13 (T53)	07:57	15:22 (T53)
	20:52 9	06:56 (T51)	20:11		19:17 63	18:26 (T52)	18:31		17:04 40	15:53 (T53)	17:12 49	16:11 (T53)
31	06:26	06:48 (T51)	06:57				08:01				07:57	15:23 (T53)
	20:51 7	06:55 (T51)	20:09				18:30				17:12 48	16:11 (T53)
Potential sun hours	459		428		375		345		297		287	
Total, worst case	651		3		849		1254		353		1480	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.71		0.71		0.69		0.69		0.75		0.75	
Total reduction	0.47		0.44		0.41		0.33		0.23		0.17	
Total, real	308		1		349		419		80		245	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 948 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6952)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March	April			May			June		
1	07:57		08:50 (T63)	07:43	07:07	07:16			06:31		07:13 (T61)	06:02		07:21 (T61)
	17:13	34	09:24 (T63)	17:48	18:22	19:56			20:27	75	08:28 (T61)	20:57	57	08:18 (T61)
2	07:57		08:50 (T63)	07:42	07:06	07:15			06:29		07:13 (T61)	06:01		07:22 (T61)
	17:14	34	09:24 (T63)	17:49	18:23	19:57			20:28	75	08:28 (T61)	20:58	56	08:18 (T61)
3	07:57		08:51 (T63)	07:41	07:04	07:13			06:28		07:13 (T61)	06:01		07:23 (T61)
	17:15	33	09:24 (T63)	17:50	18:24	19:58			20:29	75	08:28 (T61)	20:58	55	08:18 (T61)
4	07:57		08:52 (T63)	07:40	07:03	07:11			06:27		07:13 (T61)	06:01		07:23 (T61)
	17:16	33	09:25 (T63)	17:52	18:25	19:59			20:30	75	08:28 (T61)	20:59	54	08:17 (T61)
5	07:57		08:53 (T63)	07:39	07:01	07:10			06:25		07:12 (T61)	06:00		07:23 (T61)
	17:17	32	09:25 (T63)	17:53	18:27	20:00			20:31	75	08:27 (T61)	21:00	54	08:17 (T61)
6	07:57		08:53 (T63)	07:38	06:59	07:08			06:24		07:12 (T61)	06:00		07:24 (T61)
	17:18	31	09:24 (T63)	17:54	18:28	20:00			20:32	75	08:27 (T61)	21:00	53	08:17 (T61)
7	07:57		08:54 (T63)	07:37	06:58	07:06			06:23		07:12 (T61)	06:00		07:25 (T61)
	17:19	30	09:24 (T63)	17:55	18:29	20:01			20:33	75	08:27 (T61)	21:01	52	08:17 (T61)
8	07:57		08:55 (T63)	07:36	07:56	07:05		07:50 (T61)	06:22		07:12 (T61)	05:59		07:25 (T61)
	17:20	29	09:24 (T63)	17:57	19:30	20:02	14	08:04 (T61)	20:34	75	08:27 (T61)	21:02	51	08:16 (T61)
9	07:57		08:56 (T63)	07:35	07:55	07:03		07:44 (T61)	06:21		07:12 (T61)	05:59		07:26 (T61)
	17:21	28	09:24 (T63)	17:58	19:31	20:04	25	08:09 (T61)	20:35	75	08:27 (T61)	21:02	50	08:16 (T61)
10	07:57		08:58 (T63)	07:34	07:53	07:02		07:40 (T61)	06:20		07:13 (T61)	05:59		07:26 (T61)
	17:22	26	09:24 (T63)	17:59	19:32	20:05	33	08:13 (T61)	20:36	74	08:27 (T61)	21:03	50	08:16 (T61)
11	07:57		08:58 (T63)	07:32	07:51	07:00		07:37 (T61)	06:19		07:13 (T61)	05:59		07:27 (T61)
	17:23	24	09:22 (T63)	18:00	19:33	20:06	38	08:15 (T61)	20:37	74	08:27 (T61)	21:03	49	08:16 (T61)
12	07:56		09:00 (T63)	07:31	07:50	06:58		07:34 (T61)	06:17		07:13 (T61)	05:59		07:28 (T61)
	17:24	22	09:22 (T63)	18:02	19:34	20:07	43	08:17 (T61)	20:38	73	08:26 (T61)	21:04	48	08:16 (T61)
13	07:56		09:02 (T63)	07:30	07:48	06:57		07:32 (T61)	06:16		07:13 (T61)	05:59		07:28 (T61)
	17:25	19	09:21 (T63)	18:03	19:36	20:08	47	08:19 (T61)	20:39	73	08:26 (T61)	21:04	48	08:16 (T61)
14	07:56		09:04 (T63)	07:29	07:46	06:55		07:29 (T61)	06:15		07:13 (T61)	05:59		07:29 (T61)
	17:26	16	09:20 (T63)	18:04	19:37	20:09	51	08:20 (T61)	20:40	72	08:25 (T61)	21:05	46	08:15 (T61)
15	07:55		09:06 (T63)	07:27	07:45	06:54		07:28 (T61)	06:14		07:13 (T61)	05:59		07:29 (T61)
	17:27	12	09:18 (T63)	18:05	19:38	20:10	54	08:22 (T61)	20:41	72	08:25 (T61)	21:05	46	08:15 (T61)
16	07:55		09:11 (T63)	07:26	07:43	06:52		07:26 (T61)	06:13		07:14 (T61)	05:59		07:29 (T61)
	17:28	3	09:14 (T63)	18:06	19:39	20:11	57	08:23 (T61)	20:42	71	08:25 (T61)	21:06	46	08:15 (T61)
17	07:54			07:25	07:41	06:51		07:25 (T61)	06:12		07:14 (T61)	05:59		07:30 (T61)
	17:30			18:08	19:40	20:12	59	08:24 (T61)	20:43	70	08:24 (T61)	21:06	45	08:15 (T61)
18	07:54			07:23	07:40	06:49		07:23 (T61)	06:12		07:14 (T61)	05:59		07:30 (T61)
	17:31			18:09	19:41	20:13	61	08:24 (T61)	20:44	70	08:24 (T61)	21:07	45	08:15 (T61)
19	07:53			07:22	07:38	06:48		07:22 (T61)	06:11		07:14 (T61)	05:59		07:30 (T61)
	17:32			18:10	19:42	20:14	64	08:26 (T61)	20:45	69	08:23 (T61)	21:07	45	08:15 (T61)
20	07:53			07:21	07:36	06:46		07:21 (T61)	06:10		07:15 (T61)	05:59		07:30 (T61)
	17:33			18:11	19:43	20:15	65	08:26 (T61)	20:46	68	08:23 (T61)	21:07	45	08:15 (T61)
21	07:52			07:19	07:35	06:45		07:20 (T61)	06:09		07:15 (T61)	05:59		07:31 (T61)
	17:34			18:13	19:44	20:16	67	08:27 (T61)	20:47	68	08:23 (T61)	21:07	45	08:16 (T61)
22	07:52			07:18	07:33	06:43		07:19 (T61)	06:08		07:16 (T61)	05:59		07:31 (T61)
	17:35			18:14	19:45	20:17	68	08:27 (T61)	20:48	66	08:22 (T61)	21:08	45	08:16 (T61)
23	07:51			07:16	07:31	06:42		07:18 (T61)	06:07		07:16 (T61)	06:00		07:31 (T61)
	17:37			18:15	19:46	20:18	69	08:27 (T61)	20:49	65	08:21 (T61)	21:08	45	08:16 (T61)
24	07:50			07:15	07:30	06:40		07:18 (T61)	06:07		07:17 (T61)	06:00		07:31 (T61)
	17:38			18:16	19:48	20:20	70	08:28 (T61)	20:50	65	08:22 (T61)	21:08	45	08:16 (T61)
25	07:49			07:13	07:28	06:39		07:16 (T61)	06:06		07:17 (T61)	06:00		07:32 (T61)
	17:39			18:17	19:49	20:21	72	08:28 (T61)	20:51	64	08:21 (T61)	21:08	45	08:17 (T61)
26	07:49			07:12	07:26	06:37		07:16 (T61)	06:05		07:18 (T61)	06:01		07:31 (T61)
	17:40			18:18	19:50	20:22	72	08:28 (T61)	20:52	63	08:21 (T61)	21:08	46	08:17 (T61)
27	07:48			07:10	07:25	06:36		07:15 (T61)	06:05		07:18 (T61)	06:01		07:31 (T61)
	17:42			18:20	19:51	20:23	73	08:28 (T61)	20:53	62	08:20 (T61)	21:08	46	08:17 (T61)
28	07:47			07:09	07:23	06:35		07:15 (T61)	06:04		07:19 (T61)	06:01		07:32 (T61)
	17:43			18:21	19:52	20:24	73	08:28 (T61)	20:54	60	08:19 (T61)	21:08	46	08:18 (T61)
29	07:46				07:21	06:33		07:14 (T61)	06:03		07:20 (T61)	06:02		07:31 (T61)
	17:44				19:53	20:25	75	08:29 (T61)	20:54	59	08:19 (T61)	21:08	47	08:18 (T61)
30	07:45				07:20	06:32		07:13 (T61)	06:03		07:20 (T61)	06:02		07:32 (T61)
	17:45				19:54	20:26	75	08:28 (T61)	20:55	59	08:19 (T61)	21:08	48	08:20 (T61)
31	07:44				07:18				06:02		07:21 (T61)			
	17:47				19:55				20:56	58	08:19 (T61)			
Potential sun hours	297			297	370	399			448			452		
Total, worst case		406					1325			2150			1453	
Sun reduction		0.31					0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00	
Wind dir. red.		0.53					0.66			0.66			0.66	
Total reduction		0.16					0.34			0.37			0.42	
Total, real		65					447			796			604	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 948 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6952)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:03		07:31 (T61)	06:27		07:23 (T61)	06:58		07:36 (T61)	07:28	07:02			07:37		08:41 (T63)
	21:08	49	08:20 (T61)	20:50	74	08:37 (T61)	20:07	38	08:14 (T61)	19:15	17:28			17:04	23	09:04 (T63)
2	06:03		07:32 (T61)	06:28		07:22 (T61)	06:59		07:38 (T61)	07:29	07:03			07:38		08:40 (T63)
	21:08	49	08:21 (T61)	20:49	74	08:36 (T61)	20:06	33	08:11 (T61)	19:13	17:27			17:04	26	09:06 (T63)
3	06:04		07:31 (T61)	06:29		07:22 (T61)	07:00		07:42 (T61)	07:30	07:04			07:39		08:40 (T63)
	21:08	50	08:21 (T61)	20:48	75	08:37 (T61)	20:04	25	08:07 (T61)	19:12	17:26			17:04	27	09:07 (T63)
4	06:04		07:31 (T61)	06:30		07:22 (T61)	07:01		07:47 (T61)	07:31	07:06			07:40		08:39 (T63)
	21:08	51	08:22 (T61)	20:47	75	08:37 (T61)	20:02	14	08:01 (T61)	19:10	17:25			17:03	29	09:08 (T63)
5	06:05		07:30 (T61)	06:31		07:22 (T61)	07:02			07:32	07:07			07:41		08:39 (T63)
	21:08	52	08:22 (T61)	20:46	75	08:37 (T61)	20:01			19:08	17:24			17:03	30	09:09 (T63)
6	06:05		07:31 (T61)	06:32		07:22 (T61)	07:03			07:33	07:08			07:42		08:39 (T63)
	21:08	52	08:23 (T61)	20:44	75	08:37 (T61)	19:57			19:07	17:22			17:03	31	09:10 (T63)
7	06:06		07:30 (T61)	06:33		07:22 (T61)	07:04			07:34	07:09			07:43		08:39 (T63)
	21:07	53	08:23 (T61)	20:43	75	08:37 (T61)	19:56			19:05	17:21			17:03	32	09:11 (T63)
8	06:07		07:30 (T61)	06:34		07:22 (T61)	07:05			07:35	07:10			07:44		08:39 (T63)
	21:07	54	08:24 (T61)	20:42	75	08:37 (T61)	19:54			19:03	17:20			17:03	33	09:12 (T63)
9	06:07		07:30 (T61)	06:35		07:22 (T61)	07:06			07:36	07:12			07:45		08:39 (T63)
	21:07	55	08:25 (T61)	20:41	75	08:37 (T61)	19:52			19:02	17:19			17:03	33	09:12 (T63)
10	06:08		07:29 (T61)	06:36		07:22 (T61)	07:07			07:37	07:13			07:46		08:40 (T63)
	21:06	56	08:25 (T61)	20:39	75	08:37 (T61)	19:51			19:00	17:18			17:03	33	09:13 (T63)
11	06:09		07:29 (T61)	06:37		07:22 (T61)	07:08			07:38	07:14			07:46		08:40 (T63)
	21:06	57	08:26 (T61)	20:38	75	08:37 (T61)	19:49			18:59	17:17			17:03	34	09:14 (T63)
12	06:09		07:29 (T61)	06:38		07:22 (T61)	07:08			07:39	07:15			07:47		08:40 (T63)
	21:05	58	08:27 (T61)	20:37	75	08:37 (T61)	19:47			18:57	17:16			17:03	35	09:15 (T63)
13	06:10		07:28 (T61)	06:39		07:22 (T61)	07:09			07:40	07:16			07:48		08:40 (T63)
	21:05	59	08:27 (T61)	20:36	75	08:37 (T61)	19:46			18:55	17:15			17:03	35	09:15 (T63)
14	06:11		07:28 (T61)	06:40		07:22 (T61)	07:10			07:41	07:18			07:49		08:40 (T63)
	21:04	59	08:27 (T61)	20:34	74	08:36 (T61)	19:44			18:54	17:14			17:04	36	09:16 (T63)
15	06:12		07:28 (T61)	06:41		07:22 (T61)	07:11			07:43	07:19			07:49		08:41 (T63)
	21:04	60	08:28 (T61)	20:33	74	08:36 (T61)	19:42			18:52	17:13			17:04	36	09:17 (T63)
16	06:12		07:28 (T61)	06:42		07:23 (T61)	07:12			07:44	07:20			07:50		08:41 (T63)
	21:03	61	08:29 (T61)	20:31	72	08:35 (T61)	19:40			18:51	17:13			17:04	37	09:18 (T63)
17	06:13		07:27 (T61)	06:43		07:23 (T61)	07:13			07:45	07:21			07:51		08:41 (T63)
	21:03	62	08:29 (T61)	20:30	72	08:35 (T61)	19:39			18:49	17:12			17:04	37	09:18 (T63)
18	06:14		07:27 (T61)	06:44		07:23 (T61)	07:14			07:46	07:22			07:52		08:42 (T63)
	21:02	63	08:30 (T61)	20:29	71	08:34 (T61)	19:37			18:48	17:11			17:05	36	09:18 (T63)
19	06:15		07:27 (T61)	06:45		07:24 (T61)	07:15			07:47	07:23			07:52		08:42 (T63)
	21:01	64	08:31 (T61)	20:27	70	08:34 (T61)	19:35			18:46	17:10			17:05	36	09:18 (T63)
20	06:16		07:26 (T61)	06:46		07:24 (T61)	07:16			07:48	07:25			07:53		08:43 (T63)
	21:01	65	08:31 (T61)	20:26	69	08:33 (T61)	19:34			18:45	17:10			17:06	36	09:19 (T63)
21	06:17		07:26 (T61)	06:47		07:24 (T61)	07:17			07:49	07:26			07:53		08:44 (T63)
	21:00	66	08:32 (T61)	20:24	68	08:32 (T61)	19:32			18:43	17:09			17:06	36	09:20 (T63)
22	06:17		07:26 (T61)	06:48		07:25 (T61)	07:18			07:50	07:27			07:54		08:44 (T63)
	20:59	67	08:33 (T61)	20:23	66	08:31 (T61)	19:30			18:42	17:08			17:06	36	09:20 (T63)
23	06:18		07:25 (T61)	06:49		07:26 (T61)	07:19			07:52	07:28			07:54		08:44 (T63)
	20:58	68	08:33 (T61)	20:21	64	08:30 (T61)	19:29			18:40	17:08			17:07	36	09:20 (T63)
24	06:19		07:25 (T61)	06:50		07:25 (T61)	07:20			07:53	07:29			07:55		08:45 (T63)
	20:58	68	08:33 (T61)	20:20	63	08:28 (T61)	19:27			18:39	17:07			17:08	36	09:21 (T63)
25	06:20		07:25 (T61)	06:51		07:26 (T61)	07:22			07:54	07:30			07:55		08:45 (T63)
	20:57	69	08:34 (T61)	20:18	61	08:27 (T61)	19:25			18:38	17:07			17:08	36	09:21 (T63)
26	06:21		07:24 (T61)	06:52		07:27 (T61)	07:23			07:55	07:31		08:50 (T63)	07:56		08:45 (T63)
	20:56	70	08:34 (T61)	20:17	59	08:26 (T61)	19:23			18:36	17:06	2	08:52 (T63)	07:09	37	09:22 (T63)
27	06:22		07:24 (T61)	06:53		07:28 (T61)	07:24			07:56	07:33		08:46 (T63)	07:56		08:46 (T63)
	20:55	71	08:35 (T61)	20:15	56	08:24 (T61)	19:22			18:35	17:06	11	08:57 (T63)	07:09	37	09:23 (T63)
28	06:23		07:24 (T61)	06:54		07:29 (T61)	07:25			07:57	07:34		08:44 (T63)	07:56		08:47 (T63)
	20:54	71	08:35 (T61)	20:14	54	08:23 (T61)	19:20			18:33	17:05	16	09:00 (T63)	07:10	36	09:23 (T63)
29	06:24		07:24 (T61)	06:55		07:30 (T61)	07:26			07:58	07:35		08:42 (T63)	07:56		08:47 (T63)
	20:53	72	08:36 (T61)	20:12	51	08:21 (T61)	19:18			18:32	17:05	19	09:01 (T63)	07:11	36	09:23 (T63)
30	06:25		07:24 (T61)	06:56		07:32 (T61)	07:27			08:00	07:36		08:41 (T63)	07:57		08:47 (T63)
	20:52	72	08:36 (T61)	20:10	47	08:19 (T61)	19:17			18:31	17:04	22	09:03 (T63)	07:12	36	09:23 (T63)
31	06:26		07:24 (T61)	06:57		07:34 (T61)				08:01				07:57		08:49 (T63)
	20:51	73	08:37 (T61)	20:09	43	08:17 (T61)				18:30				07:12	35	09:24 (T63)
Potential sun hours	459			428			375			345	298			288		
Total, worst case		1896			2107			110				70			1052	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.66			0.66			0.66				0.53			0.53	
Total reduction		0.43			0.40			0.38				0.16			0.11	
Total, real		812			834			42				11			120	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 956 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6959)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		16:04 (T30)	07:44		08:04 (T31)	07:07		07:16		08:11 (T28)	06:30	06:01
	17:13	38	16:42 (T30)	17:47	59	16:56 (T30)	18:22		19:56	50	19:14 (T27)	20:27	20:57
2	07:57		16:04 (T30)	07:43		08:03 (T31)	07:06		07:14		08:13 (T28)	06:29	06:01
	17:14	39	16:43 (T30)	17:49	59	16:55 (T30)	18:23		19:57	42	19:12 (T27)	20:28	20:58
3	07:58		16:04 (T30)	07:42		08:02 (T31)	07:04		07:13		08:18 (T28)	06:28	06:00
	17:15	39	16:43 (T30)	17:50	61	16:55 (T30)	18:24		19:58	27	19:10 (T27)	20:29	20:58
4	07:58		16:04 (T30)	07:40		08:01 (T31)	07:02		07:11		18:55 (T27)	06:26	06:00
	17:15	40	16:44 (T30)	17:51	61	16:54 (T30)	18:25		19:59	11	19:06 (T27)	20:30	20:59
5	07:58		16:04 (T30)	07:39		08:00 (T31)	07:01		07:09			06:25	06:00
	17:16	41	16:45 (T30)	17:52	62	16:54 (T30)	18:26		20:00			20:31	21:00
6	07:58		16:04 (T30)	07:38		07:58 (T31)	06:59		07:25 (T28)		07:08	06:24	05:59
	17:17	42	16:46 (T30)	17:54	62	16:52 (T30)	18:27	14	07:39 (T28)		20:00	20:32	21:01
7	07:57		16:05 (T30)	07:37		07:57 (T31)	06:58		07:20 (T28)		07:06	06:23	05:59
	17:18	42	16:47 (T30)	17:55	61	16:51 (T30)	18:29	22	07:42 (T28)		20:01	20:33	21:01
8	07:57		16:04 (T30)	07:36		07:56 (T31)	07:56		08:17 (T28)		07:05	06:21	05:59
	17:19	43	16:47 (T30)	17:56	60	16:50 (T30)	19:30	27	08:44 (T28)		20:02	20:34	21:02
9	07:57		16:04 (T30)	07:35		07:55 (T31)	07:54		08:16 (T28)		07:03	06:20	05:59
	17:20	44	16:48 (T30)	17:57	58	16:49 (T30)	19:31	30	08:46 (T28)		20:03	20:35	21:03
10	07:57		16:05 (T30)	07:34		07:54 (T31)	07:53		08:14 (T28)		07:01	06:19	05:58
	17:21	44	16:49 (T30)	17:59	56	16:47 (T30)	19:32	33	08:47 (T28)		20:05	20:37	21:03
11	07:57		16:05 (T30)	07:32		07:53 (T31)	07:51		08:12 (T28)		07:00	06:18	05:58
	17:22	45	16:50 (T30)	18:00	51	16:44 (T30)	19:33	36	08:48 (T28)		20:06	20:38	21:04
12	07:56		16:04 (T30)	07:31		07:53 (T31)	07:50		08:11 (T28)		06:58	06:17	05:58
	17:23	46	16:50 (T30)	18:01	42	16:40 (T30)	19:34	38	08:49 (T28)		20:07	20:39	21:04
13	07:56		16:05 (T30)	07:30		07:54 (T31)	07:48		08:09 (T28)		06:56	06:16	05:58
	17:25	46	16:51 (T30)	18:02	32	08:26 (T31)	19:35	48	19:10 (T27)		20:08	20:40	21:05
14	07:56		16:04 (T30)	07:29		07:54 (T31)	07:46		08:08 (T28)		06:55	06:15	05:58
	17:26	47	16:51 (T30)	18:04	32	08:26 (T31)	19:36	58	19:14 (T27)		20:09	20:41	21:05
15	07:55		16:05 (T30)	07:27		07:54 (T31)	07:45		08:08 (T28)		06:53	06:14	05:58
	17:27	47	16:52 (T30)	18:05	31	08:25 (T31)	19:38	63	19:16 (T27)		20:10	20:42	21:06
16	07:55		16:05 (T30)	07:26		07:55 (T31)	07:43		08:07 (T28)		06:52	06:13	05:58
	17:28	47	16:52 (T30)	18:06	29	08:24 (T31)	19:39	68	19:17 (T27)		20:11	20:43	21:06
17	07:55		16:05 (T30)	07:25		07:55 (T31)	07:41		08:06 (T28)		06:50	06:12	05:58
	17:29	48	16:53 (T30)	18:07	28	08:23 (T31)	19:40	71	19:18 (T27)		20:12	20:44	21:06
18	07:54		16:05 (T30)	07:23		07:56 (T31)	07:40		08:06 (T28)		06:49	06:11	05:58
	17:30	48	16:53 (T30)	18:09	26	08:22 (T31)	19:41	74	19:20 (T27)		20:13	20:45	21:07
19	07:53		16:06 (T30)	07:22		07:58 (T31)	07:38		08:05 (T28)		06:47	06:10	05:58
	17:31	48	16:54 (T30)	18:10	24	08:22 (T31)	19:42	77	19:21 (T27)		20:14	20:46	21:07
20	07:53		16:06 (T30)	07:21		07:59 (T31)	07:36		08:04 (T28)		06:46	06:09	05:58
	17:33	48	16:54 (T30)	18:11	20	08:19 (T31)	19:43	79	19:21 (T27)		20:15	20:46	21:07
21	07:52		16:06 (T30)	07:19		08:01 (T31)	07:35		08:05 (T28)		06:44	06:08	05:59
	17:34	49	16:55 (T30)	18:12	17	08:18 (T31)	19:44	79	19:22 (T27)		20:16	20:47	21:08
22	07:52		16:07 (T30)	07:18		08:03 (T31)	07:33		08:04 (T28)		06:43	06:08	05:59
	17:35	49	16:56 (T30)	18:13	11	08:14 (T31)	19:45	80	19:22 (T27)		20:17	20:48	21:08
23	07:51		16:07 (T30)	07:16			07:31		08:04 (T28)		06:41	06:07	05:59
	17:36	49	16:56 (T30)	18:15			19:46	79	19:21 (T27)		20:18	20:49	21:08
24	07:50		16:07 (T30)	07:15			07:30		08:05 (T28)		06:40	06:06	05:59
	17:37	49	16:56 (T30)	18:16			19:47	79	19:22 (T27)		20:20	20:50	21:08
25	07:50		16:07 (T30)	07:13			07:28		08:05 (T28)		06:38	06:05	06:00
	17:39	49	16:56 (T30)	18:17			19:48	77	19:21 (T27)		20:21	20:51	21:08
26	07:49		16:08 (T30)	07:12			07:26		08:05 (T28)		06:37	06:05	06:00
	17:40	49	16:57 (T30)	18:18			19:50	76	19:20 (T27)		20:22	20:52	21:09
27	07:48		16:08 (T30)	07:10			07:24		08:05 (T28)		06:36	06:04	06:00
	17:41	49	16:57 (T30)	18:19			19:51	74	19:20 (T27)		20:23	20:53	21:09
28	07:47		16:09 (T30)	07:09			07:23		08:06 (T28)		06:34	06:03	06:01
	17:42	48	16:57 (T30)	18:20			19:52	70	19:19 (T27)		20:24	20:54	21:09
29	07:46		16:09 (T30)				07:21		08:07 (T28)		06:33	06:03	06:01
	17:44	47	16:56 (T30)				19:53	66	19:18 (T27)		20:25	20:55	21:09
30	07:45		08:06 (T31)				07:19		08:08 (T28)		06:31	06:02	06:01
	17:45	52	16:56 (T30)				19:54	62	19:17 (T27)		20:26	20:55	21:09
31	07:44		08:05 (T31)				07:18		08:10 (T28)			06:02	
	17:46	57	16:56 (T30)				19:55	56	19:16 (T27)			20:56	
Potential sun hours	297			297			370			399		449	453
Total, worst case		1429			942			1536			130		
Sun reduction		0.31			0.40			0.44			0.52		
Oper. time red.		1.00			1.00			1.00			1.00		
Wind dir. red.		0.73			0.62			0.61			0.62		
Total reduction		0.23			0.26			0.27			0.33		
Total, real		331			241			421			43		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 956 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6959)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September		October		November		December	
1	06:02	06:26	06:57		07:27		07:49 (T28)		07:02		07:23 (T31)		07:37		15:47 (T30)
	21:09	20:50	20:07		19:15	39	08:28 (T28)		17:28	57	16:16 (T30)		17:04	45	16:32 (T30)
2	06:02	06:27	06:58		07:29		07:50 (T28)		07:03		07:25 (T31)		07:38		15:48 (T30)
	21:08	20:49	20:06		19:13	37	08:27 (T28)		17:27	59	16:19 (T30)		17:03	44	16:32 (T30)
3	06:03	06:28	06:59		07:30		07:51 (T28)		07:04		07:26 (T31)		07:39		15:48 (T30)
	21:08	20:48	20:04		19:11	34	08:25 (T28)		17:25	60	16:20 (T30)		17:03	44	16:32 (T30)
4	06:03	06:29	07:00		07:31		07:52 (T28)		07:06		07:27 (T31)		07:40		15:49 (T30)
	21:08	20:47	20:02		19:10	31	08:23 (T28)		17:24	62	16:21 (T30)		17:03	43	16:32 (T30)
5	06:04	06:30	07:01		07:32		07:54 (T28)		07:07		07:28 (T31)		07:41		15:50 (T30)
	21:08	20:46	20:01		19:08	28	08:22 (T28)		17:23	62	16:22 (T30)		17:03	42	16:32 (T30)
6	06:05	06:31	07:02		07:33		07:56 (T28)		07:08		07:30 (T31)		07:42		15:50 (T30)
	21:08	20:45	19:57		19:06	24	08:20 (T28)		17:22	62	16:24 (T30)		17:03	42	16:32 (T30)
7	06:05	06:32	07:03		07:34		07:58 (T28)		07:09		07:31 (T31)		07:43		15:51 (T30)
	21:07	20:43	19:56		19:05	18	08:16 (T28)		17:21	61	16:24 (T30)		17:02	41	16:32 (T30)
8	06:06	06:33	07:04	18:50 (T27)	07:35		08:03 (T28)		07:10		07:32 (T31)		07:44		15:52 (T30)
	21:07	20:42	19:54	11 19:01 (T27)	19:03	8	08:11 (T28)		17:20	61	16:25 (T30)		17:02	40	16:32 (T30)
9	06:07	06:34	07:05	08:12 (T28)	07:36				07:12		07:34 (T31)		07:45		15:52 (T30)
	21:07	20:41	19:52	26 19:03 (T27)	19:01				17:19	59	16:26 (T30)		17:02	39	16:31 (T30)
10	06:07	06:35	07:06	08:07 (T28)	07:37				07:13		07:35 (T31)		07:46		15:53 (T30)
	21:06	20:40	19:51	39 19:05 (T27)	19:00				17:18	58	16:27 (T30)		17:02	39	16:32 (T30)
11	06:08	06:36	07:07	08:04 (T28)	07:38				07:14		07:36 (T31)		07:47		15:54 (T30)
	21:06	20:38	19:49	48 19:06 (T27)	18:58				17:17	56	16:27 (T30)		17:02	38	16:32 (T30)
12	06:09	06:37	07:08	08:01 (T28)	07:39				07:15		07:37 (T31)		07:47		15:55 (T30)
	21:06	20:37	19:47	56 19:07 (T27)	18:57				17:16	52	16:27 (T30)		17:03	37	16:32 (T30)
13	06:09	06:38	07:09	07:59 (T28)	07:40				07:16		15:41 (T30)		07:48		15:55 (T30)
	21:05	20:36	19:45	61 19:08 (T27)	18:55				17:15	47	16:28 (T30)		17:03	38	16:33 (T30)
14	06:10	06:39	07:10	07:57 (T28)	07:41				07:18		15:41 (T30)		07:49		15:55 (T30)
	21:05	20:34	19:44	66 19:08 (T27)	18:53				17:14	47	16:28 (T30)		17:03	37	16:32 (T30)
15	06:11	06:40	07:11	07:56 (T28)	07:42				07:19		15:40 (T30)		07:50		15:56 (T30)
	21:04	20:33	19:42	70 19:09 (T27)	18:52				17:13	49	16:29 (T30)		17:03	37	16:33 (T30)
16	06:12	06:41	07:12	07:55 (T28)	07:44				07:20		15:41 (T30)		07:50		15:57 (T30)
	21:04	20:32	19:40	73 19:09 (T27)	18:50				17:12	49	16:30 (T30)		17:03	36	16:33 (T30)
17	06:13	06:42	07:13	07:53 (T28)	07:45				07:21		15:41 (T30)		07:51		15:58 (T30)
	21:03	20:30	19:39	76 19:09 (T27)	18:49				17:11	49	16:30 (T30)		17:04	36	16:34 (T30)
18	06:13	06:43	07:14	07:52 (T28)	07:46				07:22		15:41 (T30)		07:52		15:58 (T30)
	21:02	20:29	19:37	78 19:09 (T27)	18:47				17:10	49	16:30 (T30)		17:04	36	16:34 (T30)
19	06:14	06:44	07:15	07:51 (T28)	07:47				07:24		15:41 (T30)		07:52		15:59 (T30)
	21:02	20:27	19:35	78 19:08 (T27)	18:46				17:10	49	16:30 (T30)		17:04	35	16:34 (T30)
20	06:15	06:45	07:16	07:51 (T28)	07:48		08:34 (T31)		07:25		15:42 (T30)		07:53		15:59 (T30)
	21:01	20:26	19:33	79 19:08 (T27)	18:44	13	08:47 (T31)		17:09	49	16:31 (T30)		17:05	35	16:34 (T30)
21	06:16	06:46	07:17	07:50 (T28)	07:49		08:31 (T31)		07:26		15:42 (T30)		07:53		16:00 (T30)
	21:00	20:24	19:32	79 19:07 (T27)	18:43	18	08:49 (T31)		17:08	49	16:31 (T30)		17:05	35	16:35 (T30)
22	06:17	06:47	07:18	07:49 (T28)	07:50		08:29 (T31)		07:27		15:42 (T30)		07:54		16:00 (T30)
	20:59	20:23	19:30	80 19:07 (T27)	18:41	21	08:50 (T31)		17:08	48	16:30 (T30)		17:06	35	16:35 (T30)
23	06:18	06:48	07:19	07:49 (T28)	07:51		08:27 (T31)		07:28		15:42 (T30)		07:54		16:01 (T30)
	20:59	20:21	19:28	79 19:06 (T27)	18:40	25	08:52 (T31)		17:07	48	16:30 (T30)		17:06	35	16:36 (T30)
24	06:19	06:49	07:20	07:49 (T28)	07:53		08:26 (T31)		07:29		15:43 (T30)		07:55		16:01 (T30)
	20:58	20:20	19:27	77 19:04 (T27)	18:39	26	08:52 (T31)		17:07	48	16:31 (T30)		17:07	35	16:36 (T30)
25	06:20	06:50	07:21	07:48 (T28)	07:54		08:26 (T31)		07:31		15:43 (T30)		07:55		16:01 (T30)
	20:57	20:18	19:25	75 19:03 (T27)	18:37	28	08:54 (T31)		17:06	48	16:31 (T30)		17:07	35	16:36 (T30)
26	06:20	06:51	07:22	07:48 (T28)	07:55		08:25 (T31)		07:32		15:44 (T30)		07:56		16:02 (T30)
	20:56	20:17	19:23	73 19:01 (T27)	18:36	29	08:54 (T31)		17:05	47	16:31 (T30)		17:08	36	16:38 (T30)
27	06:21	06:52	07:23	07:48 (T28)	07:56		08:24 (T31)		07:33		15:44 (T30)		07:56		16:02 (T30)
	20:55	20:15	19:21	69 18:59 (T27)	18:34	30	08:54 (T31)		17:05	47	16:31 (T30)		17:09	36	16:38 (T30)
28	06:22	06:53	07:24	07:48 (T28)	07:57		08:23 (T31)		07:34		15:45 (T30)		07:56		16:02 (T30)
	20:54	20:14	19:20	64 18:57 (T27)	18:33	31	08:54 (T31)		17:05	46	16:31 (T30)		17:09	36	16:38 (T30)
29	06:23	06:54	07:25	07:48 (T28)	07:58		08:24 (T31)		07:35		15:45 (T30)		07:57		16:03 (T30)
	20:53	20:12	19:18	61 18:56 (T27)	18:32	31	08:55 (T31)		17:04	46	16:31 (T30)		17:10	37	16:40 (T30)
30	06:24	06:55	07:26	07:49 (T28)	08:00		08:23 (T31)		07:36		15:45 (T30)		07:57		16:03 (T30)
	20:52	20:10	19:16	52 18:52 (T27)	18:30	45	17:11 (T30)		17:04	46	16:31 (T30)		17:11	37	16:40 (T30)
31	06:25	06:56			08:01		08:23 (T31)						07:57		16:03 (T30)
	20:51	20:09			18:29	52	17:14 (T30)						17:12	38	16:41 (T30)
Potential sun hours	460	429	375		345		297		287						
Total, worst case				1470		568		1570		1179					
Sun reduction				0.59		0.48		0.30		0.22					
Oper. time red.				1.00		1.00		1.00		1.00					
Wind dir. red.				0.61		0.57		0.70		0.73					
Total reduction				0.37		0.28		0.22		0.16					
Total, real				544		160		339		194					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 986 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6986)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57	07:43	07:07	07:16	06:30	06:49 (T5)	06:01	06:26 (T4)	06:01	06:31 (T4)	06:26	06:57 (T5)	06:57	07:27	07:02	07:37
	17:12	17:47	18:21	19:56	20:27	27 07:16 (T5)	20:57	43 07:09 (T4)	21:09	46 07:17 (T4)	20:50	29 07:26 (T5)	20:07	19:14	17:27	17:03
2	07:57	07:42	07:05	07:14	06:28	06:48 (T5)	06:00	06:26 (T4)	06:02	06:31 (T4)	06:27	06:56 (T5)	06:58	07:28	07:03	07:38
	17:13	17:48	18:22	19:57	20:28	28 07:16 (T5)	20:58	44 07:10 (T4)	21:08	46 07:17 (T4)	20:49	30 07:26 (T5)	20:05	19:13	17:26	17:03
3	07:57	07:41	07:04	07:12	06:27	06:47 (T5)	06:00	06:27 (T4)	06:02	06:32 (T4)	06:28	06:56 (T5)	06:59	07:29	07:04	07:39
	17:14	17:49	18:24	19:58	20:29	30 07:17 (T5)	20:58	44 07:11 (T4)	21:08	45 07:17 (T4)	20:48	31 07:27 (T5)	20:04	19:11	17:25	17:02
4	07:58	07:40	07:02	07:11	06:26	06:46 (T5)	05:59	06:26 (T4)	06:03	06:32 (T4)	06:29	06:55 (T5)	07:00	07:30	07:05	07:40
	17:15	17:51	18:25	19:59	20:30	31 07:17 (T5)	20:59	45 07:11 (T4)	21:08	46 07:18 (T4)	20:47	31 07:26 (T5)	20:02	19:09	17:24	17:02
5	07:58	07:39	07:01	07:09	06:25	06:45 (T5)	05:59	06:26 (T4)	06:04	06:32 (T4)	06:30	06:54 (T5)	07:01	07:31	07:07	07:41
	17:16	17:52	18:26	20:00	20:31	31 07:16 (T5)	21:00	45 07:11 (T4)	21:08	46 07:18 (T4)	20:46	32 07:26 (T5)	20:00	19:08	17:23	17:02
6	07:57	07:38	06:59	07:07	06:23	06:45 (T5)	05:59	06:27 (T4)	06:04	06:33 (T4)	06:31	06:54 (T5)	07:02	07:32	07:08	07:42
	17:17	17:53	18:27	20:00	20:32	32 07:17 (T5)	21:01	45 07:12 (T4)	21:08	45 07:18 (T4)	20:44	32 07:26 (T5)	19:57	19:06	17:21	17:02
7	07:57	07:37	06:57	07:06	06:22	06:45 (T5)	05:58	06:26 (T4)	06:05	06:32 (T4)	06:32	06:54 (T5)	07:03	07:34	07:09	07:43
	17:18	17:54	18:28	20:01	20:33	32 07:17 (T5)	21:01	45 07:11 (T4)	21:07	45 07:17 (T4)	20:43	32 07:26 (T5)	19:55	19:04	17:20	17:02
8	07:57	07:36	07:56	07:04	06:21	06:45 (T5)	05:58	06:26 (T4)	06:05	06:33 (T4)	06:33	06:54 (T5)	07:04	07:35	07:10	07:44
	17:19	17:56	19:29	20:02	20:34	31 07:16 (T5)	21:02	46 07:12 (T4)	21:07	45 07:18 (T4)	20:42	32 07:26 (T5)	19:54	19:03	17:19	17:02
9	07:57	07:35	07:54	07:03	06:20	06:45 (T5)	05:58	06:26 (T4)	06:06	06:34 (T4)	06:34	06:55 (T5)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03	20:35	31 07:16 (T5)	21:02	46 07:12 (T4)	21:07	44 07:18 (T4)	20:41	31 07:26 (T5)	19:52	19:01	17:18	17:02
10	07:57	07:34	07:53	07:01	06:19	06:45 (T5)	05:58	06:27 (T4)	06:07	06:33 (T4)	06:35	06:56 (T5)	07:06	07:37	07:13	07:46
	17:21	17:58	19:32	20:04	20:36	31 07:16 (T5)	21:03	46 07:13 (T4)	21:06	45 07:18 (T4)	20:39	29 07:25 (T5)	19:50	18:59	17:17	17:02
11	07:57	07:32	07:51	06:59	06:18	06:46 (T5)	05:58	06:27 (T4)	06:07	06:34 (T4)	06:36	06:57 (T5)	07:07	07:38	07:14	07:47
	17:22	17:59	19:33	20:05	20:37	30 07:16 (T5)	21:04	46 07:13 (T4)	21:06	44 07:18 (T4)	20:38	28 07:25 (T5)	19:49	18:58	17:16	17:02
12	07:56	07:31	07:49	06:58	06:16	06:46 (T5)	05:58	06:27 (T4)	06:08	06:35 (T4)	06:37	06:58 (T5)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:06	20:38	29 07:15 (T5)	21:04	46 07:13 (T4)	21:06	43 07:18 (T4)	20:37	26 07:24 (T5)	19:47	18:56	17:15	17:02
13	07:56	07:30	07:48	06:56	06:15	06:47 (T5)	05:57	06:27 (T4)	06:09	06:34 (T4)	06:38	06:59 (T5)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08	20:39	27 07:14 (T5)	21:05	47 07:14 (T4)	21:05	43 07:17 (T4)	20:36	25 07:24 (T5)	19:45	18:55	17:14	17:02
14	07:56	07:28	07:46	06:55	06:14	06:43 (T4)	05:57	06:28 (T4)	06:10	06:35 (T4)	06:39	07:00 (T5)	07:10	07:41	07:18	07:49
	17:25	18:03	19:36	20:09	20:41	31 07:14 (T5)	21:05	46 07:14 (T4)	21:05	42 07:17 (T4)	20:34	23 07:23 (T5)	19:44	18:53	17:13	17:02
15	07:55	07:27	07:44	06:53	06:13	06:39 (T4)	05:57	06:28 (T4)	06:10	06:36 (T4)	06:40	07:01 (T5)	07:11	07:42	07:19	07:50
	17:26	18:04	19:37	20:10	20:42	34 07:13 (T5)	21:06	46 07:14 (T4)	21:04	41 07:17 (T4)	20:33	21 07:22 (T5)	19:42	18:52	17:12	17:03
16	07:55	07:26	07:43	06:51	06:12	06:37 (T4)	05:57	06:28 (T4)	06:11	06:37 (T4)	06:41	07:02 (T5)	07:12	07:43	07:20	07:50
	17:27	18:06	19:38	20:11	20:43	35 07:12 (T5)	21:06	46 07:14 (T4)	21:03	40 07:17 (T4)	20:31	18 07:20 (T5)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	06:11	06:35 (T4)	05:57	06:28 (T4)	06:12	06:36 (T4)	06:42	07:03 (T5)	07:13	07:44	07:21	07:51
	17:29	18:07	19:39	20:12	20:44	36 07:11 (T5)	21:06	46 07:14 (T4)	21:03	40 07:16 (T4)	20:30	16 07:19 (T5)	19:38	18:48	17:11	17:03
18	07:54	07:23	07:39	06:48	06:10	06:33 (T4)	05:58	06:28 (T4)	06:13	06:37 (T4)	06:43	07:04 (T5)	07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13	20:44	37 07:10 (T5)	21:07	46 07:14 (T4)	21:02	39 07:16 (T4)	20:29	12 07:16 (T5)	19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47	06:10	06:32 (T4)	05:58	06:28 (T4)	06:14	06:38 (T4)	06:44	07:05 (T5)	07:15	07:47	07:23	07:52
	17:31	18:09	19:42	20:14	20:45	36 07:08 (T5)	21:07	47 07:15 (T4)	21:02	38 07:16 (T4)	20:27	8 07:13 (T5)	19:35	18:45	17:09	17:04
20	07:53	07:20	07:36	06:45	06:09	06:32 (T4)	05:58	06:28 (T4)	06:15	06:39 (T4)	06:45		07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15	20:46	35 07:07 (T5)	21:07	47 07:15 (T4)	21:01	37 07:16 (T4)	20:26		19:33	18:44	17:09	17:04
21	07:52	07:19	07:34	06:44	06:08	06:31 (T4)	05:58	06:28 (T4)	06:15	06:40 (T4)	06:46		07:17	07:49	07:26	07:53
	17:33	18:12	19:44	20:16	20:47	34 07:05 (T5)	21:08	47 07:15 (T4)	21:00	35 07:15 (T4)	20:24		19:31	18:42	17:08	17:05
22	07:52	07:17	07:33	06:42	06:07	06:30 (T4)	05:58	06:29 (T4)	06:16	06:41 (T4)	06:47		07:18	07:50	07:27	07:54
	17:34	18:13	19:45	20:17	20:48	34 07:04 (T4)	21:08	47 07:16 (T4)	20:59	34 07:15 (T4)	20:23		19:30	18:41	17:07	17:05
23	07:51	07:16	07:31	06:41	06:06	06:29 (T4)	05:58	06:29 (T4)	06:17	06:41 (T4)	06:48		07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18	20:49	36 07:05 (T4)	21:08	47 07:16 (T4)	20:59	35 07:16 (T5)	20:21		19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:39 06:59 (T5)	06:06	06:29 (T4)	05:59	06:29 (T4)	06:18	06:42 (T5)	06:49		07:20	07:52	07:29	07:55
	17:37	18:15	19:47	20:19 9 07:08 (T5)	20:50	37 07:06 (T4)	21:08	47 07:16 (T4)	20:58	36 07:18 (T5)	20:20		19:26	18:38	17:06	17:06
25	07:49	07:13	07:28	06:38 06:57 (T5)	06:05	06:28 (T4)	05:59	06:30 (T4)	06:19	06:43 (T4)	06:50		07:21	07:54	07:30	07:55
	17:38	18:17	19:48	20:20 13 07:10 (T5)	20:51	39 07:07 (T4)	21:08	46 07:16 (T4)	20:57	36 07:19 (T5)	20:18		19:25	18:37	17:05	17:07
26	07:49	07:12	07:26	06:36 06:56 (T5)	06:04	06:27 (T4)	05:59	06:30 (T4)	06:20	06:44 (T4)	06:51		07:22	07:55	07:32	07:56
	17:39	18:18	19:49	20:22 16 07:12 (T5)	20:52	40 07:07 (T4)	21:09	46 07:16 (T4)	20:56	37 07:21 (T5)	20:17		19:23	18:35	17:05	17:08
27	07:48	07:10	07:24	06:35 06:55 (T5)	06:04	06:27 (T4)	06:00	06:30 (T4)	06:21	06:46 (T4)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:50	20:23 19 07:14 (T5)	20:53	41 07:08 (T4)	21:09	46 07:16 (T4)	20:55	36 07:22 (T5)	20:15		19:21	18:34	17:05	17:08
28	07:47	07:08	07:22	06:34 06:53 (T5)	06:03	06:27 (T4)	06:00	06:31 (T4)	06:22	06:48 (T4)	06:53		07:24	07:57	07:34	07:56
	17:42	18:20	19:51	20:24 21 07:14 (T5)	20:54	41 07:08 (T4)	21:09	46 07:17 (T4)	20:54	35 07:23 (T5)	20:13		19:19	18:33	17:04	17:09
29	07:46		07:21	06:32 06:52 (T5)	06:02	06:27 (T4)	06:00	06:31 (T4)	06:23	06:51 (T4)	06:54		07:25	07:58	07:35	07:57
	17:43		19:52	20:25 23 07:15 (T5)	20:55	42 07:09 (T4)	21:09	46 07:17 (T4)	20:53	33 07:24 (T5)	20:12		19:18	18:31	17:04	17:10
30	07:45		07:19	06:31 06:51 (T5)	06:02	06:26 (T4)	06:01	06:31 (T4)	06:24	06:58 (T5)	06:55		07:26	08:00	07:36	07:57
	17:44		19:54	20:26 25 07:16 (T5)	20:55	43 07:09 (T4)	21:09	46 07:17 (T4)	20:52	27 07:25 (T5)	20:10		19:16	18:30	17:03	17:10
31	07:44		07:17		06:01	06:27 (T4)			06:25	06:57 (T5)	06:56			08:01		07:57
	17:46		19:55		20:56	43 07:10 (T4)			20:51	28 07:25 (T5)	20:09			18:29		17:11
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case				126	1064	1376	1232	486				
Sun reduction				0.52	0.57	0.64	0.66	0.61				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.69	0.70	0.71	0.71	0.69				
Total reduction				0.36	0.40	0.46	0.47	0.42				
Total, real				45	425	629	578	204				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 998 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6994)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:58	07:44	07:07	07:16		06:30		18:34 (T26)	06:01	18:28 (T26)	06:02	18:36 (T26)	06:26	18:38 (T26)	06:57	07:28	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	88	20:02 (T25)	20:57	86	19:54 (T26)	21:09	83	19:59 (T26)	20:50	91	20:09 (T25)	20:07	19:15	17:28	17:04
2	07:58	07:43	07:06	07:15		06:29		18:33 (T26)	06:01	18:29 (T26)	06:03	18:36 (T26)	06:27	18:38 (T26)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	90	20:03 (T25)	20:58	85	19:54 (T26)	21:09	83	19:59 (T26)	20:49	91	20:09 (T25)	20:06	19:13	17:27	17:03
3	07:58	07:42	07:04	07:13		06:28		18:31 (T26)	06:00	18:29 (T26)	06:03	18:36 (T26)	06:28	18:38 (T26)	06:59	07:30	07:05	07:39
	17:15	17:50	18:24	19:58		20:29	91	20:02 (T25)	20:59	85	19:54 (T26)	21:09	84	20:00 (T26)	20:48	92	20:10 (T25)	20:04	19:11	17:26	17:03
4	07:58	07:41	07:03	07:11		06:26		18:31 (T26)	06:00	18:29 (T26)	06:04	18:36 (T26)	06:29	18:38 (T26)	07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59		20:30	91	20:02 (T25)	20:59	85	19:54 (T26)	21:08	84	20:00 (T26)	20:47	92	20:10 (T25)	20:02	19:10	17:24	17:03
5	07:58	07:40	07:01	07:10		06:25		18:30 (T26)	06:00	18:30 (T26)	06:04	18:36 (T26)	06:30	18:39 (T26)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	92	20:02 (T25)	21:00	84	19:54 (T26)	21:08	84	20:00 (T26)	20:46	92	20:11 (T25)	20:01	19:08	17:23	17:03
6	07:58	07:38	06:59	07:08		06:24		18:30 (T26)	05:59	18:30 (T26)	06:05	18:36 (T26)	06:31	18:39 (T26)	07:02	07:33	07:08	07:42
	17:17	17:54	18:28	20:00		20:32	92	20:02 (T25)	21:01	84	19:54 (T26)	21:08	84	20:00 (T26)	20:45	92	20:11 (T25)	19:57	19:06	17:22	17:03
7	07:58	07:37	06:58	07:06		06:23		18:29 (T26)	05:59	18:30 (T26)	06:05	18:36 (T26)	06:32	18:40 (T26)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:34	92	20:01 (T25)	21:01	84	19:54 (T26)	21:08	85	20:01 (T26)	20:43	91	20:11 (T25)	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05		06:22		18:29 (T26)	05:59	18:31 (T26)	06:06	18:37 (T26)	06:33	18:40 (T26)	07:04	07:35	07:11	07:44
	17:19	17:56	19:30	20:03		20:35	92	20:01 (T25)	21:02	83	19:54 (T26)	21:07	84	20:01 (T26)	20:42	91	20:11 (T25)	19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03		06:20		18:29 (T26)	05:59	18:31 (T26)	06:07	18:36 (T26)	06:34	18:41 (T26)	07:05	07:36	07:12	07:45
	17:20	17:58	19:31	20:04		20:36	92	20:01 (T25)	21:03	84	19:55 (T26)	21:07	85	20:01 (T26)	20:41	90	20:11 (T25)	19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01		06:19		18:27 (T26)	05:58	18:31 (T26)	06:07	18:36 (T26)	06:35	18:41 (T26)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:37	92	19:59 (T25)	21:03	84	19:55 (T26)	21:07	85	20:01 (T26)	20:40	90	20:11 (T25)	19:51	19:00	17:18	17:03
11	07:57	07:33	07:51	07:00		06:18		18:27 (T26)	05:58	18:31 (T26)	06:08	18:37 (T26)	06:36	18:42 (T26)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	92	19:59 (T25)	21:04	83	19:54 (T26)	21:06	85	20:02 (T26)	20:38	89	20:11 (T25)	19:49	18:58	17:17	17:03
12	07:57	07:31	07:50	06:58		06:17		18:27 (T26)	05:58	18:31 (T26)	06:09	18:36 (T26)	06:37	18:43 (T26)	07:08	07:39	07:15	07:48
	17:24	18:01	19:34	20:07		20:39	91	19:58 (T25)	21:04	84	19:55 (T26)	21:06	85	20:01 (T26)	20:37	88	20:11 (T25)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57		06:16		18:27 (T26)	05:58	18:32 (T26)	06:10	18:36 (T26)	06:38	18:44 (T26)	07:09	07:40	07:17	07:48
	17:25	18:03	19:35	20:08		20:40	90	19:57 (T25)	21:05	83	19:55 (T26)	21:05	86	20:02 (T26)	20:36	87	20:11 (T25)	19:46	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		18:26 (T26)	05:58	18:32 (T26)	06:10	18:37 (T26)	06:39	18:44 (T26)	07:10	07:42	07:18	07:49
	17:26	18:04	19:37	20:09		20:41	90	19:56 (T25)	21:05	83	19:55 (T26)	21:05	85	20:02 (T26)	20:34	86	20:10 (T25)	19:44	18:54	17:14	17:03
15	07:56	07:28	07:45	06:53		06:14		18:27 (T26)	05:58	18:32 (T26)	06:11	18:37 (T26)	06:40	18:45 (T26)	07:11	07:43	07:19	07:50
	17:27	18:05	19:38	20:10		20:42	89	19:56 (T25)	21:06	83	19:55 (T26)	21:04	85	20:02 (T26)	20:33	85	20:10 (T25)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13		18:27 (T26)	05:58	18:32 (T26)	06:12	18:36 (T26)	06:41	18:46 (T26)	07:12	07:44	07:20	07:51
	17:28	18:06	19:39	20:11		20:43	88	19:55 (T25)	21:06	83	19:55 (T26)	21:04	86	20:02 (T26)	20:32	82	20:08 (T25)	19:40	18:50	17:12	17:04
17	07:55	07:25	07:41	06:50		06:12		18:27 (T26)	05:58	18:33 (T26)	06:13	18:36 (T26)	06:42	18:48 (T26)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12		20:44	86	19:53 (T25)	21:07	82	19:55 (T26)	21:03	86	20:02 (T26)	20:30	79	20:07 (T25)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49	19:06 (T26)	06:11		18:27 (T26)	05:58	18:34 (T26)	06:14	18:37 (T26)	06:43	18:48 (T26)	07:14	07:46	07:23	07:52
	17:30	18:09	19:41	20:13	11 19:17 (T26)	20:45	85	19:52 (T26)	21:07	82	19:56 (T26)	21:02	85	20:02 (T26)	20:29	77	20:05 (T25)	19:37	18:47	17:11	17:04
19	07:54	07:22	07:38	06:47	18:59 (T26)	06:10		18:26 (T26)	05:58	18:34 (T26)	06:14	18:37 (T26)	06:44	18:50 (T26)	07:15	07:47	07:24	07:53
	17:31	18:10	19:42	20:14	25 19:24 (T26)	20:46	86	19:52 (T26)	21:07	82	19:56 (T26)	21:02	86	20:03 (T26)	20:27	73	20:03 (T25)	19:35	18:46	17:10	17:05
20	07:53	07:21	07:36	06:46	18:54 (T26)	06:09		18:26 (T26)	05:58	18:34 (T26)	06:15	18:37 (T26)	06:45	18:51 (T26)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	47 19:53 (T25)	20:47	86	19:52 (T26)	21:08	83	19:57 (T26)	21:01	86	20:03 (T26)	20:26	71	20:02 (T25)	19:34	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	18:51 (T26)	06:09		18:26 (T26)	05:59	18:34 (T26)	06:16	18:36 (T26)	06:46	18:53 (T26)	07:17	07:49	07:26	07:54
	17:34	18:12	19:44	20:16	58 19:55 (T25)	20:48	86	19:52 (T26)	21:08	83	19:57 (T26)	21:00	86	20:02 (T26)	20:24	65	20:00 (T25)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	18:48 (T26)	06:08		18:27 (T26)	05:59	18:34 (T26)	06:17	18:36 (T26)	06:47	18:56 (T26)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:18	67 19:56 (T25)	20:49	86	19:53 (T26)	21:08	83	19:57 (T26)	21:00	86	20:02 (T26)	20:23	56	19:59 (T25)	19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41	18:46 (T26)	06:07		18:27 (T26)	05:59	18:35 (T26)	06:18	18:37 (T26)	06:48	18:59 (T26)	07:19	07:52	07:28	07:55
	17:36	18:15	19:46	20:19	71 19:57 (T25)	20:49	85	19:52 (T26)	21:08	83	19:58 (T26)	20:59	85	20:02 (T26)	20:21	44	19:56 (T25)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:30	06:40	18:43 (T26)	06:06		18:26 (T26)	05:59	18:35 (T26)	06:19	18:37 (T26)	06:49	19:03 (T26)	07:20	07:53	07:30	07:55
	17:37	18:16	19:47	20:20	75 19:58 (T25)	20:50	86	19:52 (T26)	21:08	82	19:57 (T26)	20:58	85	20:02 (T26)	20:20	23	19:26 (T26)	19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	18:42 (T26)	06:05		18:27 (T26)	06:00	18:35 (T26)	06:20	18:37 (T26)	06:50	19:10 (T26)	07:21	07:54	07:31	07:56
	17:39	18:17	19:49	20:21	77 19:59 (T25)	20:51	86	19:53 (T26)	21:09	82	19:57 (T26)	20:57	85	20:02 (T26)	20:18	9	19:19 (T26)	19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	18:41 (T26)	06:05		18:27 (T26)	06:00	18:35 (T26)	06:21	18:37 (T26)	06:51		07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	79 20:00 (T25)	20:52	86	19:53 (T26)	21:09	83	19:58 (T26)	20:56	86	20:03 (T25)	20:17			19:23	18:36	17:06	17:08
27	07:48	07:10	07:25	06:36	18:38 (T26)	06:04		18:27 (T26)	06:00	18:35 (T26)	06:21	18:37 (T26)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	83 20:01 (T25)	20:53	85	19:52 (T26)	21:09	83	19:58 (T26)	20:55	87	20:04 (T25)	20:15			19:22	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	18:37 (T26)	06:04		18:28 (T26)	06:01	18:35 (T26)	06:22	18:38 (T26)	06:53		07:25	07:57	07:34	07:57
	17:42	18:21	19:52	20:24	85 20:02 (T25)	20:54	85	19:53 (T26)	21:09	83	19:58 (T26)	20:54	88	20:06 (T25)	20:14			19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	18:36 (T26)	06:03		18:27 (T26)	06:01	18:36 (T26)	06:23	18:37 (T26)	06:54		07:26	07:59	07:35	07:57
	17:44		19:53	20:25	87 20:03 (T25)	20:55	86	19:53 (T26)	21:09	83	19:59 (T26)	20:53	89	20:06 (T25)	20:12			19:18	18:32	17:04	17:10
30	07:46		07:20	06:32	18:35 (T26)	06:02		18:28 (T26)	06:02	18:35 (T26)	06:24	18:37 (T26)	06:55		07:27	08:00	07:36	07:57
	17:45		19:54	20:26	87 20:02 (T25)	20:56	85	19:53 (T26)	21:09	84	19:59 (T26)	20:52	90	20:07 (T25)	20:11			19:17	18:31	17:04	17:11
31	07:45		07:18			06:02		18:28 (T26)				06:25		18:37 (T26)	06:56				08:01		07:57
	17:46		19:55			20:56	85	19:53 (T26)				20:51	91	20:08 (T25)	20:09				18:29		17:12
Potential sun hours	297	297	370	399		449			453		460		429		375	345	297	287
Total, worst case					852		2736			2501		2654		1926				
Sun reduction					0.52		0.57			0.64		0.66		0.61				
Oper. time red.					1.00		1.00			1.00		1.00		1.00				
Wind dir. red.					0.57		0.57			0.57		0.57		0.57				
Total reduction					0.30		0.33			0.37		0.38		0.35				
Total, real					253		892			916		1002		671				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1022 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7016)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43		08:04 (T44)		07:07		07:16		07:37 (T77)	06:30			06:02		06:36 (T42)
	17:13		17:48	17	08:21 (T44)		18:22		19:56	34	08:11 (T77)	20:27			20:57	36	07:12 (T42)
2	07:57		07:43		08:03 (T44)		07:06		07:15		07:36 (T77)	06:29			06:01		06:36 (T42)
	17:14		17:49	19	08:22 (T44)		18:23		19:57	35	08:11 (T77)	20:28			20:58	36	07:12 (T42)
3	07:57		07:41		08:02 (T44)		07:04		07:13		07:36 (T77)	06:28			06:01		06:36 (T42)
	17:15		17:50	21	08:23 (T44)		18:24		19:58	35	08:11 (T77)	20:29			20:58	35	07:11 (T42)
4	07:58		07:40		08:01 (T44)		07:03		07:11		07:35 (T77)	06:26			06:00		06:37 (T42)
	17:16		17:51	23	08:24 (T44)		18:25		19:59	35	08:10 (T77)	20:30	3	06:54 (T42)	20:59	34	07:11 (T42)
5	07:57		07:39		08:00 (T44)		07:01		07:10		07:36 (T77)	06:25		06:46 (T42)	06:00		06:38 (T42)
	17:17		17:53	25	08:25 (T44)		18:26		20:00	34	08:10 (T77)	20:31	14	07:00 (T42)	21:00	34	07:12 (T42)
6	07:57		07:38		07:58 (T44)		06:59		07:08		07:35 (T77)	06:24		06:44 (T42)	06:00		06:37 (T42)
	17:18		17:54	27	08:25 (T44)		18:28		20:00	34	08:09 (T77)	20:32	18	07:02 (T42)	21:01	34	07:11 (T42)
7	07:57		07:37		07:57 (T44)		06:58		07:06		07:35 (T77)	06:23		06:43 (T42)	05:59		06:38 (T42)
	17:19		17:55	28	08:25 (T44)		18:29		20:01	33	08:08 (T77)	20:33	21	07:04 (T42)	21:01	33	07:11 (T42)
8	07:57		07:36		07:56 (T44)		07:56		07:05		07:36 (T77)	06:22		06:42 (T42)	05:59		06:39 (T42)
	17:20		17:56	29	08:25 (T44)		19:30		20:02	32	08:08 (T77)	20:34	24	07:06 (T42)	21:02	32	07:11 (T42)
9	07:57		07:35		07:57 (T44)		07:55		07:03		07:36 (T77)	06:20		06:41 (T42)	05:59		06:39 (T42)
	17:21		17:58	29	08:26 (T44)		19:31		20:04	31	08:07 (T77)	20:35	26	07:07 (T42)	21:02	32	07:11 (T42)
10	07:57		07:34		07:57 (T44)		07:53		07:01		07:36 (T77)	06:19		06:40 (T42)	05:59		06:40 (T42)
	17:22		17:59	29	08:26 (T44)		19:32		20:05	29	08:05 (T77)	20:36	28	07:08 (T42)	21:03	31	07:11 (T42)
11	07:57		07:32		07:57 (T44)		07:51		07:00		07:38 (T77)	06:18		06:38 (T42)	05:58		06:40 (T42)
	17:23		18:00	28	08:25 (T44)		19:33		20:06	26	08:04 (T77)	20:38	30	07:08 (T42)	21:04	31	07:11 (T42)
12	07:56		07:31		07:57 (T44)		07:50		06:58		07:39 (T77)	06:17		06:37 (T42)	05:58		06:41 (T42)
	17:24		18:01	28	08:25 (T44)		19:34		20:07	23	08:02 (T77)	20:39	32	07:09 (T42)	21:04	30	07:11 (T42)
13	07:56		07:30		07:58 (T44)		07:48		06:57		07:41 (T77)	06:16		06:36 (T42)	05:58		06:40 (T42)
	17:25		18:03	27	08:25 (T44)		19:35		20:08	19	08:00 (T77)	20:40	33	07:09 (T42)	21:05	31	07:11 (T42)
14	07:56		07:29		07:59 (T44)		07:46		06:55		07:43 (T77)	06:15		06:36 (T42)	05:58		06:41 (T42)
	17:26		18:04	25	08:24 (T44)		19:37		20:09	14	07:57 (T77)	20:41	35	07:11 (T42)	21:05	30	07:11 (T42)
15	07:55		07:27		07:59 (T44)		07:45		06:53		07:49 (T77)	06:14		06:35 (T42)	05:58		06:41 (T42)
	17:27		18:05	24	08:23 (T44)		19:38		20:10	2	07:51 (T77)	20:42	36	07:11 (T42)	21:06	30	07:11 (T42)
16	07:55		07:26		08:01 (T44)		07:43		06:52			06:13		06:35 (T42)	05:58		06:42 (T42)
	17:28		18:06	21	08:22 (T44)		19:39		20:11			20:43	36	07:11 (T42)	21:06	30	07:12 (T42)
17	07:54		07:25		08:02 (T44)		07:41		06:50			06:12		06:34 (T42)	05:58		06:42 (T42)
	17:29		18:07	17	08:19 (T44)		19:40		20:12			20:44	37	07:11 (T42)	21:06	30	07:12 (T42)
18	07:54		07:23		08:04 (T44)		07:40		06:49			06:11		06:34 (T42)	05:58		06:43 (T42)
	17:30		18:09	14	08:18 (T44)		19:41		20:13			20:45	37	07:11 (T42)	21:07	29	07:12 (T42)
19	07:53		07:22		08:09 (T44)		07:38		06:47			06:10		06:34 (T42)	05:58		06:43 (T42)
	17:32		18:10	5	08:14 (T44)		19:42		20:14			20:45	37	07:11 (T42)	21:07	29	07:12 (T42)
20	07:53		07:21				07:36		06:46			06:09		06:33 (T42)	05:59		06:43 (T42)
	17:33		18:11				19:43		20:15			20:46	38	07:11 (T42)	21:07	29	07:12 (T42)
21	07:52		07:19				07:35		06:44			06:09		06:34 (T42)	05:59		06:43 (T42)
	17:34		18:12				19:44		20:16			20:47	38	07:12 (T42)	21:08	29	07:12 (T42)
22	07:52		07:18				07:33		06:43			06:08		06:34 (T42)	05:59		06:43 (T42)
	17:35		18:14				19:45		20:17			20:48	38	07:12 (T42)	21:08	29	07:12 (T42)
23	07:51		07:16				07:31		06:41			06:07		06:33 (T42)	05:59		06:44 (T42)
	17:36		18:15				19:46		20:18			20:49	39	07:12 (T42)	21:08	29	07:13 (T42)
24	07:50		07:15				07:30	07:50 (T77)	06:40			06:06		06:33 (T42)	05:59		06:44 (T42)
	17:38		18:16				19:47	14 08:04 (T77)	20:20			20:50	39	07:12 (T42)	21:08	29	07:13 (T42)
25	07:50		07:13				07:28	07:47 (T77)	06:39			06:06		06:34 (T42)	06:00		06:44 (T42)
	17:39		18:17				19:49	19 08:06 (T77)	20:21			20:51	38	07:12 (T42)	21:08	29	07:13 (T42)
26	07:49		07:12				07:26	07:45 (T77)	06:37			06:05		06:34 (T42)	06:00		06:44 (T42)
	17:40		18:18				19:50	23 08:08 (T77)	20:22			20:52	38	07:12 (T42)	21:08	30	07:14 (T42)
27	07:48		07:10				07:25	07:44 (T77)	06:36			06:04		06:35 (T42)	06:00		06:44 (T42)
	17:41		18:19				19:51	26 08:10 (T77)	20:23			20:53	37	07:12 (T42)	21:09	30	07:14 (T42)
28	07:47	08:08 (T44)	07:09				07:23	07:42 (T77)	06:34			06:04		06:34 (T42)	06:01		06:44 (T42)
	17:43	5 08:13 (T44)	18:21				19:52	28 08:10 (T77)	20:24			20:54	38	07:12 (T42)	21:09	30	07:14 (T42)
29	07:46	08:07 (T44)					07:21	07:40 (T77)	06:33			06:03		06:35 (T42)	06:01		06:44 (T42)
	17:44	9 08:16 (T44)					19:53	30 08:10 (T77)	20:25			20:54	37	07:12 (T42)	21:09	31	07:15 (T42)
30	07:45	08:06 (T44)					07:20	07:39 (T77)	06:32			06:03		06:35 (T42)	06:02		06:44 (T42)
	17:45	12 08:18 (T44)					19:54	32 08:11 (T77)	20:26			20:55	37	07:12 (T42)	21:09	30	07:14 (T42)
31	07:44	08:05 (T44)					07:18	07:38 (T77)				06:02		06:36 (T42)			
	17:46	15 08:20 (T44)					19:55	33 08:11 (T77)				20:56	36	07:12 (T42)			
Potential sun hours	297		297		370		399		448		453	
Total, worst case		41		436		205		416		900		932
Sun reduction		0.31		0.40		0.44		0.52		0.57		0.64
Oper. time red.		1.00		1.00		1.00		1.00		1.00		1.00
Wind dir. red.		0.54		0.54		0.63		0.63		0.70		0.70
Total reduction		0.17		0.21		0.27		0.32		0.40		0.44
Total, real		7		93		56		135		356		414

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1022 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7016)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:44 (T42)	06:26		06:48 (T42)	06:57		07:37 (T77)	07:28			07:02		07:26 (T44)	07:37	
	21:09	31	07:15 (T42)	20:50	31	07:19 (T42)	20:07	26	08:03 (T77)	19:15			17:28	29	07:55 (T44)	17:04	
2	06:03		06:44 (T42)	06:27		06:49 (T42)	06:58		07:35 (T77)	07:29			07:03		07:26 (T44)	07:38	
	21:08	31	07:15 (T42)	20:49	29	07:18 (T42)	20:06	29	08:04 (T77)	19:13			17:27	30	07:56 (T44)	17:03	
3	06:03		06:44 (T42)	06:28		06:50 (T42)	06:59		07:34 (T77)	07:30			07:04		07:26 (T44)	07:39	
	21:08	32	07:16 (T42)	20:48	27	07:17 (T42)	20:04	31	08:05 (T77)	19:11			17:26	29	07:55 (T44)	17:03	
4	06:04		06:44 (T42)	06:29		06:51 (T42)	07:00		07:33 (T77)	07:31			07:06		07:27 (T44)	07:40	
	21:08	32	07:16 (T42)	20:47	25	07:16 (T42)	20:02	32	08:05 (T77)	19:10			17:24	28	07:55 (T44)	17:03	
5	06:04		06:44 (T42)	06:30		06:52 (T42)	07:01		07:32 (T77)	07:32			07:07		07:28 (T44)	07:41	
	21:08	33	07:17 (T42)	20:46	23	07:15 (T42)	20:01	33	08:05 (T77)	19:08			17:23	26	07:54 (T44)	17:03	
6	06:05		06:44 (T42)	06:31		06:53 (T42)	07:02		07:32 (T77)	07:33			07:08		07:30 (T44)	07:42	
	21:08	33	07:17 (T42)	20:44	20	07:13 (T42)	19:57	34	08:06 (T77)	19:06			17:22	25	07:55 (T44)	17:03	
7	06:06		06:44 (T42)	06:32		06:54 (T42)	07:03		07:31 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	34	07:18 (T42)	20:43	17	07:11 (T42)	19:56	35	08:06 (T77)	19:05			17:21	23	07:54 (T44)	17:03	
8	06:06		06:44 (T42)	06:33		06:57 (T42)	07:04		07:30 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	35	07:19 (T42)	20:42	11	07:08 (T42)	19:54	35	08:05 (T77)	19:03			17:20	21	07:53 (T44)	17:03	
9	06:07		06:43 (T42)	06:34			07:05		07:30 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	35	07:18 (T42)	20:41			19:52	35	08:05 (T77)	19:02			17:19	19	07:53 (T44)	17:03	
10	06:08		06:44 (T42)	06:35			07:06		07:30 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	35	07:19 (T42)	20:40			19:51	35	08:05 (T77)	19:00			17:18	17	07:52 (T44)	17:03	
11	06:08		06:44 (T42)	06:36			07:07		07:30 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	36	07:20 (T42)	20:38			19:49	34	08:04 (T77)	18:58			17:17	15	07:51 (T44)	17:03	
12	06:09		06:43 (T42)	06:37			07:08		07:29 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	36	07:19 (T42)	20:37			19:47	34	08:03 (T77)	18:57			17:16	12	07:49 (T44)	17:03	
13	06:10		06:43 (T42)	06:38			07:09		07:29 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	37	07:20 (T42)	20:36			19:46	33	08:02 (T77)	18:55			17:15	9	07:48 (T44)	17:03	
14	06:10		06:44 (T42)	06:39			07:10		07:30 (T77)	07:41			07:18		07:40 (T44)	07:49	
	21:05	37	07:21 (T42)	20:34			19:44	31	08:01 (T77)	18:54			17:14	5	07:45 (T44)	17:03	
15	06:11		06:44 (T42)	06:40			07:11		07:31 (T77)	07:43			07:19			07:50	
	21:04	37	07:21 (T42)	20:33			19:42	28	07:59 (T77)	18:52			17:13			17:03	
16	06:12		06:43 (T42)	06:41			07:12		07:32 (T77)	07:44			07:20			07:50	
	21:03	38	07:21 (T42)	20:32			19:40	26	07:58 (T77)	18:50			17:12			17:04	
17	06:13		06:42 (T42)	06:42			07:13		07:33 (T77)	07:45			07:21			07:51	
	21:03	38	07:21 (T42)	20:30			19:39	23	07:56 (T77)	18:49			17:12			17:04	
18	06:14		06:43 (T42)	06:43			07:14		07:34 (T77)	07:46			07:22			07:52	
	21:02	39	07:22 (T42)	20:29			19:37	20	07:54 (T77)	18:47			17:11			17:04	
19	06:14		06:44 (T42)	06:44			07:15		07:35 (T77)	07:47			07:24			07:52	
	21:02	38	07:22 (T42)	20:27			19:35	16	07:51 (T77)	18:46			17:10			17:05	
20	06:15		06:44 (T42)	06:45			07:16		07:39 (T77)	07:48			07:25			07:53	
	21:01	38	07:22 (T42)	20:26			19:34	8	07:47 (T77)	18:44			17:09			17:05	
21	06:16		06:43 (T42)	06:46			07:17			07:49			07:26			07:53	
	21:00	39	07:22 (T42)	20:24			19:32			18:43			17:09			17:06	
22	06:17		06:43 (T42)	06:47			07:18			07:50			07:27			07:54	
	20:59	39	07:22 (T42)	20:23			19:30			18:42			17:08			17:06	
23	06:18		06:44 (T42)	06:48			07:19			07:52		08:37 (T44)	07:28			07:54	
	20:59	38	07:22 (T42)	20:21			19:28			18:40	8	08:45 (T44)	17:07			17:07	
24	06:19		06:44 (T42)	06:49			07:20			07:53		08:33 (T44)	07:29			07:55	
	20:58	38	07:22 (T42)	20:20			19:27			18:39	15	08:48 (T44)	17:07			17:07	
25	06:20		06:44 (T42)	06:50			07:21			07:54		08:32 (T44)	07:30			07:55	
	20:57	38	07:22 (T42)	20:18			19:25			18:37	19	08:51 (T44)	17:06			17:08	
26	06:21		06:45 (T42)	06:51			07:22			07:55		08:30 (T44)	07:32			07:56	
	20:56	37	07:22 (T42)	20:17			19:23			18:36	22	08:52 (T44)	17:06			17:08	
27	06:22		06:45 (T42)	06:52			07:23			07:56		08:29 (T44)	07:33			07:56	
	20:55	37	07:22 (T42)	20:15			19:22			18:35	24	08:53 (T44)	17:05			17:09	
28	06:23		06:45 (T42)	06:53		07:49 (T77)	07:24			07:57		08:28 (T44)	07:34			07:56	
	20:54	37	07:22 (T42)	20:14	4	07:53 (T77)	19:20			18:33	25	08:53 (T44)	17:05			17:10	
29	06:23		06:45 (T42)	06:54		07:43 (T77)	07:25			07:58		08:28 (T44)	07:35			07:57	
	20:53	35	07:20 (T42)	20:12	15	07:58 (T77)	19:18			18:32	27	08:55 (T44)	17:04			17:10	
30	06:24		06:46 (T42)	06:55		07:41 (T77)	07:27			08:00		08:27 (T44)	07:36			07:57	
	20:52	34	07:20 (T42)	20:10	19	08:00 (T77)	19:16			18:31	28	08:55 (T44)	17:04			17:11	
31	06:25		06:47 (T42)	06:56		07:39 (T77)				08:01		08:26 (T44)				07:57	
	20:51	32	07:19 (T42)	20:09	23	08:02 (T77)				18:29	29	08:55 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1109			244			578			197			288			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.69			0.63			0.54			0.54			
Total reduction		0.46			0.41			0.37			0.26			0.16			
Total, real		508			101			213			51			46			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1030 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7022)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		08:27 (T4)	07:43		08:19 (T4)	07:07			07:16		07:52 (T3)	06:30		07:38 (T3)	06:01		
	17:12	8	08:35 (T4)	17:47	44	09:03 (T4)	18:21			19:56	60	08:52 (T3)	20:27	68	08:46 (T3)	20:57		
2	07:57		08:26 (T4)	07:42		08:03 (T5)	07:05			07:14		07:50 (T3)	06:28		07:38 (T3)	06:00		
	17:13	11	08:37 (T4)	17:48	53	09:03 (T4)	18:22			19:57	62	08:52 (T3)	20:28	68	08:46 (T3)	20:58		
3	07:58		08:25 (T4)	07:41		08:02 (T5)	07:04			07:12		07:48 (T3)	06:27		07:39 (T3)	06:00		
	17:14	14	08:39 (T4)	17:49	56	09:03 (T4)	18:24			19:58	65	08:53 (T3)	20:29	66	08:45 (T3)	20:58		
4	07:58		08:24 (T4)	07:40		08:01 (T5)	07:02			07:11		07:48 (T3)	06:26		07:40 (T3)	05:59		
	17:15	16	08:40 (T4)	17:51	59	09:03 (T4)	18:25			19:59	66	08:54 (T3)	20:30	64	08:44 (T3)	20:59		
5	07:58		08:23 (T4)	07:39		08:00 (T5)	07:01			07:09		07:46 (T3)	06:25		07:40 (T3)	05:59		
	17:16	19	08:42 (T4)	17:52	60	09:03 (T4)	18:26			20:00	68	08:54 (T3)	20:31	62	08:42 (T3)	21:00		
6	07:57		08:23 (T4)	07:38		07:58 (T5)	06:59			07:07		07:45 (T3)	06:23		07:40 (T3)	05:59		
	17:17	21	08:44 (T4)	17:53	62	09:02 (T4)	18:27			20:00	70	08:55 (T3)	20:32	62	08:42 (T3)	21:01		
7	07:57		08:23 (T4)	07:37		07:57 (T5)	06:57			07:06		07:44 (T3)	06:22		07:41 (T3)	05:58		
	17:18	22	08:45 (T4)	17:54	62	09:01 (T4)	18:28			20:01	72	08:56 (T3)	20:33	60	08:41 (T3)	21:01		
8	07:57		08:21 (T4)	07:36		07:56 (T5)	07:56			07:04		07:43 (T3)	06:21		07:42 (T3)	05:58		
	17:19	25	08:46 (T4)	17:56	63	09:01 (T4)	19:29			20:02	72	08:55 (T3)	20:34	58	08:40 (T3)	21:02		
9	07:57		08:21 (T4)	07:35		07:55 (T5)	07:54			07:03		07:42 (T3)	06:20		07:43 (T3)	05:58		
	17:20	26	08:47 (T4)	17:57	63	09:00 (T4)	19:30			20:03	74	08:56 (T3)	20:35	56	08:39 (T3)	21:02		
10	07:57		08:21 (T4)	07:34		07:54 (T5)	07:53			07:01		07:41 (T3)	06:19		07:44 (T3)	05:58		
	17:21	28	08:49 (T4)	17:58	63	08:59 (T4)	19:32			20:04	75	08:56 (T3)	20:36	54	08:38 (T3)	21:03		
11	07:57		08:21 (T4)	07:32		07:52 (T5)	07:51			06:59		07:40 (T3)	06:18		07:45 (T3)	05:58		
	17:22	29	08:50 (T4)	17:59	61	08:57 (T4)	19:33			20:05	76	08:56 (T3)	20:37	51	08:36 (T3)	21:04		
12	07:56		08:20 (T4)	07:31		07:51 (T5)	07:49			06:58		07:40 (T3)	06:16		07:46 (T3)	05:58		
	17:23	31	08:51 (T4)	18:01	61	08:56 (T4)	19:34			20:06	76	08:56 (T3)	20:38	49	08:35 (T3)	21:04		
13	07:56		08:20 (T4)	07:30		07:51 (T5)	07:48			06:56		07:39 (T3)	06:15		07:47 (T3)	05:57		
	17:24	32	08:52 (T4)	18:02	57	08:54 (T4)	19:35			20:08	77	08:56 (T3)	20:40	47	08:34 (T3)	21:05		
14	07:56		08:19 (T4)	07:29		07:51 (T5)	07:46			06:55		07:39 (T3)	06:14		07:49 (T3)	05:57		
	17:25	34	08:53 (T4)	18:03	52	08:51 (T4)	19:36			20:09	77	08:56 (T3)	20:41	44	08:33 (T3)	21:05		
15	07:55		08:19 (T4)	07:27		07:51 (T5)	07:44			06:53		07:38 (T3)	06:13		07:50 (T3)	05:57		
	17:26	35	08:54 (T4)	18:04	46	08:48 (T4)	19:37			20:10	78	08:56 (T3)	20:42	41	08:31 (T3)	21:06		
16	07:55		08:18 (T4)	07:26		07:52 (T5)	07:43			06:51		07:38 (T3)	06:12		07:51 (T3)	05:57		
	17:27	37	08:55 (T4)	18:06	31	08:23 (T5)	19:38			20:11	78	08:56 (T3)	20:43	38	08:29 (T3)	21:06		
17	07:54		08:19 (T4)	07:25		07:52 (T5)	07:41			06:50		07:37 (T3)	06:11		07:53 (T3)	05:57		
	17:29	37	08:56 (T4)	18:07	30	08:22 (T5)	19:39			20:12	78	08:55 (T3)	20:44	35	08:28 (T3)	21:06		
18	07:54		08:18 (T4)	07:23		07:52 (T5)	07:39			06:48		07:36 (T3)	06:10		07:54 (T3)	05:58		
	17:30	39	08:57 (T4)	18:08	30	08:22 (T5)	19:41			20:13	78	08:54 (T3)	20:45	32	08:26 (T3)	21:07		
19	07:53		08:18 (T4)	07:22		07:53 (T5)	07:38			06:47		07:37 (T3)	06:10		07:56 (T3)	05:58		
	17:31	40	08:58 (T4)	18:09	27	08:20 (T5)	19:42			20:14	77	08:54 (T3)	20:45	28	08:24 (T3)	21:07		
20	07:53		08:18 (T4)	07:20		07:54 (T5)	07:36			06:45		07:37 (T3)	06:09		07:59 (T3)	05:58		
	17:32	40	08:58 (T4)	18:11	26	08:20 (T5)	19:43			20:15	77	08:54 (T3)	20:46	23	08:22 (T3)	21:07		
21	07:52		08:17 (T4)	07:19		07:55 (T5)	07:34			06:44		07:36 (T3)	06:08		08:02 (T3)	05:58		
	17:33	42	08:59 (T4)	18:12	24	08:19 (T5)	19:44			20:16	77	08:53 (T3)	20:47	17	08:19 (T3)	21:08		
22	07:52		08:18 (T4)	07:17		07:56 (T5)	07:33			06:42		07:37 (T3)	06:07		08:05 (T3)	05:58		
	17:34	42	09:00 (T4)	18:13	21	08:17 (T5)	19:45			20:17	76	08:53 (T3)	20:48	10	08:15 (T3)	21:08		
23	07:51		08:18 (T4)	07:16		07:59 (T5)	07:31			06:41		07:36 (T3)	06:06			05:58		
	17:36	43	09:01 (T4)	18:14	16	08:15 (T5)	19:46			20:18	76	08:52 (T3)	20:49			21:08		
24	07:50		08:17 (T4)	07:15		08:01 (T5)	07:29		08:15 (T3)	06:39		07:37 (T3)	06:06			05:59		
	17:37	44	09:01 (T4)	18:15	10	08:11 (T5)	19:47	18	08:33 (T3)	20:19	75	08:52 (T3)	20:50			21:08		
25	07:49		08:17 (T4)	07:13			07:28		08:10 (T3)	06:38		07:36 (T3)	06:05			05:59		
	17:38	44	09:01 (T4)	18:17			19:48	29	08:39 (T3)	20:20	75	08:51 (T3)	20:51			21:08		
26	07:49		08:17 (T4)	07:12			07:26		08:06 (T3)	06:36		07:37 (T3)	06:04			05:59		
	17:39	44	09:01 (T4)	18:18			19:49	35	08:41 (T3)	20:22	73	08:50 (T3)	20:52			21:09		
27	07:48		08:18 (T4)	07:10			07:24		08:03 (T3)	06:35		07:37 (T3)	06:03			06:00		
	17:41	45	09:03 (T4)	18:19			19:50	41	08:44 (T3)	20:23	73	08:50 (T3)	20:53			21:09		
28	07:47		08:18 (T4)	07:09			07:22		08:00 (T3)	06:34		07:37 (T3)	06:03			06:00		
	17:42	45	09:03 (T4)	18:20			19:51	45	08:45 (T3)	20:24	72	08:49 (T3)	20:54			21:09		
29	07:46		08:18 (T4)				07:21		07:58 (T3)	06:32		07:37 (T3)	06:02			06:00		
	17:43	45	09:03 (T4)				19:52	50	08:48 (T3)	20:25	71	08:48 (T3)	20:55			21:09		
30	07:45		08:18 (T4)				07:19		07:55 (T3)	06:31		07:38 (T3)	06:02			06:01		
	17:44	45	09:03 (T4)				19:54	54	08:49 (T3)	20:26	70	08:48 (T3)	20:55			21:09		
31	07:44		08:19 (T4)				07:17		07:53 (T3)				06:01					
	17:46	44	09:03 (T4)				19:55	57	08:50 (T3)				20:56					
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1027			1077			329			2194			1033				
Sun reduction		0.31			0.40			0.44			0.52			0.57				
Oper. time red.		1.00			1.00			1.00			1.00			1.00				
Wind dir. red.		0.52			0.53			0.63			0.63			0.63				
Total reduction		0.16			0.21			0.27			0.32			0.35				
Total, real		161			225			90			707			365				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1030 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7022)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:01			06:26		07:56 (T3)	06:57		07:39 (T3)	07:27			07:02		07:23 (T5)	07:37		08:03 (T4)
	21:09			20:50	50	08:46 (T3)	20:07	76	08:55 (T3)	19:14			17:27	62	08:28 (T4)	17:03	29	08:32 (T4)
2	06:02			06:27		07:55 (T3)	06:58		07:39 (T3)	07:28			07:03		07:25 (T5)	07:38		08:04 (T4)
	21:08			20:49	53	08:48 (T3)	20:05	75	08:54 (T3)	19:13			17:26	64	08:30 (T4)	17:03	28	08:32 (T4)
3	06:02			06:28		07:53 (T3)	06:59		07:39 (T3)	07:29			07:04		07:26 (T5)	07:39		08:05 (T4)
	21:08			20:48	55	08:48 (T3)	20:04	74	08:53 (T3)	19:11			17:25	64	08:31 (T4)	17:02	26	08:31 (T4)
4	06:03			06:29		07:52 (T3)	07:00		07:40 (T3)	07:30			07:05		07:27 (T5)	07:40		08:06 (T4)
	21:08			20:47	57	08:49 (T3)	20:02	72	08:52 (T3)	19:09			17:24	63	08:31 (T4)	17:02	25	08:31 (T4)
5	06:04			06:30		07:51 (T3)	07:01		07:40 (T3)	07:31			07:07		07:28 (T5)	07:41		08:08 (T4)
	21:08			20:46	59	08:50 (T3)	20:00	72	08:52 (T3)	19:08			17:23	61	08:31 (T4)	17:02	22	08:30 (T4)
6	06:04			06:31		07:51 (T3)	07:02		07:41 (T3)	07:32			07:08		07:30 (T5)	07:42		08:09 (T4)
	21:08			20:44	60	08:51 (T3)	19:57	70	08:51 (T3)	19:06			17:21	60	08:33 (T4)	17:02	21	08:30 (T4)
7	06:05			06:32		07:50 (T3)	07:03		07:41 (T3)	07:34			07:09		07:31 (T5)	07:43		08:10 (T4)
	21:07			20:43	61	08:51 (T3)	19:55	69	08:50 (T3)	19:04			17:20	58	08:33 (T4)	17:02	19	08:29 (T4)
8	06:05			06:33		07:49 (T3)	07:04		07:42 (T3)	07:35			07:10		07:32 (T5)	07:44		08:12 (T4)
	21:07			20:42	63	08:52 (T3)	19:54	66	08:48 (T3)	19:03			17:19	55	08:33 (T4)	17:02	17	08:29 (T4)
9	06:06			06:34		07:48 (T3)	07:05		07:42 (T3)	07:36			07:12		07:34 (T5)	07:45		08:13 (T4)
	21:07			20:41	65	08:53 (T3)	19:52	65	08:47 (T3)	19:01			17:18	52	08:34 (T4)	17:02	14	08:27 (T4)
10	06:07			06:35		07:47 (T3)	07:06		07:43 (T3)	07:37			07:13		07:50 (T4)	07:46		08:15 (T4)
	21:06			20:39	67	08:54 (T3)	19:50	63	08:46 (T3)	18:59			17:17	44	08:34 (T4)	17:02	11	08:26 (T4)
11	06:07			06:36		07:47 (T3)	07:07		07:44 (T3)	07:38			07:14		07:49 (T4)	07:47		08:17 (T4)
	21:06			20:38	67	08:54 (T3)	19:49	60	08:44 (T3)	18:58			17:16	45	08:34 (T4)	17:02	8	08:25 (T4)
12	06:08			06:37		07:46 (T3)	07:08		07:45 (T3)	07:39			07:15		07:49 (T4)	07:47		08:20 (T4)
	21:06			20:37	69	08:55 (T3)	19:47	57	08:42 (T3)	18:56			17:15	45	08:34 (T4)	17:02	3	08:23 (T4)
13	06:09			06:38		07:45 (T3)	07:09		07:46 (T3)	07:40			07:16		07:50 (T4)	07:48		
	21:05			20:36	71	08:56 (T3)	19:45	54	08:40 (T3)	18:55			17:14	45	08:35 (T4)	17:02		
14	06:10			06:39		07:45 (T3)	07:10		07:48 (T3)	07:41			07:18		07:50 (T4)	07:49		
	21:05			20:34	71	08:56 (T3)	19:44	50	08:38 (T3)	18:53			17:13	45	08:35 (T4)	17:02		
15	06:10			06:40		07:44 (T3)	07:11		07:49 (T3)	07:42			07:19		07:50 (T4)	07:50		
	21:04			20:33	73	08:57 (T3)	19:42	47	08:36 (T3)	18:52			17:12	45	08:35 (T4)	17:03		
16	06:11			06:41		07:44 (T3)	07:12		07:51 (T3)	07:43			07:20		07:51 (T4)	07:50		
	21:04			20:31	73	08:57 (T3)	19:40	42	08:33 (T3)	18:50			17:12	44	08:35 (T4)	17:03		
17	06:12			06:42		07:43 (T3)	07:13		07:54 (T3)	07:44			07:21		07:51 (T4)	07:51		
	21:03			20:30	74	08:57 (T3)	19:38	36	08:30 (T3)	18:48			17:11	44	08:35 (T4)	17:03		
18	06:13			06:43		07:43 (T3)	07:14		07:57 (T3)	07:46		08:31 (T5)	07:22		07:51 (T4)	07:52		
	21:02			20:29	75	08:58 (T3)	19:37	30	08:27 (T3)	18:47	13	08:44 (T5)	17:10	44	08:35 (T4)	17:04		
19	06:14			06:44		07:42 (T3)	07:15		08:01 (T3)	07:47		08:28 (T5)	07:24		07:52 (T4)	07:52		
	21:02			20:27	76	08:58 (T3)	19:35	21	08:22 (T3)	18:45	18	08:46 (T5)	17:09	43	08:35 (T4)	17:04		
20	06:15			06:45		07:42 (T3)	07:16			07:48		08:26 (T5)	07:25		07:53 (T4)	07:53		
	21:01			20:26	76	08:58 (T3)	19:33			18:44	22	08:48 (T5)	17:09	42	08:35 (T4)	17:04		
21	06:15			06:46		07:41 (T3)	07:17			07:49		08:26 (T5)	07:26		07:53 (T4)	07:53		
	21:00			20:24	77	08:58 (T3)	19:31			18:42	24	08:50 (T5)	17:08	42	08:35 (T4)	17:05		
22	06:16		08:14 (T3)	06:47		07:41 (T3)	07:18			07:50		08:24 (T5)	07:27		07:54 (T4)	07:54		
	20:59	14	08:28 (T3)	20:23	77	08:58 (T3)	19:30			18:41	27	08:51 (T5)	17:07	40	08:34 (T4)	17:05		
23	06:17		08:10 (T3)	06:48		07:41 (T3)	07:19			07:51		08:23 (T5)	07:28		07:54 (T4)	07:54		
	20:59	20	08:30 (T3)	20:21	77	08:58 (T3)	19:28			18:40	28	08:51 (T5)	17:07	40	08:34 (T4)	17:06		
24	06:18		08:07 (T3)	06:49		07:41 (T3)	07:20			07:52		08:22 (T5)	07:29		07:55 (T4)	07:55		
	20:58	26	08:33 (T3)	20:20	77	08:58 (T3)	19:26			18:38	29	08:51 (T5)	17:06	39	08:34 (T4)	17:06		
25	06:19		08:06 (T3)	06:50		07:40 (T3)	07:21			07:54		08:21 (T5)	07:30		07:57 (T4)	07:55		
	20:57	29	08:35 (T3)	20:18	78	08:58 (T3)	19:25			18:37	31	08:52 (T5)	17:05	37	08:34 (T4)	17:07		
26	06:20		08:04 (T3)	06:51		07:40 (T3)	07:22			07:55		08:21 (T5)	07:32		07:57 (T4)	07:56		
	20:56	33	08:37 (T3)	20:17	78	08:58 (T3)	19:23			18:35	37	09:14 (T4)	17:05	37	08:34 (T4)	17:08		
27	06:21		08:02 (T3)	06:52		07:40 (T3)	07:23			07:56		08:21 (T5)	07:33		07:58 (T4)	07:56		
	20:55	37	08:39 (T3)	20:15	78	08:58 (T3)	19:21			18:34	48	09:19 (T4)	17:04	35	08:33 (T4)	17:08		
28	06:22		08:01 (T3)	06:53		07:40 (T3)	07:24			07:57		08:20 (T5)	07:34		07:59 (T4)	07:56		
	20:54	40	08:41 (T3)	20:13	77	08:57 (T3)	19:19			18:33	54	09:22 (T4)	17:04	34	08:33 (T4)	17:09		
29	06:23		08:00 (T3)	06:54		07:40 (T3)	07:25			07:58		08:20 (T5)	07:35		08:00 (T4)	07:57		
	20:53	42	08:42 (T3)	20:12	77	08:57 (T3)	19:18			18:31	58	09:24 (T4)	17:04	32	08:32 (T4)	17:10		
30	06:24		07:59 (T3)	06:55		07:40 (T3)	07:26			08:00		08:21 (T5)	07:36		08:01 (T4)	07:57		
	20:52	45	08:44 (T3)	20:10	77	08:57 (T3)	19:16			18:30	61	09:26 (T4)	17:03	31	08:32 (T4)	17:10		
31	06:25		07:57 (T3)	06:56		07:39 (T3)				08:01		08:22 (T5)				07:57		
	20:51	48	08:45 (T3)	20:09	76	08:55 (T3)				18:29	62	09:27 (T4)				17:11		
Potential sun hours	460			429			375			345			297			287		
Total, worst case		334			2164			1099			512			1392			223	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.63			0.63			0.63			0.54			0.52			0.52	
Total reduction		0.41			0.38			0.37			0.25			0.15			0.11	
Total, real		137			818			402			130			213			25	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1040 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7031)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June
1	07:57	07:43		07:07		16:44 (T5)	07:16		06:30	19:30 (T3)	06:01
	17:12	17:47		18:21	60	17:44 (T5)	19:56		20:27	31	20:01 (T3)	20:57
2	07:57	07:42		07:05		16:44 (T5)	07:14		06:28		19:30 (T3)	06:00
	17:13	17:48		18:22	73	17:57 (T4)	19:57		20:28	31	20:01 (T3)	20:58
3	07:57	07:41		07:04		16:43 (T5)	07:12		06:27		19:30 (T3)	06:00
	17:14	17:49		18:24	77	18:00 (T4)	19:58		20:29	31	20:01 (T3)	20:58
4	07:57	07:40		07:02		16:43 (T5)	07:11		06:26		19:31 (T3)	05:59
	17:15	17:51		18:25	79	18:02 (T4)	19:59		20:30	30	20:01 (T3)	20:59
5	07:57	07:39		07:01		16:43 (T5)	07:09		06:24		19:30 (T3)	05:59
	17:16	17:52		18:26	80	18:03 (T4)	20:00		20:31	30	20:00 (T3)	21:00
6	07:57	07:38		06:59		16:42 (T5)	07:07		06:23		19:31 (T3)	05:59
	17:17	17:53		18:27	82	18:04 (T4)	20:00		20:32	28	19:59 (T3)	21:00
7	07:57	07:37		06:57		16:42 (T5)	07:06		06:22		19:32 (T3)	05:58
	17:18	17:54		18:28	84	18:06 (T4)	20:01		20:33	27	19:59 (T3)	21:01
8	07:57	07:36		07:56		17:42 (T5)	07:04		06:21		19:32 (T3)	05:58
	17:19	17:56		19:29	84	19:06 (T4)	20:02		20:34	26	19:58 (T3)	21:02
9	07:57	07:35		07:54		17:41 (T5)	07:02		06:20		19:33 (T3)	05:58
	17:20	17:57		19:30	85	19:06 (T4)	20:03		20:35	24	19:57 (T3)	21:02
10	07:57	07:33		07:53		17:42 (T5)	07:01		06:19		19:34 (T3)	05:58
	17:21	17:58		19:32	85	19:07 (T4)	20:04		20:36	22	19:56 (T3)	21:03
11	07:57	07:32		07:51		17:42 (T5)	06:59		06:17		19:36 (T3)	05:58
	17:22	17:59		19:33	85	19:07 (T4)	20:05		20:37	19	19:55 (T3)	21:04
12	07:56	07:31		07:49		17:42 (T5)	06:58		06:16		19:37 (T3)	05:57
	17:23	18:01		19:34	85	19:07 (T4)	20:06		20:38	16	19:53 (T3)	21:04
13	07:56	07:30		07:48		17:43 (T5)	06:56		06:15		19:39 (T3)	05:57
	17:24	18:02		19:35	84	19:07 (T4)	20:07		20:39	12	19:51 (T3)	21:05
14	07:56	07:28		07:46		17:43 (T5)	06:54		06:14		19:43 (T3)	05:57
	17:25	18:03		19:36	84	19:07 (T4)	20:09		20:40	4	19:47 (T3)	21:05
15	07:55	07:27	17:09 (T5)	07:44		17:43 (T5)	06:53		06:13			05:57
	17:26	18:04	13 17:22 (T5)	19:37	83	19:06 (T4)	20:10		20:41			21:06
16	07:55	07:26	17:05 (T5)	07:43		17:44 (T5)	06:51		06:12			05:57
	17:27	18:06	23 17:28 (T5)	19:38	82	19:06 (T4)	20:11		20:42			21:06
17	07:54	07:24	17:01 (T5)	07:41		17:44 (T5)	06:50		06:11			05:57
	17:28	18:07	29 17:30 (T5)	19:39	82	19:06 (T4)	20:12		20:43			21:06
18	07:54	07:23	16:59 (T5)	07:39		17:45 (T5)	06:48		06:10			05:57
	17:30	18:08	34 17:33 (T5)	19:40	79	19:04 (T4)	20:13		20:44			21:07
19	07:53	07:22	16:56 (T5)	07:38		17:46 (T5)	06:47	19:44 (T3)	06:10			05:58
	17:31	18:09	38 17:34 (T5)	19:42	78	19:04 (T4)	20:14	8 19:52 (T3)	20:45			21:07
20	07:53	07:20	16:55 (T5)	07:36		17:47 (T5)	06:45	19:40 (T3)	06:09			05:58
	17:32	18:10	41 17:36 (T5)	19:43	76	19:03 (T4)	20:15	13 19:53 (T3)	20:46			21:07
21	07:52	07:19	16:53 (T5)	07:34		17:48 (T5)	06:44	19:38 (T3)	06:08			05:58
	17:33	18:12	45 17:38 (T5)	19:44	73	19:01 (T4)	20:16	17 19:55 (T3)	20:47			21:08
22	07:52	07:17	16:51 (T5)	07:33		17:50 (T5)	06:42	19:37 (T3)	06:07			05:58
	17:34	18:13	48 17:39 (T5)	19:45	70	19:00 (T4)	20:17	19 19:56 (T3)	20:48			21:08
23	07:51	07:16	16:51 (T5)	07:31		17:51 (T5)	06:41	19:35 (T3)	06:06			05:58
	17:36	18:14	50 17:41 (T5)	19:46	65	18:58 (T4)	20:18	21 19:56 (T3)	20:49			21:08
24	07:50	07:14	16:49 (T5)	07:29		17:52 (T5)	06:39	19:34 (T3)	06:05			05:59
	17:37	18:15	52 17:41 (T5)	19:47	58	18:56 (T4)	20:19	24 19:58 (T3)	20:50			21:08
25	07:49	07:13	16:48 (T5)	07:27		17:54 (T5)	06:38	19:32 (T3)	06:05			05:59
	17:38	18:16	55 17:43 (T5)	19:48	48	18:53 (T4)	20:20	26 19:58 (T3)	20:51			21:08
26	07:49	07:11	16:47 (T5)	07:26		17:58 (T5)	06:36	19:32 (T3)	06:04			05:59
	17:39	18:18	56 17:43 (T5)	19:49	34	18:49 (T4)	20:21	28 20:00 (T3)	20:52			21:08
27	07:48	07:10	16:46 (T5)	07:24		18:02 (T5)	06:35	19:32 (T3)	06:03			06:00
	17:41	18:19	57 17:43 (T5)	19:50	15	18:17 (T5)	20:23	29 20:01 (T3)	20:53			21:09
28	07:47	07:08	16:45 (T5)	07:22			06:34	19:31 (T3)	06:03			06:00
	17:42	18:20	59 17:44 (T5)	19:51			20:24	30 20:01 (T3)	20:54			21:09
29	07:46			07:21			06:32	19:31 (T3)	06:02			06:00
	17:43			19:52			20:25	31 20:02 (T3)	20:54			21:09
30	07:45			07:19			06:31	19:31 (T3)	06:02			06:01
	17:44			19:53			20:26	31 20:02 (T3)	20:55			21:09
31	07:44			07:17					06:01			
	17:46			19:55					20:56			
Potential sun hours	297	297		370			399		449			453
Total, worst case			600		1970			277		331		
Sun reduction			0.40		0.44			0.52		0.57		
Oper. time red.			1.00		1.00			1.00		1.00		
Wind dir. red.			0.70		0.69			0.57		0.57		
Total reduction			0.28		0.30			0.30		0.33		
Total, real			168		598			83		108		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1040 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7031)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:01		06:26		19:47 (T3)	06:57		07:27	17:21 (T5)	07:02	07:37
	21:08		20:50	18	20:05 (T3)	20:07		19:14	18:47 (T4)	17:27	07:03
2	06:02		06:27		19:45 (T3)	06:58		07:28	17:21 (T5)	07:03	07:38
	21:08		20:49	20	20:05 (T3)	20:05		19:13	18:46 (T4)	17:26	07:03
3	06:02		06:28		19:44 (T3)	06:59		07:29	17:20 (T5)	07:04	07:39
	21:08		20:48	22	20:06 (T3)	20:04		19:11	18:45 (T4)	17:25	07:02
4	06:03		06:29		19:43 (T3)	07:00		07:30	17:19 (T5)	07:05	07:40
	21:08		20:47	24	20:07 (T3)	20:02		19:09	18:44 (T4)	17:24	07:02
5	06:03		06:30		19:42 (T3)	07:01		07:31	17:19 (T5)	07:07	07:41
	21:08		20:46	26	20:08 (T3)	20:00		19:08	18:43 (T4)	17:23	07:02
6	06:04		06:31		19:41 (T3)	07:02		07:32	17:18 (T5)	07:08	07:42
	21:08		20:44	28	20:09 (T3)	19:57		19:06	18:42 (T4)	17:21	07:02
7	06:05		06:32		19:40 (T3)	07:03		07:33	17:18 (T5)	07:09	07:43
	21:07		20:43	29	20:09 (T3)	19:55		19:04	18:40 (T4)	17:20	07:02
8	06:05		06:33		19:40 (T3)	07:04		07:35	17:18 (T5)	07:10	07:44
	21:07		20:42	29	20:09 (T3)	19:54		19:03	18:40 (T4)	17:19	07:02
9	06:06		06:34		19:39 (T3)	07:05		07:36	17:18 (T5)	07:11	07:45
	21:07		20:41	31	20:10 (T3)	19:52		19:01	18:38 (T4)	17:18	07:02
10	06:07		06:35		19:39 (T3)	07:06		07:37	17:18 (T5)	07:13	07:46
	21:06		20:39	31	20:10 (T3)	19:50		18:59	18:36 (T4)	17:17	07:02
11	06:07		06:36		19:39 (T3)	07:07		07:38	17:18 (T5)	07:14	07:46
	21:06		20:38	31	20:10 (T3)	19:49		18:58	18:33 (T4)	17:16	07:02
12	06:08		06:37		19:38 (T3)	07:08		07:39	17:18 (T5)	07:15	07:47
	21:06		20:37	32	20:10 (T3)	19:47		18:56	18:28 (T4)	17:15	07:02
13	06:09		06:38		19:38 (T3)	07:09		07:40	17:18 (T5)	07:16	07:48
	21:05		20:35	32	20:10 (T3)	19:45		18:55	18:17 (T5)	17:14	07:02
14	06:10		06:39		19:38 (T3)	07:10		07:41	17:18 (T5)	07:17	07:49
	21:05		20:34	32	20:10 (T3)	19:43		18:53	18:16 (T5)	17:13	07:02
15	06:10		06:40		19:38 (T3)	07:11		07:42	17:18 (T5)	07:19	07:50
	21:04		20:33	31	20:09 (T3)	19:42		18:51	18:15 (T5)	07:12	07:03
16	06:11		06:41		19:38 (T3)	07:12	17:52 (T5)	07:43	17:20 (T5)	07:20	07:50
	21:03		20:31	29	20:07 (T3)	19:40	13 18:05 (T5)	18:50	55 18:15 (T5)	17:12	07:03
17	06:12		06:42		19:39 (T3)	07:13	17:47 (T5)	07:44	17:20 (T5)	07:21	07:51
	21:03		20:30	27	20:06 (T3)	19:38	29 18:36 (T4)	18:48	54 18:14 (T5)	17:11	07:03
18	06:13		06:43		19:39 (T3)	07:14	17:43 (T5)	07:46	17:21 (T5)	07:22	07:52
	21:02		20:28	26	20:05 (T3)	19:37	45 18:40 (T4)	18:47	51 18:12 (T5)	17:10	07:03
19	06:14		06:44		19:40 (T3)	07:15	17:40 (T5)	07:47	17:21 (T5)	07:23	07:52
	21:02		20:27	23	20:03 (T3)	19:35	56 18:43 (T4)	18:45	50 18:11 (T5)	17:09	07:04
20	06:14		06:45		19:41 (T3)	07:16	17:38 (T5)	07:48	17:22 (T5)	07:25	07:53
	21:01		20:26	21	20:02 (T3)	19:33	64 18:44 (T4)	18:44	47 18:09 (T5)	17:08	07:04
21	06:15		06:46		19:42 (T3)	07:17	17:36 (T5)	07:49	17:23 (T5)	07:26	07:53
	21:00		20:24	19	20:01 (T3)	19:31	69 18:45 (T4)	18:42	44 18:07 (T5)	17:08	07:05
22	06:16		06:47		19:43 (T3)	07:18	17:34 (T5)	07:50	17:26 (T5)	07:27	07:54
	20:59		20:23	16	19:59 (T3)	19:30	72 18:46 (T4)	18:41	41 18:07 (T5)	17:07	07:05
23	06:17		06:48		19:45 (T3)	07:19	17:32 (T5)	07:51	17:27 (T5)	07:28	07:54
	20:58		20:21	13	19:58 (T3)	19:28	75 18:47 (T4)	18:39	37 18:04 (T5)	17:07	07:06
24	06:18		06:49		19:49 (T3)	07:20	17:30 (T5)	07:52	17:29 (T5)	07:29	07:55
	20:58		20:20	6	19:55 (T3)	19:26	77 18:47 (T4)	18:38	33 18:02 (T5)	17:06	07:06
25	06:19		06:50			07:21	17:28 (T5)	07:54	17:31 (T5)	07:30	07:55
	20:57		20:18			19:25	80 18:48 (T4)	18:37	28 17:59 (T5)	17:05	07:07
26	06:20		06:51			07:22	17:27 (T5)	07:55	17:35 (T5)	07:32	07:56
	20:56		20:16			19:23	81 18:48 (T4)	18:35	21 17:56 (T5)	17:05	07:08
27	06:21		06:52			07:23	17:26 (T5)	07:56	17:41 (T5)	07:33	07:56
	20:55		20:15			19:21	82 18:48 (T4)	18:34	9 17:50 (T5)	17:04	07:08
28	06:22		06:53			07:24	17:24 (T5)	07:57		07:34	07:56
	20:54		20:13			19:19	84 18:48 (T4)	18:33		17:04	07:09
29	06:23		06:54			07:25	17:23 (T5)	07:58		07:35	07:57
	20:53		20:12			19:18	84 18:47 (T4)	18:31		17:04	07:10
30	06:24	19:52 (T3)	06:55			07:26	17:22 (T5)	07:59		07:36	07:57
	20:52	8 20:00 (T3)	20:10			19:16	85 18:47 (T4)	18:30		17:03	07:10
31	06:25	19:49 (T3)	06:56					08:01			07:57
	20:51	14 20:03 (T3)	20:09					18:29			17:11
Potential sun hours	460		429			375		345		297	287
Total, worst case		22		596		996		1619			
Sun reduction		0.66		0.61		0.59		0.48			
Oper. time red.		1.00		1.00		1.00		1.00			
Wind dir. red.		0.57		0.57		0.68		0.69			
Total reduction		0.38		0.35		0.41		0.33			
Total, real		8		209		404		540			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1043 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7033)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		08:36 (T71)	07:43		07:07		07:16		17:49 (T69)	06:30	06:59 (T67)	06:02
	17:13	45	09:21 (T71)	17:48		18:22		19:56	81	19:10 (T69)	20:27	129	18:54 (T69)	20:57
2	07:57		08:36 (T71)	07:42		07:06		07:15		17:49 (T69)	06:29		07:00 (T67)	06:01
	17:14	45	09:21 (T71)	17:49		18:23		19:57	82	19:11 (T69)	20:28	125	18:52 (T69)	20:57
3	07:57		08:37 (T71)	07:41		07:04		07:13		17:48 (T69)	06:28		07:02 (T67)	06:01
	17:15	44	09:21 (T71)	17:50		18:24		19:58	82	19:10 (T69)	20:29	120	18:51 (T69)	20:58
4	07:57		08:37 (T71)	07:40		07:02		07:11		17:47 (T69)	06:27		07:04 (T67)	06:01
	17:16	45	09:22 (T71)	17:51		18:25		19:59	83	19:10 (T69)	20:30	113	18:49 (T69)	20:59
5	07:57		08:38 (T71)	07:39		07:01		07:10		17:48 (T69)	06:25		07:14 (T68)	06:00
	17:17	44	09:22 (T71)	17:53		18:26		20:00	83	19:11 (T69)	20:31	101	18:48 (T69)	20:59
6	07:57		08:38 (T71)	07:38		06:59		07:08		07:43 (T68)	06:24		07:15 (T68)	06:00
	17:18	45	09:23 (T71)	17:54		18:28		20:00	95	19:10 (T69)	20:32	95	18:46 (T69)	21:00
7	07:57		08:39 (T71)	07:37		06:58		07:06		07:37 (T68)	06:23		07:16 (T68)	06:00
	17:19	44	09:23 (T71)	17:55		18:29		20:01	106	19:10 (T69)	20:33	90	18:44 (T69)	21:01
8	07:57		08:40 (T71)	07:36		07:56		07:05		07:35 (T68)	06:22		07:16 (T68)	05:59
	17:20	43	09:23 (T71)	17:57		19:30		20:02	111	19:10 (T69)	20:34	86	18:43 (T69)	21:01
9	07:57		08:41 (T71)	07:35		07:54		07:03		07:31 (T68)	06:21		07:17 (T68)	05:59
	17:21	43	09:24 (T71)	17:58		19:31		20:03	118	19:10 (T69)	20:35	79	18:40 (T69)	21:02
10	07:57		08:41 (T71)	07:33		07:53		07:02		07:29 (T68)	06:20		07:18 (T68)	05:59
	17:22	42	09:23 (T71)	17:59		19:32		20:04	120	19:09 (T69)	20:36	73	18:38 (T69)	21:03
11	07:56		08:41 (T71)	07:32		07:51		07:00		07:27 (T68)	06:18		07:18 (T68)	05:59
	17:23	43	09:24 (T71)	18:00		19:33		20:06	124	19:09 (T69)	20:37	64	18:34 (T69)	21:03
12	07:56		08:43 (T71)	07:31		07:50		06:58		07:25 (T68)	06:17		07:19 (T68)	05:59
	17:24	41	09:24 (T71)	18:01		19:34		20:07	126	19:08 (T69)	20:38	45	08:04 (T68)	21:04
13	07:56		08:43 (T71)	07:30		07:48		06:57		07:16 (T67)	06:16		07:20 (T68)	05:59
	17:25	40	09:23 (T71)	18:03		19:35		20:08	132	19:09 (T69)	20:39	43	08:03 (T68)	21:04
14	07:55		08:44 (T71)	07:28		07:46	18:25 (T69)	06:55		07:14 (T67)	06:15		07:21 (T68)	05:59
	17:26	40	09:24 (T71)	18:04		19:37	19 18:44 (T69)	20:09	138	19:08 (T69)	20:40	41	08:02 (T68)	21:05
15	07:55		08:44 (T71)	07:27		07:45	18:20 (T69)	06:54		07:13 (T67)	06:14		07:22 (T68)	05:59
	17:27	39	09:23 (T71)	18:05		19:38	30 18:50 (T69)	20:10	140	19:08 (T69)	20:41	39	08:01 (T68)	21:05
16	07:55		08:45 (T71)	07:26		07:43	18:15 (T69)	06:52		07:11 (T67)	06:13		07:23 (T68)	05:59
	17:28	39	09:24 (T71)	18:06		19:39	38 18:53 (T69)	20:11	142	19:07 (T69)	20:42	37	08:00 (T68)	21:06
17	07:54		08:46 (T71)	07:25		07:41	18:12 (T69)	06:51		07:10 (T67)	06:12		07:24 (T68)	05:59
	17:30	37	09:23 (T71)	18:08		19:40	43 18:55 (T69)	20:12	143	19:07 (T69)	20:43	34	07:58 (T68)	21:06
18	07:54		08:47 (T71)	07:23		07:40	18:10 (T69)	06:49		07:08 (T67)	06:11		07:25 (T68)	05:59
	17:31	36	09:23 (T71)	18:09		19:41	48 18:58 (T69)	20:13	144	19:06 (T69)	20:44	32	07:57 (T68)	21:06
19	07:53		08:48 (T71)	07:22		07:38	18:07 (T69)	06:47		07:07 (T67)	06:11		07:26 (T68)	05:59
	17:32	34	09:22 (T71)	18:10		19:42	53 19:00 (T69)	20:14	144	19:05 (T69)	20:45	29	07:55 (T68)	21:07
20	07:53		08:50 (T71)	07:20		07:36	18:04 (T69)	06:46		07:05 (T67)	06:10		07:29 (T68)	05:59
	17:33	32	09:22 (T71)	18:11		19:43	57 19:01 (T69)	20:15	144	19:04 (T69)	20:46	25	07:54 (T68)	21:07
21	07:52		08:50 (T71)	07:19		07:35	18:03 (T69)	06:44		07:04 (T67)	06:09		07:30 (T68)	05:59
	17:34	31	09:21 (T71)	18:12		19:44	60 19:03 (T69)	20:16	145	19:04 (T69)	20:47	22	07:52 (T68)	21:07
22	07:51		08:51 (T71)	07:18		07:33	18:01 (T69)	06:43		07:02 (T67)	06:08		07:32 (T68)	05:59
	17:35	29	09:20 (T71)	18:14		19:45	63 19:04 (T69)	20:17	145	19:03 (T69)	20:48	18	07:50 (T68)	21:07
23	07:51		08:54 (T71)	07:16		07:31	17:59 (T69)	06:42		07:01 (T67)	06:07		07:35 (T68)	06:00
	17:37	26	09:20 (T71)	18:15		19:46	66 19:05 (T69)	20:18	145	19:02 (T69)	20:49	12	07:47 (T68)	21:08
24	07:50		08:55 (T71)	07:15		07:30	17:58 (T69)	06:40		06:59 (T67)	06:07			06:00
	17:38	23	09:18 (T71)	18:16		19:47	68 19:06 (T69)	20:19	145	19:01 (T69)	20:50			21:08
25	07:49		08:57 (T71)	07:13		07:28	17:56 (T69)	06:39		06:58 (T67)	06:06			06:00
	17:39	19	09:16 (T71)	18:17		19:48	71 19:07 (T69)	20:20	144	19:00 (T69)	20:51			21:08
26	07:48		09:00 (T71)	07:12		07:26	17:55 (T69)	06:37		06:57 (T67)	06:05			06:00
	17:40	14	09:14 (T71)	18:18		19:50	72 19:07 (T69)	20:21	144	19:00 (T69)	20:52			21:08
27	07:48		09:05 (T71)	07:10		07:25	17:54 (T69)	06:36		06:56 (T67)	06:05			06:01
	17:42	4	09:09 (T71)	18:20		19:51	75 19:09 (T69)	20:23	142	18:58 (T69)	20:52			21:08
28	07:47			07:09		07:23	17:53 (T69)	06:35		06:56 (T67)	06:04			06:01
	17:43			18:21		19:52	76 19:09 (T69)	20:24	140	18:57 (T69)	20:53			21:08
29	07:46					07:21	17:52 (T69)	06:33		06:57 (T67)	06:03			06:02
	17:44					19:53	77 19:09 (T69)	20:25	136	18:56 (T69)	20:54			21:08
30	07:45					07:20	17:51 (T69)	06:32		06:57 (T67)	06:03			06:02
	17:45					19:54	79 19:10 (T69)	20:26	133	18:54 (T69)	20:55			21:08
31	07:44					07:18	17:50 (T69)				06:02			
	17:46					19:55	80 19:10 (T69)				20:56			
Potential sun hours	297			297		370		399			448			452
Total, worst case		967				1075			3757			1452		
Sun reduction		0.31				0.44			0.52			0.57		
Oper. time red.		1.00				1.00			1.00			1.00		
Wind dir. red.		0.53				0.65			0.65			0.66		
Total reduction		0.16				0.28			0.33			0.37		
Total, real		155				301			1253			533		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1043 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7033)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:03			06:27		07:28 (T68)	06:57		07:26 (T68)	07:28	07:02			07:37		08:24 (T71)
	21:08			20:50	57	18:41 (T69)	20:07	124	19:08 (T69)	19:15	17:28			17:04	42	09:06 (T71)
2	06:03			06:28		07:28 (T68)	06:58		07:28 (T68)	07:29	07:03			07:38		08:24 (T71)
	21:08			20:49	67	18:45 (T69)	20:05	120	19:08 (T69)	19:13	17:27			17:04	42	09:06 (T71)
3	06:04			06:29		07:27 (T68)	06:59		07:29 (T68)	07:30	07:04			07:39		08:24 (T71)
	21:08			20:48	75	18:48 (T69)	20:04	118	19:08 (T69)	19:11	17:26			17:04	43	09:07 (T71)
4	06:04			06:30		07:26 (T68)	07:00		07:32 (T68)	07:31	07:05			07:40		08:24 (T71)
	21:08			20:47	82	18:51 (T69)	20:02	111	19:07 (T69)	19:10	17:25			17:03	43	09:07 (T71)
5	06:05			06:31		07:26 (T68)	07:01		07:34 (T68)	07:32	07:07			07:41		08:24 (T71)
	21:08			20:45	87	18:53 (T69)	20:01	107	19:07 (T69)	19:08	17:23			17:03	44	09:08 (T71)
6	06:05			06:31		07:25 (T68)	07:02		07:39 (T68)	07:33	07:08			07:42		08:24 (T71)
	21:07			20:44	93	18:55 (T69)	19:57	95	19:06 (T69)	19:07	17:22			17:03	45	09:09 (T71)
7	06:06			06:32		07:25 (T68)	07:03		17:43 (T69)	07:34	07:09			07:43		08:25 (T71)
	21:07			20:43	96	18:56 (T69)	19:56	83	19:06 (T69)	19:05	17:21			17:03	44	09:09 (T71)
8	06:07			06:33		07:24 (T68)	07:04		17:43 (T69)	07:35	07:10			07:44		08:25 (T71)
	21:07			20:42	102	18:58 (T69)	19:54	82	19:05 (T69)	19:03	17:20			17:03	45	09:10 (T71)
9	06:07			06:34		07:12 (T67)	07:05		17:42 (T69)	07:36	07:11			07:44		08:26 (T71)
	21:06			20:41	116	18:59 (T69)	19:52	83	19:05 (T69)	19:02	17:19			17:03	44	09:10 (T71)
10	06:08			06:35		07:10 (T67)	07:06		17:42 (T69)	07:37	07:13			07:45		08:26 (T71)
	21:06			20:39	121	19:00 (T69)	19:51	82	19:04 (T69)	19:00	17:18			17:03	45	09:11 (T71)
11	06:09			06:36		07:08 (T67)	07:07		17:42 (T69)	07:38	07:14			07:46		08:27 (T71)
	21:06			20:38	126	19:01 (T69)	19:49	81	19:03 (T69)	18:58	17:17			17:03	45	09:12 (T71)
12	06:09			06:37		07:07 (T67)	07:08		17:41 (T69)	07:39	07:15			07:47		08:26 (T71)
	21:05			20:37	131	19:03 (T69)	19:47	80	19:01 (T69)	18:57	17:16			17:03	45	09:11 (T71)
13	06:10			06:38		07:06 (T67)	07:09		17:42 (T69)	07:40	07:16			07:48		08:27 (T71)
	21:05			20:35	133	19:03 (T69)	19:45	78	19:00 (T69)	18:55	17:15			17:03	45	09:12 (T71)
14	06:11			06:39		07:05 (T67)	07:10		17:42 (T69)	07:41	07:17			07:49		08:27 (T71)
	21:04			20:34	137	19:04 (T69)	19:44	77	18:59 (T69)	18:54	17:14			17:04	46	09:13 (T71)
15	06:12			06:40		07:04 (T67)	07:11		17:42 (T69)	07:42	07:19		08:38 (T71)	07:49		08:28 (T71)
	21:04			20:33	140	19:05 (T69)	19:42	76	18:58 (T69)	18:52	17:13	4	08:42 (T71)	17:04	46	09:14 (T71)
16	06:12			06:41		07:03 (T67)	07:12		17:42 (T69)	07:44	07:20		08:33 (T71)	07:50		08:28 (T71)
	21:03			20:31	143	19:06 (T69)	19:40	75	18:57 (T69)	18:51	17:13	14	08:47 (T71)	17:04	45	09:13 (T71)
17	06:13			06:42		07:04 (T67)	07:13		17:43 (T69)	07:45	07:21		08:30 (T71)	07:51		08:29 (T71)
	21:03			20:30	143	19:06 (T69)	19:39	73	18:56 (T69)	18:49	17:12	19	08:49 (T71)	17:04	45	09:14 (T71)
18	06:14			06:43		07:05 (T67)	07:14		17:43 (T69)	07:46	07:22		08:29 (T71)	07:51		08:30 (T71)
	21:02			20:28	144	19:07 (T69)	19:37	71	18:54 (T69)	18:48	17:11	23	08:52 (T71)	17:05	45	09:15 (T71)
19	06:15			06:44		07:06 (T67)	07:15		17:44 (T69)	07:47	07:23		08:28 (T71)	07:52		08:29 (T71)
	21:01			20:27	145	19:08 (T69)	19:35	69	18:53 (T69)	18:46	17:10	26	08:54 (T71)	17:05	46	09:15 (T71)
20	06:16		07:47 (T68)	06:45		07:07 (T67)	07:16		17:45 (T69)	07:48	07:24		08:26 (T71)	07:53		08:30 (T71)
	21:01	8	07:55 (T68)	20:26	144	19:08 (T69)	19:34	66	18:51 (T69)	18:45	17:10	29	08:55 (T71)	17:05	46	09:16 (T71)
21	06:16		07:44 (T68)	06:46		07:08 (T67)	07:17		17:46 (T69)	07:49	07:26		08:25 (T71)	07:53		08:30 (T71)
	21:00	15	07:59 (T68)	20:24	144	19:08 (T69)	19:32	64	18:50 (T69)	18:43	17:09	31	08:56 (T71)	17:06	46	09:16 (T71)
22	06:17		07:42 (T68)	06:47		07:08 (T67)	07:18		17:47 (T69)	07:50	07:27		08:26 (T71)	07:54		08:31 (T71)
	20:59	20	08:02 (T68)	20:23	145	19:08 (T69)	19:30	61	18:48 (T69)	18:42	17:08	32	08:58 (T71)	17:06	46	09:17 (T71)
23	06:18		07:39 (T68)	06:48		07:09 (T67)	07:19		17:48 (T69)	07:51	07:28		08:25 (T71)	07:54		08:31 (T71)
	20:58	24	08:03 (T68)	20:21	144	19:08 (T69)	19:28	58	18:46 (T69)	18:40	17:08	34	08:59 (T71)	17:07	46	09:17 (T71)
24	06:19		07:37 (T68)	06:49		07:10 (T67)	07:20		17:50 (T69)	07:53	07:29		08:24 (T71)	07:55		08:32 (T71)
	20:57	28	08:05 (T68)	20:20	143	19:08 (T69)	19:27	54	18:44 (T69)	18:39	17:07	36	09:00 (T71)	17:07	46	09:18 (T71)
25	06:20		07:36 (T68)	06:50		07:11 (T67)	07:21		17:51 (T69)	07:54	07:30		08:24 (T71)	07:55		08:33 (T71)
	20:57	31	08:07 (T68)	20:18	143	19:08 (T69)	19:25	50	18:41 (T69)	18:37	17:06	37	09:01 (T71)	17:08	45	09:18 (T71)
26	06:21		07:35 (T68)	06:51		07:12 (T67)	07:22		17:53 (T69)	07:55	07:31		08:23 (T71)	07:55		08:33 (T71)
	20:56	33	08:08 (T68)	20:17	143	19:09 (T69)	19:23	46	18:39 (T69)	18:36	17:06	39	09:02 (T71)	17:09	45	09:18 (T71)
27	06:22		07:34 (T68)	06:52		07:13 (T67)	07:23		17:56 (T69)	07:56	07:32		08:24 (T71)	07:56		08:34 (T71)
	20:55	35	08:09 (T68)	20:15	142	19:09 (T69)	19:22	39	18:35 (T69)	18:35	17:06	39	09:03 (T71)	17:09	45	09:19 (T71)
28	06:23		07:33 (T68)	06:53		07:14 (T67)	07:24		17:59 (T69)	07:57	07:34		08:24 (T71)	07:56		08:34 (T71)
	20:54	38	08:11 (T68)	20:13	140	19:09 (T69)	19:20	33	18:32 (T69)	18:33	17:05	40	09:04 (T71)	17:10	45	09:19 (T71)
29	06:24		07:32 (T68)	06:54		07:15 (T67)	07:25		18:03 (T69)	07:58	07:35		08:24 (T71)	07:56		08:34 (T71)
	20:53	40	08:12 (T68)	20:12	138	19:09 (T69)	19:18	24	18:27 (T69)	18:32	17:05	41	09:05 (T71)	17:11	46	09:20 (T71)
30	06:25		07:31 (T68)	06:55		07:16 (T67)	07:26		18:11 (T69)	07:59	07:36		08:24 (T71)	07:56		08:35 (T71)
	20:52	42	08:13 (T68)	20:10	131	19:09 (T69)	19:17	7	18:18 (T69)	18:31	17:04	41	09:05 (T71)	17:12	45	09:20 (T71)
31	06:26		07:30 (T68)	06:56		07:25 (T68)				08:01				07:57		08:35 (T71)
	20:51	44	08:14 (T68)	20:09	126	19:08 (T69)				18:29				17:12	45	09:20 (T71)
Potential sun hours	459			428			375			345	298			288		
Total, worst case		358			3821			2187				485			1391	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.66			0.65			0.65				0.53			0.53	
Total reduction		0.43			0.39			0.38				0.16			0.11	
Total, real		153			1498			823				75			159	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1056 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7044)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		09:02 (T12)	07:44		08:06 (T13)	07:07			07:16		18:54 (T11)	06:30		07:04 (T10)	06:01		06:42 (T10)
	17:13	64	10:06 (T12)	17:47	50	09:50 (T12)	18:22			19:56	34	19:28 (T11)	20:27	42	19:19 (T11)	20:57	57	07:39 (T10)
2	07:58		09:02 (T12)	07:43		08:06 (T13)	07:06			07:14		18:51 (T11)	06:29		07:00 (T10)	06:01		06:42 (T10)
	17:14	65	10:07 (T12)	17:49	35	08:41 (T13)	18:23			19:57	38	19:29 (T11)	20:28	46	19:17 (T11)	20:58	57	07:39 (T10)
3	07:58		09:03 (T12)	07:42		08:06 (T13)	07:04			07:13		18:50 (T11)	06:27		06:57 (T10)	06:00		06:43 (T10)
	17:14	64	10:07 (T12)	17:50	36	08:42 (T13)	18:24			19:58	41	19:31 (T11)	20:29	44	19:13 (T11)	20:59	56	07:39 (T10)
4	07:58		09:03 (T12)	07:41		08:06 (T13)	07:03			07:11		18:48 (T11)	06:26		06:55 (T10)	06:00		06:43 (T10)
	17:15	64	10:07 (T12)	17:51	36	08:42 (T13)	18:25			19:59	43	19:31 (T11)	20:30	42	19:10 (T11)	21:00	56	07:39 (T10)
5	07:58		09:04 (T12)	07:40		08:06 (T13)	07:01			07:09		18:47 (T11)	06:25		06:53 (T10)	06:00		06:43 (T10)
	17:16	64	10:08 (T12)	17:52	36	08:42 (T13)	18:26			20:00	45	19:32 (T11)	20:32	34	07:27 (T10)	21:00	56	07:39 (T10)
6	07:58		09:05 (T12)	07:39		08:07 (T13)	06:59			07:08		18:46 (T11)	06:24		06:52 (T10)	05:59		06:43 (T10)
	17:17	63	10:08 (T12)	17:54	35	08:42 (T13)	18:27			20:00	47	19:33 (T11)	20:33	37	07:29 (T10)	21:01	56	07:39 (T10)
7	07:58		09:05 (T12)	07:37		08:07 (T13)	06:58			07:06		18:45 (T11)	06:23		06:51 (T10)	05:59		06:44 (T10)
	17:18	63	10:08 (T12)	17:55	35	08:42 (T13)	18:29			20:01	48	19:33 (T11)	20:34	39	07:30 (T10)	21:02	56	07:40 (T10)
8	07:58		09:06 (T12)	07:36		08:07 (T13)	07:56			07:05		18:44 (T11)	06:21		06:48 (T10)	05:59		06:44 (T10)
	17:19	63	10:09 (T12)	17:56	34	08:41 (T13)	19:30			20:03	50	19:34 (T11)	20:35	42	07:30 (T10)	21:02	56	07:40 (T10)
9	07:57		09:06 (T12)	07:35		08:07 (T13)	07:55			07:03		18:43 (T11)	06:20		06:48 (T10)	05:58		06:45 (T10)
	17:20	62	10:08 (T12)	17:57	34	08:41 (T13)	19:31			20:04	51	19:34 (T11)	20:36	43	07:31 (T10)	21:03	55	07:40 (T10)
10	07:57		09:07 (T12)	07:34		08:08 (T13)	07:53			07:01		18:42 (T11)	06:19		06:47 (T10)	05:58		06:44 (T10)
	17:21	62	10:09 (T12)	17:59	33	08:41 (T13)	19:32			20:05	52	19:34 (T11)	20:37	45	07:32 (T10)	21:03	55	07:39 (T10)
11	07:57		09:08 (T12)	07:33		08:09 (T13)	07:51			07:00		18:42 (T11)	06:18		06:46 (T10)	05:58		06:44 (T10)
	17:22	61	10:09 (T12)	18:00	32	08:41 (T13)	19:33			20:06	52	19:34 (T11)	20:38	47	07:33 (T10)	21:04	56	07:40 (T10)
12	07:57		09:08 (T12)	07:31		08:09 (T13)	07:50			06:58		18:41 (T11)	06:17		06:45 (T10)	05:58		06:45 (T10)
	17:23	61	10:09 (T12)	18:01	30	08:39 (T13)	19:34			20:07	53	19:34 (T11)	20:39	49	07:34 (T10)	21:04	55	07:40 (T10)
13	07:56		09:09 (T12)	07:30		08:10 (T13)	07:48			06:57		18:41 (T11)	06:16		06:44 (T10)	05:58		06:45 (T10)
	17:24	60	10:09 (T12)	18:02	28	08:38 (T13)	19:35			20:08	53	19:34 (T11)	20:40	50	07:34 (T10)	21:05	55	07:40 (T10)
14	07:56		09:10 (T12)	07:29		08:12 (T13)	07:46			06:55		18:41 (T11)	06:15		06:44 (T10)	05:58		06:45 (T10)
	17:26	59	10:09 (T12)	18:04	26	08:38 (T13)	19:37			20:09	53	19:34 (T11)	20:41	51	07:35 (T10)	21:05	55	07:40 (T10)
15	07:56		09:10 (T12)	07:28		08:13 (T13)	07:45			06:53		18:40 (T11)	06:14		06:43 (T10)	05:58		06:46 (T10)
	17:27	59	10:09 (T12)	18:05	22	08:35 (T13)	19:38			20:10	53	19:33 (T11)	20:42	52	07:35 (T10)	21:06	54	07:40 (T10)
16	07:55		09:11 (T12)	07:26		08:15 (T13)	07:43			06:52		18:40 (T11)	06:13		06:43 (T10)	05:58		06:46 (T10)
	17:28	58	10:09 (T12)	18:06	19	08:34 (T13)	19:39			20:11	53	19:33 (T11)	20:43	53	07:36 (T10)	21:06	54	07:40 (T10)
17	07:55		09:12 (T12)	07:25		08:18 (T13)	07:41			06:50		18:40 (T11)	06:12		06:43 (T10)	05:58		06:46 (T10)
	17:29	56	10:08 (T12)	18:07	13	08:31 (T13)	19:40			20:12	52	19:32 (T11)	20:44	54	07:37 (T10)	21:07	54	07:40 (T10)
18	07:54		09:13 (T12)	07:24			07:40			06:49		18:41 (T11)	06:11		06:43 (T10)	05:58		06:46 (T10)
	17:30	56	10:09 (T12)	18:09			19:41			20:13	51	19:32 (T11)	20:45	54	07:37 (T10)	21:07	55	07:41 (T10)
19	07:54		09:14 (T12)	07:22			07:38			06:47		18:40 (T11)	06:10		06:42 (T10)	05:58		06:47 (T10)
	17:31	54	10:08 (T12)	18:10			19:42			20:14	51	19:31 (T11)	20:46	55	07:37 (T10)	21:07	55	07:42 (T10)
20	07:53		08:16 (T13)	07:21			07:36			06:46		18:41 (T11)	06:09		06:42 (T10)	05:58		06:47 (T10)
	17:32	61	10:07 (T12)	18:11			19:43			20:15	50	19:31 (T11)	20:47	55	07:37 (T10)	21:08	55	07:42 (T10)
21	07:53		08:14 (T13)	07:19			07:35			06:44		18:41 (T11)	06:08		06:42 (T10)	05:58		06:47 (T10)
	17:34	66	10:08 (T12)	18:12			19:44			20:17	49	19:30 (T11)	20:48	55	07:37 (T10)	21:08	55	07:42 (T10)
22	07:52		08:13 (T13)	07:18			07:33			06:43		18:41 (T11)	06:08		06:42 (T10)	05:59		06:47 (T10)
	17:35	68	10:07 (T12)	18:13			19:45			20:18	49	19:30 (T11)	20:49	56	07:38 (T10)	21:08	55	07:42 (T10)
23	07:51		08:12 (T13)	07:16			07:31			06:41		18:42 (T11)	06:07		06:42 (T10)	05:59		06:47 (T10)
	17:36	69	10:06 (T12)	18:15			19:46			20:19	47	19:29 (T11)	20:50	56	07:38 (T10)	21:08	55	07:42 (T10)
24	07:51		08:11 (T13)	07:15			07:30			06:40		18:42 (T11)	06:06		06:41 (T10)	05:59		06:48 (T10)
	17:37	69	10:05 (T12)	18:16			19:47			20:20	46	19:28 (T11)	20:51	57	07:38 (T10)	21:09	55	07:43 (T10)
25	07:50		08:11 (T13)	07:13			07:28			06:38		18:44 (T11)	06:05		06:42 (T10)	05:59		06:48 (T10)
	17:39	69	10:05 (T12)	18:17			19:49			20:21	43	19:27 (T11)	20:51	57	07:39 (T10)	21:09	55	07:43 (T10)
26	07:49		08:10 (T13)	07:12			07:26			06:37		18:44 (T11)	06:05		06:42 (T10)	06:00		06:48 (T10)
	17:40	68	10:03 (T12)	18:18			19:50			20:22	41	19:25 (T11)	20:52	56	07:38 (T10)	21:09	54	07:42 (T10)
27	07:48		08:09 (T13)	07:10			07:25			06:36		18:45 (T11)	06:04		06:41 (T10)	06:00		06:49 (T10)
	17:41	67	10:02 (T12)	18:19			19:51			20:23	40	19:25 (T11)	20:53	57	07:38 (T10)	21:09	54	07:43 (T10)
28	07:47		08:08 (T13)	07:09			07:23			06:34		18:46 (T11)	06:03		06:42 (T10)	06:00		06:48 (T10)
	17:42	66	10:00 (T12)	18:21			19:52			20:24	38	19:24 (T11)	20:54	57	07:39 (T10)	21:09	55	07:43 (T10)
29	07:47		08:07 (T13)				07:21		19:03 (T11)	06:33		18:47 (T11)	06:03		06:42 (T10)	06:01		06:49 (T10)
	17:44	65	09:59 (T12)				19:53	17	19:20 (T11)	20:25	35	19:22 (T11)	20:55	56	07:38 (T10)	21:09	55	07:44 (T10)
30	07:46		08:07 (T13)				07:19		18:59 (T11)	06:31		18:49 (T11)	06:02		06:42 (T10)	06:01		06:49 (T10)
	17:45	62	09:57 (T12)				19:54	24	19:23 (T11)	20:26	31	19:20 (T11)	20:56	57	07:39 (T10)	21:09	55	07:44 (T10)
31	07:45		08:06 (T13)				07:18		18:56 (T11)				06:02		06:42 (T10)			
	17:46	57	09:54 (T12)				19:55	30	19:26 (T11)				20:56	57	07:39 (T10)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1945			534			71			1389			1555			1656	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.53			0.61			0.61			0.69			0.70	
Total reduction		0.16			0.20			0.26			0.31			0.38			0.43	
Total, real		307			109			18			426			591			712	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1056 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7044)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		06:49 (T10)	06:26		06:56 (T10)	06:57		18:41 (T11)	07:28		07:02	07:38 (T13)	07:37		08:50 (T12)
	21:09	55	07:44 (T10)	20:50	48	07:44 (T10)	20:07	52	19:33 (T11)	19:15		17:28	33	08:11 (T13)	17:03	61	09:51 (T12)
2	06:02		06:49 (T10)	06:27		06:57 (T10)	06:58		18:41 (T11)	07:29		07:03	07:37 (T13)	07:38		08:50 (T12)
	21:09	55	07:44 (T10)	20:49	46	07:43 (T10)	20:06	52	19:33 (T11)	19:13		17:27	34	08:11 (T13)	17:03	62	09:52 (T12)
3	06:03		06:49 (T10)	06:28		06:58 (T10)	06:59		18:41 (T11)	07:30		07:05	07:36 (T13)	07:39		08:50 (T12)
	21:09	55	07:44 (T10)	20:48	45	07:43 (T10)	20:04	51	19:32 (T11)	19:11		17:25	35	08:11 (T13)	17:03	62	09:52 (T12)
4	06:03		06:49 (T10)	06:29		06:59 (T10)	07:00		18:41 (T11)	07:31		07:06	07:36 (T13)	07:40		08:50 (T12)
	21:09	56	07:45 (T10)	20:47	43	07:42 (T10)	20:02	50	19:31 (T11)	19:10		17:24	35	08:11 (T13)	17:03	63	09:53 (T12)
5	06:04		06:50 (T10)	06:30		07:00 (T10)	07:01		18:42 (T11)	07:32		07:07	07:36 (T13)	07:41		08:50 (T12)
	21:08	56	07:46 (T10)	20:46	41	07:41 (T10)	20:01	48	19:30 (T11)	19:08		17:23	36	08:12 (T13)	17:03	63	09:53 (T12)
6	06:05		06:49 (T10)	06:31		07:01 (T10)	07:02		18:42 (T11)	07:33		07:08	07:36 (T13)	07:42		08:51 (T12)
	21:08	56	07:45 (T10)	20:45	39	07:40 (T10)	19:57	47	19:29 (T11)	19:06		17:22	36	08:12 (T13)	17:02	63	09:54 (T12)
7	06:05		06:50 (T10)	06:32		07:02 (T10)	07:03		18:43 (T11)	07:34		07:09	07:36 (T13)	07:43		08:51 (T12)
	21:08	56	07:46 (T10)	20:44	36	07:38 (T10)	19:56	45	19:28 (T11)	19:05		17:21	36	08:12 (T13)	17:02	64	09:55 (T12)
8	06:06		06:49 (T10)	06:33		07:03 (T10)	07:04		18:43 (T11)	07:35		07:11	07:37 (T13)	07:44		08:51 (T12)
	21:08	57	07:46 (T10)	20:42	34	07:37 (T10)	19:54	43	19:26 (T11)	19:03		17:20	35	08:12 (T13)	17:02	64	09:55 (T12)
9	06:07		06:50 (T10)	06:34		07:05 (T10)	07:05		18:44 (T11)	07:36		07:12	07:37 (T13)	07:45		08:52 (T12)
	21:07	56	07:46 (T10)	20:41	44	19:21 (T11)	19:52	41	19:25 (T11)	19:02		17:19	35	08:12 (T13)	17:02	64	09:56 (T12)
10	06:07		06:50 (T10)	06:35		07:07 (T10)	07:06		18:45 (T11)	07:37		07:13	07:37 (T13)	07:46		08:52 (T12)
	21:07	57	07:47 (T10)	20:40	46	19:24 (T11)	19:51	38	19:23 (T11)	19:00		17:18	52	09:22 (T12)	17:02	65	09:57 (T12)
11	06:08		06:50 (T10)	06:36		07:10 (T10)	07:07		18:46 (T11)	07:38		07:14	07:37 (T13)	07:47		08:52 (T12)
	21:06	56	07:46 (T10)	20:39	44	19:26 (T11)	19:49	34	19:20 (T11)	18:58		17:17	57	09:25 (T12)	17:02	64	09:56 (T12)
12	06:09		06:50 (T10)	06:37		07:14 (T10)	07:08		18:47 (T11)	07:39		07:15	07:39 (T13)	07:48		08:52 (T12)
	21:06	57	07:47 (T10)	20:37	40	19:28 (T11)	19:47	31	19:18 (T11)	18:57		17:16	61	09:29 (T12)	17:03	65	09:57 (T12)
13	06:09		06:51 (T10)	06:38		18:57 (T11)	07:09		18:49 (T11)	07:40		07:17	07:39 (T13)	07:48		08:53 (T12)
	21:05	56	07:47 (T10)	20:36	32	19:29 (T11)	19:46	26	19:15 (T11)	18:55		17:15	65	09:31 (T12)	17:03	65	09:58 (T12)
14	06:10		06:51 (T10)	06:39		18:54 (T11)	07:10		18:52 (T11)	07:42		07:18	07:40 (T13)	07:49		08:54 (T12)
	21:05	57	07:48 (T10)	20:35	36	19:30 (T11)	19:44	19	19:11 (T11)	18:54		17:14	66	09:32 (T12)	17:03	64	09:58 (T12)
15	06:11		06:50 (T10)	06:40		18:53 (T11)	07:11		18:58 (T11)	07:43		07:19	07:42 (T13)	07:50		08:54 (T12)
	21:04	57	07:47 (T10)	20:33	38	19:31 (T11)	19:42	7	19:05 (T11)	18:52		17:13	67	09:35 (T12)	17:03	65	09:59 (T12)
16	06:12		06:51 (T10)	06:41		18:51 (T11)	07:12			07:44		07:20	07:43 (T13)	07:51		08:54 (T12)
	21:04	57	07:48 (T10)	20:32	41	19:32 (T11)	19:40			18:50		17:12	68	09:36 (T12)	17:03	65	09:59 (T12)
17	06:12		06:51 (T10)	06:42		18:50 (T11)	07:13			07:45		07:21	07:44 (T13)	07:51		08:55 (T12)
	21:03	57	07:48 (T10)	20:30	42	19:32 (T11)	19:39			18:49		17:11	69	09:38 (T12)	17:04	65	10:00 (T12)
18	06:13		06:51 (T10)	06:43		18:49 (T11)	07:14			07:46		07:23	07:45 (T13)	07:52		08:56 (T12)
	21:03	57	07:48 (T10)	20:29	44	19:33 (T11)	19:37			18:47		17:10	69	09:39 (T12)	17:04	65	10:01 (T12)
19	06:14		06:52 (T10)	06:44		18:48 (T11)	07:15			07:47		07:24	07:47 (T13)	07:53		08:55 (T12)
	21:02	56	07:48 (T10)	20:27	46	19:34 (T11)	19:35			18:46		17:10	69	09:41 (T12)	17:04	66	10:01 (T12)
20	06:15		06:51 (T10)	06:45		18:47 (T11)	07:16			07:48		07:25	07:48 (T13)	07:53		08:56 (T12)
	21:01	57	07:48 (T10)	20:26	47	19:34 (T11)	19:34			18:44		17:09	68	09:42 (T12)	17:05	66	10:02 (T12)
21	06:16		06:52 (T10)	06:46		18:46 (T11)	07:17			07:49		07:26	07:49 (T13)	07:54		08:56 (T12)
	21:00	56	07:48 (T10)	20:25	49	19:35 (T11)	19:32			18:43		17:08	66	09:43 (T12)	17:05	66	10:02 (T12)
22	06:17		06:52 (T10)	06:47		18:45 (T11)	07:18			07:51		07:27	07:52 (T13)	07:54		08:57 (T12)
	21:00	56	07:48 (T10)	20:23	50	19:35 (T11)	19:30			18:41		17:08	62	09:43 (T12)	17:06	66	10:03 (T12)
23	06:18		06:52 (T10)	06:48		18:45 (T11)	07:19			07:52		07:29	08:51 (T12)	07:55		08:57 (T12)
	20:59	56	07:48 (T10)	20:22	50	19:35 (T11)	19:28			18:40		17:07	54	09:45 (T12)	17:06	66	10:03 (T12)
24	06:19		06:53 (T10)	06:49		18:44 (T11)	07:20			07:53	08:51 (T13)	07:30		08:50 (T12)	07:55		08:57 (T12)
	20:58	55	07:48 (T10)	20:20	51	19:35 (T11)	19:27			18:39	7 08:58 (T13)	17:06	56	09:46 (T12)	17:07	66	10:03 (T12)
25	06:19		06:53 (T10)	06:50		18:43 (T11)	07:21			07:54	08:47 (T13)	07:31		08:50 (T12)	07:56		08:59 (T12)
	20:57	55	07:48 (T10)	20:18	52	19:35 (T11)	19:25			18:37	15 09:02 (T13)	17:06	56	09:46 (T12)	17:07	65	10:04 (T12)
26	06:20		06:54 (T10)	06:51		18:43 (T11)	07:22			07:55	08:44 (T13)	07:32		08:49 (T12)	07:56		08:59 (T12)
	20:56	54	07:48 (T10)	20:17	52	19:35 (T11)	19:23			18:36	20 09:04 (T13)	17:05	58	09:47 (T12)	17:08	65	10:04 (T12)
27	06:21		06:53 (T10)	06:52		18:42 (T11)	07:23			07:56	08:42 (T13)	07:33		08:49 (T12)	07:56		08:59 (T12)
	20:55	53	07:46 (T10)	20:15	53	19:35 (T11)	19:22			18:34	23 09:05 (T13)	17:05	59	09:48 (T12)	17:09	65	10:04 (T12)
28	06:22		06:54 (T10)	06:53		18:42 (T11)	07:24			07:58	08:41 (T13)	07:34		08:50 (T12)	07:57		09:00 (T12)
	20:54	52	07:46 (T10)	20:14	53	19:35 (T11)	19:20			18:33	27 09:08 (T13)	17:05	59	09:49 (T12)	17:09	65	10:05 (T12)
29	06:23		06:54 (T10)	06:54		18:42 (T11)	07:26			07:59	08:40 (T13)	07:35		08:50 (T12)	07:57		09:00 (T12)
	20:54	52	07:46 (T10)	20:12	53	19:35 (T11)	19:18			18:32	28 09:08 (T13)	17:04	60	09:50 (T12)	17:10	65	10:05 (T12)
30	06:24		06:55 (T10)	06:55		18:41 (T11)	07:27			08:00	08:39 (T13)	07:36		08:50 (T12)	07:57		09:01 (T12)
	20:53	50	07:45 (T10)	20:11	53	19:34 (T11)	19:16			18:30	30 09:09 (T13)	17:04	61	09:51 (T12)	17:11	65	10:06 (T12)
31	06:25		06:55 (T10)	06:56		18:41 (T11)				08:01	08:38 (T13)				07:57		09:01 (T12)
	20:51	50	07:45 (T10)	20:09	53	19:34 (T11)				18:29	32 09:10 (T13)				17:12	65	10:06 (T12)
Potential sun hours	460			429			375			345		297			287		
Total, worst case		1715			1401			584			182			1617			2000
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00
Wind dir. red.		0.70			0.64			0.61			0.53			0.53			0.53
Total reduction		0.44			0.37			0.35			0.25			0.15			0.11
Total, real		760			525			203			45			247			224

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1067 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7053)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June
1	07:57		07:43		16:16 (T35)	07:07	07:38 (T36)	07:16		06:30	06:50 (T31)	06:01
	17:13		17:47	53	17:09 (T35)	18:22	23 08:01 (T36)	19:56		20:27	23 07:13 (T31)	20:57
2	07:57		07:43		16:16 (T35)	07:06	07:39 (T36)	07:14		06:29	06:49 (T31)	06:01
	17:14		17:49	53	17:09 (T35)	18:23	21 08:00 (T36)	19:57		20:28	25 07:14 (T31)	20:58
3	07:58		07:41		16:16 (T35)	07:04	07:40 (T36)	07:13		06:28	06:47 (T31)	06:00
	17:15		17:50	53	17:09 (T35)	18:24	17 07:57 (T36)	19:58		20:29	27 07:14 (T31)	20:58
4	07:58		07:40		16:16 (T35)	07:02	07:43 (T36)	07:11		06:26	06:46 (T31)	06:00
	17:15		17:51	54	17:10 (T35)	18:25	12 07:55 (T36)	19:59		20:30	28 07:14 (T31)	20:59
5	07:58		07:39		16:16 (T35)	07:01		07:09		06:25	06:45 (T31)	06:00
	17:16		17:52	54	17:10 (T35)	18:26		20:00		20:31	30 07:15 (T31)	21:00
6	07:57		07:38		16:16 (T35)	06:59		07:08		06:24	06:44 (T31)	05:59
	17:17		17:54	53	17:09 (T35)	18:27		20:00		20:32	31 07:15 (T31)	21:01
7	07:57	16:30 (T35)	07:37		16:16 (T35)	06:58		07:06		06:23	06:43 (T31)	05:59
	17:18	10 16:40 (T35)	17:55	53	17:09 (T35)	18:29		20:01		20:33	33 07:16 (T31)	21:01
8	07:57	16:27 (T35)	07:36		16:17 (T35)	07:56		07:05		06:21	06:42 (T31)	05:59
	17:19	15 16:42 (T35)	17:56	52	17:09 (T35)	19:30		20:02		20:34	34 07:16 (T31)	21:02
9	07:57	16:26 (T35)	07:35		16:17 (T35)	07:54		07:03		06:20	06:41 (T31)	05:59
	17:20	18 16:44 (T35)	17:57	52	17:09 (T35)	19:31		20:03		20:35	34 07:15 (T31)	21:02
10	07:57	16:25 (T35)	07:34		16:18 (T35)	07:53		07:01		06:19	06:41 (T31)	05:58
	17:21	21 16:46 (T35)	17:59	51	17:09 (T35)	19:32		20:05		20:36	34 07:15 (T31)	21:03
11	07:57	16:23 (T35)	07:32		16:18 (T35)	07:51		07:00		06:18	06:41 (T31)	05:58
	17:22	25 16:48 (T35)	18:00	50	17:08 (T35)	19:33		20:06		20:38	34 07:15 (T31)	21:04
12	07:56	16:23 (T35)	07:31		16:19 (T35)	07:50		06:58		06:17	06:42 (T31)	05:58
	17:23	27 16:50 (T35)	18:01	49	17:08 (T35)	19:34		20:07		20:39	32 07:14 (T31)	21:04
13	07:56	16:22 (T35)	07:30		07:50 (T36)	07:48		06:56		06:16	06:42 (T31)	05:58
	17:25	29 16:51 (T35)	18:02	51	17:08 (T35)	19:35		20:08		20:40	32 07:14 (T31)	21:05
14	07:56	16:21 (T35)	07:29		07:49 (T36)	07:46		06:55		06:15	06:42 (T31)	05:58
	17:26	31 16:52 (T35)	18:04	55	17:07 (T35)	19:36		20:09		20:41	32 07:14 (T31)	21:05
15	07:55	16:21 (T35)	07:27		07:47 (T36)	07:45		06:53		06:14	06:42 (T31)	05:58
	17:27	33 16:54 (T35)	18:05	57	17:06 (T35)	19:38		20:10		20:42	31 07:13 (T31)	21:06
16	07:55	16:20 (T35)	07:26		07:46 (T36)	07:43		06:52		06:13	06:43 (T31)	05:58
	17:28	35 16:55 (T35)	18:06	57	17:05 (T35)	19:39		20:11		20:43	30 07:13 (T31)	21:06
17	07:55	16:20 (T35)	07:25		07:44 (T36)	07:41		06:50		06:12	06:44 (T31)	05:58
	17:29	37 16:57 (T35)	18:07	58	17:03 (T35)	19:40		20:12		20:44	29 07:13 (T31)	21:06
18	07:54	16:19 (T35)	07:23		07:43 (T36)	07:40		06:49		06:11	06:44 (T31)	05:58
	17:30	39 16:58 (T35)	18:09	57	17:02 (T35)	19:41		20:13		20:45	29 07:13 (T31)	21:07
19	07:53	16:19 (T35)	07:22		07:42 (T36)	07:38		06:47		06:10	06:45 (T31)	05:58
	17:31	40 16:59 (T35)	18:10	56	17:01 (T35)	19:42		20:14		20:46	27 07:12 (T31)	21:07
20	07:53	16:18 (T35)	07:21		07:40 (T36)	07:36		06:46		06:09	06:46 (T31)	05:58
	17:33	42 17:00 (T35)	18:11	55	16:59 (T35)	19:43		20:15		20:46	25 07:11 (T31)	21:07
21	07:52	16:17 (T35)	07:19		07:39 (T36)	07:35		06:44		06:08	06:46 (T31)	05:59
	17:34	44 17:01 (T35)	18:12	52	16:57 (T35)	19:44		20:16		20:47	24 07:10 (T31)	21:08
22	07:52	16:18 (T35)	07:18		07:37 (T36)	07:33		06:43		06:08	06:48 (T31)	05:59
	17:35	44 17:02 (T35)	18:13	49	16:54 (T35)	19:45		20:17		20:48	22 07:10 (T31)	21:08
23	07:51	16:17 (T35)	07:16		07:36 (T36)	07:31		06:41		06:07	06:49 (T31)	05:59
	17:36	46 17:03 (T35)	18:15	41	16:50 (T35)	19:46		20:18		20:49	20 07:09 (T31)	21:08
24	07:50	16:16 (T35)	07:15		07:35 (T36)	07:30		06:40		06:06	06:50 (T31)	05:59
	17:37	48 17:04 (T35)	18:16	30	08:05 (T36)	19:47		20:20		20:50	17 07:07 (T31)	21:08
25	07:50	16:16 (T35)	07:13		07:36 (T36)	07:28		06:38		06:05	06:52 (T31)	06:00
	17:39	48 17:04 (T35)	18:17	29	08:05 (T36)	19:48		20:21		20:51	14 07:06 (T31)	21:08
26	07:49	16:17 (T35)	07:12		07:36 (T36)	07:26		06:37	06:56 (T31)	06:05	06:53 (T31)	06:00
	17:40	49 17:06 (T35)	18:18	28	08:04 (T36)	19:50		20:22	8 07:04 (T31)	20:52	11 07:04 (T31)	21:09
27	07:48	16:16 (T35)	07:10		07:36 (T36)	07:24		06:36	06:55 (T31)	06:04	06:55 (T31)	06:00
	17:41	50 17:06 (T35)	18:19	28	08:04 (T36)	19:51		20:23	13 07:08 (T31)	20:53	7 07:02 (T31)	21:09
28	07:47	16:16 (T35)	07:09		07:37 (T36)	07:23		06:34	06:54 (T31)	06:03		06:01
	17:42	51 17:07 (T35)	18:20	25	08:02 (T36)	19:52		20:24	16 07:10 (T31)	20:54		21:09
29	07:46	16:16 (T35)				07:21		06:33	06:52 (T31)	06:03		06:01
	17:44	51 17:07 (T35)				19:53		20:25	19 07:11 (T31)	20:55		21:09
30	07:45	16:16 (T35)				07:19		06:31	06:51 (T31)	06:02		06:01
	17:45	52 17:08 (T35)				19:54		20:26	21 07:12 (T31)	20:55		21:09
31	07:44	16:16 (T35)				07:18				06:02		
	17:46	52 17:08 (T35)				19:55				20:56		
Potential sun hours	297		297			370		399		449		453
Total, worst case		937		1355			73		77		715	
Sun reduction		0.31		0.40			0.44		0.52		0.57	
Oper. time red.		1.00		1.00			1.00		1.00		1.00	
Wind dir. red.		0.73		0.69			0.56		0.69		0.69	
Total reduction		0.23		0.28			0.25		0.36		0.40	
Total, real		213		374			18		28		284	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1067 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7053)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02			06:26		06:52 (T31)	06:57	07:27			07:02		15:47 (T35)	07:37		16:06 (T35)
	21:09			20:50	33	07:25 (T31)	20:07	19:15			17:28	51	16:38 (T35)	17:04	25	16:31 (T35)
2	06:02			06:27		06:52 (T31)	06:58	07:29			07:03		15:47 (T35)	07:38		16:08 (T35)
	21:08			20:49	33	07:25 (T31)	20:06	19:13			17:27	52	16:39 (T35)	17:03	22	16:30 (T35)
3	06:03			06:28		06:52 (T31)	06:59	07:30			07:04		15:46 (T35)	07:39		16:10 (T35)
	21:08			20:48	33	07:25 (T31)	20:04	19:11			17:25	53	16:39 (T35)	17:03	18	16:28 (T35)
4	06:04			06:29		06:52 (T31)	07:00	07:31			07:06		15:46 (T35)	07:40		16:12 (T35)
	21:08			20:47	33	07:25 (T31)	20:02	19:10			17:24	53	16:39 (T35)	17:03	15	16:27 (T35)
5	06:04			06:30		06:52 (T31)	07:01	07:32			07:07		15:45 (T35)	07:41		16:14 (T35)
	21:08			20:46	33	07:25 (T31)	20:01	19:08			17:23	54	16:39 (T35)	17:03	11	16:25 (T35)
6	06:05			06:31		06:53 (T31)	07:02	07:33			07:08		15:46 (T35)	07:42		16:19 (T35)
	21:08			20:45	32	07:25 (T31)	19:57	19:06			17:22	54	16:40 (T35)	17:03	2	16:21 (T35)
7	06:05			06:32		06:54 (T31)	07:03	07:34			07:09		15:46 (T35)	07:43		
	21:07			20:43	31	07:25 (T31)	19:56	19:05			17:21	53	16:39 (T35)	17:02		
8	06:06			06:33		06:55 (T31)	07:04	07:35			07:10		15:46 (T35)	07:44		
	21:07			20:42	29	07:24 (T31)	19:54	19:03			17:20	53	16:39 (T35)	17:02		
9	06:07			06:34		06:56 (T31)	07:05	07:36		08:20 (T36)	07:12		15:47 (T35)	07:45		
	21:07			20:41	28	07:24 (T31)	19:52	19:01	7	08:27 (T36)	17:19	53	16:40 (T35)	17:02		
10	06:07			06:35		06:57 (T31)	07:06	07:37		08:16 (T36)	07:13		15:46 (T35)	07:46		
	21:06			20:40	26	07:23 (T31)	19:51	19:00	15	08:31 (T36)	17:18	54	16:40 (T35)	17:02		
11	06:08			06:36		06:58 (T31)	07:07	07:38		08:13 (T36)	07:14		15:46 (T35)	07:47		
	21:06			20:38	25	07:23 (T31)	19:49	18:58	19	08:32 (T36)	17:17	53	16:39 (T35)	17:03		
12	06:09			06:37		06:59 (T31)	07:08	07:39		08:12 (T36)	07:15		15:47 (T35)	07:47		
	21:06			20:37	23	07:22 (T31)	19:47	18:57	22	08:34 (T36)	17:16	52	16:39 (T35)	17:03		
13	06:09			06:38		07:00 (T31)	07:09	07:40		08:10 (T36)	07:16		15:48 (T35)	07:48		
	21:05			20:36	20	07:20 (T31)	19:45	18:55	24	08:34 (T36)	17:15	51	16:39 (T35)	17:03		
14	06:10			06:39		07:00 (T31)	07:10	07:41		08:10 (T36)	07:18		15:48 (T35)	07:49		
	21:05			20:34	18	07:18 (T31)	19:44	18:53	26	08:36 (T36)	17:14	51	16:39 (T35)	17:03		
15	06:11			06:40		07:01 (T31)	07:11	07:42		08:09 (T36)	07:19		15:48 (T35)	07:50		
	21:04			20:33	15	07:16 (T31)	19:42	18:52	27	08:36 (T36)	17:13	50	16:38 (T35)	17:03		
16	06:12			06:41		07:02 (T31)	07:12	07:44		08:08 (T36)	07:20		15:50 (T35)	07:50		
	21:04			20:32	12	07:14 (T31)	19:40	18:50	28	08:36 (T36)	17:12	49	16:39 (T35)	17:03		
17	06:13		07:04 (T31)	06:42		07:03 (T31)	07:13	07:45		08:07 (T36)	07:21		15:50 (T35)	07:51		
	21:03	9	07:13 (T31)	20:30	6	07:09 (T31)	19:39	18:49	29	08:36 (T36)	17:11	48	16:38 (T35)	17:04		
18	06:13		07:02 (T31)	06:43			07:14	07:46		08:07 (T36)	07:22		15:50 (T35)	07:52		
	21:02	13	07:15 (T31)	20:29			19:37	18:47	29	08:36 (T36)	17:11	48	16:38 (T35)	17:04		
19	06:14		07:01 (T31)	06:44			07:15	07:47		08:07 (T36)	07:24		15:51 (T35)	07:52		
	21:02	16	07:17 (T31)	20:27			19:35	18:46	44	17:22 (T35)	17:10	46	16:37 (T35)	17:04		
20	06:15		06:59 (T31)	06:45			07:16	07:48		08:09 (T36)	07:25		15:53 (T35)	07:53		
	21:01	18	07:17 (T31)	20:26			19:33	18:44	49	17:26 (T35)	17:09	44	16:37 (T35)	17:05		
21	06:16		06:58 (T31)	06:46			07:17	07:49		08:10 (T36)	07:26		15:53 (T35)	07:53		
	21:00	21	07:19 (T31)	20:24			19:32	18:43	54	17:29 (T35)	17:08	44	16:37 (T35)	17:05		
22	06:17		06:57 (T31)	06:47			07:18	07:50		08:11 (T36)	07:27		15:54 (T35)	07:54		
	20:59	23	07:20 (T31)	20:23			19:30	18:41	56	17:30 (T35)	17:08	42	16:36 (T35)	17:06		
23	06:18		06:56 (T31)	06:48			07:19	07:51		08:12 (T36)	07:28		15:55 (T35)	07:54		
	20:59	25	07:21 (T31)	20:21			19:28	18:40	57	17:31 (T35)	17:07	40	16:35 (T35)	17:06		
24	06:19		06:56 (T31)	06:49			07:20	07:53		08:13 (T36)	07:29		15:56 (T35)	07:55		
	20:58	26	07:22 (T31)	20:20			19:27	18:39	58	17:32 (T35)	17:07	39	16:35 (T35)	17:07		
25	06:20		06:55 (T31)	06:50			07:21	07:54		08:15 (T36)	07:31		15:58 (T35)	07:55		
	20:57	28	07:23 (T31)	20:18			19:25	18:37	58	17:34 (T35)	17:06	37	16:35 (T35)	17:08		
26	06:20		06:55 (T31)	06:51			07:22	07:55		08:16 (T36)	07:32		15:59 (T35)	07:56		
	20:56	28	07:23 (T31)	20:17			19:23	18:36	58	17:35 (T35)	17:06	35	16:34 (T35)	17:08		
27	06:21		06:53 (T31)	06:52			07:23	07:56		08:17 (T36)	07:33		16:00 (T35)	07:56		
	20:55	30	07:23 (T31)	20:15			19:21	18:34	57	17:36 (T35)	17:05	33	16:33 (T35)	17:09		
28	06:22		06:53 (T31)	06:53			07:24	07:57		08:18 (T36)	07:34		16:01 (T35)	07:56		
	20:54	31	07:24 (T31)	20:14			19:20	18:33	55	17:36 (T35)	17:05	31	16:32 (T35)	17:09		
29	06:23		06:53 (T31)	06:54			07:25	07:58		16:49 (T35)	07:35		16:02 (T35)	07:57		
	20:53	31	07:24 (T31)	20:12			19:18	18:32	48	17:37 (T35)	17:04	30	16:32 (T35)	17:10		
30	06:24		06:53 (T31)	06:55			07:26	08:00		16:48 (T35)	07:36		16:04 (T35)	07:57		
	20:52	32	07:25 (T31)	20:10			19:16	18:30	50	17:38 (T35)	17:04	27	16:31 (T35)	17:11		
31	06:25		06:52 (T31)	06:56				08:01		16:47 (T35)				07:57		
	20:51	33	07:25 (T31)	20:09				18:29	51	17:38 (T35)				17:12		
Potential sun hours	460			429			375	345			297			287		
Total, worst case		364			430				921			1380			93	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.69			0.69				0.65			0.73			0.73	
Total reduction		0.46			0.43				0.31			0.22			0.16	
Total, real		167			183				290			303			15	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1085 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7068)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May	June
1	07:57	14:54 (T79)	07:43	16:22 (T62)	07:07		07:16	18:54 (T60)	06:30	06:02
	17:13 73	16:44 (T62)	17:47 39	17:01 (T62)	18:22		19:56 36	19:30 (T60)	20:27	20:56
2	07:57	14:55 (T79)	07:42	16:23 (T62)	07:05		07:14	18:52 (T60)	06:29	06:01
	17:14 73	16:45 (T62)	17:49 38	17:01 (T62)	18:23		19:57 38	19:30 (T60)	20:28	20:57
3	07:57	14:56 (T79)	07:41	16:24 (T62)	07:04		07:13	18:51 (T60)	06:28	06:01
	17:15 73	16:46 (T62)	17:50 36	17:00 (T62)	18:24		19:58 41	19:32 (T60)	20:29	20:58
4	07:57	14:57 (T79)	07:40	16:25 (T62)	07:02		07:11	18:50 (T60)	06:26	06:00
	17:16 74	16:47 (T62)	17:51 35	17:00 (T62)	18:25		19:59 42	19:32 (T60)	20:30	20:59
5	07:57	14:58 (T79)	07:39	16:26 (T62)	07:01		07:09	18:48 (T60)	06:25	06:00
	17:17 74	16:48 (T62)	17:53 33	16:59 (T62)	18:26		20:00 44	19:32 (T60)	20:31	20:59
6	07:57	14:59 (T79)	07:38	16:27 (T62)	06:59		07:08	18:48 (T60)	06:24	06:00
	17:18 74	16:49 (T62)	17:54 31	16:58 (T62)	18:27		20:00 45	19:33 (T60)	20:32	21:00
7	07:57	15:00 (T79)	07:37	16:29 (T62)	06:58		07:06	18:47 (T60)	06:23	05:59
	17:19 74	16:50 (T62)	17:55 29	16:58 (T62)	18:29		20:01 46	19:33 (T60)	20:33	21:01
8	07:57	15:02 (T79)	07:36	16:31 (T62)	07:56		07:05	18:46 (T60)	06:22	05:59
	17:20 72	16:51 (T62)	17:56 25	16:56 (T62)	19:30		20:02 47	19:33 (T60)	20:34	21:01
9	07:57	15:03 (T79)	07:35	16:32 (T62)	07:54		07:03	18:46 (T60)	06:20	05:59
	17:21 72	16:52 (T62)	17:58 22	16:54 (T62)	19:31		20:03 48	19:34 (T60)	20:35	21:02
10	07:56	15:04 (T79)	07:33	16:35 (T62)	07:53		07:01	18:45 (T60)	06:19	05:59
	17:22 71	16:52 (T62)	17:59 16	16:51 (T62)	19:32		20:04 48	19:33 (T60)	20:36	21:03
11	07:56	15:05 (T79)	07:32	16:40 (T62)	07:51		07:00	18:45 (T60)	06:18	05:59
	17:23 71	16:54 (T62)	18:00 7	16:47 (T62)	19:33		20:05 48	19:33 (T60)	20:37	21:03
12	07:56	15:07 (T79)	07:31		07:49		06:58	18:45 (T60)	06:17	05:58
	17:24 70	16:55 (T62)	18:01		19:34		20:06 48	19:33 (T60)	20:38	21:04
13	07:56	15:08 (T79)	07:30		07:48		06:57	18:45 (T60)	06:16	05:58
	17:25 68	16:55 (T62)	18:02		19:35		20:07 48	19:33 (T60)	20:39	21:04
14	07:55	15:11 (T79)	07:28		07:46		06:55	18:45 (T60)	06:15	05:58
	17:26 65	16:56 (T62)	18:04		19:36		20:09 47	19:32 (T60)	20:40	21:05
15	07:55	15:12 (T79)	07:27		07:44		06:53	18:44 (T60)	06:14	05:58
	17:27 62	16:56 (T62)	18:05		19:37		20:10 47	19:31 (T60)	20:41	21:05
16	07:55	15:15 (T79)	07:26		07:43		06:52	18:45 (T60)	06:13	05:58
	17:28 60	16:58 (T62)	18:06		19:39		20:11 46	19:31 (T60)	20:42	21:05
17	07:54	15:18 (T79)	07:24		07:41		06:50	18:44 (T60)	06:12	05:58
	17:29 54	16:58 (T62)	18:07		19:40		20:12 46	19:30 (T60)	20:43	21:06
18	07:54	16:18 (T62)	07:23		07:39		06:49	18:45 (T60)	06:11	05:58
	17:30 41	16:59 (T62)	18:09		19:41		20:13 45	19:30 (T60)	20:44	21:06
19	07:53	16:18 (T62)	07:22		07:38		06:47	18:45 (T60)	06:10	05:59
	17:32 41	16:59 (T62)	18:10		19:42		20:14 43	19:28 (T60)	20:45	21:07
20	07:52	16:19 (T62)	07:20		07:36		06:46	18:46 (T60)	06:09	05:59
	17:33 41	17:00 (T62)	18:11		19:43		20:15 42	19:28 (T60)	20:46	21:07
21	07:52	16:18 (T62)	07:19		07:34		06:44	18:46 (T60)	06:09	05:59
	17:34 42	17:00 (T62)	18:12		19:44		20:16 40	19:26 (T60)	20:47	21:07
22	07:51	16:18 (T62)	07:17		07:33		06:43	18:48 (T60)	06:08	05:59
	17:35 43	17:01 (T62)	18:13		19:45		20:17 38	19:26 (T60)	20:48	21:07
23	07:51	16:18 (T62)	07:16		07:31		06:41	18:49 (T60)	06:07	05:59
	17:36 43	17:01 (T62)	18:15		19:46		20:18 36	19:25 (T60)	20:49	21:08
24	07:50	16:19 (T62)	07:14		07:29		06:40	18:50 (T60)	06:06	06:00
	17:38 43	17:02 (T62)	18:16		19:47		20:19 33	19:23 (T60)	20:50	21:08
25	07:49	16:19 (T62)	07:13		07:28		06:38	18:51 (T60)	06:06	06:00
	17:39 43	17:02 (T62)	18:17		19:48		20:20 30	19:21 (T60)	20:51	21:08
26	07:48	16:19 (T62)	07:11		07:26		06:37	18:52 (T60)	06:05	06:00
	17:40 43	17:02 (T62)	18:18		19:49		20:21 27	19:19 (T60)	20:51	21:08
27	07:48	16:20 (T62)	07:10		07:24	19:13 (T60)	06:36	18:54 (T60)	06:04	06:01
	17:41 42	17:02 (T62)	18:19		19:50 1	19:14 (T60)	20:22 23	19:17 (T60)	20:52	21:08
28	07:47	16:20 (T62)	07:08		07:23	19:05 (T60)	06:34	18:57 (T60)	06:04	06:01
	17:43 42	17:02 (T62)	18:20		19:51 17	19:22 (T60)	20:23 18	19:15 (T60)	20:53	21:08
29	07:46	16:20 (T62)			07:21	19:01 (T60)	06:33	19:01 (T60)	06:03	06:01
	17:44 42	17:02 (T62)			19:53 24	19:25 (T60)	20:25 8	19:09 (T60)	20:54	21:08
30	07:45	16:21 (T62)			07:19	18:58 (T60)	06:32		06:03	06:02
	17:45 41	17:02 (T62)			19:54 29	19:27 (T60)	20:26		20:55	21:08
31	07:44	16:21 (T62)			07:18	18:56 (T60)			06:02	
	17:46 41	17:02 (T62)			19:55 33	19:29 (T60)			20:56	
Potential sun hours	297		297		370		399		448	452
Total, worst case	1768		311		104		1148			
Sun reduction	0.31		0.40		0.44		0.52			
Oper. time red.	1.00		1.00		1.00		1.00			
Wind dir. red.	0.73		0.73		0.62		0.62			
Total reduction	0.23		0.30		0.28		0.33			
Total, real	413		93		29		379			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1085 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7068)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December		
1	06:02	06:26			06:57		18:44 (T60)	07:27			07:02		16:04 (T62)	07:37		14:48 (T79)
	21:08	20:50			20:07	48	19:32 (T60)	19:15			17:28	18	16:22 (T62)	17:04	70	16:36 (T62)
2	06:03	06:27			06:58		18:44 (T60)	07:28			07:03		16:01 (T62)	07:38		14:47 (T79)
	21:08	20:49			20:05	48	19:32 (T60)	19:13			17:27	23	16:24 (T62)	17:04	72	16:36 (T62)
3	06:03	06:28			06:59		18:44 (T60)	07:29			07:04		15:59 (T62)	07:39		14:46 (T79)
	21:08	20:48			20:04	48	19:32 (T60)	19:11			17:26	26	16:25 (T62)	17:03	72	16:35 (T62)
4	06:04	06:29			07:00		18:44 (T60)	07:30			07:05		15:58 (T62)	07:40		14:46 (T79)
	21:08	20:46			20:02	47	19:31 (T60)	19:10			17:24	30	16:28 (T62)	17:03	72	16:35 (T62)
5	06:04	06:30			07:01		18:44 (T60)	07:32			07:06		15:57 (T62)	07:41		14:45 (T79)
	21:07	20:45			20:00	46	19:30 (T60)	19:08			17:23	31	16:28 (T62)	17:03	74	16:35 (T62)
6	06:05	06:31			07:02		18:44 (T60)	07:33			07:08		15:56 (T62)	07:42		14:45 (T79)
	21:07	20:44			19:57	45	19:29 (T60)	19:06			17:22	33	16:29 (T62)	17:03	74	16:35 (T62)
7	06:06	06:32			07:03		18:44 (T60)	07:34			07:09		15:55 (T62)	07:43		14:45 (T79)
	21:07	20:43			19:55	44	19:28 (T60)	19:05			17:21	36	16:31 (T62)	17:03	74	16:35 (T62)
8	06:06	06:33			07:04		18:44 (T60)	07:35			07:10		15:55 (T62)	07:43		14:45 (T79)
	21:07	20:42			19:54	42	19:26 (T60)	19:03			17:20	36	16:31 (T62)	17:03	74	16:35 (T62)
9	06:07	06:34			07:05		18:44 (T60)	07:36			07:11		15:54 (T62)	07:44		14:45 (T79)
	21:06	20:40			19:52	41	19:25 (T60)	19:01			17:19	38	16:32 (T62)	17:03	73	16:35 (T62)
10	06:08	06:35			07:06		18:45 (T60)	07:37			07:12		15:53 (T62)	07:45		14:45 (T79)
	21:06	20:39			19:50	39	19:24 (T60)	19:00			17:18	39	16:32 (T62)	17:03	73	16:35 (T62)
11	06:08	06:36			07:07		18:46 (T60)	07:38			07:14		15:53 (T62)	07:46		14:45 (T79)
	21:06	20:38			19:49	36	19:22 (T60)	18:58			17:17	40	16:33 (T62)	17:03	73	16:35 (T62)
12	06:09	06:37			07:08		18:47 (T60)	07:39			07:15		15:53 (T62)	07:47		14:45 (T79)
	21:05	20:37			19:47	33	19:20 (T60)	18:57			17:16	41	16:34 (T62)	17:03	72	16:34 (T62)
13	06:10	06:38			07:09		18:49 (T60)	07:40			07:16		15:52 (T62)	07:48		14:45 (T79)
	21:05	20:35			19:45	29	19:18 (T60)	18:55			17:15	42	16:34 (T62)	17:03	72	16:35 (T62)
14	06:10	06:39		19:08 (T60)	07:10		18:51 (T60)	07:41			07:17		15:53 (T62)	07:48		14:46 (T79)
	21:04	20:34	11	19:19 (T60)	19:44	24	19:15 (T60)	18:53			17:14	42	16:35 (T62)	17:03	71	16:35 (T62)
15	06:11	06:40		19:04 (T60)	07:11		18:53 (T60)	07:42			07:18		15:53 (T62)	07:49		14:46 (T79)
	21:04	20:33	19	19:23 (T60)	19:42	19	19:12 (T60)	18:52			17:13	42	16:35 (T62)	17:03	71	16:35 (T62)
16	06:12	06:41		19:01 (T60)	07:12		18:59 (T60)	07:43			07:20		15:52 (T62)	07:50		14:46 (T79)
	21:03	20:31	23	19:24 (T60)	19:40	7	19:06 (T60)	18:50			17:12	43	16:35 (T62)	17:04	71	16:35 (T62)
17	06:13	06:42		18:59 (T60)	07:13			07:44			07:21		15:52 (T62)	07:51		14:46 (T79)
	21:02	20:30	27	19:26 (T60)	19:38			18:49			17:11	43	16:35 (T62)	17:04	71	16:35 (T62)
18	06:14	06:43		18:57 (T60)	07:14			07:46			07:22		15:53 (T62)	07:51		14:47 (T79)
	21:02	20:28	31	19:28 (T60)	19:37			18:47			17:11	43	16:36 (T62)	17:04	71	16:36 (T62)
19	06:15	06:44		18:55 (T60)	07:15			07:47			07:23		15:53 (T62)	07:52		14:47 (T79)
	21:01	20:27	34	19:29 (T60)	19:35			18:46			17:10	43	16:36 (T62)	17:05	70	16:35 (T62)
20	06:15	06:45		18:54 (T60)	07:16			07:48			07:24		15:53 (T62)	07:52		14:48 (T79)
	21:00	20:25	36	19:30 (T60)	19:33			18:44			17:09	43	16:36 (T62)	17:05	70	16:36 (T62)
21	06:16	06:46		18:52 (T60)	07:17			07:49			07:25		15:53 (T62)	07:53		14:48 (T79)
	21:00	20:24	39	19:31 (T60)	19:32			18:43			17:09	43	16:36 (T62)	17:06	70	16:36 (T62)
22	06:17	06:47		18:51 (T60)	07:18			07:50			07:27		15:55 (T62)	07:53		14:49 (T79)
	20:59	20:22	40	19:31 (T60)	19:30			18:41			17:08	41	16:36 (T62)	17:06	70	16:37 (T62)
23	06:18	06:48		18:50 (T60)	07:19			07:51			07:28		15:55 (T62)	07:54		14:49 (T79)
	20:58	20:21	42	19:32 (T60)	19:28			18:40			17:07	41	16:36 (T62)	17:07	70	16:37 (T62)
24	06:19	06:49		18:49 (T60)	07:20			07:52			07:29		15:55 (T62)	07:54		14:50 (T79)
	20:57	20:19	43	19:32 (T60)	19:26			18:39			17:07	41	16:36 (T62)	17:07	70	16:38 (T62)
25	06:20	06:50		18:48 (T60)	07:21			07:53			07:30		14:56 (T79)	07:55		14:50 (T79)
	20:56	20:18	45	19:33 (T60)	19:25			18:37			17:06	54	16:36 (T62)	17:08	71	16:39 (T62)
26	06:21	06:51		18:47 (T60)	07:22			07:55			07:31		14:53 (T79)	07:55		14:50 (T79)
	20:56	20:16	46	19:33 (T60)	19:23			18:36			17:06	60	16:36 (T62)	17:08	71	16:39 (T62)
27	06:22	06:52		18:47 (T60)	07:23			07:56			07:32		14:52 (T79)	07:56		14:51 (T79)
	20:55	20:15	46	19:33 (T60)	19:21			18:34			17:05	62	16:36 (T62)	17:09	70	16:39 (T62)
28	06:23	06:53		18:46 (T60)	07:24			07:57			07:33		14:51 (T79)	07:56		14:52 (T79)
	20:54	20:13	47	19:33 (T60)	19:20			18:33			17:05	65	16:36 (T62)	17:10	71	16:41 (T62)
29	06:23	06:54		18:45 (T60)	07:25			07:58			07:34		14:49 (T79)	07:56		14:52 (T79)
	20:53	20:12	48	19:33 (T60)	19:18			18:32			17:04	68	16:36 (T62)	17:11	72	16:42 (T62)
30	06:24	06:55		18:45 (T60)	07:26			07:59			07:36		14:48 (T79)	07:56		14:53 (T79)
	20:52	20:10	48	19:33 (T60)	19:16			18:31			17:04	70	16:36 (T62)	17:11	71	16:42 (T62)
31	06:25	06:56		18:45 (T60)				08:01		17:08 (T62)				07:57		14:54 (T79)
	20:51	20:09	48	19:33 (T60)				18:29	10	17:18 (T62)				17:12	71	16:43 (T62)
Potential sun hours	459	428			375			345			298			288		
Total, worst case			673			596			10			1277			2217	
Sun reduction			0.61			0.59			0.48			0.30			0.22	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.62			0.62			0.73			0.73			0.74	
Total reduction			0.39			0.37			0.36			0.23			0.17	
Total, real			260			223			4			288			370	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1106 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7088)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:58	07:44		07:07		17:11 (T37)	07:16	17:56 (T37)	06:30		19:50 (T34)
	17:13	17:48		18:22	49	18:00 (T38)	19:56	50 18:46 (T37)	20:27		20:21 (T34)
2	07:58	07:43		07:06		17:08 (T37)	07:15	17:58 (T37)	06:29		19:51 (T34)
	17:14	17:49		18:23	53	18:01 (T38)	19:57	47 18:45 (T37)	20:28		20:21 (T34)
3	07:58	07:42		07:04		17:07 (T37)	07:13	17:59 (T37)	06:28		19:50 (T34)
	17:15	17:50		18:24	56	18:03 (T38)	19:58	44 18:43 (T37)	20:29		20:20 (T34)
4	07:58	07:41		07:03		17:05 (T37)	07:11	18:00 (T37)	06:26		19:51 (T34)
	17:16	17:51		18:25	59	18:04 (T38)	19:59	41 18:41 (T37)	20:30		20:20 (T34)
5	07:58	07:40		07:01		17:03 (T37)	07:10	18:03 (T37)	06:25	20:00 (T34)	19:52 (T34)
	17:17	17:53		18:27	61	18:04 (T38)	20:00	36 18:39 (T37)	20:31	8 20:08 (T34)	20:21 (T34)
6	07:58	07:39		07:00		17:02 (T37)	07:08	18:04 (T37)	06:24	19:57 (T34)	19:52 (T34)
	17:18	17:54		18:28	64	18:06 (T38)	20:00	33 18:37 (T37)	20:33	13 20:10 (T34)	20:20 (T34)
7	07:58	07:37		06:58		17:00 (T37)	07:06	18:06 (T37)	06:23	19:55 (T34)	19:53 (T34)
	17:19	17:55		18:29	67	18:07 (T38)	20:02	27 18:33 (T37)	20:34	16 20:11 (T34)	20:20 (T34)
8	07:58	07:36		07:56		17:59 (T37)	07:05	18:11 (T37)	06:22	19:53 (T34)	19:53 (T34)
	17:20	17:56		19:30	69	19:08 (T38)	20:03	19 18:30 (T37)	20:35	19 20:12 (T34)	20:20 (T34)
9	07:57	07:35		07:55		17:58 (T37)	07:03	18:17 (T37)	06:20	19:52 (T34)	19:54 (T34)
	17:21	17:58		19:31	70	19:08 (T38)	20:04	6 18:23 (T37)	20:36	21 20:13 (T34)	20:20 (T34)
10	07:57	07:34		07:53		17:57 (T37)	07:02		06:19	19:51 (T34)	19:55 (T34)
	17:22	17:59		19:32	70	19:07 (T38)	20:05		20:37	23 20:14 (T34)	20:20 (T34)
11	07:57	07:33		07:51		17:56 (T37)	07:00		06:18	19:50 (T34)	19:55 (T34)
	17:23	18:00		19:33	71	19:07 (T38)	20:06		20:38	25 20:15 (T34)	20:20 (T34)
12	07:57	07:31		07:50		17:55 (T37)	06:58		06:17	19:50 (T34)	19:56 (T34)
	17:24	18:01		19:34	71	19:06 (T38)	20:07		20:39	26 20:16 (T34)	20:20 (T34)
13	07:56	07:30		07:48		17:54 (T37)	06:57		06:16	19:49 (T34)	19:55 (T34)
	17:25	18:03		19:36	71	19:05 (T38)	20:08		20:40	28 20:17 (T34)	20:19 (T34)
14	07:56	07:29		07:46		17:54 (T37)	06:55		06:15	19:48 (T34)	19:56 (T34)
	17:26	18:04		19:37	70	19:04 (T38)	20:09		20:41	30 20:18 (T34)	20:19 (T34)
15	07:56	07:28		07:45		17:53 (T37)	06:54		06:14	19:48 (T34)	19:56 (T34)
	17:27	18:05		19:38	70	19:03 (T38)	20:10		20:42	31 20:19 (T34)	20:19 (T34)
16	07:55	07:26		07:43		17:53 (T37)	06:52		06:13	19:48 (T34)	19:58 (T34)
	17:28	18:06		19:39	67	19:00 (T38)	20:11		20:43	32 20:20 (T34)	20:20 (T34)
17	07:55	07:25		07:41		17:53 (T37)	06:50		06:12	19:47 (T34)	19:58 (T34)
	17:29	18:08		19:40	66	18:59 (T38)	20:12		20:44	34 20:21 (T34)	20:20 (T34)
18	07:54	07:24		07:40		17:52 (T37)	06:49		06:11	19:47 (T34)	19:58 (T34)
	17:30	18:09		19:41	66	18:58 (T37)	20:13		20:45	34 20:21 (T34)	20:20 (T34)
19	07:54	07:22		07:38		17:52 (T37)	06:47		06:10	19:47 (T34)	19:58 (T34)
	17:32	18:10		19:42	65	18:57 (T37)	20:14		20:46	34 20:21 (T34)	20:20 (T34)
20	07:53	07:21		07:36		17:52 (T37)	06:46		06:09	19:46 (T34)	19:59 (T34)
	17:33	18:11		19:43	65	18:57 (T37)	20:15		20:47	35 20:21 (T34)	20:20 (T34)
21	07:53	07:19		07:35		17:52 (T37)	06:44		06:09	19:47 (T34)	19:59 (T34)
	17:34	18:12		19:44	65	18:57 (T37)	20:17		20:48	35 20:22 (T34)	20:20 (T34)
22	07:52	07:18		07:33		17:52 (T37)	06:43		06:08	19:47 (T34)	19:59 (T34)
	17:35	18:14		19:45	64	18:56 (T37)	20:18		20:49	35 20:22 (T34)	20:20 (T34)
23	07:51	07:16		07:31		17:51 (T37)	06:41		06:07	19:47 (T34)	19:59 (T34)
	17:36	18:15		19:46	64	18:55 (T37)	20:19		20:49	35 20:22 (T34)	20:21 (T34)
24	07:50	07:15		07:30		17:52 (T37)	06:40		06:06	19:47 (T34)	19:59 (T34)
	17:38	18:16		19:48	63	18:55 (T37)	20:20		20:50	34 20:21 (T34)	20:21 (T34)
25	07:50	07:13		07:28		17:52 (T37)	06:39		06:06	19:48 (T34)	19:59 (T34)
	17:39	18:17		19:49	62	18:54 (T37)	20:21		20:51	34 20:22 (T34)	20:21 (T34)
26	07:49	07:12	17:24 (T37)	07:26		17:52 (T37)	06:37		06:05	19:48 (T34)	20:00 (T34)
	17:40	18:18	9 17:33 (T37)	19:50	61	18:53 (T37)	20:22		20:52	33 20:21 (T34)	20:22 (T34)
27	07:48	07:10	17:18 (T37)	07:25		17:53 (T37)	06:36		06:04	19:48 (T34)	20:00 (T34)
	17:41	18:20	22 17:40 (T37)	19:51	60	18:53 (T37)	20:23		20:53	34 20:22 (T34)	20:22 (T34)
28	07:47	07:09	17:14 (T37)	07:23		17:54 (T37)	06:34		06:04	19:48 (T34)	19:59 (T34)
	17:43	18:21	39 17:58 (T38)	19:52	57	18:51 (T37)	20:24		20:54	33 20:21 (T34)	20:22 (T34)
29	07:46			07:21		17:54 (T37)	06:33		06:03	19:49 (T34)	20:00 (T34)
	17:44			19:53	56	18:50 (T37)	20:25		20:55	33 20:22 (T34)	20:23 (T34)
30	07:46			07:20		17:55 (T37)	06:32		06:03	19:49 (T34)	19:59 (T34)
	17:45			19:54	55	18:50 (T37)	20:26		20:56	32 20:21 (T34)	20:23 (T34)
31	07:45			07:18		17:56 (T37)			06:02	19:50 (T34)	
	17:46			19:55	52	18:48 (T37)			20:56	32 20:22 (T34)	
Potential sun hours	297	297		370			399		449		453
Total, worst case			70		1959			303		779	732
Sun reduction			0.40		0.44			0.52		0.57	0.64
Oper. time red.			1.00		1.00			1.00		1.00	1.00
Wind dir. red.			0.67		0.67			0.67		0.56	0.56
Total reduction			0.27		0.30			0.35		0.32	0.36
Total, real			19		583			107		249	263

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1106 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7088)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		20:00 (T34)	06:26		20:00 (T34)	06:57		07:28	17:35 (T37)	07:02	07:37
	21:09	24	20:24 (T34)	20:50	25	20:25 (T34)	20:07		19:15	70	18:45 (T38)	07:28	07:04
2	06:03		19:59 (T34)	06:27		20:00 (T34)	06:58		07:29	17:35 (T37)	07:03	07:38
	21:09	25	20:24 (T34)	20:49	25	20:25 (T34)	20:06		19:13	71	18:46 (T38)	07:27	07:04
3	06:03		19:59 (T34)	06:28		20:01 (T34)	06:59		18:15 (T37)	07:30	17:35 (T37)	07:05	07:39
	21:09	26	20:25 (T34)	20:48	23	20:24 (T34)	20:04	6	18:21 (T37)	19:12	71	18:46 (T38)	07:26	07:03
4	06:04		19:59 (T34)	06:29		20:02 (T34)	07:00		18:08 (T37)	07:31		17:35 (T37)	07:06	07:40
	21:08	26	20:25 (T34)	20:47	20	20:22 (T34)	20:02	19	18:27 (T37)	19:10	70	18:45 (T38)	07:24	07:03
5	06:04		19:59 (T34)	06:30		20:04 (T34)	07:01		18:04 (T37)	07:32		17:36 (T37)	07:07	07:41
	21:08	27	20:26 (T34)	20:46	17	20:21 (T34)	20:01	26	18:30 (T37)	19:08	69	18:45 (T38)	07:23	07:03
6	06:05		19:58 (T34)	06:31		20:05 (T34)	07:02		18:00 (T37)	07:33		17:36 (T37)	07:08	07:42
	21:08	28	20:26 (T34)	20:45	15	20:20 (T34)	19:58	33	18:33 (T37)	19:07	68	18:44 (T38)	07:22	07:03
7	06:06		19:58 (T34)	06:32		20:08 (T34)	07:03		17:58 (T37)	07:34		17:37 (T37)	07:09	07:43
	21:08	29	20:27 (T34)	20:44	11	20:19 (T34)	19:56	36	18:34 (T37)	19:05	66	18:43 (T38)	07:21	07:03
8	06:06		19:59 (T34)	06:33		20:12 (T34)	07:04		17:56 (T37)	07:35		17:38 (T37)	07:11	07:44
	21:07	29	20:28 (T34)	20:42	4	20:16 (T34)	19:54	40	18:36 (T37)	19:03	63	18:41 (T38)	07:20	07:03
9	06:07		19:58 (T34)	06:34			07:05		17:53 (T37)	07:36		17:39 (T37)	07:12	07:45
	21:07	29	20:27 (T34)	20:41			19:52	44	18:37 (T37)	19:02	60	18:39 (T38)	07:19	07:03
10	06:08		19:58 (T34)	06:35			07:06		17:52 (T37)	07:37		17:40 (T37)	07:13	07:46
	21:07	30	20:28 (T34)	20:40			19:51	46	18:38 (T37)	19:00	57	18:37 (T38)	07:18	07:03
11	06:08		19:58 (T34)	06:36			07:07		17:50 (T37)	07:38		17:41 (T37)	07:14	07:47
	21:06	31	20:29 (T34)	20:38			19:49	49	18:39 (T37)	18:58	55	18:36 (T38)	07:17	07:03
12	06:09		19:57 (T34)	06:37			07:08		17:48 (T37)	07:39		17:43 (T37)	07:15	07:48
	21:06	32	20:29 (T34)	20:37			19:47	52	18:40 (T37)	18:57	51	18:34 (T38)	07:16	07:03
13	06:10		19:57 (T34)	06:38			07:09		17:47 (T37)	07:40		17:46 (T37)	07:17	07:48
	21:05	32	20:29 (T34)	20:36			19:46	54	18:41 (T37)	18:55	45	18:33 (T38)	07:15	07:03
14	06:10		19:58 (T34)	06:39			07:10		17:45 (T37)	07:42		17:49 (T37)	07:18	07:49
	21:05	32	20:30 (T34)	20:34			19:44	56	18:41 (T37)	18:54	33	18:31 (T38)	07:14	07:03
15	06:11		19:58 (T34)	06:40			07:11		17:43 (T37)	07:43		17:52 (T37)	07:19	07:50
	21:04	33	20:31 (T34)	20:33			19:42	58	18:41 (T37)	18:52	18	18:10 (T37)	07:13	07:03
16	06:12		19:57 (T34)	06:41			07:12		17:42 (T37)	07:44			07:20	07:51
	21:04	33	20:30 (T34)	20:32			19:41	59	18:41 (T37)	18:51			17:12	07:04
17	06:13		19:57 (T34)	06:42			07:13		17:41 (T37)	07:45			07:21	07:51
	21:03	34	20:31 (T34)	20:30			19:39	60	18:41 (T37)	18:49			17:12	07:04
18	06:14		19:57 (T34)	06:43			07:14		17:40 (T37)	07:46			07:23	07:52
	21:02	34	20:31 (T34)	20:29			19:37	61	18:41 (T37)	18:48			17:11	07:04
19	06:14		19:57 (T34)	06:44			07:15		17:39 (T37)	07:47			07:24	07:53
	21:02	35	20:32 (T34)	20:27			19:35	62	18:41 (T37)	18:46			17:10	07:05
20	06:15		19:57 (T34)	06:45			07:16		17:38 (T37)	07:48			07:25	07:53
	21:01	35	20:32 (T34)	20:26			19:34	63	18:41 (T37)	18:45			17:09	07:05
21	06:16		19:57 (T34)	06:46			07:17		17:37 (T37)	07:49			07:26	07:54
	21:00	34	20:31 (T34)	20:25			19:32	64	18:41 (T37)	18:43			17:09	07:06
22	06:17		19:57 (T34)	06:47			07:18		17:36 (T37)	07:51			07:27	07:54
	21:00	34	20:31 (T34)	20:23			19:30	65	18:41 (T37)	18:42			17:08	07:06
23	06:18		19:57 (T34)	06:48			07:19		17:36 (T37)	07:52			07:28	07:55
	20:59	35	20:32 (T34)	20:22			19:29	65	18:41 (T37)	18:40			17:07	07:07
24	06:19		19:57 (T34)	06:49			07:21		17:35 (T37)	07:53			07:30	07:55
	20:58	35	20:32 (T34)	20:20			19:27	66	18:41 (T37)	18:39			17:07	07:07
25	06:20		19:57 (T34)	06:50			07:22		17:35 (T37)	07:54			07:31	07:56
	20:57	35	20:32 (T34)	20:18			19:25	65	18:40 (T37)	18:37			17:06	07:08
26	06:21		19:58 (T34)	06:51			07:23		17:34 (T37)	07:55			07:32	07:56
	20:56	34	20:32 (T34)	20:17			19:23	66	18:40 (T37)	18:36			17:06	07:08
27	06:22		19:58 (T34)	06:52			07:24		17:34 (T37)	07:56			07:33	07:56
	20:55	33	20:31 (T34)	20:15			19:22	67	18:41 (T38)	18:35			17:05	07:09
28	06:23		19:58 (T34)	06:53			07:25		17:34 (T37)	07:58			07:34	07:57
	20:54	32	20:30 (T34)	20:14			19:20	69	18:43 (T38)	18:33			17:05	07:10
29	06:24		19:59 (T34)	06:54			07:26		17:34 (T37)	07:59			07:35	07:57
	20:53	30	20:29 (T34)	20:12			19:18	69	18:43 (T38)	18:32			17:04	07:10
30	06:24		19:58 (T34)	06:55			07:27		17:34 (T37)	08:00			07:36	07:57
	20:52	29	20:27 (T34)	20:11			19:17	70	18:44 (T38)	18:31			17:04	07:11
31	06:25		19:59 (T34)	06:56						08:01				07:57
	20:51	27	20:26 (T34)	20:09						18:29				07:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		962			140			1490			867			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.56			0.56			0.67			0.67			
Total reduction		0.37			0.34			0.40			0.32			
Total, real		356			48			596			281			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1136 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7113)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June
1	07:57		08:31 (T36)	07:43			07:07		07:27 (T31)	07:16			06:30		07:03 (T28)	06:01
	17:13	20	08:51 (T36)	17:47			18:22	71	17:50 (T30)	19:56			20:27	75	19:48 (T27)	20:57
2	07:57		08:32 (T36)	07:43			07:06		07:25 (T31)	07:14			06:29		07:04 (T28)	06:01
	17:14	19	08:51 (T36)	17:49			18:23	74	17:50 (T30)	19:57			20:28	71	19:47 (T27)	20:58
3	07:58		08:33 (T36)	07:41			07:04		07:23 (T31)	07:13			06:28		07:03 (T28)	06:00
	17:15	18	08:51 (T36)	17:50			18:24	78	17:50 (T30)	19:58			20:29	67	19:44 (T27)	20:58
4	07:58		08:34 (T36)	07:40			07:02		07:22 (T31)	07:11			06:26		07:04 (T28)	06:00
	17:15	17	08:51 (T36)	17:51			18:25	80	17:51 (T30)	19:59			20:30	63	19:43 (T27)	20:59
5	07:58		08:35 (T36)	07:39			07:01		07:20 (T31)	07:09			06:25		07:04 (T28)	06:00
	17:16	16	08:51 (T36)	17:52			18:26	83	17:50 (T30)	20:00			20:31	58	19:41 (T27)	21:00
6	07:58		08:36 (T36)	07:38			06:59		07:19 (T31)	07:08			06:24		07:05 (T28)	05:59
	17:17	15	08:51 (T36)	17:54			18:27	85	17:51 (T30)	20:00			20:32	53	19:39 (T27)	21:01
7	07:57		08:38 (T36)	07:37			06:58		07:17 (T31)	07:06			06:23		07:06 (T28)	05:59
	17:18	12	08:50 (T36)	17:55			18:29	86	17:50 (T30)	20:01			20:33	39	07:45 (T28)	21:01
8	07:57		08:38 (T36)	07:36			07:56		08:15 (T31)	07:05			06:21		07:06 (T28)	05:59
	17:19	11	08:49 (T36)	17:56			19:30	88	18:49 (T30)	20:02			20:34	37	07:43 (T28)	21:02
9	07:57		08:41 (T36)	07:35			07:54		08:16 (T31)	07:03			06:20		07:06 (T28)	05:59
	17:20	7	08:48 (T36)	17:57			19:31	87	18:50 (T30)	20:03			20:35	37	07:43 (T28)	21:02
10	07:57			07:34			07:53		08:15 (T31)	07:01			06:19		07:07 (T28)	05:58
	17:21			17:59			19:32	87	18:49 (T30)	20:05			20:37	35	07:42 (T28)	21:03
11	07:57			07:32			07:51		08:15 (T31)	07:00		07:25 (T28)	06:18		07:08 (T28)	05:58
	17:22			18:00			19:33	85	18:48 (T30)	20:06	25	19:45 (T27)	20:38	33	07:41 (T28)	21:04
12	07:56			07:31			07:50		08:15 (T31)	06:58		07:20 (T28)	06:17		07:09 (T28)	05:58
	17:23			18:01			19:34	84	18:48 (T30)	20:07	39	19:46 (T27)	20:39	30	07:39 (T28)	21:04
13	07:56			07:30			07:48		08:15 (T31)	06:56		07:18 (T28)	06:16		07:11 (T28)	05:58
	17:25			18:02			19:35	82	18:47 (T30)	20:08	47	19:47 (T27)	20:40	27	07:38 (T28)	21:05
14	07:56			07:29			07:46		08:15 (T31)	06:55		07:15 (T28)	06:15		07:12 (T28)	05:58
	17:26			18:04			19:36	78	18:45 (T30)	20:09	54	19:48 (T27)	20:41	25	07:37 (T28)	21:05
15	07:55			07:27			07:45		08:17 (T31)	06:53		07:13 (T28)	06:14		07:14 (T28)	05:58
	17:27			18:05			19:38	74	18:45 (T30)	20:10	59	19:48 (T27)	20:42	21	07:35 (T28)	21:06
16	07:55			07:26			07:43		08:17 (T31)	06:52		07:12 (T28)	06:13		07:16 (T28)	05:58
	17:28			18:06			19:39	70	18:43 (T30)	20:11	64	19:50 (T27)	20:43	16	07:32 (T28)	21:06
17	07:55			07:25		17:16 (T30)	07:41		08:18 (T31)	06:50		07:10 (T28)	06:12		07:20 (T28)	05:58
	17:29			18:07	17	17:33 (T30)	19:40	64	18:41 (T30)	20:12	68	19:50 (T27)	20:44	10	07:30 (T28)	21:06
18	07:54			07:23		17:13 (T30)	07:40		08:21 (T31)	06:49		07:09 (T28)	06:11			05:58
	17:30			18:09	24	17:37 (T30)	19:41	57	18:41 (T30)	20:13	72	19:52 (T27)	20:45			21:07
19	07:53			07:22		17:11 (T30)	07:38		08:23 (T31)	06:47		07:07 (T28)	06:10			05:58
	17:31			18:10	29	17:40 (T30)	19:42	47	18:38 (T30)	20:14	76	19:52 (T27)	20:46			21:07
20	07:53			07:21		17:08 (T30)	07:36		18:04 (T30)	06:46		07:07 (T28)	06:09			05:58
	17:33			18:11	34	17:42 (T30)	19:43	32	18:36 (T30)	20:15	78	19:53 (T27)	20:46			21:07
21	07:52			07:19		17:07 (T30)	07:35		18:07 (T30)	06:44		07:06 (T28)	06:08			05:59
	17:34			18:12	37	17:44 (T30)	19:44	27	18:34 (T30)	20:16	78	19:52 (T27)	20:47			21:08
22	07:52			07:18		17:05 (T30)	07:33		18:09 (T30)	06:43		07:05 (T28)	06:08			05:59
	17:35			18:13	40	17:45 (T30)	19:45	22	18:31 (T30)	20:17	81	19:53 (T27)	20:48			21:08
23	07:51			07:16		17:04 (T30)	07:31		18:13 (T30)	06:41		07:05 (T28)	06:07			05:59
	17:36			18:15	42	17:46 (T30)	19:46	13	18:26 (T30)	20:18	82	19:53 (T27)	20:49			21:08
24	07:50			07:15		17:02 (T30)	07:30			06:40		07:04 (T28)	06:06			05:59
	17:37			18:16	45	17:47 (T30)	19:47			20:20	82	19:52 (T27)	20:50			21:08
25	07:50			07:13		17:01 (T30)	07:28			06:38		07:04 (T28)	06:05			06:00
	17:39			18:17	47	17:48 (T30)	19:48			20:21	81	19:52 (T27)	20:51			21:08
26	07:49			07:12		17:00 (T30)	07:26			06:37		07:03 (T28)	06:05			06:00
	17:40			18:18	48	17:48 (T30)	19:50			20:22	82	19:51 (T27)	20:52			21:09
27	07:48			07:10		07:30 (T31)	07:24			06:36		07:03 (T28)	06:04			06:00
	17:41			18:19	61	17:50 (T30)	19:51			20:23	81	19:51 (T27)	20:53			21:09
28	07:47			07:09		07:28 (T31)	07:23			06:34		07:03 (T28)	06:03			06:01
	17:42			18:20	67	17:50 (T30)	19:52			20:24	80	19:50 (T27)	20:54			21:09
29	07:46						07:21			06:33		07:03 (T28)	06:03			06:01
	17:44						19:53			20:25	78	19:49 (T27)	20:55			21:09
30	07:45						07:19			06:31		07:03 (T28)	06:02			06:01
	17:45						19:54			20:26	76	19:48 (T27)	20:55			21:09
31	07:44						07:18						06:02			
	17:46						19:55						20:56			
Potential sun hours	297			297			370			399			449			453
Total, worst case		135			491			1554			1383			697		
Sun reduction		0.31			0.40			0.44			0.52			0.57		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.53			0.69			0.65			0.63			0.65		
Total reduction		0.16			0.27			0.29			0.32			0.37		
Total, real		22			134			444			447			256		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1136 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7113)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		07:20 (T28)	06:57		07:25 (T28)	07:27		07:54 (T31)	07:02			07:37		
	21:09			20:50	30	07:50 (T28)	20:07	24	19:44 (T27)	19:15	82	18:26 (T30)	17:28			17:04		
2	06:02			06:27		07:19 (T28)	06:58			07:29		07:53 (T31)	07:03			07:38		
	21:08			20:49	33	07:52 (T28)	20:06			19:13	84	18:26 (T30)	17:27			17:03		
3	06:03			06:28		07:18 (T28)	06:59			07:30		07:53 (T31)	07:04			07:39		08:25 (T36)
	21:08			20:48	35	07:53 (T28)	20:04			19:11	85	18:26 (T30)	17:25			17:03	6	08:31 (T36)
4	06:04			06:29		07:17 (T28)	07:00			07:31		07:52 (T31)	07:06			07:40		08:24 (T36)
	21:08			20:47	37	07:54 (T28)	20:02			19:10	87	18:26 (T30)	17:24			17:03	10	08:34 (T36)
5	06:04			06:30		07:16 (T28)	07:01			07:32		07:53 (T31)	07:07			07:41		08:23 (T36)
	21:08			20:46	38	07:54 (T28)	20:01			19:08	88	18:27 (T30)	17:23			17:03	12	08:35 (T36)
6	06:05			06:31		07:15 (T28)	07:02			07:33		07:53 (T31)	07:08			07:42		08:22 (T36)
	21:08			20:45	45	19:45 (T27)	19:57			19:06	87	18:27 (T30)	17:22			17:03	15	08:37 (T36)
7	06:05			06:32		07:14 (T28)	07:03			07:34		07:54 (T31)	07:09			07:43		08:22 (T36)
	21:07			20:43	55	19:49 (T27)	19:56			19:05	85	18:26 (T30)	17:21			17:02	16	08:38 (T36)
8	06:06			06:33		07:14 (T28)	07:04			07:35		07:55 (T31)	07:10			07:44		08:22 (T36)
	21:07			20:42	60	19:52 (T27)	19:54			19:03	84	18:26 (T30)	17:20			17:02	17	08:39 (T36)
9	06:07			06:34		07:13 (T28)	07:05			07:36		07:56 (T31)	07:12			07:45		08:21 (T36)
	21:07			20:41	65	19:53 (T27)	19:52			19:01	83	18:26 (T30)	17:19			17:02	18	08:39 (T36)
10	06:07			06:35		07:13 (T28)	07:06			07:37		07:57 (T31)	07:13			07:46		08:21 (T36)
	21:06			20:40	69	19:55 (T27)	19:51			19:00	79	18:25 (T30)	17:18			17:02	19	08:40 (T36)
11	06:08			06:36		07:12 (T28)	07:07			07:38		07:58 (T31)	07:14			07:47		08:21 (T36)
	21:06			20:38	72	19:56 (T27)	19:49			18:58	76	18:24 (T30)	17:17			17:02	20	08:41 (T36)
12	06:09			06:37		07:12 (T28)	07:08			07:39		07:59 (T31)	07:15			07:47		08:22 (T36)
	21:06			20:37	74	19:56 (T27)	19:47			18:57	73	18:24 (T30)	17:16			17:03	20	08:42 (T36)
13	06:09			06:38		07:12 (T28)	07:09			07:40		08:00 (T31)	07:16			07:48		08:22 (T36)
	21:05			20:36	76	19:57 (T27)	19:45			18:55	69	18:23 (T30)	17:15			17:03	21	08:43 (T36)
14	06:10			06:39		07:10 (T28)	07:10			07:41		08:02 (T31)	07:18			07:49		08:21 (T36)
	21:05			20:34	79	19:57 (T27)	19:44			18:53	65	18:23 (T30)	17:14			17:03	22	08:43 (T36)
15	06:11			06:40		07:10 (T28)	07:11			07:42		08:03 (T31)	07:19			07:50		08:22 (T36)
	21:04			20:33	80	19:57 (T27)	19:42			18:52	59	18:22 (T30)	17:13			17:03	21	08:43 (T36)
16	06:12			06:41		07:10 (T28)	07:12			07:44		17:33 (T30)	07:20			07:50		08:23 (T36)
	21:04			20:32	82	19:58 (T27)	19:40			18:50	48	18:21 (T30)	17:12			17:03	21	08:44 (T36)
17	06:13			06:42		07:10 (T28)	07:13			07:45		17:33 (T30)	07:21			07:51		08:23 (T36)
	21:03			20:30	81	19:58 (T27)	19:39			18:49	46	18:19 (T30)	17:11			17:04	22	08:45 (T36)
18	06:13			06:43		07:10 (T28)	07:14			07:46		17:34 (T30)	07:22			07:52		08:23 (T36)
	21:02			20:29	82	19:58 (T27)	19:37			18:47	44	18:18 (T30)	17:11			17:04	22	08:45 (T36)
19	06:14			06:44		07:10 (T28)	07:15			07:47		17:35 (T30)	07:24			07:52		08:24 (T36)
	21:02			20:27	82	19:58 (T27)	19:35			18:46	41	18:16 (T30)	17:10			17:04	22	08:46 (T36)
20	06:15			06:45		07:10 (T28)	07:16		18:01 (T30)	07:48		17:37 (T30)	07:25			07:53		08:24 (T36)
	21:01			20:26	81	19:58 (T27)	19:33	9	18:10 (T30)	18:44	39	18:16 (T30)	17:09			17:05	22	08:46 (T36)
21	06:16			06:46		07:10 (T28)	07:17		17:55 (T30)	07:49		17:38 (T30)	07:26			07:53		08:25 (T36)
	21:00			20:24	81	19:57 (T27)	19:32	20	18:15 (T30)	18:43	36	18:14 (T30)	17:08			17:05	22	08:47 (T36)
22	06:17			06:47		07:11 (T28)	07:18		17:52 (T30)	07:50		17:39 (T30)	07:27			07:54		08:25 (T36)
	20:59			20:23	79	19:57 (T27)	19:30	26	18:18 (T30)	18:41	33	18:12 (T30)	17:08			17:06	22	08:47 (T36)
23	06:18			06:48		07:11 (T28)	07:19		17:49 (T30)	07:51		17:41 (T30)	07:28			07:54		08:26 (T36)
	20:59			20:21	78	19:57 (T27)	19:28	31	18:20 (T30)	18:40	28	18:09 (T30)	17:07			17:06	22	08:48 (T36)
24	06:19			06:49		07:11 (T28)	07:20		08:08 (T31)	07:53		17:44 (T30)	07:29			07:55		08:26 (T36)
	20:58			20:20	76	19:56 (T27)	19:27	43	18:21 (T30)	18:39	22	18:06 (T30)	17:07			17:07	22	08:48 (T36)
25	06:20			06:50		07:12 (T28)	07:21		08:04 (T31)	07:54		17:48 (T30)	07:31			07:55		08:26 (T36)
	20:57			20:18	72	19:55 (T27)	19:25	54	18:22 (T30)	18:37	15	18:03 (T30)	17:06			17:08	22	08:48 (T36)
26	06:20		07:33 (T28)	06:51		07:13 (T28)	07:22		08:01 (T31)	07:55			07:32			07:56		08:27 (T36)
	20:56	5	07:38 (T28)	20:17	68	19:53 (T27)	19:23	61	18:23 (T30)	18:36			17:05			17:08	22	08:49 (T36)
27	06:21		07:28 (T28)	06:52		07:14 (T28)	07:23		07:59 (T31)	07:56			07:33			07:56		08:27 (T36)
	20:55	13	07:41 (T28)	20:15	64	19:52 (T27)	19:21	68	18:24 (T30)	18:34			17:05			17:09	22	08:49 (T36)
28	06:22		07:25 (T28)	06:53		07:15 (T28)	07:24		07:58 (T31)	07:57			07:34			07:56		08:28 (T36)
	20:54	19	07:44 (T28)	20:14	59	19:50 (T27)	19:20	73	18:25 (T30)	18:33			17:05			17:09	21	08:49 (T36)
29	06:23		07:24 (T28)	06:54		07:16 (T28)	07:25		07:56 (T31)	07:58			07:35			07:57		08:29 (T36)
	20:53	22	07:46 (T28)	20:12	54	19:49 (T27)	19:18	76	18:25 (T30)	18:32			17:04			17:10	22	08:51 (T36)
30	06:24		07:22 (T28)	06:55		07:18 (T28)	07:26		07:55 (T31)	08:00			07:36			07:57		08:30 (T36)
	20:52	26	07:48 (T28)	20:10	47	19:47 (T27)	19:16	80	18:26 (T30)	18:30			17:04			17:11	21	08:51 (T36)
31	06:25		07:21 (T28)	06:56		07:20 (T28)				08:01						07:57		08:30 (T36)
	20:51	28	07:49 (T28)	20:09	38	19:45 (T27)				18:29						17:12	21	08:51 (T36)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		113			1972			565			1538						565	
Sun reduction		0.66			0.61			0.59			0.48						0.22	
Oper. time red.		1.00			1.00			1.00			1.00						1.00	
Wind dir. red.		0.66			0.63			0.66			0.66						0.53	
Total reduction		0.44			0.38			0.38			0.32						0.11	
Total, real		49			755			217			485						65	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1137 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7114)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:58 17:13	07:44 17:48	07:07 18:22	07:16 19:56 71	07:35 (T37) 08:51 (T38)	06:30 20:27 30	07:57 (T38) 08:27 (T38)	06:02 20:57	06:02 21:09	06:26 20:50	06:58 20:07 88	07:21 (T37) 08:49 (T38)	07:28 19:15	07:02 17:28	07:37 17:04
2	07:58 17:14	07:43 17:49	07:06 18:23	07:15 19:57 77	07:34 (T37) 08:52 (T38)	06:29 20:28 26	07:59 (T38) 08:25 (T38)	06:01 20:58	06:03 21:09	06:27 20:49	06:59 20:06 88	07:21 (T37) 08:49 (T38)	07:29 19:13	07:04 17:27	07:38 17:04
3	07:58 17:15	07:42 17:50	07:04 18:24	07:13 19:58 80	07:32 (T37) 08:52 (T38)	06:28 20:29 20	08:02 (T38) 08:22 (T38)	06:01 20:59	06:03 21:09	06:28 20:48	07:00 20:04 89	07:20 (T37) 08:49 (T38)	07:30 19:12	07:05 17:26	07:39 17:03
4	07:58 17:16	07:41 17:51	07:03 18:25	07:11 19:59 82	07:30 (T37) 08:52 (T38)	06:27 20:30 10	08:06 (T38) 08:16 (T38)	06:00 20:59	06:04 21:08	06:29 20:47	07:01 20:03 88	07:21 (T37) 08:49 (T38)	07:31 19:10	07:06 17:25	07:40 17:03
5	07:58 17:17	07:40 17:53	07:01 18:27	07:10 20:01 83	07:29 (T37) 08:52 (T38)	06:25 20:32		06:00 21:00	06:04 21:08	06:30 20:46	07:02 20:01 86	07:22 (T37) 08:48 (T38)	07:32 19:08	07:07 17:23	07:41 17:03
6	07:58 17:18	07:39 17:54	07:00 18:28	07:08 20:01 85	07:27 (T37) 08:52 (T38)	06:24 20:33		06:00 21:01	06:05 21:08	06:31 20:45	07:03 19:58 85	07:23 (T37) 08:48 (T38)	07:33 19:07	07:08 17:22	07:42 17:03
7	07:58 17:19	07:37 17:55	06:58 18:29	07:06 20:02 86	07:25 (T37) 08:51 (T38)	06:23 20:34		05:59 21:02	06:06 21:08	06:32 20:44	07:04 19:56 83	07:24 (T37) 08:47 (T38)	07:34 19:05	07:09 17:21	07:43 17:03
8	07:58 17:20	07:36 17:56	07:56 19:30	07:05 20:03 88	07:24 (T37) 08:52 (T38)	06:22 20:35		05:59 21:02	06:06 21:07	06:33 20:42	07:05 19:54 82	07:25 (T37) 08:47 (T38)	07:35 19:03	07:11 17:20	07:44 17:03
9	07:57 17:21	07:35 17:58	07:55 19:31	07:03 20:04 89	07:22 (T37) 08:51 (T38)	06:21 20:36		05:59 21:03	06:07 21:07	06:34 20:41 14	08:14 (T38) 08:28 (T38)	07:06 19:53 80	07:26 (T37) 08:46 (T38)	07:36 19:02	07:12 17:19	07:45 17:03
10	07:57 17:22	07:34 17:59	07:53 19:32	07:02 20:05 88	07:23 (T37) 08:51 (T38)	06:19 20:37		05:59 21:03	06:08 21:07	06:35 20:40 21	08:10 (T38) 08:31 (T38)	07:07 19:51 77	07:27 (T37) 08:45 (T38)	07:37 19:00	07:13 17:18	07:46 17:03
11	07:57 17:23	07:33 18:00	07:52 19:33	07:00 20:06 88	07:22 (T37) 08:50 (T38)	06:18 20:38		05:59 21:04	06:08 21:06	06:36 20:39 27	08:07 (T38) 08:34 (T38)	07:08 19:49 72	07:28 (T37) 08:44 (T38)	07:38 18:59	07:14 17:17	07:47 17:03
12	07:57 17:24	07:31 18:01	07:50 19:35	06:58 20:07 89	07:21 (T37) 08:50 (T38)	06:17 20:39		05:58 21:04	06:09 21:06	06:37 20:37 31	08:05 (T38) 08:36 (T38)	07:09 19:47 62	07:31 (T37) 08:43 (T38)	07:39 18:57	07:16 17:16	07:48 17:03
13	07:56 17:25	07:30 18:03	07:48 19:36	06:57 20:08 88	07:22 (T37) 08:50 (T38)	06:16 20:40		05:58 21:05	06:10 21:05	06:38 20:36 35	08:03 (T38) 08:38 (T38)	07:10 19:46 57	07:45 (T38) 08:42 (T38)	07:41 18:55	07:17 17:15	07:48 17:03
14	07:56 17:26	07:29 18:04	07:47 19:37	06:55 20:09 87	07:22 (T37) 08:49 (T38)	06:15 20:41		05:58 21:05	06:11 21:05	06:39 20:35 39	08:01 (T38) 08:40 (T38)	07:11 19:44 56	07:45 (T38) 08:41 (T38)	07:42 18:54	07:18 17:14	07:49 17:03
15	07:56 17:27	07:28 18:05	07:45 19:38	06:54 20:10 85	07:23 (T37) 08:48 (T38)	06:14 20:42		05:58 21:06	06:11 21:04	06:40 20:33 42	07:59 (T38) 08:41 (T38)	07:12 19:42 54	07:46 (T38) 08:40 (T38)	07:43 18:52	07:19 17:13	07:50 17:04
16	07:55 17:28	07:26 18:06	07:43 19:39	06:52 20:11 84	07:23 (T37) 08:47 (T38)	06:13 20:43		05:58 21:06	06:12 21:04	06:41 20:32 45	07:58 (T38) 08:43 (T38)	07:13 19:41 51	07:47 (T38) 08:38 (T38)	07:44 18:51	07:20 17:12	07:51 17:04
17	07:55 17:29	07:25 18:08	07:42 19:40	06:51 20:12 82	07:25 (T37) 08:47 (T38)	06:12 20:44		05:58 21:07	06:13 21:03	06:42 20:30 48	07:56 (T38) 08:44 (T38)	07:14 19:39 48	07:48 (T38) 08:36 (T38)	07:45 18:49	07:21 17:12	07:51 17:04
18	07:54 17:31	07:24 18:09	07:40 19:41	06:49 20:13 80	07:25 (T37) 08:46 (T38)	06:11 20:45		05:58 21:07	06:14 21:03	06:43 20:29 50	07:55 (T38) 08:45 (T38)	07:15 19:37 45	07:48 (T38) 08:33 (T38)	07:46 18:48	07:23 17:11	07:52 17:04
19	07:54 17:32	07:22 18:10	07:38 19:42	06:47 20:14 74	07:28 (T37) 08:45 (T38)	06:10 20:46		05:59 21:07	06:15 21:02	06:44 20:28 52	07:54 (T38) 08:46 (T38)	07:16 19:35 42	07:49 (T38) 08:31 (T38)	07:47 18:46	07:24 17:10	07:53 17:05
20	07:53 17:33	07:21 18:11	07:37 19:43 13	08:19 (T38) 08:32 (T38)	06:46 20:16 68	07:30 (T37) 08:44 (T38)	06:10 20:47	05:59 21:08	06:15 21:01	06:45 20:26 54	07:53 (T38) 08:47 (T38)	07:17 19:34 38	07:51 (T38) 08:29 (T38)	07:48 18:45	07:25 17:09	07:53 17:05
21	07:53 17:34	07:19 18:12	07:35 19:44 24	08:13 (T38) 08:37 (T38)	06:44 20:17 57	07:46 (T38) 08:43 (T38)	06:09 20:48	05:59 21:08	06:16 21:00	06:46 20:25 55	07:52 (T38) 08:47 (T38)	07:18 19:32 33	07:53 (T38) 08:26 (T38)	07:49 18:43	07:26 17:09	07:54 17:06
22	07:52 17:35	07:18 18:14	07:33 19:45 31	08:09 (T38) 08:40 (T38)	06:43 20:18 55	07:46 (T38) 08:41 (T38)	06:08 20:49	05:59 21:08	06:17 21:00	06:47 20:23 57	07:51 (T38) 08:48 (T38)	07:19 19:30 27	07:56 (T38) 08:23 (T38)	07:51 18:42	07:27 17:08	07:54 17:06
23	07:51 17:36	07:16 18:15	07:31 19:47 37	08:06 (T38) 08:43 (T38)	06:42 20:19 54	07:47 (T38) 08:41 (T38)	06:07 20:50	05:59 21:08	06:18 20:59	06:48 20:22 69	07:33 (T37) 08:48 (T38)	07:20 19:29 18	08:00 (T38) 08:18 (T38)	07:52 18:40	07:29 17:07	07:55 17:07
24	07:51 17:38	07:15 18:16	07:30 19:48 41	08:04 (T38) 08:45 (T38)	06:40 20:20 52	07:47 (T38) 08:39 (T38)	06:06 20:50	06:00 21:09	06:19 20:58	06:49 20:20 76	07:30 (T37) 08:48 (T38)	07:21 19:27		07:53 18:39	07:30 17:07	07:55 17:07
25	07:50 17:39	07:14 18:17	07:28 19:49 45	08:01 (T38) 08:46 (T38)	06:39 20:21 49	07:49 (T38) 08:38 (T38)	06:06 20:51	06:00 21:09	06:20 20:57	06:50 20:19 79	07:28 (T37) 08:48 (T38)	07:22 19:25		07:54 18:37	07:31 17:06	07:56 17:08
26	07:49 17:40	07:12 18:18	07:26 19:50 48	07:59 (T38) 08:47 (T38)	06:37 20:22 47	07:50 (T38) 08:37 (T38)	06:05 20:52	06:00 21:09	06:21 20:56	06:51 20:17 83	07:26 (T37) 08:49 (T38)	07:23 19:23		07:55 18:36	07:32 17:06	07:56 17:08
27	07:48 17:41	07:11 18:20	07:25 19:51 51	07:58 (T38) 08:49 (T38)	06:36 20:23 45	07:50 (T38) 08:35 (T38)	06:04 20:53	06:01 21:09	06:22 20:55	06:52 20:15 84	07:25 (T37) 08:49 (T38)	07:24 19:22		07:56 18:35	07:33 17:05	07:56 17:09
28	07:47 17:43	07:09 18:21	07:23 19:52 53	07:56 (T38) 08:49 (T38)	06:34 20:24 41	07:52 (T38) 08:33 (T38)	06:04 20:54	06:01 21:09	06:23 20:54	06:54 20:14 85	07:24 (T37) 08:49 (T38)	07:25 19:20		07:58 18:33	07:34 17:05	07:57 17:10
29	07:47 17:44		07:21 19:53 56	07:54 (T38) 08:50 (T38)	06:33 20:25 38	07:54 (T38) 08:32 (T38)	06:03 20:55	06:01 21:09	06:24 20:53	06:55 20:12 86	07:23 (T37) 08:49 (T38)	07:26 19:18		07:59 18:32	07:35 17:05	07:57 17:11
30	07:46 17:45		07:20 19:54 57	07:54 (T38) 08:51 (T38)	06:32 20:26 35	07:54 (T38) 08:29 (T38)	06:03 20:56	06:02 21:09	06:25 20:53	06:56 20:11 88	07:22 (T37) 08:50 (T38)	07:27 19:17		08:00 18:31	07:36 17:04	07:57 17:11
31	07:45 17:46		07:18 19:55 59	07:52 (T38) 08:51 (T38)			06:02 20:56		06:26 20:51	06:57 20:09 89	07:21 (T37) 08:50 (T38)			08:01 18:29		07:57 17:12
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case			515	2127	86			1309	1449			
Sun reduction			0.44	0.52	0.57			0.61	0.59			
Oper. time red.			1.00	1.00	1.00			1.00	1.00			
Wind dir. red.			0.62	0.63	0.62			0.63	0.63			
Total reduction			0.27	0.33	0.35			0.38	0.37			
Total, real			141	694	30			500	536			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1146 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7121)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		19:14 (T23)	06:01		19:06 (T23)	06:02		19:13 (T23)	06:26		19:15 (T23)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	41	19:55 (T23)	20:57	60	20:06 (T23)	21:09	57	20:10 (T23)	20:50	58	20:13 (T23)	20:07	19:15	17:28	17:03
2	07:57	07:42	07:06	07:14		06:29		19:12 (T23)	06:01		19:06 (T23)	06:02		19:14 (T23)	06:27		19:16 (T23)	06:58	07:28	07:03	07:38
	17:14	17:48	18:23	19:57		20:28	44	19:56 (T23)	20:58	59	20:05 (T23)	21:08	57	20:11 (T23)	20:49	57	20:13 (T23)	20:06	19:13	17:27	17:03
3	07:58	07:41	07:04	07:13		06:27		19:11 (T23)	06:00		19:07 (T23)	06:03		19:13 (T23)	06:28		19:16 (T23)	06:59	07:30	07:04	07:39
	17:14	17:50	18:24	19:58		20:29	46	19:57 (T23)	20:58	58	20:05 (T23)	21:08	57	20:10 (T23)	20:48	56	20:12 (T23)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		19:10 (T23)	06:00		19:07 (T23)	06:03		19:14 (T23)	06:29		19:17 (T23)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	48	19:58 (T23)	20:59	59	20:06 (T23)	21:08	57	20:11 (T23)	20:47	55	20:12 (T23)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		19:09 (T23)	06:00		19:07 (T23)	06:04		19:14 (T23)	06:30		19:17 (T23)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	50	19:59 (T23)	21:00	58	20:05 (T23)	21:08	58	20:12 (T23)	20:46	54	20:11 (T23)	20:01	19:08	17:23	17:03
6	07:58	07:38	06:59	07:08		06:24		19:09 (T23)	05:59		19:07 (T23)	06:05		19:14 (T23)	06:31		19:18 (T23)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	51	20:00 (T23)	21:01	58	20:05 (T23)	21:08	58	20:12 (T23)	20:44	52	20:10 (T23)	19:57	19:06	17:22	17:02
7	07:57	07:37	06:58	07:06		06:22		19:08 (T23)	05:59		19:08 (T23)	06:05		19:14 (T23)	06:32		19:19 (T23)	07:03	07:34	07:09	07:43
	17:18	17:55	18:28	20:01		20:33	53	20:01 (T23)	21:01	58	20:06 (T23)	21:07	58	20:12 (T23)	20:43	51	20:10 (T23)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:04		06:21		19:06 (T23)	05:59		19:09 (T23)	06:06		19:14 (T23)	06:33		19:19 (T23)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	55	20:01 (T23)	21:02	57	20:06 (T23)	21:07	58	20:12 (T23)	20:42	50	20:09 (T23)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		19:06 (T23)	05:58		19:09 (T23)	06:06		19:14 (T23)	06:34		19:20 (T23)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	55	20:01 (T23)	21:02	57	20:06 (T23)	21:07	59	20:13 (T23)	20:41	48	20:08 (T23)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		19:05 (T23)	05:58		19:09 (T23)	06:07		19:14 (T23)	06:35		19:21 (T23)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	57	20:02 (T23)	21:03	56	20:05 (T23)	21:06	59	20:13 (T23)	20:40	45	20:06 (T23)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		19:05 (T23)	05:58		19:09 (T23)	06:08		19:13 (T23)	06:36		19:21 (T23)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	57	20:02 (T23)	21:04	57	20:06 (T23)	21:06	60	20:13 (T23)	20:38	43	20:04 (T23)	19:49	18:58	17:17	17:02
12	07:56	07:31	07:50	06:58		06:17		19:05 (T23)	05:58		19:09 (T23)	06:09		19:14 (T23)	06:37		19:22 (T23)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:39	58	20:03 (T23)	21:04	57	20:06 (T23)	21:06	59	20:13 (T23)	20:37	41	20:03 (T23)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16		19:04 (T23)	05:58		19:10 (T23)	06:09		19:14 (T23)	06:38		19:24 (T23)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08		20:40	59	20:03 (T23)	21:05	56	20:06 (T23)	21:05	60	20:14 (T23)	20:36	37	20:01 (T23)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		19:04 (T23)	05:58		19:10 (T23)	06:10		19:14 (T23)	06:39		19:25 (T23)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:41	59	20:03 (T23)	21:05	56	20:06 (T23)	21:05	60	20:14 (T23)	20:34	34	19:59 (T23)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53		06:14		19:04 (T23)	05:58		19:10 (T23)	06:11		19:14 (T23)	06:40		19:27 (T23)	07:11	07:42	07:19	07:50
	17:27	18:05	19:37	20:10		20:42	59	20:03 (T23)	21:06	56	20:06 (T23)	21:04	60	20:14 (T23)	20:33	30	19:57 (T23)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13		19:03 (T23)	05:58		19:11 (T23)	06:12		19:14 (T23)	06:41		19:30 (T23)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11		20:43	61	20:04 (T23)	21:06	55	20:06 (T23)	21:04	60	20:14 (T23)	20:31	24	19:54 (T23)	19:40	18:50	17:12	17:03
17	07:55	07:25	07:41	06:50		06:12		19:03 (T23)	05:58		19:11 (T23)	06:12		19:14 (T23)	06:42		19:34 (T23)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12		20:44	61	20:04 (T23)	21:06	55	20:06 (T23)	21:03	61	20:15 (T23)	20:30	16	19:50 (T23)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49		06:11		19:04 (T23)	05:58		19:11 (T23)	06:13		19:14 (T23)	06:43			07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13		20:45	61	20:05 (T23)	21:07	55	20:06 (T23)	21:02	61	20:15 (T23)	20:29			19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47		06:10		19:04 (T23)	05:58		19:12 (T23)	06:14		19:13 (T23)	06:44			07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14		20:46	61	20:05 (T23)	21:07	56	20:08 (T23)	21:02	61	20:14 (T23)	20:27			19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46		06:09		19:04 (T23)	05:58		19:12 (T23)	06:15		19:13 (T23)	06:45			07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15		20:46	61	20:05 (T23)	21:07	56	20:08 (T23)	21:01	62	20:15 (T23)	20:26			19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44		06:08		19:03 (T23)	05:58		19:12 (T23)	06:16		19:14 (T23)	06:46			07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16		20:47	62	20:05 (T23)	21:08	56	20:08 (T23)	21:00	61	20:15 (T23)	20:24			19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43		06:07		19:04 (T23)	05:59		19:12 (T23)	06:17		19:14 (T23)	06:47			07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17		20:48	61	20:05 (T23)	21:08	56	20:08 (T23)	20:59	61	20:15 (T23)	20:23			19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41		06:07		19:04 (T23)	05:59		19:12 (T23)	06:18		19:14 (T23)	06:48			07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18		20:49	61	20:05 (T23)	21:08	56	20:08 (T23)	20:59	61	20:15 (T23)	20:21			19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40		06:06		19:04 (T23)	05:59		19:13 (T23)	06:19		19:14 (T23)	06:49			07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20		20:50	61	20:05 (T23)	21:08	55	20:08 (T23)	20:58	61	20:15 (T23)	20:20			19:27	18:38	17:06	17:07
25	07:50	07:13	07:28	06:38	19:34 (T23)	06:05		19:04 (T23)	05:59		19:13 (T23)	06:19		19:14 (T23)	06:50			07:21	07:54	07:31	07:55
	17:39	18:17	19:48	20:21	4 19:38 (T23)	20:51	61	20:05 (T23)	21:08	55	20:08 (T23)	20:57	61	20:15 (T23)	20:18			19:25	18:37	17:06	17:07
26	07:49	07:12	07:26	06:37	19:26 (T23)	06:05		19:05 (T23)	06:00		19:13 (T23)	06:20		19:14 (T23)	06:51			07:22	07:55	07:32	07:56
	17:40	18:18	19:49	20:22	18 19:44 (T23)	20:52	60	20:05 (T23)	21:09	55	20:08 (T23)	20:56	60	20:14 (T23)	20:17			19:23	18:36	17:05	17:08
27	07:48	07:10	07:24	06:35	19:23 (T23)	06:04		19:04 (T23)	06:00		19:14 (T23)	06:21		19:14 (T23)	06:52			07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	25 19:48 (T23)	20:53	61	20:05 (T23)	21:09	55	20:09 (T23)	20:55	60	20:14 (T23)	20:15			19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	19:20 (T23)	06:03		19:05 (T23)	06:00		19:13 (T23)	06:22		19:14 (T23)	06:53			07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24	31 19:51 (T23)	20:54	61	20:06 (T23)	21:09	56	20:09 (T23)	20:54	60	20:14 (T23)	20:14			19:20	18:33	17:04	17:09
29	07:46		07:21	06:33	19:17 (T23)	06:03		19:05 (T23)	06:01		19:13 (T23)	06:23		19:14 (T23)	06:54			07:25	07:58	07:35	07:57
	17:43		19:53	20:25	35 19:52 (T23)	20:55	60	20:05 (T23)	21:09	56	20:09 (T23)	20:53	60	20:14 (T23)	20:12			19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	19:16 (T23)	06:02		19:06 (T23)	06:01		19:14 (T23)	06:24		19:15 (T23)	06:55			07:26	08:00	07:36	07:57
	17:45		19:54	20:26	38 19:54 (T23)	20:55	60	20:06 (T23)	21:09	56	20:10 (T23)	20:52	59	20:14 (T23)	20:10			19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:05 (T23)				06:25		19:15 (T23)	06:56				08:01		07:57
	17:46		19:55			20:56	60	20:05 (T23)				20:51	59	20:14 (T23)	20:09				18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				151		1765		1695		1845		751					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.57		0.57		0.57		0.57		0.57					
Total reduction				0.29		0.32		0.36		0.37		0.35					
Total, real				44		570		614		690		259					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1151 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7125)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:57	07:43	07:07			07:16		07:57 (T49)	06:30		07:40 (T49)	06:02		08:16 (T49)
	17:13	17:48	18:22			19:56	66	09:03 (T49)	20:27	79	08:59 (T49)	20:57	4	08:20 (T49)
2	07:57	07:42	07:06			07:15		07:55 (T49)	06:29		07:41 (T49)	06:01		
	17:14	17:49	18:23			19:57	68	09:03 (T49)	20:28	78	08:59 (T49)	20:58		
3	07:57	07:41	07:04			07:13		07:54 (T49)	06:28		07:41 (T49)	06:01		
	17:15	17:50	18:24			19:58	71	09:05 (T49)	20:29	77	08:58 (T49)	20:58		
4	07:57	07:40	07:03			07:11		07:52 (T49)	06:27		07:41 (T49)	06:00		
	17:16	17:51	18:25			19:59	73	09:05 (T49)	20:30	76	08:57 (T49)	20:59		
5	07:57	07:39	07:01			07:10		07:51 (T49)	06:25		07:42 (T49)	06:00		
	17:17	17:53	18:26			20:00	75	09:06 (T49)	20:31	74	08:56 (T49)	21:00		
6	07:57	07:38	06:59			07:08		07:50 (T49)	06:24		07:42 (T49)	06:00		
	17:18	17:54	18:28			20:00	76	09:06 (T49)	20:32	74	08:56 (T49)	21:00		
7	07:57	07:37	06:58			07:06		07:48 (T49)	06:23		07:43 (T49)	05:59		
	17:19	17:55	18:29			20:01	78	09:06 (T49)	20:33	72	08:55 (T49)	21:01		
8	07:57	07:36	07:56			07:05		07:48 (T49)	06:22		07:43 (T49)	05:59		
	17:20	17:56	19:30			20:02	79	09:07 (T49)	20:34	71	08:54 (T49)	21:02		
9	07:57	07:35	07:55			07:03		07:47 (T49)	06:21		07:44 (T49)	05:59		
	17:21	17:58	19:31			20:03	80	09:07 (T49)	20:35	69	08:53 (T49)	21:02		
10	07:57	07:34	07:53			07:01		07:45 (T49)	06:19		07:45 (T49)	05:59		
	17:22	17:59	19:32			20:05	82	09:07 (T49)	20:36	67	08:52 (T49)	21:03		
11	07:57	07:32	07:51			07:00		07:45 (T49)	06:18		07:46 (T49)	05:59		
	17:23	18:00	19:33			20:06	83	09:08 (T49)	20:37	66	08:52 (T49)	21:03		
12	07:56	07:31	07:50			06:58		07:44 (T49)	06:17		07:46 (T49)	05:59		
	17:24	18:01	19:34			20:07	83	09:07 (T49)	20:38	65	08:51 (T49)	21:04		
13	07:56	07:30	07:48			06:57		07:44 (T49)	06:16		07:47 (T49)	05:58		
	17:25	18:03	19:35			20:08	84	09:08 (T49)	20:39	63	08:50 (T49)	21:04		
14	07:56	07:29	07:46			06:55		07:43 (T49)	06:15		07:48 (T49)	05:58		
	17:26	18:04	19:37			20:09	84	09:07 (T49)	20:40	61	08:49 (T49)	21:05		
15	07:55	07:27	07:45			06:54		07:43 (T49)	06:14		07:49 (T49)	05:58		
	17:27	18:05	19:38			20:10	85	09:08 (T49)	20:41	59	08:48 (T49)	21:05		
16	07:55	07:26	07:43			06:52		07:42 (T49)	06:13		07:49 (T49)	05:58		
	17:28	18:06	19:39			20:11	85	09:07 (T49)	20:42	58	08:47 (T49)	21:06		
17	07:54	07:25	07:41			06:50		07:42 (T49)	06:12		07:50 (T49)	05:58		
	17:29	18:08	19:40			20:12	85	09:07 (T49)	20:43	55	08:45 (T49)	21:06		
18	07:54	07:23	07:40			06:49		07:41 (T49)	06:11		07:51 (T49)	05:58		
	17:31	18:09	19:41			20:13	86	09:07 (T49)	20:44	53	08:44 (T49)	21:07		
19	07:53	07:22	07:38			06:47		07:41 (T49)	06:10		07:52 (T49)	05:59		
	17:32	18:10	19:42			20:14	86	09:07 (T49)	20:45	51	08:43 (T49)	21:07		
20	07:53	07:20	07:36			06:46		07:40 (T49)	06:10		07:53 (T49)	05:59		
	17:33	18:11	19:43			20:15	86	09:06 (T49)	20:46	49	08:42 (T49)	21:07		
21	07:52	07:19	07:35			06:44		07:40 (T49)	06:09		07:55 (T49)	05:59		
	17:34	18:12	19:44			20:16	86	09:06 (T49)	20:47	46	08:41 (T49)	21:07		
22	07:52	07:18	07:33			06:43		07:40 (T49)	06:08		07:56 (T49)	05:59		
	17:35	18:14	19:45			20:17	85	09:05 (T49)	20:48	44	08:40 (T49)	21:08		
23	07:51	07:16	07:31		08:24 (T49)	06:41		07:40 (T49)	06:07		07:57 (T49)	05:59		
	17:36	18:15	19:46	17	08:41 (T49)	20:18	85	09:05 (T49)	20:49	41	08:38 (T49)	21:08		
24	07:50	07:15	07:30		08:18 (T49)	06:40		07:39 (T49)	06:06		07:59 (T49)	06:00		
	17:38	18:16	19:47	29	08:47 (T49)	20:19	85	09:04 (T49)	20:50	39	08:38 (T49)	21:08		
25	07:49	07:13	07:28		08:14 (T49)	06:39		07:40 (T49)	06:06		08:00 (T49)	06:00		
	17:39	18:17	19:48	37	08:51 (T49)	20:21	83	09:03 (T49)	20:51	36	08:36 (T49)	21:08		
26	07:49	07:12	07:26		08:10 (T49)	06:37		07:40 (T49)	06:05		08:01 (T49)	06:00		
	17:40	18:18	19:50	43	08:53 (T49)	20:22	83	09:03 (T49)	20:52	33	08:34 (T49)	21:08		
27	07:48	07:10	07:25		08:08 (T49)	06:36		07:39 (T49)	06:04		08:03 (T49)	06:01		
	17:41	18:19	19:51	48	08:56 (T49)	20:23	83	09:02 (T49)	20:53	30	08:33 (T49)	21:08		
28	07:47	07:09	07:23		08:05 (T49)	06:34		07:40 (T49)	06:04		08:04 (T49)	06:01		
	17:43	18:21	19:52	53	08:58 (T49)	20:24	82	09:02 (T49)	20:54	27	08:31 (T49)	21:08		
29	07:46		07:21		08:02 (T49)	06:33		07:40 (T49)	06:03		08:07 (T49)	06:01		
	17:44		19:53	57	08:59 (T49)	20:25	81	09:01 (T49)	20:54	23	08:30 (T49)	21:08		
30	07:45		07:20		08:01 (T49)	06:32		07:40 (T49)	06:03		08:08 (T49)	06:02		
	17:45		19:54	60	09:01 (T49)	20:26	80	09:00 (T49)	20:55	20	08:28 (T49)	21:08		
31	07:44		07:18		07:59 (T49)				06:02		08:12 (T49)			
	17:46		19:55	63	09:02 (T49)				20:56	13	08:25 (T49)			
Potential sun hours	297	297	370			399			448			452		
Total, worst case				407			2428			1669			4	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.63			0.63			0.63			0.63	
Total reduction				0.28			0.33			0.36			0.40	
Total, real				113			794			598			2	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1151 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7125)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November	December
1	06:02			06:26		07:56 (T49)	06:57		07:44 (T49)	07:28	07:02	07:37
	21:08			20:50	65	09:01 (T49)	20:07	83	09:07 (T49)	19:15	17:28	17:04
2	06:03			06:27		07:55 (T49)	06:58		07:44 (T49)	07:29	07:03	07:38
	21:08			20:49	67	09:02 (T49)	20:06	82	09:06 (T49)	19:13	17:27	17:04
3	06:03			06:28		07:54 (T49)	06:59		07:45 (T49)	07:30	07:04	07:39
	21:08			20:48	68	09:02 (T49)	20:04	80	09:05 (T49)	19:11	17:26	17:03
4	06:04			06:29		07:54 (T49)	07:00		07:45 (T49)	07:31	07:06	07:40
	21:08			20:47	69	09:03 (T49)	20:02	79	09:04 (T49)	19:10	17:24	17:03
5	06:04			06:30		07:53 (T49)	07:01		07:45 (T49)	07:32	07:07	07:41
	21:08			20:46	71	09:04 (T49)	20:01	79	09:04 (T49)	19:08	17:23	17:03
6	06:05			06:31		07:52 (T49)	07:02		07:46 (T49)	07:33	07:08	07:42
	21:08			20:44	73	09:05 (T49)	19:57	77	09:03 (T49)	19:06	17:22	17:03
7	06:06			06:32		07:52 (T49)	07:03		07:46 (T49)	07:34	07:09	07:43
	21:07			20:43	73	09:05 (T49)	19:56	75	09:01 (T49)	19:05	17:21	17:03
8	06:06			06:33		07:51 (T49)	07:04		07:47 (T49)	07:35	07:10	07:44
	21:07			20:42	75	09:06 (T49)	19:54	73	09:00 (T49)	19:03	17:20	17:03
9	06:07			06:34		07:51 (T49)	07:05		07:48 (T49)	07:36	07:12	07:45
	21:07			20:41	76	09:07 (T49)	19:52	71	08:59 (T49)	19:02	17:19	17:03
10	06:08			06:35		07:50 (T49)	07:06		07:49 (T49)	07:37	07:13	07:46
	21:06			20:39	77	09:07 (T49)	19:51	69	08:58 (T49)	19:00	17:18	17:03
11	06:08			06:36		07:49 (T49)	07:07		07:50 (T49)	07:38	07:14	07:46
	21:06			20:38	79	09:08 (T49)	19:49	66	08:56 (T49)	18:58	17:17	17:03
12	06:09		08:22 (T49)	06:37		07:49 (T49)	07:08		07:50 (T49)	07:39	07:15	07:47
	21:05	10	08:32 (T49)	20:37	79	09:08 (T49)	19:47	63	08:53 (T49)	18:57	17:16	17:03
13	06:10		08:18 (T49)	06:38		07:48 (T49)	07:09		07:51 (T49)	07:40	07:16	07:48
	21:05	17	08:35 (T49)	20:36	81	09:09 (T49)	19:45	60	08:51 (T49)	18:55	17:15	17:03
14	06:11		08:16 (T49)	06:39		07:48 (T49)	07:10		07:52 (T49)	07:41	07:18	07:49
	21:04	21	08:37 (T49)	20:34	81	09:09 (T49)	19:44	57	08:49 (T49)	18:54	17:14	17:03
15	06:11		08:14 (T49)	06:40		07:48 (T49)	07:11		07:54 (T49)	07:42	07:19	07:49
	21:04	26	08:40 (T49)	20:33	82	09:10 (T49)	19:42	53	08:47 (T49)	18:52	17:13	17:04
16	06:12		08:12 (T49)	06:41		07:47 (T49)	07:12		07:56 (T49)	07:44	07:20	07:50
	21:03	29	08:41 (T49)	20:31	83	09:10 (T49)	19:40	49	08:45 (T49)	18:51	17:12	17:04
17	06:13		08:11 (T49)	06:42		07:47 (T49)	07:13		07:58 (T49)	07:45	07:21	07:51
	21:03	32	08:43 (T49)	20:30	83	09:10 (T49)	19:39	44	08:42 (T49)	18:49	17:12	17:04
18	06:14		08:10 (T49)	06:43		07:46 (T49)	07:14		08:00 (T49)	07:46	07:22	07:52
	21:02	35	08:45 (T49)	20:29	84	09:10 (T49)	19:37	39	08:39 (T49)	18:47	17:11	17:04
19	06:15		08:09 (T49)	06:44		07:46 (T49)	07:15		08:03 (T49)	07:47	07:23	07:52
	21:01	37	08:46 (T49)	20:27	84	09:10 (T49)	19:35	32	08:35 (T49)	18:46	17:10	17:05
20	06:15		08:08 (T49)	06:45		07:45 (T49)	07:16		08:08 (T49)	07:48	07:25	07:53
	21:01	40	08:48 (T49)	20:26	85	09:10 (T49)	19:34	21	08:29 (T49)	18:45	17:09	17:05
21	06:16		08:07 (T49)	06:46		07:45 (T49)	07:17			07:49	07:26	07:53
	21:00	43	08:50 (T49)	20:24	85	09:10 (T49)	19:32			18:43	17:09	17:06
22	06:17		08:05 (T49)	06:47		07:44 (T49)	07:18			07:50	07:27	07:54
	20:59	45	08:50 (T49)	20:23	86	09:10 (T49)	19:30			18:42	17:08	17:06
23	06:18		08:04 (T49)	06:48		07:44 (T49)	07:19			07:51	07:28	07:54
	20:58	47	08:51 (T49)	20:21	86	09:10 (T49)	19:28			18:40	17:07	17:07
24	06:19		08:03 (T49)	06:49		07:44 (T49)	07:20			07:53	07:29	07:55
	20:58	50	08:53 (T49)	20:20	86	09:10 (T49)	19:27			18:39	17:07	17:07
25	06:20		08:02 (T49)	06:50		07:44 (T49)	07:21			07:54	07:30	07:55
	20:57	52	08:54 (T49)	20:18	85	09:09 (T49)	19:25			18:37	17:06	17:08
26	06:21		08:01 (T49)	06:51		07:44 (T49)	07:22			07:55	07:31	07:56
	20:56	54	08:55 (T49)	20:17	85	09:09 (T49)	19:23			18:36	17:06	17:09
27	06:22		08:00 (T49)	06:52		07:44 (T49)	07:23			07:56	07:33	07:56
	20:55	57	08:57 (T49)	20:15	85	09:09 (T49)	19:22			18:35	17:05	17:09
28	06:23		08:00 (T49)	06:53		07:44 (T49)	07:24			07:57	07:34	07:56
	20:54	58	08:58 (T49)	20:14	85	09:09 (T49)	19:20			18:33	17:05	17:10
29	06:24		07:59 (T49)	06:54		07:44 (T49)	07:25			07:58	07:35	07:56
	20:53	60	08:59 (T49)	20:12	84	09:08 (T49)	19:18			18:32	17:05	17:11
30	06:25		07:58 (T49)	06:55		07:44 (T49)	07:27			08:00	07:36	07:57
	20:52	62	09:00 (T49)	20:10	84	09:08 (T49)	19:17			18:31	17:04	17:11
31	06:26		07:56 (T49)	06:56		07:44 (T49)				08:01		07:57
	20:51	64	09:00 (T49)	20:09	83	09:07 (T49)				18:29		17:12
Potential sun hours	459			428			375			345	297	287
Total, worst case		839			2469			1252				
Sun reduction		0.66			0.61			0.59				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.63			0.63			0.63				
Total reduction		0.41			0.38			0.37				
Total, real		348			947			464				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1158 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7130)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30	19:01 (T36)	06:01	19:03 (T36)	06:02	19:11 (T36)	06:26	19:07 (T36)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27 54	19:55 (T36)	20:57 52	19:55 (T36)	21:08 47	19:58 (T36)	20:50 61	20:08 (T36)	20:07	19:15	17:28	17:03
2	07:57	07:42	07:06	07:14		06:29	18:59 (T36)	06:01	19:03 (T36)	06:02	19:12 (T36)	06:27	19:07 (T36)	06:58	07:28	07:03	07:38
	17:14	17:49	18:23	19:57		20:28 55	19:54 (T36)	20:58 51	19:54 (T36)	21:08 47	19:59 (T36)	20:49 61	20:08 (T36)	20:05	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:27	18:59 (T36)	06:00	19:03 (T36)	06:03	19:11 (T36)	06:28	19:07 (T36)	06:59	07:29	07:04	07:39
	17:14	17:50	18:24	19:58		20:29 56	19:55 (T36)	20:58 52	19:55 (T36)	21:08 48	19:59 (T36)	20:48 60	20:07 (T36)	20:04	19:11	17:25	17:03
4	07:57	07:40	07:02	07:11		06:26	18:58 (T36)	06:00	19:04 (T36)	06:03	19:12 (T36)	06:29	19:07 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30 58	19:56 (T36)	20:59 51	19:55 (T36)	21:08 47	19:59 (T36)	20:47 60	20:07 (T36)	20:02	19:10	17:24	17:03
5	07:57	07:39	07:01	07:09		06:25	18:58 (T36)	06:00	19:04 (T36)	06:04	19:12 (T36)	06:30	19:07 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31 58	19:56 (T36)	21:00 50	19:54 (T36)	21:08 48	20:00 (T36)	20:46 60	20:07 (T36)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24	18:58 (T36)	05:59	19:05 (T36)	06:05	19:11 (T36)	06:31	19:07 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32 59	19:57 (T36)	21:00 49	19:54 (T36)	21:08 49	20:00 (T36)	20:44 60	20:07 (T36)	19:57	19:06	17:22	17:02
7	07:57	07:37	06:58	07:06		06:23	18:58 (T36)	05:59	19:06 (T36)	06:05	19:11 (T36)	06:32	19:08 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:28	20:01		20:33 59	19:57 (T36)	21:01 48	19:54 (T36)	21:07 50	20:01 (T36)	20:43 58	20:06 (T36)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:04		06:21	18:57 (T36)	05:59	19:06 (T36)	06:06	19:11 (T36)	06:33	19:08 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34 59	19:56 (T36)	21:02 48	19:54 (T36)	21:07 50	20:01 (T36)	20:42 58	20:06 (T36)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20	18:56 (T36)	05:59	19:07 (T36)	06:07	19:11 (T36)	06:34	19:08 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35 61	19:57 (T36)	21:02 47	19:54 (T36)	21:07 51	20:02 (T36)	20:41 57	20:05 (T36)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19	18:56 (T36)	05:58	19:07 (T36)	06:07	19:11 (T36)	06:35	19:09 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:04		20:36 61	19:57 (T36)	21:03 47	19:54 (T36)	21:06 52	20:03 (T36)	20:39 56	20:05 (T36)	19:50	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18	18:56 (T36)	05:58	19:07 (T36)	06:08	19:10 (T36)	06:36	19:09 (T36)	07:07	07:38	07:14	07:46
	17:22	18:00	19:33	20:06		20:37 61	19:57 (T36)	21:04 47	19:54 (T36)	21:06 52	20:02 (T36)	20:38 55	20:04 (T36)	19:49	18:58	17:17	17:02
12	07:56	07:31	07:49	06:58		06:17	18:56 (T36)	05:58	19:08 (T36)	06:09	19:10 (T36)	06:37	19:09 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:38 61	19:57 (T36)	21:04 46	19:54 (T36)	21:06 53	20:03 (T36)	20:37 53	20:02 (T36)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16	18:56 (T36)	05:58	19:08 (T36)	06:09	19:10 (T36)	06:38	19:09 (T36)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08		20:39 61	19:57 (T36)	21:05 46	19:54 (T36)	21:05 54	20:04 (T36)	20:36 52	20:01 (T36)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15	18:56 (T36)	05:58	19:09 (T36)	06:10	19:10 (T36)	06:39	19:10 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:40 61	19:57 (T36)	21:05 45	19:54 (T36)	21:05 54	20:04 (T36)	20:34 50	20:00 (T36)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53		06:14	18:56 (T36)	05:58	19:09 (T36)	06:11	19:09 (T36)	06:40	19:11 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:37	20:10		20:41 61	19:57 (T36)	21:05 45	19:54 (T36)	21:04 55	20:04 (T36)	20:33 48	19:59 (T36)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13	18:56 (T36)	05:58	19:09 (T36)	06:12	19:09 (T36)	06:41	19:11 (T36)	07:12	07:43	07:20	07:50
	17:28	18:06	19:39	20:11		20:42 61	19:57 (T36)	21:06 45	19:54 (T36)	21:03 56	20:05 (T36)	20:31 47	19:58 (T36)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50		06:12	18:57 (T36)	05:58	19:10 (T36)	06:13	19:09 (T36)	06:42	19:12 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12		20:43 61	19:58 (T36)	21:06 44	19:54 (T36)	21:03 56	20:05 (T36)	20:30 45	19:57 (T36)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49		06:11	18:57 (T36)	05:58	19:10 (T36)	06:13	19:09 (T36)	06:43	19:14 (T36)	07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13		20:44 60	19:57 (T36)	21:07 44	19:54 (T36)	21:02 57	20:06 (T36)	20:29 41	19:55 (T36)	19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47	19:28 (T36)	06:10	18:57 (T36)	05:58	19:11 (T36)	06:14	19:09 (T36)	06:44	19:15 (T36)	07:15	07:47	07:23	07:52
	17:31	18:10	19:42	20:14 3	19:31 (T36)	20:45 60	19:57 (T36)	21:07 44	19:55 (T36)	21:02 57	20:06 (T36)	20:27 38	19:53 (T36)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	19:20 (T36)	06:09	18:57 (T36)	05:58	19:11 (T36)	06:15	19:08 (T36)	06:45	19:17 (T36)	07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15 19	19:39 (T36)	20:46 60	19:57 (T36)	21:07 44	19:55 (T36)	21:01 58	20:06 (T36)	20:26 34	19:51 (T36)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:34	06:44	19:16 (T36)	06:08	18:57 (T36)	05:58	19:11 (T36)	06:16	19:08 (T36)	06:46	19:19 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16 26	19:42 (T36)	20:47 60	19:57 (T36)	21:08 44	19:55 (T36)	21:00 58	20:06 (T36)	20:24 30	19:49 (T36)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	19:13 (T36)	06:08	18:59 (T36)	05:59	19:11 (T36)	06:17	19:08 (T36)	06:47	19:21 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17 32	19:45 (T36)	20:48 58	19:57 (T36)	21:08 44	19:55 (T36)	20:59 59	20:07 (T36)	20:23 25	19:46 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	19:11 (T36)	06:07	18:59 (T36)	05:59	19:11 (T36)	06:18	19:08 (T36)	06:48	19:25 (T36)	07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18 35	19:46 (T36)	20:49 58	19:57 (T36)	21:08 44	19:55 (T36)	20:59 59	20:07 (T36)	20:21 17	19:42 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	19:09 (T36)	06:06	18:59 (T36)	05:59	19:12 (T36)	06:19	19:08 (T36)	06:49		07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:19 39	19:48 (T36)	20:50 57	19:56 (T36)	21:08 44	19:56 (T36)	20:58 60	20:08 (T36)	20:20		19:27	18:38	17:06	17:07
25	07:49	07:13	07:28	06:38	19:08 (T36)	06:05	19:00 (T36)	05:59	19:12 (T36)	06:19	19:08 (T36)	06:50		07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21 42	19:50 (T36)	20:51 57	19:57 (T36)	21:08 44	19:56 (T36)	20:57 60	20:08 (T36)	20:18		19:25	18:37	17:06	17:07
26	07:49	07:12	07:26	06:37	19:05 (T36)	06:05	19:00 (T36)	06:00	19:11 (T36)	06:20	19:08 (T36)	06:51		07:22	07:55	07:32	07:56
	17:40	18:18	19:49	20:22 45	19:50 (T36)	20:52 56	19:56 (T36)	21:08 45	19:56 (T36)	20:56 60	20:08 (T36)	20:17		19:23	18:36	17:05	17:08
27	07:48	07:10	07:24	06:35	19:04 (T36)	06:04	19:00 (T36)	06:00	19:12 (T36)	06:21	19:07 (T36)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23 47	19:51 (T36)	20:53 56	19:56 (T36)	21:08 45	19:57 (T36)	20:55 60	20:07 (T36)	20:15		19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	19:04 (T36)	06:03	19:01 (T36)	06:01	19:12 (T36)	06:22	19:07 (T36)	06:53		07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24 49	19:53 (T36)	20:54 55	19:56 (T36)	21:09 45	19:57 (T36)	20:54 60	20:07 (T36)	20:13		19:20	18:33	17:05	17:09
29	07:46		07:21	06:33	19:02 (T36)	06:03	19:01 (T36)	06:01	19:12 (T36)	06:23	19:07 (T36)	06:54		07:25	07:58	07:35	07:57
	17:44		19:53	20:25 51	19:53 (T36)	20:54 54	19:55 (T36)	21:09 46	19:58 (T36)	20:53 61	20:08 (T36)	20:12		19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	19:01 (T36)	06:02	19:02 (T36)	06:01	19:12 (T36)	06:24	19:07 (T36)	06:55		07:26	08:00	07:36	07:57
	17:45		19:54	20:26 53	19:54 (T36)	20:55 54	19:56 (T36)	21:09 46	19:58 (T36)	20:52 61	20:08 (T36)	20:10		19:16	18:30	17:04	17:11
31	07:44		07:18			06:02	19:02 (T36)			06:25	19:07 (T36)	06:56			08:01		07:57
	17:46		19:55			20:56 53	19:55 (T36)			20:51 61	20:08 (T36)	20:09			18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				441		1805		1392		1700		1126					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.57		0.57		0.57		0.57		0.57					
Total reduction				0.30		0.33		0.37		0.38		0.35					
Total, real				131		587		509		641		392					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1174 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7143)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March			April			May			June		
1	07:57		07:43		07:07			07:16		18:35 (T59)	06:31		18:33 (T59)	06:02		19:59 (T78)
	17:13		17:48		18:22			19:56	49	19:24 (T59)	20:27	41	19:14 (T59)	20:57	27	20:26 (T78)
2	07:57		07:42		07:06			07:15		18:34 (T59)	06:29		18:34 (T59)	06:01		19:58 (T78)
	17:14		17:49		18:23			19:57	51	19:25 (T59)	20:28	39	19:13 (T59)	20:58	30	20:28 (T78)
3	07:57		07:41		07:04			07:13		18:32 (T59)	06:28		18:36 (T59)	06:01		19:58 (T78)
	17:15		17:50		18:24			19:58	54	19:26 (T59)	20:29	35	19:11 (T59)	20:58	31	20:29 (T78)
4	07:57		07:40		07:03			07:11		18:31 (T59)	06:27		18:38 (T59)	06:01		19:57 (T78)
	17:16		17:52		18:25			19:59	55	19:26 (T59)	20:30	32	19:10 (T59)	20:59	32	20:29 (T78)
5	07:57		07:39		07:01			07:10		18:30 (T59)	06:25		18:39 (T59)	06:00		19:57 (T78)
	17:17		17:53		18:27			20:00	57	19:27 (T59)	20:31	28	19:07 (T59)	21:00	33	20:30 (T78)
6	07:57		07:38		06:59			07:08		18:29 (T59)	06:24		18:42 (T59)	06:00		19:57 (T78)
	17:18		17:54		18:28			20:00	58	19:27 (T59)	20:32	22	19:04 (T59)	21:00	34	20:31 (T78)
7	07:57		07:37		06:58			07:06		18:28 (T59)	06:23		18:45 (T59)	06:00		19:56 (T78)
	17:19		17:55		18:29			20:01	59	19:27 (T59)	20:33	16	19:01 (T59)	21:01	36	20:32 (T78)
8	07:57		07:36		07:56			07:05		18:28 (T59)	06:22			05:59		19:55 (T78)
	17:20		17:57		19:30			20:02	60	19:28 (T59)	20:34			21:02	37	20:32 (T78)
9	07:57		07:35		07:55			07:03		18:27 (T59)	06:21			05:59		19:55 (T78)
	17:21		17:58		19:31			20:04	61	19:28 (T59)	20:35			21:02	38	20:33 (T78)
10	07:57		07:34		07:53			07:02		18:27 (T59)	06:20			05:59		19:55 (T78)
	17:22		17:59		19:32			20:05	61	19:28 (T59)	20:36			21:03	38	20:33 (T78)
11	07:57		07:32		07:51			07:00		18:26 (T59)	06:18			05:59		19:55 (T78)
	17:23		18:00		19:33			20:06	62	19:28 (T59)	20:37			21:03	39	20:34 (T78)
12	07:56		07:31		07:50			06:58		18:25 (T59)	06:17			05:59		19:55 (T78)
	17:24		18:02		19:34			20:07	62	19:27 (T59)	20:38			21:04	40	20:35 (T78)
13	07:56		07:30		07:48			06:57		18:25 (T59)	06:16			05:59		19:55 (T78)
	17:25		18:03		19:36			20:08	63	19:28 (T59)	20:39			21:04	40	20:35 (T78)
14	07:56		07:29		07:46			06:55		18:25 (T59)	06:15			05:59		19:55 (T78)
	17:26		18:04		19:37			20:09	62	19:27 (T59)	20:41			21:05	41	20:36 (T78)
15	07:55		07:27		07:45			06:54		18:25 (T59)	06:14			05:59		19:55 (T78)
	17:27		18:05		19:38			20:10	62	19:27 (T59)	20:42			21:05	41	20:36 (T78)
16	07:55		07:26		07:43			06:52		18:25 (T59)	06:13			05:59		19:55 (T78)
	17:28		18:06		19:39			20:11	61	19:26 (T59)	20:42			21:06	41	20:36 (T78)
17	07:54		07:25		07:41			06:51		18:25 (T59)	06:12			05:59		19:55 (T78)
	17:30		18:08		19:40			20:12	62	19:27 (T59)	20:43			21:06	41	20:36 (T78)
18	07:54		07:23		07:40			06:49		18:25 (T59)	06:12			05:59		19:55 (T78)
	17:31		18:09		19:41			20:13	61	19:26 (T59)	20:44			21:07	42	20:37 (T78)
19	07:53		07:22		07:38			06:48		18:25 (T59)	06:11			05:59		19:55 (T78)
	17:32		18:10		19:42			20:14	61	19:26 (T59)	20:45			21:07	42	20:37 (T78)
20	07:53		07:21		07:36			06:46		18:25 (T59)	06:10			05:59		19:55 (T78)
	17:33		18:11		19:43			20:15	59	19:24 (T59)	20:46			21:07	42	20:37 (T78)
21	07:52		07:19		07:35			06:45		18:26 (T59)	06:09			05:59		19:56 (T78)
	17:34		18:13		19:44			20:16	58	19:24 (T59)	20:47			21:07	42	20:38 (T78)
22	07:52		07:18		07:33			06:43		18:26 (T59)	06:08			05:59		19:56 (T78)
	17:35		18:14		19:45			20:17	57	19:23 (T59)	20:48			21:08	42	20:38 (T78)
23	07:51		07:16		07:31			06:42		18:26 (T59)	06:07			06:00		19:56 (T78)
	17:37		18:15		19:46			20:18	57	19:23 (T59)	20:49			21:08	42	20:38 (T78)
24	07:50		07:15		07:30			06:40		18:27 (T59)	06:07			06:00		19:56 (T78)
	17:38		18:16		19:48			20:20	55	19:22 (T59)	20:50			21:08	42	20:38 (T78)
25	07:49		07:13		07:28		18:55 (T59)	06:39		18:27 (T59)	06:06			06:00		19:57 (T78)
	17:39		18:17		19:49	14	19:09 (T59)	20:21	54	19:21 (T59)	20:51			21:08	42	20:39 (T78)
26	07:49		07:12		07:26		18:49 (T59)	06:37		18:28 (T59)	06:05			06:00		19:57 (T78)
	17:40		18:18		19:50	24	19:13 (T59)	20:22	52	19:20 (T59)	20:52			21:08	41	20:38 (T78)
27	07:48		07:10		07:25		18:46 (T59)	06:36		18:29 (T59)	06:05		20:06 (T78)	06:01		19:57 (T78)
	17:42		18:20		19:51	31	19:17 (T59)	20:23	50	19:19 (T59)	20:53	12	20:18 (T78)	21:08	41	20:38 (T78)
28	07:47		07:09		07:23		18:43 (T59)	06:35		18:30 (T59)	06:04		20:04 (T78)	06:01		19:58 (T78)
	17:43		18:21		19:52	36	19:19 (T59)	20:24	48	19:18 (T59)	20:54	16	20:20 (T78)	21:08	41	20:39 (T78)
29	07:46				07:21		18:40 (T59)	06:33		18:31 (T59)	06:03		20:02 (T78)	06:02		19:58 (T78)
	17:44				19:53	40	19:20 (T59)	20:25	46	19:17 (T59)	20:54	21	20:23 (T78)	21:08	40	20:38 (T78)
30	07:45				07:20		18:39 (T59)	06:32		18:31 (T59)	06:03		20:01 (T78)	06:02		19:59 (T78)
	17:45				19:54	43	19:22 (T59)	20:26	44	19:15 (T59)	20:55	23	20:24 (T78)	21:08	40	20:39 (T78)
31	07:44				07:18		18:37 (T59)				06:02		20:00 (T78)			
	17:47				19:55	46	19:23 (T59)				20:56	26	20:26 (T78)			
Potential sun hours	297		297		370			399			448			452		
Total, worst case						234			1701			311			1158	
Sun reduction						0.44			0.52			0.57			0.64	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.62			0.62			0.60			0.54	
Total reduction						0.28			0.33			0.34			0.34	
Total, real						64			553			106			398	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1174 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7143)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:03	19:59 (T78)	06:27		06:58	18:25 (T59)	07:28	07:02	07:37
	21:08 39	20:38 (T78)	20:50		20:07 62	19:27 (T59)	19:15	17:28	17:04
2	06:03	20:00 (T78)	06:28		06:59	18:25 (T59)	07:29	07:03	07:38
	21:08 39	20:39 (T78)	20:49		20:06 61	19:26 (T59)	19:13	17:27	17:04
3	06:04	20:00 (T78)	06:29		07:00	18:25 (T59)	07:30	07:04	07:39
	21:08 38	20:38 (T78)	20:48		20:04 61	19:26 (T59)	19:12	17:26	17:04
4	06:04	20:01 (T78)	06:30		07:01	18:25 (T59)	07:31	07:06	07:40
	21:08 37	20:38 (T78)	20:47		20:02 60	19:25 (T59)	19:10	17:25	17:03
5	06:05	20:01 (T78)	06:31	18:58 (T59)	07:02	18:25 (T59)	07:32	07:07	07:41
	21:08 37	20:38 (T78)	20:46 10	19:08 (T59)	20:01 59	19:24 (T59)	19:08	17:24	17:03
6	06:05	20:02 (T78)	06:32	18:54 (T59)	07:03	18:25 (T59)	07:33	07:08	07:42
	21:08 36	20:38 (T78)	20:44 18	19:12 (T59)	19:57 58	19:23 (T59)	19:07	17:22	17:03
7	06:06	20:03 (T78)	06:33	18:51 (T59)	07:04	18:25 (T59)	07:34	07:09	07:43
	21:07 34	20:37 (T78)	20:43 24	19:15 (T59)	19:56 57	19:22 (T59)	19:05	17:21	17:03
8	06:07	20:04 (T78)	06:34	18:48 (T59)	07:05	18:26 (T59)	07:35	07:10	07:44
	21:07 33	20:37 (T78)	20:42 29	19:17 (T59)	19:54 55	19:21 (T59)	19:03	17:20	17:03
9	06:07	20:05 (T78)	06:35	18:46 (T59)	07:06	18:26 (T59)	07:36	07:12	07:45
	21:07 32	20:37 (T78)	20:41 33	19:19 (T59)	19:52 54	19:20 (T59)	19:02	17:19	17:03
10	06:08	20:05 (T78)	06:36	18:44 (T59)	07:07	18:27 (T59)	07:37	07:13	07:46
	21:06 30	20:35 (T78)	20:40 36	19:20 (T59)	19:51 52	19:19 (T59)	19:00	17:18	17:03
11	06:09	20:06 (T78)	06:37	18:43 (T59)	07:07	18:28 (T59)	07:38	07:14	07:46
	21:06 29	20:35 (T78)	20:38 39	19:22 (T59)	19:49 49	19:17 (T59)	18:59	17:17	17:03
12	06:09	20:08 (T78)	06:37	18:41 (T59)	07:08	18:29 (T59)	07:39	07:15	07:47
	21:05 27	20:35 (T78)	20:37 42	19:23 (T59)	19:47 46	19:15 (T59)	18:57	17:16	17:03
13	06:10	20:08 (T78)	06:39	18:40 (T59)	07:09	18:30 (T59)	07:40	07:16	07:48
	21:05 25	20:33 (T78)	20:36 44	19:24 (T59)	19:46 44	19:14 (T59)	18:55	17:15	17:03
14	06:11	20:10 (T78)	06:40	18:38 (T59)	07:10	18:31 (T59)	07:41	07:18	07:49
	21:05 22	20:32 (T78)	20:34 47	19:25 (T59)	19:44 41	19:12 (T59)	18:54	17:14	17:04
15	06:12	20:12 (T78)	06:41	18:37 (T59)	07:11	18:32 (T59)	07:43	07:19	07:50
	21:04 19	20:31 (T78)	20:33 49	19:26 (T59)	19:42 36	19:08 (T59)	18:52	17:13	17:04
16	06:12	20:14 (T78)	06:42	18:36 (T59)	07:12	18:34 (T59)	07:44	07:20	07:50
	21:03 15	20:29 (T78)	20:32 51	19:27 (T59)	19:40 31	19:05 (T59)	18:51	17:13	17:04
17	06:13	20:17 (T78)	06:43	18:35 (T59)	07:13	18:37 (T59)	07:45	07:21	07:51
	21:03 8	20:25 (T78)	20:30 52	19:27 (T59)	19:39 25	19:02 (T59)	18:49	17:12	17:04
18	06:14		06:44	18:34 (T59)	07:14	18:41 (T59)	07:46	07:22	07:52
	21:02		20:29 54	19:28 (T59)	19:37 16	18:57 (T59)	18:48	17:11	17:05
19	06:15		06:45	18:33 (T59)	07:15		07:47	07:24	07:52
	21:01		20:27 55	19:28 (T59)	19:35		18:46	17:10	17:05
20	06:16		06:46	18:32 (T59)	07:16		07:48	07:25	07:53
	21:01		20:26 57	19:29 (T59)	19:34		18:45	17:10	17:05
21	06:16		06:47	18:31 (T59)	07:17		07:49	07:26	07:53
	21:00		20:24 58	19:29 (T59)	19:32		18:43	17:09	17:06
22	06:17		06:48	18:30 (T59)	07:18		07:50	07:27	07:54
	20:59		20:23 59	19:29 (T59)	19:30		18:42	17:08	17:06
23	06:18		06:49	18:30 (T59)	07:19		07:52	07:28	07:54
	20:58		20:21 59	19:29 (T59)	19:29		18:40	17:08	17:07
24	06:19		06:50	18:28 (T59)	07:20		07:53	07:29	07:55
	20:58		20:20 60	19:28 (T59)	19:27		18:39	17:07	17:07
25	06:20		06:51	18:27 (T59)	07:22		07:54	07:30	07:55
	20:57		20:18 61	19:28 (T59)	19:25		18:37	17:07	17:08
26	06:21		06:52	18:27 (T59)	07:23		07:55	07:32	07:56
	20:56		20:17 61	19:28 (T59)	19:23		18:36	17:06	17:09
27	06:22		06:53	18:26 (T59)	07:24		07:56	07:33	07:56
	20:55		20:15 62	19:28 (T59)	19:22		18:35	17:06	17:09
28	06:23		06:54	18:26 (T59)	07:25		07:57	07:34	07:56
	20:54		20:14 62	19:28 (T59)	19:20		18:33	17:05	17:10
29	06:24		06:55	18:26 (T59)	07:26		07:58	07:35	07:57
	20:53		20:12 62	19:28 (T59)	19:18		18:32	17:05	17:11
30	06:25		06:56	18:25 (T59)	07:27		08:00	07:36	07:57
	20:52		20:10 63	19:28 (T59)	19:17		18:31	17:04	17:12
31	06:26		06:57	18:25 (T59)			08:01		07:57
	20:51		20:09 62	19:27 (T59)			18:30		17:12
Potential sun hours	459		428		375		345	297	287
Total, worst case		500		1309		867			
Sun reduction		0.66		0.61		0.59			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.54		0.62		0.62			
Total reduction		0.35		0.38		0.37			
Total, real		177		500		320			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1179 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7147)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March			April			May			June		
1	07:57		08:40 (T71)	07:43	07:07			07:16		18:20 (T69)	06:30		06:50 (T67)	06:02		07:05 (T68)
	17:13	50	09:30 (T71)	17:48	18:22			19:56	60	19:20 (T69)	20:27	135	19:14 (T69)	20:57	57	08:02 (T68)
2	07:57		08:41 (T71)	07:42	07:06			07:15		18:19 (T69)	06:29		06:49 (T67)	06:01		07:06 (T68)
	17:14	49	09:30 (T71)	17:49	18:23			19:57	62	19:21 (T69)	20:28	134	19:13 (T69)	20:57	56	08:02 (T68)
3	07:57		08:41 (T71)	07:41	07:04			07:13		18:18 (T69)	06:28		06:48 (T67)	06:01		07:07 (T68)
	17:15	49	09:30 (T71)	17:50	18:24			19:58	64	19:22 (T69)	20:29	133	19:12 (T69)	20:58	55	08:02 (T68)
4	07:57		08:42 (T71)	07:40	07:02			07:11		18:16 (T69)	06:27		06:48 (T67)	06:01		07:06 (T68)
	17:16	49	09:31 (T71)	17:51	18:25			19:59	66	19:22 (T69)	20:30	130	19:10 (T69)	20:59	55	08:01 (T68)
5	07:57		08:43 (T71)	07:39	07:01			07:10		18:16 (T69)	06:25		06:48 (T67)	06:00		07:07 (T68)
	17:17	48	09:31 (T71)	17:53	18:26			20:00	67	19:23 (T69)	20:31	128	19:09 (T69)	20:59	54	08:01 (T68)
6	07:57		08:43 (T71)	07:38	06:59			07:08		18:15 (T69)	06:24		06:49 (T67)	06:00		07:08 (T68)
	17:18	48	09:31 (T71)	17:54	18:28			20:00	68	19:23 (T69)	20:32	126	19:08 (T69)	21:00	53	08:01 (T68)
7	07:57		08:44 (T71)	07:37	06:58			07:06		18:13 (T69)	06:23		06:50 (T67)	06:00		07:09 (T68)
	17:19	48	09:32 (T71)	17:55	18:29			20:01	70	19:23 (T69)	20:33	122	19:07 (T69)	21:01	52	08:01 (T68)
8	07:57		08:45 (T71)	07:36	07:56			07:05		18:13 (T69)	06:22		06:51 (T67)	05:59		07:08 (T68)
	17:20	47	09:32 (T71)	17:57	19:30			20:02	71	19:24 (T69)	20:34	119	19:06 (T69)	21:01	52	08:00 (T68)
9	07:57		08:46 (T71)	07:35	07:54			07:03		18:12 (T69)	06:21		06:52 (T67)	05:59		07:09 (T68)
	17:21	47	09:33 (T71)	17:58	19:31			20:03	72	19:24 (T69)	20:35	114	19:04 (T69)	21:02	52	08:01 (T68)
10	07:57		08:46 (T71)	07:33	07:53			07:02		18:11 (T69)	06:20		06:53 (T67)	05:59		07:10 (T68)
	17:22	46	09:32 (T71)	17:59	19:32			20:04	72	19:23 (T69)	20:36	110	19:03 (T69)	21:03	51	08:01 (T68)
11	07:56		08:47 (T71)	07:32	07:51			07:00		18:11 (T69)	06:18		06:55 (T67)	05:59		07:10 (T68)
	17:23	45	09:32 (T71)	18:00	19:33			20:06	73	19:24 (T69)	20:37	105	19:01 (T69)	21:03	51	08:01 (T68)
12	07:56		08:48 (T71)	07:31	07:50			06:58		18:11 (T69)	06:17		06:57 (T67)	05:59		07:11 (T68)
	17:24	45	09:33 (T71)	18:01	19:34			20:07	72	19:23 (T69)	20:38	98	18:59 (T69)	21:04	50	08:01 (T68)
13	07:56		08:48 (T71)	07:30	07:48			06:57		18:11 (T69)	06:16		07:00 (T68)	05:59		07:11 (T68)
	17:25	44	09:32 (T71)	18:03	19:35			20:08	73	19:24 (T69)	20:39	91	18:57 (T69)	21:04	50	08:01 (T68)
14	07:55		08:49 (T71)	07:28	07:46			06:55		18:10 (T69)	06:15		07:00 (T68)	05:59		07:12 (T68)
	17:26	44	09:33 (T71)	18:04	19:37			20:09	73	19:23 (T69)	20:40	84	18:53 (T69)	21:05	49	08:01 (T68)
15	07:55		08:49 (T71)	07:27	07:45			06:54		18:10 (T69)	06:14		07:00 (T68)	05:59		07:12 (T68)
	17:27	43	09:32 (T71)	18:05	19:38			20:10	74	19:24 (T69)	20:41	72	18:48 (T69)	21:05	49	08:01 (T68)
16	07:55		08:50 (T71)	07:26	07:43			06:52		07:30 (T68)	06:13		07:00 (T68)	05:59		07:12 (T68)
	17:28	42	09:32 (T71)	18:06	19:39			20:11	88	19:23 (T69)	20:42	66	08:06 (T68)	21:06	49	08:01 (T68)
17	07:54		08:51 (T71)	07:25	07:41			06:51		07:25 (T68)	06:12		07:00 (T68)	05:59		07:12 (T68)
	17:30	40	09:31 (T71)	18:08	19:40			20:12	98	19:23 (T69)	20:43	66	08:06 (T68)	21:06	49	08:01 (T68)
18	07:54		08:52 (T71)	07:23	07:40			06:49		07:08 (T67)	06:11		07:00 (T68)	05:59		07:13 (T68)
	17:31	40	09:32 (T71)	18:09	19:41			20:13	105	19:22 (T69)	20:44	65	08:05 (T68)	21:06	48	08:01 (T68)
19	07:53		08:53 (T71)	07:22	07:38			06:47		07:07 (T67)	06:11		07:00 (T68)	05:59		07:13 (T68)
	17:32	38	09:31 (T71)	18:10	19:42			20:14	115	19:22 (T69)	20:45	65	08:05 (T68)	21:07	48	08:01 (T68)
20	07:53		08:55 (T71)	07:20	07:36			06:46		07:05 (T67)	06:10		07:01 (T68)	05:59		07:13 (T68)
	17:33	36	09:31 (T71)	18:11	19:43			20:15	121	19:21 (T69)	20:46	65	08:06 (T68)	21:07	48	08:01 (T68)
21	07:52		08:56 (T71)	07:19	07:35			06:44		07:04 (T67)	06:09		07:01 (T68)	05:59		07:14 (T68)
	17:34	34	09:30 (T71)	18:12	19:44			20:16	124	19:21 (T69)	20:47	64	08:05 (T68)	21:07	48	08:02 (T68)
22	07:51		08:57 (T71)	07:18	07:33			06:43		07:02 (T67)	06:08		07:01 (T68)	05:59		07:14 (T68)
	17:35	32	09:29 (T71)	18:14	19:45			20:17	127	19:20 (T69)	20:48	64	08:05 (T68)	21:07	48	08:02 (T68)
23	07:51		08:59 (T71)	07:16	07:31		18:43 (T69)	06:42		07:01 (T67)	06:07		07:01 (T68)	06:00		07:14 (T68)
	17:37	30	09:29 (T71)	18:15	19:46	19	19:02 (T69)	20:18	129	19:20 (T69)	20:49	63	08:04 (T68)	21:08	48	08:02 (T68)
24	07:50		09:00 (T71)	07:15	07:30		18:39 (T69)	06:40		06:59 (T67)	06:07		07:02 (T68)	06:00		07:14 (T68)
	17:38	27	09:27 (T71)	18:16	19:47	28	19:07 (T69)	20:19	130	19:19 (T69)	20:50	62	08:04 (T68)	21:08	48	08:02 (T68)
25	07:49		09:02 (T71)	07:13	07:28		18:35 (T69)	06:39		06:58 (T67)	06:06		07:02 (T68)	06:00		07:15 (T68)
	17:39	23	09:25 (T71)	18:17	19:48	35	19:10 (T69)	20:20	131	19:19 (T69)	20:51	62	08:04 (T68)	21:08	48	08:03 (T68)
26	07:48		09:04 (T71)	07:12	07:26		18:32 (T69)	06:37		06:57 (T67)	06:05		07:02 (T68)	06:00		07:14 (T68)
	17:40	19	09:23 (T71)	18:18	19:50	40	19:12 (T69)	20:21	133	19:18 (T69)	20:52	61	08:03 (T68)	21:08	49	08:03 (T68)
27	07:48		09:07 (T71)	07:10	07:25		18:30 (T69)	06:36		06:55 (T67)	06:05		07:03 (T68)	06:01		07:14 (T68)
	17:42	13	09:20 (T71)	18:20	19:51	45	19:15 (T69)	20:23	134	19:17 (T69)	20:52	60	08:03 (T68)	21:08	49	08:03 (T68)
28	07:47			07:09	07:23		18:27 (T69)	06:35		06:54 (T67)	06:04		07:03 (T68)	06:01		07:15 (T68)
	17:43			18:21	19:52	49	19:16 (T69)	20:24	134	19:17 (T69)	20:53	60	08:03 (T68)	21:08	49	08:04 (T68)
29	07:46				07:21		18:25 (T69)	06:33		06:53 (T67)	06:03		07:04 (T68)	06:02		07:14 (T68)
	17:44				19:53	52	19:17 (T69)	20:25	134	19:16 (T69)	20:54	59	08:03 (T68)	21:08	50	08:04 (T68)
30	07:45				07:20		18:24 (T69)	06:32		06:51 (T67)	06:03		07:04 (T68)	06:02		07:15 (T68)
	17:45				19:54	55	19:19 (T69)	20:26	134	19:14 (T69)	20:55	58	08:02 (T68)	21:08	50	08:05 (T68)
31	07:44				07:18		18:22 (T69)				06:02		07:05 (T68)			
	17:46				19:55	57	19:19 (T69)				20:56	57	08:02 (T68)			
Potential sun hours	297			297	370			399			448			452		
Total, worst case		1076				380			2874			2698			1515	
Sun reduction		0.31				0.44			0.52			0.57			0.64	
Oper. time red.		1.00				1.00			1.00			1.00			1.00	
Wind dir. red.		0.53				0.63			0.64			0.66			0.67	
Total reduction		0.16				0.27			0.33			0.37			0.42	
Total, real		173				103			940			999			637	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1179 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7147)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November		December	
1	06:03		07:14 (T68)	06:27		07:06 (T67)	06:57		18:10 (T69)	07:28	07:02			07:37		08:29 (T71)
	21:08	51	08:05 (T68)	20:50	100	19:09 (T69)	20:07	73	19:23 (T69)	19:15	17:28			17:04	45	09:14 (T71)
2	06:03		07:15 (T68)	06:28		07:04 (T67)	06:58		18:10 (T69)	07:29	07:03			07:38		08:29 (T71)
	21:08	51	08:06 (T68)	20:49	107	19:11 (T69)	20:05	72	19:22 (T69)	19:13	17:27			17:04	46	09:15 (T71)
3	06:04		07:14 (T68)	06:29		07:02 (T67)	06:59		18:10 (T69)	07:30	07:04			07:39		08:29 (T71)
	21:08	52	08:06 (T68)	20:48	112	19:13 (T69)	20:04	72	19:22 (T69)	19:11	17:26			17:04	47	09:16 (T71)
4	06:04		07:15 (T68)	06:30		07:01 (T67)	07:00		18:10 (T69)	07:31	07:05			07:40		08:29 (T71)
	21:08	52	08:07 (T68)	20:47	117	19:15 (T69)	20:02	71	19:21 (T69)	19:10	17:25			17:03	47	09:16 (T71)
5	06:05		07:14 (T68)	06:31		07:00 (T67)	07:01		18:10 (T69)	07:32	07:07			07:41		08:29 (T71)
	21:08	52	08:06 (T68)	20:45	120	19:16 (T69)	20:01	70	19:20 (T69)	19:08	17:23			17:03	48	09:17 (T71)
6	06:05		07:14 (T68)	06:31		06:59 (T67)	07:02		18:11 (T69)	07:33	07:08			07:42		08:29 (T71)
	21:07	53	08:07 (T68)	20:44	123	19:17 (T69)	19:57	68	19:19 (T69)	19:07	17:22			17:03	48	09:17 (T71)
7	06:06		07:14 (T68)	06:32		06:58 (T67)	07:03		18:11 (T69)	07:34	07:09			07:43		08:30 (T71)
	21:07	53	08:07 (T68)	20:43	126	19:18 (T69)	19:56	67	19:18 (T69)	19:05	17:21			17:03	48	09:18 (T71)
8	06:07		07:14 (T68)	06:33		06:58 (T67)	07:04		18:11 (T69)	07:35	07:10			07:44		08:30 (T71)
	21:07	54	08:08 (T68)	20:42	129	19:19 (T69)	19:54	66	19:17 (T69)	19:03	17:20			17:03	49	09:19 (T71)
9	06:07		07:14 (T68)	06:34		06:57 (T67)	07:05		18:12 (T69)	07:36	07:11			07:44		08:31 (T71)
	21:06	55	08:09 (T68)	20:41	132	19:20 (T69)	19:52	64	19:16 (T69)	19:02	17:19			17:03	48	09:19 (T71)
10	06:08		07:13 (T68)	06:35		06:57 (T67)	07:06		18:12 (T69)	07:37	07:13			07:45		08:31 (T71)
	21:06	56	08:09 (T68)	20:39	133	19:21 (T69)	19:51	63	19:15 (T69)	19:00	17:18			17:03	49	09:20 (T71)
11	06:09		07:13 (T68)	06:36		06:58 (T67)	07:07		18:13 (T69)	07:38	07:14			07:46		08:32 (T71)
	21:06	57	08:10 (T68)	20:38	134	19:22 (T69)	19:49	60	19:13 (T69)	18:58	17:17			17:03	49	09:21 (T71)
12	06:09		07:13 (T68)	06:37		06:59 (T67)	07:08		18:13 (T69)	07:39	07:15			07:47		08:31 (T71)
	21:05	58	08:11 (T68)	20:37	134	19:23 (T69)	19:47	58	19:11 (T69)	18:57	17:16			17:03	49	09:20 (T71)
13	06:10		07:13 (T68)	06:38		07:00 (T67)	07:09		18:14 (T69)	07:40	07:16			07:48		08:32 (T71)
	21:05	57	08:10 (T68)	20:35	134	19:23 (T69)	19:45	55	19:09 (T69)	18:55	17:15			17:03	49	09:21 (T71)
14	06:11		07:13 (T68)	06:39		07:01 (T67)	07:10		18:15 (T69)	07:41	07:17			07:49		08:32 (T71)
	21:04	58	08:11 (T68)	20:34	134	19:24 (T69)	19:44	52	19:07 (T69)	18:54	17:14			17:04	50	09:22 (T71)
15	06:12		07:13 (T68)	06:40		07:02 (T67)	07:11		18:16 (T69)	07:42	07:19		08:40 (T71)	07:49		08:33 (T71)
	21:04	59	08:12 (T68)	20:33	133	19:24 (T69)	19:42	49	19:05 (T69)	18:52	17:13	13	08:53 (T71)	17:04	50	09:23 (T71)
16	06:12		07:13 (T68)	06:41		07:03 (T67)	07:12		18:18 (T69)	07:43	07:20		08:37 (T71)	07:50		08:33 (T71)
	21:03	60	08:13 (T68)	20:31	133	19:25 (T69)	19:40	45	19:03 (T69)	18:51	17:13	19	08:56 (T71)	17:04	49	09:22 (T71)
17	06:13		07:12 (T68)	06:42		07:04 (T67)	07:13		18:19 (T69)	07:45	07:21		08:35 (T71)	07:51		08:34 (T71)
	21:03	60	08:12 (T68)	20:30	132	19:25 (T69)	19:39	42	19:01 (T69)	18:49	17:12	23	08:58 (T71)	17:04	49	09:23 (T71)
18	06:14		07:12 (T68)	06:43		07:05 (T67)	07:14		18:22 (T69)	07:46	07:22		08:34 (T71)	07:51		08:34 (T71)
	21:02	61	08:13 (T68)	20:28	132	19:26 (T69)	19:37	36	18:58 (T69)	18:48	17:11	27	09:01 (T71)	17:05	50	09:24 (T71)
19	06:15		07:12 (T68)	06:44		07:06 (T67)	07:15		18:24 (T69)	07:47	07:23		08:33 (T71)	07:52		08:34 (T71)
	21:01	62	08:14 (T68)	20:27	131	19:26 (T69)	19:35	30	18:54 (T69)	18:46	17:10	30	09:03 (T71)	17:05	50	09:24 (T71)
20	06:16		07:12 (T68)	06:45		07:07 (T67)	07:16		18:28 (T69)	07:48	07:24		08:32 (T71)	07:53		08:35 (T71)
	21:01	62	08:14 (T68)	20:26	128	19:26 (T69)	19:34	22	18:50 (T69)	18:45	17:10	32	09:04 (T71)	17:05	50	09:25 (T71)
21	06:16		07:12 (T68)	06:46		07:08 (T67)	07:17		18:37 (T69)	07:49	07:26		08:31 (T71)	07:53		08:35 (T71)
	21:00	63	08:15 (T68)	20:24	127	19:26 (T69)	19:32	4	18:41 (T69)	18:43	17:09	34	09:05 (T71)	17:06	50	09:25 (T71)
22	06:17		07:12 (T68)	06:47		07:08 (T67)	07:18			07:50	07:27		08:31 (T71)	07:54		08:36 (T71)
	20:59	63	08:15 (T68)	20:23	125	19:25 (T69)	19:30			18:42	17:08	36	09:07 (T71)	17:06	50	09:26 (T71)
23	06:18		07:11 (T68)	06:48		07:09 (T67)	07:19			07:51	07:28		08:30 (T71)	07:54		08:36 (T71)
	20:58	64	08:15 (T68)	20:21	120	19:25 (T69)	19:28			18:40	17:08	38	09:08 (T71)	17:07	50	09:26 (T71)
24	06:19		07:11 (T68)	06:49		07:10 (T67)	07:20			07:52	07:29		08:29 (T71)	07:55		08:37 (T71)
	20:57	64	08:15 (T68)	20:20	115	19:25 (T69)	19:27			18:39	17:07	40	09:09 (T71)	17:07	50	09:27 (T71)
25	06:20		07:11 (T68)	06:50		07:11 (T67)	07:21			07:54	07:30		08:29 (T71)	07:55		08:37 (T71)
	20:57	65	08:16 (T68)	20:18	104	19:25 (T69)	19:25			18:37	17:06	40	09:09 (T71)	17:08	50	09:27 (T71)
26	06:21		07:11 (T68)	06:51		07:28 (T68)	07:22			07:55	07:31		08:28 (T71)	07:55		08:37 (T71)
	20:56	65	08:16 (T68)	20:17	97	19:25 (T69)	19:23			18:36	17:06	42	09:10 (T71)	17:09	50	09:27 (T71)
27	06:22		07:11 (T68)	06:52		07:32 (T68)	07:23			07:56	07:32		08:29 (T71)	07:56		08:39 (T71)
	20:55	65	08:16 (T68)	20:15	87	19:25 (T69)	19:22			18:35	17:06	43	09:12 (T71)	17:09	49	09:28 (T71)
28	06:23		07:11 (T68)	06:53		18:11 (T69)	07:24			07:57	07:34		08:29 (T71)	07:56		08:39 (T71)
	20:54	66	08:17 (T68)	20:13	73	19:24 (T69)	19:20			18:33	17:05	44	09:13 (T71)	17:10	49	09:28 (T71)
29	06:24		07:11 (T68)	06:54		18:11 (T69)	07:25			07:58	07:35		08:29 (T71)	07:56		08:39 (T71)
	20:53	78	19:01 (T69)	20:12	73	19:24 (T69)	19:18			18:32	17:05	44	09:13 (T71)	17:11	50	09:29 (T71)
30	06:25		07:11 (T68)	06:55		18:11 (T69)	07:26			07:59	07:36		08:29 (T71)	07:56		08:40 (T71)
	20:52	86	19:05 (T69)	20:10	73	19:24 (T69)	19:17			18:31	17:04	45	09:14 (T71)	17:12	49	09:29 (T71)
31	06:26		07:10 (T67)	06:56		18:11 (T69)				08:01				07:57		08:40 (T71)
	20:51	92	19:08 (T69)	20:09	72	19:23 (T69)				18:29				17:12	49	09:29 (T71)
Potential sun hours	459			428			375			345	298			288		
Total, worst case		1894			3590			1139				550			1516	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.67			0.65			0.63				0.53			0.53	
Total reduction		0.43			0.39			0.36				0.16			0.11	
Total, real		820			1398			414				86			173	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1204 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7169)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June
1	07:57			07:44		08:06 (T22)	07:07		16:24 (T21)	07:16			06:30		07:03 (T20)	06:01
	17:13			17:47	89	17:05 (T21)	18:22	26	16:50 (T21)	19:56			20:27	19	07:22 (T20)	20:57
2	07:58			07:43		08:06 (T22)	07:06		16:28 (T21)	07:14			06:29		07:04 (T20)	06:01
	17:13			17:48	89	17:05 (T21)	18:23	17	16:45 (T21)	19:57			20:28	16	07:20 (T20)	20:58
3	07:58			07:42		08:07 (T22)	07:04			07:13			06:27		07:06 (T20)	06:00
	17:14			17:50	89	17:06 (T21)	18:24			19:58			20:29	12	07:18 (T20)	20:59
4	07:58			07:40		08:08 (T22)	07:02			07:11			06:26			06:00
	17:15			17:51	88	17:06 (T21)	18:25			19:59			20:30			20:59
5	07:58			07:39		08:08 (T22)	07:01			07:09			06:25			05:59
	17:16			17:52	89	17:07 (T21)	18:26			20:00			20:31			21:00
6	07:58			07:38		08:09 (T22)	06:59			07:08			06:24			05:59
	17:17			17:53	87	17:07 (T21)	18:27			20:00			20:32			21:01
7	07:58			07:37		08:09 (T22)	06:58			07:06			06:22			05:59
	17:18			17:55	87	17:07 (T21)	18:28			20:01			20:33			21:01
8	07:57			07:36		08:11 (T22)	07:56			07:04			06:21			05:59
	17:19			17:56	84	17:07 (T21)	19:30			20:02			20:34			21:02
9	07:57			07:35		08:12 (T22)	07:54			07:03			06:20			05:58
	17:20			17:57	82	17:08 (T21)	19:31			20:03			20:36			21:03
10	07:57		16:23 (T21)	07:34		08:14 (T22)	07:53			07:01			06:19			05:58
	17:21	11	16:34 (T21)	17:59	78	17:08 (T21)	19:32			20:05			20:37			21:03
11	07:57		16:21 (T21)	07:32		08:16 (T22)	07:51			07:00			06:18			05:58
	17:22	17	16:38 (T21)	18:00	73	17:07 (T21)	19:33			20:06			20:38			21:04
12	07:57		16:18 (T21)	07:31		16:05 (T21)	07:50			06:58			06:17			05:58
	17:23	21	16:39 (T21)	18:01	62	17:07 (T21)	19:34			20:07			20:39			21:04
13	07:56		16:17 (T21)	07:30		16:05 (T21)	07:48			06:56			06:16			05:58
	17:24	25	16:42 (T21)	18:02	62	17:07 (T21)	19:35			20:08			20:40			21:05
14	07:56		16:15 (T21)	07:29		16:06 (T21)	07:46			06:55		07:14 (T20)	06:15			05:58
	17:25	28	16:43 (T21)	18:03	62	17:08 (T21)	19:36			20:09	8	07:22 (T20)	20:41			21:05
15	07:55		16:15 (T21)	07:27		16:06 (T21)	07:45			06:53		07:12 (T20)	06:14			05:58
	17:27	31	16:46 (T21)	18:05	61	17:07 (T21)	19:37			20:10	12	07:24 (T20)	20:42			21:06
16	07:55		16:13 (T21)	07:26		16:07 (T21)	07:43			06:52		07:11 (T20)	06:13			05:58
	17:28	34	16:47 (T21)	18:06	60	17:07 (T21)	19:39			20:11	15	07:26 (T20)	20:43			21:06
17	07:55		08:16 (T22)	07:25		16:07 (T21)	07:41			06:50		07:09 (T20)	06:12			05:58
	17:29	39	16:49 (T21)	18:07	58	17:05 (T21)	19:40			20:12	17	07:26 (T20)	20:44			21:07
18	07:54		08:15 (T22)	07:23		16:08 (T21)	07:40			06:49		07:08 (T20)	06:11			05:58
	17:30	45	16:50 (T21)	18:08	57	17:05 (T21)	19:41			20:13	19	07:27 (T20)	20:45			21:07
19	07:54		08:15 (T22)	07:22		16:09 (T21)	07:38			06:47		07:06 (T20)	06:10			05:58
	17:31	51	16:52 (T21)	18:10	56	17:05 (T21)	19:42			20:14	21	07:27 (T20)	20:46			21:07
20	07:53		08:14 (T22)	07:21		16:09 (T21)	07:36			06:46		07:05 (T20)	06:09			05:58
	17:32	55	16:53 (T21)	18:11	55	17:04 (T21)	19:43			20:15	23	07:28 (T20)	20:47			21:07
21	07:52		08:13 (T22)	07:19		16:10 (T21)	07:34			06:44		07:03 (T20)	06:08			05:58
	17:34	59	16:54 (T21)	18:12	53	17:03 (T21)	19:44			20:16	25	07:28 (T20)	20:47			21:08
22	07:52		08:13 (T22)	07:18		16:11 (T21)	07:33			06:43		07:02 (T20)	06:07			05:59
	17:35	63	16:56 (T21)	18:13	51	17:02 (T21)	19:45			20:17	26	07:28 (T20)	20:48			21:08
23	07:51		08:12 (T22)	07:16		16:13 (T21)	07:31			06:41		07:00 (T20)	06:07			05:59
	17:36	66	16:57 (T21)	18:14	48	17:01 (T21)	19:46			20:18	27	07:27 (T20)	20:49			21:08
24	07:50		08:11 (T22)	07:15		16:13 (T21)	07:29			06:40		07:00 (T20)	06:06			05:59
	17:37	70	16:58 (T21)	18:16	46	16:59 (T21)	19:47			20:20	28	07:28 (T20)	20:50			21:08
25	07:50		08:10 (T22)	07:13		16:15 (T21)	07:28			06:38		07:00 (T20)	06:05			05:59
	17:38	74	16:59 (T21)	18:17	43	16:58 (T21)	19:48			20:21	28	07:28 (T20)	20:51			21:09
26	07:49		08:10 (T22)	07:12		16:16 (T21)	07:26			06:37		07:00 (T20)	06:04			06:00
	17:40	76	17:00 (T21)	18:18	40	16:56 (T21)	19:49			20:22	26	07:26 (T20)	20:52			21:09
27	07:48		08:09 (T22)	07:10		16:19 (T21)	07:24			06:35		07:00 (T20)	06:04			06:00
	17:41	79	17:01 (T21)	18:19	36	16:55 (T21)	19:51			20:23	26	07:26 (T20)	20:53			21:09
28	07:47		08:08 (T22)	07:09		16:21 (T21)	07:23			06:34		07:01 (T20)	06:03			06:00
	17:42	82	17:02 (T21)	18:20	31	16:52 (T21)	19:52			20:24	25	07:26 (T20)	20:54			21:09
29	07:46		08:07 (T22)				07:21			06:33		07:01 (T20)	06:03			06:01
	17:43	85	17:03 (T21)				19:53			20:25	23	07:24 (T20)	20:55			21:09
30	07:45		08:06 (T22)				07:19			06:31		07:02 (T20)	06:02			06:01
	17:45	86	17:03 (T21)				19:54			20:26	21	07:23 (T20)	20:55			21:09
31	07:44		08:06 (T22)				07:18						06:02			
	17:46	88	17:04 (T21)				19:55						20:56			
Potential sun hours	297			297			370			399			449			453
Total, worst case		1185			1816			43			370			47		
Sun reduction		0.31			0.40			0.44			0.52			0.57		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.68			0.70			0.73			0.67			0.67		
Total reduction		0.21			0.28			0.32			0.35			0.38		
Total, real		250			508			14			128			18		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1204 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7169)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August			September		October			November			December		
1	06:02		06:26			06:57		07:27			07:02		07:43 (T22)	07:37		16:03 (T21)
	21:09		20:50			20:07		19:15			17:28	78	16:37 (T21)	17:03	17	16:20 (T21)
2	06:02		06:27			06:58		07:28			07:03		07:42 (T22)	07:38		16:06 (T21)
	21:09		20:49			20:06		19:13			17:26	82	16:37 (T21)	17:03	11	16:17 (T21)
3	06:03		06:28			06:59		07:30			07:04		07:40 (T22)	07:39		
	21:08		20:48			20:04		19:11			17:25	85	16:37 (T21)	17:03		
4	06:03		06:29			07:00		07:31			07:06		07:39 (T22)	07:40		
	21:08		20:47			20:02		19:10			17:24	87	16:37 (T21)	17:03		
5	06:04		06:30			07:01		07:32			07:07		07:39 (T22)	07:41		
	21:08		20:46			20:01		19:08			17:23	87	16:37 (T21)	17:02		
6	06:04		06:31			07:02		07:33			07:08		07:38 (T22)	07:42		
	21:08		20:45			19:57		19:06			17:22	89	16:37 (T21)	17:02		
7	06:05		06:32			07:03		07:34			07:09		07:37 (T22)	07:43		
	21:08		20:43			19:56		19:05			17:21	89	16:36 (T21)	17:02		
8	06:06		06:33			07:04		07:35			07:10		07:37 (T22)	07:44		
	21:07		20:42			19:54		19:03			17:20	89	16:36 (T21)	17:02		
9	06:06		06:34		07:19 (T20)	07:05		07:36			07:12		07:37 (T22)	07:45		
	21:07		20:41	6	07:25 (T20)	19:52		19:01			17:19	89	16:36 (T21)	17:02		
10	06:07		06:35		07:14 (T20)	07:06		07:37			07:13		07:37 (T22)	07:46		
	21:07		20:40	13	07:27 (T20)	19:51		19:00			17:18	89	16:36 (T21)	17:02		
11	06:08		06:36		07:12 (T20)	07:07		07:38		17:05 (T21)	07:14		07:37 (T22)	07:47		
	21:06		20:38	17	07:29 (T20)	19:49		18:58	10	17:15 (T21)	17:17	88	16:35 (T21)	17:02		
12	06:09		06:37		07:11 (T20)	07:08		07:39		16:59 (T21)	07:15		07:38 (T22)	07:47		
	21:06		20:37	19	07:30 (T20)	19:47		18:57	21	17:20 (T21)	17:16	86	16:35 (T21)	17:02		
13	06:09		06:38		07:09 (T20)	07:09		07:40		16:55 (T21)	07:16		07:39 (T22)	07:48		
	21:05		20:36	22	07:31 (T20)	19:45		18:55	28	17:23 (T21)	17:15	84	16:35 (T21)	17:03		
14	06:10		06:39		07:08 (T20)	07:10		07:41		16:53 (T21)	07:18		07:40 (T22)	07:49		
	21:05		20:34	24	07:32 (T20)	19:44		18:53	33	17:26 (T21)	17:14	82	16:34 (T21)	17:03		
15	06:11		06:40		07:08 (T20)	07:11		07:42		16:51 (T21)	07:19		07:41 (T22)	07:50		
	21:04		20:33	25	07:33 (T20)	19:42		18:52	37	17:28 (T21)	17:13	79	16:33 (T21)	17:03		
16	06:12		06:41		07:07 (T20)	07:12		07:44		16:48 (T21)	07:20		07:43 (T22)	07:50		
	21:04		20:32	26	07:33 (T20)	19:40		18:50	41	17:29 (T21)	17:12	76	16:33 (T21)	17:03		
17	06:12		06:42		07:06 (T20)	07:13		07:45		16:46 (T21)	07:21		07:44 (T22)	07:51		
	21:03		20:30	27	07:33 (T20)	19:39		18:49	44	17:30 (T21)	17:11	74	16:33 (T21)	17:04		
18	06:13		06:43		07:06 (T20)	07:14		07:46		16:44 (T21)	07:22		07:45 (T22)	07:52		
	21:02		20:29	27	07:33 (T20)	19:37		18:47	47	17:31 (T21)	17:10	70	16:32 (T21)	17:04		
19	06:14		06:44		07:05 (T20)	07:15		07:47		16:43 (T21)	07:24		07:46 (T22)	07:52		
	21:02		20:27	28	07:33 (T20)	19:35		18:46	49	17:32 (T21)	17:10	66	16:31 (T21)	17:04		
20	06:15		06:45		07:06 (T20)	07:16		07:48		16:42 (T21)	07:25		07:48 (T22)	07:53		
	21:01		20:26	27	07:33 (T20)	19:33		18:44	52	17:34 (T21)	17:09	63	16:31 (T21)	17:05		
21	06:16		06:46		07:07 (T20)	07:17		07:49		16:41 (T21)	07:26		07:49 (T22)	07:54		
	21:00		20:24	26	07:33 (T20)	19:32		18:43	53	17:34 (T21)	17:08	59	16:30 (T21)	17:05		
22	06:17		06:47		07:08 (T20)	07:18		07:50		16:39 (T21)	07:27		07:50 (T22)	07:54		
	20:59		20:23	25	07:33 (T20)	19:30		18:41	56	17:35 (T21)	17:08	55	16:29 (T21)	17:06		
23	06:18		06:48		07:09 (T20)	07:19		07:51		16:38 (T21)	07:28		07:51 (T22)	07:55		
	20:59		20:21	23	07:32 (T20)	19:28		18:40	57	17:35 (T21)	17:07	51	16:28 (T21)	17:06		
24	06:18		06:49		07:10 (T20)	07:20		07:53		16:37 (T21)	07:29		07:53 (T22)	07:55		
	20:58		20:20	21	07:31 (T20)	19:27		18:38	58	17:35 (T21)	17:06	45	16:28 (T21)	17:07		
25	06:19		06:50		07:11 (T20)	07:21		07:54		16:37 (T21)	07:31		07:54 (T22)	07:55		
	20:57		20:18	19	07:30 (T20)	19:25		18:37	59	17:36 (T21)	17:06	40	16:27 (T21)	17:07		
26	06:20		06:51		07:12 (T20)	07:22		07:55		16:36 (T21)	07:32		15:52 (T21)	07:56		
	20:56		20:17	17	07:29 (T20)	19:23		18:36	60	17:36 (T21)	17:05	34	16:26 (T21)	17:08		
27	06:21		06:52		07:13 (T20)	07:23		07:56		16:35 (T21)	07:33		15:54 (T21)	07:56		
	20:55		20:15	14	07:27 (T20)	19:21		18:34	61	17:36 (T21)	17:05	31	16:25 (T21)	17:09		
28	06:22		06:53		07:14 (T20)	07:24		07:57		16:35 (T21)	07:34		15:55 (T21)	07:56		
	20:54		20:14	11	07:25 (T20)	19:20		18:33	61	17:36 (T21)	17:04	29	16:24 (T21)	17:09		
29	06:23		06:54		07:15 (T20)	07:25		07:58		16:35 (T21)	07:35		15:57 (T21)	07:57		
	20:53		20:12	8	07:23 (T20)	19:18		18:32	62	17:37 (T21)	17:04	25	16:22 (T21)	17:10		
30	06:24		06:55			07:26		08:00		16:35 (T21)	07:36		16:00 (T21)	07:57		
	20:52		20:10			19:16		18:30	62	17:37 (T21)	17:04	22	16:22 (T21)	17:11		
31	06:25		06:56					08:01		08:46 (T22)				07:57		
	20:51		20:09					18:29	73	17:37 (T21)				17:12		
Potential sun hours	460		429			375		345			297			287		
Total, worst case				425					1024			2023			28	
Sun reduction				0.61					0.48			0.30			0.22	
Oper. time red.				1.00					1.00			1.00			1.00	
Wind dir. red.				0.67					0.73			0.68			0.73	
Total reduction				0.41					0.35			0.20			0.16	
Total, real				173					356			410			4	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1236 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7193)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		08:21 (T4)		07:43		08:04 (T5)		07:07		07:16	
	17:12	34	08:55 (T4)		17:47	58	09:07 (T4)		18:21		19:56	75
2	07:57		08:21 (T4)		07:42		08:03 (T5)		07:05		07:14	
	17:13	34	08:55 (T4)		17:48	58	09:06 (T4)		18:22		19:57	75
3	07:58		08:22 (T4)		07:41		08:02 (T5)		07:04		07:12	
	17:14	34	08:56 (T4)		17:49	59	09:06 (T4)		18:24		19:58	76
4	07:58		08:22 (T4)		07:40		08:01 (T5)		07:02		07:11	
	17:15	35	08:57 (T4)		17:51	59	09:05 (T4)		18:25		19:59	76
5	07:58		08:22 (T4)		07:39		08:00 (T5)		07:01		07:09	
	17:16	36	08:58 (T4)		17:52	58	09:04 (T4)		18:26		20:00	76
6	07:57		08:22 (T4)		07:38		07:58 (T5)		06:59		07:07	
	17:17	37	08:59 (T4)		17:53	57	09:02 (T4)		18:27		20:00	76
7	07:57		08:22 (T4)		07:37		07:57 (T5)		06:57		07:06	
	17:18	38	09:00 (T4)		17:54	55	09:00 (T4)		18:28		20:01	76
8	07:57		08:22 (T4)		07:36		07:57 (T5)		07:56		07:04	
	17:19	38	09:00 (T4)		17:56	50	08:58 (T4)		19:29		20:02	76
9	07:57		08:22 (T4)		07:35		07:57 (T5)		07:54		07:03	
	17:20	39	09:01 (T4)		17:57	44	08:55 (T4)		19:30		20:03	75
10	07:57		08:22 (T4)		07:34		07:57 (T5)		07:53		07:01	
	17:21	40	09:02 (T4)		17:58	32	08:29 (T5)		19:32		20:04	75
11	07:57		08:23 (T4)		07:32		07:57 (T5)		07:51		06:59	
	17:22	40	09:03 (T4)		17:59	31	08:28 (T5)		19:33		20:05	74
12	07:56		08:22 (T4)		07:31		07:57 (T5)		07:49		06:58	
	17:23	41	09:03 (T4)		18:01	31	08:28 (T5)		19:34		20:06	73
13	07:56		08:23 (T4)		07:30		07:58 (T5)		07:48	08:33 (T3)	06:56	
	17:24	41	09:04 (T4)		18:02	30	08:28 (T5)		19:35	19 08:52 (T3)	20:08	72
14	07:56		08:22 (T4)		07:29		07:58 (T5)		07:46	08:27 (T3)	06:55	
	17:25	42	09:04 (T4)		18:03	28	08:26 (T5)		19:36	29 08:56 (T3)	20:09	71
15	07:55		08:23 (T4)		07:27		07:59 (T5)		07:44	08:24 (T3)	06:53	
	17:26	42	09:05 (T4)		18:04	27	08:26 (T5)		19:37	36 09:00 (T3)	20:10	70
16	07:55		08:22 (T4)		07:26		08:01 (T5)		07:43	08:21 (T3)	06:51	
	17:27	43	09:05 (T4)		18:06	24	08:25 (T5)		19:38	41 09:02 (T3)	20:11	69
17	07:54		08:23 (T4)		07:25		08:01 (T5)		07:41	08:18 (T3)	06:50	
	17:29	43	09:06 (T4)		18:07	22	08:23 (T5)		19:39	46 09:04 (T3)	20:12	67
18	07:54		08:23 (T4)		07:23		08:03 (T5)		07:39	08:15 (T3)	06:48	
	17:30	43	09:06 (T4)		18:08	19	08:22 (T5)		19:41	50 09:05 (T3)	20:13	66
19	07:53		08:23 (T4)		07:22		08:05 (T5)		07:38	08:14 (T3)	06:47	
	17:31	44	09:07 (T4)		18:09	14	08:19 (T5)		19:42	53 09:07 (T3)	20:14	64
20	07:53		08:23 (T4)		07:20		08:09 (T5)		07:36	08:12 (T3)	06:45	
	17:32	44	09:07 (T4)		18:11	6	08:15 (T5)		19:43	56 09:08 (T3)	20:15	62
21	07:52		08:23 (T4)		07:19				07:34	08:10 (T3)	06:44	
	17:33	44	09:07 (T4)		18:12				19:44	59 09:09 (T3)	20:16	61
22	07:52		08:24 (T4)		07:17				07:33	08:09 (T3)	06:42	
	17:34	44	09:08 (T4)		18:13				19:45	62 09:11 (T3)	20:17	59
23	07:51		08:24 (T4)		07:16				07:31	08:07 (T3)	06:41	
	17:36	44	09:08 (T4)		18:14				19:46	64 09:11 (T3)	20:18	56
24	07:50		08:24 (T4)		07:15				07:29	08:06 (T3)	06:39	
	17:37	44	09:08 (T4)		18:15				19:47	66 09:12 (T3)	20:19	54
25	07:49		08:24 (T4)		07:13				07:28	08:05 (T3)	06:38	
	17:38	44	09:08 (T4)		18:17				19:48	68 09:13 (T3)	20:20	51
26	07:49		08:25 (T4)		07:12				07:26	08:04 (T3)	06:36	
	17:39	43	09:08 (T4)		18:18				19:49	69 09:13 (T3)	20:22	48
27	07:48		08:10 (T5)		07:10				07:24	08:02 (T3)	06:35	
	17:41	45	09:09 (T4)		18:19				19:50	71 09:13 (T3)	20:23	45
28	07:47		08:08 (T5)		07:09				07:22	08:01 (T3)	06:34	
	17:42	52	09:09 (T4)		18:20				19:51	72 09:13 (T3)	20:24	42
29	07:46		08:07 (T5)						07:21	08:01 (T3)	06:32	
	17:43	53	09:08 (T4)						19:52	73 09:14 (T3)	20:25	38
30	07:45		08:06 (T5)						07:19	08:00 (T3)	06:31	
	17:44	55	09:08 (T4)						19:54	73 09:13 (T3)	20:26	33
31	07:44		08:05 (T5)						07:17	07:59 (T3)		
	17:46	58	09:08 (T4)						19:55	74 09:13 (T3)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case		1314		762		1081		1931		65		
Sun reduction		0.31		0.40		0.44		0.52		0.57		
Oper. time red.		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.		0.52		0.54		0.60		0.60		0.60		
Total reduction		0.16		0.21		0.26		0.31		0.34		
Total, real		208		160		282		594		22		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1236 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7193)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December	
1	06:01	06:26		06:57	07:54 (T3)	07:27	08:17 (T3)	07:02	07:26 (T5)	07:37	08:05 (T4)
	21:09	20:50		20:07 74	09:08 (T3)	19:14 9	08:26 (T3)	17:27 31	07:57 (T5)	17:03 40	08:45 (T4)
2	06:02	06:27		06:58	07:53 (T3)	07:28		07:03	07:27 (T5)	07:38	08:05 (T4)
	21:08	20:49		20:05 75	09:08 (T3)	19:13		17:26 46	08:26 (T4)	17:03 40	08:45 (T4)
3	06:02	06:28		06:59	07:53 (T3)	07:29		07:04	07:27 (T5)	07:39	08:06 (T4)
	21:08	20:48		20:04 75	09:08 (T3)	19:11		17:25 51	08:28 (T4)	17:02 39	08:45 (T4)
4	06:03	06:29		07:00	07:52 (T3)	07:30		07:05	07:27 (T5)	07:40	08:07 (T4)
	21:08	20:47		20:02 76	09:08 (T3)	19:09		17:24 55	08:30 (T4)	17:02 38	08:45 (T4)
5	06:04	06:30		07:01	07:52 (T3)	07:31		07:07	07:28 (T5)	07:41	08:07 (T4)
	21:08	20:46		20:00 76	09:08 (T3)	19:08		17:23 57	08:32 (T4)	17:02 38	08:45 (T4)
6	06:04	06:31		07:02	07:52 (T3)	07:32		07:08	07:30 (T5)	07:42	08:08 (T4)
	21:08	20:44		19:57 76	09:08 (T3)	19:06		17:21 58	08:34 (T4)	17:02 37	08:45 (T4)
7	06:05	06:32		07:03	07:51 (T3)	07:34		07:09	07:31 (T5)	07:43	08:09 (T4)
	21:07	20:43		19:55 76	09:07 (T3)	19:04		17:20 59	08:35 (T4)	17:02 36	08:45 (T4)
8	06:05	06:33		07:04	07:51 (T3)	07:35		07:10	07:32 (T5)	07:44	08:10 (T4)
	21:07	20:42		19:54 76	09:07 (T3)	19:03		17:19 59	08:36 (T4)	17:02 35	08:45 (T4)
9	06:06	06:34		07:05	07:51 (T3)	07:36		07:12	07:34 (T5)	07:45	08:10 (T4)
	21:07	20:41		19:52 76	09:07 (T3)	19:01		17:18 58	08:37 (T4)	17:02 34	08:44 (T4)
10	06:07	06:35	08:26 (T3)	07:06	07:51 (T3)	07:37		07:13	07:35 (T5)	07:46	08:10 (T4)
	21:06	20:39 16	08:42 (T3)	19:50 75	09:06 (T3)	18:59		17:17 58	08:38 (T4)	17:02 34	08:44 (T4)
11	06:07	06:36	08:22 (T3)	07:07	07:51 (T3)	07:38		07:14	07:36 (T5)	07:47	08:11 (T4)
	21:06	20:38 24	08:46 (T3)	19:49 75	09:06 (T3)	18:58		17:16 58	08:39 (T4)	17:02 34	08:45 (T4)
12	06:08	06:37	08:19 (T3)	07:08	07:51 (T3)	07:39		07:15	07:37 (T5)	07:47	08:12 (T4)
	21:06	20:37 30	08:49 (T3)	19:47 74	09:05 (T3)	18:56		17:15 56	08:39 (T4)	17:02 33	08:45 (T4)
13	06:09	06:38	08:17 (T3)	07:09	07:51 (T3)	07:40		07:16	07:39 (T5)	07:48	08:13 (T4)
	21:05	20:36 34	08:51 (T3)	19:45 74	09:05 (T3)	18:55		17:14 53	08:40 (T4)	17:02 32	08:45 (T4)
14	06:10	06:39	08:15 (T3)	07:10	07:51 (T3)	07:41		07:18	07:40 (T5)	07:49	08:14 (T4)
	21:05	20:34 38	08:53 (T3)	19:44 73	09:04 (T3)	18:53		17:13 51	08:40 (T4)	17:02 32	08:46 (T4)
15	06:10	06:40	08:13 (T3)	07:11	07:51 (T3)	07:42		07:19	07:58 (T4)	07:50	08:14 (T4)
	21:04	20:33 42	08:55 (T3)	19:42 72	09:03 (T3)	18:52		17:12 43	08:41 (T4)	17:03 31	08:45 (T4)
16	06:11	06:41	08:11 (T3)	07:12	07:51 (T3)	07:43		07:20	07:59 (T4)	07:50	08:15 (T4)
	21:04	20:31 46	08:57 (T3)	19:40 71	09:02 (T3)	18:50		17:12 43	08:42 (T4)	17:03 31	08:46 (T4)
17	06:12	06:42	08:09 (T3)	07:13	07:52 (T3)	07:44		07:21	07:58 (T4)	07:51	08:16 (T4)
	21:03	20:30 49	08:58 (T3)	19:38 69	09:01 (T3)	18:48		17:11 44	08:42 (T4)	17:03 30	08:46 (T4)
18	06:13	06:43	08:08 (T3)	07:14	07:52 (T3)	07:46		07:22	07:58 (T4)	07:52	08:16 (T4)
	21:02	20:29 51	08:59 (T3)	19:37 68	09:00 (T3)	18:47		17:10 44	08:42 (T4)	17:04 30	08:46 (T4)
19	06:14	06:44	08:07 (T3)	07:15	07:53 (T3)	07:47		07:24	07:58 (T4)	07:52	08:17 (T4)
	21:02	20:27 54	09:01 (T3)	19:35 66	08:59 (T3)	18:45		17:09 44	08:42 (T4)	17:04 30	08:47 (T4)
20	06:15	06:45	08:05 (T3)	07:16	07:53 (T3)	07:48		07:25	07:59 (T4)	07:53	08:17 (T4)
	21:01	20:26 57	09:02 (T3)	19:33 65	08:58 (T3)	18:44		17:09 44	08:43 (T4)	17:04 30	08:47 (T4)
21	06:15	06:46	08:04 (T3)	07:17	07:54 (T3)	07:49		07:26	07:59 (T4)	07:53	08:18 (T4)
	21:00	20:24 59	09:03 (T3)	19:31 62	08:56 (T3)	18:42		17:08 44	08:43 (T4)	17:05 30	08:48 (T4)
22	06:16	06:47	08:03 (T3)	07:18	07:55 (T3)	07:50	08:38 (T5)	07:27	07:59 (T4)	07:54	08:18 (T4)
	20:59	20:23 60	09:03 (T3)	19:30 60	08:55 (T3)	18:41 9	08:47 (T5)	17:07 44	08:43 (T4)	17:05 30	08:48 (T4)
23	06:17	06:48	08:02 (T3)	07:19	07:56 (T3)	07:51	08:35 (T5)	07:28	07:59 (T4)	07:54	08:19 (T4)
	20:59	20:21 62	09:04 (T3)	19:28 57	08:53 (T3)	18:40 15	08:50 (T5)	17:07 44	08:43 (T4)	17:06 30	08:49 (T4)
24	06:18	06:49	08:01 (T3)	07:20	07:57 (T3)	07:52	08:32 (T5)	07:29	08:00 (T4)	07:55	08:19 (T4)
	20:58	20:20 64	09:05 (T3)	19:26 54	08:51 (T3)	18:38 20	08:52 (T5)	17:06 43	08:43 (T4)	17:06 30	08:49 (T4)
25	06:19	06:50	08:00 (T3)	07:21	07:58 (T3)	07:54	08:30 (T5)	07:30	08:01 (T4)	07:55	08:19 (T4)
	20:57	20:18 66	09:06 (T3)	19:25 51	08:49 (T3)	18:37 23	08:53 (T5)	17:05 43	08:44 (T4)	17:07 30	08:49 (T4)
26	06:20	06:51	07:59 (T3)	07:22	08:00 (T3)	07:55	08:30 (T5)	07:32	08:01 (T4)	07:56	08:20 (T4)
	20:56	20:17 67	09:06 (T3)	19:23 47	08:47 (T3)	18:35 25	08:55 (T5)	17:05 43	08:44 (T4)	17:08 30	08:50 (T4)
27	06:21	06:52	07:58 (T3)	07:23	08:01 (T3)	07:56	08:29 (T5)	07:33	08:02 (T4)	07:56	08:20 (T4)
	20:55	20:15 69	09:07 (T3)	19:21 44	08:45 (T3)	18:34 27	08:56 (T5)	17:04 42	08:44 (T4)	17:08 31	08:51 (T4)
28	06:22	06:53	07:57 (T3)	07:24	08:04 (T3)	07:57	08:28 (T5)	07:34	08:02 (T4)	07:56	08:20 (T4)
	20:54	20:13 70	09:07 (T3)	19:19 38	08:42 (T3)	18:33 28	08:56 (T5)	17:04 42	08:44 (T4)	17:09 31	08:51 (T4)
29	06:23	06:54	07:57 (T3)	07:25	08:06 (T3)	07:58	08:27 (T5)	07:35	08:03 (T4)	07:57	08:21 (T4)
	20:53	20:12 71	09:08 (T3)	19:18 32	08:38 (T3)	18:31 29	08:56 (T5)	17:04 41	08:44 (T4)	17:10 32	08:53 (T4)
30	06:24	06:55	07:56 (T3)	07:26	08:10 (T3)	08:00	08:27 (T5)	07:36	08:03 (T4)	07:57	08:21 (T4)
	20:52	20:10 72	09:08 (T3)	19:16 24	08:34 (T3)	18:30 31	08:58 (T5)	17:03 41	08:44 (T4)	17:10 32	08:53 (T4)
31	06:25	06:56	07:54 (T3)			08:01	08:27 (T5)			07:57	08:21 (T4)
	20:51	20:09 73	09:07 (T3)			18:29 31	08:58 (T5)			17:11 33	08:54 (T4)
Potential sun hours	460	429		375		345		297		287	
Total, worst case		1174		1931		247		1439		1023	
Sun reduction		0.61		0.59		0.48		0.30		0.22	
Oper. time red.		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.		0.60		0.60		0.54		0.53		0.52	
Total reduction		0.36		0.35		0.26		0.15		0.11	
Total, real		424		674		63		223		115	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1237 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7194)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:58			07:44		16:28 (T13)	07:07		16:31 (T13)	07:16	06:30			06:01		20:04 (T10)
	17:13			17:47	45	17:13 (T13)	18:22	63	18:00 (T12)	19:56	20:27			20:57	29	20:33 (T10)
2	07:58			07:43		16:28 (T13)	07:06		16:32 (T13)	07:14	06:29			06:01		20:03 (T10)
	17:14			17:48	46	17:14 (T13)	18:23	63	18:01 (T12)	19:57	20:28			20:58	30	20:33 (T10)
3	07:58			07:42		16:27 (T13)	07:04		16:34 (T13)	07:13	06:27			06:00		20:03 (T10)
	17:14			17:50	48	17:15 (T13)	18:24	63	18:03 (T12)	19:58	20:29			20:59	31	20:34 (T10)
4	07:58			07:41		16:26 (T13)	07:03		16:35 (T13)	07:11	06:26			06:00		20:03 (T10)
	17:15			17:51	50	17:16 (T13)	18:25	60	18:03 (T12)	19:59	20:30			20:59	32	20:35 (T10)
5	07:58			07:40		16:26 (T13)	07:01		16:37 (T13)	07:09	06:25			05:59		20:02 (T10)
	17:16			17:52	51	17:17 (T13)	18:26	57	18:04 (T12)	20:00	20:31			21:00	33	20:35 (T10)
6	07:58			07:38		16:25 (T13)	06:59		16:41 (T13)	07:08	06:24			05:59		20:02 (T10)
	17:17			17:54	53	17:18 (T13)	18:27	53	18:06 (T12)	20:00	20:33			21:01	34	20:36 (T10)
7	07:58			07:37		16:24 (T13)	06:58		16:46 (T13)	07:06	06:22			05:59		20:02 (T10)
	17:18			17:55	54	17:18 (T13)	18:29	43	18:06 (T12)	20:01	20:34			21:01	34	20:36 (T10)
8	07:58			07:36		16:24 (T13)	07:56		18:32 (T12)	07:05	06:21			05:59		20:02 (T10)
	17:19			17:56	55	17:19 (T13)	19:30	33	19:05 (T12)	20:03	20:35			21:02	35	20:37 (T10)
9	07:57			07:35		16:24 (T13)	07:55		18:33 (T12)	07:03	06:20			05:58		20:01 (T10)
	17:20			17:57	56	17:20 (T13)	19:31	32	19:05 (T12)	20:04	20:36			21:03	36	20:37 (T10)
10	07:57			07:34		16:24 (T13)	07:53		18:32 (T12)	07:01	06:19			05:58		20:01 (T10)
	17:21			17:59	56	17:20 (T13)	19:32	33	19:05 (T12)	20:05	20:37			21:03	36	20:37 (T10)
11	07:57			07:33		16:24 (T13)	07:51		18:33 (T12)	07:00	06:18			05:58		20:01 (T10)
	17:22			18:00	57	17:21 (T13)	19:33	32	19:05 (T12)	20:06	20:38			21:04	37	20:38 (T10)
12	07:57			07:31		16:23 (T13)	07:50		18:33 (T12)	06:58	06:17			05:58		20:01 (T10)
	17:23			18:01	58	17:21 (T13)	19:34	31	19:04 (T12)	20:07	20:39			21:04	37	20:38 (T10)
13	07:56			07:30		16:23 (T13)	07:48		18:33 (T12)	06:56	06:16			05:58		20:02 (T10)
	17:24			18:02	58	17:21 (T13)	19:35	29	19:02 (T12)	20:08	20:40			21:05	37	20:39 (T10)
14	07:56			07:29		16:23 (T13)	07:46		18:34 (T12)	06:55	06:15			05:58		20:02 (T10)
	17:26			18:04	59	17:22 (T13)	19:36	28	19:02 (T12)	20:09	20:41			21:05	37	20:39 (T10)
15	07:56			07:27		16:22 (T13)	07:45		18:35 (T12)	06:53	06:14			05:58		20:02 (T10)
	17:27			18:05	59	17:21 (T13)	19:38	25	19:00 (T12)	20:10	20:42			21:06	37	20:39 (T10)
16	07:55			07:26		16:23 (T13)	07:43		18:36 (T12)	06:52	06:13			05:58		20:02 (T10)
	17:28			18:06	59	17:22 (T13)	19:39	22	18:58 (T12)	20:11	20:43			21:06	38	20:40 (T10)
17	07:55			07:25		16:23 (T13)	07:41		18:37 (T12)	06:50	06:12			05:58		20:02 (T10)
	17:29			18:07	59	17:22 (T13)	19:40	19	18:56 (T12)	20:12	20:44			21:07	38	20:40 (T10)
18	07:54			07:23		16:23 (T13)	07:40		18:40 (T12)	06:49	06:11			05:58		20:02 (T10)
	17:30			18:08	58	17:21 (T13)	19:41	13	18:53 (T12)	20:13	20:45			21:07	38	20:40 (T10)
19	07:54			07:22		16:23 (T13)	07:38			06:47	06:10			05:58		20:02 (T10)
	17:31			18:10	58	17:21 (T13)	19:42			20:14	20:46			21:07	38	20:40 (T10)
20	07:53			07:21		16:23 (T13)	07:36			06:46	06:09			05:58		20:03 (T10)
	17:32			18:11	57	17:20 (T13)	19:43			20:15	20:47			21:08	38	20:41 (T10)
21	07:53			07:19		16:24 (T13)	07:35			06:44	06:08			05:58		20:03 (T10)
	17:34			18:12	56	17:20 (T13)	19:44			20:16	20:48			21:08	38	20:41 (T10)
22	07:52			07:18		16:24 (T13)	07:33			06:43	06:07			05:59		20:03 (T10)
	17:35			18:13	55	17:19 (T13)	19:45			20:18	20:49			21:08	38	20:41 (T10)
23	07:51		16:45 (T13)	07:16		16:25 (T13)	07:31			06:41	06:07			05:59		20:03 (T10)
	17:36	7	16:52 (T13)	18:15	54	17:19 (T13)	19:46			20:19	20:50			21:08	38	20:41 (T10)
24	07:50		16:40 (T13)	07:15		16:25 (T13)	07:30			06:40	06:06		20:14 (T10)	05:59		20:04 (T10)
	17:37	17	16:57 (T13)	18:16	53	17:18 (T13)	19:47			20:20	20:50	6	20:20 (T10)	21:09	38	20:42 (T10)
25	07:50		16:38 (T13)	07:13		16:26 (T13)	07:28			06:38	06:05		20:10 (T10)	05:59		20:04 (T10)
	17:38	23	17:01 (T13)	18:17	52	17:18 (T13)	19:48			20:21	20:51	13	20:23 (T10)	21:09	38	20:42 (T10)
26	07:49		16:36 (T13)	07:12		16:27 (T13)	07:26			06:37	06:05		20:09 (T10)	06:00		20:04 (T10)
	17:40	27	17:03 (T13)	18:18	56	17:54 (T12)	19:50			20:22	20:52	17	20:26 (T10)	21:09	38	20:42 (T10)
27	07:48		16:34 (T13)	07:10		16:28 (T13)	07:24			06:35	06:04		20:07 (T10)	06:00		20:05 (T10)
	17:41	31	17:05 (T13)	18:19	62	17:57 (T12)	19:51			20:23	20:53	20	20:27 (T10)	21:09	38	20:43 (T10)
28	07:47		16:33 (T13)	07:09		16:29 (T13)	07:23			06:34	06:03		20:07 (T10)	06:00		20:05 (T10)
	17:42	34	17:07 (T13)	18:20	63	17:58 (T12)	19:52			20:24	20:54	22	20:29 (T10)	21:09	37	20:42 (T10)
29	07:46		16:32 (T13)				07:21			06:33	06:03		20:05 (T10)	06:01		20:05 (T10)
	17:43	37	17:09 (T13)				19:53			20:25	20:55	25	20:30 (T10)	21:09	37	20:42 (T10)
30	07:46		16:30 (T13)				07:19			06:31	06:02		20:05 (T10)	06:01		20:06 (T10)
	17:45	40	17:10 (T13)				19:54			20:26	20:56	26	20:31 (T10)	21:09	37	20:43 (T10)
31	07:45		16:29 (T13)				07:18				06:02		20:04 (T10)			
	17:46	43	17:12 (T13)				19:55				20:56	28	20:32 (T10)			
Potential sun hours	297			297			370			399	449			453		
Total, worst case		259			1547			699				157			1082	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.72			0.72			0.68				0.54			0.54	
Total reduction		0.23			0.30			0.31				0.31			0.35	
Total, real		60			458			216				49			381	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1237 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7194)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August	September			October			November			December
1	06:02		20:05 (T10)	06:26	06:57			07:28		18:12 (T12)	07:02		15:53 (T13)	07:37
	21:09	37	20:42 (T10)	20:50	20:07			19:15	30	18:42 (T12)	17:28	57	16:50 (T13)	17:03
2	06:02		20:06 (T10)	06:27	06:58			07:29		18:11 (T12)	07:03		15:54 (T13)	07:38
	21:09	37	20:43 (T10)	20:49	20:06			19:13	31	18:42 (T12)	17:27	55	16:49 (T13)	17:03
3	06:03		20:06 (T10)	06:28	06:59			07:30		18:11 (T12)	07:05		15:54 (T13)	07:39
	21:09	36	20:42 (T10)	20:48	20:04			19:11	32	18:43 (T12)	17:25	55	16:49 (T13)	17:03
4	06:03		20:07 (T10)	06:29	07:00			07:31		18:10 (T12)	07:06		15:54 (T13)	07:40
	21:08	35	20:42 (T10)	20:47	20:02			19:10	33	18:43 (T12)	17:24	54	16:48 (T13)	17:03
5	06:04		20:08 (T10)	06:30	07:01			07:32		18:10 (T12)	07:07		15:55 (T13)	07:41
	21:08	35	20:43 (T10)	20:46	20:01			19:08	33	18:43 (T12)	17:23	53	16:48 (T13)	17:03
6	06:05		20:08 (T10)	06:31	07:02			07:33		18:10 (T12)	07:08		15:56 (T13)	07:42
	21:08	34	20:42 (T10)	20:45	19:57			19:06	32	18:42 (T12)	17:22	51	16:47 (T13)	17:02
7	06:05		20:09 (T10)	06:32	07:03			07:34		17:19 (T13)	07:09		15:56 (T13)	07:43
	21:08	33	20:42 (T10)	20:43	19:56			19:05	49	18:42 (T12)	17:21	50	16:46 (T13)	17:02
8	06:06		20:09 (T10)	06:33	07:04			07:35		17:15 (T13)	07:11		15:58 (T13)	07:44
	21:07	32	20:41 (T10)	20:42	19:54			19:03	56	18:41 (T12)	17:20	48	16:46 (T13)	17:02
9	06:06		20:10 (T10)	06:34	07:05			07:36		17:11 (T13)	07:12		15:59 (T13)	07:45
	21:07	32	20:42 (T10)	20:41	19:52			19:01	60	18:39 (T12)	17:19	46	16:45 (T13)	17:02
10	06:07		20:11 (T10)	06:35	07:06			07:37		17:09 (T13)	07:13		15:59 (T13)	07:46
	21:07	31	20:42 (T10)	20:40	19:51			19:00	61	18:37 (T12)	17:18	45	16:44 (T13)	17:02
11	06:08		20:11 (T10)	06:36	07:07			07:38		17:06 (T13)	07:14		16:00 (T13)	07:47
	21:06	29	20:40 (T10)	20:38	19:49			18:58	63	18:35 (T12)	17:17	42	16:42 (T13)	17:02
12	06:09		20:12 (T10)	06:37	07:08			07:39		17:04 (T13)	07:15		16:02 (T13)	07:48
	21:06	28	20:40 (T10)	20:37	19:47			18:57	64	18:34 (T12)	17:16	40	16:42 (T13)	17:02
13	06:09		20:13 (T10)	06:38	07:09			07:40		17:03 (T13)	07:17		16:04 (T13)	07:48
	21:05	27	20:40 (T10)	20:36	19:46			18:55	64	18:33 (T12)	17:15	37	16:41 (T13)	17:03
14	06:10		20:14 (T10)	06:39	07:10			07:41		17:02 (T13)	07:18		16:05 (T13)	07:49
	21:05	26	20:40 (T10)	20:34	19:44			18:53	62	18:31 (T12)	17:14	34	16:39 (T13)	17:03
15	06:11		20:14 (T10)	06:40	07:11			07:43		17:00 (T13)	07:19		16:07 (T13)	07:50
	21:04	24	20:38 (T10)	20:33	19:42			18:52	61	18:29 (T12)	17:13	31	16:38 (T13)	17:03
16	06:12		20:16 (T10)	06:41	07:12			07:44		16:59 (T13)	07:20		16:09 (T13)	07:51
	21:04	21	20:37 (T10)	20:32	19:40			18:50	50	17:49 (T13)	17:12	27	16:36 (T13)	17:03
17	06:12		20:17 (T10)	06:42	07:13			07:45		16:57 (T13)	07:21		16:11 (T13)	07:51
	21:03	19	20:36 (T10)	20:30	19:39			18:49	53	17:50 (T13)	17:11	23	16:34 (T13)	17:04
18	06:13		20:19 (T10)	06:43	07:14			07:46		16:56 (T13)	07:23		16:14 (T13)	07:52
	21:03	16	20:35 (T10)	20:29	19:37			18:47	54	17:50 (T13)	17:10	17	16:31 (T13)	17:04
19	06:14		20:21 (T10)	06:44	07:15			07:47		16:55 (T13)	07:24		16:20 (T13)	07:53
	21:02	11	20:32 (T10)	20:27	19:35			18:46	55	17:50 (T13)	17:10	7	16:27 (T13)	17:04
20	06:15			06:45	07:16			07:48		16:55 (T13)	07:25			07:53
	21:01			20:26	19:34			18:44	56	17:51 (T13)	17:09			17:05
21	06:16			06:46	07:17			07:49		16:54 (T13)	07:26			07:54
	21:00			20:24	19:32			18:43	57	17:51 (T13)	17:08			17:05
22	06:17			06:47	07:18			07:50		16:54 (T13)	07:27			07:54
	21:00			20:23	19:30			18:41	57	17:51 (T13)	17:08			17:06
23	06:18			06:48	07:19			07:52		16:53 (T13)	07:28			07:55
	20:59			20:21	19:28			18:40	58	17:51 (T13)	17:07			17:06
24	06:18			06:49	07:20			07:53		16:53 (T13)	07:30			07:55
	20:58			20:20	19:27			18:38	59	17:52 (T13)	17:06			17:07
25	06:19			06:50	07:21		18:24 (T12)	07:54		16:53 (T13)	07:31			07:56
	20:57			20:18	19:25	10	18:34 (T12)	18:37	59	17:52 (T13)	17:06			17:07
26	06:20			06:51	07:22		18:21 (T12)	07:55		16:52 (T13)	07:32			07:56
	20:56			20:17	19:23	16	18:37 (T12)	18:36	59	17:51 (T13)	17:05			17:08
27	06:21			06:52	07:23		18:18 (T12)	07:56		16:52 (T13)	07:33			07:56
	20:55			20:15	19:22	21	18:39 (T12)	18:34	59	17:51 (T13)	17:05			17:09
28	06:22			06:53	07:24		18:16 (T12)	07:57		16:52 (T13)	07:34			07:57
	20:54			20:14	19:20	24	18:40 (T12)	18:33	58	17:50 (T13)	17:04			17:09
29	06:23			06:54	07:25		18:14 (T12)	07:59		16:53 (T13)	07:35			07:57
	20:53			20:12	19:18	27	18:41 (T12)	18:32	58	17:51 (T13)	17:04			17:10
30	06:24			06:55	07:27		18:13 (T12)	08:00		16:53 (T13)	07:36			07:57
	20:52			20:11	19:16	29	18:42 (T12)	18:30	57	17:50 (T13)	17:04			17:11
31	06:25			06:56				08:01		16:52 (T13)				07:57
	20:51			20:09				18:29	58	17:50 (T13)				17:12
Potential sun hours	460			429	375			345			297			287
Total, worst case		543				127			1638			772		
Sun reduction		0.66				0.59			0.48			0.30		
Oper. time red.		1.00				1.00			1.00			1.00		
Wind dir. red.		0.54				0.67			0.71			0.72		
Total reduction		0.36				0.40			0.35			0.22		
Total, real		197				51			572			172		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1253 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7208)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57	07:43	07:07	07:16	06:30	06:51 (T4)	06:01	06:48 (T4)	06:01	06:58 (T4)	06:26	06:55 (T4)	06:57	07:27	07:02	07:37
	17:12	17:47	18:21	19:56	20:27 37	07:28 (T5) 20:57 39	07:27 (T4) 21:09 31	07:29 (T4) 20:50 46	07:41 (T4) 20:07	19:14	17:27	17:03
2	07:57	07:42	07:05	07:14	06:28	06:50 (T4) 06:00	06:49 (T4) 06:02	06:58 (T4) 06:27	06:55 (T4) 06:58	07:28	07:03	07:38
	17:13	17:48	18:22	19:57	20:28 37	07:27 (T5) 20:58 38	07:27 (T4) 21:08 31	07:29 (T4) 20:49 46	07:41 (T4) 20:05	19:13	17:26	17:03
3	07:57	07:41	07:04	07:12	06:27	06:49 (T4) 06:00	06:50 (T4) 06:02	06:58 (T4) 06:28	06:55 (T4) 06:59	07:29	07:04	07:39
	17:14	17:49	18:24	19:58	20:29 37	07:26 (T5) 20:58 37	07:27 (T4) 21:08 32	07:30 (T4) 20:48 45	07:40 (T4) 20:04	19:11	17:25	17:02
4	07:58	07:40	07:02	07:11	06:26	06:49 (T4) 05:59	06:50 (T4) 06:03	06:58 (T4) 06:29	06:55 (T4) 07:00	07:30	07:05	07:40
	17:15	17:51	18:25	19:59	20:30 38	07:27 (T4) 20:59 36	07:26 (T4) 21:08 33	07:31 (T4) 20:47 44	07:39 (T4) 20:02	19:09	17:24	17:02
5	07:58	07:39	07:01	07:09	06:25	06:47 (T4) 05:59	06:51 (T4) 06:04	06:58 (T4) 06:30	06:55 (T4) 07:01	07:31	07:07	07:41
	17:16	17:52	18:26	20:00	20:31 40	07:27 (T4) 21:00 35	07:26 (T4) 21:08 33	07:31 (T4) 20:46 43	07:38 (T4) 20:00	19:08	17:23	17:02
6	07:57	07:38	06:59	07:07	06:23	06:46 (T4) 05:59	06:51 (T4) 06:04	06:58 (T4) 06:31	06:56 (T4) 07:02	07:32	07:08	07:42
	17:17	17:53	18:27	20:00	20:32 42	07:28 (T4) 21:01 35	07:26 (T4) 21:08 34	07:32 (T4) 20:44 42	07:38 (T4) 19:57	19:06	17:21	17:02
7	07:57	07:37	06:57	07:06	06:22	06:46 (T4) 05:58	06:51 (T4) 06:05	06:57 (T4) 06:32	06:56 (T4) 07:03	07:34	07:09	07:43
	17:18	17:54	18:28	20:01	20:33 42	07:28 (T4) 21:01 34	07:25 (T4) 21:07 35	07:32 (T4) 20:43 41	07:37 (T4) 19:55	19:04	17:20	17:02
8	07:57	07:36	07:56	07:04	06:21	06:45 (T4) 05:58	06:52 (T4) 06:05	06:57 (T4) 06:33	06:57 (T4) 07:04	07:35	07:10	07:44
	17:19	17:56	19:29	20:02	20:34 44	07:29 (T4) 21:02 33	07:25 (T4) 21:07 36	07:33 (T4) 20:42 40	07:37 (T4) 19:54	19:03	17:19	17:02
9	07:57	07:35	07:54	07:03	06:20	06:45 (T4) 05:58	06:53 (T4) 06:06	06:57 (T4) 06:34	06:57 (T4) 07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03	20:35 44	07:29 (T4) 21:02 32	07:25 (T4) 21:07 37	07:34 (T4) 20:41 39	07:36 (T4) 19:52	19:01	17:18	17:02
10	07:57	07:34	07:53	07:01	06:19	06:45 (T4) 05:58	06:53 (T4) 06:07	06:56 (T4) 06:35	06:58 (T4) 07:06	07:37	07:13	07:46
	17:21	17:58	19:32	20:04	20:36 45	07:30 (T4) 21:03 32	07:25 (T4) 21:06 38	07:34 (T4) 20:39 37	07:35 (T5) 19:50	18:59	17:17	17:02
11	07:57	07:32	07:51	06:59	06:18	06:44 (T4) 05:58	06:54 (T4) 06:07	06:56 (T4) 06:36	06:59 (T4) 07:07	07:38	07:14	07:47
	17:22	17:59	19:33	20:05	20:37 46	07:30 (T4) 21:04 31	07:25 (T4) 21:06 39	07:35 (T4) 20:38 37	07:36 (T5) 19:49	18:58	17:16	17:02
12	07:56	07:31	07:49	06:58	06:16	06:44 (T4) 05:58	06:55 (T4) 06:08	06:57 (T4) 06:37	07:00 (T4) 07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:06	20:38 46	07:30 (T4) 21:04 30	07:25 (T4) 21:06 39	07:36 (T4) 20:37 37	07:37 (T5) 19:47	18:56	17:15	17:02
13	07:56	07:30	07:48	06:56	07:15 (T5) 06:15	06:44 (T4) 05:57	06:55 (T4) 06:09	06:56 (T4) 06:38	07:02 (T4) 07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08 8	07:23 (T5) 20:39 46	07:30 (T4) 21:05 30	07:25 (T4) 21:05 40	07:36 (T4) 20:36 35	07:37 (T5) 19:45	18:55	17:14	17:02
14	07:56	07:28	07:46	06:55	07:14 (T5) 06:14	06:44 (T4) 05:57	06:56 (T4) 06:10	06:56 (T4) 06:39	07:03 (T4) 07:10	07:41	07:18	07:49
	17:25	18:03	19:36	20:09 13	07:27 (T5) 20:41 46	07:30 (T4) 21:05 29	07:25 (T4) 21:05 40	07:36 (T4) 20:34 35	07:38 (T5) 19:44	18:53	17:13	17:02
15	07:55	07:27	07:44	06:53	07:12 (T5) 06:13	06:44 (T4) 05:57	06:56 (T4) 06:10	06:56 (T4) 06:40	07:05 (T4) 07:11	07:42	07:19	07:50
	17:26	18:04	19:37	20:10 16	07:28 (T5) 20:42 46	07:30 (T4) 21:06 29	07:25 (T4) 21:04 41	07:37 (T4) 20:33 33	07:38 (T5) 19:42	18:52	17:12	17:03
16	07:55	07:26	07:43	06:51	07:11 (T5) 06:12	06:43 (T4) 05:57	06:56 (T4) 06:11	06:56 (T4) 06:41	07:07 (T5) 07:12	07:43	07:20	07:50
	17:27	18:06	19:38	20:11 19	07:30 (T5) 20:43 47	07:30 (T4) 21:06 29	07:25 (T4) 21:03 42	07:38 (T4) 20:31 31	07:38 (T5) 19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	07:09 (T5) 06:11	06:43 (T4) 05:57	06:57 (T4) 06:12	06:55 (T4) 06:42	07:07 (T5) 07:13	07:44	07:21	07:51
	17:29	18:07	19:39	20:12 22	07:31 (T5) 20:44 47	07:30 (T4) 21:06 28	07:25 (T4) 21:03 43	07:38 (T4) 20:30 31	07:38 (T5) 19:38	18:48	17:11	17:03
18	07:54	07:23	07:39	06:48	07:07 (T5) 06:10	06:43 (T4) 05:58	06:57 (T4) 06:13	06:55 (T4) 06:43	07:07 (T5) 07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13 24	07:31 (T5) 20:44 47	07:30 (T4) 21:07 28	07:25 (T4) 21:02 43	07:38 (T4) 20:29 31	07:38 (T5) 19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47	07:06 (T5) 06:10	06:43 (T4) 05:58	06:57 (T4) 06:14	06:55 (T4) 06:44	07:06 (T5) 07:15	07:47	07:23	07:52
	17:31	18:09	19:42	20:14 26	07:32 (T5) 20:45 47	07:30 (T4) 21:07 28	07:25 (T4) 21:02 44	07:39 (T4) 20:27 32	07:38 (T5) 19:35	18:45	17:09	17:04
20	07:53	07:20	07:36	06:45	07:05 (T5) 06:09	06:44 (T4) 05:58	06:57 (T4) 06:15	06:55 (T4) 06:45	07:06 (T5) 07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15 28	07:33 (T5) 20:46 46	07:30 (T4) 21:07 28	07:25 (T4) 21:01 44	07:39 (T4) 20:26 32	07:38 (T5) 19:33	18:44	17:09	17:04
21	07:52	07:19	07:34	06:44	07:03 (T5) 06:08	06:44 (T4) 05:58	06:57 (T4) 06:15	06:55 (T4) 06:46	07:07 (T5) 07:17	07:49	07:26	07:53
	17:33	18:12	19:44	20:16 29	07:32 (T5) 20:47 46	07:30 (T4) 21:08 28	07:25 (T4) 21:00 45	07:40 (T4) 20:24 31	07:38 (T5) 19:31	18:42	17:08	17:05
22	07:52	07:17	07:33	06:42	07:02 (T5) 06:07	06:44 (T4) 05:58	06:58 (T4) 06:16	06:55 (T4) 06:47	07:08 (T5) 07:18	07:50	07:27	07:54
	17:34	18:13	19:45	20:17 31	07:33 (T5) 20:48 45	07:29 (T4) 21:08 28	07:26 (T4) 20:59 45	07:40 (T4) 20:23 29	07:37 (T5) 19:30	18:41	17:07	17:05
23	07:51	07:16	07:31	06:41	07:00 (T5) 06:06	06:44 (T4) 05:58	06:58 (T4) 06:17	06:54 (T4) 06:48	07:09 (T5) 07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18 32	07:32 (T5) 20:49 45	07:29 (T4) 21:08 28	07:26 (T4) 20:59 46	07:40 (T4) 20:21 28	07:37 (T5) 19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:39	07:01 (T5) 06:06	06:45 (T4) 05:59	06:58 (T4) 06:18	06:54 (T4) 06:49	07:10 (T5) 07:20	07:52	07:29	07:55
	17:37	18:15	19:47	20:19 32	07:33 (T5) 20:50 44	07:29 (T4) 21:08 28	07:26 (T4) 20:58 46	07:40 (T4) 20:20 26	07:36 (T5) 19:26	18:38	17:06	17:06
25	07:49	07:13	07:28	06:38	07:00 (T5) 06:05	06:45 (T4) 05:59	06:59 (T4) 06:19	06:54 (T4) 06:50	07:11 (T5) 07:21	07:54	07:30	07:55
	17:38	18:17	19:48	20:20 32	07:32 (T5) 20:51 44	07:29 (T4) 21:08 28	07:27 (T4) 20:57 46	07:40 (T4) 20:18 24	07:35 (T5) 19:25	18:37	17:05	17:07
26	07:49	07:12	07:26	06:36	07:00 (T5) 06:04	06:45 (T4) 05:59	06:59 (T4) 06:20	06:54 (T4) 06:51	07:12 (T5) 07:22	07:55	07:32	07:56
	17:39	18:18	19:49	20:22 32	07:32 (T5) 20:52 43	07:28 (T4) 21:09 28	07:27 (T4) 20:56 46	07:40 (T4) 20:17 21	07:33 (T5) 19:23	18:35	17:05	17:08
27	07:48	07:10	07:24	06:35	07:01 (T5) 06:04	06:46 (T4) 06:00	06:58 (T4) 06:21	06:54 (T4) 06:52	07:13 (T5) 07:23	07:56	07:33	07:56
	17:41	18:19	19:50	20:23 31	07:32 (T5) 20:53 43	07:29 (T4) 21:09 29	07:27 (T4) 20:55 47	07:41 (T4) 20:15 19	07:32 (T5) 19:21	18:34	17:05	17:08
28	07:47	07:08	07:22	06:34	06:57 (T4) 06:03	06:46 (T4) 06:00	06:59 (T4) 06:22	06:54 (T4) 06:53	07:14 (T5) 07:24	07:57	07:34	07:56
	17:42	18:20	19:51	20:24 33	07:30 (T5) 20:54 42	07:28 (T4) 21:09 29	07:28 (T4) 20:54 47	07:41 (T4) 20:13 16	07:30 (T5) 19:19	18:33	17:04	17:09
29	07:46		07:21	06:32	06:55 (T4) 06:02	06:47 (T4) 06:00	06:58 (T4) 06:23	06:54 (T4) 06:54	07:15 (T5) 07:25	07:58	07:35	07:57
	17:43		19:52	20:25 35	07:30 (T5) 20:55 41	07:28 (T4) 21:09 30	07:28 (T4) 20:53 47	07:41 (T4) 20:12 13	07:28 (T5) 19:18	18:31	17:04	17:10
30	07:45		07:19	06:31	06:54 (T4) 06:02	06:47 (T4) 06:01	06:59 (T4) 06:24	06:54 (T4) 06:55	07:16 (T5) 07:26	08:00	07:36	07:57
	17:44		19:54	20:26 35	07:29 (T5) 20:55 41	07:28 (T4) 21:09 30	07:29 (T4) 20:52 47	07:41 (T4) 20:10 7	07:23 (T5) 19:16	18:30	17:03	17:10
31	07:44		07:17		06:01	06:48 (T4)		06:25	06:55 (T4) 06:56		08:01		07:57
	17:46		19:55		20:56 40	07:28 (T4)		20:51 46	07:41 (T4) 20:09		18:29		17:11
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case				478	1344	927	1263	971				
Sun reduction				0.52	0.57	0.64	0.66	0.61				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.67	0.69	0.69	0.69	0.68				
Total reduction				0.35	0.39	0.44	0.46	0.41				
Total, real				166	529	410	576	402				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1264 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7214)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57	07:44	07:07	07:16	06:30	07:15 (T39)	06:02	06:26	07:28 (T39)	06:57	07:30 (T39)	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27 65	08:20 (T39)	20:57	21:09	20:50 56	08:24 (T39)	20:07 44	08:14 (T39)	19:15	17:28	17:04	17:04
2	07:58	07:43	07:06	07:15	06:29	07:16 (T39)	06:01	06:03	06:27	07:28 (T39)	06:58	07:31 (T39)	07:29	07:03	07:38	
	17:14	17:49	18:23	19:57	20:28 63	08:19 (T39)	20:58	21:09	20:49 57	08:25 (T39)	20:06 41	08:12 (T39)	19:13	17:27	17:03	
3	07:58	07:42	07:04	07:13	06:28	07:16 (T39)	06:01	06:03	06:28	07:27 (T39)	06:59	07:33 (T39)	07:30	07:05	07:39	
	17:15	17:50	18:24	19:58	20:29 63	08:19 (T39)	20:59	21:08	20:48 58	08:25 (T39)	20:04 36	08:09 (T39)	19:12	17:26	17:03	
4	07:58	07:41	07:03	07:11	06:26	07:15 (T39)	06:00	06:04	06:29	07:27 (T39)	07:00	07:35 (T39)	07:31	07:06	07:40	
	17:16	17:51	18:25	19:59	20:30 63	08:18 (T39)	20:59	21:08	20:47 59	08:26 (T39)	20:02 31	08:06 (T39)	19:10	17:24	17:03	
5	07:58	07:40	07:01	07:10	06:25	07:16 (T39)	06:00	06:04	06:30	07:26 (T39)	07:01	07:38 (T39)	07:32	07:07	07:41	
	17:17	17:53	18:26	20:00	20:31 62	08:18 (T39)	21:00	21:08	20:46 60	08:26 (T39)	20:01 25	08:03 (T39)	19:08	17:23	17:03	
6	07:58	07:38	06:59	07:08 07:46 (T39)	06:24	07:16 (T39)	06:00	06:05	06:31	07:26 (T39)	07:02	07:42 (T39)	07:33	07:08	07:42	
	17:18	17:54	18:28	20:00 16 08:02 (T39)	20:32 61	08:17 (T39)	21:01	21:08	20:45 61	08:27 (T39)	19:57 16	07:58 (T39)	19:07	17:22	17:03	
7	07:58	07:37	06:58	07:06 07:41 (T39)	06:23	07:16 (T39)	05:59	06:06	06:32	07:26 (T39)	07:03		07:34	07:09	07:43	
	17:19	17:55	18:29	20:02 25 08:06 (T39)	20:34 61	08:17 (T39)	21:01	21:08	20:43 61	08:27 (T39)	19:56		19:05	17:21	17:03	
8	07:57	07:36	07:56	07:05 07:38 (T39)	06:22	07:17 (T39)	05:59	06:06	06:33	07:25 (T39)	07:04		07:35	07:11	07:44	
	17:20	17:56	19:30	20:03 31 08:09 (T39)	20:35 59	08:16 (T39)	21:02	21:07	20:42 62	08:27 (T39)	19:54		19:03	17:20	17:03	
9	07:57	07:35	07:55	07:03 07:35 (T39)	06:20	07:17 (T39)	05:59	06:07	06:34	07:25 (T39)	07:05		07:36	07:12	07:45	
	17:21	17:58	19:31	20:04 36 08:11 (T39)	20:36 59	08:16 (T39)	21:03	21:07	20:41 63	08:28 (T39)	19:52		19:02	17:19	17:03	
10	07:57	07:34	07:53	07:01 07:32 (T39)	06:19	07:18 (T39)	05:59	06:08	06:35	07:25 (T39)	07:06		07:37	07:13	07:46	
	17:22	17:59	19:32	20:05 41 08:13 (T39)	20:37 57	08:15 (T39)	21:03	21:07	20:40 63	08:28 (T39)	19:51		19:00	17:18	17:03	
11	07:57	07:33	07:51	07:00 07:31 (T39)	06:18	07:18 (T39)	05:58	06:08	06:36	07:24 (T39)	07:07		07:38	07:14	07:47	
	17:23	18:00	19:33	20:06 44 08:15 (T39)	20:38 57	08:15 (T39)	21:04	21:06	20:38 64	08:28 (T39)	19:49		18:58	17:17	17:03	
12	07:57	07:31	07:50	06:58 07:28 (T39)	06:17	07:18 (T39)	05:58	06:09 07:51 (T39)	06:37	07:24 (T39)	07:08		07:39	07:15	07:48	
	17:24	18:01	19:34	20:07 47 08:15 (T39)	20:39 55	08:13 (T39)	21:04	21:06 6 07:57 (T39)	20:37 64	08:28 (T39)	19:47		18:57	17:16	17:03	
13	07:56	07:30	07:48	06:57 07:27 (T39)	06:16	07:19 (T39)	05:58	06:10 07:48 (T39)	06:38	07:24 (T39)	07:09		07:40	07:17	07:48	
	17:25	18:03	19:36	20:08 50 08:17 (T39)	20:40 54	08:13 (T39)	21:05	21:05 13 08:01 (T39)	20:36 64	08:28 (T39)	19:46		18:55	17:15	17:03	
14	07:56	07:29	07:46	06:55 07:25 (T39)	06:15	07:20 (T39)	05:58	06:10 07:46 (T39)	06:39	07:24 (T39)	07:10		07:42	07:18	07:49	
	17:26	18:04	19:37	20:09 53 08:18 (T39)	20:41 53	08:13 (T39)	21:05	21:05 18 08:04 (T39)	20:34 64	08:28 (T39)	19:44		18:54	17:14	17:03	
15	07:56	07:28	07:45	06:54 07:25 (T39)	06:14	07:21 (T39)	05:58	06:11 07:45 (T39)	06:40	07:24 (T39)	07:11		07:43	07:19	07:50	
	17:27	18:05	19:38	20:10 54 08:19 (T39)	20:42 51	08:12 (T39)	21:06	21:04 21 08:06 (T39)	20:33 64	08:28 (T39)	19:42		18:52	17:13	17:03	
16	07:55	07:26	07:43	06:52 07:23 (T39)	06:13	07:21 (T39)	05:58	06:12 07:42 (T39)	06:41	07:23 (T39)	07:12		07:44	07:20	07:51	
	17:28	18:06	19:39	20:11 56 08:19 (T39)	20:43 50	08:11 (T39)	21:06	21:04 25 08:07 (T39)	20:32 65	08:28 (T39)	19:41		18:51	17:12	17:04	
17	07:55	07:25	07:41	06:50 07:22 (T39)	06:12	07:22 (T39)	05:58	06:13 07:41 (T39)	06:42	07:23 (T39)	07:13		07:45	07:21	07:51	
	17:29	18:08	19:40	20:12 58 08:20 (T39)	20:44 48	08:10 (T39)	21:07	21:03 28 08:09 (T39)	20:30 65	08:28 (T39)	19:39		18:49	17:12	17:04	
18	07:54	07:23	07:40	06:49 07:21 (T39)	06:11	07:23 (T39)	05:58	06:14 07:40 (T39)	06:43	07:23 (T39)	07:14		07:46	07:23	07:52	
	17:30	18:09	19:41	20:13 59 08:20 (T39)	20:45 46	08:09 (T39)	21:07	21:02 31 08:11 (T39)	20:29 65	08:28 (T39)	19:37		18:48	17:11	17:04	
19	07:54	07:22	07:38	06:47 07:21 (T39)	06:10	07:23 (T39)	05:58	06:14 07:39 (T39)	06:44	07:23 (T39)	07:15		07:47	07:24	07:52	
	17:32	18:10	19:42	20:14 60 08:21 (T39)	20:46 45	08:08 (T39)	21:07	21:02 33 08:12 (T39)	20:27 64	08:27 (T39)	19:35		18:46	17:10	17:05	
20	07:53	07:21	07:36	06:46 07:19 (T39)	06:09	07:24 (T39)	05:59	06:15 07:38 (T39)	06:45	07:23 (T39)	07:16		07:48	07:25	07:53	
	17:33	18:11	19:43	20:15 62 08:21 (T39)	20:47 43	08:07 (T39)	21:08	21:01 36 08:14 (T39)	20:26 63	08:26 (T39)	19:34		18:45	17:09	17:05	
21	07:52	07:19	07:35	06:44 07:19 (T39)	06:09	07:26 (T39)	05:59	06:16 07:37 (T39)	06:46	07:23 (T39)	07:17		07:49	07:26	07:54	
	17:34	18:12	19:44	20:16 62 08:21 (T39)	20:48 41	08:07 (T39)	21:08	21:00 37 08:14 (T39)	20:24 62	08:25 (T39)	19:32		18:43	17:09	17:06	
22	07:52	07:18	07:33	06:43 07:18 (T39)	06:08	07:27 (T39)	05:59	06:17 07:36 (T39)	06:47	07:23 (T39)	07:18		07:51	07:27	07:54	
	17:35	18:14	19:45	20:18 63 08:21 (T39)	20:49 38	08:05 (T39)	21:08	21:00 40 08:16 (T39)	20:23 62	08:25 (T39)	19:30		18:42	17:08	17:06	
23	07:51	07:16	07:31	06:41 07:18 (T39)	06:07	07:27 (T39)	05:59	06:18 07:35 (T39)	06:48	07:23 (T39)	07:19		07:52	07:28	07:55	
	17:36	18:15	19:46	20:19 63 08:21 (T39)	20:49 37	08:04 (T39)	21:08	20:59 42 08:17 (T39)	20:21 61	08:24 (T39)	19:28		18:40	17:07	17:07	
24	07:50	07:15	07:30	06:40 07:17 (T39)	06:06	07:28 (T39)	05:59	06:19 07:34 (T39)	06:49	07:23 (T39)	07:20		07:53	07:30	07:55	
	17:38	18:16	19:48	20:20 64 08:21 (T39)	20:50 35	08:03 (T39)	21:08	20:58 44 08:18 (T39)	20:20 61	08:24 (T39)	19:27		18:39	17:07	17:07	
25	07:50	07:13	07:28	06:39 07:17 (T39)	06:06	07:30 (T39)	06:00	06:20 07:34 (T39)	06:50	07:24 (T39)	07:21		07:54	07:31	07:55	
	17:39	18:17	19:49	20:21 64 08:21 (T39)	20:51 32	08:02 (T39)	21:09	20:57 45 08:19 (T39)	20:18 59	08:23 (T39)	19:25		18:37	17:06	17:08	
26	07:49	07:12	07:26	06:37 07:17 (T39)	06:05	07:31 (T39)	06:00	06:21 07:33 (T39)	06:51	07:24 (T39)	07:23		07:55	07:32	07:56	
	17:40	18:18	19:50	20:22 64 08:21 (T39)	20:52 30	08:01 (T39)	21:09	20:56 47 08:20 (T39)	20:17 58	08:22 (T39)	19:23		18:36	17:06	17:08	
27	07:48	07:10	07:25	06:36 07:16 (T39)	06:04	07:33 (T39)	06:00	06:22 07:32 (T39)	06:52	07:25 (T39)	07:24		07:56	07:33	07:56	
	17:41	18:20	19:51	20:23 64 08:20 (T39)	20:53 27	08:00 (T39)	21:09	20:55 49 08:21 (T39)	20:15 56	08:21 (T39)	19:22		18:35	17:05	17:09	
28	07:47	07:09	07:23	06:34 07:16 (T39)	06:04	07:34 (T39)	06:01	06:23 07:32 (T39)	06:53	07:26 (T39)	07:25		07:57	07:34	07:57	
	17:43	18:21	19:52	20:24 65 08:21 (T39)	20:54 24	07:58 (T39)	21:09	20:54 50 08:22 (T39)	20:14 54	08:20 (T39)	19:20		18:33	17:05	17:10	
29	07:46		07:21	06:33 07:16 (T39)	06:03	07:37 (T39)	06:01	06:23 07:31 (T39)	06:54	07:26 (T39)	07:26		07:59	07:35	07:57	
	17:44		19:53	20:25 65 08:21 (T39)	20:55 20	07:57 (T39)	21:09	20:53 52 08:23 (T39)	20:12 52	08:18 (T39)	19:18		18:32	17:04	17:10	
30	07:46		07:20	06:32 07:15 (T39)	06:03	07:38 (T39)	06:02	06:24 07:29 (T39)	06:55	07:27 (T39)	07:27		08:00	07:36	07:57	
	17:45		19:54	20:26 65 08:20 (T39)	20:56 16	07:54 (T39)	21:09	20:52 54 08:23 (T39)	20:11 50	08:17 (T39)	19:17		18:31	17:04	17:11	
31	07:45		07:18		06:02	07:42 (T39)		06:25 07:29 (T39)	06:56	07:28 (T39)			08:01		07:57	
	17:46		19:55		20:56 10	07:52 (T39)		20:51 54 08:23 (T39)	20:09 47	08:15 (T39)			18:29		17:12	
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case				1331	1425		725	1864	193			
Sun reduction				0.52	0.57		0.66	0.61	0.59			
Oper. time red.				1.00	1.00		1.00	1.00	1.00			
Wind dir. red.				0.66	0.66		0.66	0.66	0.66			
Total reduction				0.34	0.37		0.43	0.40	0.39			
Total, real				454	533		314	746	75			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1269 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7219)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:57		15:57 (T35)	07:43		08:08 (T36)	07:07	07:16			06:30		07:20 (T31)	06:01		20:05 (T27)
	17:13	42	16:39 (T35)	17:47	31	08:39 (T36)	18:22	19:56			20:27	66	19:55 (T30)	20:57	28	20:33 (T27)
2	07:57		15:57 (T35)	07:42		08:08 (T36)	07:06	07:14			06:29		07:24 (T31)	06:01		20:05 (T27)
	17:14	42	16:39 (T35)	17:49	30	08:38 (T36)	18:23	19:57			20:28	59	19:55 (T30)	20:58	29	20:34 (T27)
3	07:58		15:58 (T35)	07:41		08:09 (T36)	07:04	07:13			06:28		19:04 (T30)	06:00		20:04 (T27)
	17:15	42	16:40 (T35)	17:50	29	08:38 (T36)	18:24	19:58			20:29	50	19:54 (T30)	20:58	30	20:34 (T27)
4	07:58		15:58 (T35)	07:40		08:10 (T36)	07:02	07:11			06:26		19:05 (T30)	06:00		20:05 (T27)
	17:15	42	16:40 (T35)	17:51	28	08:38 (T36)	18:25	19:59			20:30	49	19:54 (T30)	20:59	30	20:35 (T27)
5	07:58		15:59 (T35)	07:39		08:10 (T36)	07:01	07:09			06:25		19:05 (T30)	06:00		20:05 (T27)
	17:16	42	16:41 (T35)	17:52	28	08:38 (T36)	18:26	20:00			20:31	49	19:54 (T30)	21:00	31	20:36 (T27)
6	07:57		15:59 (T35)	07:38		08:10 (T36)	06:59	07:08		07:27 (T31)	06:24		19:05 (T30)	05:59		20:05 (T27)
	17:17	43	16:42 (T35)	17:54	26	08:36 (T36)	18:27	20:00	15	07:42 (T31)	20:32	49	19:54 (T30)	21:01	31	20:36 (T27)
7	07:57		16:00 (T35)	07:37		08:12 (T36)	06:58	07:06		07:25 (T31)	06:23		19:06 (T30)	05:59		20:05 (T27)
	17:18	42	16:42 (T35)	17:55	23	08:35 (T36)	18:29	20:01	19	07:44 (T31)	20:33	48	19:54 (T30)	21:01	31	20:36 (T27)
8	07:57		16:00 (T35)	07:36		08:13 (T36)	07:56	07:05		07:24 (T31)	06:21		19:05 (T30)	05:59		20:05 (T27)
	17:19	42	16:42 (T35)	17:56	21	08:34 (T36)	19:30	20:02	22	07:46 (T31)	20:34	47	19:52 (T30)	21:02	32	20:37 (T27)
9	07:57		16:00 (T35)	07:35		08:15 (T36)	07:54	07:03		07:22 (T31)	06:20		19:05 (T30)	05:59		20:06 (T27)
	17:20	42	16:42 (T35)	17:57	18	08:33 (T36)	19:31	20:03	25	07:47 (T31)	20:35	47	19:52 (T30)	21:02	32	20:38 (T27)
10	07:57		16:01 (T35)	07:34		08:18 (T36)	07:53	07:01		07:20 (T31)	06:19		19:06 (T30)	05:58		20:05 (T27)
	17:21	42	16:43 (T35)	17:59	13	08:31 (T36)	19:32	20:05	28	07:48 (T31)	20:36	46	19:52 (T30)	21:03	32	20:37 (T27)
11	07:57		16:01 (T35)	07:32		08:22 (T36)	07:51	07:00		07:19 (T31)	06:18		19:06 (T30)	05:58		20:05 (T27)
	17:22	42	16:43 (T35)	18:00	2	08:24 (T36)	19:33	20:06	30	07:49 (T31)	20:38	45	19:51 (T30)	21:04	32	20:37 (T27)
12	07:56		16:02 (T35)	07:31			07:50	06:58		07:17 (T31)	06:17		19:07 (T30)	05:58		20:06 (T27)
	17:23	41	16:43 (T35)	18:01			19:34	20:07	32	07:49 (T31)	20:39	44	19:51 (T30)	21:04	32	20:38 (T27)
13	07:56		08:18 (T36)	07:30			07:48	06:56		07:16 (T31)	06:16		19:08 (T30)	05:58		20:06 (T27)
	17:25	42	16:44 (T35)	18:02			19:35	20:08	34	07:50 (T31)	20:40	42	19:50 (T30)	21:05	32	20:38 (T27)
14	07:56		08:17 (T36)	07:29			07:46	06:55		07:14 (T31)	06:15		19:08 (T30)	05:58		20:06 (T27)
	17:26	48	16:44 (T35)	18:04			19:36	20:09	42	19:36 (T30)	20:41	41	19:49 (T30)	21:05	32	20:38 (T27)
15	07:55		08:17 (T36)	07:27			07:45	06:53		07:12 (T31)	06:14		19:09 (T30)	05:58		20:06 (T27)
	17:27	48	16:44 (T35)	18:05			19:38	20:10	55	19:41 (T30)	20:42	40	19:49 (T30)	21:06	32	20:38 (T27)
16	07:55		08:16 (T36)	07:26			07:43	06:52		07:12 (T31)	06:13		19:09 (T30)	05:58		20:07 (T27)
	17:28	51	16:44 (T35)	18:06			19:39	20:11	62	19:45 (T30)	20:43	39	19:48 (T30)	21:06	31	20:38 (T27)
17	07:55		08:16 (T36)	07:25			07:41	06:50		07:11 (T31)	06:12		19:11 (T30)	05:58		20:07 (T27)
	17:29	52	16:44 (T35)	18:07			19:40	20:12	67	19:46 (T30)	20:44	37	19:48 (T30)	21:06	31	20:38 (T27)
18	07:54		08:15 (T36)	07:23			07:40	06:49		07:12 (T31)	06:11		19:12 (T30)	05:58		20:07 (T27)
	17:30	54	16:44 (T35)	18:09			19:41	20:13	70	19:48 (T30)	20:45	42	20:21 (T27)	21:07	32	20:39 (T27)
19	07:53		08:15 (T36)	07:22			07:38	06:47		07:11 (T31)	06:10		19:13 (T30)	05:58		20:08 (T27)
	17:31	55	16:44 (T35)	18:10			19:42	20:14	73	19:49 (T30)	20:46	43	20:22 (T27)	21:07	32	20:40 (T27)
20	07:53		08:14 (T36)	07:21			07:36	06:46		07:11 (T31)	06:09		19:14 (T30)	05:58		20:08 (T27)
	17:33	55	16:44 (T35)	18:11			19:43	20:15	76	19:51 (T30)	20:46	44	20:23 (T27)	21:07	32	20:40 (T27)
21	07:52		08:13 (T36)	07:19			07:35	06:44		07:11 (T31)	06:08		19:15 (T30)	05:59		20:08 (T27)
	17:34	56	16:43 (T35)	18:12			19:44	20:16	77	19:51 (T30)	20:47	43	20:23 (T27)	21:08	32	20:40 (T27)
22	07:52		08:13 (T36)	07:18			07:33	06:43		07:11 (T31)	06:08		19:17 (T30)	05:59		20:08 (T27)
	17:35	57	16:44 (T35)	18:13			19:45	20:17	79	19:52 (T30)	20:48	43	20:25 (T27)	21:08	32	20:40 (T27)
23	07:51		08:12 (T36)	07:16			07:31	06:41		07:12 (T31)	06:07		19:18 (T30)	05:59		20:08 (T27)
	17:36	56	16:43 (T35)	18:15			19:46	20:18	79	19:53 (T30)	20:49	43	20:26 (T27)	21:08	32	20:40 (T27)
24	07:50		08:11 (T36)	07:15			07:30	06:40		07:12 (T31)	06:06		19:19 (T30)	05:59		20:09 (T27)
	17:37	56	16:42 (T35)	18:16			19:47	20:20	79	19:53 (T30)	20:50	41	20:26 (T27)	21:08	32	20:41 (T27)
25	07:50		08:10 (T36)	07:13			07:28	06:38		07:13 (T31)	06:05		19:21 (T30)	06:00		20:09 (T27)
	17:39	55	16:41 (T35)	18:17			19:48	20:21	79	19:54 (T30)	20:51	40	20:28 (T27)	21:08	31	20:40 (T27)
26	07:49		08:10 (T36)	07:12			07:26	06:37		07:13 (T31)	06:05		19:23 (T30)	06:00		20:09 (T27)
	17:40	55	16:41 (T35)	18:18			19:50	20:22	79	19:54 (T30)	20:52	36	20:28 (T27)	21:09	31	20:40 (T27)
27	07:48		08:09 (T36)	07:10			07:24	06:36		07:14 (T31)	06:04		19:26 (T30)	06:00		20:09 (T27)
	17:41	53	16:40 (T35)	18:19			19:51	20:23	77	19:54 (T30)	20:53	30	20:28 (T27)	21:09	32	20:41 (T27)
28	07:47		08:08 (T36)	07:09			07:23	06:34		07:15 (T31)	06:03		20:05 (T27)	06:01		20:09 (T27)
	17:42	52	16:39 (T35)	18:20			19:52	20:24	76	19:55 (T30)	20:54	25	20:30 (T27)	21:09	32	20:41 (T27)
29	07:46		08:07 (T36)				07:21	06:33		07:16 (T31)	06:03		20:05 (T27)	06:01		20:10 (T27)
	17:44	48	16:37 (T35)				19:53	20:25	73	19:54 (T30)	20:55	25	20:30 (T27)	21:09	32	20:42 (T27)
30	07:45		08:07 (T36)				07:19	06:31		07:18 (T31)	06:02		20:05 (T27)	06:01		20:10 (T27)
	17:45	42	16:34 (T35)				19:54	20:26	69	19:54 (T30)	20:55	26	20:31 (T27)	21:09	32	20:42 (T27)
31	07:44		08:07 (T36)				07:18				06:02		20:04 (T27)			
	17:46	32	08:39 (T36)				19:55				20:56	27	20:31 (T27)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		1471			249				1417			1306			942	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.68			0.53				0.62			0.57			0.54	
Total reduction		0.22			0.22				0.33			0.33			0.36	
Total, real		320			54				470			435			336	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1269 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7219)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		20:10 (T27)	06:26		19:17 (T30)	06:57		07:18 (T31)	07:27		07:02	07:46 (T36)	07:37		15:44 (T35)
	21:09	32	20:42 (T27)	20:50	45	20:02 (T30)	20:07	30	07:48 (T31)	19:15		17:28	14	08:00 (T36)	17:04	42	16:26 (T35)
2	06:02		20:10 (T27)	06:27		19:17 (T30)	06:58		07:19 (T31)	07:29		07:03	07:45 (T36)	07:38		15:44 (T35)
	21:08	32	20:42 (T27)	20:49	45	20:02 (T30)	20:06	28	07:47 (T31)	19:13		17:27	18	08:03 (T36)	17:03	42	16:26 (T35)
3	06:03		20:11 (T27)	06:28		19:16 (T30)	06:59		07:20 (T31)	07:30		07:04	07:43 (T36)	07:39		15:44 (T35)
	21:08	32	20:43 (T27)	20:48	46	20:02 (T30)	20:04	25	07:45 (T31)	19:11		17:25	21	08:04 (T36)	17:03	42	16:26 (T35)
4	06:04		20:11 (T27)	06:29		19:16 (T30)	07:00		07:21 (T31)	07:31		07:06	07:41 (T36)	07:40		15:45 (T35)
	21:08	31	20:42 (T27)	20:47	47	20:03 (T30)	20:02	22	07:43 (T31)	19:10		17:24	24	08:05 (T36)	17:03	42	16:27 (T35)
5	06:04		20:11 (T27)	06:30		19:15 (T30)	07:01		07:22 (T31)	07:32		07:07	07:40 (T36)	07:41		15:45 (T35)
	21:08	32	20:43 (T27)	20:46	48	20:03 (T30)	20:01	19	07:41 (T31)	19:08		17:23	26	08:06 (T36)	17:03	42	16:27 (T35)
6	06:05		20:11 (T27)	06:31		19:15 (T30)	07:02		07:23 (T31)	07:33		07:08	07:40 (T36)	07:42		15:45 (T35)
	21:08	31	20:42 (T27)	20:45	48	20:03 (T30)	19:57	15	07:38 (T31)	19:06		17:22	27	08:07 (T36)	17:03	43	16:28 (T35)
7	06:05		20:11 (T27)	06:32		19:15 (T30)	07:03		07:29 (T31)	07:34		07:09	07:39 (T36)	07:43		15:46 (T35)
	21:07	31	20:42 (T27)	20:43	48	20:03 (T30)	19:56	3	07:32 (T31)	19:05		17:21	29	08:08 (T36)	17:02	42	16:28 (T35)
8	06:06		20:11 (T27)	06:33		19:15 (T30)	07:04			07:35		07:10	07:39 (T36)	07:44		15:46 (T35)
	21:07	30	20:41 (T27)	20:42	49	20:04 (T30)	19:54			19:03		17:20	29	08:08 (T36)	17:02	43	16:29 (T35)
9	06:07		20:12 (T27)	06:34		19:14 (T30)	07:05			07:36		07:12	07:39 (T36)	07:45		15:46 (T35)
	21:07	29	20:41 (T27)	20:41	50	20:04 (T30)	19:52			19:01		17:19	30	08:09 (T36)	17:02	42	16:28 (T35)
10	06:07		20:12 (T27)	06:35		19:14 (T30)	07:06			07:37		07:13	07:39 (T36)	07:46		15:46 (T35)
	21:06	29	20:41 (T27)	20:40	50	20:04 (T30)	19:51			19:00		17:18	30	08:09 (T36)	17:02	43	16:29 (T35)
11	06:08		20:12 (T27)	06:36		07:31 (T31)	07:07			07:38		07:14	07:38 (T36)	07:47		15:47 (T35)
	21:06	28	20:40 (T27)	20:38	61	20:03 (T30)	19:49			18:58		17:17	31	08:09 (T36)	17:03	42	16:29 (T35)
12	06:09		20:12 (T27)	06:37		07:28 (T31)	07:08			07:39		07:15	07:38 (T36)	07:47		15:48 (T35)
	21:06	28	20:40 (T27)	20:37	66	20:03 (T30)	19:47			18:57		17:16	42	16:05 (T35)	17:03	42	16:30 (T35)
13	06:09		20:13 (T27)	06:38		07:26 (T31)	07:09			07:40		07:16	07:39 (T36)	07:48		15:48 (T35)
	21:05	27	20:40 (T27)	20:36	70	20:03 (T30)	19:45			18:55		17:15	48	16:09 (T35)	17:03	42	16:30 (T35)
14	06:10		20:14 (T27)	06:39		07:23 (T31)	07:10			07:41		07:18	07:40 (T36)	07:49		15:48 (T35)
	21:05	26	20:40 (T27)	20:34	74	20:02 (T30)	19:44			18:53		17:14	52	16:11 (T35)	17:03	42	16:30 (T35)
15	06:11		20:13 (T27)	06:40		07:22 (T31)	07:11			07:42		07:19	07:41 (T36)	07:50		15:49 (T35)
	21:04	25	20:38 (T27)	20:33	75	20:01 (T30)	19:42			18:52		17:13	53	16:12 (T35)	17:03	42	16:31 (T35)
16	06:12		20:14 (T27)	06:41		07:21 (T31)	07:12			07:44		07:20	07:43 (T36)	07:50		15:50 (T35)
	21:04	24	20:38 (T27)	20:32	77	20:01 (T30)	19:40			18:50		17:12	54	16:14 (T35)	17:03	41	16:31 (T35)
17	06:13		19:34 (T30)	06:42		07:19 (T31)	07:13			07:45		07:21	07:44 (T36)	07:51		15:51 (T35)
	21:03	34	20:38 (T27)	20:30	79	20:00 (T30)	19:39			18:49		17:11	55	16:15 (T35)	17:04	41	16:32 (T35)
18	06:13		19:32 (T30)	06:43		07:18 (T31)	07:14			07:46		07:22	07:45 (T36)	07:52		15:50 (T35)
	21:02	36	20:37 (T27)	20:29	79	19:59 (T30)	19:37			18:47		17:11	56	16:16 (T35)	17:04	42	16:32 (T35)
19	06:14		19:30 (T30)	06:44		07:18 (T31)	07:15			07:47		07:24	07:46 (T36)	07:52		15:51 (T35)
	21:02	41	20:37 (T27)	20:27	79	19:59 (T30)	19:35			18:46		17:10	56	16:17 (T35)	17:04	42	16:33 (T35)
20	06:15		19:28 (T30)	06:45		07:17 (T31)	07:16			07:48		07:25	07:48 (T36)	07:53		15:51 (T35)
	21:01	41	20:35 (T27)	20:26	80	19:58 (T30)	19:33			18:44		17:09	57	16:19 (T35)	17:05	42	16:33 (T35)
21	06:16		19:27 (T30)	06:46		07:16 (T31)	07:17			07:49		07:26	07:49 (T36)	07:53		15:52 (T35)
	21:00	43	20:35 (T27)	20:24	79	19:57 (T30)	19:32			18:43		17:08	56	16:19 (T35)	17:05	42	16:34 (T35)
22	06:17		19:26 (T30)	06:47		07:16 (T31)	07:18			07:50		07:27	07:50 (T36)	07:54		15:52 (T35)
	20:59	43	20:34 (T27)	20:23	77	19:56 (T30)	19:30			18:41		17:08	55	16:20 (T35)	17:06	42	16:34 (T35)
23	06:18		19:25 (T30)	06:48		07:15 (T31)	07:19			07:51		07:28	07:51 (T36)	07:54		15:53 (T35)
	20:59	44	20:34 (T27)	20:21	75	19:54 (T30)	19:28			18:40		17:07	54	16:20 (T35)	17:06	42	16:35 (T35)
24	06:19		19:24 (T30)	06:49		07:15 (T31)	07:20			07:53		07:29	07:52 (T36)	07:55		15:53 (T35)
	20:58	44	20:33 (T27)	20:20	73	19:53 (T30)	19:27			18:39		17:07	54	16:21 (T35)	17:07	42	16:35 (T35)
25	06:20		19:23 (T30)	06:50		07:15 (T31)	07:21			07:54		07:31	07:54 (T36)	07:55		15:53 (T35)
	20:57	43	20:32 (T27)	20:18	70	19:51 (T30)	19:25			18:37		17:06	52	16:22 (T35)	17:08	42	16:35 (T35)
26	06:20		19:22 (T30)	06:51		07:14 (T31)	07:22			07:55		07:32	07:55 (T36)	07:56		15:54 (T35)
	20:56	41	20:32 (T27)	20:17	67	19:49 (T30)	19:23			18:36		17:05	51	16:23 (T35)	17:08	42	16:36 (T35)
27	06:21		19:20 (T30)	06:52		07:14 (T31)	07:23			07:56		07:33	07:56 (T36)	07:56		15:55 (T35)
	20:55	38	19:58 (T30)	20:15	61	19:46 (T30)	19:21			18:34		17:05	49	16:23 (T35)	17:09	41	16:36 (T35)
28	06:22		19:20 (T30)	06:53		07:14 (T31)	07:24			07:57		07:34	07:57 (T36)	07:56		15:55 (T35)
	20:54	39	19:59 (T30)	20:14	55	19:43 (T30)	19:20			18:33		17:05	47	16:24 (T35)	17:09	41	16:36 (T35)
29	06:23		19:19 (T30)	06:54		07:15 (T31)	07:25			07:58		07:35	07:58 (T36)	07:57		15:55 (T35)
	20:53	41	20:00 (T30)	20:12	40	19:36 (T30)	19:18			18:32		17:04	42	16:24 (T35)	17:10	42	16:37 (T35)
30	06:24		19:18 (T30)	06:55		07:16 (T31)	07:26			08:00		07:36	15:43 (T35)	07:57		15:56 (T35)
	20:52	42	20:00 (T30)	20:10	34	07:50 (T31)	19:16			18:30		17:04	41	16:24 (T35)	17:11	42	16:38 (T35)
31	06:25		19:18 (T30)	06:56		07:17 (T31)				08:01	08:50 (T36)				07:57		15:57 (T35)
	20:51	43	20:01 (T30)	20:09	32	07:49 (T31)				18:29	6 08:56 (T36)				17:12	41	16:38 (T35)
Potential sun hours	460			429			375			345		297			287		
Total, worst case		1080			1879			142			6		1253			1300	
Sun reduction		0.66			0.61			0.59			0.48		0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00		1.00			1.00	
Wind dir. red.		0.56			0.60			0.66			0.53		0.63			0.74	
Total reduction		0.38			0.38			0.40			0.26		0.19			0.17	
Total, real		407			712			57			2		244			217	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1314 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7257)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April	May		June		
1	07:58	07:44		16:56 (T13)	07:07	16:41 (T13)	07:16	06:30		06:01	19:58 (T10)
	17:13	17:47	15	17:11 (T13)	18:22	58 18:00 (T12)	19:56	20:27		20:57	35 20:33 (T10)
2	07:58	07:43		16:53 (T13)	07:06	16:42 (T13)	07:14	06:29		06:01	19:57 (T10)
	17:14	17:48	22	17:15 (T13)	18:23	60 18:01 (T12)	19:57	20:28		20:58	36 20:33 (T10)
3	07:58	07:42		16:51 (T13)	07:04	16:44 (T13)	07:13	06:27		06:00	19:58 (T10)
	17:14	17:50	26	17:17 (T13)	18:24	61 18:03 (T12)	19:58	20:29		20:59	36 20:34 (T10)
4	07:58	07:41		16:49 (T13)	07:03	16:44 (T13)	07:11	06:26		06:00	19:58 (T10)
	17:15	17:51	30	17:19 (T13)	18:25	60 18:03 (T12)	19:59	20:30		20:59	36 20:34 (T10)
5	07:58	07:40		16:48 (T13)	07:01	16:45 (T13)	07:09	06:25		05:59	19:57 (T10)
	17:16	17:52	33	17:21 (T13)	18:26	60 18:04 (T12)	20:00	20:31		21:00	37 20:34 (T10)
6	07:58	07:38		16:46 (T13)	06:59	16:48 (T13)	07:08	06:24		05:59	19:57 (T10)
	17:17	17:54	37	17:23 (T13)	18:27	58 18:06 (T12)	20:00	20:33		21:01	38 20:35 (T10)
7	07:58	07:37		16:44 (T13)	06:58	16:49 (T13)	07:06	06:22		05:59	19:58 (T10)
	17:18	17:55	40	17:24 (T13)	18:29	57 18:07 (T12)	20:01	20:34		21:01	37 20:35 (T10)
8	07:58	07:36		16:44 (T13)	07:56	17:52 (T13)	07:05	06:21		05:59	19:58 (T10)
	17:19	17:56	41	17:25 (T13)	19:30	52 19:08 (T12)	20:02	20:35		21:02	38 20:36 (T10)
9	07:57	07:35		16:43 (T13)	07:55	17:56 (T13)	07:03	06:20		05:58	19:57 (T10)
	17:20	17:57	43	17:26 (T13)	19:31	45 19:09 (T12)	20:04	20:36		21:03	38 20:35 (T10)
10	07:57	07:34		16:42 (T13)	07:53	18:37 (T12)	07:01	06:19		05:58	19:57 (T10)
	17:21	17:59	46	17:28 (T13)	19:32	31 19:08 (T12)	20:05	20:37		21:03	39 20:36 (T10)
11	07:57	07:33		16:42 (T13)	07:51	18:38 (T12)	07:00	06:18		05:58	19:58 (T10)
	17:22	18:00	47	17:29 (T13)	19:33	30 19:08 (T12)	20:06	20:38		21:04	38 20:36 (T10)
12	07:57	07:31		16:40 (T13)	07:50	18:37 (T12)	06:58	06:17		05:58	19:58 (T10)
	17:23	18:01	49	17:29 (T13)	19:34	30 19:07 (T12)	20:07	20:39		21:04	38 20:36 (T10)
13	07:56	07:30		16:40 (T13)	07:48	18:37 (T12)	06:56	06:16		05:58	19:58 (T10)
	17:24	18:02	50	17:30 (T13)	19:35	29 19:06 (T12)	20:08	20:40		21:05	39 20:37 (T10)
14	07:56	07:29		16:40 (T13)	07:46	18:38 (T12)	06:55	06:15		05:58	19:58 (T10)
	17:25	18:04	51	17:31 (T13)	19:36	28 19:06 (T12)	20:09	20:41		21:05	39 20:37 (T10)
15	07:56	07:27		16:39 (T13)	07:45	18:39 (T12)	06:53	06:14		05:58	19:58 (T10)
	17:27	18:05	51	17:30 (T13)	19:38	26 19:05 (T12)	20:10	20:42		21:06	39 20:37 (T10)
16	07:55	07:26		16:39 (T13)	07:43	18:39 (T12)	06:52	06:13		05:58	19:59 (T10)
	17:28	18:06	52	17:31 (T13)	19:39	24 19:03 (T12)	20:11	20:43		21:06	38 20:37 (T10)
17	07:55	07:25		16:39 (T13)	07:41	18:40 (T12)	06:50	06:12		05:58	19:59 (T10)
	17:29	18:07	53	17:32 (T13)	19:40	21 19:01 (T12)	20:12	20:44		21:07	39 20:38 (T10)
18	07:54	07:23		16:38 (T13)	07:40	18:43 (T12)	06:49	06:11	20:13 (T10)	05:58	19:59 (T10)
	17:30	18:08	53	17:31 (T13)	19:41	16 18:59 (T12)	20:13	20:45	3 20:16 (T10)	21:07	39 20:38 (T10)
19	07:54	07:22		16:38 (T13)	07:38	18:45 (T12)	06:47	06:10	20:08 (T10)	05:58	19:59 (T10)
	17:31	18:10	54	17:32 (T13)	19:42	11 18:56 (T12)	20:14	20:46	12 20:20 (T10)	21:07	39 20:38 (T10)
20	07:53	07:21		16:38 (T13)	07:36		06:46	06:09	20:06 (T10)	05:58	20:00 (T10)
	17:32	18:11	53	17:31 (T13)	19:43		20:15	20:47	16 20:22 (T10)	21:08	39 20:39 (T10)
21	07:53	07:19		16:38 (T13)	07:35		06:44	06:08	20:04 (T10)	05:58	20:00 (T10)
	17:34	18:12	54	17:32 (T13)	19:44		20:16	20:48	20 20:24 (T10)	21:08	39 20:39 (T10)
22	07:52	07:18		16:38 (T13)	07:33		06:43	06:07	20:03 (T10)	05:59	20:00 (T10)
	17:35	18:13	53	17:31 (T13)	19:45		20:18	20:49	22 20:25 (T10)	21:08	39 20:39 (T10)
23	07:51	07:16		16:38 (T13)	07:31		06:41	06:07	20:02 (T10)	05:59	20:00 (T10)
	17:36	18:15	53	17:31 (T13)	19:46		20:19	20:50	24 20:26 (T10)	21:08	39 20:39 (T10)
24	07:50	07:15		16:38 (T13)	07:30		06:40	06:06	20:01 (T10)	05:59	20:01 (T10)
	17:37	18:16	52	17:30 (T13)	19:47		20:20	20:50	25 20:26 (T10)	21:09	39 20:40 (T10)
25	07:50	07:13		16:39 (T13)	07:28		06:38	06:05	20:00 (T10)	05:59	20:01 (T10)
	17:38	18:17	51	17:30 (T13)	19:48		20:21	20:51	27 20:27 (T10)	21:09	39 20:40 (T10)
26	07:49	07:12		16:39 (T13)	07:26		06:37	06:05	20:00 (T10)	06:00	20:01 (T10)
	17:40	18:18	50	17:29 (T13)	19:50		20:22	20:52	28 20:28 (T10)	21:09	38 20:39 (T10)
27	07:48	07:10		16:40 (T13)	07:24		06:35	06:04	19:59 (T10)	06:00	20:02 (T10)
	17:41	18:19	49	17:29 (T13)	19:51		20:23	20:53	30 20:29 (T10)	21:09	38 20:40 (T10)
28	07:47	07:09		16:40 (T13)	07:23		06:34	06:03	19:59 (T10)	06:00	20:01 (T10)
	17:42	18:20	54	17:57 (T12)	19:52		20:24	20:54	31 20:30 (T10)	21:09	39 20:40 (T10)
29	07:46				07:21		06:33	06:03	19:58 (T10)	06:01	20:01 (T10)
	17:43				19:53		20:25	20:55	32 20:30 (T10)	21:09	39 20:40 (T10)
30	07:46				07:19		06:31	06:02	19:58 (T10)	06:01	20:02 (T10)
	17:45				19:54		20:26	20:56	34 20:32 (T10)	21:09	39 20:41 (T10)
31	07:45				07:18			06:02	19:58 (T10)		
	17:46				19:55			20:56	34 20:32 (T10)		
Potential sun hours	297	297			370		399	449		453	
Total, worst case			1262			757			338		1145
Sun reduction			0.40			0.44			0.57		0.64
Oper. time red.			1.00			1.00			1.00		1.00
Wind dir. red.			0.72			0.69			0.54		0.54
Total reduction			0.29			0.31			0.32		0.36
Total, real			370			234			107		407

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1314 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7257)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August	September			October			November			December
1	06:02		20:02 (T10)	06:26	06:57			07:28		18:16 (T12)	07:02		16:12 (T13)	07:37
	21:09	38	20:40 (T10)	20:50	20:07			19:15	30	18:46 (T12)	17:28	45	16:57 (T13)	17:03
2	06:02		20:03 (T10)	06:27	06:58			07:29		18:15 (T12)	07:03		16:13 (T13)	07:38
	21:09	38	20:41 (T10)	20:49	20:06			19:13	31	18:46 (T12)	17:27	43	16:56 (T13)	17:03
3	06:03		20:02 (T10)	06:28	06:59			07:30		18:16 (T12)	07:05		16:14 (T13)	07:39
	21:09	38	20:40 (T10)	20:48	20:04			19:11	31	18:47 (T12)	17:25	41	16:55 (T13)	17:03
4	06:03		20:03 (T10)	06:29	07:00			07:31		17:37 (T13)	07:06		16:14 (T13)	07:40
	21:08	38	20:41 (T10)	20:47	20:02			19:10	39	18:46 (T12)	17:24	39	16:53 (T13)	17:03
5	06:04		20:04 (T10)	06:30	07:01			07:32		17:31 (T13)	07:07		16:17 (T13)	07:41
	21:08	37	20:41 (T10)	20:46	20:01			19:08	50	18:46 (T12)	17:23	36	16:53 (T13)	17:03
6	06:05		20:04 (T10)	06:31	07:02			07:33		17:27 (T13)	07:08		16:18 (T13)	07:42
	21:08	37	20:41 (T10)	20:45	19:57			19:06	55	18:44 (T12)	17:22	33	16:51 (T13)	17:02
7	06:05		20:04 (T10)	06:32	07:03			07:34		17:24 (T13)	07:09		16:19 (T13)	07:43
	21:08	37	20:41 (T10)	20:43	19:56			19:05	58	18:42 (T12)	17:21	30	16:49 (T13)	17:02
8	06:06		20:04 (T10)	06:33	07:04			07:35		17:22 (T13)	07:11		16:22 (T13)	07:44
	21:07	37	20:41 (T10)	20:42	19:54			19:03	60	18:41 (T12)	17:20	26	16:48 (T13)	17:02
9	06:06		20:05 (T10)	06:34	07:05			07:36		17:20 (T13)	07:12		16:24 (T13)	07:45
	21:07	36	20:41 (T10)	20:41	19:52			19:01	60	18:39 (T12)	17:19	21	16:45 (T13)	17:02
10	06:07		20:05 (T10)	06:35	07:06			07:37		17:18 (T13)	07:13		16:28 (T13)	07:46
	21:07	36	20:41 (T10)	20:40	19:51			19:00	61	18:37 (T12)	17:18	14	16:42 (T13)	17:02
11	06:08		20:05 (T10)	06:36	07:07			07:38		17:16 (T13)	07:14			07:47
	21:06	35	20:40 (T10)	20:38	19:49			18:58	61	18:35 (T12)	17:17			17:02
12	06:09		20:06 (T10)	06:37	07:08			07:39		17:15 (T13)	07:15			07:48
	21:06	34	20:40 (T10)	20:37	19:47			18:57	60	18:34 (T12)	17:16			17:02
13	06:09		20:07 (T10)	06:38	07:09			07:40		17:15 (T13)	07:17			07:48
	21:05	33	20:40 (T10)	20:36	19:46			18:55	57	18:33 (T12)	17:15			17:03
14	06:10		20:07 (T10)	06:39	07:10			07:41		17:13 (T13)	07:18			07:49
	21:05	33	20:40 (T10)	20:34	19:44			18:53	48	18:01 (T13)	17:14			17:03
15	06:11		20:07 (T10)	06:40	07:11			07:43		17:12 (T13)	07:19			07:50
	21:04	32	20:39 (T10)	20:33	19:42			18:52	50	18:02 (T13)	17:13			17:03
16	06:12		20:08 (T10)	06:41	07:12			07:44		17:11 (T13)	07:20			07:51
	21:04	30	20:38 (T10)	20:32	19:40			18:50	51	18:02 (T13)	17:12			17:03
17	06:12		20:09 (T10)	06:42	07:13			07:45		17:10 (T13)	07:21			07:51
	21:03	29	20:38 (T10)	20:30	19:39			18:49	52	18:02 (T13)	17:11			17:04
18	06:13		20:10 (T10)	06:43	07:14			07:46		17:10 (T13)	07:23			07:52
	21:03	28	20:38 (T10)	20:29	19:37			18:47	52	18:02 (T13)	17:10			17:04
19	06:14		20:10 (T10)	06:44	07:15			07:47		17:09 (T13)	07:24			07:53
	21:02	26	20:36 (T10)	20:27	19:35			18:46	53	18:02 (T13)	17:10			17:04
20	06:15		20:11 (T10)	06:45	07:16			07:48		17:09 (T13)	07:25			07:53
	21:01	25	20:36 (T10)	20:26	19:34			18:44	53	18:02 (T13)	17:09			17:05
21	06:16		20:12 (T10)	06:46	07:17			07:49		17:09 (T13)	07:26			07:54
	21:00	23	20:35 (T10)	20:24	19:32			18:43	53	18:02 (T13)	17:08			17:05
22	06:17		20:14 (T10)	06:47	07:18			07:50		17:08 (T13)	07:27			07:54
	21:00	21	20:35 (T10)	20:23	19:30			18:41	54	18:02 (T13)	17:08			17:06
23	06:18		20:15 (T10)	06:48	07:19			07:52		17:08 (T13)	07:28			07:55
	20:59	19	20:34 (T10)	20:21	19:28			18:40	53	18:01 (T13)	17:07			17:06
24	06:18		20:17 (T10)	06:49	07:20		18:30 (T12)	07:53		17:09 (T13)	07:30			07:55
	20:58	15	20:32 (T10)	20:20	19:27	7	18:37 (T12)	18:38	53	18:02 (T13)	17:06			17:07
25	06:19		20:20 (T10)	06:50	07:21		18:26 (T12)	07:54		17:09 (T13)	07:31			07:56
	20:57	10	20:30 (T10)	20:18	19:25	15	18:41 (T12)	18:37	52	18:01 (T13)	17:06			17:07
26	06:20			06:51	07:22		18:23 (T12)	07:55		17:09 (T13)	07:32			07:56
	20:56			20:17	19:23	20	18:43 (T12)	18:36	52	18:01 (T13)	17:05			17:08
27	06:21			06:52	07:23		18:21 (T12)	07:56		17:09 (T13)	07:33			07:56
	20:55			20:15	19:22	23	18:44 (T12)	18:34	51	18:00 (T13)	17:05			17:09
28	06:22			06:53	07:24		18:20 (T12)	07:57		17:09 (T13)	07:34			07:57
	20:54			20:14	19:20	25	18:45 (T12)	18:33	50	17:59 (T13)	17:04			17:09
29	06:23			06:54	07:25		18:18 (T12)	07:59		17:10 (T13)	07:35			07:57
	20:53			20:12	19:18	27	18:45 (T12)	18:32	49	17:59 (T13)	17:04			17:10
30	06:24			06:55	07:27		18:17 (T12)	08:00		17:10 (T13)	07:36			07:57
	20:52			20:11	19:16	29	18:46 (T12)	18:30	48	17:58 (T13)	17:04			17:11
31	06:25			06:56				08:01		17:11 (T13)				07:57
	20:51			20:09				18:29	46	17:57 (T13)				17:12
Potential sun hours	460			429	375			345			297			287
Total, worst case		765				146			1573			328		
Sun reduction		0.66				0.59			0.48			0.30		
Oper. time red.		1.00				1.00			1.00			1.00		
Wind dir. red.		0.54				0.67			0.71			0.72		
Total reduction		0.37				0.40			0.35			0.22		
Total, real		280				59			545			72		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1375 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7298)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		08:49 (T71)	07:43		07:07			07:16		18:14 (T69)	06:30		06:50 (T67)	06:02		07:11 (T68)
	17:13	47	09:36 (T71)	17:48		18:22			19:56	65	19:19 (T69)	20:27	122	19:00 (T69)	20:57	56	08:07 (T68)
2	07:57		08:50 (T71)	07:42		07:06			07:15		18:14 (T69)	06:29		06:50 (T67)	06:01		07:12 (T68)
	17:14	46	09:36 (T71)	17:49		18:23			19:57	66	19:20 (T69)	20:28	118	18:58 (T69)	20:57	55	08:07 (T68)
3	07:57		08:50 (T71)	07:41		07:04			07:13		18:12 (T69)	06:28		06:51 (T67)	06:01		07:13 (T68)
	17:15	46	09:36 (T71)	17:50		18:24			19:58	68	19:20 (T69)	20:29	113	18:56 (T69)	20:58	54	08:07 (T68)
4	07:57		08:51 (T71)	07:40		07:02			07:11		18:11 (T69)	06:27		06:50 (T67)	06:01		07:13 (T68)
	17:16	45	09:36 (T71)	17:51		18:25			19:59	69	19:20 (T69)	20:30	109	18:53 (T69)	20:59	53	08:06 (T68)
5	07:57		08:52 (T71)	07:39		07:01			07:10		18:11 (T69)	06:25		06:51 (T67)	06:00		07:14 (T68)
	17:17	45	09:37 (T71)	17:53		18:26			20:00	69	19:20 (T69)	20:31	100	18:49 (T69)	20:59	52	08:06 (T68)
6	07:57		08:53 (T71)	07:38		06:59			07:08		18:11 (T69)	06:24		06:52 (T67)	06:00		07:14 (T68)
	17:18	44	09:37 (T71)	17:54		18:28			20:00	69	19:20 (T69)	20:32	85	18:42 (T69)	21:00	52	08:06 (T68)
7	07:57		08:53 (T71)	07:37		06:58			07:06		18:10 (T69)	06:23		06:53 (T67)	06:00		07:15 (T68)
	17:19	44	09:37 (T71)	17:55		18:29			20:01	69	19:19 (T69)	20:33	81	08:14 (T68)	21:01	51	08:06 (T68)
8	07:57		08:54 (T71)	07:36		07:56			07:05		18:10 (T69)	06:22		06:54 (T67)	05:59		07:15 (T68)
	17:20	43	09:37 (T71)	17:57		19:30			20:02	70	19:20 (T69)	20:34	80	08:14 (T68)	21:01	50	08:05 (T68)
9	07:57		08:55 (T71)	07:35		07:54			07:03		18:09 (T69)	06:21		06:56 (T67)	05:59		07:16 (T68)
	17:21	43	09:38 (T71)	17:58		19:31			20:03	70	19:19 (T69)	20:35	78	08:14 (T68)	21:02	49	08:05 (T68)
10	07:57		08:56 (T71)	07:33		07:53			07:02		18:09 (T69)	06:20		06:57 (T67)	05:59		07:16 (T68)
	17:22	41	09:37 (T71)	17:59		19:32			20:04	70	19:19 (T69)	20:36	77	08:14 (T68)	21:03	49	08:05 (T68)
11	07:56		08:57 (T71)	07:32		07:51			07:00		18:09 (T69)	06:18		07:00 (T67)	05:59		07:17 (T68)
	17:23	40	09:37 (T71)	18:00		19:33			20:06	70	19:19 (T69)	20:37	74	08:14 (T68)	21:03	48	08:05 (T68)
12	07:56		08:58 (T71)	07:31		07:50			06:58		18:09 (T69)	06:17		07:05 (T68)	05:59		07:17 (T68)
	17:24	39	09:37 (T71)	18:01		19:34			20:07	69	19:18 (T69)	20:38	69	08:14 (T68)	21:04	48	08:05 (T68)
13	07:56		08:58 (T71)	07:30		07:48			06:57		07:37 (T68)	06:16		07:05 (T68)	05:59		07:18 (T68)
	17:25	38	09:36 (T71)	18:03		19:35			20:08	85	19:18 (T69)	20:39	68	08:13 (T68)	21:04	47	08:05 (T68)
14	07:55		09:00 (T71)	07:28		07:46			06:55		07:31 (T68)	06:15		07:05 (T68)	05:59		07:18 (T68)
	17:26	36	09:36 (T71)	18:04		19:37			20:09	94	19:17 (T69)	20:40	68	08:13 (T68)	21:05	47	08:05 (T68)
15	07:55		09:00 (T71)	07:27		07:45			06:54		07:28 (T68)	06:14		07:05 (T68)	05:59		07:19 (T68)
	17:27	35	09:35 (T71)	18:05		19:38			20:10	99	19:17 (T69)	20:41	68	08:13 (T68)	21:05	46	08:05 (T68)
16	07:55		09:02 (T71)	07:26		07:43			06:52		07:25 (T68)	06:13		07:05 (T68)	05:59		07:19 (T68)
	17:28	33	09:35 (T71)	18:06		19:39			20:11	104	19:16 (T69)	20:42	67	08:12 (T68)	21:06	46	08:05 (T68)
17	07:54		09:03 (T71)	07:25		07:41			06:51		07:10 (T67)	06:12		07:05 (T68)	05:59		07:19 (T68)
	17:30	31	09:34 (T71)	18:08		19:40			20:12	113	19:16 (T69)	20:43	67	08:12 (T68)	21:06	46	08:05 (T68)
18	07:54		09:05 (T71)	07:23		07:40			06:49		07:08 (T67)	06:11		07:05 (T68)	05:59		07:20 (T68)
	17:31	29	09:34 (T71)	18:09		19:41			20:13	119	19:15 (T69)	20:44	67	08:12 (T68)	21:06	45	08:05 (T68)
19	07:53		09:06 (T71)	07:22		07:38		18:41 (T69)	06:47		07:07 (T67)	06:11		07:05 (T68)	05:59		07:20 (T68)
	17:32	26	09:32 (T71)	18:10		19:42	19	19:00 (T69)	20:14	124	19:15 (T69)	20:45	66	08:11 (T68)	21:07	45	08:05 (T68)
20	07:53		09:08 (T71)	07:20		07:36		18:36 (T69)	06:46		07:05 (T67)	06:10		07:07 (T68)	05:59		07:20 (T68)
	17:33	24	09:32 (T71)	18:11		19:43	28	19:04 (T69)	20:15	125	19:13 (T69)	20:46	65	08:12 (T68)	21:07	45	08:05 (T68)
21	07:52		09:10 (T71)	07:19		07:35		18:33 (T69)	06:44		07:04 (T67)	06:09		07:07 (T68)	05:59		07:21 (T68)
	17:34	20	09:30 (T71)	18:12		19:44	34	19:07 (T69)	20:16	127	19:13 (T69)	20:47	64	08:11 (T68)	21:07	45	08:06 (T68)
22	07:51		09:13 (T71)	07:18		07:33		18:30 (T69)	06:43		07:02 (T67)	06:08		07:07 (T68)	05:59		07:21 (T68)
	17:35	14	09:27 (T71)	18:14		19:45	39	19:09 (T69)	20:17	128	19:12 (T69)	20:48	64	08:11 (T68)	21:07	45	08:06 (T68)
23	07:51		09:19 (T71)	07:16		07:31		18:27 (T69)	06:42		07:01 (T67)	06:07		07:07 (T68)	06:00		07:21 (T68)
	17:37	4	09:23 (T71)	18:15		19:46	44	19:11 (T69)	20:18	128	19:11 (T69)	20:49	63	08:10 (T68)	21:08	45	08:06 (T68)
24	07:50			07:15		07:30		18:25 (T69)	06:40		06:59 (T67)	06:07		07:08 (T68)	06:00		07:21 (T68)
	17:38			18:16		19:47	48	19:13 (T69)	20:19	128	19:09 (T69)	20:50	62	08:10 (T68)	21:08	45	08:06 (T68)
25	07:49			07:13		07:28		18:23 (T69)	06:39		06:58 (T67)	06:06		07:08 (T68)	06:00		07:22 (T68)
	17:39			18:17		19:48	51	19:14 (T69)	20:20	128	19:09 (T69)	20:51	62	08:10 (T68)	21:08	45	08:07 (T68)
26	07:48			07:12		07:26		18:21 (T69)	06:37		06:57 (T67)	06:05		07:08 (T68)	06:00		07:21 (T68)
	17:40			18:18		19:50	54	19:15 (T69)	20:21	128	19:08 (T69)	20:52	61	08:09 (T68)	21:08	46	08:07 (T68)
27	07:48			07:10		07:25		18:20 (T69)	06:36		06:55 (T67)	06:05		07:09 (T68)	06:01		07:21 (T68)
	17:42			18:20		19:51	57	19:17 (T69)	20:23	128	19:06 (T69)	20:52	60	08:09 (T68)	21:08	46	08:07 (T68)
28	07:47			07:09		07:23		18:18 (T69)	06:35		06:54 (T67)	06:04		07:09 (T68)	06:01		07:22 (T68)
	17:43			18:21		19:52	59	19:17 (T69)	20:24	126	19:05 (T69)	20:53	59	08:08 (T68)	21:08	46	08:08 (T68)
29	07:46					07:21		18:17 (T69)	06:33		06:53 (T67)	06:03		07:10 (T68)	06:02		07:21 (T68)
	17:44					19:53	60	19:17 (T69)	20:25	125	19:04 (T69)	20:54	58	08:08 (T68)	21:08	47	08:08 (T68)
30	07:45					07:20		18:16 (T69)	06:32		06:51 (T67)	06:03		07:10 (T68)	06:02		07:22 (T68)
	17:45					19:54	63	19:19 (T69)	20:26	123	19:01 (T69)	20:55	58	08:08 (T68)	21:08	47	08:09 (T68)
31	07:44					07:18		18:15 (T69)				06:02		07:11 (T68)			
	17:46					19:55	64	19:19 (T69)				20:56	57	08:08 (T68)			
Potential sun hours	297			297		370			399			448			452		
Total, worst case		813					620			2956			2310			1441	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.53					0.64			0.65			0.67			0.67	
Total reduction		0.16					0.28			0.33			0.37			0.42	
Total, real		131					171			981			861			604	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1375 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7298)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:03		07:21 (T68)	06:27		07:13 (T67)	06:57		18:08 (T69)	07:28	07:02			07:37		08:39 (T71)
	21:08	48	08:09 (T68)	20:50	70	08:23 (T68)	20:07	70	19:18 (T69)	19:15	17:28			17:04	40	09:19 (T71)
2	06:03		07:22 (T68)	06:28		07:09 (T67)	06:58		18:08 (T69)	07:29	07:03			07:38		08:39 (T71)
	21:08	48	08:10 (T68)	20:49	75	08:24 (T68)	20:05	70	19:18 (T69)	19:13	17:27			17:04	41	09:20 (T71)
3	06:04		07:21 (T68)	06:29		07:06 (T67)	06:59		18:07 (T69)	07:30	07:04			07:39		08:39 (T71)
	21:08	49	08:10 (T68)	20:48	78	08:24 (T68)	20:04	70	19:17 (T69)	19:11	17:26			17:04	42	09:21 (T71)
4	06:04		07:21 (T68)	06:30		07:05 (T67)	07:00		18:07 (T69)	07:31	07:05			07:40		08:39 (T71)
	21:08	50	08:11 (T68)	20:47	79	08:24 (T68)	20:02	70	19:17 (T69)	19:10	17:25			17:03	42	09:21 (T71)
5	06:05		07:21 (T68)	06:31		07:03 (T67)	07:01		18:07 (T69)	07:32	07:07			07:41		08:39 (T71)
	21:08	50	08:11 (T68)	20:45	81	08:24 (T68)	20:01	69	19:16 (T69)	19:08	17:23			17:03	43	09:22 (T71)
6	06:05		07:21 (T68)	06:31		07:02 (T67)	07:02		18:07 (T69)	07:33	07:08			07:42		08:39 (T71)
	21:07	51	08:12 (T68)	20:44	82	08:24 (T68)	19:57	69	19:16 (T69)	19:07	17:22			17:03	44	09:23 (T71)
7	06:06		07:20 (T68)	06:32		07:01 (T67)	07:03		18:07 (T69)	07:34	07:09			07:43		08:39 (T71)
	21:07	52	08:12 (T68)	20:43	94	18:56 (T69)	19:56	68	19:15 (T69)	19:05	17:21			17:03	45	09:24 (T71)
8	06:07		07:20 (T68)	06:33		07:00 (T67)	07:04		18:07 (T69)	07:35	07:10			07:44		08:39 (T71)
	21:07	53	08:13 (T68)	20:42	104	19:00 (T69)	19:54	68	19:15 (T69)	19:03	17:20			17:03	45	09:24 (T71)
9	06:07		07:20 (T68)	06:34		07:00 (T67)	07:05		18:07 (T69)	07:36	07:11			07:44		08:39 (T71)
	21:06	54	08:14 (T68)	20:41	109	19:03 (T69)	19:52	67	19:14 (T69)	19:02	17:19			17:03	46	09:25 (T71)
10	06:08		07:19 (T68)	06:35		06:59 (T67)	07:06		18:07 (T69)	07:37	07:13			07:45		08:40 (T71)
	21:06	55	08:14 (T68)	20:39	114	19:05 (T69)	19:51	66	19:13 (T69)	19:00	17:18			17:03	46	09:26 (T71)
11	06:09		07:20 (T68)	06:36		06:59 (T67)	07:07		18:07 (T69)	07:38	07:14			07:46		08:40 (T71)
	21:06	55	08:15 (T68)	20:38	119	19:07 (T69)	19:49	65	19:12 (T69)	18:58	17:17			17:03	47	09:27 (T71)
12	06:09		07:20 (T68)	06:37		06:59 (T67)	07:08		18:06 (T69)	07:39	07:15			07:47		08:40 (T71)
	21:05	56	08:16 (T68)	20:37	122	19:09 (T69)	19:47	64	19:10 (T69)	18:57	17:16			17:03	46	09:26 (T71)
13	06:10		07:19 (T68)	06:38		07:00 (T67)	07:09		18:06 (T69)	07:40	07:16			07:48		08:40 (T71)
	21:05	57	08:16 (T68)	20:35	123	19:10 (T69)	19:45	63	19:09 (T69)	18:55	17:15			17:03	47	09:27 (T71)
14	06:11		07:19 (T68)	06:39		07:01 (T67)	07:10		18:07 (T69)	07:41	07:17			07:49		08:41 (T71)
	21:04	58	08:17 (T68)	20:34	126	19:12 (T69)	19:44	61	19:08 (T69)	18:54	17:14			17:04	47	09:28 (T71)
15	06:12		07:19 (T68)	06:40		07:02 (T67)	07:11		18:08 (T69)	07:42	07:19			07:49		08:42 (T71)
	21:04	58	08:17 (T68)	20:33	127	19:13 (T69)	19:42	58	19:06 (T69)	18:52	17:13			17:04	47	09:29 (T71)
16	06:12		07:19 (T68)	06:41		07:03 (T67)	07:12		18:08 (T69)	07:43	07:20			07:50		08:41 (T71)
	21:03	59	08:18 (T68)	20:31	127	19:14 (T69)	19:40	57	19:05 (T69)	18:51	17:13			17:04	48	09:29 (T71)
17	06:13		07:18 (T68)	06:42		07:04 (T67)	07:13		18:09 (T69)	07:45	07:21			07:51		08:42 (T71)
	21:03	60	08:18 (T68)	20:30	128	19:15 (T69)	19:39	54	19:03 (T69)	18:49	17:12			17:04	48	09:30 (T71)
18	06:14		07:18 (T68)	06:43		07:05 (T67)	07:14		18:10 (T69)	07:46	07:22			07:51		08:43 (T71)
	21:02	61	08:19 (T68)	20:28	129	19:16 (T69)	19:37	52	19:02 (T69)	18:48	17:11			17:05	48	09:31 (T71)
19	06:15		07:18 (T68)	06:44		07:06 (T67)	07:15		18:11 (T69)	07:47	07:23		08:53 (T71)	07:52		08:43 (T71)
	21:01	61	08:19 (T68)	20:27	128	19:16 (T69)	19:35	49	19:00 (T69)	18:46	17:10	4	08:57 (T71)	17:05	47	09:30 (T71)
20	06:16		07:17 (T68)	06:45		07:07 (T67)	07:16		18:13 (T69)	07:48	07:24		08:48 (T71)	07:53		08:43 (T71)
	21:01	63	08:20 (T68)	20:26	128	19:17 (T69)	19:34	45	18:58 (T69)	18:45	17:10	14	09:02 (T71)	17:05	48	09:31 (T71)
21	06:16		07:17 (T68)	06:46		07:08 (T67)	07:17		18:14 (T69)	07:49	07:26		08:45 (T71)	07:53		08:43 (T71)
	21:00	64	08:21 (T68)	20:24	126	19:17 (T69)	19:32	41	18:55 (T69)	18:43	17:09	20	09:05 (T71)	17:06	48	09:31 (T71)
22	06:17		07:17 (T68)	06:47		07:08 (T67)	07:18		18:16 (T69)	07:50	07:27		08:44 (T71)	07:54		08:44 (T71)
	20:59	64	08:21 (T68)	20:23	126	19:17 (T69)	19:30	37	18:53 (T69)	18:42	17:08	24	09:08 (T71)	17:06	48	09:32 (T71)
23	06:18		07:16 (T68)	06:48		07:09 (T67)	07:19		18:19 (T69)	07:51	07:28		08:43 (T71)	07:54		08:44 (T71)
	20:58	65	08:21 (T68)	20:21	125	19:17 (T69)	19:28	30	18:49 (T69)	18:40	17:08	26	09:09 (T71)	17:07	48	09:32 (T71)
24	06:19		07:16 (T68)	06:49		07:10 (T67)	07:20		18:22 (T69)	07:52	07:29		08:42 (T71)	07:55		08:46 (T71)
	20:57	65	08:21 (T68)	20:20	124	19:18 (T69)	19:27	23	18:45 (T69)	18:39	17:07	29	09:11 (T71)	17:07	47	09:33 (T71)
25	06:20		07:16 (T68)	06:50		07:11 (T67)	07:21		18:29 (T69)	07:54	07:30		08:41 (T71)	07:55		08:46 (T71)
	20:57	66	08:22 (T68)	20:18	117	19:18 (T69)	19:25	9	18:38 (T69)	18:37	17:06	31	09:12 (T71)	17:08	47	09:33 (T71)
26	06:21		07:16 (T68)	06:51		07:12 (T67)	07:22			07:55	07:31		08:40 (T71)	07:55		08:46 (T71)
	20:56	66	08:22 (T68)	20:17	111	19:18 (T69)	19:23			18:36	17:06	33	09:13 (T71)	17:09	48	09:34 (T71)
27	06:22		07:16 (T68)	06:52		07:27 (T68)	07:23			07:56	07:32		08:40 (T71)	07:56		08:47 (T71)
	20:55	67	08:23 (T68)	20:15	104	19:18 (T69)	19:22			18:35	17:06	35	09:15 (T71)	17:09	48	09:35 (T71)
28	06:23		07:16 (T68)	06:53		07:29 (T68)	07:24			07:57	07:34		08:40 (T71)	07:56		08:47 (T71)
	20:54	67	08:23 (T68)	20:13	99	19:18 (T69)	19:20			18:33	17:05	36	09:16 (T71)	17:10	48	09:35 (T71)
29	06:24		07:16 (T68)	06:54		07:32 (T68)	07:25			07:58	07:35		08:39 (T71)	07:56		08:48 (T71)
	20:53	68	08:24 (T68)	20:12	93	19:18 (T69)	19:18			18:32	17:05	38	09:17 (T71)	17:11	47	09:35 (T71)
30	06:25		07:16 (T68)	06:55		07:37 (T68)	07:26			07:59	07:36		08:39 (T71)	07:56		08:48 (T71)
	20:52	68	08:24 (T68)	20:10	84	19:18 (T69)	19:17			18:31	17:04	39	09:18 (T71)	17:12	47	09:35 (T71)
31	06:26		07:15 (T68)	06:56		18:09 (T69)				08:01				07:57		08:49 (T71)
	20:51	69	08:24 (T68)	20:09	69	19:18 (T69)				18:29				17:12	46	09:35 (T71)
Potential sun hours	459			428			375			345	298			288		
Total, worst case		1827			3321			1395				329			1429	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.67			0.66			0.64				0.53			0.53	
Total reduction		0.43			0.39			0.37				0.16			0.11	
Total, real		789			1309			516				51			163	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1396 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7313)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:58		08:20 (T39)	07:44		07:07			07:16		18:20 (T37)	06:30			06:02		19:56 (T34)
	17:13	15	08:35 (T39)	17:48		18:22			19:56	56	19:16 (T37)	20:27			20:57	28	20:24 (T34)
2	07:58		08:20 (T39)	07:43		07:06			07:15		18:21 (T37)	06:29			06:01		19:57 (T34)
	17:14	15	08:35 (T39)	17:49		18:23			19:57	55	19:16 (T37)	20:28			20:58	28	20:25 (T34)
3	07:58		08:20 (T39)	07:42		07:04			07:13		18:21 (T37)	06:28			06:01		19:57 (T34)
	17:15	16	08:36 (T39)	17:50		18:24			19:58	54	19:15 (T37)	20:29			20:59	27	20:24 (T34)
4	07:58		08:20 (T39)	07:41		07:03			07:11		18:21 (T37)	06:26			06:00		19:58 (T34)
	17:16	17	08:37 (T39)	17:51		18:25			19:59	53	19:14 (T37)	20:30			20:59	26	20:24 (T34)
5	07:58		08:20 (T39)	07:40		07:01			07:10		18:21 (T37)	06:25			06:00		19:58 (T34)
	17:17	17	08:37 (T39)	17:53		18:26			20:00	53	19:14 (T37)	20:31			21:00	26	20:24 (T34)
6	07:58		08:20 (T39)	07:38		07:00			07:08		18:21 (T37)	06:24			06:00		19:58 (T34)
	17:18	18	08:38 (T39)	17:54		18:28			20:00	52	19:13 (T37)	20:33			21:01	25	20:23 (T34)
7	07:58		08:20 (T39)	07:37		06:58		18:01 (T38)	07:06		18:21 (T37)	06:23			05:59		19:59 (T34)
	17:19	19	08:39 (T39)	17:55		18:29	6	18:07 (T38)	20:02	51	19:12 (T37)	20:34			21:01	24	20:23 (T34)
8	07:58		08:20 (T39)	07:36		07:56		18:58 (T38)	07:05		18:22 (T37)	06:22		20:04 (T34)	05:59		20:00 (T34)
	17:20	20	08:40 (T39)	17:56		19:30	11	19:09 (T38)	20:03	49	19:11 (T37)	20:35	8	20:12 (T34)	21:02	23	20:23 (T34)
9	07:57		08:19 (T39)	07:35		07:55		18:55 (T38)	07:03		18:23 (T37)	06:20		20:02 (T34)	05:59		20:00 (T34)
	17:21	21	08:40 (T39)	17:58		19:31	15	19:10 (T38)	20:04	47	19:10 (T37)	20:36	11	20:13 (T34)	21:03	24	20:24 (T34)
10	07:57		08:19 (T39)	07:34		07:53		18:53 (T38)	07:02		18:24 (T37)	06:19		20:00 (T34)	05:59		20:01 (T34)
	17:22	21	08:40 (T39)	17:59		19:32	17	19:10 (T38)	20:05	45	19:09 (T37)	20:37	14	20:14 (T34)	21:03	23	20:24 (T34)
11	07:57		08:19 (T39)	07:33		07:51		18:52 (T38)	07:00		18:25 (T37)	06:18		19:59 (T34)	05:58		20:02 (T34)
	17:23	22	08:41 (T39)	18:00		19:33	20	19:12 (T38)	20:06	43	19:08 (T37)	20:38	16	20:15 (T34)	21:04	22	20:24 (T34)
12	07:57		08:18 (T39)	07:31		07:50		18:51 (T38)	06:58		18:25 (T37)	06:17		19:58 (T34)	05:58		20:02 (T34)
	17:24	23	08:41 (T39)	18:01		19:34	22	19:13 (T38)	20:07	41	19:06 (T37)	20:39	18	20:16 (T34)	21:04	22	20:24 (T34)
13	07:56		08:18 (T39)	07:30		07:48		18:50 (T38)	06:57		18:27 (T37)	06:16		19:57 (T34)	05:58		20:02 (T34)
	17:25	24	08:42 (T39)	18:03		19:36	24	19:14 (T38)	20:08	38	19:05 (T37)	20:40	20	20:17 (T34)	21:05	21	20:23 (T34)
14	07:56		08:18 (T39)	07:29		07:46		18:45 (T37)	06:55		18:28 (T37)	06:15		19:56 (T34)	05:58		20:02 (T34)
	17:26	25	08:43 (T39)	18:04		19:37	31	19:16 (T38)	20:09	34	19:02 (T37)	20:41	22	20:18 (T34)	21:05	20	20:22 (T34)
15	07:56		08:17 (T39)	07:28		07:45		18:40 (T37)	06:54		18:30 (T37)	06:14		19:55 (T34)	05:58		20:03 (T34)
	17:27	25	08:42 (T39)	18:05		19:38	36	19:16 (T38)	20:10	31	19:01 (T37)	20:42	24	20:19 (T34)	21:06	19	20:22 (T34)
16	07:55		08:18 (T39)	07:26		07:43		18:37 (T37)	06:52		18:32 (T37)	06:13		19:55 (T34)	05:58		20:04 (T34)
	17:28	25	08:43 (T39)	18:06		19:39	39	19:16 (T38)	20:11	26	18:58 (T37)	20:43	25	20:20 (T34)	21:06	19	20:23 (T34)
17	07:55		08:18 (T39)	07:25		07:41		18:35 (T37)	06:50		18:35 (T37)	06:12		19:54 (T34)	05:58		20:04 (T34)
	17:29	25	08:43 (T39)	18:08		19:40	41	19:16 (T38)	20:12	20	18:55 (T37)	20:44	27	20:21 (T34)	21:07	19	20:23 (T34)
18	07:54		08:18 (T39)	07:24		07:40		18:33 (T37)	06:49		18:39 (T37)	06:11		19:54 (T34)	05:58		20:05 (T34)
	17:30	25	08:43 (T39)	18:09		19:41	42	19:15 (T38)	20:13	11	18:50 (T37)	20:45	27	20:21 (T34)	21:07	18	20:23 (T34)
19	07:54		08:19 (T39)	07:22		07:38		18:31 (T37)	06:47			06:10		19:54 (T34)	05:58		20:05 (T34)
	17:32	24	08:43 (T39)	18:10		19:42	43	19:14 (T38)	20:14			20:46	28	20:22 (T34)	21:07	18	20:23 (T34)
20	07:53		08:19 (T39)	07:21		07:36		18:30 (T37)	06:46			06:09		19:53 (T34)	05:59		20:05 (T34)
	17:33	24	08:43 (T39)	18:11		19:43	45	19:15 (T37)	20:15			20:47	30	20:23 (T34)	21:08	18	20:23 (T34)
21	07:53		08:21 (T39)	07:19		07:35		18:28 (T37)	06:44			06:09		19:54 (T34)	05:59		20:05 (T34)
	17:34	22	08:43 (T39)	18:12		19:44	47	19:15 (T37)	20:17			20:48	30	20:24 (T34)	21:08	18	20:23 (T34)
22	07:52		08:21 (T39)	07:18		07:33		18:27 (T37)	06:43			06:08		19:54 (T34)	05:59		20:05 (T34)
	17:35	22	08:43 (T39)	18:14		19:45	48	19:15 (T37)	20:18			20:49	31	20:25 (T34)	21:08	18	20:23 (T34)
23	07:51		08:22 (T39)	07:16		07:31		18:25 (T37)	06:41			06:07		19:54 (T34)	05:59		20:06 (T34)
	17:36	20	08:42 (T39)	18:15		19:46	51	19:16 (T37)	20:19			20:49	31	20:25 (T34)	21:08	18	20:24 (T34)
24	07:50		08:23 (T39)	07:15		07:30		18:25 (T37)	06:40			06:06		19:53 (T34)	05:59		20:06 (T34)
	17:38	18	08:41 (T39)	18:16		19:48	52	19:17 (T37)	20:20			20:50	31	20:24 (T34)	21:08	18	20:24 (T34)
25	07:50		08:25 (T39)	07:13		07:28		18:24 (T37)	06:39			06:06		19:54 (T34)	06:00		20:05 (T34)
	17:39	16	08:41 (T39)	18:17		19:49	53	19:17 (T37)	20:21			20:51	31	20:25 (T34)	21:09	19	20:24 (T34)
26	07:49		08:27 (T39)	07:12		07:26		18:23 (T37)	06:37			06:05		19:54 (T34)	06:00		20:06 (T34)
	17:40	12	08:39 (T39)	18:18		19:50	54	19:17 (T37)	20:22			20:52	31	20:25 (T34)	21:09	19	20:25 (T34)
27	07:48		08:30 (T39)	07:10		07:25		18:23 (T37)	06:36			06:04		19:55 (T34)	06:00		20:06 (T34)
	17:41	7	08:37 (T39)	18:20		19:51	54	19:17 (T37)	20:23			20:53	30	20:25 (T34)	21:09	19	20:25 (T34)
28	07:47			07:09		07:23		18:22 (T37)	06:34			06:04		19:55 (T34)	06:01		20:05 (T34)
	17:43			18:21		19:52	55	19:17 (T37)	20:24			20:54	30	20:25 (T34)	21:09	20	20:25 (T34)
29	07:46					07:21		18:21 (T37)	06:33			06:03		19:56 (T34)	06:01		20:06 (T34)
	17:44					19:53	56	19:17 (T37)	20:25			20:55	29	20:25 (T34)	21:09	20	20:26 (T34)
30	07:46					07:20		18:22 (T37)	06:32			06:03		19:55 (T34)	06:02		20:05 (T34)
	17:45					19:54	55	19:17 (T37)	20:26			20:56	30	20:25 (T34)	21:09	22	20:27 (T34)
31	07:45					07:18		18:21 (T37)				06:02		19:56 (T34)			
	17:46					19:55	56	19:17 (T37)				20:56	29	20:25 (T34)			
Potential sun hours	297			297		370			399			449			453		
Total, worst case		538					973			759			603			641	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.52					0.65			0.65			0.55			0.55	
Total reduction		0.16					0.28			0.33			0.31			0.35	
Total, real		86					276			254			189			225	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1396 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7313)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:06 (T34)	06:26		20:08 (T34)	06:57		18:23 (T37)	07:28		18:30 (T38)	07:02			07:37		08:01 (T39)
	21:09	22	20:28 (T34)	20:50	17	20:25 (T34)	20:07	44	19:07 (T37)	19:15	23	18:53 (T38)	17:28			17:04	22	08:23 (T39)
2	06:03		20:05 (T34)	06:27		20:09 (T34)	06:58		18:22 (T37)	07:29		18:31 (T38)	07:03			07:38		08:02 (T39)
	21:09	23	20:28 (T34)	20:49	16	20:25 (T34)	20:06	45	19:07 (T37)	19:13	20	18:51 (T38)	17:27			17:04	22	08:24 (T39)
3	06:03		20:06 (T34)	06:28		20:10 (T34)	06:59		18:21 (T37)	07:30		18:31 (T38)	07:05			07:39		08:03 (T39)
	21:09	23	20:29 (T34)	20:48	14	20:24 (T34)	20:04	47	19:08 (T37)	19:12	19	18:50 (T38)	17:26			17:03	21	08:24 (T39)
4	06:04		20:05 (T34)	06:29		20:12 (T34)	07:00		18:19 (T37)	07:31		18:32 (T38)	07:06			07:40		08:04 (T39)
	21:08	24	20:29 (T34)	20:47	10	20:22 (T34)	20:02	49	19:08 (T37)	19:10	16	18:48 (T38)	17:24			17:03	20	08:24 (T39)
5	06:04		20:05 (T34)	06:30		20:15 (T34)	07:01		18:18 (T37)	07:32		18:33 (T38)	07:07			07:41		08:05 (T39)
	21:08	24	20:29 (T34)	20:46	6	20:21 (T34)	20:01	51	19:09 (T37)	19:08	13	18:46 (T38)	17:23			17:03	19	08:24 (T39)
6	06:05		20:04 (T34)	06:31			07:02		18:17 (T37)	07:33		18:36 (T38)	07:08			07:42		08:06 (T39)
	21:08	25	20:29 (T34)	20:45			19:58	52	19:09 (T37)	19:07	8	18:44 (T38)	17:22			17:03	18	08:24 (T39)
7	06:06		20:05 (T34)	06:32			07:03		18:16 (T37)	07:34			07:09			07:43		08:07 (T39)
	21:08	25	20:30 (T34)	20:44			19:56	53	19:09 (T37)	19:05			17:21			17:03	18	08:25 (T39)
8	06:06		20:05 (T34)	06:33			07:04		18:16 (T37)	07:35			07:11			07:44		08:08 (T39)
	21:07	26	20:31 (T34)	20:42			19:54	53	19:09 (T37)	19:03			17:20			17:03	17	08:25 (T39)
9	06:07		20:04 (T34)	06:34			07:05		18:15 (T37)	07:36			07:12			07:45		08:09 (T39)
	21:07	27	20:31 (T34)	20:41			19:52	54	19:09 (T37)	19:02			17:19			17:03	16	08:25 (T39)
10	06:08		20:04 (T34)	06:35			07:06		18:14 (T37)	07:37			07:13			07:46		08:09 (T39)
	21:07	28	20:32 (T34)	20:40			19:51	55	19:09 (T37)	19:00			17:18			17:03	15	08:24 (T39)
11	06:08		20:04 (T34)	06:36			07:07		18:14 (T37)	07:38			07:14			07:47		08:10 (T39)
	21:06	28	20:32 (T34)	20:38			19:49	55	19:09 (T37)	18:58			17:17			17:03	15	08:25 (T39)
12	06:09		20:04 (T34)	06:37			07:08		18:13 (T37)	07:39			07:15			07:48		08:11 (T39)
	21:06	28	20:32 (T34)	20:37			19:47	56	19:09 (T37)	18:57			17:16			17:03	14	08:25 (T39)
13	06:10		20:04 (T34)	06:38			07:09		18:13 (T37)	07:40			07:17			07:48		08:12 (T39)
	21:05	29	20:33 (T34)	20:36			19:46	55	19:08 (T37)	18:55			17:15			17:03	14	08:26 (T39)
14	06:10		20:04 (T34)	06:39			07:10		18:12 (T37)	07:42			07:18			07:49		08:13 (T39)
	21:05	29	20:33 (T34)	20:34			19:44	56	19:08 (T37)	18:54			17:14			17:03	13	08:26 (T39)
15	06:11		20:04 (T34)	06:40			07:11		18:11 (T37)	07:43			07:19		08:03 (T39)	07:50		08:13 (T39)
	21:04	30	20:34 (T34)	20:33			19:42	55	19:06 (T37)	18:52			17:13	7	08:10 (T39)	17:03	13	08:26 (T39)
16	06:12		20:03 (T34)	06:41			07:12		18:11 (T37)	07:44			07:20		08:00 (T39)	07:51		08:14 (T39)
	21:04	31	20:34 (T34)	20:32			19:41	55	19:06 (T37)	18:51			17:12	12	08:12 (T39)	17:04	12	08:26 (T39)
17	06:13		20:03 (T34)	06:42			07:13		18:11 (T37)	07:45			07:21		07:58 (T39)	07:51		08:15 (T39)
	21:03	31	20:34 (T34)	20:30			19:39	54	19:05 (T37)	18:49			17:12	16	08:14 (T39)	17:04	12	08:27 (T39)
18	06:14		20:04 (T34)	06:43			07:14		18:11 (T37)	07:46			07:23		07:57 (T39)	07:52		08:15 (T39)
	21:02	30	20:34 (T34)	20:29			19:37	53	19:04 (T37)	18:48			17:11	18	08:15 (T39)	17:04	12	08:27 (T39)
19	06:14		20:04 (T34)	06:44			07:15		18:11 (T37)	07:47			07:24		07:57 (T39)	07:53		08:16 (T39)
	21:02	31	20:35 (T34)	20:27			19:35	52	19:03 (T37)	18:46			17:10	20	08:17 (T39)	17:05	11	08:27 (T39)
20	06:15		20:04 (T34)	06:45			07:16		18:11 (T37)	07:48			07:25		07:57 (T39)	07:53		08:16 (T39)
	21:01	31	20:35 (T34)	20:26			19:34	51	19:02 (T37)	18:45			17:09	21	08:18 (T39)	17:05	11	08:27 (T39)
21	06:16		20:03 (T34)	06:46			07:17		18:12 (T37)	07:49			07:26		07:56 (T39)	07:54		08:17 (T39)
	21:00	31	20:34 (T34)	20:25			19:32	49	19:01 (T37)	18:43			17:09	22	08:18 (T39)	17:06	11	08:28 (T39)
22	06:17		20:03 (T34)	06:47			07:18		18:12 (T37)	07:51			07:27		07:55 (T39)	07:54		08:17 (T39)
	21:00	31	20:34 (T34)	20:23			19:30	48	19:00 (T37)	18:42			17:08	24	08:19 (T39)	17:06	11	08:28 (T39)
23	06:18		20:04 (T34)	06:48			07:19		18:13 (T37)	07:52			07:28		07:55 (T39)	07:55		08:18 (T39)
	20:59	30	20:34 (T34)	20:22			19:29	45	18:58 (T37)	18:40			17:07	24	08:19 (T39)	17:07	11	08:29 (T39)
24	06:19		20:04 (T34)	06:49			07:20		18:14 (T37)	07:53			07:30		07:56 (T39)	07:55		08:18 (T39)
	20:58	29	20:33 (T34)	20:20			19:27	43	18:57 (T37)	18:39			17:07	25	08:21 (T39)	17:07	11	08:29 (T39)
25	06:20		20:04 (T34)	06:50		18:41 (T37)	07:22		18:15 (T37)	07:54			07:31		07:56 (T39)	07:56		08:19 (T39)
	20:57	28	20:32 (T34)	20:18	13	18:54 (T37)	19:25	43	18:58 (T38)	18:37			17:06	25	08:21 (T39)	17:08	11	08:30 (T39)
26	06:21		20:05 (T34)	06:51		18:36 (T37)	07:23		18:16 (T37)	07:55			07:32		07:56 (T39)	07:56		08:19 (T39)
	20:56	27	20:32 (T34)	20:17	21	18:57 (T37)	19:23	42	18:58 (T38)	18:36			17:06	25	08:21 (T39)	17:08	12	08:31 (T39)
27	06:22		20:05 (T34)	06:52		18:33 (T37)	07:24		18:18 (T37)	07:56			07:33		07:56 (T39)	07:56		08:19 (T39)
	20:55	26	20:31 (T34)	20:15	27	19:00 (T37)	19:22	39	18:57 (T38)	18:35			17:05	25	08:21 (T39)	17:09	12	08:31 (T39)
28	06:23		20:06 (T34)	06:53		18:31 (T37)	07:25		18:20 (T37)	07:58			07:34		07:57 (T39)	07:57		08:19 (T39)
	20:54	24	20:30 (T34)	20:14	31	19:02 (T37)	19:20	37	18:57 (T38)	18:33			17:05	25	08:22 (T39)	17:10	12	08:31 (T39)
29	06:24		20:06 (T34)	06:54		18:29 (T37)	07:26		18:23 (T37)	07:59			07:35		07:59 (T39)	07:57		08:20 (T39)
	20:53	23	20:29 (T34)	20:12	34	19:03 (T37)	19:18	33	18:56 (T38)	18:32			17:04	24	08:23 (T39)	17:10	13	08:33 (T39)
30	06:24		20:06 (T34)	06:55		18:27 (T37)	07:27		18:27 (T37)	08:00			07:36		08:00 (T39)	07:57		08:20 (T39)
	20:52	21	20:27 (T34)	20:11	38	19:05 (T37)	19:17	27	18:54 (T38)	18:31			17:04	23	08:23 (T39)	17:11	13	08:33 (T39)
31	06:25		20:07 (T34)	06:56		18:25 (T37)				08:01						07:57		08:20 (T39)
	20:51	19	20:26 (T34)	20:09	41	19:06 (T37)				18:29						17:12	14	08:34 (T39)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		834			268			1451			99			336			446	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.63			0.65			0.66			0.52			0.52	
Total reduction		0.36			0.38			0.38			0.31			0.15			0.11	
Total, real		302			101			551			31			52			50	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1422 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7334)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March	April	May	June	July	August	September	October		November		December	
1	07:57	15:26 (T48)	07:43	15:31 (T48)	07:07	07:16	06:30	06:02	06:02	06:27	06:57	07:28		07:02	15:05 (T48)	07:37	15:09 (T48)
	17:13 60	16:26 (T48)	17:48 72	16:43 (T48)	18:22	19:56	20:27	20:57	21:08	20:50	20:07	19:15		17:28 64	16:09 (T48)	17:04 66	16:15 (T48)
2	07:57	15:26 (T48)	07:42	15:31 (T48)	07:06	07:15	06:29	06:01	06:03	06:28	06:58	07:29		07:03	15:05 (T48)	07:38	15:09 (T48)
	17:14 61	16:27 (T48)	17:49 72	16:43 (T48)	18:23	19:57	20:28	20:58	21:08	20:49	20:06	19:13		17:27 66	16:11 (T48)	17:04 66	16:15 (T48)
3	07:57	15:26 (T48)	07:41	15:32 (T48)	07:04	07:13	06:28	06:01	06:03	06:28	06:59	07:30		07:04	15:04 (T48)	07:39	15:11 (T48)
	17:15 62	16:28 (T48)	17:50 71	16:43 (T48)	18:24	19:58	20:29	20:58	21:08	20:48	20:04	19:12		17:26 67	16:11 (T48)	17:03 65	16:16 (T48)
4	07:57	15:26 (T48)	07:40	15:33 (T48)	07:03	07:11	06:27	06:00	06:04	06:29	07:00	07:31		07:06	15:04 (T48)	07:40	15:11 (T48)
	17:16 63	16:29 (T48)	17:51 70	16:43 (T48)	18:25	19:59	20:30	20:59	21:08	20:47	20:02	19:10		17:25 67	16:11 (T48)	17:03 65	16:16 (T48)
5	07:57	15:27 (T48)	07:39	15:33 (T48)	07:01	07:10	06:25	06:00	06:05	06:30	07:01	07:32		07:07	15:03 (T48)	07:41	15:12 (T48)
	17:17 62	16:29 (T48)	17:53 70	16:43 (T48)	18:27	20:00	20:31	21:00	21:08	20:46	20:01	19:08		17:23 68	16:11 (T48)	17:03 64	16:16 (T48)
6	07:57	15:27 (T48)	07:38	15:33 (T48)	06:59	07:08	06:24	06:00	06:05	06:31	07:02	07:33		07:08	15:03 (T48)	07:42	15:13 (T48)
	17:18 63	16:30 (T48)	17:54 68	16:41 (T48)	18:28	20:00	20:32	21:00	21:08	20:44	19:57	19:07		17:22 69	16:12 (T48)	17:03 63	16:16 (T48)
7	07:57	15:26 (T48)	07:37	15:34 (T48)	06:58	07:06	06:23	05:59	06:06	06:32	07:03	07:34		07:09	15:02 (T48)	07:43	15:13 (T48)
	17:19 64	16:30 (T48)	17:55 67	16:41 (T48)	18:29	20:01	20:33	21:01	21:07	20:43	19:56	19:05		17:21 70	16:12 (T48)	17:03 62	16:15 (T48)
8	07:57	15:26 (T48)	07:36	15:35 (T48)	07:56	07:05	06:22	05:59	06:06	06:33	07:04	07:35		07:10	15:02 (T48)	07:44	15:13 (T48)
	17:20 65	16:31 (T48)	17:56 66	16:41 (T48)	19:30	20:02	20:34	21:02	21:07	20:42	19:54	19:03		17:20 71	16:13 (T48)	17:03 63	16:16 (T48)
9	07:57	15:27 (T48)	07:35	15:36 (T48)	07:55	07:03	06:21	05:59	06:07	06:34	07:05	07:36		07:12	15:02 (T48)	07:45	15:14 (T48)
	17:21 65	16:32 (T48)	17:58 65	16:41 (T48)	19:31	20:04	20:35	21:02	21:07	20:41	19:52	19:02		17:19 72	16:14 (T48)	17:03 62	16:16 (T48)
10	07:57	15:27 (T48)	07:34	15:37 (T48)	07:53	07:02	06:20	05:59	06:08	06:35	07:06	07:37		07:13	15:02 (T48)	07:46	15:15 (T48)
	17:22 66	16:33 (T48)	17:59 63	16:40 (T48)	19:32	20:05	20:36	21:03	21:06	20:40	19:51	19:00		17:18 72	16:14 (T48)	17:03 61	16:16 (T48)
11	07:57	15:27 (T48)	07:32	15:37 (T48)	07:51	07:00	06:18	05:59	06:08	06:36	07:07	07:38		07:14	15:01 (T48)	07:46	15:16 (T48)
	17:23 66	16:33 (T48)	18:00 62	16:39 (T48)	19:33	20:06	20:37	21:04	21:06	20:38	19:49	18:58		17:17 72	16:13 (T48)	17:03 60	16:16 (T48)
12	07:56	15:27 (T48)	07:31	15:38 (T48)	07:50	06:58	06:17	05:59	06:09	06:37	07:08	07:39		07:15	15:01 (T48)	07:47	15:17 (T48)
	17:24 67	16:34 (T48)	18:01 61	16:39 (T48)	19:34	20:07	20:39	21:04	21:06	20:37	19:47	18:57		17:16 72	16:13 (T48)	17:03 60	16:17 (T48)
13	07:56	15:27 (T48)	07:30	15:40 (T48)	07:48	06:57	06:16	05:58	06:10	06:38	07:09	07:40		07:16	15:02 (T48)	07:48	15:18 (T48)
	17:25 68	16:35 (T48)	18:03 58	16:38 (T48)	19:36	20:08	20:40	21:05	21:05	20:36	19:46	18:55		17:15 72	16:14 (T48)	17:03 59	16:17 (T48)
14	07:56	15:27 (T48)	07:29	15:41 (T48)	07:46	06:55	06:15	05:58	06:11	06:39	07:10	07:41		07:18	15:02 (T48)	07:49	15:17 (T48)
	17:26 68	16:35 (T48)	18:04 56	16:37 (T48)	19:37	20:09	20:41	21:05	21:05	20:34	19:44	18:54		17:14 72	16:14 (T48)	17:03 60	16:17 (T48)
15	07:55	15:28 (T48)	07:27	15:42 (T48)	07:45	06:54	06:14	05:58	06:11	06:40	07:11	07:43		07:19	15:02 (T48)	07:50	15:18 (T48)
	17:27 68	16:36 (T48)	18:05 54	16:36 (T48)	19:38	20:10	20:42	21:05	21:04	20:33	19:42	18:52		17:13 72	16:14 (T48)	17:04 59	16:17 (T48)
16	07:55	15:27 (T48)	07:26	15:44 (T48)	07:43	06:52	06:13	05:58	06:12	06:41	07:12	07:44		07:20	15:02 (T48)	07:50	15:19 (T48)
	17:28 69	16:36 (T48)	18:06 51	16:35 (T48)	19:39	20:11	20:43	21:06	21:03	20:32	19:40	18:51		17:12 73	16:15 (T48)	17:04 59	16:18 (T48)
17	07:54	15:28 (T48)	07:25	15:45 (T48)	07:41	06:51	06:12	05:58	06:13	06:42	07:13	07:45		07:21	15:02 (T48)	07:51	15:19 (T48)
	17:29 70	16:38 (T48)	18:08 48	16:33 (T48)	19:40	20:12	20:44	21:06	21:03	20:30	19:39	18:49		17:12 73	16:15 (T48)	17:04 59	16:18 (T48)
18	07:54	15:27 (T48)	07:23	15:47 (T48)	07:40	06:49	06:11	05:59	06:14	06:43	07:14	07:46		07:22	15:02 (T48)	07:52	15:20 (T48)
	17:31 71	16:38 (T48)	18:09 45	16:32 (T48)	19:41	20:13	20:44	21:07	21:02	20:29	19:37	18:48		17:11 73	16:15 (T48)	17:05 58	16:18 (T48)
19	07:53	15:28 (T48)	07:22	15:49 (T48)	07:38	06:47	06:11	05:59	06:15	06:44	07:15	07:47	16:31 (T48)	07:24	15:02 (T48)	07:52	15:21 (T48)
	17:32 71	16:39 (T48)	18:10 41	16:30 (T48)	19:42	20:14	20:45	21:07	21:02	20:27	19:35	18:46 19	16:50 (T48)	17:10 73	16:15 (T48)	17:05 58	16:19 (T48)
20	07:53	15:28 (T48)	07:21	15:51 (T48)	07:36	06:46	06:10	05:59	06:16	06:45	07:16	07:48	16:27 (T48)	07:25	15:04 (T48)	07:53	15:21 (T48)
	17:33 71	16:39 (T48)	18:11 37	16:28 (T48)	19:43	20:15	20:46	21:07	21:01	20:26	19:34	18:45 28	16:55 (T48)	17:09 71	16:15 (T48)	17:05 58	16:19 (T48)
21	07:52	15:28 (T48)	07:19	15:54 (T48)	07:35	06:44	06:09	05:59	06:16	06:46	07:17	07:49	16:24 (T48)	07:26	15:04 (T48)	07:53	15:22 (T48)
	17:34 71	16:39 (T48)	18:12 32	16:26 (T48)	19:44	20:16	20:47	21:08	21:00	20:24	19:32	18:43 33	16:57 (T48)	17:09 71	16:15 (T48)	17:06 58	16:20 (T48)
22	07:52	15:29 (T48)	07:18	15:57 (T48)	07:33	06:43	06:08	05:59	06:17	06:47	07:18	07:50	16:21 (T48)	07:27	15:04 (T48)	07:54	15:22 (T48)
	17:35 71	16:40 (T48)	18:14 25	16:22 (T48)	19:45	20:17	20:48	21:08	20:59	20:23	19:30	18:42 38	16:59 (T48)	17:08 71	16:15 (T48)	17:06 58	16:20 (T48)
23	07:51	15:28 (T48)	07:16	16:02 (T48)	07:31	06:42	06:07	05:59	06:18	06:48	07:19	07:52	16:18 (T48)	07:28	15:04 (T48)	07:54	15:23 (T48)
	17:37 73	16:41 (T48)	18:15 16	16:18 (T48)	19:46	20:18	20:49	21:08	20:59	20:21	19:28	18:40 43	17:01 (T48)	17:08 71	16:15 (T48)	17:07 58	16:21 (T48)
24	07:50	15:28 (T48)	07:15		07:30	06:40	06:07	06:00	06:19	06:49	07:20	07:53	16:16 (T48)	07:29	15:04 (T48)	07:55	15:23 (T48)
	17:38 73	16:41 (T48)	18:16		19:48	20:20	20:50	21:08	20:58	20:20	19:27	18:39 46	17:02 (T48)	17:07 71	16:15 (T48)	17:07 58	16:21 (T48)
25	07:50	15:28 (T48)	07:13		07:28	06:39	06:06	06:00	06:20	06:50	07:21	07:54	16:15 (T48)	07:30	15:06 (T48)	07:55	15:23 (T48)
	17:39 73	16:41 (T48)	18:17		19:49	20:21	20:51	21:08	20:57	20:18	19:25	18:37 49	17:04 (T48)	17:06 70	16:16 (T48)	17:08 58	16:21 (T48)
26	07:49	15:28 (T48)	07:12		07:26	06:37	06:05	06:00	06:21	06:51	07:22	07:55	16:13 (T48)	07:32	15:06 (T48)	07:56	15:24 (T48)
	17:40 73	16:41 (T48)	18:18		19:50	20:22	20:52	21:08	20:56	20:17	19:23	18:36 52	17:05 (T48)	17:06 69	16:15 (T48)	17:09 59	16:23 (T48)
27	07:48	15:30 (T48)	07:10		07:25	06:36	06:04	06:01	06:22	06:52	07:24	07:56	16:11 (T48)	07:33	15:07 (T48)	07:56	15:24 (T48)
	17:41 72	16:42 (T48)	18:20		19:51	20:23	20:53	21:08	20:55	20:15	19:22	18:35 55	17:06 (T48)	17:05 68	16:15 (T48)	17:09 59	16:23 (T48)
28	07:47	15:30 (T48)	07:09		07:23	06:34	06:04	06:01	06:23	06:53	07:25	07:57	16:10 (T48)	07:34	15:07 (T48)	07:56	15:24 (T48)
	17:43 72	16:42 (T48)	18:21		19:52	20:24	20:54	21:09	20:54	20:14	19:20	18:33 56	17:06 (T48)	17:05 68	16:15 (T48)	17:10 59	16:23 (T48)
29	07:46	15:30 (T48)			07:21	06:33	06:03	06:01	06:24	06:54	07:26	07:59	16:09 (T48)	07:35	15:07 (T48)	07:57	15:24 (T48)
	17:44 72	16:42 (T48)			19:53	20:25	20:54	21:09	20:53	20:12	19:18	18:32 59	17:08 (T48)	17:05 68	16:15 (T48)	17:11 60	16:24 (T48)
30	07:45	15:30 (T48)			07:20	06:32	06:03	06:02	06:25	06:55	07:27	08:00	16:08 (T48)	07:36	15:08 (T48)	07:57	15:26 (T48)
	17:45 72	16:42 (T48)			19:54	20:26	20:55	21:09	20:52	20:10	19:17	18:31 61	17:09 (T48)	17:04 67	16:15 (T48)	17:11 59	16:25 (T48)
31	07:44	15:31 (T48)			07:18		06:02		06:26	06:56		08:01	16:07 (T48)			07:57	15:26 (T48)
	17:46 72	16:43 (T48)			19:55		20:56		20:51	20:09		18:29 62	17:09 (T48)			17:12 60	16:26 (T48)
Potential sun hours	297		297		370	399	448	452	459	428	375	345		297		287	
Total, worst case		2114		1270									601		2103		1873
Sun reduction		0.31		0.40									0.48		0.30		0.22
Oper. time red.		1.00		1.00									1.00		1.00		1.00
Wind dir. red.		0.74		0.74									0.74		0.74		0.74
Total reduction		0.23		0.30									0.36		0.22		0.16
Total, real		486		376									214		467		305

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1431 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7342)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		15:31 (T44)	07:43		07:07			07:16		07:35 (T76)	06:30		18:51 (T77)	06:01		19:52 (T42)
	17:13	50	16:21 (T44)	17:47		18:22			19:56	60	19:27 (T77)	20:27	22	19:13 (T77)	20:57	38	20:30 (T42)
2	07:57		15:31 (T44)	07:42		07:06			07:14		07:33 (T76)	06:29		18:54 (T77)	06:01		19:52 (T42)
	17:14	50	16:21 (T44)	17:49		18:23			19:57	65	19:28 (T77)	20:28	17	19:11 (T77)	20:58	39	20:31 (T42)
3	07:57		15:32 (T44)	07:41		07:04			07:13		07:32 (T76)	06:28		18:58 (T77)	06:01		19:51 (T42)
	17:15	50	16:22 (T44)	17:50		18:24			19:58	70	19:29 (T77)	20:29	7	19:05 (T77)	20:58	40	20:31 (T42)
4	07:57		15:32 (T44)	07:40		07:02			07:11		07:30 (T76)	06:26			06:00		19:51 (T42)
	17:16	50	16:22 (T44)	17:51		18:25			19:59	74	19:30 (T77)	20:30			20:59	41	20:32 (T42)
5	07:57		15:33 (T44)	07:39		07:01			07:09		07:28 (T76)	06:25			06:00		19:52 (T42)
	17:17	49	16:22 (T44)	17:52		18:26			20:00	78	19:30 (T77)	20:31			21:00	41	20:33 (T42)
6	07:57		15:34 (T44)	07:38		06:59			07:08		07:28 (T76)	06:24			05:59		19:51 (T42)
	17:17	49	16:23 (T44)	17:54		18:27			20:00	79	19:31 (T77)	20:32			21:00	41	20:32 (T42)
7	07:57		15:34 (T44)	07:37		06:58			07:06		07:27 (T76)	06:23			05:59		19:51 (T42)
	17:18	48	16:22 (T44)	17:55		18:29			20:01	81	19:31 (T77)	20:33			21:01	42	20:33 (T42)
8	07:57		15:34 (T44)	07:36		07:56			07:05		07:27 (T76)	06:22			05:59		19:51 (T42)
	17:19	49	16:23 (T44)	17:56		19:30			20:02	83	19:32 (T77)	20:34			21:02	42	20:33 (T42)
9	07:57		15:35 (T44)	07:35		07:54			07:03		07:26 (T76)	06:20			05:59		19:51 (T42)
	17:20	48	16:23 (T44)	17:57		19:31			20:03	85	19:32 (T77)	20:35			21:02	43	20:34 (T42)
10	07:57		15:36 (T44)	07:34		07:53			07:01		07:26 (T76)	06:19			05:59		19:52 (T42)
	17:21	47	16:23 (T44)	17:59		19:32			20:05	84	19:31 (T77)	20:36			21:03	42	20:34 (T42)
11	07:57		15:36 (T44)	07:32		07:51			07:00		07:26 (T76)	06:18			05:58		19:52 (T42)
	17:23	47	16:23 (T44)	18:00		19:33			20:06	85	19:32 (T77)	20:37			21:03	43	20:35 (T42)
12	07:56		15:37 (T44)	07:31		07:50			06:58		07:26 (T76)	06:17			05:58		19:51 (T42)
	17:24	46	16:23 (T44)	18:01		19:34			20:07	84	19:32 (T77)	20:38			21:04	43	20:34 (T42)
13	07:56		15:38 (T44)	07:30		07:48			06:57		07:27 (T76)	06:16			05:58		19:51 (T42)
	17:25	46	16:24 (T44)	18:02		19:35			20:08	82	19:32 (T77)	20:39			21:05	44	20:35 (T42)
14	07:56		15:39 (T44)	07:29		07:46			06:55		07:27 (T76)	06:15			05:58		19:51 (T42)
	17:26	44	16:23 (T44)	18:04		19:36			20:09	81	19:31 (T77)	20:40			21:05	44	20:35 (T42)
15	07:55		15:40 (T44)	07:27		07:45			06:53		07:27 (T76)	06:14			05:58		19:51 (T42)
	17:27	44	16:24 (T44)	18:05		19:38			20:10	78	19:30 (T77)	20:41			21:05	44	20:35 (T42)
16	07:55		15:40 (T44)	07:26		07:43			06:52		07:29 (T76)	06:13			05:58		19:52 (T42)
	17:28	43	16:23 (T44)	18:06		19:39			20:11	76	19:31 (T77)	20:42			21:06	43	20:35 (T42)
17	07:54		15:42 (T44)	07:25		07:41			06:50		07:30 (T76)	06:12			05:58		19:53 (T42)
	17:29	41	16:23 (T44)	18:07		19:40			20:12	72	19:30 (T77)	20:43			21:06	44	20:37 (T42)
18	07:54		15:42 (T44)	07:23		07:40			06:49		07:32 (T76)	06:11			05:58		19:53 (T42)
	17:30	40	16:22 (T44)	18:09		19:41			20:13	68	19:30 (T77)	20:44			21:07	44	20:37 (T42)
19	07:53		15:44 (T44)	07:22		07:38			06:47		07:34 (T76)	06:10		20:05 (T42)	05:58		19:53 (T42)
	17:32	39	16:23 (T44)	18:10		19:42			20:14	60	19:28 (T77)	20:45	10	20:15 (T42)	21:07	44	20:37 (T42)
20	07:53		15:45 (T44)	07:20		07:36			06:46		18:39 (T77)	06:09		20:02 (T42)	05:59		19:53 (T42)
	17:33	37	16:22 (T44)	18:11		19:43			20:15	49	19:28 (T77)	20:46	16	20:18 (T42)	21:07	44	20:37 (T42)
21	07:52		15:46 (T44)	07:19		07:35			06:44		18:40 (T77)	06:09		19:59 (T42)	05:59		19:53 (T42)
	17:34	35	16:21 (T44)	18:12		19:44			20:16	48	19:28 (T77)	20:47	20	20:19 (T42)	21:08	44	20:37 (T42)
22	07:52		15:48 (T44)	07:18		07:33			06:43		18:40 (T77)	06:08		19:59 (T42)	05:59		19:53 (T42)
	17:35	33	16:21 (T44)	18:13		19:45			20:17	46	19:26 (T77)	20:48	23	20:22 (T42)	21:08	44	20:37 (T42)
23	07:51		15:49 (T44)	07:16		07:31			06:41		18:41 (T77)	06:07		19:57 (T42)	05:59		19:54 (T42)
	17:36	31	16:20 (T44)	18:15		19:46			20:18	45	19:26 (T77)	20:49	26	20:23 (T42)	21:08	44	20:38 (T42)
24	07:50		15:51 (T44)	07:15		07:30			06:40		18:41 (T77)	06:06		19:56 (T42)	05:59		19:54 (T42)
	17:38	27	16:18 (T44)	18:16		19:47			20:19	43	19:24 (T77)	20:50	28	20:24 (T42)	21:08	44	20:38 (T42)
25	07:49		15:53 (T44)	07:13		07:28			06:38		18:42 (T77)	06:06		19:55 (T42)	06:00		19:54 (T42)
	17:39	24	16:17 (T44)	18:17		19:48			20:21	42	19:24 (T77)	20:51	30	20:25 (T42)	21:08	44	20:38 (T42)
26	07:49		15:55 (T44)	07:12		07:26			06:37		18:43 (T77)	06:05		19:54 (T42)	06:00		19:55 (T42)
	17:40	20	16:15 (T44)	18:18		19:50			20:22	39	19:22 (T77)	20:52	32	20:26 (T42)	21:08	44	20:39 (T42)
27	07:48		15:59 (T44)	07:10		07:24			06:36		18:44 (T77)	06:04		19:54 (T42)	06:00		19:54 (T42)
	17:41	14	16:13 (T44)	18:19		19:51			20:23	37	19:21 (T77)	20:53	33	20:27 (T42)	21:08	44	20:38 (T42)
28	07:47			07:09		07:23		19:01 (T77)	06:34		18:46 (T77)	06:04		19:53 (T42)	06:01		19:54 (T42)
	17:42			18:21		19:52	18	19:19 (T77)	20:24	34	19:20 (T77)	20:54	35	20:28 (T42)	21:09	44	20:38 (T42)
29	07:46					07:21		07:42 (T76)	06:33		18:46 (T77)	06:03		19:52 (T42)	06:01		19:55 (T42)
	17:44					19:53	32	19:22 (T77)	20:25	31	19:17 (T77)	20:54	36	20:28 (T42)	21:09	44	20:39 (T42)
30	07:45					07:19		07:38 (T76)	06:32		18:48 (T77)	06:02		19:52 (T42)	06:02		19:55 (T42)
	17:45					19:54	46	19:24 (T77)	20:26	27	19:15 (T77)	20:55	37	20:29 (T42)	21:08	43	20:38 (T42)
31	07:44					07:18		07:37 (T76)				06:02		19:52 (T42)			
	17:46					19:55	53	19:26 (T77)				20:56	37	20:29 (T42)			
Potential sun hours	297			297		370			399			448			453		
Total, worst case		1101					149			1886			409			1285	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.74					0.62			0.62			0.55			0.54	
Total reduction		0.24					0.29			0.34			0.33			0.36	
Total, real		264					43			636			133			464	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1431 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7342)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		19:56 (T42)	06:26			06:57			07:25 (T76)	07:27			07:37		15:18 (T44)
	21:08	43	20:39 (T42)	20:50			20:07	85		19:31 (T77)	19:15			17:04	47	16:05 (T44)
2	06:03		19:56 (T42)	06:27			06:58			07:25 (T76)	07:29			07:38		15:18 (T44)
	21:08	43	20:39 (T42)	20:49			20:06	84		19:30 (T77)	19:13			17:03	47	16:05 (T44)
3	06:03		19:56 (T42)	06:28			06:59			07:24 (T76)	07:30			07:39		15:18 (T44)
	21:08	43	20:39 (T42)	20:48			20:04	85		19:30 (T77)	19:11			17:03	48	16:06 (T44)
4	06:04		19:56 (T42)	06:29			07:00			07:24 (T76)	07:31			07:40		15:19 (T44)
	21:08	43	20:39 (T42)	20:47			20:02	83		19:29 (T77)	19:10			17:03	49	16:08 (T44)
5	06:04		19:57 (T42)	06:30			07:01			07:24 (T76)	07:32			07:41		15:20 (T44)
	21:08	42	20:39 (T42)	20:46			20:01	81		19:28 (T77)	19:08			17:03	48	16:08 (T44)
6	06:05		19:57 (T42)	06:31			07:02			07:24 (T76)	07:33			07:42		15:19 (T44)
	21:08	42	20:39 (T42)	20:44			19:57	80		19:27 (T77)	19:06			17:03	49	16:08 (T44)
7	06:05		19:58 (T42)	06:32			07:03			07:24 (T76)	07:34			07:43		15:19 (T44)
	21:07	41	20:39 (T42)	20:43			19:56	78		19:26 (T77)	19:05			17:03	49	16:08 (T44)
8	06:06		19:58 (T42)	06:33			07:04			07:25 (T76)	07:35			07:44		15:19 (T44)
	21:07	41	20:39 (T42)	20:42			19:54	74		19:25 (T77)	19:03			17:03	50	16:09 (T44)
9	06:07		19:58 (T42)	06:34			07:05			07:26 (T76)	07:36			07:45		15:20 (T44)
	21:07	40	20:38 (T42)	20:41			19:52	71		19:24 (T77)	19:01			17:03	50	16:10 (T44)
10	06:07		19:59 (T42)	06:35		19:06 (T77)	07:06			07:26 (T76)	07:37			07:46		15:20 (T44)
	21:06	40	20:39 (T42)	20:39	11	19:17 (T77)	19:51	66		19:21 (T77)	19:00			17:03	50	16:10 (T44)
11	06:08		20:00 (T42)	06:36		19:02 (T77)	07:07			07:27 (T76)	07:38			07:46		15:21 (T44)
	21:06	39	20:39 (T42)	20:38	18	19:20 (T77)	19:49	60		19:19 (T77)	18:58			17:03	50	16:11 (T44)
12	06:09		20:00 (T42)	06:37		18:59 (T77)	07:08			07:28 (T76)	07:39			07:47		15:21 (T44)
	21:05	38	20:38 (T42)	20:37	24	19:23 (T77)	19:47	53		19:17 (T77)	18:57			17:03	51	16:12 (T44)
13	06:10		20:01 (T42)	06:38		18:57 (T77)	07:09			07:29 (T76)	07:40			07:48		15:22 (T44)
	21:05	37	20:38 (T42)	20:36	28	19:25 (T77)	19:45	47		19:15 (T77)	18:55			17:03	50	16:12 (T44)
14	06:10		20:01 (T42)	06:39		18:55 (T77)	07:10			07:31 (T76)	07:41			07:49		15:22 (T44)
	21:05	37	20:38 (T42)	20:34	31	19:26 (T77)	19:44	36		19:12 (T77)	18:54			17:03	50	16:12 (T44)
15	06:11		20:02 (T42)	06:40		18:53 (T77)	07:11			18:49 (T77)	07:42		15:31 (T44)	07:50		15:22 (T44)
	21:04	35	20:37 (T42)	20:33	35	19:28 (T77)	19:42	20		19:09 (T77)	18:52	14	15:45 (T44)	17:03	51	16:13 (T44)
16	06:12		20:02 (T42)	06:41		18:50 (T77)	07:12			18:55 (T77)	07:44		15:28 (T44)	07:50		15:23 (T44)
	21:03	34	20:36 (T42)	20:31	38	19:28 (T77)	19:40	8		19:03 (T77)	18:50	20	15:48 (T44)	17:04	51	16:14 (T44)
17	06:13		20:03 (T42)	06:42		18:49 (T77)	07:13				07:45		15:27 (T44)	07:51		15:23 (T44)
	21:03	33	20:36 (T42)	20:30	40	19:29 (T77)	19:39				18:49	24	15:51 (T44)	17:04	50	16:13 (T44)
18	06:14		20:04 (T42)	06:43		18:48 (T77)	07:14				07:46		15:25 (T44)	07:52		15:24 (T44)
	21:02	31	20:35 (T42)	20:29	42	19:30 (T77)	19:37				18:47	27	15:52 (T44)	17:04	50	16:14 (T44)
19	06:14		20:06 (T42)	06:44		18:47 (T77)	07:15				07:47		15:23 (T44)	07:52		15:24 (T44)
	21:01	29	20:35 (T42)	20:27	43	19:30 (T77)	19:35				18:46	31	15:54 (T44)	17:05	51	16:15 (T44)
20	06:15		20:07 (T42)	06:45		18:45 (T77)	07:16				07:48		15:22 (T44)	07:53		15:24 (T44)
	21:01	27	20:34 (T42)	20:26	46	19:31 (T77)	19:33				18:44	33	15:55 (T44)	17:05	51	16:15 (T44)
21	06:16		20:07 (T42)	06:46		18:44 (T77)	07:17				07:49		15:22 (T44)	07:53		15:25 (T44)
	21:00	25	20:32 (T42)	20:24	47	19:31 (T77)	19:32				18:43	35	15:57 (T44)	17:06	51	16:16 (T44)
22	06:17		20:09 (T42)	06:47		18:44 (T77)	07:18				07:50		15:21 (T44)	07:54		15:25 (T44)
	20:59	22	20:31 (T42)	20:23	48	19:32 (T77)	19:30				18:41	37	15:58 (T44)	17:06	51	16:16 (T44)
23	06:18		20:11 (T42)	06:48		18:43 (T77)	07:19				07:51		15:20 (T44)	07:54		15:26 (T44)
	20:58	18	20:29 (T42)	20:21	49	19:32 (T77)	19:28				18:40	39	15:59 (T44)	17:07	51	16:17 (T44)
24	06:19		20:13 (T42)	06:49		07:38 (T76)	07:20				07:53		15:20 (T44)	07:55		15:26 (T44)
	20:58	14	20:27 (T42)	20:20	60	19:32 (T77)	19:27				18:39	39	15:59 (T44)	17:07	51	16:17 (T44)
25	06:20		20:18 (T42)	06:50		07:35 (T76)	07:21				07:54		15:20 (T44)	07:55		15:27 (T44)
	20:57	5	20:23 (T42)	20:18	67	19:32 (T77)	19:25				18:37	41	16:01 (T44)	17:08	50	16:17 (T44)
26	06:21			06:51		07:32 (T76)	07:22				07:55		15:19 (T44)	07:56		15:28 (T44)
	20:56			20:17	72	19:32 (T77)	19:23				18:36	43	16:02 (T44)	17:08	50	16:18 (T44)
27	06:22			06:52		07:31 (T76)	07:23				07:56		15:19 (T44)	07:56		15:28 (T44)
	20:55			20:15	75	19:32 (T77)	19:22				18:34	44	16:03 (T44)	17:09	51	16:19 (T44)
28	06:22			06:53		07:29 (T76)	07:24				07:57		15:19 (T44)	07:56		15:28 (T44)
	20:54			20:14	78	19:32 (T77)	19:20				18:33	44	16:03 (T44)	17:10	51	16:19 (T44)
29	06:23			06:54		07:28 (T76)	07:25				07:58		15:19 (T44)	07:57		15:28 (T44)
	20:53			20:12	81	19:32 (T77)	19:18				18:32	45	16:04 (T44)	17:10	51	16:19 (T44)
30	06:24			06:55		07:27 (T76)	07:26				08:00		15:18 (T44)	07:57		15:30 (T44)
	20:52			20:10	82	19:32 (T77)	19:16				18:31	46	16:04 (T44)	17:11	50	16:20 (T44)
31	06:25			06:56		07:26 (T76)					08:01			07:57		15:30 (T44)
	20:51			20:09	83	19:31 (T77)					18:29			17:12	50	16:20 (T44)
Potential sun hours	460			429			375				345	297		287		
Total, worst case		842			1098			1011					562		1549	
Sun reduction		0.66			0.61			0.59					0.30		0.22	
Oper. time red.		1.00			1.00			1.00					1.00		1.00	
Wind dir. red.		0.54			0.62			0.63					0.74		0.74	
Total reduction		0.37			0.39			0.38					0.23		0.17	
Total, real		313			433			389					131		264	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1438 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7348)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:57	07:44	07:07			07:16		07:46 (T22)	06:30			06:01		19:30 (T21)
	17:13	17:47	18:22			19:56	40	08:26 (T22)	20:27			20:57	49	20:19 (T21)
2	07:58	07:43	07:06			07:14		07:46 (T22)	06:29			06:01		19:30 (T21)
	17:13	17:48	18:23			19:57	38	08:24 (T22)	20:28			20:58	49	20:19 (T21)
3	07:58	07:42	07:04			07:13		07:47 (T22)	06:27			06:00		19:31 (T21)
	17:14	17:50	18:24			19:58	37	08:24 (T22)	20:29			20:59	48	20:19 (T21)
4	07:58	07:40	07:02			07:11		07:47 (T22)	06:26			06:00		19:31 (T21)
	17:15	17:51	18:25			19:59	36	08:23 (T22)	20:30			20:59	49	20:20 (T21)
5	07:58	07:39	07:01			07:09		07:47 (T22)	06:25		19:49 (T21)	05:59		19:31 (T21)
	17:16	17:52	18:26			20:00	34	08:21 (T22)	20:31	9	19:58 (T21)	21:00	48	20:19 (T21)
6	07:58	07:38	06:59			07:08		07:48 (T22)	06:24		19:45 (T21)	05:59		19:31 (T21)
	17:17	17:53	18:27			20:00	33	08:21 (T22)	20:32	17	20:02 (T21)	21:01	49	20:20 (T21)
7	07:57	07:37	06:58			07:06		07:49 (T22)	06:22		19:42 (T21)	05:59		19:32 (T21)
	17:18	17:55	18:28			20:01	30	08:19 (T22)	20:33	22	20:04 (T21)	21:01	48	20:20 (T21)
8	07:57	07:36	07:56			07:04		07:50 (T22)	06:21		19:40 (T21)	05:59		19:32 (T21)
	17:19	17:56	19:30			20:02	26	08:16 (T22)	20:34	26	20:06 (T21)	21:02	48	20:20 (T21)
9	07:57	07:35	07:54			07:03		07:52 (T22)	06:20		19:38 (T21)	05:58		19:32 (T21)
	17:20	17:57	19:31			20:03	23	08:15 (T22)	20:35	30	20:08 (T21)	21:03	48	20:20 (T21)
10	07:57	07:34	07:53			07:01		07:54 (T22)	06:19		19:37 (T21)	05:58		19:32 (T21)
	17:21	17:59	19:32			20:05	18	08:12 (T22)	20:37	32	20:09 (T21)	21:03	48	20:20 (T21)
11	07:57	07:32	07:51			07:00		07:57 (T22)	06:18		19:36 (T21)	05:58		19:32 (T21)
	17:22	18:00	19:33			20:06	11	08:08 (T22)	20:38	34	20:10 (T21)	21:04	48	20:20 (T21)
12	07:56	07:31	07:50			06:58			06:17		19:35 (T21)	05:58		19:33 (T21)
	17:23	18:01	19:34			20:07			20:39	36	20:11 (T21)	21:04	47	20:20 (T21)
13	07:56	07:30	07:48			06:56			06:16		19:34 (T21)	05:58		19:33 (T21)
	17:24	18:02	19:35			20:08			20:40	38	20:12 (T21)	21:05	48	20:21 (T21)
14	07:56	07:29	07:46			06:55			06:15		19:33 (T21)	05:58		19:33 (T21)
	17:25	18:03	19:36			20:09			20:41	40	20:13 (T21)	21:05	48	20:21 (T21)
15	07:55	07:27	07:45			06:53			06:14		19:32 (T21)	05:58		19:34 (T21)
	17:27	18:05	19:37			20:10			20:42	42	20:14 (T21)	21:06	47	20:21 (T21)
16	07:55	07:26	07:43			06:52			06:13		19:31 (T21)	05:58		19:34 (T21)
	17:28	18:06	19:39			20:11			20:43	43	20:14 (T21)	21:06	47	20:21 (T21)
17	07:55	07:25	07:41		08:04 (T22)	06:50			06:12		19:31 (T21)	05:58		19:34 (T21)
	17:29	18:07	19:40	12	08:16 (T22)	20:12			20:44	44	20:15 (T21)	21:06	47	20:21 (T21)
18	07:54	07:23	07:40		08:01 (T22)	06:49			06:11		19:31 (T21)	05:58		19:34 (T21)
	17:30	18:08	19:41	19	08:20 (T22)	20:13			20:45	45	20:16 (T21)	21:07	47	20:21 (T21)
19	07:54	07:22	07:38		07:58 (T22)	06:47			06:10		19:31 (T21)	05:58		19:34 (T21)
	17:31	18:10	19:42	24	08:22 (T22)	20:14			20:46	45	20:16 (T21)	21:07	47	20:21 (T21)
20	07:53	07:20	07:36		07:56 (T22)	06:46			06:09		19:30 (T21)	05:58		19:35 (T21)
	17:32	18:11	19:43	28	08:24 (T22)	20:15			20:47	46	20:16 (T21)	21:07	47	20:22 (T21)
21	07:52	07:19	07:34		07:54 (T22)	06:44			06:08		19:30 (T21)	05:58		19:35 (T21)
	17:34	18:12	19:44	31	08:25 (T22)	20:16			20:47	47	20:17 (T21)	21:08	47	20:22 (T21)
22	07:52	07:18	07:33		07:53 (T22)	06:43			06:07		19:29 (T21)	05:59		19:35 (T21)
	17:35	18:13	19:45	33	08:26 (T22)	20:17			20:48	48	20:17 (T21)	21:08	47	20:22 (T21)
23	07:51	07:16	07:31		07:51 (T22)	06:41			06:07		19:30 (T21)	05:59		19:35 (T21)
	17:36	18:14	19:46	35	08:26 (T22)	20:18			20:49	48	20:18 (T21)	21:08	47	20:22 (T21)
24	07:50	07:15	07:29		07:50 (T22)	06:40			06:06		19:30 (T21)	05:59		19:36 (T21)
	17:37	18:16	19:47	37	08:27 (T22)	20:20			20:50	48	20:18 (T21)	21:08	47	20:23 (T21)
25	07:50	07:13	07:28		07:49 (T22)	06:38			06:05		19:29 (T21)	05:59		19:36 (T21)
	17:38	18:17	19:48	39	08:28 (T22)	20:21			20:51	48	20:17 (T21)	21:08	47	20:23 (T21)
26	07:49	07:12	07:26		07:48 (T22)	06:37			06:04		19:30 (T21)	06:00		19:36 (T21)
	17:40	18:18	19:49	39	08:27 (T22)	20:22			20:52	48	20:18 (T21)	21:09	47	20:23 (T21)
27	07:48	07:10	07:24		07:47 (T22)	06:35			06:04		19:29 (T21)	06:00		19:37 (T21)
	17:41	18:19	19:51	40	08:27 (T22)	20:23			20:53	49	20:18 (T21)	21:09	47	20:24 (T21)
28	07:47	07:09	07:23		07:47 (T22)	06:34			06:03		19:30 (T21)	06:00		19:36 (T21)
	17:42	18:20	19:52	41	08:28 (T22)	20:24			20:54	49	20:19 (T21)	21:09	48	20:24 (T21)
29	07:46		07:21		07:47 (T22)	06:33			06:03		19:30 (T21)	06:01		19:36 (T21)
	17:43		19:53	40	08:27 (T22)	20:25			20:55	49	20:19 (T21)	21:09	48	20:24 (T21)
30	07:45		07:19		07:46 (T22)	06:31			06:02		19:30 (T21)	06:01		19:37 (T21)
	17:45		19:54	40	08:26 (T22)	20:26			20:55	49	20:19 (T21)	21:09	48	20:25 (T21)
31	07:44		07:18		07:47 (T22)				06:02		19:30 (T21)			
	17:46		19:55	39	08:26 (T22)				20:56	49	20:19 (T21)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				497			326			1081			1430	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.62			0.62			0.56			0.56	
Total reduction				0.27			0.32			0.32			0.36	
Total, real				135			105			344			512	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1438 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7348)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02	19:37 (T21)	06:26	19:46 (T21)	06:57	07:56 (T22)	07:27	07:02	07:37
	21:09 47	20:24 (T21)	20:50 36	20:22 (T21)	20:07 11	08:07 (T22)	19:15	17:28	17:03
2	06:02	19:37 (T21)	06:27	19:47 (T21)	06:58	07:52 (T22)	07:28	07:03	07:38
	21:09 48	20:25 (T21)	20:49 34	20:21 (T21)	20:06 19	08:11 (T22)	19:13	17:26	17:03
3	06:03	19:37 (T21)	06:28	19:48 (T21)	06:59	07:50 (T22)	07:30	07:04	07:39
	21:08 48	20:25 (T21)	20:48 31	20:19 (T21)	20:04 23	08:13 (T22)	19:11	17:25	17:03
4	06:03	19:37 (T21)	06:29	19:49 (T21)	07:00	07:48 (T22)	07:31	07:06	07:40
	21:08 49	20:26 (T21)	20:47 29	20:18 (T21)	20:02 26	08:14 (T22)	19:10	17:24	17:03
5	06:04	19:37 (T21)	06:30	19:51 (T21)	07:01	07:46 (T22)	07:32	07:07	07:41
	21:08 48	20:25 (T21)	20:46 25	20:16 (T21)	20:01 30	08:16 (T22)	19:08	17:23	17:02
6	06:04	19:37 (T21)	06:31	19:53 (T21)	07:02	07:44 (T22)	07:33	07:08	07:42
	21:08 49	20:26 (T21)	20:45 21	20:14 (T21)	19:57 33	08:17 (T22)	19:06	17:22	17:02
7	06:05	19:38 (T21)	06:32	19:56 (T21)	07:03	07:42 (T22)	07:34	07:09	07:43
	21:08 48	20:26 (T21)	20:43 15	20:11 (T21)	19:56 34	08:16 (T22)	19:05	17:21	17:02
8	06:06	19:37 (T21)	06:33	20:03 (T21)	07:04	07:41 (T22)	07:35	07:10	07:44
	21:07 49	20:26 (T21)	20:42 1	20:04 (T21)	19:54 36	08:17 (T22)	19:03	17:20	17:02
9	06:06	19:38 (T21)	06:34		07:05	07:40 (T22)	07:36	07:12	07:45
	21:07 49	20:27 (T21)	20:41		19:52 37	08:17 (T22)	19:01	17:19	17:02
10	06:07	19:38 (T21)	06:35		07:06	07:39 (T22)	07:37	07:13	07:46
	21:07 49	20:27 (T21)	20:40		19:51 39	08:18 (T22)	19:00	17:18	17:02
11	06:08	19:38 (T21)	06:36		07:07	07:38 (T22)	07:38	07:14	07:47
	21:06 49	20:27 (T21)	20:38		19:49 40	08:18 (T22)	18:58	17:17	17:02
12	06:09	19:38 (T21)	06:37		07:08	07:38 (T22)	07:39	07:15	07:47
	21:06 49	20:27 (T21)	20:37		19:47 40	08:18 (T22)	18:57	17:16	17:02
13	06:09	19:39 (T21)	06:38		07:09	07:37 (T22)	07:40	07:16	07:48
	21:05 48	20:27 (T21)	20:36		19:45 40	08:17 (T22)	18:55	17:15	17:03
14	06:10	19:38 (T21)	06:39		07:10	07:37 (T22)	07:41	07:18	07:49
	21:05 49	20:27 (T21)	20:34		19:44 40	08:17 (T22)	18:53	17:14	17:03
15	06:11	19:38 (T21)	06:40		07:11	07:37 (T22)	07:42	07:19	07:50
	21:04 49	20:27 (T21)	20:33		19:42 40	08:17 (T22)	18:52	17:13	17:03
16	06:12	19:39 (T21)	06:41		07:12	07:36 (T22)	07:44	07:20	07:50
	21:04 48	20:27 (T21)	20:32		19:40 40	08:16 (T22)	18:50	17:12	17:03
17	06:12	19:39 (T21)	06:42		07:13	07:36 (T22)	07:45	07:21	07:51
	21:03 49	20:28 (T21)	20:30		19:39 40	08:16 (T22)	18:49	17:11	17:04
18	06:13	19:39 (T21)	06:43		07:14	07:37 (T22)	07:46	07:22	07:52
	21:02 49	20:28 (T21)	20:29		19:37 38	08:15 (T22)	18:47	17:10	17:04
19	06:14	19:39 (T21)	06:44		07:15	07:37 (T22)	07:47	07:24	07:52
	21:02 48	20:27 (T21)	20:27		19:35 37	08:14 (T22)	18:46	17:10	17:04
20	06:15	19:39 (T21)	06:45		07:16	07:37 (T22)	07:48	07:25	07:53
	21:01 48	20:27 (T21)	20:26		19:33 36	08:13 (T22)	18:44	17:09	17:05
21	06:16	19:40 (T21)	06:46		07:17	07:38 (T22)	07:49	07:26	07:54
	21:00 47	20:27 (T21)	20:24		19:32 34	08:12 (T22)	18:43	17:08	17:05
22	06:17	19:40 (T21)	06:47		07:18	07:38 (T22)	07:50	07:27	07:54
	20:59 47	20:27 (T21)	20:23		19:30 32	08:10 (T22)	18:41	17:08	17:06
23	06:18	19:41 (T21)	06:48		07:19	07:39 (T22)	07:51	07:28	07:55
	20:59 46	20:27 (T21)	20:21		19:28 29	08:08 (T22)	18:40	17:07	17:06
24	06:18	19:41 (T21)	06:49		07:20	07:41 (T22)	07:53	07:29	07:55
	20:58 46	20:27 (T21)	20:20		19:27 25	08:06 (T22)	18:38	17:06	17:07
25	06:19	19:42 (T21)	06:50		07:21	07:43 (T22)	07:54	07:31	07:55
	20:57 45	20:27 (T21)	20:18		19:25 21	08:04 (T22)	18:37	17:06	17:07
26	06:20	19:41 (T21)	06:51		07:22	07:45 (T22)	07:55	07:32	07:56
	20:56 44	20:25 (T21)	20:17		19:23 15	08:00 (T22)	18:36	17:05	17:08
27	06:21	19:42 (T21)	06:52		07:23		07:56	07:33	07:56
	20:55 43	20:25 (T21)	20:15		19:21		18:34	17:05	17:09
28	06:22	19:42 (T21)	06:53		07:24		07:57	07:34	07:56
	20:54 42	20:24 (T21)	20:14		19:20		18:33	17:04	17:09
29	06:23	19:43 (T21)	06:54		07:25		07:58	07:35	07:57
	20:53 41	20:24 (T21)	20:12		19:18		18:32	17:04	17:10
30	06:24	19:44 (T21)	06:55		07:26		08:00	07:36	07:57
	20:52 39	20:23 (T21)	20:10		19:16		18:30	17:04	17:11
31	06:25	19:45 (T21)	06:56				08:01		07:57
	20:51 37	20:22 (T21)	20:09				18:29		17:12
Potential sun hours	460		429		375		345	297	287
Total, worst case	1447		192		835				
Sun reduction	0.66		0.61		0.59				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	0.56		0.56		0.62				
Total reduction	0.37		0.34		0.37				
Total, real	534		65		305				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1461 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7365)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:57	07:43	07:07			07:16		18:56 (T5)	06:30		18:38 (T5)	06:01		19:58 (T3)
	17:12	17:47	18:21			19:56	38	19:34 (T4)	20:27	49	19:27 (T5)	20:57	27	20:25 (T3)
2	07:57	07:42	07:05			07:14		18:53 (T5)	06:28		18:39 (T5)	06:00		19:59 (T3)
	17:13	17:48	18:22			19:57	42	19:35 (T4)	20:28	47	19:26 (T5)	20:58	27	20:26 (T3)
3	07:57	07:41	07:04			07:12		18:50 (T5)	06:27		18:40 (T5)	06:00		20:00 (T3)
	17:14	17:49	18:24			19:58	45	19:35 (T4)	20:29	45	19:25 (T5)	20:58	26	20:26 (T3)
4	07:57	07:40	07:02			07:11		18:49 (T5)	06:26		18:41 (T5)	05:59		20:00 (T3)
	17:15	17:51	18:25			19:59	47	19:36 (T4)	20:30	43	19:24 (T5)	20:59	25	20:25 (T3)
5	07:57	07:39	07:01			07:09		18:46 (T5)	06:24		18:41 (T5)	05:59		20:00 (T3)
	17:16	17:52	18:26			20:00	50	19:36 (T4)	20:31	41	19:22 (T5)	21:00	26	20:26 (T3)
6	07:57	07:38	06:59			07:07		18:44 (T5)	06:23		18:43 (T5)	05:59		20:01 (T3)
	17:17	17:53	18:27			20:00	52	19:36 (T4)	20:32	38	19:21 (T5)	21:00	25	20:26 (T3)
7	07:57	07:37	06:57			07:06		18:43 (T5)	06:22		18:44 (T5)	05:58		20:01 (T3)
	17:18	17:54	18:28			20:01	54	19:37 (T4)	20:33	36	19:20 (T5)	21:01	24	20:25 (T3)
8	07:57	07:36	07:56			07:04		18:42 (T5)	06:21		18:46 (T5)	05:58		20:01 (T3)
	17:19	17:56	19:29			20:02	54	19:36 (T4)	20:34	32	19:18 (T5)	21:02	24	20:25 (T3)
9	07:57	07:35	07:54			07:02		18:40 (T5)	06:20		18:48 (T5)	05:58		20:02 (T3)
	17:20	17:57	19:30			20:03	56	19:36 (T4)	20:35	29	19:17 (T5)	21:02	23	20:25 (T3)
10	07:57	07:33	07:53			07:01		18:40 (T5)	06:19		18:50 (T5)	05:58		20:03 (T3)
	17:21	17:58	19:32			20:04	56	19:36 (T4)	20:36	33	20:14 (T3)	21:03	22	20:25 (T3)
11	07:57	07:32	07:51			06:59		18:38 (T5)	06:17		18:52 (T5)	05:58		20:03 (T3)
	17:22	17:59	19:33			20:05	57	19:35 (T4)	20:37	31	20:15 (T3)	21:04	22	20:25 (T3)
12	07:56	07:31	07:49			06:58		18:38 (T5)	06:16		18:55 (T5)	05:57		20:04 (T3)
	17:23	18:01	19:34			20:06	57	19:35 (T4)	20:38	28	20:16 (T3)	21:04	21	20:25 (T3)
13	07:56	07:30	07:48			06:56		18:37 (T5)	06:15		20:01 (T3)	05:57		20:04 (T3)
	17:24	18:02	19:35			20:07	57	19:34 (T5)	20:39	16	20:17 (T3)	21:05	21	20:25 (T3)
14	07:56	07:28	07:46			06:54		18:37 (T5)	06:14		20:00 (T3)	05:57		20:05 (T3)
	17:25	18:03	19:36			20:09	57	19:34 (T5)	20:40	17	20:17 (T3)	21:05	20	20:25 (T3)
15	07:55	07:27	07:44			06:53		18:36 (T5)	06:13		19:59 (T3)	05:57		20:05 (T3)
	17:26	18:04	19:37			20:10	58	19:34 (T5)	20:41	19	20:18 (T3)	21:06	20	20:25 (T3)
16	07:55	07:26	07:43			06:51		18:35 (T5)	06:12		19:58 (T3)	05:57		20:06 (T3)
	17:27	18:06	19:38			20:11	59	19:34 (T5)	20:42	21	20:19 (T3)	21:06	19	20:25 (T3)
17	07:54	07:24	07:41			06:50		18:35 (T5)	06:11		19:58 (T3)	05:57		20:06 (T3)
	17:28	18:07	19:39			20:12	59	19:34 (T5)	20:43	22	20:20 (T3)	21:06	19	20:25 (T3)
18	07:54	07:23	07:39			06:48		18:34 (T5)	06:10		19:57 (T3)	05:57		20:06 (T3)
	17:30	18:08	19:40			20:13	59	19:33 (T5)	20:44	24	20:21 (T3)	21:07	19	20:25 (T3)
19	07:53	07:22	07:38			06:47		18:35 (T5)	06:10		19:57 (T3)	05:58		20:06 (T3)
	17:31	18:09	19:42			20:14	59	19:34 (T5)	20:45	24	20:21 (T3)	21:07	19	20:25 (T3)
20	07:53	07:20	07:36			06:45		18:34 (T5)	06:09		19:57 (T3)	05:58		20:06 (T3)
	17:32	18:10	19:43			20:15	59	19:33 (T5)	20:46	26	20:23 (T3)	21:07	19	20:25 (T3)
21	07:52	07:19	07:34			06:44		18:35 (T5)	06:08		19:57 (T3)	05:58		20:06 (T3)
	17:33	18:12	19:44			20:16	58	19:33 (T5)	20:47	27	20:24 (T3)	21:08	19	20:25 (T3)
22	07:52	07:17	07:33			06:42		18:35 (T5)	06:07		19:57 (T3)	05:58		20:07 (T3)
	17:34	18:13	19:45			20:17	58	19:33 (T5)	20:48	27	20:24 (T3)	21:08	19	20:26 (T3)
23	07:51	07:16	07:31			06:41		18:35 (T5)	06:06		19:56 (T3)	05:58		20:07 (T3)
	17:36	18:14	19:46			20:18	57	19:32 (T5)	20:49	29	20:25 (T3)	21:08	19	20:26 (T3)
24	07:50	07:14	07:29			06:39		18:35 (T5)	06:05		19:57 (T3)	05:59		20:07 (T3)
	17:37	18:15	19:47			20:19	57	19:32 (T5)	20:50	29	20:26 (T3)	21:08	19	20:26 (T3)
25	07:49	07:13	07:27			06:38		18:35 (T5)	06:05		19:57 (T3)	05:59		20:07 (T3)
	17:38	18:16	19:48			20:20	56	19:31 (T5)	20:51	29	20:26 (T3)	21:08	19	20:26 (T3)
26	07:49	07:11	07:26			06:36		18:36 (T5)	06:04		19:56 (T3)	05:59		20:08 (T3)
	17:39	18:18	19:49			20:21	55	19:31 (T5)	20:52	30	20:26 (T3)	21:08	19	20:27 (T3)
27	07:48	07:10	07:24			06:35		18:36 (T5)	06:03		19:57 (T3)	06:00		20:07 (T3)
	17:41	18:19	19:50			20:23	54	19:30 (T5)	20:53	29	20:26 (T3)	21:09	20	20:27 (T3)
28	07:47	07:08	07:22		19:17 (T4)	06:34		18:36 (T5)	06:03		19:57 (T3)	06:00		20:08 (T3)
	17:42	18:20	19:51	7	19:24 (T4)	20:24	53	19:29 (T5)	20:54	29	20:26 (T3)	21:09	20	20:28 (T3)
29	07:46		07:21		19:13 (T4)	06:32		18:37 (T5)	06:02		19:58 (T3)	06:00		20:08 (T3)
	17:43		19:52	16	19:29 (T4)	20:25	52	19:29 (T5)	20:54	28	20:26 (T3)	21:09	20	20:28 (T3)
30	07:45		07:19		19:10 (T4)	06:31		18:38 (T5)	06:02		19:58 (T3)	06:01		20:07 (T3)
	17:44		19:53	21	19:31 (T4)	20:26	50	19:28 (T5)	20:55	28	20:26 (T3)	21:09	21	20:28 (T3)
31	07:44		07:17		19:00 (T5)				06:01		19:58 (T3)			
	17:46		19:55	33	19:33 (T4)				20:56	28	20:26 (T3)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				77			1625			934			643	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.61			0.61			0.58			0.55	
Total reduction				0.27			0.32			0.33			0.35	
Total, real				21			517			308			228	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1461 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7365)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:01		20:08 (T3)	06:26		19:05 (T5)	06:57		18:37 (T5)	07:27	07:02	07:37
	21:08	21	20:29 (T3)	20:50	29	20:26 (T3)	20:07	57	19:34 (T4)	19:14	17:27	17:03
2	06:02		20:07 (T3)	06:27		19:01 (T5)	06:58		18:38 (T5)	07:28	07:03	07:38
	21:08	22	20:29 (T3)	20:49	32	20:24 (T3)	20:05	56	19:34 (T4)	19:13	17:26	17:03
3	06:02		20:07 (T3)	06:28		18:59 (T5)	06:59		18:38 (T5)	07:29	07:04	07:39
	21:08	23	20:30 (T3)	20:48	32	20:23 (T3)	20:04	56	19:34 (T4)	19:11	17:25	17:02
4	06:03		20:07 (T3)	06:29		18:57 (T5)	07:00		18:39 (T5)	07:30	07:05	07:40
	21:08	23	20:30 (T3)	20:47	30	19:27 (T5)	20:02	54	19:33 (T4)	19:09	17:24	17:02
5	06:03		20:07 (T3)	06:30		18:55 (T5)	07:01		18:39 (T5)	07:31	07:07	07:41
	21:08	24	20:31 (T3)	20:46	34	19:29 (T5)	20:00	54	19:33 (T4)	19:08	17:23	17:02
6	06:04		20:07 (T3)	06:31		18:53 (T5)	07:02		18:40 (T5)	07:32	07:08	07:42
	21:08	25	20:32 (T3)	20:44	37	19:30 (T5)	19:57	52	19:32 (T4)	19:06	17:21	17:02
7	06:05		20:07 (T3)	06:32		18:52 (T5)	07:03		18:41 (T5)	07:33	07:09	07:43
	21:07	25	20:32 (T3)	20:43	39	19:31 (T5)	19:55	50	19:31 (T4)	19:04	17:20	17:02
8	06:05		20:07 (T3)	06:33		18:51 (T5)	07:04		18:42 (T5)	07:35	07:10	07:44
	21:07	25	20:32 (T3)	20:42	41	19:32 (T5)	19:54	49	19:31 (T4)	19:03	17:19	17:02
9	06:06		20:07 (T3)	06:34		18:50 (T5)	07:05		18:44 (T5)	07:36	07:11	07:45
	21:07	26	20:33 (T3)	20:41	43	19:33 (T5)	19:52	45	19:29 (T4)	19:01	17:18	17:02
10	06:07		20:06 (T3)	06:35		18:48 (T5)	07:06		18:46 (T5)	07:37	07:13	07:46
	21:06	27	20:33 (T3)	20:39	46	19:34 (T5)	19:50	42	19:28 (T4)	18:59	17:17	17:02
11	06:07		20:07 (T3)	06:36		18:47 (T5)	07:07		18:48 (T5)	07:38	07:14	07:46
	21:06	27	20:34 (T3)	20:38	48	19:35 (T5)	19:49	39	19:27 (T4)	18:58	17:16	17:02
12	06:08		20:07 (T3)	06:37		18:46 (T5)	07:08		18:51 (T5)	07:39	07:15	07:47
	21:06	27	20:34 (T3)	20:37	49	19:35 (T5)	19:47	34	19:25 (T4)	18:56	17:15	17:02
13	06:09		20:06 (T3)	06:38		18:45 (T5)	07:09		18:59 (T5)	07:40	07:16	07:48
	21:05	28	20:34 (T3)	20:35	51	19:36 (T5)	19:45	24	19:23 (T4)	18:55	17:14	17:02
14	06:10		20:06 (T3)	06:39		18:44 (T5)	07:10		19:03 (T4)	07:41	07:17	07:49
	21:05	28	20:34 (T3)	20:34	53	19:37 (T5)	19:43	17	19:20 (T4)	18:53	17:13	17:02
15	06:10		20:06 (T3)	06:40		18:44 (T5)	07:11		19:06 (T4)	07:42	07:19	07:50
	21:04	29	20:35 (T3)	20:33	53	19:37 (T5)	19:42	10	19:16 (T4)	18:51	17:12	17:03
16	06:11		20:07 (T3)	06:41		18:43 (T5)	07:12			07:43	07:20	07:50
	21:03	28	20:35 (T3)	20:31	54	19:37 (T5)	19:40			18:50	17:12	17:03
17	06:12		20:06 (T3)	06:42		18:42 (T5)	07:13			07:44	07:21	07:51
	21:03	29	20:35 (T3)	20:30	56	19:38 (T5)	19:38			18:48	17:11	17:03
18	06:13		20:06 (T3)	06:43		18:41 (T5)	07:14			07:46	07:22	07:52
	21:02	29	20:35 (T3)	20:28	57	19:38 (T5)	19:37			18:47	17:10	17:03
19	06:14		20:06 (T3)	06:44		18:41 (T5)	07:15			07:47	07:23	07:52
	21:01	29	20:35 (T3)	20:27	57	19:38 (T5)	19:35			18:45	17:09	17:04
20	06:14		20:07 (T3)	06:45		18:40 (T5)	07:16			07:48	07:25	07:53
	21:01	29	20:36 (T3)	20:26	58	19:38 (T5)	19:33			18:44	17:08	17:04
21	06:15		20:07 (T3)	06:46		18:40 (T5)	07:17			07:49	07:26	07:53
	21:00	28	20:35 (T3)	20:24	58	19:38 (T5)	19:31			18:42	17:08	17:05
22	06:16		20:07 (T3)	06:47		18:39 (T5)	07:18			07:50	07:27	07:54
	20:59	28	20:35 (T3)	20:23	59	19:38 (T5)	19:30			18:41	17:07	17:05
23	06:17		20:07 (T3)	06:48		18:39 (T5)	07:19			07:51	07:28	07:54
	20:58	26	20:33 (T3)	20:21	59	19:38 (T5)	19:28			18:39	17:07	17:06
24	06:18		20:07 (T3)	06:49		18:39 (T5)	07:20			07:52	07:29	07:55
	20:58	25	20:32 (T3)	20:20	59	19:38 (T5)	19:26			18:38	17:06	17:06
25	06:19		20:07 (T3)	06:50		18:38 (T5)	07:21			07:54	07:30	07:55
	20:57	25	20:32 (T3)	20:18	59	19:37 (T5)	19:25			18:37	17:05	17:07
26	06:20		20:08 (T3)	06:51		18:38 (T5)	07:22			07:55	07:32	07:56
	20:56	23	20:31 (T3)	20:16	59	19:37 (T5)	19:23			18:35	17:05	17:08
27	06:21		20:09 (T3)	06:52		18:38 (T5)	07:23			07:56	07:33	07:56
	20:55	21	20:30 (T3)	20:15	58	19:36 (T5)	19:21			18:34	17:04	17:08
28	06:22		20:09 (T3)	06:53		18:38 (T5)	07:24			07:57	07:34	07:56
	20:54	20	20:29 (T3)	20:13	58	19:36 (T5)	19:19			18:33	17:04	17:09
29	06:23		20:10 (T3)	06:54		18:37 (T5)	07:25			07:58	07:35	07:57
	20:53	19	20:29 (T3)	20:12	57	19:34 (T5)	19:18			18:31	17:04	17:10
30	06:24		20:11 (T3)	06:55		18:37 (T5)	07:26			07:59	07:36	07:57
	20:52	17	20:28 (T3)	20:10	57	19:34 (T5)	19:16			18:30	17:03	17:10
31	06:25		19:09 (T5)	06:56		18:37 (T5)				08:01		07:57
	20:51	23	20:27 (T3)	20:09	57	19:34 (T4)				18:29		17:11
Potential sun hours	460			429			375			345	297	287
Total, worst case		779			1539			639				
Sun reduction		0.66			0.61			0.59				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.55			0.61			0.61				
Total reduction		0.37			0.37			0.36				
Total, real		285			573			231				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1468 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7370)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May		June		July		August	September	October	November	December
1	07:57	07:43	07:07	07:16	06:31		06:02		06:03		06:27	06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27		20:57	58	07:31 (T71)	21:08	62	07:39 (T71)	20:50	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:15	06:29		06:01		06:33 (T71)	06:03		06:38 (T71)	06:28	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28		20:57	58	07:31 (T71)	21:08	62	07:40 (T71)	20:49	20:05	19:13	17:27	17:04
3	07:57	07:41	07:04	07:13	06:28		06:01		06:33 (T71)	06:04		06:38 (T71)	06:29	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58	20:29		20:58	59	07:32 (T71)	21:08	61	07:39 (T71)	20:48	20:04	19:11	17:26	17:04
4	07:57	07:40	07:02	07:11	06:27		06:01		06:33 (T71)	06:04		06:38 (T71)	06:30	07:00	07:31	07:05	07:40
	17:16	17:52	18:25	19:59	20:30		20:59	59	07:32 (T71)	21:08	62	07:40 (T71)	20:47	20:02	19:10	17:25	17:03
5	07:57	07:39	07:01	07:10	06:25		06:00		06:33 (T71)	06:05		06:38 (T71)	06:31	07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00	20:31		20:59	60	07:33 (T71)	21:08	61	07:39 (T71)	20:45	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08	06:24		06:00		06:33 (T71)	06:05		06:39 (T71)	06:32	07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00	20:32		21:00	60	07:33 (T71)	21:07	61	07:40 (T71)	20:44	19:57	19:07	17:22	17:03
7	07:57	07:37	06:58	07:06	06:23		06:00		06:33 (T71)	06:06		06:39 (T71)	06:32	07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:01	20:33		21:01	61	07:34 (T71)	21:07	60	07:39 (T71)	20:43	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22		05:59		06:32 (T71)	06:07		06:40 (T71)	06:33	07:04	07:35	07:10	07:44
	17:20	17:57	19:30	20:02	20:34		21:01	62	07:34 (T71)	21:07	59	07:39 (T71)	20:42	19:54	19:03	17:20	17:03
9	07:57	07:35	07:54	07:03	06:21		05:59		06:33 (T71)	06:07		06:40 (T71)	06:34	07:05	07:36	07:11	07:44
	17:21	17:58	19:31	20:03	20:35		21:02	61	07:34 (T71)	21:06	60	07:40 (T71)	20:41	19:52	19:02	17:19	17:03
10	07:57	07:33	07:53	07:02	06:20		05:59		06:33 (T71)	06:08		06:40 (T71)	06:35	07:06	07:37	07:13	07:45
	17:22	17:59	19:32	20:04	20:36		21:03	62	07:35 (T71)	21:06	59	07:39 (T71)	20:39	19:51	19:00	17:18	17:03
11	07:56	07:32	07:51	07:00	06:18		05:59		06:33 (T71)	06:09		06:41 (T71)	06:36	07:07	07:38	07:14	07:46
	17:23	18:00	19:33	20:06	20:37		21:03	62	07:35 (T71)	21:06	58	07:39 (T71)	20:38	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58	06:17		05:59		06:33 (T71)	06:09		06:42 (T71)	06:37	07:08	07:39	07:15	07:47
	17:24	18:01	19:34	20:07	20:38		21:04	62	07:35 (T71)	21:05	57	07:39 (T71)	20:37	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57	06:16		06:56 (T71)	05:59	06:33 (T71)	06:10		06:42 (T71)	06:38	07:09	07:40	07:16	07:48
	17:25	18:03	19:35	20:08	20:39	11	07:07 (T71)	21:04	63	07:36 (T71)	21:05	56	07:38 (T71)	20:35	19:45	18:55	17:15	17:03
14	07:55	07:28	07:46	06:55	06:15		06:51 (T71)	05:59	06:33 (T71)	06:11		06:42 (T71)	06:39	07:10	07:41	07:17	07:49
	17:26	18:04	19:37	20:09	20:40	20	07:11 (T71)	21:05	63	07:36 (T71)	21:04	56	07:38 (T71)	20:34	19:44	18:54	17:14	17:04
15	07:55	07:27	07:45	06:54	06:14		06:48 (T71)	05:59	06:33 (T71)	06:12		06:43 (T71)	06:40	07:11	07:42	07:19	07:49
	17:27	18:05	19:38	20:10	20:41	26	07:14 (T71)	21:05	63	07:36 (T71)	21:04	55	07:38 (T71)	20:33	19:42	18:52	17:13	17:04
16	07:55	07:26	07:43	06:52	06:13		06:46 (T71)	05:59	06:33 (T71)	06:12		06:44 (T71)	06:41	07:12	07:43	07:20	07:50
	17:28	18:06	19:39	20:11	20:42	30	07:16 (T71)	21:06	63	07:36 (T71)	21:03	54	07:38 (T71)	20:31	19:40	18:51	17:13	17:04
17	07:54	07:25	07:41	06:51	06:12		06:44 (T71)	05:59	06:34 (T71)	06:13		06:44 (T71)	06:42	07:13	07:45	07:21	07:51
	17:30	18:08	19:40	20:12	20:43	34	07:18 (T71)	21:06	63	07:37 (T71)	21:03	53	07:37 (T71)	20:30	19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49	06:12		06:42 (T71)	05:59	06:34 (T71)	06:14		06:45 (T71)	06:43	07:14	07:46	07:22	07:51
	17:31	18:09	19:41	20:13	20:44	37	07:19 (T71)	21:06	63	07:37 (T71)	21:02	51	07:36 (T71)	20:28	19:37	18:48	17:11	17:05
19	07:53	07:22	07:38	06:47	06:11		06:41 (T71)	05:59	06:34 (T71)	06:15		06:46 (T71)	06:44	07:15	07:47	07:23	07:52
	17:32	18:10	19:42	20:14	20:45	39	07:20 (T71)	21:07	63	07:37 (T71)	21:01	50	07:36 (T71)	20:27	19:35	18:46	17:10	17:05
20	07:53	07:20	07:36	06:46	06:10		06:41 (T71)	05:59	06:34 (T71)	06:16		06:47 (T71)	06:45	07:16	07:48	07:24	07:52
	17:33	18:11	19:43	20:15	20:46	41	07:22 (T71)	21:07	63	07:37 (T71)	21:01	48	07:35 (T71)	20:26	19:34	18:45	17:10	17:05
21	07:52	07:19	07:35	06:44	06:09		06:39 (T71)	05:59	06:35 (T71)	06:16		06:48 (T71)	06:46	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	20:47	44	07:23 (T71)	21:07	63	07:38 (T71)	21:00	47	07:35 (T71)	20:24	19:32	18:43	17:09	17:06
22	07:51	07:18	07:33	06:43	06:08		06:38 (T71)	05:59	06:35 (T71)	06:17		06:49 (T71)	06:47	07:18	07:50	07:27	07:54
	17:35	18:14	19:45	20:17	20:48	46	07:24 (T71)	21:07	63	07:38 (T71)	20:59	45	07:34 (T71)	20:23	19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:42	06:07		06:37 (T71)	06:00	06:35 (T71)	06:18		06:49 (T71)	06:48	07:19	07:51	07:28	07:54
	17:37	18:15	19:46	20:18	20:49	48	07:25 (T71)	21:08	63	07:38 (T71)	20:58	43	07:32 (T71)	20:21	19:28	18:40	17:08	17:07
24	07:50	07:15	07:30	06:40	06:07		06:37 (T71)	06:00	06:35 (T71)	06:19		06:51 (T71)	06:49	07:20	07:52	07:29	07:55
	17:38	18:16	19:47	20:19	20:50	49	07:26 (T71)	21:08	63	07:38 (T71)	20:57	40	07:31 (T71)	20:20	19:27	18:39	17:07	17:07
25	07:49	07:13	07:28	06:39	06:06		06:36 (T71)	06:00	06:36 (T71)	06:20		06:52 (T71)	06:50	07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:20	20:51	51	07:27 (T71)	21:08	63	07:39 (T71)	20:57	38	07:30 (T71)	20:18	19:25	18:37	17:07	17:08
26	07:48	07:12	07:26	06:37	06:05		06:35 (T71)	06:00	06:36 (T71)	06:21		06:54 (T71)	06:51	07:22	07:55	07:31	07:55
	17:40	18:18	19:50	20:21	20:52	52	07:27 (T71)	21:08	63	07:39 (T71)	20:56	35	07:29 (T71)	20:17	19:23	18:36	17:06	17:09
27	07:48	07:10	07:25	06:36	06:05		06:35 (T71)	06:01	06:35 (T71)	06:22		06:55 (T71)	06:52	07:23	07:56	07:32	07:56
	17:42	18:20	19:51	20:23	20:52	53	07:28 (T71)	21:08	63	07:38 (T71)	20:55	32	07:27 (T71)	20:15	19:22	18:35	17:06	17:09
28	07:47	07:09	07:23	06:35	06:04		06:34 (T71)	06:01	06:36 (T71)	06:23		06:58 (T71)	06:53	07:24	07:57	07:33	07:56
	17:43	18:21	19:52	20:24	20:53	54	07:28 (T71)	21:08	63	07:39 (T71)	20:54	28	07:26 (T71)	20:13	19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:03		06:34 (T71)	06:02	06:36 (T71)	06:24		07:00 (T71)	06:54	07:25	07:58	07:35	07:56
	17:44		19:53	20:25	20:54	56	07:30 (T71)	21:08	63	07:39 (T71)	20:53	23	07:23 (T71)	20:12	19:18	18:32	17:05	17:11
30	07:45		07:20	06:32	06:03		06:34 (T71)	06:02	06:37 (T71)	06:25		07:03 (T71)	06:55	07:26	07:59	07:36	07:56
	17:45		19:54	20:26	20:55	56	07:30 (T71)	21:08	62	07:39 (T71)	20:52	17	07:20 (T71)	20:10	19:17	18:31	17:04	17:12
31	07:44		07:18		06:02		06:34 (T71)				06:26		07:11 (T71)	06:56		08:01		07:57
	17:47		19:55		20:56	57	07:31 (T71)				20:51	2	07:13 (T71)	20:09		18:29		17:12
Potential sun hours	297	297	370	399	448			452		459		428	375	345	298	288	
Total, worst case						804		1857		1495							
Sun reduction						0.57		0.64		0.66							
Oper. time red.						1.00		1.00		1.00							
Wind dir. red.						0.71		0.71		0.71							
Total reduction						0.41		0.46		0.47							
Total, real						327		847		703							

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1472 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7374)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		16:52 (T45)	07:07		16:51 (T45)	07:16			06:30			06:01		19:21 (T44)
	17:13			17:47	26	17:18 (T45)	18:22	30	17:21 (T45)	19:56			20:27			20:57	55	20:16 (T44)
2	07:57			07:42		16:51 (T45)	07:06		16:52 (T45)	07:14			06:29			06:01		19:22 (T44)
	17:14			17:49	29	17:20 (T45)	18:23	26	17:18 (T45)	19:57			20:28			20:58	55	20:17 (T44)
3	07:57			07:41		16:49 (T45)	07:04		16:55 (T45)	07:13			06:28		19:41 (T44)	06:01		19:22 (T44)
	17:15			17:50	33	17:22 (T45)	18:24	20	17:15 (T45)	19:58			20:29	13	19:54 (T44)	20:58	54	20:16 (T44)
4	07:57			07:40		16:48 (T45)	07:02		16:59 (T45)	07:11			06:26		19:37 (T44)	06:00		19:22 (T44)
	17:16			17:51	35	17:23 (T45)	18:25	12	17:11 (T45)	19:59			20:30	21	19:58 (T44)	20:59	55	20:17 (T44)
5	07:57			07:39		16:46 (T45)	07:01			07:09			06:25		19:35 (T44)	06:00		19:23 (T44)
	17:17			17:52	37	17:23 (T45)	18:26			20:00			20:31	26	20:01 (T44)	21:00	54	20:17 (T44)
6	07:57			07:38		16:46 (T45)	06:59			07:08			06:24		19:33 (T44)	06:00		19:22 (T44)
	17:17			17:54	39	17:25 (T45)	18:27			20:00			20:32	30	20:03 (T44)	21:00	54	20:16 (T44)
7	07:57			07:37		16:45 (T45)	06:58			07:06			06:23		19:31 (T44)	05:59		19:23 (T44)
	17:18			17:55	41	17:26 (T45)	18:29			20:01			20:33	33	20:04 (T44)	21:01	54	20:17 (T44)
8	07:57			07:36		16:45 (T45)	07:56			07:05			06:22		19:30 (T44)	05:59		19:23 (T44)
	17:19			17:56	42	17:27 (T45)	19:30			20:02			20:34	36	20:06 (T44)	21:02	54	20:17 (T44)
9	07:57			07:35		16:44 (T45)	07:54			07:03			06:20		19:28 (T44)	05:59		19:23 (T44)
	17:20			17:58	44	17:28 (T45)	19:31			20:03			20:35	39	20:07 (T44)	21:02	55	20:18 (T44)
10	07:57			07:34		16:44 (T45)	07:53			07:01			06:19		19:26 (T44)	05:59		19:24 (T44)
	17:21			17:59	45	17:29 (T45)	19:32			20:04			20:36	41	20:07 (T44)	21:03	54	20:18 (T44)
11	07:57			07:32		16:43 (T45)	07:51			07:00			06:18		19:25 (T44)	05:58		19:24 (T44)
	17:23			18:00	46	17:29 (T45)	19:33			20:06			20:37	43	20:08 (T44)	21:03	54	20:18 (T44)
12	07:56			07:31		16:43 (T45)	07:50			06:58			06:17		19:25 (T44)	05:58		19:24 (T44)
	17:24			18:01	46	17:29 (T45)	19:34			20:07			20:38	44	20:09 (T44)	21:04	53	20:17 (T44)
13	07:56			07:30		16:43 (T45)	07:48			06:57			06:16		19:24 (T44)	05:58		19:24 (T44)
	17:25			18:02	47	17:30 (T45)	19:35			20:08			20:39	46	20:10 (T44)	21:05	53	20:17 (T44)
14	07:56			07:29		16:42 (T45)	07:46			06:55			06:15		19:23 (T44)	05:58		19:24 (T44)
	17:26			18:04	47	17:29 (T45)	19:36			20:09			20:40	47	20:10 (T44)	21:05	54	20:18 (T44)
15	07:55			07:27		16:42 (T45)	07:45			06:53			06:14		19:24 (T44)	05:58		19:24 (T44)
	17:27			18:05	48	17:30 (T45)	19:38			20:10			20:41	48	20:12 (T44)	21:05	54	20:18 (T44)
16	07:55			07:26		16:42 (T45)	07:43			06:52			06:13		19:23 (T44)	05:58		19:25 (T44)
	17:28			18:06	48	17:30 (T45)	19:39			20:11			20:42	49	20:12 (T44)	21:06	53	20:18 (T44)
17	07:54			07:25		16:42 (T45)	07:41			06:50			06:12		19:22 (T44)	05:58		19:26 (T44)
	17:29			18:07	48	17:30 (T45)	19:40			20:12			20:43	51	20:13 (T44)	21:06	53	20:19 (T44)
18	07:54			07:23		16:42 (T45)	07:40			06:49			06:11		19:22 (T44)	05:58		19:26 (T44)
	17:30			18:09	48	17:30 (T45)	19:41			20:13			20:44	51	20:13 (T44)	21:07	53	20:19 (T44)
19	07:53			07:22		16:43 (T45)	07:38			06:47			06:10		19:21 (T44)	05:58		19:26 (T44)
	17:32			18:10	47	17:30 (T45)	19:42			20:14			20:45	52	20:13 (T44)	21:07	53	20:19 (T44)
20	07:53			07:20		16:42 (T45)	07:36			06:46			06:09		19:21 (T44)	05:59		19:26 (T44)
	17:33			18:11	47	17:29 (T45)	19:43			20:15			20:46	52	20:13 (T44)	21:07	53	20:19 (T44)
21	07:52			07:19		16:43 (T45)	07:35			06:44			06:09		19:21 (T44)	05:59		19:26 (T44)
	17:34			18:12	46	17:29 (T45)	19:44			20:16			20:47	52	20:13 (T44)	21:07	53	20:19 (T44)
22	07:52			07:18		16:43 (T45)	07:33			06:43			06:08		19:21 (T44)	05:59		19:26 (T44)
	17:35			18:13	45	17:28 (T45)	19:45			20:17			20:48	53	20:14 (T44)	21:08	53	20:19 (T44)
23	07:51			07:16		16:44 (T45)	07:31			06:41			06:07		19:21 (T44)	05:59		19:27 (T44)
	17:36			18:15	44	17:28 (T45)	19:46			20:18			20:49	53	20:14 (T44)	21:08	53	20:20 (T44)
24	07:50			07:15		16:44 (T45)	07:30			06:40			06:06		19:20 (T44)	05:59		19:27 (T44)
	17:38			18:16	43	17:27 (T45)	19:47			20:19			20:50	54	20:14 (T44)	21:08	53	20:20 (T44)
25	07:49			07:13		16:46 (T45)	07:28			06:38			06:06		19:21 (T44)	06:00		19:27 (T44)
	17:39			18:17	40	17:26 (T45)	19:48			20:21			20:51	54	20:15 (T44)	21:08	53	20:20 (T44)
26	07:49			07:12		16:46 (T45)	07:26			06:37			06:05		19:21 (T44)	06:00		19:28 (T44)
	17:40			18:18	39	17:25 (T45)	19:50			20:22			20:52	54	20:15 (T44)	21:08	53	20:21 (T44)
27	07:48			07:10		16:48 (T45)	07:24			06:36			06:04		19:21 (T44)	06:00		19:28 (T44)
	17:41			18:19	36	17:24 (T45)	19:51			20:23			20:53	55	20:16 (T44)	21:08	53	20:21 (T44)
28	07:47			07:09		16:49 (T45)	07:23			06:34			06:04		19:21 (T44)	06:01		19:27 (T44)
	17:42			18:21	33	17:22 (T45)	19:52			20:24			20:54	55	20:16 (T44)	21:08	54	20:21 (T44)
29	07:46		17:01 (T45)				07:21			06:33			06:03		19:21 (T44)	06:01		19:28 (T44)
	17:44	7	17:08 (T45)				19:53			20:25			20:54	54	20:15 (T44)	21:08	54	20:22 (T44)
30	07:45		16:56 (T45)				07:19			06:32			06:02		19:21 (T44)	06:02		19:28 (T44)
	17:45	17	17:13 (T45)				19:54			20:26			20:55	55	20:16 (T44)	21:08	53	20:21 (T44)
31	07:44		16:54 (T45)				07:18						06:02		19:22 (T44)			
	17:46	22	17:16 (T45)				19:55						20:56	55	20:17 (T44)			
Potential sun hours	297			297			370			399			448			453		
Total, worst case		46			1169			88						1316			1609	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.72			0.72			0.72						0.56			0.56	
Total reduction		0.23			0.29			0.32						0.33			0.37	
Total, real		10			343			28						429			589	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1472 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7374)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December
1	06:02		19:28 (T44)	06:26		19:36 (T44)	06:57	07:27			07:02		16:13 (T45)	07:37
	21:08	54	20:22 (T44)	20:50	43	20:19 (T44)	20:07	19:15			17:28	44	16:57 (T45)	17:04
2	06:03		19:28 (T44)	06:27		19:36 (T44)	06:58	07:29			07:03		16:14 (T45)	07:38
	21:08	54	20:22 (T44)	20:49	42	20:18 (T44)	20:06	19:13			17:27	44	16:58 (T45)	17:03
3	06:03		19:29 (T44)	06:28		19:37 (T44)	06:59	07:30			07:04		16:14 (T45)	07:39
	21:08	54	20:23 (T44)	20:48	40	20:17 (T44)	20:04	19:11			17:26	43	16:57 (T45)	17:03
4	06:04		19:28 (T44)	06:29		19:39 (T44)	07:00	07:31			07:06		16:15 (T45)	07:40
	21:08	54	20:22 (T44)	20:47	37	20:16 (T44)	20:02	19:10			17:24	41	16:56 (T45)	17:03
5	06:04		19:29 (T44)	06:30		19:40 (T44)	07:01	07:32			07:07		16:16 (T45)	07:41
	21:08	54	20:23 (T44)	20:46	35	20:15 (T44)	20:01	19:08			17:23	38	16:54 (T45)	17:03
6	06:05		19:28 (T44)	06:31		19:41 (T44)	07:02	07:33			07:08		16:17 (T45)	07:42
	21:08	55	20:23 (T44)	20:44	32	20:13 (T44)	19:57	19:06			17:22	37	16:54 (T45)	17:03
7	06:05		19:29 (T44)	06:32		19:43 (T44)	07:03	07:34			07:09		16:18 (T45)	07:43
	21:07	54	20:23 (T44)	20:43	29	20:12 (T44)	19:56	19:05			17:21	35	16:53 (T45)	17:03
8	06:06		19:29 (T44)	06:33		19:45 (T44)	07:04	07:35			07:10		16:19 (T45)	07:44
	21:07	55	20:24 (T44)	20:42	25	20:10 (T44)	19:54	19:03			17:20	32	16:51 (T45)	17:03
9	06:07		19:29 (T44)	06:34		19:48 (T44)	07:05	07:36			07:12		16:21 (T45)	07:45
	21:07	54	20:23 (T44)	20:41	19	20:07 (T44)	19:52	19:01			17:19	29	16:50 (T45)	17:03
10	06:07		19:29 (T44)	06:35		19:52 (T44)	07:06	07:37		17:31 (T45)	07:13		16:23 (T45)	07:46
	21:06	55	20:24 (T44)	20:39	10	20:02 (T44)	19:51	19:00	16	17:47 (T45)	17:18	26	16:49 (T45)	17:03
11	06:08		19:30 (T44)	06:36			07:07	07:38		17:28 (T45)	07:14		16:25 (T45)	07:46
	21:06	54	20:24 (T44)	20:38			19:49	18:58	22	17:50 (T45)	17:17	22	16:47 (T45)	17:03
12	06:09		19:29 (T44)	06:37			07:08	07:39		17:25 (T45)	07:15		16:28 (T45)	07:47
	21:05	55	20:24 (T44)	20:37			19:47	18:57	27	17:52 (T45)	17:16	16	16:44 (T45)	17:03
13	06:10		19:29 (T44)	06:38			07:09	07:40		17:22 (T45)	07:16		16:33 (T45)	07:48
	21:05	55	20:24 (T44)	20:36			19:45	18:55	32	17:54 (T45)	17:15	7	16:40 (T45)	17:03
14	06:10		19:30 (T44)	06:39			07:10	07:41		17:20 (T45)	07:18			07:49
	21:04	55	20:25 (T44)	20:34			19:44	18:54	35	17:55 (T45)	17:14			17:03
15	06:11		19:30 (T44)	06:40			07:11	07:42		17:20 (T45)	07:19			07:50
	21:04	55	20:25 (T44)	20:33			19:42	18:52	37	17:57 (T45)	17:13			17:03
16	06:12		19:30 (T44)	06:41			07:12	07:44		17:18 (T45)	07:20			07:50
	21:03	54	20:24 (T44)	20:31			19:40	18:50	39	17:57 (T45)	17:12			17:04
17	06:13		19:30 (T44)	06:42			07:13	07:45		17:17 (T45)	07:21			07:51
	21:03	54	20:24 (T44)	20:30			19:39	18:49	41	17:58 (T45)	17:11			17:04
18	06:14		19:30 (T44)	06:43			07:14	07:46		17:16 (T45)	07:22			07:52
	21:02	55	20:25 (T44)	20:29			19:37	18:47	42	17:58 (T45)	17:11			17:04
19	06:14		19:31 (T44)	06:44			07:15	07:47		17:14 (T45)	07:23			07:52
	21:01	54	20:25 (T44)	20:27			19:35	18:46	45	17:59 (T45)	17:10			17:05
20	06:15		19:31 (T44)	06:45			07:16	07:48		17:14 (T45)	07:25			07:53
	21:01	54	20:25 (T44)	20:26			19:33	18:44	45	17:59 (T45)	17:09			17:05
21	06:16		19:30 (T44)	06:46			07:17	07:49		17:14 (T45)	07:26			07:53
	21:00	54	20:24 (T44)	20:24			19:32	18:43	46	18:00 (T45)	17:09			17:06
22	06:17		19:31 (T44)	06:47			07:18	07:50		17:13 (T45)	07:27			07:54
	20:59	53	20:24 (T44)	20:23			19:30	18:41	47	18:00 (T45)	17:08			17:06
23	06:18		19:31 (T44)	06:48			07:19	07:51		17:12 (T45)	07:28			07:54
	20:58	53	20:24 (T44)	20:21			19:28	18:40	48	18:00 (T45)	17:07			17:07
24	06:19		19:32 (T44)	06:49			07:20	07:53		17:12 (T45)	07:29			07:55
	20:58	52	20:24 (T44)	20:20			19:27	18:39	48	18:00 (T45)	17:07			17:07
25	06:20		19:32 (T44)	06:50			07:21	07:54		17:11 (T45)	07:30			07:55
	20:57	52	20:24 (T44)	20:18			19:25	18:37	48	17:59 (T45)	17:06			17:08
26	06:21		19:33 (T44)	06:51			07:22	07:55		17:12 (T45)	07:32			07:56
	20:56	50	20:23 (T44)	20:17			19:23	18:36	48	18:00 (T45)	17:06			17:08
27	06:22		19:33 (T44)	06:52			07:23	07:56		17:12 (T45)	07:33			07:56
	20:55	50	20:23 (T44)	20:15			19:21	18:34	48	18:00 (T45)	17:05			17:09
28	06:22		19:34 (T44)	06:53			07:24	07:57		17:11 (T45)	07:34			07:56
	20:54	49	20:23 (T44)	20:14			19:20	18:33	48	17:59 (T45)	17:05			17:10
29	06:23		19:33 (T44)	06:54			07:25	07:58		17:11 (T45)	07:35			07:57
	20:53	48	20:21 (T44)	20:12			19:18	18:32	48	17:59 (T45)	17:04			17:10
30	06:24		19:34 (T44)	06:55			07:26	08:00		17:12 (T45)	07:36			07:57
	20:52	47	20:21 (T44)	20:10			19:16	18:31	47	17:59 (T45)	17:04			17:11
31	06:25		19:35 (T44)	06:56				08:01		17:13 (T45)				07:57
	20:51	45	20:20 (T44)	20:09				18:29	45	17:58 (T45)				17:12
Potential sun hours	460			429			375	345			297			287
Total, worst case		1641			312				902			414		
Sun reduction		0.66			0.61				0.48			0.30		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.56			0.56				0.72			0.72		
Total reduction		0.38			0.35				0.35			0.22		
Total, real		620			109				318			91		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1473 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7375)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March			April			May			June		
1	07:57		14:17 (T20)	07:43	07:07			07:16		17:52 (T19)	06:30		19:24 (T17)	06:01		19:33 (T17)
	17:13	49	15:06 (T20)	17:47	18:21			19:56	65	18:57 (T19)	20:27	39	20:03 (T17)	20:57	22	19:55 (T17)
2	07:57		14:18 (T20)	07:42	07:06			07:14		17:52 (T19)	06:29		19:22 (T17)	06:01		19:34 (T17)
	17:13	48	15:06 (T20)	17:48	18:23			19:57	64	18:56 (T19)	20:28	40	20:02 (T17)	20:58	20	19:54 (T17)
3	07:58		14:19 (T20)	07:41	07:04		17:26 (T19)	07:13		17:53 (T19)	06:27		19:22 (T17)	06:00		19:35 (T17)
	17:14	47	15:06 (T20)	17:50	18:24	10	17:36 (T19)	19:58	63	18:56 (T19)	20:29	41	20:03 (T17)	20:59	18	19:53 (T17)
4	07:58		14:20 (T20)	07:40	07:02		17:20 (T19)	07:11		17:53 (T19)	06:26		19:21 (T17)	06:00		19:37 (T17)
	17:15	46	15:06 (T20)	17:51	18:25	23	17:43 (T19)	19:59	62	18:55 (T19)	20:30	43	20:04 (T17)	20:59	15	19:52 (T17)
5	07:58		14:22 (T20)	07:39	07:01		17:15 (T19)	07:09		17:53 (T19)	06:25		19:21 (T17)	05:59		19:38 (T17)
	17:16	44	15:06 (T20)	17:52	18:26	31	17:46 (T19)	20:00	60	18:53 (T19)	20:31	43	20:04 (T17)	21:00	12	19:50 (T17)
6	07:58		14:23 (T20)	07:38	06:59		17:13 (T19)	07:08		17:55 (T19)	06:24		19:21 (T17)	05:59		19:40 (T17)
	17:17	42	15:05 (T20)	17:53	18:27	36	17:49 (T19)	20:00	58	18:53 (T19)	20:32	43	20:04 (T17)	21:01	9	19:49 (T17)
7	07:57		14:25 (T20)	07:37	06:58		17:10 (T19)	07:06		17:55 (T19)	06:22		19:20 (T17)	05:59		
	17:18	40	15:05 (T20)	17:55	18:28	41	17:51 (T19)	20:01	56	18:51 (T19)	20:33	44	20:04 (T17)	21:01		
8	07:57		14:25 (T20)	07:36	07:56		18:07 (T19)	07:04		17:56 (T19)	06:21		19:20 (T17)	05:58		
	17:19	39	15:04 (T20)	17:56	19:30	46	18:53 (T19)	20:02	54	18:50 (T19)	20:34	44	20:04 (T17)	21:02		
9	07:57		14:27 (T20)	07:35	07:54		18:06 (T19)	07:03		17:57 (T19)	06:20		19:20 (T17)	05:58		
	17:20	37	15:04 (T20)	17:57	19:31	49	18:55 (T19)	20:03	52	18:49 (T19)	20:35	44	20:04 (T17)	21:03		
10	07:57		14:29 (T20)	07:34	07:53		18:04 (T19)	07:01		17:58 (T19)	06:19		19:20 (T17)	05:58		
	17:21	34	15:03 (T20)	17:58	19:32	52	18:56 (T19)	20:04	49	18:47 (T19)	20:36	44	20:04 (T17)	21:03		
11	07:57		14:31 (T20)	07:32	07:51		18:02 (T19)	06:59		18:00 (T19)	06:18		19:20 (T17)	05:58		
	17:22	31	15:02 (T20)	18:00	19:33	54	18:56 (T19)	20:06	46	18:46 (T19)	20:38	44	20:04 (T17)	21:04		
12	07:56		14:33 (T20)	07:31	07:49		18:01 (T19)	06:58		18:01 (T19)	06:17		19:20 (T17)	05:58		
	17:23	28	15:01 (T20)	18:01	19:34	57	18:58 (T19)	20:07	42	18:43 (T19)	20:39	44	20:04 (T17)	21:04		
13	07:56		14:36 (T20)	07:30	07:48		17:59 (T19)	06:56		18:02 (T19)	06:16		19:20 (T17)	05:58		
	17:24	23	14:59 (T20)	18:02	19:35	60	18:59 (T19)	20:08	39	18:41 (T19)	20:40	44	20:04 (T17)	21:05		
14	07:56		14:38 (T20)	07:29	07:46		17:58 (T19)	06:55		18:05 (T19)	06:15		19:20 (T17)	05:58		
	17:25	19	14:57 (T20)	18:03	19:36	61	18:59 (T19)	20:09	34	18:39 (T19)	20:41	44	20:04 (T17)	21:05		
15	07:55		14:43 (T20)	07:27	07:44		17:57 (T19)	06:53		18:07 (T19)	06:14		19:21 (T17)	05:58		
	17:26	11	14:54 (T20)	18:05	19:37	63	19:00 (T19)	20:10	29	18:36 (T19)	20:42	42	20:03 (T17)	21:06		
16	07:55			07:26	07:43		17:56 (T19)	06:52		18:10 (T19)	06:13		19:21 (T17)	05:58		
	17:28			18:06	19:38	65	19:01 (T19)	20:11	23	18:33 (T19)	20:43	42	20:03 (T17)	21:06		
17	07:55			07:25	07:41		17:55 (T19)	06:50		18:15 (T19)	06:12		19:21 (T17)	05:58		
	17:29			18:07	19:40	66	19:01 (T19)	20:12	12	18:27 (T19)	20:44	41	20:02 (T17)	21:06		
18	07:54			07:23	07:39		17:55 (T19)	06:48			06:11		19:21 (T17)	05:58		
	17:30			18:08	19:41	67	19:02 (T19)	20:13			20:45	41	20:02 (T17)	21:07		
19	07:53			07:22	07:38		17:54 (T19)	06:47			06:10		19:23 (T17)	05:58		
	17:31			18:10	19:42	67	19:01 (T19)	20:14			20:46	39	20:02 (T17)	21:07		
20	07:53			07:20	07:36		17:53 (T19)	06:45			06:09		19:23 (T17)	05:58		
	17:32			18:11	19:43	68	19:01 (T19)	20:15			20:46	39	20:02 (T17)	21:07		
21	07:52			07:19	07:34		17:53 (T19)	06:44			06:08		19:23 (T17)	05:58		
	17:33			18:12	19:44	69	19:02 (T19)	20:16			20:47	38	20:01 (T17)	21:08		
22	07:52			07:18	07:33		17:52 (T19)	06:42			06:07		19:24 (T17)	05:58		
	17:35			18:13	19:45	70	19:02 (T19)	20:17			20:48	37	20:01 (T17)	21:08		
23	07:51			07:16	07:31		17:52 (T19)	06:41		19:36 (T17)	06:07		19:25 (T17)	05:59		
	17:36			18:14	19:46	69	19:01 (T19)	20:18	15	19:51 (T17)	20:49	36	20:01 (T17)	21:08		
24	07:50			07:15	07:29		17:51 (T19)	06:40		19:33 (T17)	06:06		19:26 (T17)	05:59		
	17:37			18:16	19:47	70	19:01 (T19)	20:19	21	19:54 (T17)	20:50	34	20:00 (T17)	21:08		
25	07:50			07:13	07:28		17:51 (T19)	06:38		19:32 (T17)	06:05		19:26 (T17)	05:59		
	17:38			18:17	19:48	70	19:01 (T19)	20:21	25	19:57 (T17)	20:51	33	19:59 (T17)	21:08		
26	07:49			07:12	07:26		17:51 (T19)	06:37		19:29 (T17)	06:04		19:27 (T17)	06:00		
	17:40			18:18	19:49	70	19:01 (T19)	20:22	29	19:58 (T17)	20:52	32	19:59 (T17)	21:09		
27	07:48			07:10	07:24		17:51 (T19)	06:35		19:28 (T17)	06:04		19:28 (T17)	06:00		
	17:41			18:19	19:50	69	19:00 (T19)	20:23	31	19:59 (T17)	20:53	30	19:58 (T17)	21:09		
28	07:47			07:09	07:23		17:51 (T19)	06:34		19:26 (T17)	06:03		19:29 (T17)	06:00		
	17:42			18:20	19:52	69	19:00 (T19)	20:24	34	20:00 (T17)	20:54	29	19:58 (T17)	21:09		
29	07:46				07:21		17:51 (T19)	06:33		19:25 (T17)	06:03		19:30 (T17)	06:01		
	17:43				19:53	68	18:59 (T19)	20:25	36	20:01 (T17)	20:55	27	19:57 (T17)	21:09		
30	07:45				07:19		17:51 (T19)	06:31		19:24 (T17)	06:02		19:31 (T17)	06:01		
	17:45				19:54	67	18:58 (T19)	20:26	38	20:02 (T17)	20:55	26	19:57 (T17)	21:09		
31	07:44				07:18		17:52 (T19)				06:01		19:32 (T17)			
	17:46				19:55	66	18:58 (T19)				20:56	23	19:55 (T17)			
Potential sun hours	297			297	370			399			449			453		
Total, worst case		538				1673			1037			1190			96	
Sun reduction		0.31				0.44			0.52			0.57			0.64	
Oper. time red.		1.00				1.00			1.00			1.00			1.00	
Wind dir. red.		0.73				0.66			0.64			0.57			0.57	
Total reduction		0.23				0.30			0.34			0.33			0.37	
Total, real		125				500			354			394			36	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1473 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7375)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		19:31 (T17)	06:57		17:59 (T19)	07:27		17:39 (T19)	07:02			07:37		14:14 (T20)
	21:09			20:50	44	20:15 (T17)	20:07	46	18:45 (T19)	19:15	58	18:37 (T19)	17:28			17:03	30	14:44 (T20)
2	06:02			06:27		19:31 (T17)	06:58		17:57 (T19)	07:28		17:40 (T19)	07:03			07:38		14:12 (T20)
	21:09			20:49	44	20:15 (T17)	20:05	49	18:46 (T19)	19:13	56	18:36 (T19)	17:26			17:03	34	14:46 (T20)
3	06:03			06:28		19:31 (T17)	06:59		17:55 (T19)	07:29		17:41 (T19)	07:04			07:39		14:11 (T20)
	21:08			20:48	44	20:15 (T17)	20:04	52	18:47 (T19)	19:11	53	18:34 (T19)	17:25			17:03	37	14:48 (T20)
4	06:03			06:29		19:31 (T17)	07:00		17:54 (T19)	07:31		17:42 (T19)	07:06			07:40		14:10 (T20)
	21:08			20:47	44	20:15 (T17)	20:02	54	18:48 (T19)	19:10	50	18:32 (T19)	17:24			17:03	39	14:49 (T20)
5	06:04			06:30		19:31 (T17)	07:01		17:51 (T19)	07:32		17:43 (T19)	07:07			07:41		14:10 (T20)
	21:08			20:46	43	20:14 (T17)	20:01	56	18:47 (T19)	19:08	47	18:30 (T19)	17:23			17:02	40	14:50 (T20)
6	06:04		19:48 (T17)	06:31		19:31 (T17)	07:02		17:50 (T19)	07:33		17:46 (T19)	07:08			07:42		14:09 (T20)
	21:08	6	19:54 (T17)	20:45	43	20:14 (T17)	19:57	58	18:48 (T19)	19:06	43	18:29 (T19)	17:22			17:02	42	14:51 (T20)
7	06:05		19:46 (T17)	06:32		19:31 (T17)	07:03		17:48 (T19)	07:34		17:47 (T19)	07:09			07:43		14:09 (T20)
	21:08	11	19:57 (T17)	20:43	43	20:14 (T17)	19:56	60	18:48 (T19)	19:05	39	18:26 (T19)	17:21			17:02	44	14:53 (T20)
8	06:06		19:44 (T17)	06:33		19:30 (T17)	07:04		17:47 (T19)	07:35		17:50 (T19)	07:10			07:44		14:09 (T20)
	21:07	14	19:58 (T17)	20:42	43	20:13 (T17)	19:54	62	18:49 (T19)	19:03	33	18:23 (T19)	17:20			17:02	45	14:54 (T20)
9	06:06		19:43 (T17)	06:34		19:30 (T17)	07:05		17:46 (T19)	07:36		17:52 (T19)	07:12			07:45		14:07 (T20)
	21:07	17	20:00 (T17)	20:41	42	20:12 (T17)	19:52	63	18:49 (T19)	19:01	28	18:20 (T19)	17:18			17:02	47	14:54 (T20)
10	06:07		19:43 (T17)	06:35		19:31 (T17)	07:06		17:45 (T19)	07:37		17:57 (T19)	07:13			07:46		14:07 (T20)
	21:07	18	20:01 (T17)	20:40	41	20:12 (T17)	19:50	64	18:49 (T19)	19:00	18	18:15 (T19)	17:17			17:02	48	14:55 (T20)
11	06:08		19:41 (T17)	06:36		19:31 (T17)	07:07		17:44 (T19)	07:38			07:14			07:47		14:07 (T20)
	21:06	21	20:02 (T17)	20:38	40	20:11 (T17)	19:49	66	18:50 (T19)	18:58			17:16			17:02	49	14:56 (T20)
12	06:08		19:40 (T17)	06:37		19:32 (T17)	07:08		17:43 (T19)	07:39			07:15			07:47		14:08 (T20)
	21:06	23	20:03 (T17)	20:37	38	20:10 (T17)	19:47	67	18:50 (T19)	18:56			17:15			17:02	49	14:57 (T20)
13	06:09		19:40 (T17)	06:38		19:32 (T17)	07:09		17:42 (T19)	07:40			07:16			07:48		14:08 (T20)
	21:05	24	20:04 (T17)	20:36	37	20:09 (T17)	19:45	68	18:50 (T19)	18:55			17:15			17:02	50	14:58 (T20)
14	06:10		19:38 (T17)	06:39		19:33 (T17)	07:10		17:41 (T19)	07:41			07:18			07:49		14:08 (T20)
	21:05	27	20:05 (T17)	20:34	35	20:08 (T17)	19:44	69	18:50 (T19)	18:53			17:14			17:03	51	14:59 (T20)
15	06:11		19:38 (T17)	06:40		19:34 (T17)	07:11		17:41 (T19)	07:42			07:19			07:50		14:08 (T20)
	21:04	28	20:06 (T17)	20:33	33	20:07 (T17)	19:42	68	18:49 (T19)	18:52			17:13			17:03	51	14:59 (T20)
16	06:11		19:37 (T17)	06:41		19:35 (T17)	07:12		17:40 (T19)	07:44			07:20			07:50		14:08 (T20)
	21:04	30	20:07 (T17)	20:31	31	20:06 (T17)	19:40	69	18:49 (T19)	18:50			17:12			17:03	52	15:00 (T20)
17	06:12		19:37 (T17)	06:42		19:36 (T17)	07:13		17:39 (T19)	07:45			07:21			07:51		14:09 (T20)
	21:03	31	20:08 (T17)	20:30	28	20:04 (T17)	19:39	70	18:49 (T19)	18:49			17:11			17:03	52	15:01 (T20)
18	06:13		19:36 (T17)	06:43		19:38 (T17)	07:14		17:39 (T19)	07:46			07:22			07:52		14:08 (T20)
	21:02	32	20:08 (T17)	20:29	24	20:02 (T17)	19:37	70	18:49 (T19)	18:47			17:10			17:04	53	15:01 (T20)
19	06:14		19:35 (T17)	06:44		19:40 (T17)	07:15		17:38 (T19)	07:47			07:24			07:52		14:09 (T20)
	21:02	34	20:09 (T17)	20:27	20	20:00 (T17)	19:35	70	18:48 (T19)	18:46			17:10			17:04	53	15:02 (T20)
20	06:15		19:35 (T17)	06:45		19:43 (T17)	07:16		17:38 (T19)	07:48			07:25			07:53		14:09 (T20)
	21:01	35	20:10 (T17)	20:26	13	19:56 (T17)	19:33	70	18:48 (T19)	18:44			17:09			17:05	53	15:02 (T20)
21	06:16		19:34 (T17)	06:46			07:17		17:38 (T19)	07:49			07:26			07:54		14:10 (T20)
	21:00	37	20:11 (T17)	20:24			19:32	69	18:47 (T19)	18:43			17:08			17:05	53	15:03 (T20)
22	06:17		19:34 (T17)	06:47			07:18		17:37 (T19)	07:50			07:27			07:54		14:10 (T20)
	20:59	37	20:11 (T17)	20:23			19:30	70	18:47 (T19)	18:41			17:07			17:06	53	15:03 (T20)
23	06:17		19:34 (T17)	06:48			07:19		17:37 (T19)	07:51			07:28			07:55		14:11 (T20)
	20:59	38	20:12 (T17)	20:21			19:28	69	18:46 (T19)	18:40			17:07			17:06	53	15:04 (T20)
24	06:18		19:33 (T17)	06:49			07:20		17:37 (T19)	07:53			07:29			07:55		14:11 (T20)
	20:58	40	20:13 (T17)	20:20			19:26	68	18:45 (T19)	18:38			17:06			17:07	53	15:04 (T20)
25	06:19		19:32 (T17)	06:50			07:21		17:37 (T19)	07:54			07:31			07:55		14:12 (T20)
	20:57	40	20:12 (T17)	20:18			19:25	67	18:44 (T19)	18:37			17:06			17:07	53	15:05 (T20)
26	06:20		19:32 (T17)	06:51		18:17 (T19)	07:22		17:37 (T19)	07:55			07:32			07:56		14:12 (T20)
	20:56	41	20:13 (T17)	20:17	14	18:31 (T19)	19:23	66	18:43 (T19)	18:36			17:05			17:08	53	15:05 (T20)
27	06:21		19:32 (T17)	06:52		18:12 (T19)	07:23		17:37 (T19)	07:56			07:33		14:23 (T20)	07:56		14:13 (T20)
	20:55	41	20:13 (T17)	20:15	23	18:35 (T19)	19:21	65	18:42 (T19)	18:34			17:05	9	14:32 (T20)	17:09	52	15:05 (T20)
28	06:22		19:31 (T17)	06:53		18:08 (T19)	07:24		17:38 (T19)	07:57			07:34		14:19 (T20)	07:56		14:13 (T20)
	20:54	43	20:14 (T17)	20:14	30	18:38 (T19)	19:20	63	18:41 (T19)	18:33			17:04	18	14:37 (T20)	17:09	52	15:05 (T20)
29	06:23		19:31 (T17)	06:54		18:06 (T19)	07:25		17:38 (T19)	07:58			07:35		14:16 (T20)	07:57		14:15 (T20)
	20:53	43	20:14 (T17)	20:12	34	18:40 (T19)	19:18	62	18:40 (T19)	18:31			17:04	23	14:39 (T20)	17:10	51	15:06 (T20)
30	06:24		19:31 (T17)	06:55		18:03 (T19)	07:26		17:39 (T19)	08:00			07:36		14:14 (T20)	07:57		14:16 (T20)
	20:52	43	20:14 (T17)	20:10	39	18:42 (T19)	19:16	60	18:39 (T19)	18:30			17:04	28	14:42 (T20)	17:11	50	15:06 (T20)
31	06:25		19:31 (T17)	06:56		18:01 (T19)				08:01						07:57		14:16 (T20)
	20:51	43	20:14 (T17)	20:09	42	18:43 (T19)				18:29						17:11	50	15:06 (T20)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		797			912			1910			425			78			1492	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.57			0.59			0.66			0.66			0.73			0.73	
Total reduction		0.38			0.37			0.40			0.33			0.22			0.16	
Total, real		305			334			765			138			18			246	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1493 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7389)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June	
1	07:57		15:53 (T77)	07:43		16:07 (T77)	07:07		07:53 (T76)	07:16			06:30		19:27 (T41)	06:01	
	17:13	45	16:38 (T77)	17:47	39	16:46 (T77)	18:22	24	17:51 (T42)	19:56			20:27	34	20:01 (T41)	20:57	
2	07:57		15:53 (T77)	07:42		16:09 (T77)	07:06		17:30 (T42)	07:14			06:29		19:28 (T41)	06:01	
	17:14	46	16:39 (T77)	17:49	36	16:45 (T77)	18:23	24	17:54 (T42)	19:57			20:28	33	20:01 (T41)	20:58	
3	07:57		15:54 (T77)	07:41		16:10 (T77)	07:04		17:27 (T42)	07:13			06:28		19:27 (T41)	06:01	
	17:15	46	16:40 (T77)	17:50	34	16:44 (T77)	18:24	29	17:56 (T42)	19:58			20:29	33	20:00 (T41)	20:58	
4	07:57		15:54 (T77)	07:40		16:12 (T77)	07:02		17:26 (T42)	07:11			06:26		19:27 (T41)	06:00	
	17:16	46	16:40 (T77)	17:51	31	16:43 (T77)	18:25	32	17:58 (T42)	19:59			20:30	33	20:00 (T41)	20:59	
5	07:57		15:54 (T77)	07:39		16:14 (T77)	07:01		17:24 (T42)	07:09			06:25		19:28 (T41)	06:00	
	17:17	47	16:41 (T77)	17:52	27	16:41 (T77)	18:26	35	17:59 (T42)	20:00			20:31	32	20:00 (T41)	21:00	
6	07:57		15:55 (T77)	07:38		16:15 (T77)	06:59		17:23 (T42)	07:08			06:24		19:28 (T41)	05:59	
	17:17	47	16:42 (T77)	17:54	24	16:39 (T77)	18:27	38	18:01 (T42)	20:00			20:32	31	19:59 (T41)	21:00	
7	07:57		15:54 (T77)	07:37		16:18 (T77)	06:58		17:21 (T42)	07:06			06:23		19:29 (T41)	05:59	
	17:18	47	16:41 (T77)	17:55	18	16:36 (T77)	18:29	41	18:02 (T42)	20:01			20:33	30	19:59 (T41)	21:01	
8	07:57		15:55 (T77)	07:36		16:23 (T77)	07:56		18:19 (T42)	07:05			06:22		19:30 (T41)	05:59	
	17:19	47	16:42 (T77)	17:56	9	16:32 (T77)	19:30	43	19:02 (T42)	20:02			20:34	28	19:58 (T41)	21:02	
9	07:57		15:55 (T77)	07:35			07:54		18:19 (T42)	07:03			06:20		19:31 (T41)	05:59	
	17:20	48	16:43 (T77)	17:57			19:31	44	19:03 (T42)	20:03			20:35	26	19:57 (T41)	21:02	
10	07:57		15:56 (T77)	07:34		07:54 (T76)	07:53		18:17 (T42)	07:01			06:19		19:31 (T41)	05:59	
	17:21	48	16:44 (T77)	17:59	9	08:03 (T76)	19:32	47	19:04 (T42)	20:05			20:36	24	19:55 (T41)	21:03	
11	07:57		15:55 (T77)	07:32		07:52 (T76)	07:51		18:16 (T42)	07:00			06:18		19:32 (T41)	05:58	
	17:23	49	16:44 (T77)	18:00	13	08:05 (T76)	19:33	48	19:04 (T42)	20:06			20:37	22	19:54 (T41)	21:04	
12	07:56		15:56 (T77)	07:31		07:51 (T76)	07:50		18:16 (T42)	06:58			06:17		19:33 (T41)	05:58	
	17:24	48	16:44 (T77)	18:01	16	08:07 (T76)	19:34	48	19:04 (T42)	20:07			20:38	20	19:53 (T41)	21:04	
13	07:56		15:56 (T77)	07:30		07:50 (T76)	07:48		18:15 (T42)	06:57			06:16		19:34 (T41)	05:58	
	17:25	49	16:45 (T77)	18:02	19	08:09 (T76)	19:35	49	19:04 (T42)	20:08			20:39	17	19:51 (T41)	21:05	
14	07:56		15:56 (T77)	07:29		07:48 (T76)	07:46		18:15 (T42)	06:55			06:15		19:36 (T41)	05:58	
	17:26	49	16:45 (T77)	18:04	21	08:09 (T76)	19:36	49	19:04 (T42)	20:09			20:41	13	19:49 (T41)	21:05	
15	07:55		15:57 (T77)	07:27		07:47 (T76)	07:45		18:15 (T42)	06:53			06:14		19:40 (T41)	05:58	
	17:27	49	16:46 (T77)	18:05	23	08:10 (T76)	19:38	49	19:04 (T42)	20:10			20:42	6	19:46 (T41)	21:05	
16	07:55		15:57 (T77)	07:26		07:46 (T76)	07:43		18:14 (T42)	06:52			06:13			05:58	
	17:28	49	16:46 (T77)	18:06	25	08:11 (T76)	19:39	50	19:04 (T42)	20:11			20:42			21:06	
17	07:54		15:58 (T77)	07:25		07:44 (T76)	07:41		18:14 (T42)	06:50			06:12			05:58	
	17:29	49	16:47 (T77)	18:07	27	08:11 (T76)	19:40	49	19:03 (T42)	20:12			20:43			21:06	
18	07:54		15:58 (T77)	07:23		07:43 (T76)	07:40		18:14 (T42)	06:49		19:45 (T41)	06:11			05:58	
	17:30	49	16:47 (T77)	18:09	29	08:12 (T76)	19:41	49	19:03 (T42)	20:13	3	19:48 (T41)	20:44			21:07	
19	07:53		15:59 (T77)	07:22		07:43 (T76)	07:38		18:14 (T42)	06:47		19:39 (T41)	06:10			05:58	
	17:32	49	16:48 (T77)	18:10	29	08:12 (T76)	19:42	49	19:03 (T42)	20:14	13	19:52 (T41)	20:45			21:07	
20	07:53		15:59 (T77)	07:20		07:42 (T76)	07:36		18:14 (T42)	06:46		19:37 (T41)	06:09			05:59	
	17:33	49	16:48 (T77)	18:11	29	08:11 (T76)	19:43	48	19:02 (T42)	20:15	17	19:54 (T41)	20:46			21:07	
21	07:52		15:59 (T77)	07:19		07:43 (T76)	07:35		18:15 (T42)	06:44		19:35 (T41)	06:09			05:59	
	17:34	48	16:47 (T77)	18:12	29	08:12 (T76)	19:44	47	19:02 (T42)	20:16	20	19:55 (T41)	20:47			21:08	
22	07:52		16:00 (T77)	07:18		07:42 (T76)	07:33		18:15 (T42)	06:43		19:33 (T41)	06:08			05:59	
	17:35	48	16:48 (T77)	18:13	29	08:11 (T76)	19:45	45	19:00 (T42)	20:17	23	19:56 (T41)	20:48			21:08	
23	07:51		16:00 (T77)	07:16		07:43 (T76)	07:31		18:15 (T42)	06:41		19:32 (T41)	06:07			05:59	
	17:36	48	16:48 (T77)	18:15	28	08:11 (T76)	19:46	44	18:59 (T42)	20:18	25	19:57 (T41)	20:49			21:08	
24	07:50		16:01 (T77)	07:15		07:43 (T76)	07:30		18:17 (T42)	06:40		19:30 (T41)	06:06			05:59	
	17:38	47	16:48 (T77)	18:16	26	08:09 (T76)	19:47	42	18:59 (T42)	20:19	28	19:58 (T41)	20:50			21:08	
25	07:49		16:01 (T77)	07:13		07:45 (T76)	07:28		18:17 (T42)	06:38		19:30 (T41)	06:06			06:00	
	17:39	47	16:48 (T77)	18:17	24	08:09 (T76)	19:48	40	18:57 (T42)	20:21	29	19:59 (T41)	20:51			21:08	
26	07:49		16:01 (T77)	07:12		07:45 (T76)	07:26		18:18 (T42)	06:37		19:29 (T41)	06:05			06:00	
	17:40	46	16:47 (T77)	18:18	22	08:07 (T76)	19:50	37	18:55 (T42)	20:22	30	19:59 (T41)	20:52			21:08	
27	07:48		16:03 (T77)	07:10		07:47 (T76)	07:24		18:18 (T42)	06:36		19:28 (T41)	06:04			06:00	
	17:41	45	16:48 (T77)	18:19	19	08:06 (T76)	19:51	35	18:53 (T42)	20:23	33	20:01 (T41)	20:53			21:08	
28	07:47		16:04 (T77)	07:09		07:49 (T76)	07:23		18:21 (T42)	06:34		19:28 (T41)	06:04			06:01	
	17:42	44	16:48 (T77)	18:21	14	08:03 (T76)	19:52	31	18:52 (T42)	20:24	33	20:01 (T41)	20:54			21:09	
29	07:46		16:04 (T77)				07:21		18:22 (T42)	06:33		19:27 (T41)	06:03			06:01	
	17:44	43	16:47 (T77)				19:53	27	18:49 (T42)	20:25	34	20:01 (T41)	20:54			21:09	
30	07:45		16:05 (T77)				07:19		18:24 (T42)	06:32		19:27 (T41)	06:02			06:02	
	17:45	42	16:47 (T77)				19:54	22	18:46 (T42)	20:26	34	20:01 (T41)	20:55			21:09	
31	07:44		16:06 (T77)				07:18		18:28 (T42)				06:02				
	17:46	40	16:46 (T77)				19:55	15	18:43 (T42)				20:56				
Potential sun hours	297			297			370			399			448			453	
Total, worst case		1454			649			1230			322			382			
Sun reduction		0.31			0.40			0.44			0.52			0.57			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.74			0.62			0.67			0.57			0.57			
Total reduction		0.23			0.25			0.30			0.30			0.33			
Total, real		341			165			370			98			128			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1493 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7389)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		06:26		19:43 (T41)	06:57		07:27		17:55 (T42)	07:02		07:23 (T76)	07:37		15:37 (T77)
	21:08		20:50	21	20:04 (T41)	20:07		19:15	48	18:43 (T42)	17:28	9	07:32 (T76)	17:04	49	16:26 (T77)
2	06:03		06:27		19:42 (T41)	06:58		07:29		17:55 (T42)	07:03			07:38		15:38 (T77)
	21:08		20:49	23	20:05 (T41)	20:06		19:13	47	18:42 (T42)	17:27			17:03	48	16:26 (T77)
3	06:03		06:28		19:41 (T41)	06:59		07:30		17:55 (T42)	07:04		15:52 (T77)	07:39		15:39 (T77)
	21:08		20:48	25	20:06 (T41)	20:04		19:11	46	18:41 (T42)	17:26	11	16:03 (T77)	17:03	48	16:27 (T77)
4	06:04		06:29		19:40 (T41)	07:00		07:31		17:55 (T42)	07:06		15:47 (T77)	07:40		15:40 (T77)
	21:08		20:47	27	20:07 (T41)	20:02		19:10	45	18:40 (T42)	17:24	20	16:07 (T77)	17:03	47	16:27 (T77)
5	06:04		06:30		19:39 (T41)	07:01		07:32		17:56 (T42)	07:07		15:45 (T77)	07:41		15:40 (T77)
	21:08		20:46	29	20:08 (T41)	20:01		19:08	44	18:40 (T42)	17:23	24	16:09 (T77)	17:03	47	16:27 (T77)
6	06:05		06:31		19:39 (T41)	07:02		07:33		17:57 (T42)	07:08		15:43 (T77)	07:42		15:41 (T77)
	21:08		20:44	30	20:09 (T41)	19:57		19:06	42	18:39 (T42)	17:22	28	16:11 (T77)	17:03	47	16:28 (T77)
7	06:05		06:32		19:38 (T41)	07:03		07:34		17:58 (T42)	07:09		15:42 (T77)	07:43		15:40 (T77)
	21:07		20:43	31	20:09 (T41)	19:56		19:05	40	18:38 (T42)	17:21	31	16:13 (T77)	17:03	47	16:27 (T77)
8	06:06		06:33		19:37 (T41)	07:04		07:35		17:58 (T42)	07:10		15:40 (T77)	07:44		15:41 (T77)
	21:07		20:42	32	20:09 (T41)	19:54		19:03	38	18:36 (T42)	17:20	34	16:14 (T77)	17:03	46	16:27 (T77)
9	06:07		06:34		19:37 (T41)	07:05		07:36		18:00 (T42)	07:12		15:39 (T77)	07:45		15:42 (T77)
	21:07		20:41	33	20:10 (T41)	19:52		19:01	34	18:34 (T42)	17:19	37	16:16 (T77)	17:03	46	16:28 (T77)
10	06:07		06:35		19:37 (T41)	07:06		07:37		18:01 (T42)	07:13		15:38 (T77)	07:46		15:42 (T77)
	21:06		20:39	33	20:10 (T41)	19:51		19:00	31	18:32 (T42)	17:18	39	16:17 (T77)	17:03	46	16:28 (T77)
11	06:08		06:36		19:36 (T41)	07:07		07:38		18:03 (T42)	07:14		15:37 (T77)	07:46		15:43 (T77)
	21:06		20:38	34	20:10 (T41)	19:49		18:58	26	18:29 (T42)	17:17	40	16:17 (T77)	17:03	45	16:28 (T77)
12	06:09		06:37		19:36 (T41)	07:08	18:20 (T42)	07:39		18:05 (T42)	07:15		15:36 (T77)	07:47		15:44 (T77)
	21:06		20:37	34	20:10 (T41)	19:47	13 18:33 (T42)	18:57	21	18:26 (T42)	17:16	42	16:18 (T77)	17:03	45	16:29 (T77)
13	06:10		06:38		19:36 (T41)	07:09	18:16 (T42)	07:40		08:23 (T76)	07:16		15:36 (T77)	07:48		15:45 (T77)
	21:05		20:36	34	20:10 (T41)	19:45	21 18:37 (T42)	18:55	24	18:22 (T42)	17:15	43	16:19 (T77)	17:03	44	16:29 (T77)
14	06:10		06:39		19:36 (T41)	07:10	18:13 (T42)	07:41		08:20 (T76)	07:18		15:36 (T77)	07:49		15:45 (T77)
	21:05		20:34	33	20:09 (T41)	19:44	26 18:39 (T42)	18:54	16	08:36 (T76)	17:14	44	16:20 (T77)	17:03	44	16:29 (T77)
15	06:11		06:40		19:36 (T41)	07:11	18:10 (T42)	07:42		08:19 (T76)	07:19		15:35 (T77)	07:50		15:45 (T77)
	21:04		20:33	33	20:09 (T41)	19:42	31 18:41 (T42)	18:52	20	08:39 (T76)	17:13	45	16:20 (T77)	17:03	45	16:30 (T77)
16	06:12		06:41		19:35 (T41)	07:12	18:08 (T42)	07:44		08:17 (T76)	07:20		15:34 (T77)	07:50		15:46 (T77)
	21:03		20:31	32	20:07 (T41)	19:40	34 18:42 (T42)	18:50	23	08:40 (T76)	17:12	46	16:20 (T77)	17:04	44	16:30 (T77)
17	06:13		06:42		19:35 (T41)	07:13	18:06 (T42)	07:45		08:16 (T76)	07:21		15:35 (T77)	07:51		15:46 (T77)
	21:03		20:30	31	20:06 (T41)	19:39	37 18:43 (T42)	18:49	25	08:41 (T76)	17:11	47	16:22 (T77)	17:04	44	16:30 (T77)
18	06:14		06:43		19:36 (T41)	07:14	18:05 (T42)	07:46		08:15 (T76)	07:22		15:35 (T77)	07:52		15:47 (T77)
	21:02		20:29	28	20:04 (T41)	19:37	39 18:44 (T42)	18:47	26	08:41 (T76)	17:11	47	16:22 (T77)	17:04	44	16:31 (T77)
19	06:14		06:44		19:36 (T41)	07:15	18:03 (T42)	07:47		08:14 (T76)	07:23		15:34 (T77)	07:52		15:48 (T77)
	21:02		20:27	27	20:03 (T41)	19:35	42 18:45 (T42)	18:46	27	08:41 (T76)	17:10	48	16:22 (T77)	17:05	44	16:32 (T77)
20	06:15		06:45		19:37 (T41)	07:16	18:02 (T42)	07:48		08:13 (T76)	07:25		15:35 (T77)	07:53		15:48 (T77)
	21:01		20:26	25	20:02 (T41)	19:33	43 18:45 (T42)	18:44	28	08:41 (T76)	17:09	48	16:23 (T77)	17:05	43	16:31 (T77)
21	06:16		06:46		19:38 (T41)	07:17	18:01 (T42)	07:49		08:13 (T76)	07:26		15:35 (T77)	07:53		15:49 (T77)
	21:00		20:24	22	20:00 (T41)	19:32	45 18:46 (T42)	18:43	29	08:42 (T76)	17:08	48	16:23 (T77)	17:05	43	16:32 (T77)
22	06:17		06:47		19:39 (T41)	07:18	18:00 (T42)	07:50		08:13 (T76)	07:27		15:35 (T77)	07:54		15:49 (T77)
	20:59		20:23	20	19:59 (T41)	19:30	46 18:46 (T42)	18:41	29	08:42 (T76)	17:08	49	16:24 (T77)	17:06	43	16:32 (T77)
23	06:18		06:48		19:41 (T41)	07:19	17:59 (T42)	07:51		08:13 (T76)	07:28		15:35 (T77)	07:54		15:50 (T77)
	20:59		20:21	16	19:57 (T41)	19:28	47 18:46 (T42)	18:40	29	08:42 (T76)	17:07	49	16:24 (T77)	17:07	43	16:33 (T77)
24	06:19		06:49		19:43 (T41)	07:20	17:58 (T42)	07:53		08:13 (T76)	07:29		15:35 (T77)	07:55		15:50 (T77)
	20:58		20:20	13	19:56 (T41)	19:27	48 18:46 (T42)	18:39	28	08:41 (T76)	17:07	49	16:24 (T77)	17:07	43	16:33 (T77)
25	06:20		06:50			07:21	17:57 (T42)	07:54		08:15 (T76)	07:30		15:36 (T77)	07:55		15:50 (T77)
	20:57		20:18			19:25	49 18:46 (T42)	18:37	27	08:42 (T76)	17:06	49	16:25 (T77)	17:08	44	16:34 (T77)
26	06:21		06:51			07:22	17:56 (T42)	07:55		08:16 (T76)	07:32		15:36 (T77)	07:56		15:51 (T77)
	20:56		20:17			19:23	50 18:46 (T42)	18:36	25	08:41 (T76)	17:06	49	16:25 (T77)	17:08	44	16:35 (T77)
27	06:22		06:52			07:23	17:56 (T42)	07:56		08:17 (T76)	07:33		15:36 (T77)	07:56		15:51 (T77)
	20:55		20:15			19:22	49 18:45 (T42)	18:34	23	08:40 (T76)	17:05	49	16:25 (T77)	17:09	44	16:35 (T77)
28	06:22		06:53			07:24	17:55 (T42)	07:57		08:18 (T76)	07:34		15:36 (T77)	07:56		15:51 (T77)
	20:54		20:14			19:20	50 18:45 (T42)	18:33	21	08:39 (T76)	17:05	49	16:25 (T77)	17:10	44	16:35 (T77)
29	06:23	19:49 (T41)	06:54			07:25	17:55 (T42)	07:58		08:19 (T76)	07:35		15:37 (T77)	07:57		15:52 (T77)
	20:53	9 19:58 (T41)	20:12			19:18	49 18:44 (T42)	18:32	18	08:37 (T76)	17:04	48	16:25 (T77)	17:10	44	16:36 (T77)
30	06:24	19:46 (T41)	06:55			07:26	17:55 (T42)	08:00		08:21 (T76)	07:36		15:37 (T77)	07:57		15:53 (T77)
	20:52	15 20:01 (T41)	20:10			19:16	49 18:44 (T42)	18:30	16	08:37 (T76)	17:04	49	16:26 (T77)	17:11	44	16:37 (T77)
31	06:25	19:44 (T41)	06:56					08:01		08:22 (T76)				07:57		15:53 (T77)
	20:51	19 20:03 (T41)	20:09					18:29	13	08:35 (T76)				17:12	45	16:38 (T77)
Potential sun hours	460		429			375		345			297			287		
Total, worst case		43		666			768		909			1171			1394	
Sun reduction		0.66		0.61			0.59		0.48			0.30			0.22	
Oper. time red.		1.00		1.00			1.00		1.00			1.00			1.00	
Wind dir. red.		0.57		0.57			0.67		0.61			0.74			0.74	
Total reduction		0.39		0.36			0.40		0.30			0.23			0.17	
Total, real		17		238			310		275			265			232	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1495 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7391)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:58	08:20 (T26)	07:44	08:22 (T26)	07:07		07:16	07:44 (T75)	06:30	07:12 (T24)	06:01	07:19 (T24)
	17:13 78	10:19 (T25)	17:47 28	08:50 (T26)	18:22		19:56 31	08:15 (T75)	20:27 71	08:23 (T24)	20:57 54	08:13 (T24)
2	07:58	08:20 (T26)	07:43	08:24 (T26)	07:06		07:15	07:45 (T75)	06:29	07:12 (T24)	06:01	07:20 (T24)
	17:14 78	10:19 (T25)	17:49 25	08:49 (T26)	18:23		19:57 30	08:15 (T75)	20:28 71	08:23 (T24)	20:58 53	08:13 (T24)
3	07:58	08:20 (T26)	07:42	08:25 (T26)	07:04		07:13	07:45 (T75)	06:28	07:11 (T24)	06:01	07:20 (T24)
	17:15 78	10:19 (T25)	17:50 23	08:48 (T26)	18:24		19:58 29	08:14 (T75)	20:29 71	08:22 (T24)	20:59 52	08:12 (T24)
4	07:58	08:20 (T26)	07:41	08:27 (T26)	07:03		07:11	07:45 (T75)	06:26	07:11 (T24)	06:00	07:21 (T24)
	17:16 79	10:19 (T25)	17:51 20	08:47 (T26)	18:25		19:59 27	08:12 (T75)	20:30 71	08:22 (T24)	20:59 51	08:12 (T24)
5	07:58	08:20 (T26)	07:40	08:29 (T26)	07:01		07:10	07:47 (T75)	06:25	07:11 (T24)	06:00	07:22 (T24)
	17:17 81	10:20 (T25)	17:53 16	08:45 (T26)	18:26		20:00 24	08:11 (T75)	20:32 71	08:22 (T24)	21:00 50	08:12 (T24)
6	07:58	08:20 (T26)	07:39	08:32 (T26)	07:00		07:08	07:47 (T75)	06:24	07:11 (T24)	05:59	07:22 (T24)
	17:17 81	10:20 (T25)	17:54 11	08:43 (T26)	18:28		20:00 22	08:09 (T75)	20:33 71	08:22 (T24)	21:01 49	08:11 (T24)
7	07:58	08:20 (T26)	07:37		06:58		07:06	07:49 (T75)	06:23	07:11 (T24)	05:59	07:23 (T24)
	17:18 81	10:20 (T25)	17:55		18:29		20:02 17	08:06 (T75)	20:34 71	08:22 (T24)	21:01 48	08:11 (T24)
8	07:58	08:20 (T26)	07:36		07:56		07:05	07:52 (T75)	06:22	07:11 (T24)	05:59	07:24 (T24)
	17:19 81	10:20 (T25)	17:56		19:30		20:03 11	08:03 (T75)	20:35 71	08:22 (T24)	21:02 47	08:11 (T24)
9	07:57	08:19 (T26)	07:35		07:55		07:03		06:20	07:11 (T24)	05:59	07:24 (T24)
	17:20 82	10:20 (T25)	17:58		19:31		20:04		20:36 71	08:22 (T24)	21:03 46	08:10 (T24)
10	07:57	08:19 (T26)	07:34		07:53		07:01	07:44 (T24)	06:19	07:11 (T24)	05:59	07:25 (T24)
	17:21 82	10:20 (T25)	17:59		19:32		20:05 16	08:00 (T24)	20:37 71	08:22 (T24)	21:03 45	08:10 (T24)
11	07:57	08:19 (T26)	07:33		07:51		07:00	07:39 (T24)	06:18	07:10 (T24)	05:58	07:26 (T24)
	17:23 83	10:20 (T25)	18:00		19:33		20:06 26	08:05 (T24)	20:38 70	08:20 (T24)	21:04 44	08:10 (T24)
12	07:57	08:18 (T26)	07:31		07:50		06:58	07:35 (T24)	06:17	07:10 (T24)	05:58	07:25 (T24)
	17:24 83	10:19 (T25)	18:01		19:34		20:07 33	08:08 (T24)	20:39 70	08:20 (T24)	21:04 44	08:09 (T24)
13	07:56	08:18 (T26)	07:30		07:48		06:57	07:33 (T24)	06:16	07:10 (T24)	05:58	07:26 (T24)
	17:25 84	10:20 (T25)	18:03		19:36		20:08 38	08:11 (T24)	20:40 70	08:20 (T24)	21:05 43	08:09 (T24)
14	07:56	08:18 (T26)	07:29		07:46		06:55	07:30 (T24)	06:15	07:11 (T24)	05:58	07:27 (T24)
	17:26 84	10:20 (T25)	18:04		19:37		20:09 42	08:12 (T24)	20:41 68	08:19 (T24)	21:05 42	08:09 (T24)
15	07:56	08:17 (T26)	07:28		07:45		06:54	07:28 (T24)	06:14	07:12 (T24)	05:58	07:27 (T24)
	17:27 84	10:19 (T25)	18:05		19:38		20:10 46	08:14 (T24)	20:42 68	08:20 (T24)	21:06 42	08:09 (T24)
16	07:55	08:17 (T26)	07:26		07:43		06:52	07:26 (T24)	06:13	07:12 (T24)	05:58	07:27 (T24)
	17:28 84	10:19 (T25)	18:06		19:39		20:11 49	08:15 (T24)	20:43 67	08:19 (T24)	21:06 42	08:09 (T24)
17	07:55	08:16 (T26)	07:25		07:41		06:50	07:25 (T24)	06:12	07:12 (T24)	05:58	07:29 (T24)
	17:29 83	10:18 (T25)	18:07		19:40		20:12 52	08:17 (T24)	20:44 67	08:19 (T24)	21:07 41	08:10 (T24)
18	07:54	08:17 (T26)	07:24		07:40		06:49	07:23 (T24)	06:11	07:12 (T24)	05:58	07:29 (T24)
	17:30 81	10:18 (T25)	18:09		19:41		20:13 55	08:18 (T24)	20:45 66	08:18 (T24)	21:07 41	08:10 (T24)
19	07:54	08:17 (T26)	07:22		07:38	07:57 (T75)	06:47	07:22 (T24)	06:10	07:13 (T24)	05:58	07:29 (T24)
	17:32 80	10:17 (T25)	18:10		19:42 13	08:10 (T75)	20:14 57	08:19 (T24)	20:46 65	08:18 (T24)	21:07 41	08:10 (T24)
20	07:53	08:16 (T26)	07:21		07:36	07:56 (T75)	06:46	07:20 (T24)	06:09	07:13 (T24)	05:58	07:29 (T24)
	17:33 79	10:16 (T25)	18:11		19:43 17	08:13 (T75)	20:15 59	08:19 (T24)	20:47 64	08:17 (T24)	21:08 41	08:10 (T24)
21	07:53	08:17 (T26)	07:19		07:35	07:54 (T75)	06:44	07:19 (T24)	06:09	07:14 (T24)	05:59	07:29 (T24)
	17:34 76	10:15 (T25)	18:12		19:44 21	08:15 (T75)	20:17 61	08:20 (T24)	20:48 64	08:18 (T24)	21:08 41	08:10 (T24)
22	07:52	08:17 (T26)	07:18		07:33	07:52 (T75)	06:43	07:18 (T24)	06:08	07:14 (T24)	05:59	07:29 (T24)
	17:35 74	10:14 (T25)	18:14		19:45 24	08:16 (T75)	20:18 62	08:20 (T24)	20:49 63	08:17 (T24)	21:08 41	08:10 (T24)
23	07:51	08:17 (T26)	07:16		07:31	07:50 (T75)	06:41	07:17 (T24)	06:07	07:14 (T24)	05:59	07:30 (T24)
	17:36 70	10:12 (T25)	18:15		19:46 26	08:16 (T75)	20:19 64	08:21 (T24)	20:50 62	08:16 (T24)	21:08 41	08:11 (T24)
24	07:51	08:17 (T26)	07:15		07:30	07:49 (T75)	06:40	07:16 (T24)	06:06	07:14 (T24)	05:59	07:30 (T24)
	17:38 68	10:11 (T25)	18:16		19:48 29	08:18 (T75)	20:20 65	08:21 (T24)	20:50 62	08:16 (T24)	21:09 41	08:11 (T24)
25	07:50	08:18 (T26)	07:13		07:28	07:47 (T75)	06:39	07:15 (T24)	06:06	07:16 (T24)	06:00	07:30 (T24)
	17:39 64	10:10 (T25)	18:17		19:49 31	08:18 (T75)	20:21 67	08:22 (T24)	20:51 60	08:16 (T24)	21:09 41	08:11 (T24)
26	07:49	08:19 (T26)	07:12		07:26	07:45 (T75)	06:37	07:15 (T24)	06:05	07:16 (T24)	06:00	07:30 (T24)
	17:40 57	10:07 (T25)	18:18		19:50 33	08:18 (T75)	20:22 67	08:22 (T24)	20:52 59	08:15 (T24)	21:09 42	08:12 (T24)
27	07:48	08:19 (T26)	07:10		07:25	07:45 (T75)	06:36	07:13 (T24)	06:04	07:17 (T24)	06:00	07:30 (T24)
	17:41 51	10:04 (T25)	18:19		19:51 33	08:18 (T75)	20:23 69	08:22 (T24)	20:53 58	08:15 (T24)	21:09 42	08:12 (T24)
28	07:47	08:19 (T26)	07:09		07:23	07:45 (T75)	06:34	07:13 (T24)	06:04	07:17 (T24)	06:01	07:30 (T24)
	17:42 37	09:57 (T25)	18:21		19:52 33	08:18 (T75)	20:24 69	08:22 (T24)	20:54 57	08:14 (T24)	21:09 42	08:12 (T24)
29	07:47	08:20 (T26)			07:21	07:44 (T75)	06:33	07:13 (T24)	06:03	07:17 (T24)	06:01	07:30 (T24)
	17:44 32	08:52 (T26)			19:53 33	08:17 (T75)	20:25 70	08:23 (T24)	20:55 56	08:13 (T24)	21:09 43	08:13 (T24)
30	07:46	08:21 (T26)			07:20	07:44 (T75)	06:32	07:12 (T24)	06:02	07:18 (T24)	06:02	07:30 (T24)
	17:45 30	08:51 (T26)			19:54 33	08:17 (T75)	20:26 70	08:22 (T24)	20:56 55	08:13 (T24)	21:09 43	08:13 (T24)
31	07:45	08:21 (T26)			07:18	07:44 (T75)			06:02	07:19 (T24)		
	17:46 30	08:51 (T26)			19:55 33	08:17 (T75)			20:56 55	08:14 (T24)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case	2215		123		359		1328		2036		1333	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.52		0.52		0.62		0.66		0.66		0.66	
Total reduction	0.16		0.20		0.26		0.33		0.36		0.41	
Total, real	346		24		95		437		740		544	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1495 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7391)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		07:30 (T24)	06:26		07:21 (T24)	06:57		07:38 (T24)	07:28	07:02			07:37		08:01 (T26)
	21:09	44	08:14 (T24)	20:50	70	08:31 (T24)	20:07	26	08:04 (T24)	19:15	17:28			17:04	83	10:02 (T25)
2	06:03		07:29 (T24)	06:27		07:21 (T24)	06:58		07:43 (T24)	07:29	07:03			07:38		08:02 (T26)
	21:09	45	08:14 (T24)	20:49	70	08:31 (T24)	20:06	16	07:59 (T24)	19:13	17:27			17:03	83	10:03 (T25)
3	06:03		07:30 (T24)	06:28		07:21 (T24)	06:59			07:30	07:05			07:39		08:03 (T26)
	21:09	45	08:15 (T24)	20:48	70	08:31 (T24)	20:04			19:12	17:26			17:03	82	10:04 (T25)
4	06:04		07:29 (T24)	06:29		07:20 (T24)	07:00		07:49 (T75)	07:31	07:06			07:40		08:04 (T26)
	21:08	47	08:16 (T24)	20:47	71	08:31 (T24)	20:03	11	08:00 (T75)	19:10	17:24			17:03	81	10:04 (T25)
5	06:04		07:29 (T24)	06:30		07:20 (T24)	07:01		07:46 (T75)	07:32	07:07		08:01 (T26)	07:41		08:05 (T26)
	21:08	48	08:17 (T24)	20:46	72	08:32 (T24)	20:01	17	08:03 (T75)	19:08	17:23	12	08:13 (T26)	17:03	81	10:05 (T25)
6	06:05		07:28 (T24)	06:31		07:20 (T24)	07:02		07:44 (T75)	07:33	07:08		07:58 (T26)	07:42		08:06 (T26)
	21:08	49	08:17 (T24)	20:45	72	08:32 (T24)	19:58	21	08:05 (T75)	19:07	17:22	18	08:16 (T26)	17:03	81	10:06 (T25)
7	06:05		07:29 (T24)	06:32		07:20 (T24)	07:03		07:42 (T75)	07:34	07:09		07:56 (T26)	07:43		08:07 (T26)
	21:08	49	08:18 (T24)	20:44	72	08:32 (T24)	19:56	24	08:06 (T75)	19:05	17:21	21	08:17 (T26)	17:03	81	10:07 (T25)
8	06:06		07:29 (T24)	06:33		07:20 (T24)	07:04		07:40 (T75)	07:35	07:11		07:56 (T26)	07:44		08:08 (T26)
	21:07	50	08:19 (T24)	20:42	72	08:32 (T24)	19:54	27	08:07 (T75)	19:03	17:20	23	08:19 (T26)	17:03	80	10:07 (T25)
9	06:07		07:28 (T24)	06:34		07:20 (T24)	07:05		07:39 (T75)	07:36	07:12		07:54 (T26)	07:45		08:09 (T26)
	21:07	51	08:19 (T24)	20:41	72	08:32 (T24)	19:52	29	08:08 (T75)	19:02	17:19	26	08:20 (T26)	17:03	78	10:08 (T25)
10	06:07		07:28 (T24)	06:35		07:20 (T24)	07:06		07:38 (T75)	07:37	07:13		07:53 (T26)	07:46		08:10 (T26)
	21:07	52	08:20 (T24)	20:40	72	08:32 (T24)	19:51	30	08:08 (T75)	19:00	17:18	28	08:21 (T26)	17:03	78	10:09 (T25)
11	06:08		07:28 (T24)	06:36		07:20 (T24)	07:07		07:37 (T75)	07:38	07:14		07:52 (T26)	07:47		08:10 (T26)
	21:06	53	08:21 (T24)	20:39	71	08:31 (T24)	19:49	32	08:09 (T75)	18:58	17:17	30	08:22 (T26)	17:03	77	10:09 (T25)
12	06:09		07:27 (T24)	06:37		07:20 (T24)	07:08		07:36 (T75)	07:39	07:15		07:53 (T26)	07:48		08:11 (T26)
	21:06	54	08:21 (T24)	20:37	71	08:31 (T24)	19:47	33	08:09 (T75)	18:57	17:16	30	08:23 (T26)	17:03	77	10:10 (T25)
13	06:10		07:27 (T24)	06:38		07:21 (T24)	07:09		07:36 (T75)	07:40	07:17		07:52 (T26)	07:48		08:12 (T26)
	21:05	55	08:22 (T24)	20:36	70	08:31 (T24)	19:46	33	08:09 (T75)	18:55	17:15	32	08:24 (T26)	17:03	75	10:10 (T25)
14	06:10		07:27 (T24)	06:39		07:21 (T24)	07:10		07:35 (T75)	07:42	07:18		07:51 (T26)	07:49		08:13 (T26)
	21:05	55	08:22 (T24)	20:35	70	08:31 (T24)	19:44	33	08:08 (T75)	18:54	17:14	39	09:30 (T25)	17:03	75	10:11 (T25)
15	06:11		07:27 (T24)	06:40		07:21 (T24)	07:11		07:34 (T75)	07:43	07:19		07:52 (T26)	07:50		08:13 (T26)
	21:04	56	08:23 (T24)	20:33	69	08:30 (T24)	19:42	33	08:07 (T75)	18:52	17:13	51	09:37 (T25)	17:03	74	10:11 (T25)
16	06:12		07:25 (T24)	06:41		07:21 (T24)	07:12		07:34 (T75)	07:44	07:20		07:52 (T26)	07:51		08:14 (T26)
	21:04	58	08:23 (T24)	20:32	69	08:30 (T24)	19:41	33	08:07 (T75)	18:51	17:12	57	09:40 (T25)	17:04	73	10:12 (T25)
17	06:13		07:25 (T24)	06:42		07:22 (T24)	07:13		07:34 (T75)	07:45	07:21		07:51 (T26)	07:51		08:16 (T26)
	21:03	59	08:24 (T24)	20:30	67	08:29 (T24)	19:39	32	08:06 (T75)	18:49	17:11	64	09:43 (T25)	17:04	72	10:13 (T25)
18	06:14		07:25 (T24)	06:43		07:22 (T24)	07:14		07:34 (T75)	07:46	07:23		07:51 (T26)	07:52		08:16 (T26)
	21:03	60	08:25 (T24)	20:29	66	08:28 (T24)	19:37	31	08:05 (T75)	18:47	17:11	68	09:45 (T25)	17:04	72	10:13 (T25)
19	06:14		07:25 (T24)	06:44		07:21 (T24)	07:15		07:35 (T75)	07:47	07:24		07:52 (T26)	07:53		08:17 (T26)
	21:02	61	08:26 (T24)	20:27	66	08:27 (T24)	19:35	29	08:04 (T75)	18:46	17:10	70	09:47 (T25)	17:05	71	10:14 (T25)
20	06:15		07:25 (T24)	06:45		07:22 (T24)	07:16		07:36 (T75)	07:48	07:25		07:52 (T26)	07:53		08:19 (T26)
	21:01	61	08:26 (T24)	20:26	64	08:26 (T24)	19:34	27	08:03 (T75)	18:44	17:09	74	09:49 (T25)	17:05	69	10:15 (T25)
21	06:16		07:24 (T24)	06:46		07:22 (T24)	07:17		07:37 (T75)	07:49	07:26		07:52 (T26)	07:54		08:19 (T26)
	21:00	62	08:26 (T24)	20:25	63	08:25 (T24)	19:32	24	08:01 (T75)	18:43	17:09	76	09:50 (T25)	17:05	68	10:14 (T25)
22	06:17		07:24 (T24)	06:47		07:23 (T24)	07:18		07:38 (T75)	07:51	07:27		07:52 (T26)	07:54		08:20 (T26)
	21:00	63	08:27 (T24)	20:23	61	08:24 (T24)	19:30	22	08:00 (T75)	18:42	17:08	79	09:52 (T25)	17:06	68	10:15 (T25)
23	06:18		07:23 (T24)	06:48		07:24 (T24)	07:19		07:39 (T75)	07:52	07:28		07:54 (T26)	07:55		08:20 (T26)
	20:59	64	08:27 (T24)	20:22	59	08:23 (T24)	19:29	19	07:58 (T75)	18:40	17:07	80	09:54 (T25)	17:07	68	10:15 (T25)
24	06:19		07:23 (T24)	06:49		07:25 (T24)	07:20		07:40 (T75)	07:53	07:30		07:54 (T26)	07:55		08:20 (T26)
	20:58	65	08:28 (T24)	20:20	57	08:22 (T24)	19:27	15	07:55 (T75)	18:39	17:07	81	09:55 (T25)	17:07	70	10:16 (T25)
25	06:20		07:23 (T24)	06:50		07:26 (T24)	07:22		07:44 (T75)	07:54	07:31		07:54 (T26)	07:56		08:20 (T26)
	20:57	66	08:29 (T24)	20:18	54	08:20 (T24)	19:25	5	07:49 (T75)	18:37	17:06	83	09:56 (T25)	17:08	71	10:17 (T25)
26	06:21		07:23 (T24)	06:51		07:27 (T24)	07:23			07:55	07:32		07:55 (T26)	07:56		08:20 (T26)
	20:56	66	08:29 (T24)	20:17	52	08:19 (T24)	19:23			18:36	17:06	84	09:57 (T25)	17:08	72	10:17 (T25)
27	06:22		07:23 (T24)	06:52		07:28 (T24)	07:24			07:56	07:33		07:56 (T26)	07:56		08:19 (T26)
	20:55	67	08:30 (T24)	20:15	49	08:17 (T24)	19:22			18:35	17:05	84	09:58 (T25)	17:09	74	10:17 (T25)
28	06:22		07:22 (T24)	06:53		07:29 (T24)	07:25			07:58	07:34		07:57 (T26)	07:57		08:20 (T26)
	20:54	68	08:30 (T24)	20:14	46	08:15 (T24)	19:20			18:33	17:05	83	09:59 (T25)	17:10	74	10:18 (T25)
29	06:23		07:21 (T24)	06:54		07:31 (T24)	07:26			07:59	07:35		07:59 (T26)	07:57		08:20 (T26)
	20:53	69	08:30 (T24)	20:12	42	08:13 (T24)	19:18			18:32	17:04	84	10:01 (T25)	17:10	75	10:18 (T25)
30	06:24		07:21 (T24)	06:55		07:33 (T24)	07:27			08:00	07:36		08:00 (T26)	07:57		08:20 (T26)
	20:52	69	08:30 (T24)	20:11	37	08:10 (T24)	19:17			18:31	17:04	83	10:01 (T25)	17:11	76	10:18 (T25)
31	06:25		07:21 (T24)	06:56		07:35 (T24)				08:01				07:57		08:20 (T26)
	20:51	69	08:30 (T24)	20:09	33	08:08 (T24)				18:29				17:12	76	10:18 (T25)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		1780			1949			602				1460			2335	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.66			0.66			0.62				0.52			0.52	
Total reduction		0.42			0.39			0.36				0.15			0.11	
Total, real		750			759			214				220			260	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1526 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7414)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May	June
1	07:57	07:43			07:07		07:48 (T61)	07:16		08:28 (T61)	06:31	06:02
	17:13	17:48			18:22	57	08:45 (T61)	19:56	74	09:42 (T61)	20:27	20:57
2	07:57	07:42			07:06		07:46 (T61)	07:15		08:29 (T61)	06:29	06:01
	17:14	17:49			18:23	60	08:46 (T61)	19:57	72	09:41 (T61)	20:28	20:58
3	07:57	07:41			07:04		07:44 (T61)	07:13		08:29 (T61)	06:28	06:01
	17:15	17:50			18:24	64	08:48 (T61)	19:58	70	09:39 (T61)	20:29	20:58
4	07:57	07:40			07:03		07:43 (T61)	07:11		08:29 (T61)	06:27	06:01
	17:16	17:52			18:25	65	08:48 (T61)	19:59	69	09:38 (T61)	20:30	20:59
5	07:57	07:39			07:01		07:41 (T61)	07:10		08:30 (T61)	06:25	06:00
	17:17	17:53			18:27	68	08:49 (T61)	20:00	67	09:37 (T61)	20:31	21:00
6	07:57	07:38			06:59		07:40 (T61)	07:08		08:30 (T61)	06:24	06:00
	17:18	17:54			18:28	70	08:50 (T61)	20:00	65	09:35 (T61)	20:32	21:00
7	07:57	07:37			06:58		07:38 (T61)	07:06		08:31 (T61)	06:23	06:00
	17:19	17:55			18:29	73	08:51 (T61)	20:01	62	09:33 (T61)	20:33	21:01
8	07:57	07:36			07:56		08:37 (T61)	07:05		08:32 (T61)	06:22	05:59
	17:20	17:57			19:30	74	09:51 (T61)	20:02	60	09:32 (T61)	20:34	21:02
9	07:57	07:35			07:55		08:36 (T61)	07:03		08:33 (T61)	06:21	05:59
	17:21	17:58			19:31	76	09:52 (T61)	20:04	56	09:29 (T61)	20:35	21:02
10	07:57	07:34			07:53		08:35 (T61)	07:02		08:35 (T61)	06:20	05:59
	17:22	17:59			19:32	77	09:52 (T61)	20:05	53	09:28 (T61)	20:36	21:03
11	07:57	07:32			07:51		08:35 (T61)	07:00		08:36 (T61)	06:19	05:59
	17:23	18:00			19:33	78	09:53 (T61)	20:06	50	09:26 (T61)	20:37	21:03
12	07:56	07:31			07:50		08:33 (T61)	06:58		08:37 (T61)	06:17	05:59
	17:24	18:02			19:34	80	09:53 (T61)	20:07	46	09:23 (T61)	20:38	21:04
13	07:56	07:30			07:48		08:32 (T61)	06:57		08:39 (T61)	06:16	05:59
	17:25	18:03			19:36	81	09:53 (T61)	20:08	42	09:21 (T61)	20:39	21:04
14	07:56	07:29			07:46		08:32 (T61)	06:55		08:40 (T61)	06:15	05:59
	17:26	18:04			19:37	82	09:54 (T61)	20:09	38	09:18 (T61)	20:40	21:05
15	07:55	07:27			07:45		08:31 (T61)	06:54		08:43 (T61)	06:14	05:59
	17:27	18:05			19:38	82	09:53 (T61)	20:10	32	09:15 (T61)	20:41	21:05
16	07:55	07:26			07:43		08:30 (T61)	06:52		08:46 (T61)	06:13	05:59
	17:28	18:06			19:39	83	09:53 (T61)	20:11	25	09:11 (T61)	20:42	21:06
17	07:54	07:25			07:41		08:30 (T61)	06:51		08:51 (T61)	06:12	05:59
	17:30	18:08			19:40	83	09:53 (T61)	20:12	15	09:06 (T61)	20:43	21:06
18	07:54	07:23			07:40		08:30 (T61)	06:49			06:12	05:59
	17:31	18:09			19:41	83	09:53 (T61)	20:13			20:44	21:07
19	07:53	07:22			07:38		08:29 (T61)	06:48			06:11	05:59
	17:32	18:10			19:42	83	09:52 (T61)	20:14			20:45	21:07
20	07:53	07:21			07:36		08:28 (T61)	06:46			06:10	05:59
	17:33	18:11			19:43	83	09:51 (T61)	20:15			20:46	21:07
21	07:52	07:19			07:35		08:28 (T61)	06:45			06:09	05:59
	17:34	18:13			19:44	84	09:52 (T61)	20:16			20:47	21:07
22	07:52	07:18		08:11 (T61)	07:33		08:28 (T61)	06:43			06:08	05:59
	17:35	18:14	11	08:22 (T61)	19:45	83	09:51 (T61)	20:17			20:48	21:08
23	07:51	07:16		08:04 (T61)	07:31		08:27 (T61)	06:42			06:07	06:00
	17:37	18:15	25	08:29 (T61)	19:46	83	09:50 (T61)	20:18			20:49	21:08
24	07:50	07:15		08:00 (T61)	07:30		08:28 (T61)	06:40			06:07	06:00
	17:38	18:16	33	08:33 (T61)	19:48	82	09:50 (T61)	20:20			20:50	21:08
25	07:49	07:13		07:57 (T61)	07:28		08:27 (T61)	06:39			06:06	06:00
	17:39	18:17	39	08:36 (T61)	19:49	82	09:49 (T61)	20:21			20:51	21:08
26	07:49	07:12		07:54 (T61)	07:26		08:27 (T61)	06:37			06:05	06:01
	17:40	18:18	45	08:39 (T61)	19:50	81	09:48 (T61)	20:22			20:52	21:08
27	07:48	07:10		07:52 (T61)	07:25		08:28 (T61)	06:36			06:05	06:01
	17:42	18:20	49	08:41 (T61)	19:51	80	09:48 (T61)	20:23			20:53	21:08
28	07:47	07:09		07:49 (T61)	07:23		08:27 (T61)	06:35			06:04	06:01
	17:43	18:21	54	08:43 (T61)	19:52	79	09:46 (T61)	20:24			20:54	21:08
29	07:46				07:21		08:27 (T61)	06:33			06:03	06:02
	17:44				19:53	78	09:45 (T61)	20:25			20:54	21:08
30	07:45				07:20		08:28 (T61)	06:32			06:03	06:02
	17:45				19:54	77	09:45 (T61)	20:26			20:55	21:08
31	07:44				07:18		08:28 (T61)				06:02	
	17:47				19:55	75	09:43 (T61)				20:56	
Potential sun hours	297	297			370			399			448	452
Total, worst case			256			2386			896			
Sun reduction			0.40			0.44			0.52			
Oper. time red.			1.00			1.00			1.00			
Wind dir. red.			0.57			0.57			0.57			
Total reduction			0.23			0.25			0.30			
Total, real			58			597			265			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1526 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7414)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November	December
1	06:03	06:27		06:58	08:35 (T61)	07:28	08:12 (T61)	07:02	07:37
	21:08	20:50		20:07 50	09:25 (T61)	19:15 80	09:32 (T61)	17:28	17:04
2	06:03	06:28		06:59	08:33 (T61)	07:29	08:12 (T61)	07:03	07:38
	21:08	20:49		20:06 53	09:26 (T61)	19:13 79	09:31 (T61)	17:27	17:04
3	06:04	06:29		07:00	08:31 (T61)	07:30	08:13 (T61)	07:04	07:39
	21:08	20:48		20:04 56	09:27 (T61)	19:12 78	09:31 (T61)	17:26	17:04
4	06:04	06:30		07:01	08:29 (T61)	07:31	08:14 (T61)	07:06	07:40
	21:08	20:47		20:02 60	09:29 (T61)	19:10 76	09:30 (T61)	17:25	17:03
5	06:05	06:31		07:02	08:28 (T61)	07:32	08:14 (T61)	07:07	07:41
	21:08	20:46		20:01 62	09:30 (T61)	19:08 75	09:29 (T61)	17:24	17:03
6	06:05	06:32		07:03	08:27 (T61)	07:33	08:15 (T61)	07:08	07:42
	21:08	20:44		19:57 64	09:31 (T61)	19:07 73	09:28 (T61)	17:22	17:03
7	06:06	06:33		07:04	08:25 (T61)	07:34	08:15 (T61)	07:09	07:43
	21:07	20:43		19:56 67	09:32 (T61)	19:05 72	09:27 (T61)	17:21	17:03
8	06:07	06:34		07:05	08:24 (T61)	07:35	08:16 (T61)	07:10	07:44
	21:07	20:42		19:54 69	09:33 (T61)	19:03 69	09:25 (T61)	17:20	17:03
9	06:07	06:35		07:06	08:23 (T61)	07:36	08:17 (T61)	07:12	07:45
	21:07	20:41		19:52 70	09:33 (T61)	19:02 67	09:24 (T61)	17:19	17:03
10	06:08	06:36		07:07	08:22 (T61)	07:37	08:17 (T61)	07:13	07:46
	21:06	20:39		19:51 72	09:34 (T61)	19:00 65	09:22 (T61)	17:18	17:03
11	06:09	06:37		07:07	08:21 (T61)	07:38	08:18 (T61)	07:14	07:46
	21:06	20:38		19:49 74	09:35 (T61)	18:59 62	09:20 (T61)	17:17	17:03
12	06:09	06:38		07:08	08:20 (T61)	07:39	08:20 (T61)	07:15	07:47
	21:05	20:37		19:47 75	09:35 (T61)	18:57 58	09:18 (T61)	17:16	17:03
13	06:10	06:39		07:09	08:19 (T61)	07:40	08:21 (T61)	07:16	07:48
	21:05	20:36		19:46 77	09:36 (T61)	18:55 55	09:16 (T61)	17:15	17:03
14	06:11	06:40		07:10	08:18 (T61)	07:41	08:23 (T61)	07:18	07:49
	21:04	20:34		19:44 78	09:36 (T61)	18:54 52	09:15 (T61)	17:14	17:04
15	06:12	06:41		07:11	08:17 (T61)	07:43	08:25 (T61)	07:19	07:49
	21:04	20:33		19:42 79	09:36 (T61)	18:52 48	09:13 (T61)	17:13	17:04
16	06:12	06:42		07:12	08:16 (T61)	07:44	08:27 (T61)	07:20	07:50
	21:03	20:31		19:40 80	09:36 (T61)	18:51 43	09:10 (T61)	17:13	17:04
17	06:13	06:43		07:13	08:15 (T61)	07:45	08:29 (T61)	07:21	07:51
	21:03	20:30		19:39 81	09:36 (T61)	18:49 38	09:07 (T61)	17:12	17:04
18	06:14	06:44		07:14	08:15 (T61)	07:46	08:33 (T61)	07:22	07:52
	21:02	20:29		19:37 81	09:36 (T61)	18:48 30	09:03 (T61)	17:11	17:05
19	06:15	06:45		07:15	08:14 (T61)	07:47	08:37 (T61)	07:23	07:52
	21:01	20:27		19:35 82	09:36 (T61)	18:46 21	08:58 (T61)	17:10	17:05
20	06:16	06:46		07:16	08:14 (T61)	07:48		07:25	07:53
	21:01	20:26		19:34 82	09:36 (T61)	18:45		17:10	17:06
21	06:17	06:47		07:17	08:13 (T61)	07:49		07:26	07:53
	21:00	20:24		19:32 83	09:36 (T61)	18:43		17:09	17:06
22	06:17	06:48		07:18	08:13 (T61)	07:50		07:27	07:54
	20:59	20:23		19:30 83	09:36 (T61)	18:42		17:08	17:06
23	06:18	06:49		07:19	08:12 (T61)	07:52		07:28	07:54
	20:58	20:21		19:29 84	09:36 (T61)	18:40		17:08	17:07
24	06:19	06:50		07:20	08:12 (T61)	07:53		07:29	07:55
	20:58	20:20		19:27 84	09:36 (T61)	18:39		17:07	17:08
25	06:20	06:51		07:21	08:12 (T61)	07:54		07:30	07:55
	20:57	20:18		19:25 83	09:35 (T61)	18:38		17:07	17:08
26	06:21	06:52	08:52 (T61)	07:23	08:12 (T61)	07:55		07:31	07:56
	20:56	20:17 17	09:09 (T61)	19:23 83	09:35 (T61)	18:36		17:06	17:09
27	06:22	06:53	08:47 (T61)	07:24	08:12 (T61)	07:56		07:33	07:56
	20:55	20:15 26	09:13 (T61)	19:22 82	09:34 (T61)	18:35		17:06	17:09
28	06:23	06:54	08:44 (T61)	07:25	08:12 (T61)	07:57		07:34	07:56
	20:54	20:14 32	09:16 (T61)	19:20 82	09:34 (T61)	18:33		17:05	17:10
29	06:24	06:55	08:41 (T61)	07:26	08:12 (T61)	07:58		07:35	07:56
	20:53	20:12 38	09:19 (T61)	19:18 81	09:33 (T61)	18:32		17:05	17:11
30	06:25	06:56	08:39 (T61)	07:27	08:12 (T61)	08:00		07:36	07:57
	20:52	20:10 42	09:21 (T61)	19:17 81	09:33 (T61)	18:31		17:04	17:12
31	06:26	06:57	08:37 (T61)			08:01			07:57
	20:51	20:09 46	09:23 (T61)			18:30			17:12
Potential sun hours	459	428		375		345		298	288
Total, worst case		201		2238		1141			
Sun reduction		0.61		0.59		0.48			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.57		0.57		0.57			
Total reduction		0.35		0.34		0.27			
Total, real		70		751		312			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1531 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7419)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:58	07:44	07:07			07:16		07:39 (T26)	06:30		07:00 (T25)	06:01		06:28 (T75)
	17:13	17:48	18:22			19:56	30	08:09 (T26)	20:27	52	07:52 (T25)	20:57	76	07:51 (T25)
2	07:58	07:43	07:06			07:15		07:40 (T26)	06:29		06:59 (T25)	06:01		06:29 (T75)
	17:14	17:49	18:23			19:57	29	08:09 (T26)	20:28	54	07:53 (T25)	20:58	74	07:51 (T25)
3	07:58	07:42	07:04			07:13		07:40 (T26)	06:28		06:59 (T25)	06:01		06:29 (T75)
	17:15	17:50	18:24			19:58	28	08:08 (T26)	20:29	55	07:54 (T25)	20:59	72	07:50 (T25)
4	07:58	07:41	07:03			07:11		07:40 (T26)	06:26		06:57 (T25)	06:00		06:30 (T75)
	17:16	17:51	18:25			19:59	27	08:07 (T26)	20:30	56	07:53 (T25)	20:59	71	07:50 (T25)
5	07:58	07:40	07:01			07:10		07:41 (T26)	06:25		06:57 (T25)	06:00		06:31 (T75)
	17:17	17:53	18:26			20:00	25	08:06 (T26)	20:32	57	07:54 (T25)	21:00	70	07:51 (T25)
6	07:58	07:39	07:00			07:08		07:42 (T26)	06:24		06:57 (T25)	06:00		06:30 (T75)
	17:17	17:54	18:28			20:00	22	08:04 (T26)	20:33	57	07:54 (T25)	21:01	69	07:50 (T25)
7	07:58	07:37	06:58			07:06		07:42 (T26)	06:23		06:56 (T25)	05:59		06:31 (T75)
	17:18	17:55	18:29			20:02	20	08:02 (T26)	20:34	58	07:54 (T25)	21:01	67	07:50 (T25)
8	07:58	07:36	07:56			07:05		07:45 (T26)	06:22		06:56 (T25)	05:59		06:32 (T75)
	17:19	17:56	19:30			20:03	15	08:00 (T26)	20:35	59	07:55 (T25)	21:02	67	07:50 (T25)
9	07:57	07:35	07:55			07:03		07:48 (T26)	06:20		06:56 (T25)	05:59		06:33 (T75)
	17:20	17:58	19:31			20:04	8	07:56 (T26)	20:36	59	07:55 (T25)	21:03	65	07:50 (T25)
10	07:57	07:34	07:53			07:01			06:19		06:56 (T25)	05:59		06:33 (T75)
	17:21	17:59	19:32			20:05			20:37	59	07:55 (T25)	21:03	64	07:50 (T25)
11	07:57	07:33	07:51			07:00			06:18		06:38 (T75)	05:58		06:34 (T75)
	17:23	18:00	19:33			20:06			20:38	65	07:54 (T25)	21:04	62	07:50 (T25)
12	07:57	07:31	07:50			06:58			06:17		06:37 (T75)	05:58		06:34 (T75)
	17:24	18:01	19:34			20:07			20:39	68	07:54 (T25)	21:04	60	07:49 (T25)
13	07:56	07:30	07:48			06:57			06:16		06:36 (T75)	05:58		06:34 (T75)
	17:25	18:03	19:36			20:08			20:40	70	07:54 (T25)	21:05	60	07:49 (T25)
14	07:56	07:29	07:46			06:55			06:15		06:36 (T75)	05:58		06:35 (T75)
	17:26	18:04	19:37			20:09			20:41	73	07:55 (T25)	21:05	58	07:49 (T25)
15	07:56	07:28	07:45			06:54			06:14		06:35 (T75)	05:58		06:35 (T75)
	17:27	18:05	19:38			20:10			20:42	75	07:55 (T25)	21:06	58	07:49 (T25)
16	07:55	07:26	07:43			06:52			06:13		06:34 (T75)	05:58		06:36 (T75)
	17:28	18:06	19:39			20:11			20:43	77	07:55 (T25)	21:06	57	07:49 (T25)
17	07:55	07:25	07:41			06:50			06:12		06:33 (T75)	05:58		06:37 (T75)
	17:29	18:08	19:40			20:12			20:44	77	07:54 (T25)	21:07	56	07:50 (T25)
18	07:54	07:24	07:40			06:49			06:11		06:32 (T75)	05:58		06:37 (T75)
	17:30	18:09	19:41			20:13			20:45	79	07:54 (T25)	21:07	56	07:50 (T25)
19	07:54	07:22	07:38			06:47			06:10		06:31 (T75)	05:58		06:37 (T75)
	17:32	18:10	19:42			20:14			20:46	80	07:54 (T25)	21:07	56	07:50 (T25)
20	07:53	07:21	07:36			06:46		07:21 (T25)	06:09		06:30 (T75)	05:59		06:37 (T75)
	17:33	18:11	19:43			20:15	14	07:35 (T25)	20:47	80	07:53 (T25)	21:08	56	07:50 (T25)
21	07:53	07:19	07:35		07:55 (T26)	06:44		07:17 (T25)	06:09		06:30 (T75)	05:59		06:38 (T75)
	17:34	18:12	19:44	7	08:02 (T26)	20:17	22	07:39 (T25)	20:48	81	07:54 (T25)	21:08	55	07:50 (T25)
22	07:52	07:18	07:33		07:52 (T26)	06:43		07:13 (T25)	06:08		06:29 (T75)	05:59		06:38 (T75)
	17:35	18:14	19:45	13	08:05 (T26)	20:18	29	07:42 (T25)	20:49	82	07:54 (T25)	21:08	55	07:50 (T25)
23	07:51	07:16	07:31		07:50 (T26)	06:41		07:11 (T25)	06:07		06:28 (T75)	05:59		06:38 (T75)
	17:36	18:15	19:46	17	08:07 (T26)	20:19	33	07:44 (T25)	20:50	82	07:53 (T25)	21:08	56	07:51 (T25)
24	07:51	07:15	07:30		07:49 (T26)	06:40		07:09 (T25)	06:06		06:27 (T75)	05:59		06:38 (T75)
	17:38	18:16	19:48	20	08:09 (T26)	20:20	36	07:45 (T25)	20:50	81	07:52 (T25)	21:09	56	07:51 (T25)
25	07:50	07:13	07:28		07:47 (T26)	06:39		07:07 (T25)	06:06		06:27 (T75)	06:00		06:38 (T75)
	17:39	18:17	19:49	22	08:09 (T26)	20:21	40	07:47 (T25)	20:51	82	07:53 (T25)	21:09	56	07:51 (T25)
26	07:49	07:12	07:26		07:45 (T26)	06:37		07:06 (T25)	06:05		06:26 (T75)	06:00		06:39 (T75)
	17:40	18:18	19:50	25	08:10 (T26)	20:22	43	07:49 (T25)	20:52	82	07:52 (T25)	21:09	57	07:52 (T25)
27	07:48	07:10	07:25		07:44 (T26)	06:36		07:04 (T25)	06:04		06:27 (T75)	06:00		06:38 (T75)
	17:41	18:20	19:51	27	08:11 (T26)	20:23	45	07:49 (T25)	20:53	81	07:53 (T25)	21:09	58	07:52 (T25)
28	07:47	07:09	07:23		07:42 (T26)	06:34		07:03 (T25)	06:04		06:27 (T75)	06:01		06:38 (T75)
	17:43	18:21	19:52	29	08:11 (T26)	20:24	47	07:50 (T25)	20:54	80	07:52 (T25)	21:09	58	07:52 (T25)
29	07:47		07:21		07:40 (T26)	06:33		07:02 (T25)	06:03		06:27 (T75)	06:01		06:38 (T75)
	17:44		19:53	30	08:10 (T26)	20:25	49	07:51 (T25)	20:55	78	07:51 (T25)	21:09	60	07:53 (T25)
30	07:46		07:20		07:40 (T26)	06:32		07:00 (T25)	06:02		06:28 (T75)	06:02		06:38 (T75)
	17:45		19:54	31	08:11 (T26)	20:26	51	07:51 (T25)	20:56	78	07:52 (T25)	21:09	60	07:53 (T25)
31	07:45		07:18		07:40 (T26)				06:02		06:28 (T75)			
	17:46		19:55	30	08:10 (T26)				20:56	77	07:52 (T25)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				251			613			2194			1845	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.63			0.66			0.68			0.69	
Total reduction				0.28			0.34			0.39			0.44	
Total, real				69			210			855			810	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1531 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7419)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02	06:38 (T75)	06:26	06:48 (T75)	06:57		07:28	07:02	07:37
	21:09	62 07:54 (T25)	20:50	68 08:05 (T25)	20:07		19:15	17:28	17:04
2	06:03	06:38 (T75)	06:27	06:49 (T75)	06:58		07:29	07:03	07:38
	21:09	62 07:54 (T25)	20:49	64 08:05 (T25)	20:06		19:13	17:27	17:03
3	06:03	06:38 (T75)	06:28	07:06 (T25)	06:59	07:46 (T26)	07:30	07:05	07:39
	21:09	65 07:55 (T25)	20:48	59 08:05 (T25)	20:04	8 07:54 (T26)	19:12	17:26	17:03
4	06:04	06:37 (T75)	06:29	07:06 (T25)	07:00	07:42 (T26)	07:31	07:06	07:40
	21:08	66 07:55 (T25)	20:47	58 08:04 (T25)	20:03	15 07:57 (T26)	19:10	17:24	17:03
5	06:04	06:37 (T75)	06:30	07:06 (T25)	07:01	07:40 (T26)	07:32	07:07	07:41
	21:08	67 07:56 (T25)	20:46	58 08:04 (T25)	20:01	19 07:59 (T26)	19:08	17:23	17:03
6	06:05	06:37 (T75)	06:31	07:06 (T25)	07:02	07:38 (T26)	07:33	07:08	07:42
	21:08	68 07:56 (T25)	20:45	58 08:04 (T25)	19:58	22 08:00 (T26)	19:07	17:22	17:03
7	06:05	06:37 (T75)	06:32	07:07 (T25)	07:03	07:36 (T26)	07:34	07:09	07:43
	21:08	69 07:57 (T25)	20:44	57 08:04 (T25)	19:56	25 08:01 (T26)	19:05	17:21	17:03
8	06:06	06:37 (T75)	06:33	07:07 (T25)	07:04	07:35 (T26)	07:35	07:11	07:44
	21:07	71 07:58 (T25)	20:42	56 08:03 (T25)	19:54	27 08:02 (T26)	19:03	17:20	17:03
9	06:07	06:36 (T75)	06:34	07:07 (T25)	07:05	07:34 (T26)	07:36	07:12	07:45
	21:07	72 07:57 (T25)	20:41	56 08:03 (T25)	19:52	28 08:02 (T26)	19:02	17:19	17:03
10	06:07	06:37 (T75)	06:35	07:08 (T25)	07:06	07:33 (T26)	07:37	07:13	07:46
	21:07	73 07:58 (T25)	20:40	54 08:02 (T25)	19:51	29 08:02 (T26)	19:00	17:18	17:03
11	06:08	06:37 (T75)	06:36	07:08 (T25)	07:07	07:32 (T26)	07:38	07:14	07:47
	21:06	75 07:59 (T25)	20:39	54 08:02 (T25)	19:49	30 08:02 (T26)	18:58	17:17	17:03
12	06:09	06:36 (T75)	06:37	07:09 (T25)	07:08	07:32 (T26)	07:39	07:15	07:48
	21:06	76 07:59 (T25)	20:37	52 08:01 (T25)	19:47	30 08:02 (T26)	18:57	17:16	17:03
13	06:10	06:36 (T75)	06:38	07:09 (T25)	07:09	07:32 (T26)	07:41	07:17	07:48
	21:05	77 08:00 (T25)	20:36	51 08:00 (T25)	19:46	30 08:02 (T26)	18:55	17:15	17:03
14	06:10	06:36 (T75)	06:39	07:10 (T25)	07:10	07:31 (T26)	07:42	07:18	07:49
	21:05	78 08:00 (T25)	20:35	49 07:59 (T25)	19:44	30 08:01 (T26)	18:54	17:14	17:03
15	06:11	06:36 (T75)	06:40	07:11 (T25)	07:11	07:31 (T26)	07:43	07:19	07:50
	21:04	79 08:01 (T25)	20:33	47 07:58 (T25)	19:42	29 08:00 (T26)	18:52	17:13	17:03
16	06:12	06:36 (T75)	06:41	07:12 (T25)	07:12	07:32 (T26)	07:44	07:20	07:51
	21:04	80 08:01 (T25)	20:32	45 07:57 (T25)	19:41	27 07:59 (T26)	18:51	17:12	17:04
17	06:13	06:36 (T75)	06:42	07:13 (T25)	07:13	07:33 (T26)	07:45	07:21	07:51
	21:03	80 08:01 (T25)	20:30	42 07:55 (T25)	19:39	25 07:58 (T26)	18:49	17:11	17:04
18	06:14	06:36 (T75)	06:43	07:14 (T25)	07:14	07:34 (T26)	07:46	07:23	07:52
	21:03	82 08:02 (T25)	20:29	40 07:54 (T25)	19:37	23 07:57 (T26)	18:48	17:11	17:04
19	06:14	06:37 (T75)	06:44	07:16 (T25)	07:15	07:35 (T26)	07:47	07:24	07:53
	21:02	82 08:03 (T25)	20:27	36 07:52 (T25)	19:35	20 07:55 (T26)	18:46	17:10	17:05
20	06:15	06:38 (T75)	06:45	07:16 (T25)	07:16	07:36 (T26)	07:48	07:25	07:53
	21:01	81 08:03 (T25)	20:26	33 07:49 (T25)	19:34	18 07:54 (T26)	18:45	17:09	17:05
21	06:16	06:38 (T75)	06:46	07:19 (T25)	07:17	07:37 (T26)	07:49	07:26	07:54
	21:00	81 08:03 (T25)	20:25	27 07:46 (T25)	19:32	14 07:51 (T26)	18:43	17:09	17:06
22	06:17	06:39 (T75)	06:47	07:22 (T25)	07:18	07:38 (T26)	07:51	07:27	07:54
	21:00	80 08:03 (T25)	20:23	21 07:43 (T25)	19:30	10 07:48 (T26)	18:42	17:08	17:06
23	06:18	06:40 (T75)	06:48	07:26 (T25)	07:19		07:52	07:28	07:55
	20:59	80 08:04 (T25)	20:22	12 07:38 (T25)	19:29		18:40	17:07	17:07
24	06:19	06:41 (T75)	06:49		07:20		07:53	07:30	07:55
	20:58	79 08:04 (T25)	20:20		19:27		18:39	17:07	17:07
25	06:20	06:42 (T75)	06:50		07:22		07:54	07:31	07:56
	20:57	79 08:05 (T25)	20:18		19:25		18:37	17:06	17:08
26	06:21	06:43 (T75)	06:51		07:23		07:55	07:32	07:56
	20:56	78 08:05 (T25)	20:17		19:23		18:36	17:06	17:08
27	06:22	06:44 (T75)	06:52		07:24		07:56	07:33	07:56
	20:55	77 08:05 (T25)	20:15		19:22		18:35	17:05	17:09
28	06:23	06:45 (T75)	06:53		07:25		07:58	07:34	07:57
	20:54	75 08:05 (T25)	20:14		19:20		18:33	17:05	17:10
29	06:23	06:45 (T75)	06:54		07:26		07:59	07:35	07:57
	20:53	74 08:05 (T25)	20:12		19:18		18:32	17:04	17:10
30	06:24	06:46 (T75)	06:55		07:27		08:00	07:36	07:57
	20:52	73 08:05 (T25)	20:11		19:17		18:31	17:04	17:11
31	06:25	06:47 (T75)	06:56				08:01		07:57
	20:51	70 08:05 (T25)	20:09				18:29		17:12
Potential sun hours	460		429		375		345	297	287
Total, worst case		2311		1097		459			
Sun reduction		0.66		0.61		0.59			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.69		0.68		0.63			
Total reduction		0.45		0.41		0.37			
Total, real		1047		453		170			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1549 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7434)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May	June
1	07:57		07:43		15:47 (T69)	07:07	07:41 (T68)	07:16	07:35 (T67)	06:30	06:02
	17:13		17:48	71	16:58 (T69)	18:22	79	16:57 (T69)	19:56	52	08:52 (T68)	20:27	20:57
2	07:57		07:42		15:46 (T69)	07:06		07:36 (T68)	07:15		07:34 (T67)	06:29	06:01
	17:14		17:49	73	16:59 (T69)	18:23	86	16:55 (T69)	19:57	49	08:50 (T68)	20:28	20:57
3	07:57		07:41		15:46 (T69)	07:04		07:33 (T68)	07:13		07:32 (T67)	06:28	06:01
	17:15		17:50	73	16:59 (T69)	18:24	88	16:53 (T69)	19:58	43	08:46 (T68)	20:29	20:58
4	07:57		07:40		15:45 (T69)	07:02		07:31 (T68)	07:11		07:30 (T67)	06:27	06:01
	17:16		17:51	74	16:59 (T69)	18:25	91	16:53 (T69)	19:59	27	07:57 (T67)	20:30	20:59
5	07:57		07:39		15:45 (T69)	07:01		07:29 (T68)	07:10		07:29 (T67)	06:25	06:00
	17:17		17:53	75	17:00 (T69)	18:26	91	16:51 (T69)	20:00	28	07:57 (T67)	20:31	20:59
6	07:57		07:38		15:44 (T69)	06:59		07:27 (T68)	07:08		07:29 (T67)	06:24	06:00
	17:18		17:54	77	17:01 (T69)	18:28	92	16:50 (T69)	20:00	27	07:56 (T67)	20:32	21:00
7	07:57		07:37		15:44 (T69)	06:58		07:25 (T68)	07:06		07:29 (T67)	06:23	06:00
	17:19		17:55	77	17:01 (T69)	18:29	90	16:47 (T69)	20:01	25	07:54 (T67)	20:33	21:01
8	07:57	16:14 (T69)	07:36		15:44 (T69)	07:56		08:24 (T68)	07:05		07:30 (T67)	06:22	05:59
	17:20	1	16:15 (T69)	17:57	78	17:02 (T69)	19:30	87	17:45 (T69)	20:02	24	07:54 (T67)	20:34	21:01
9	07:57	16:09 (T69)	07:35		15:44 (T69)	07:54		08:23 (T68)	07:03		07:31 (T67)	06:21	05:59
	17:21	13	16:22 (T69)	17:58	78	17:02 (T69)	19:31	86	17:43 (T69)	20:03	21	07:52 (T67)	20:35	21:02
10	07:57	16:05 (T69)	07:33		15:43 (T69)	07:53		08:22 (T68)	07:02		07:32 (T67)	06:20	05:59
	17:22	20	16:25 (T69)	17:59	79	17:02 (T69)	19:32	81	17:40 (T69)	20:04	17	07:49 (T67)	20:36	21:03
11	07:56	16:04 (T69)	07:32		15:44 (T69)	07:51		08:20 (T68)	07:00		07:35 (T67)	06:18	05:59
	17:23	24	16:28 (T69)	18:00	78	17:02 (T69)	19:33	76	17:36 (T69)	20:06	12	07:47 (T67)	20:37	21:03
12	07:56	16:02 (T69)	07:31		15:44 (T69)	07:50		08:20 (T68)	06:58				06:17	05:59
	17:24	29	16:31 (T69)	18:01	79	17:03 (T69)	19:34	66	17:31 (T69)	20:07			20:38	21:04
13	07:56	16:00 (T69)	07:30		15:44 (T69)	07:48		08:19 (T68)	06:57				06:16	05:59
	17:25	32	16:32 (T69)	18:03	79	17:03 (T69)	19:35	52	09:11 (T68)	20:08			20:39	21:04
14	07:55	16:00 (T69)	07:28		15:44 (T69)	07:46		08:18 (T68)	06:55				06:15	05:59
	17:26	35	16:35 (T69)	18:04	79	17:03 (T69)	19:37	52	09:10 (T68)	20:09			20:40	21:05
15	07:55	15:58 (T69)	07:27		15:44 (T69)	07:45		08:18 (T68)	06:54				06:14	05:59
	17:27	38	16:36 (T69)	18:05	79	17:03 (T69)	19:38	53	09:11 (T68)	20:10			20:41	21:05
16	07:55	15:57 (T69)	07:26		15:44 (T69)	07:43		08:17 (T68)	06:52				06:13	05:59
	17:28	41	16:38 (T69)	18:06	79	17:03 (T69)	19:39	54	09:11 (T68)	20:11			20:42	21:06
17	07:54	15:56 (T69)	07:25		15:44 (T69)	07:41		08:16 (T68)	06:51				06:12	05:59
	17:30	43	16:39 (T69)	18:08	79	17:03 (T69)	19:40	54	09:10 (T68)	20:12			20:43	21:06
18	07:54	15:55 (T69)	07:23		15:45 (T69)	07:40		08:17 (T68)	06:49				06:11	05:59
	17:31	46	16:41 (T69)	18:09	78	17:03 (T69)	19:41	53	09:10 (T68)	20:13			20:44	21:06
19	07:53	15:54 (T69)	07:22		15:44 (T69)	07:38		08:16 (T68)	06:47				06:11	05:59
	17:32	49	16:43 (T69)	18:10	78	17:02 (T69)	19:42	54	09:10 (T68)	20:14			20:45	21:07
20	07:53	15:54 (T69)	07:20		15:45 (T69)	07:36		08:16 (T68)	06:46				06:10	05:59
	17:33	51	16:45 (T69)	18:11	77	17:02 (T69)	19:43	53	09:09 (T68)	20:15			20:46	21:07
21	07:52	15:53 (T69)	07:19		15:46 (T69)	07:35		08:16 (T68)	06:44				06:09	05:59
	17:34	53	16:46 (T69)	18:12	76	17:02 (T69)	19:44	53	09:09 (T68)	20:16			20:47	21:07
22	07:51	15:52 (T69)	07:18		15:46 (T69)	07:33		08:16 (T68)	06:43				06:08	05:59
	17:35	55	16:47 (T69)	18:14	75	17:01 (T69)	19:45	52	09:08 (T68)	20:17			20:48	21:07
23	07:51	15:52 (T69)	07:16		15:47 (T69)	07:31		08:16 (T68)	06:42				06:07	06:00
	17:37	57	16:49 (T69)	18:15	74	17:01 (T69)	19:46	51	09:07 (T68)	20:18			20:49	21:08
24	07:50	15:51 (T69)	07:15		15:47 (T69)	07:30		08:17 (T68)	06:40				06:07	06:00
	17:38	59	16:50 (T69)	18:16	73	17:00 (T69)	19:47	49	09:06 (T68)	20:19			20:50	21:08
25	07:49	15:50 (T69)	07:13		15:48 (T69)	07:28		07:47 (T67)	06:39				06:06	06:00
	17:39	61	16:51 (T69)	18:17	72	17:00 (T69)	19:48	54	09:05 (T68)	20:20			20:51	21:08
26	07:48	15:49 (T69)	07:12		15:48 (T69)	07:26		07:45 (T67)	06:37				06:05	06:00
	17:40	63	16:52 (T69)	18:18	71	16:59 (T69)	19:50	56	09:03 (T68)	20:21			20:52	21:08
27	07:48	15:48 (T69)	07:10		15:50 (T69)	07:25		07:44 (T67)	06:36				06:05	06:01
	17:42	65	16:53 (T69)	18:20	68	16:58 (T69)	19:51	58	09:03 (T68)	20:23			20:52	21:08
28	07:47	15:48 (T69)	07:09		15:50 (T69)	07:23		07:42 (T67)	06:35				06:04	06:01
	17:43	66	16:54 (T69)	18:21	67	16:57 (T69)	19:52	58	09:01 (T68)	20:24			20:53	21:08
29	07:46	15:48 (T69)				07:21		07:40 (T67)	06:33				06:03	06:02
	17:44	67	16:55 (T69)			19:53	58	08:59 (T68)	20:25				20:54	21:08
30	07:45	15:48 (T69)				07:20		07:39 (T67)	06:32				06:03	06:02
	17:45	68	16:56 (T69)			19:54	57	08:58 (T68)	20:26				20:55	21:08
31	07:44	15:47 (T69)				07:18		07:37 (T67)					06:02	
	17:46	70	16:57 (T69)			19:55	55	08:55 (T68)					20:56	
Potential sun hours	297		297		370		399		448	452
Total, worst case		1106		2116		2039		325		
Sun reduction		0.31		0.40		0.44		0.52		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.73		0.73		0.62		0.62		
Total reduction		0.23		0.30		0.28		0.33		
Total, real		253		625		563		107		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1549 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7434)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September		October		November		December	
1	06:03	06:27	06:57		07:34 (T67)	07:28		07:58 (T68)	07:02	
	21:08	20:50	20:07	12	07:46 (T67)	19:15	60	17:06 (T69)	17:28	79
2	06:03	06:28	06:58		07:31 (T67)	07:29		07:58 (T68)	07:03	
	21:08	20:49	20:05	17	07:48 (T67)	19:13	73	17:13 (T69)	17:27	78
3	06:04	06:29	06:59		07:29 (T67)	07:30		07:59 (T68)	07:04	
	21:08	20:48	20:04	21	07:50 (T67)	19:11	79	17:16 (T69)	17:26	78
4	06:04	06:30	07:00		07:27 (T67)	07:31		07:59 (T68)	07:05	
	21:08	20:47	20:02	24	07:51 (T67)	19:10	85	17:19 (T69)	17:25	77
5	06:05	06:31	07:01		07:26 (T67)	07:32		08:01 (T68)	07:07	
	21:08	20:45	20:01	25	07:51 (T67)	19:08	87	17:22 (T69)	17:23	76
6	06:05	06:31	07:02		07:25 (T67)	07:33		08:02 (T68)	07:08	
	21:07	20:44	19:57	27	07:52 (T67)	19:07	88	17:23 (T69)	17:22	76
7	06:06	06:32	07:03		07:24 (T67)	07:34		08:02 (T68)	07:09	
	21:07	20:43	19:56	28	07:52 (T67)	19:05	91	17:25 (T69)	17:21	74
8	06:07	06:33	07:04		07:25 (T67)	07:35		08:03 (T68)	07:10	
	21:07	20:42	19:54	27	07:52 (T67)	19:03	91	17:26 (T69)	17:20	73
9	06:07	06:34	07:05		07:26 (T67)	07:36		08:05 (T68)	07:11	
	21:06	20:41	19:52	43	08:40 (T68)	19:02	90	17:27 (T69)	17:19	73
10	06:08	06:35	07:06		07:27 (T67)	07:37		08:06 (T68)	07:13	
	21:06	20:39	19:51	48	08:43 (T68)	19:00	90	17:28 (T69)	17:18	71
11	06:09	06:36	07:07		07:28 (T67)	07:38		08:09 (T68)	07:14	
	21:06	20:38	19:49	51	08:45 (T68)	18:58	86	17:28 (T69)	17:17	70
12	06:09	06:37	07:08		07:28 (T67)	07:39		08:11 (T68)	07:15	
	21:05	20:37	19:47	55	08:46 (T68)	18:57	83	17:29 (T69)	17:16	68
13	06:10	06:38	07:09		07:29 (T67)	07:40		08:17 (T68)	07:16	
	21:05	20:35	19:45	57	08:48 (T68)	18:55	72	17:29 (T69)	17:15	67
14	06:11	06:39	07:10		07:30 (T67)	07:41		16:22 (T69)	07:17	
	21:04	20:34	19:44	57	08:49 (T68)	18:54	68	17:30 (T69)	17:14	65
15	06:12	06:40	07:11		07:31 (T67)	07:42		16:22 (T69)	07:19	
	21:04	20:33	19:42	58	08:50 (T68)	18:52	69	17:31 (T69)	17:13	65
16	06:12	06:41	07:12		07:32 (T67)	07:44		16:21 (T69)	07:20	
	21:03	20:31	19:40	57	08:51 (T68)	18:51	70	17:31 (T69)	17:13	63
17	06:13	06:42	07:13		07:33 (T67)	07:45		16:19 (T69)	07:21	
	21:03	20:30	19:39	57	08:51 (T68)	18:49	73	17:32 (T69)	17:12	61
18	06:14	06:43	07:14		07:34 (T67)	07:46		16:18 (T69)	07:22	
	21:02	20:28	19:37	55	08:52 (T68)	18:48	74	17:32 (T69)	17:11	59
19	06:15	06:44	07:15		07:35 (T67)	07:47		16:17 (T69)	07:23	
	21:01	20:27	19:35	51	08:52 (T68)	18:46	75	17:32 (T69)	17:10	57
20	06:16	06:45	07:16		08:02 (T68)	07:48		16:16 (T69)	07:24	
	21:01	20:26	19:34	51	08:53 (T68)	18:45	76	17:32 (T69)	17:10	55
21	06:16	06:46	07:17		08:01 (T68)	07:49		16:16 (T69)	07:26	
	21:00	20:24	19:32	52	08:53 (T68)	18:43	77	17:33 (T69)	17:09	53
22	06:17	06:47	07:18		08:01 (T68)	07:50		16:16 (T69)	07:27	
	20:59	20:23	19:30	52	08:53 (T68)	18:42	77	17:33 (T69)	17:08	51
23	06:18	06:48	07:19		08:00 (T68)	07:51		16:15 (T69)	07:28	
	20:58	20:21	19:28	53	08:53 (T68)	18:40	78	17:33 (T69)	17:08	49
24	06:19	06:49	07:20		08:00 (T68)	07:53		16:14 (T69)	07:29	
	20:57	20:20	19:27	53	08:53 (T68)	18:39	79	17:33 (T69)	17:07	47
25	06:20	06:50	07:21		07:59 (T68)	07:54		16:14 (T69)	07:30	
	20:57	20:18	19:25	54	08:53 (T68)	18:37	78	17:32 (T69)	17:06	43
26	06:21	06:51	07:22		07:59 (T68)	07:55		16:14 (T69)	07:31	
	20:56	20:17	19:23	54	08:53 (T68)	18:36	79	17:33 (T69)	17:06	41
27	06:22	06:52	07:23		07:58 (T68)	07:56		16:14 (T69)	07:32	
	20:55	20:15	19:22	54	08:52 (T68)	18:35	79	17:33 (T69)	17:06	38
28	06:23	06:53	07:24		07:58 (T68)	07:57		16:13 (T69)	07:34	
	20:54	20:13	19:20	54	08:52 (T68)	18:33	79	17:32 (T69)	17:05	36
29	06:24	06:54	07:25		07:58 (T68)	07:58		16:13 (T69)	07:35	
	20:53	20:12	19:18	53	08:51 (T68)	18:32	79	17:32 (T69)	17:05	32
30	06:25	06:55	07:26		07:58 (T68)	07:59		16:14 (T69)	07:36	
	20:52	20:10	19:17	52	08:50 (T68)	18:31	79	17:33 (T69)	17:04	29
31	06:26	06:56				08:01		16:13 (T69)		
	20:51	20:09				18:29	79	17:32 (T69)		
Potential sun hours	459	428	375			345			298	
Total, worst case				1352			2443			1804
Sun reduction				0.59			0.48			0.30
Oper. time red.				1.00			1.00			1.00
Wind dir. red.				0.59			0.70			0.73
Total reduction				0.35			0.34			0.22
Total, real				478			829			399

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1551 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7436)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	15:48 (T77)	07:43	08:13 (T76)	07:07	17:03 (T42)	07:16	19:12 (T41)	06:30		06:01	19:57 (T40)
	17:13 35	16:23 (T77)	17:47 29	08:42 (T76)	18:22 30	17:33 (T42)	19:56 22	19:34 (T41)	20:27		20:57 27	20:24 (T40)
2	07:57	15:48 (T77)	07:42	08:13 (T76)	07:06	17:04 (T42)	07:14	19:11 (T41)	06:29		06:01	19:58 (T40)
	17:14 35	16:23 (T77)	17:49 28	08:41 (T76)	18:23 27	17:31 (T42)	19:57 24	19:35 (T41)	20:28		20:58 27	20:25 (T40)
3	07:57	15:49 (T77)	07:41	08:14 (T76)	07:04	17:06 (T42)	07:13	19:10 (T41)	06:28		06:01	19:58 (T40)
	17:15 34	16:23 (T77)	17:50 27	08:41 (T76)	18:24 23	17:29 (T42)	19:58 27	19:37 (T41)	20:29		20:58 26	20:24 (T40)
4	07:57	15:50 (T77)	07:40	08:15 (T76)	07:02	17:09 (T42)	07:11	19:09 (T41)	06:26		06:00	19:59 (T40)
	17:16 33	16:23 (T77)	17:51 25	08:40 (T76)	18:25 18	17:27 (T42)	19:59 28	19:37 (T41)	20:30		20:59 25	20:24 (T40)
5	07:57	15:51 (T77)	07:39	08:16 (T76)	07:01	17:13 (T42)	07:09	19:08 (T41)	06:25		06:00	20:00 (T40)
	17:16 33	16:24 (T77)	17:52 33	17:24 (T42)	18:26 9	17:22 (T42)	20:00 30	19:38 (T41)	20:31		21:00 24	20:24 (T40)
6	07:57	15:52 (T77)	07:38	08:17 (T76)	06:59		07:08	19:08 (T41)	06:24		05:59	19:59 (T40)
	17:17 32	16:24 (T77)	17:54 37	17:27 (T42)	18:27		20:00 31	19:39 (T41)	20:32		21:00 24	20:23 (T40)
7	07:57	15:52 (T77)	07:37	08:19 (T76)	06:58		07:06	19:08 (T41)	06:23		05:59	20:00 (T40)
	17:18 31	16:23 (T77)	17:55 38	17:29 (T42)	18:29		20:01 30	19:38 (T41)	20:33		21:01 23	20:23 (T40)
8	07:57	15:53 (T77)	07:36	08:21 (T76)	07:56		07:05	19:08 (T41)	06:22	20:08 (T40)	05:59	20:01 (T40)
	17:19 30	16:23 (T77)	17:56 38	17:31 (T42)	19:30		20:02 30	19:38 (T41)	20:34 4	20:12 (T40)	21:02 22	20:23 (T40)
9	07:57	15:54 (T77)	07:35	08:26 (T76)	07:54		07:03	19:08 (T41)	06:20	20:03 (T40)	05:59	20:02 (T40)
	17:20 29	16:23 (T77)	17:57 32	17:33 (T42)	19:31		20:03 29	19:37 (T41)	20:35 9	20:12 (T40)	21:02 21	20:23 (T40)
10	07:57	15:55 (T77)	07:34	17:04 (T42)	07:53		07:01	19:08 (T41)	06:19	20:01 (T40)	05:59	20:02 (T40)
	17:21 28	16:23 (T77)	17:59 31	17:35 (T42)	19:32		20:05 28	19:36 (T41)	20:36 12	20:13 (T40)	21:03 21	20:23 (T40)
11	07:57	08:18 (T76)	07:32	17:02 (T42)	07:51		07:00	19:09 (T41)	06:18	20:00 (T40)	05:58	20:03 (T40)
	17:23 32	16:22 (T77)	18:00 33	17:35 (T42)	19:33		20:06 27	19:36 (T41)	20:37 14	20:14 (T40)	21:04 20	20:23 (T40)
12	07:56	08:18 (T76)	07:31	17:01 (T42)	07:50		06:58	19:09 (T41)	06:17	19:58 (T40)	05:58	20:03 (T40)
	17:24 34	16:22 (T77)	18:01 35	17:36 (T42)	19:34		20:07 25	19:34 (T41)	20:38 17	20:15 (T40)	21:04 19	20:22 (T40)
13	07:56	08:18 (T76)	07:30	17:01 (T42)	07:48		06:57	19:10 (T41)	06:16	19:57 (T40)	05:58	20:03 (T40)
	17:25 34	16:22 (T77)	18:02 37	17:38 (T42)	19:35		20:08 23	19:33 (T41)	20:39 19	20:16 (T40)	21:05 19	20:22 (T40)
14	07:56	08:17 (T76)	07:29	17:00 (T42)	07:46		06:55	19:11 (T41)	06:15	19:57 (T40)	05:58	20:04 (T40)
	17:26 34	16:21 (T77)	18:04 38	17:38 (T42)	19:36		20:09 20	19:31 (T41)	20:41 20	20:17 (T40)	21:05 18	20:22 (T40)
15	07:55	08:17 (T76)	07:27	16:59 (T42)	07:45		06:53	19:12 (T41)	06:14	19:56 (T40)	05:58	20:04 (T40)
	17:27 33	16:20 (T77)	18:05 39	17:38 (T42)	19:38		20:10 17	19:29 (T41)	20:42 22	20:18 (T40)	21:05 18	20:22 (T40)
16	07:55	08:16 (T76)	07:26	16:59 (T42)	07:43		06:52	19:15 (T41)	06:13	19:56 (T40)	05:58	20:04 (T40)
	17:28 31	16:18 (T77)	18:06 40	17:39 (T42)	19:39		20:11 11	19:26 (T41)	20:42 24	20:20 (T40)	21:06 18	20:22 (T40)
17	07:54	08:16 (T76)	07:25	16:58 (T42)	07:41		06:50		06:12	19:56 (T40)	05:58	20:06 (T40)
	17:29 27	16:16 (T77)	18:07 41	17:39 (T42)	19:40		20:12		20:43 24	20:20 (T40)	21:06 17	20:23 (T40)
18	07:54	08:15 (T76)	07:23	16:58 (T42)	07:40		06:49		06:11	19:55 (T40)	05:58	20:06 (T40)
	17:30 20	08:35 (T76)	18:09 41	17:39 (T42)	19:41		20:13		20:44 26	20:21 (T40)	21:07 17	20:23 (T40)
19	07:53	08:15 (T76)	07:22	16:59 (T42)	07:38		06:47		06:10	19:55 (T40)	05:58	20:06 (T40)
	17:31 22	08:37 (T76)	18:10 41	17:40 (T42)	19:42		20:14		20:45 27	20:22 (T40)	21:07 17	20:23 (T40)
20	07:53	08:14 (T76)	07:20	16:58 (T42)	07:36		06:46		06:09	19:55 (T40)	05:58	20:06 (T40)
	17:33 23	08:37 (T76)	18:11 41	17:39 (T42)	19:43		20:15		20:46 28	20:23 (T40)	21:07 17	20:23 (T40)
21	07:52	08:13 (T76)	07:19	16:59 (T42)	07:35		06:44		06:09	19:54 (T40)	05:59	20:06 (T40)
	17:34 25	08:38 (T76)	18:12 41	17:40 (T42)	19:44		20:16		20:47 29	20:23 (T40)	21:08 17	20:23 (T40)
22	07:52	08:13 (T76)	07:18	16:58 (T42)	07:33		06:43		06:08	19:55 (T40)	05:59	20:06 (T40)
	17:35 26	08:39 (T76)	18:13 41	17:39 (T42)	19:45		20:17		20:48 30	20:25 (T40)	21:08 17	20:23 (T40)
23	07:51	08:12 (T76)	07:16	16:59 (T42)	07:31		06:41		06:07	19:55 (T40)	05:59	20:07 (T40)
	17:36 28	08:40 (T76)	18:15 40	17:39 (T42)	19:46		20:18		20:49 30	20:25 (T40)	21:08 17	20:24 (T40)
24	07:50	08:11 (T76)	07:15	16:59 (T42)	07:30		06:40		06:06	19:55 (T40)	05:59	20:07 (T40)
	17:37 29	08:40 (T76)	18:16 39	17:38 (T42)	19:47		20:19		20:50 29	20:24 (T40)	21:08 17	20:24 (T40)
25	07:49	08:10 (T76)	07:13	17:00 (T42)	07:28		06:38		06:06	19:55 (T40)	06:00	20:07 (T40)
	17:39 30	08:40 (T76)	18:17 38	17:38 (T42)	19:48		20:21		20:51 30	20:25 (T40)	21:08 17	20:24 (T40)
26	07:49	08:10 (T76)	07:12	17:00 (T42)	07:26		06:37		06:05	19:55 (T40)	06:00	20:08 (T40)
	17:40 31	08:41 (T76)	18:18 36	17:36 (T42)	19:50		20:22		20:52 30	20:25 (T40)	21:08 17	20:25 (T40)
27	07:48	08:11 (T76)	07:10	17:01 (T42)	07:24		06:36		06:04	19:55 (T40)	06:00	20:07 (T40)
	17:41 31	08:42 (T76)	18:19 35	17:36 (T42)	19:51		20:23		20:53 29	20:24 (T40)	21:08 18	20:25 (T40)
28	07:47	08:11 (T76)	07:09	17:02 (T42)	07:23	19:22 (T41)	06:34		06:04	19:56 (T40)	06:01	20:07 (T40)
	17:42 31	08:42 (T76)	18:21 32	17:34 (T42)	19:52 8	19:30 (T41)	20:24		20:54 29	20:25 (T40)	21:09 18	20:25 (T40)
29	07:46	08:11 (T76)			07:21	19:18 (T41)	06:33		06:03	19:56 (T40)	06:01	20:07 (T40)
	17:44 31	08:42 (T76)			19:53 13	19:31 (T41)	20:25		20:54 28	20:24 (T40)	21:09 19	20:26 (T40)
30	07:45	08:12 (T76)			07:19	19:15 (T41)	06:32		06:02	19:57 (T40)	06:02	20:07 (T40)
	17:45 30	08:42 (T76)			19:54 17	19:32 (T41)	20:26		20:55 28	20:25 (T40)	21:09 19	20:26 (T40)
31	07:44	08:12 (T76)			07:18	19:14 (T41)			06:02	19:57 (T40)		
	17:46 30	08:42 (T76)			19:55 20	19:34 (T41)			20:56 27	20:24 (T40)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case		932		1006		165		402		565		596
Sun reduction		0.31		0.40		0.44		0.52		0.57		0.64
Oper. time red.		1.00		1.00		1.00		1.00		1.00		1.00
Wind dir. red.		0.63		0.67		0.68		0.61		0.55		0.55
Total reduction		0.20		0.28		0.30		0.33		0.32		0.36
Total, real		187		278		50		131		182		216

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1551 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7436)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:07 (T40)	06:26		20:09 (T40)	06:57		19:08 (T41)	07:27			07:02		16:33 (T42)	07:37		08:00 (T76)
	21:08	20	20:27 (T40)	20:50	16	20:25 (T40)	20:07	27	19:35 (T41)	19:15			17:28	30	17:03 (T42)	17:04	33	16:04 (T77)
2	06:03		20:07 (T40)	06:27		20:11 (T40)	06:58		19:07 (T41)	07:29			07:03		07:54 (T76)	07:38		15:37 (T77)
	21:08	20	20:27 (T40)	20:49	13	20:24 (T40)	20:06	28	19:35 (T41)	19:13			17:27	35	17:03 (T42)	17:03	28	16:05 (T77)
3	06:03		20:07 (T40)	06:28		20:12 (T40)	06:59		19:06 (T41)	07:30			07:04		07:51 (T76)	07:39		15:38 (T77)
	21:08	21	20:28 (T40)	20:48	11	20:23 (T40)	20:04	29	19:35 (T41)	19:11			17:26	38	17:01 (T42)	17:03	29	16:07 (T77)
4	06:04		20:06 (T40)	06:29		20:15 (T40)	07:00		19:05 (T41)	07:31			07:06		07:48 (T76)	07:40		15:38 (T77)
	21:08	22	20:28 (T40)	20:47	7	20:22 (T40)	20:02	30	19:35 (T41)	19:10			17:24	39	16:59 (T42)	17:03	30	16:08 (T77)
5	06:04		20:07 (T40)	06:30			07:01		19:05 (T41)	07:32			07:07		07:47 (T76)	07:41		15:38 (T77)
	21:08	22	20:29 (T40)	20:46			20:01	30	19:35 (T41)	19:08			17:23	36	16:56 (T42)	17:03	31	16:09 (T77)
6	06:05		20:06 (T40)	06:31			07:02		19:04 (T41)	07:33			07:08		07:46 (T76)	07:42		15:38 (T77)
	21:08	23	20:29 (T40)	20:44			19:57	31	19:35 (T41)	19:06			17:22	31	16:53 (T42)	17:03	32	16:10 (T77)
7	06:05		20:06 (T40)	06:32			07:03		19:04 (T41)	07:34			07:09		07:45 (T76)	07:43		15:37 (T77)
	21:07	24	20:30 (T40)	20:43			19:56	30	19:34 (T41)	19:05			17:21	25	08:10 (T76)	17:03	33	16:10 (T77)
8	06:06		20:06 (T40)	06:33			07:04		19:04 (T41)	07:35			07:10		07:44 (T76)	07:44		15:37 (T77)
	21:07	25	20:31 (T40)	20:42			19:54	29	19:33 (T41)	19:03			17:20	27	08:11 (T76)	17:03	33	16:10 (T77)
9	06:07		20:05 (T40)	06:34			07:05		19:04 (T41)	07:36		17:46 (T42)	07:12		07:44 (T76)	07:45		15:37 (T77)
	21:07	26	20:31 (T40)	20:41			19:52	27	19:31 (T41)	19:01	13	17:59 (T42)	17:19	28	08:12 (T76)	17:03	34	16:11 (T77)
10	06:07		20:06 (T40)	06:35			07:06		19:04 (T41)	07:37		17:42 (T42)	07:13		07:44 (T76)	07:46		15:38 (T77)
	21:06	26	20:32 (T40)	20:39			19:51	24	19:28 (T41)	19:00	20	18:02 (T42)	17:18	28	08:12 (T76)	17:03	34	16:12 (T77)
11	06:08		20:06 (T40)	06:36			07:07		19:04 (T41)	07:38		17:39 (T42)	07:14		07:43 (T76)	07:46		15:38 (T77)
	21:06	26	20:32 (T40)	20:38			19:49	23	19:27 (T41)	18:58	25	18:04 (T42)	17:17	30	08:13 (T76)	17:03	35	16:13 (T77)
12	06:09		20:05 (T40)	06:37			07:08		19:05 (T41)	07:39		17:37 (T42)	07:15		07:43 (T76)	07:47		15:38 (T77)
	21:06	27	20:32 (T40)	20:37			19:47	20	19:25 (T41)	18:57	28	18:05 (T42)	17:16	30	08:13 (T76)	17:03	36	16:14 (T77)
13	06:10		20:05 (T40)	06:38			07:09		19:06 (T41)	07:40		17:35 (T42)	07:16		07:43 (T76)	07:48		15:39 (T77)
	21:05	28	20:33 (T40)	20:36			19:45	17	19:23 (T41)	18:55	31	18:06 (T42)	17:15	31	08:14 (T76)	17:03	35	16:14 (T77)
14	06:10		20:05 (T40)	06:39			07:10		19:08 (T41)	07:41		17:34 (T42)	07:18		07:43 (T76)	07:49		15:38 (T77)
	21:05	28	20:33 (T40)	20:34			19:44	14	19:22 (T41)	18:54	33	18:07 (T42)	17:14	31	08:14 (T76)	17:03	36	16:14 (T77)
15	06:11		20:05 (T40)	06:40			07:11		19:10 (T41)	07:42		17:33 (T42)	07:19		07:43 (T76)	07:50		15:39 (T77)
	21:04	29	20:34 (T40)	20:33			19:42	10	19:20 (T41)	18:52	36	18:09 (T42)	17:13	31	08:14 (T76)	17:03	36	16:15 (T77)
16	06:12		20:05 (T40)	06:41			07:12			07:44		17:32 (T42)	07:20		07:43 (T76)	07:50		15:40 (T77)
	21:03	28	20:33 (T40)	20:31			19:40			18:50	37	18:09 (T42)	17:12	31	08:14 (T76)	17:04	36	16:16 (T77)
17	06:13		20:05 (T40)	06:42			07:13			07:45		17:31 (T42)	07:21		07:44 (T76)	07:51		15:39 (T77)
	21:03	29	20:34 (T40)	20:30			19:39			18:49	38	18:09 (T42)	17:11	30	08:14 (T76)	17:04	37	16:16 (T77)
18	06:14		20:05 (T40)	06:43			07:14			07:46		17:30 (T42)	07:22		07:45 (T76)	07:52		15:40 (T77)
	21:02	29	20:34 (T40)	20:29			19:37			18:47	40	18:10 (T42)	17:11	29	08:14 (T76)	17:04	37	16:17 (T77)
19	06:14		20:05 (T40)	06:44			07:15			07:47		17:29 (T42)	07:23		07:46 (T76)	07:52		15:41 (T77)
	21:02	30	20:35 (T40)	20:27			19:35			18:46	41	18:10 (T42)	17:10	28	08:14 (T76)	17:05	37	16:18 (T77)
20	06:15		20:05 (T40)	06:45			07:16			07:48		17:29 (T42)	07:25		07:48 (T76)	07:53		15:41 (T77)
	21:01	30	20:35 (T40)	20:26			19:33			18:44	40	18:09 (T42)	17:09	26	08:14 (T76)	17:05	37	16:18 (T77)
21	06:16		20:04 (T40)	06:46			07:17			07:49		17:29 (T42)	07:26		07:49 (T76)	07:53		15:42 (T77)
	21:00	30	20:34 (T40)	20:24			19:32			18:43	41	18:10 (T42)	17:08	25	08:14 (T76)	17:05	37	16:19 (T77)
22	06:17		20:05 (T40)	06:47			07:18			07:50		17:29 (T42)	07:27		07:50 (T76)	07:54		15:42 (T77)
	20:59	29	20:34 (T40)	20:23			19:30			18:41	41	18:10 (T42)	17:08	24	08:14 (T76)	17:06	37	16:19 (T77)
23	06:18		20:05 (T40)	06:48			07:19			07:51		17:28 (T42)	07:28		07:51 (T76)	07:54		15:43 (T77)
	20:59	28	20:33 (T40)	20:21			19:28			18:40	42	18:10 (T42)	17:07	22	08:13 (T76)	17:07	37	16:20 (T77)
24	06:19		20:05 (T40)	06:49			07:20			07:53		17:28 (T42)	07:29		07:52 (T76)	07:55		15:43 (T77)
	20:58	28	20:33 (T40)	20:20			19:27			18:39	41	18:09 (T42)	17:07	20	08:12 (T76)	17:07	37	16:20 (T77)
25	06:20		20:06 (T40)	06:50			07:21			07:54		17:29 (T42)	07:30		07:54 (T76)	07:55		15:43 (T77)
	20:57	26	20:32 (T40)	20:18			19:25			18:37	40	18:09 (T42)	17:06	27	15:54 (T77)	17:08	37	16:20 (T77)
26	06:21		20:06 (T40)	06:51			07:22			07:55		17:29 (T42)	07:32		07:55 (T76)	07:56		15:44 (T77)
	20:56	25	20:31 (T40)	20:17			19:23			18:36	40	18:09 (T42)	17:06	31	15:57 (T77)	17:08	37	16:21 (T77)
27	06:22		20:07 (T40)	06:52		19:17 (T41)	07:23			07:56		17:29 (T42)	07:33		07:56 (T76)	07:56		15:45 (T77)
	20:55	24	20:31 (T40)	20:15	12	19:29 (T41)	19:21			18:34	39	18:08 (T42)	17:05	33	15:59 (T77)	17:09	36	16:21 (T77)
28	06:22		20:06 (T40)	06:53		19:14 (T41)	07:24			07:57		17:29 (T42)	07:34		07:57 (T76)	07:56		15:45 (T77)
	20:54	23	20:29 (T40)	20:14	17	19:31 (T41)	19:20			18:33	38	18:07 (T42)	17:05	35	16:01 (T77)	17:10	36	16:21 (T77)
29	06:23		20:07 (T40)	06:54		19:12 (T41)	07:25			07:58		17:30 (T42)	07:35		07:58 (T76)	07:57		15:45 (T77)
	20:53	21	20:28 (T40)	20:12	20	19:32 (T41)	19:18			18:32	36	18:06 (T42)	17:04	35	16:02 (T77)	17:10	36	16:21 (T77)
30	06:24		20:08 (T40)	06:55		19:10 (T41)	07:26			08:00		17:31 (T42)	07:36		07:59 (T76)	07:57		15:47 (T77)
	20:52	19	20:27 (T40)	20:10	23	19:33 (T41)	19:16			18:30	35	18:06 (T42)	17:04	33	16:03 (T77)	17:11	35	16:22 (T77)
31	06:25		20:08 (T40)	06:56		19:09 (T41)				08:01		17:32 (T42)				07:57		15:47 (T77)
	20:51	18	20:26 (T40)	20:09	25	19:34 (T41)				18:29	33	18:05 (T42)				17:12	35	16:22 (T77)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		784			144			369			808			899			1079	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.59			0.61			0.71			0.58			0.74	
Total reduction		0.37			0.37			0.37			0.35			0.18			0.17	
Total, real		293			53			137			282			159			180	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1552 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7437)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April			May			June	
1	07:58		07:44		07:07		07:16		07:52 (T25)	06:30		06:50 (T75)	06:01	
	17:13		17:48		18:22		19:56	67	08:59 (T25)	20:27	66	08:42 (T25)	20:57	
2	07:58		07:43		07:06		07:15		07:52 (T25)	06:29		06:49 (T75)	06:01	
	17:14		17:49		18:23		19:57	68	09:00 (T25)	20:28	66	08:41 (T25)	20:58	
3	07:58		07:42		07:04		07:13		07:50 (T25)	06:28		06:48 (T75)	06:01	
	17:15		17:50		18:24		19:58	70	09:00 (T25)	20:29	66	08:39 (T25)	20:59	
4	07:58		07:41		07:03		07:23 (T26)		07:11	07:49 (T25)		06:26	06:46 (T75)	06:00
	17:16		17:51		18:25	11	07:34 (T26)		19:59	09:00 (T25)	71	20:30	64	08:37 (T25)	20:59
5	07:58		07:40		07:01		07:20 (T26)		07:10	07:49 (T25)		06:25	06:45 (T75)	06:00
	17:17		17:53		18:26	16	07:36 (T26)		20:00	09:01 (T25)	72	20:32	63	08:35 (T25)	21:00
6	07:58		07:39		07:00		07:19 (T26)		07:08	07:48 (T25)		06:24	06:44 (T75)	05:59
	17:17		17:54		18:28	20	07:39 (T26)		20:00	09:00 (T25)	72	20:33	62	08:34 (T25)	21:01
7	07:58		07:37		06:58		07:17 (T26)		07:06	07:47 (T25)		06:23	06:43 (T75)	05:59
	17:18		17:55		18:29	23	07:40 (T26)		20:02	09:00 (T25)	73	20:34	59	08:32 (T25)	21:01
8	07:58		07:36		07:56		08:16 (T26)		07:05	07:47 (T25)		06:22	06:42 (T75)	05:59
	17:19		17:56		19:30	26	08:42 (T26)		20:03	09:00 (T25)	73	20:35	56	08:29 (T25)	21:02
9	07:57		07:35		07:55		08:14 (T26)		07:03	07:46 (T25)		06:20	06:41 (T75)	05:59
	17:20		17:58		19:31	28	08:42 (T26)		20:04	09:00 (T25)	74	20:36	52	08:27 (T25)	21:03
10	07:57		07:34		07:53		08:12 (T26)		07:01	07:45 (T25)		06:19	06:40 (T75)	05:59
	17:21		17:59		19:32	30	08:42 (T26)		20:05	08:59 (T25)	74	20:37	45	08:23 (T25)	21:03
11	07:57		07:33		07:51		08:11 (T26)		07:00	07:45 (T25)		06:18	06:39 (T75)	05:58
	17:23		18:00		19:33	32	08:43 (T26)		20:06	08:59 (T25)	74	20:38	30	07:09 (T75)	21:04
12	07:57		07:31		07:50		08:10 (T26)		06:58	07:44 (T25)		06:17	06:39 (T75)	05:58
	17:24		18:01		19:34	33	08:43 (T26)		20:07	08:59 (T25)	75	20:39	30	07:09 (T75)	21:04
13	07:56		07:30		07:48		08:09 (T26)		06:57	07:45 (T25)		06:16	06:39 (T75)	05:58
	17:25		18:03		19:36	34	08:43 (T26)		20:08	08:59 (T25)	74	20:40	30	07:09 (T75)	21:05
14	07:56		07:29		07:46		08:09 (T26)		06:55	07:44 (T25)		06:15	06:40 (T75)	05:58
	17:26		18:04		19:37	34	08:43 (T26)		20:09	08:58 (T25)	74	20:41	29	07:09 (T75)	21:05
15	07:56		07:28		07:45		08:09 (T26)		06:54	07:45 (T25)		06:14	06:41 (T75)	05:58
	17:27		18:05		19:38	33	08:42 (T26)		20:10	08:58 (T25)	73	20:42	28	07:09 (T75)	21:06
16	07:55		07:26		07:43		08:08 (T26)		06:52	07:44 (T25)		06:13	06:41 (T75)	05:58
	17:28		18:06		19:39	34	08:42 (T26)		20:11	08:57 (T25)	73	20:43	28	07:09 (T75)	21:06
17	07:55		07:25		07:41		08:09 (T26)		06:50	07:44 (T25)		06:12	06:41 (T75)	05:58
	17:29		18:07		19:40	33	08:42 (T26)		20:12	08:57 (T25)	73	20:44	27	07:08 (T75)	21:07
18	07:54		07:24		07:40		08:09 (T26)		06:49	07:44 (T25)		06:11	06:41 (T75)	05:58
	17:30		18:09		19:41	31	08:40 (T26)		20:13	08:55 (T25)	71	20:45	26	07:07 (T75)	21:07
19	07:54		07:22		07:38		08:09 (T26)		06:47	07:45 (T25)		06:10	06:42 (T75)	05:58
	17:32		18:10		19:42	30	08:39 (T26)		20:14	08:55 (T25)	70	20:46	25	07:07 (T75)	21:07
20	07:53		07:21		07:36		08:10 (T26)		06:46	07:44 (T25)		06:09	06:42 (T75)	05:59
	17:33		18:11		19:43	32	08:42 (T25)		20:15	08:54 (T25)	70	20:47	24	07:06 (T75)	21:08
21	07:53		07:19		07:35		08:11 (T26)		06:44	07:45 (T25)		06:09	06:44 (T75)	05:59
	17:34		18:12		19:44	35	08:46 (T25)		20:17	08:53 (T25)	68	20:48	22	07:06 (T75)	21:08
22	07:52		07:18		07:33		08:10 (T25)		06:43	07:45 (T25)		06:08	06:45 (T75)	05:59
	17:35		18:14		19:45	38	08:48 (T25)		20:18	08:52 (T25)	67	20:49	20	07:05 (T75)	21:08
23	07:51		07:16		07:31		08:07 (T25)		06:41	07:45 (T25)		06:07	06:45 (T75)	05:59
	17:36		18:15		19:46	43	08:50 (T25)		20:19	08:51 (T25)	66	20:50	19	07:04 (T75)	21:08
24	07:51		07:15		07:30		08:05 (T25)		06:40	07:45 (T25)		06:06	06:46 (T75)	05:59
	17:38		18:16		19:48	47	08:52 (T25)		20:20	08:50 (T25)	65	20:50	16	07:02 (T75)	21:09
25	07:50		07:13		07:28		08:03 (T25)		06:39	07:46 (T25)		06:06	06:48 (T75)	06:00
	17:39		18:17		19:49	51	08:54 (T25)		20:21	08:49 (T25)	63	20:51	14	07:02 (T75)	21:09
26	07:49		07:12		07:26		08:01 (T25)		06:37	07:47 (T25)		06:05	06:50 (T75)	06:00
	17:40		18:18		19:50	54	08:55 (T25)		20:22	08:49 (T25)	62	20:52	10	07:00 (T75)	21:09
27	07:48		07:10		07:25		08:00 (T25)		06:36	07:47 (T25)		06:04	06:53 (T75)	06:00
	17:41		18:19		19:51	56	08:56 (T25)		20:23	08:47 (T25)	60	20:53	4	06:57 (T75)	21:09
28	07:47		07:09		07:23		07:58 (T25)		06:34	07:48 (T25)		06:04			06:01
	17:43		18:21		19:52	59	08:57 (T25)		20:24	08:46 (T25)	58	20:54			21:09
29	07:47				07:21		07:56 (T25)		06:33	06:53 (T75)		06:03			06:01
	17:44				19:53	61	08:57 (T25)		20:25	08:45 (T25)	64	20:55			21:09
30	07:46				07:20		07:55 (T25)		06:32	06:51 (T75)		06:02			06:02
	17:45				19:54	64	08:59 (T25)		20:26	08:43 (T25)	66	20:56			21:09
31	07:45				07:18		07:53 (T25)					06:02			
	17:46				19:55	66	08:59 (T25)					20:56			
Potential sun hours	297		297		370		399			449			453	
Total, worst case					1054				2080			981		
Sun reduction					0.44				0.52			0.57		
Oper. time red.					1.00				1.00			1.00		
Wind dir. red.					0.60				0.62			0.67		
Total reduction					0.26				0.32			0.38		
Total, real					278				671			373		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1552 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7437)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December
1	06:02			06:26		06:50 (T75)	06:57		07:44 (T25)	07:28		07:49 (T26)	07:02	07:37
	21:09			20:50	29	07:19 (T75)	20:07	74	08:58 (T25)	19:15	34	08:23 (T26)	17:28	17:04
2	06:03			06:27		06:50 (T75)	06:58		07:44 (T25)	07:29		07:49 (T26)	07:03	07:38
	21:09			20:49	37	08:29 (T25)	20:06	74	08:58 (T25)	19:13	33	08:22 (T26)	17:27	17:03
3	06:03			06:28		06:50 (T75)	06:59		07:44 (T25)	07:30		07:50 (T26)	07:05	07:39
	21:09			20:48	47	08:34 (T25)	20:04	74	08:58 (T25)	19:12	31	08:21 (T26)	17:26	17:03
4	06:04			06:29		06:51 (T75)	07:00		07:44 (T25)	07:31		07:51 (T26)	07:06	07:40
	21:08			20:47	52	08:37 (T25)	20:03	73	08:57 (T25)	19:10	29	08:20 (T26)	17:24	17:03
5	06:04			06:30		06:52 (T75)	07:01		07:44 (T25)	07:32		07:52 (T26)	07:07	07:41
	21:08			20:46	57	08:40 (T25)	20:01	73	08:57 (T25)	19:08	27	08:19 (T26)	17:23	17:03
6	06:05			06:31		06:53 (T75)	07:02		07:44 (T25)	07:33		07:53 (T26)	07:08	07:42
	21:08			20:45	60	08:42 (T25)	19:58	72	08:56 (T25)	19:07	24	08:17 (T26)	17:22	17:03
7	06:05			06:32		06:54 (T75)	07:03		07:44 (T25)	07:34		07:54 (T26)	07:09	07:43
	21:08			20:44	62	08:44 (T25)	19:56	72	08:56 (T25)	19:05	22	08:16 (T26)	17:21	17:03
8	06:06			06:33		06:55 (T75)	07:04		07:44 (T25)	07:35		07:55 (T26)	07:11	07:44
	21:07			20:42	65	08:46 (T25)	19:54	71	08:55 (T25)	19:03	18	08:13 (T26)	17:20	17:03
9	06:07			06:34		06:56 (T75)	07:05		07:44 (T25)	07:36		07:56 (T26)	07:12	07:45
	21:07			20:41	65	08:47 (T25)	19:52	70	08:54 (T25)	19:02	15	08:11 (T26)	17:19	17:03
10	06:07			06:35		06:57 (T75)	07:06		07:45 (T25)	07:37		08:00 (T26)	07:13	07:46
	21:07			20:40	66	08:48 (T25)	19:51	68	08:53 (T25)	19:00	6	08:06 (T26)	17:18	17:03
11	06:08			06:36		06:58 (T75)	07:07		07:45 (T25)	07:38			07:14	07:47
	21:06			20:39	67	08:50 (T25)	19:49	67	08:52 (T25)	18:58			17:17	17:03
12	06:09			06:37		06:59 (T75)	07:08		07:46 (T25)	07:39			07:15	07:48
	21:06			20:37	66	08:51 (T25)	19:47	65	08:51 (T25)	18:57			17:16	17:03
13	06:10			06:38		07:00 (T75)	07:09		07:46 (T25)	07:40			07:17	07:48
	21:05			20:36	65	08:52 (T25)	19:46	64	08:50 (T25)	18:55			17:15	17:03
14	06:10			06:39		07:01 (T75)	07:10		07:47 (T25)	07:42			07:18	07:49
	21:05			20:35	63	08:53 (T25)	19:44	62	08:49 (T25)	18:54			17:14	17:03
15	06:11			06:40		07:56 (T25)	07:11		07:47 (T25)	07:43			07:19	07:50
	21:04			20:33	58	08:54 (T25)	19:42	59	08:46 (T25)	18:52			17:13	17:03
16	06:12			06:41		07:55 (T25)	07:12		07:48 (T25)	07:44			07:20	07:51
	21:04			20:32	60	08:55 (T25)	19:41	57	08:45 (T25)	18:51			17:12	17:04
17	06:13		07:00 (T75)	06:42		07:54 (T25)	07:13		07:49 (T25)	07:45			07:21	07:51
	21:03	8	07:08 (T75)	20:30	61	08:55 (T25)	19:39	54	08:43 (T25)	18:49			17:11	17:04
18	06:14		06:58 (T75)	06:43		07:53 (T25)	07:14		07:50 (T25)	07:46			07:23	07:52
	21:03	12	07:10 (T75)	20:29	63	08:56 (T25)	19:37	51	08:41 (T25)	18:47			17:11	17:04
19	06:14		06:57 (T75)	06:44		07:51 (T25)	07:15		07:51 (T25)	07:47			07:24	07:53
	21:02	15	07:12 (T75)	20:27	65	08:56 (T25)	19:35	48	08:39 (T25)	18:46			17:10	17:05
20	06:15		06:56 (T75)	06:45		07:50 (T25)	07:16		07:53 (T25)	07:48			07:25	07:53
	21:01	17	07:13 (T75)	20:26	66	08:56 (T25)	19:34	44	08:37 (T25)	18:45			17:09	17:05
21	06:16		06:54 (T75)	06:46		07:49 (T25)	07:17		07:55 (T25)	07:49			07:26	07:54
	21:00	20	07:14 (T75)	20:25	68	08:57 (T25)	19:32	39	08:34 (T25)	18:43			17:09	17:06
22	06:17		06:54 (T75)	06:47		07:49 (T25)	07:18		07:56 (T26)	07:51			07:27	07:54
	21:00	21	07:15 (T75)	20:23	68	08:57 (T25)	19:30	35	08:31 (T25)	18:42			17:08	17:06
23	06:18		06:53 (T75)	06:48		07:48 (T25)	07:19		07:54 (T26)	07:52			07:28	07:55
	20:59	23	07:16 (T75)	20:22	70	08:58 (T25)	19:29	33	08:27 (T25)	18:40			17:07	17:07
24	06:19		06:53 (T75)	06:49		07:47 (T25)	07:20		07:53 (T26)	07:53			07:30	07:55
	20:58	24	07:17 (T75)	20:20	71	08:58 (T25)	19:27	29	08:22 (T26)	18:39			17:07	17:07
25	06:20		06:52 (T75)	06:50		07:47 (T25)	07:22		07:52 (T26)	07:54			07:31	07:56
	20:57	25	07:17 (T75)	20:18	71	08:58 (T25)	19:25	31	08:23 (T26)	18:37			17:06	17:08
26	06:21		06:52 (T75)	06:51		07:46 (T25)	07:23		07:51 (T26)	07:55			07:32	07:56
	20:56	26	07:18 (T75)	20:17	72	08:58 (T25)	19:23	32	08:23 (T26)	18:36			17:06	17:08
27	06:22		06:52 (T75)	06:52		07:46 (T25)	07:24		07:50 (T26)	07:56			07:33	07:56
	20:55	27	07:19 (T75)	20:15	73	08:59 (T25)	19:22	33	08:23 (T26)	18:35			17:05	17:09
28	06:22		06:51 (T75)	06:53		07:45 (T25)	07:25		07:49 (T26)	07:58			07:34	07:57
	20:54	28	07:19 (T75)	20:14	74	08:59 (T25)	19:20	34	08:23 (T26)	18:33			17:05	17:10
29	06:23		06:50 (T75)	06:54		07:45 (T25)	07:26		07:49 (T26)	07:59			07:35	07:57
	20:53	29	07:19 (T75)	20:12	74	08:59 (T25)	19:18	34	08:23 (T26)	18:32			17:04	17:10
30	06:24		06:50 (T75)	06:55		07:45 (T25)	07:27		07:49 (T26)	08:00			07:36	07:57
	20:52	29	07:19 (T75)	20:11	74	08:59 (T25)	19:17	33	08:22 (T26)	18:31			17:04	17:11
31	06:25		06:50 (T75)	06:56		07:44 (T25)				08:01				07:57
	20:51	29	07:19 (T75)	20:09	74	08:58 (T25)				18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		333			1963			1625			239			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.63			0.61			0.58			
Total reduction		0.46			0.38			0.36			0.28			
Total, real		153			755			587			66			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1568 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7445)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April	May	June
1	07:57	15:49 (T30)	07:44	08:04 (T31)	07:07	07:29 (T28)	07:16	06:30	06:01
	17:13 46	16:35 (T30)	17:47 48	16:32 (T30)	18:22 35	08:04 (T28)	19:56	20:27	20:57
2	07:57	15:49 (T30)	07:43	08:03 (T31)	07:06	07:27 (T28)	07:14	06:29	06:01
	17:14 47	16:36 (T30)	17:49 43	16:29 (T30)	18:23 38	08:05 (T28)	19:57	20:28	20:58
3	07:58	15:50 (T30)	07:42	08:03 (T31)	07:04	07:25 (T28)	07:13	06:28	06:00
	17:15 46	16:36 (T30)	17:50 31	08:34 (T31)	18:24 40	08:05 (T28)	19:58	20:29	20:58
4	07:58	15:50 (T30)	07:40	08:03 (T31)	07:02	07:25 (T28)	07:11	06:26	06:00
	17:15 47	16:37 (T30)	17:51 32	08:35 (T31)	18:25 41	08:06 (T28)	19:59	20:30	20:59
5	07:58	15:51 (T30)	07:39	08:03 (T31)	07:01	07:24 (T28)	07:09	06:25	06:00
	17:16 46	16:37 (T30)	17:52 32	08:35 (T31)	18:26 42	08:06 (T28)	20:00	20:31	21:00
6	07:58	15:51 (T30)	07:38	08:02 (T31)	06:59	07:24 (T28)	07:08	06:24	05:59
	17:17 47	16:38 (T30)	17:54 32	08:34 (T31)	18:27 55	18:05 (T27)	20:00	20:32	21:01
7	07:57	15:52 (T30)	07:37	08:03 (T31)	06:58	07:23 (T28)	07:06	06:23	05:59
	17:18 47	16:39 (T30)	17:55 31	08:34 (T31)	18:29 62	18:07 (T27)	20:01	20:33	21:01
8	07:57	15:51 (T30)	07:36	08:04 (T31)	07:56	08:22 (T28)	07:05	06:21	05:59
	17:19 47	16:38 (T30)	17:56 30	08:34 (T31)	19:30 66	19:08 (T27)	20:02	20:34	21:02
9	07:57	15:52 (T30)	07:35	08:04 (T31)	07:54	08:22 (T28)	07:03	06:20	05:59
	17:20 47	16:39 (T30)	17:57 29	08:33 (T31)	19:31 70	19:10 (T27)	20:03	20:35	21:03
10	07:57	15:53 (T30)	07:34	08:05 (T31)	07:53	08:21 (T28)	07:01	06:19	05:58
	17:21 47	16:40 (T30)	17:59 28	08:33 (T31)	19:32 72	19:10 (T27)	20:05	20:37	21:03
11	07:57	15:53 (T30)	07:32	08:06 (T31)	07:51	08:21 (T28)	07:00	06:18	05:58
	17:22 47	16:40 (T30)	18:00 25	08:31 (T31)	19:33 75	19:11 (T27)	20:06	20:38	21:04
12	07:56	15:53 (T30)	07:31	08:07 (T31)	07:50	08:21 (T28)	06:58	06:17	05:58
	17:23 47	16:40 (T30)	18:01 23	08:30 (T31)	19:34 77	19:13 (T27)	20:07	20:39	21:04
13	07:56	15:54 (T30)	07:30	08:09 (T31)	07:48	08:21 (T28)	06:56	06:16	05:58
	17:25 47	16:41 (T30)	18:02 20	08:29 (T31)	19:35 77	19:13 (T27)	20:08	20:40	21:05
14	07:56	15:54 (T30)	07:29	08:11 (T31)	07:46	08:21 (T28)	06:55	06:15	05:58
	17:26 46	16:40 (T30)	18:04 17	08:28 (T31)	19:36 77	19:13 (T27)	20:09	20:41	21:05
15	07:55	15:55 (T30)	07:27	08:13 (T31)	07:45	08:22 (T28)	06:53	06:14	05:58
	17:27 46	16:41 (T30)	18:05 11	08:24 (T31)	19:38 77	19:14 (T27)	20:10	20:42	21:06
16	07:55	15:55 (T30)	07:26		07:43	08:22 (T28)	06:52	06:13	05:58
	17:28 46	16:41 (T30)	18:06		19:39 75	19:13 (T27)	20:11	20:43	21:06
17	07:55	15:56 (T30)	07:25		07:41	08:22 (T28)	06:50	06:12	05:58
	17:29 45	16:41 (T30)	18:07		19:40 74	19:13 (T27)	20:12	20:44	21:06
18	07:54	15:56 (T30)	07:23		07:40	08:23 (T28)	06:49	06:11	05:58
	17:30 45	16:41 (T30)	18:09		19:41 72	19:13 (T27)	20:13	20:45	21:07
19	07:53	15:57 (T30)	07:22		07:38	08:24 (T28)	06:47	06:10	05:58
	17:31 45	16:42 (T30)	18:10		19:42 69	19:12 (T27)	20:14	20:46	21:07
20	07:53	15:58 (T30)	07:21		07:36	08:24 (T28)	06:46	06:09	05:58
	17:33 43	16:41 (T30)	18:11		19:43 66	19:11 (T27)	20:15	20:46	21:07
21	07:52	08:13 (T31)	07:19		07:35	08:26 (T28)	06:44	06:08	05:59
	17:34 49	16:41 (T30)	18:12		19:44 61	19:11 (T27)	20:16	20:47	21:08
22	07:52	08:13 (T31)	07:18		07:33	08:28 (T28)	06:43	06:08	05:59
	17:35 51	16:41 (T30)	18:13		19:45 55	19:10 (T27)	20:17	20:48	21:08
23	07:51	08:12 (T31)	07:16		07:31	08:30 (T28)	06:41	06:07	05:59
	17:36 54	16:41 (T30)	18:15		19:46 48	19:08 (T27)	20:18	20:49	21:08
24	07:50	08:11 (T31)	07:15	07:40 (T28)	07:30	08:34 (T28)	06:40	06:06	05:59
	17:37 54	16:40 (T30)	18:16 13	07:53 (T28)	19:47 37	19:07 (T27)	20:20	20:50	21:08
25	07:50	08:10 (T31)	07:13	07:37 (T28)	07:28	18:42 (T27)	06:38	06:05	06:00
	17:39 55	16:40 (T30)	18:17 20	07:57 (T28)	19:48 23	19:05 (T27)	20:21	20:51	21:08
26	07:49	08:10 (T31)	07:12	07:34 (T28)	07:26	18:44 (T27)	06:37	06:05	06:00
	17:40 55	16:40 (T30)	18:18 25	07:59 (T28)	19:50 18	19:02 (T27)	20:22	20:52	21:09
27	07:48	08:09 (T31)	07:10	07:32 (T28)	07:24	18:46 (T27)	06:36	06:04	06:00
	17:41 55	16:39 (T30)	18:19 29	08:01 (T28)	19:51 12	18:58 (T27)	20:23	20:53	21:09
28	07:47	08:08 (T31)	07:09	07:30 (T28)	07:23		06:34	06:03	06:01
	17:42 55	16:38 (T30)	18:20 32	08:02 (T28)	19:52		20:24	20:54	21:09
29	07:46	08:07 (T31)			07:21		06:33	06:03	06:01
	17:44 55	16:37 (T30)			19:53		20:25	20:55	21:09
30	07:45	08:06 (T31)			07:19		06:31	06:02	06:01
	17:45 54	16:36 (T30)			19:54		20:26	20:55	21:09
31	07:44	08:05 (T31)			07:18			06:02	
	17:46 52	16:35 (T30)			19:55			20:56	
Potential sun hours	297		297		370		399	449	453
Total, worst case	1513		551		1514				
Sun reduction	0.31		0.40		0.44				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	0.71		0.55		0.61				
Total reduction	0.23		0.23		0.27				
Total, real	342		125		414				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1568 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7445)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September			October			November			December		
1	06:02	06:26	06:57			07:27		08:00 (T28)	07:02		07:34 (T31)	07:37		15:35 (T30)
	21:09	20:50	20:07			19:15	77	18:52 (T27)	17:28	28	08:02 (T31)	17:04	47	16:22 (T30)
2	06:02	06:27	06:58			07:29		07:59 (T28)	07:03		07:34 (T31)	07:38		15:36 (T30)
	21:08	20:49	20:06			19:13	75	18:50 (T27)	17:27	29	08:03 (T31)	17:03	47	16:23 (T30)
3	06:03	06:28	06:59			07:30		07:59 (T28)	07:04		07:33 (T31)	07:39		15:36 (T30)
	21:08	20:48	20:04			19:11	74	18:49 (T27)	17:25	30	08:03 (T31)	17:03	47	16:23 (T30)
4	06:03	06:29	07:00			07:31		07:59 (T28)	07:06		07:33 (T31)	07:40		15:36 (T30)
	21:08	20:47	20:02			19:10	71	18:47 (T27)	17:24	31	08:04 (T31)	17:03	47	16:23 (T30)
5	06:04	06:30	07:01			07:32		07:59 (T28)	07:07		07:32 (T31)	07:41		15:37 (T30)
	21:08	20:46	20:01			19:08	68	18:46 (T27)	17:23	32	08:04 (T31)	17:03	47	16:24 (T30)
6	06:05	06:31	07:02			07:33		07:59 (T28)	07:08		07:33 (T31)	07:42		15:37 (T30)
	21:08	20:45	19:57			19:06	65	18:44 (T27)	17:22	32	08:05 (T31)	17:03	47	16:24 (T30)
7	06:05	06:32	07:03			07:34		07:59 (T28)	07:09		07:33 (T31)	07:43		15:38 (T30)
	21:08	20:43	19:56			19:05	59	18:42 (T27)	17:21	31	08:04 (T31)	17:02	46	16:24 (T30)
8	06:06	06:33	07:04			07:35		07:59 (T28)	07:10		07:32 (T31)	07:44		15:38 (T30)
	21:07	20:42	19:54			19:03	49	18:37 (T27)	17:20	32	08:04 (T31)	17:02	47	16:25 (T30)
9	06:07	06:34	07:05			07:36		07:59 (T28)	07:12		07:34 (T31)	07:45		15:38 (T30)
	21:07	20:41	19:52			19:01	42	08:41 (T28)	17:19	44	16:01 (T30)	17:02	46	16:24 (T30)
10	06:07	06:35	07:06			07:37		08:00 (T28)	07:13		07:35 (T31)	07:46		15:38 (T30)
	21:06	20:40	19:51			19:00	40	08:40 (T28)	17:18	49	16:04 (T30)	17:02	47	16:25 (T30)
11	06:08	06:36	07:07			07:38		08:00 (T28)	07:14		07:36 (T31)	07:47		15:39 (T30)
	21:06	20:38	19:49			18:58	39	08:39 (T28)	17:17	52	16:06 (T30)	17:02	46	16:25 (T30)
12	06:09	06:37	07:08			07:39		08:01 (T28)	07:15		07:37 (T31)	07:47		15:40 (T30)
	21:06	20:37	19:47			18:57	37	08:38 (T28)	17:16	53	16:07 (T30)	17:03	46	16:26 (T30)
13	06:09	06:38	07:09			07:40		08:02 (T28)	07:16		07:39 (T31)	07:48		15:40 (T30)
	21:05	20:36	19:45			18:55	34	08:36 (T28)	17:15	55	16:09 (T30)	17:03	47	16:27 (T30)
14	06:10	06:39	07:10			07:41		08:04 (T28)	07:18		07:40 (T31)	07:49		15:41 (T30)
	21:05	20:34	19:44			18:53	31	08:35 (T28)	17:14	55	16:10 (T30)	17:03	46	16:27 (T30)
15	06:11	06:40	07:11			07:42		08:05 (T28)	07:19		07:41 (T31)	07:50		15:41 (T30)
	21:04	20:33	19:42			18:52	28	08:33 (T28)	17:13	55	16:11 (T30)	17:03	46	16:27 (T30)
16	06:12	06:41	07:12		18:36 (T27)	07:44		08:07 (T28)	07:20		07:43 (T31)	07:50		15:42 (T30)
	21:04	20:32	19:40	11	18:47 (T27)	18:50	24	08:31 (T28)	17:12	55	16:13 (T30)	17:03	46	16:28 (T30)
17	06:13	06:42	07:13		18:32 (T27)	07:45		08:09 (T28)	07:21		07:44 (T31)	07:51		15:42 (T30)
	21:03	20:30	19:39	18	18:50 (T27)	18:49	18	08:27 (T28)	17:11	55	16:14 (T30)	17:04	46	16:28 (T30)
18	06:13	06:43	07:14		18:30 (T27)	07:46		08:14 (T28)	07:22		07:45 (T31)	07:52		15:42 (T30)
	21:02	20:29	19:37	22	18:52 (T27)	18:47	8	08:22 (T28)	17:10	54	16:14 (T30)	17:04	46	16:28 (T30)
19	06:14	06:44	07:15		08:23 (T28)	07:47			07:24		07:46 (T31)	07:52		15:43 (T30)
	21:02	20:27	19:35	32	18:53 (T27)	18:46			17:10	54	16:15 (T30)	17:04	46	16:29 (T30)
20	06:15	06:45	07:16		08:17 (T28)	07:48			07:25		07:48 (T31)	07:53		15:43 (T30)
	21:01	20:26	19:33	46	18:54 (T27)	18:44			17:09	51	16:16 (T30)	17:05	46	16:29 (T30)
21	06:16	06:46	07:17		08:14 (T28)	07:49			07:26		07:49 (T31)	07:53		15:44 (T30)
	21:00	20:24	19:32	53	18:55 (T27)	18:43			17:08	49	16:17 (T30)	17:05	46	16:30 (T30)
22	06:17	06:47	07:18		08:11 (T28)	07:50			07:27		15:34 (T30)	07:54		15:44 (T30)
	20:59	20:23	19:30	60	18:55 (T27)	18:41			17:08	43	16:17 (T30)	17:06	46	16:30 (T30)
23	06:18	06:48	07:19		08:09 (T28)	07:51			07:28		15:33 (T30)	07:54		15:45 (T30)
	20:59	20:21	19:28	64	18:55 (T27)	18:40			17:07	45	16:18 (T30)	17:06	46	16:31 (T30)
24	06:19	06:49	07:20		08:07 (T28)	07:53			07:29		15:34 (T30)	07:55		15:45 (T30)
	20:58	20:20	19:27	69	18:55 (T27)	18:39			17:07	45	16:19 (T30)	17:07	46	16:31 (T30)
25	06:20	06:50	07:21		08:06 (T28)	07:54			07:31		15:34 (T30)	07:55		15:45 (T30)
	20:57	20:18	19:25	70	18:55 (T27)	18:37			17:06	45	16:19 (T30)	17:07	46	16:31 (T30)
26	06:20	06:51	07:22		08:05 (T28)	07:55		08:47 (T31)	07:32		15:34 (T30)	07:56		15:46 (T30)
	20:56	20:17	19:23	73	18:55 (T27)	18:36	3	08:50 (T31)	17:05	46	16:20 (T30)	17:08	46	16:32 (T30)
27	06:21	06:52	07:23		08:03 (T28)	07:56		08:42 (T31)	07:33		15:34 (T30)	07:56		15:47 (T30)
	20:55	20:15	19:21	76	18:55 (T27)	18:34	13	08:55 (T31)	17:05	46	16:20 (T30)	17:09	45	16:32 (T30)
28	06:22	06:53	07:24		08:02 (T28)	07:57		08:39 (T31)	07:34		15:34 (T30)	07:56		15:47 (T30)
	20:54	20:14	19:20	77	18:54 (T27)	18:33	18	08:57 (T31)	17:05	46	16:20 (T30)	17:09	46	16:33 (T30)
29	06:23	06:54	07:25		08:01 (T28)	07:58		08:38 (T31)	07:35		15:34 (T30)	07:57		15:48 (T30)
	20:53	20:12	19:18	78	18:54 (T27)	18:32	21	08:59 (T31)	17:04	47	16:21 (T30)	17:10	46	16:34 (T30)
30	06:24	06:55	07:26		08:01 (T28)	08:00		08:36 (T31)	07:36		15:34 (T30)	07:57		15:48 (T30)
	20:52	20:10	19:16	77	18:53 (T27)	18:30	24	09:00 (T31)	17:04	47	16:21 (T30)	17:11	46	16:34 (T30)
31	06:25	06:56				08:01		08:35 (T31)				07:57		15:48 (T30)
	20:51	20:09				18:29	26	09:01 (T31)				17:12	47	16:35 (T30)
Potential sun hours	460	429	375			345			297			287		
Total, worst case				826			944			1336			1435	
Sun reduction				0.59			0.48			0.30			0.22	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.62			0.58			0.66			0.74	
Total reduction				0.37			0.29			0.20			0.17	
Total, real				308			271			272			239	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1583 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7458)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		09:12 (T11)	07:44		16:52 (T74)	07:07			07:16		07:35 (T9)	06:30			06:01		06:44 (T72)
	17:13	64	10:16 (T11)	17:47	16	17:08 (T74)	18:22			19:56	21	07:56 (T9)	20:27			20:57	14	06:58 (T72)
2	07:58		09:12 (T11)	07:43		16:54 (T74)	07:06			07:15		07:34 (T9)	06:29			06:01		06:44 (T72)
	17:14	64	10:16 (T11)	17:49	13	17:07 (T74)	18:23			19:57	23	07:57 (T9)	20:28			20:58	12	06:56 (T72)
3	07:58		09:13 (T11)	07:42		16:57 (T74)	07:04			07:13		07:32 (T9)	06:28		06:47 (T72)	06:00		06:46 (T72)
	17:14	64	10:17 (T11)	17:50	7	17:04 (T74)	18:24			19:58	24	07:56 (T9)	20:29	8	06:55 (T72)	20:59	10	06:56 (T72)
4	07:58		09:14 (T11)	07:41			07:03			07:11		07:30 (T9)	06:26		06:46 (T72)	06:00		06:49 (T72)
	17:15	63	10:17 (T11)	17:51			18:25			19:59	26	07:56 (T9)	20:31	12	06:58 (T72)	21:00	5	06:54 (T72)
5	07:58		09:14 (T11)	07:40		17:23 (T73)	07:01			07:10		07:30 (T9)	06:25		06:45 (T72)	06:00		
	17:16	63	10:17 (T11)	17:52	4	17:27 (T73)	18:26			20:00	26	07:56 (T9)	20:32	14	06:59 (T72)	21:00		
6	07:58		09:15 (T11)	07:39		17:19 (T73)	07:00			07:08		07:30 (T9)	06:24		06:44 (T72)	05:59		
	17:17	65	16:51 (T74)	17:54	11	17:30 (T73)	18:28			20:00	25	07:55 (T9)	20:33	17	07:01 (T72)	21:01		
7	07:58		09:16 (T11)	07:37		17:17 (T73)	06:58			07:06		07:30 (T9)	06:23		06:43 (T72)	05:59		
	17:18	66	16:52 (T74)	17:55	15	17:32 (T73)	18:29			20:02	24	07:54 (T9)	20:34	19	07:02 (T72)	21:02		
8	07:58		09:17 (T11)	07:36		17:14 (T73)	07:56			07:05		07:31 (T9)	06:21		06:42 (T72)	05:59		
	17:19	67	16:53 (T74)	17:56	18	17:32 (T73)	19:30			20:03	22	07:53 (T9)	20:35	21	07:03 (T72)	21:02		
9	07:58		09:17 (T11)	07:35		17:13 (T73)	07:55			07:03		07:31 (T9)	06:20		06:40 (T72)	05:58		
	17:20	69	16:54 (T74)	17:57	21	17:34 (T73)	19:31			20:04	20	07:51 (T9)	20:36	22	07:02 (T72)	21:03		
10	07:57		09:18 (T11)	07:34		17:12 (T73)	07:53			07:01		07:32 (T9)	06:19		06:39 (T72)	05:58		
	17:21	70	16:55 (T74)	17:59	23	17:35 (T73)	19:32			20:05	17	07:49 (T9)	20:37	24	07:03 (T72)	21:03		
11	07:57		09:19 (T11)	07:33		17:12 (T73)	07:51			07:00		07:34 (T9)	06:18		06:38 (T72)	05:58		
	17:22	70	16:56 (T74)	18:00	25	17:37 (T73)	19:33			20:06	14	07:48 (T9)	20:38	25	07:03 (T72)	21:04		
12	07:57		09:20 (T11)	07:31		17:10 (T73)	07:50			06:58		07:37 (T9)	06:17		06:37 (T72)	05:58		
	17:23	71	16:58 (T74)	18:01	28	17:38 (T73)	19:34			20:07	6	07:43 (T9)	20:39	27	07:04 (T72)	21:05		
13	07:56		09:20 (T11)	07:30		17:10 (T73)	07:48			06:57			06:16		06:36 (T72)	05:58		
	17:24	71	16:58 (T74)	18:02	29	17:39 (T73)	19:35			20:08			20:40	28	07:04 (T72)	21:05		
14	07:56		09:21 (T11)	07:29		17:10 (T73)	07:46			06:55			06:15		06:35 (T72)	05:58		
	17:26	72	17:00 (T74)	18:04	31	17:41 (T73)	19:37			20:09			20:41	29	07:04 (T72)	21:06		
15	07:56		09:22 (T11)	07:28		17:09 (T73)	07:45			06:53			06:14		06:34 (T72)	05:58		
	17:27	72	17:01 (T74)	18:05	32	17:41 (T73)	19:38			20:10			20:42	30	07:04 (T72)	21:06		
16	07:55		09:23 (T11)	07:26		17:09 (T73)	07:43			06:52			06:13		06:34 (T72)	05:58		
	17:28	71	17:02 (T74)	18:06	32	17:41 (T73)	19:39			20:11			20:43	30	07:04 (T72)	21:06		
17	07:55		09:23 (T11)	07:25		17:10 (T73)	07:41			06:50			06:12		06:35 (T72)	05:58		
	17:29	73	17:03 (T74)	18:07	32	17:42 (T73)	19:40			20:12			20:44	30	07:05 (T72)	21:07		
18	07:54		09:25 (T11)	07:24		17:09 (T73)	07:40			06:49			06:11		06:35 (T72)	05:58		
	17:30	72	17:05 (T74)	18:09	32	17:41 (T73)	19:41			20:13			20:45	29	07:04 (T72)	21:07		
19	07:54		09:26 (T11)	07:22		17:10 (T73)	07:38			06:47			06:10		06:35 (T72)	05:58		
	17:31	72	17:06 (T74)	18:10	31	17:41 (T73)	19:42			20:14			20:46	29	07:04 (T72)	21:07		
20	07:53		09:26 (T11)	07:21		17:10 (T73)	07:36			06:46			06:09		06:35 (T72)	05:58		
	17:33	72	17:07 (T74)	18:11	30	17:40 (T73)	19:43			20:16			20:47	29	07:04 (T72)	21:08		
21	07:53		09:28 (T11)	07:19		17:11 (T73)	07:35			06:44			06:08		06:35 (T72)	05:58		
	17:34	71	17:09 (T74)	18:12	29	17:40 (T73)	19:44			20:17			20:48	28	07:03 (T72)	21:08		
22	07:52		09:29 (T11)	07:18		17:12 (T73)	07:33			06:43			06:08		06:36 (T72)	05:59		
	17:35	69	17:10 (T74)	18:13	28	17:40 (T73)	19:45			20:18			20:49	28	07:04 (T72)	21:08		
23	07:51		09:30 (T11)	07:16		17:12 (T73)	07:31			06:41			06:07		06:37 (T72)	05:59		
	17:36	68	17:11 (T74)	18:15	26	17:38 (T73)	19:46			20:19			20:50	26	07:03 (T72)	21:09		
24	07:51		09:33 (T11)	07:15		17:14 (T73)	07:30			06:40			06:06		06:37 (T72)	05:59		
	17:37	65	17:12 (T74)	18:16	23	17:37 (T73)	19:48			20:20			20:51	25	07:02 (T72)	21:09		
25	07:50		09:34 (T11)	07:13		17:15 (T73)	07:28			06:38			06:05		06:38 (T72)	05:59		
	17:39	62	17:12 (T74)	18:17	20	17:35 (T73)	19:49			20:21			20:51	25	07:03 (T72)	21:09		
26	07:49		09:36 (T11)	07:12		17:17 (T73)	07:26			06:37			06:05		06:38 (T72)	06:00		
	17:40	58	17:12 (T74)	18:18	17	17:34 (T73)	19:50			20:22			20:52	24	07:02 (T72)	21:09		
27	07:48		09:38 (T11)	07:10		17:20 (T73)	07:25		07:44 (T9)	06:36			06:04		06:39 (T72)	06:00		
	17:41	53	17:12 (T74)	18:19	10	17:30 (T73)	19:51	7	07:51 (T9)	20:23			20:53	22	07:01 (T72)	21:09		
28	07:47		09:41 (T11)	07:09			07:23		07:42 (T9)	06:34			06:03		06:40 (T72)	06:01		
	17:42	46	17:11 (T74)	18:21			19:52	11	07:53 (T9)	20:24			20:54	21	07:01 (T72)	21:09		
29	07:47		09:45 (T11)				07:21		07:40 (T9)	06:33			06:03		06:40 (T72)	06:01		
	17:44	37	17:11 (T74)				19:53	14	07:54 (T9)	20:25			20:55	20	07:00 (T72)	21:09		
30	07:46		16:49 (T74)				07:20		07:39 (T9)	06:31			06:02		06:42 (T72)	06:01		
	17:45	21	17:10 (T74)				19:54	17	07:56 (T9)	20:26			20:56	18	07:00 (T72)	21:09		
31	07:45		16:50 (T74)				07:18		07:37 (T9)				06:02		06:42 (T72)			
	17:46	20	17:10 (T74)				19:55	19	07:56 (T9)				20:57	16	06:58 (T72)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1941			583			68			248			676			41	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.57			0.71			0.64			0.64			0.70			0.70	
Total reduction		0.17			0.27			0.27			0.32			0.39			0.43	
Total, real		333			160			18			80			261			18	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1583 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7458)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		06:48 (T72)	06:57		07:33 (T9)	07:28			07:02		16:42 (T73)	07:37		09:01 (T11)
	21:09			20:50	26	07:14 (T72)	20:07	14	07:47 (T9)	19:15			17:28	23	17:05 (T73)	17:03	71	16:39 (T74)
2	06:02			06:27		06:49 (T72)	06:58		07:31 (T9)	07:29			07:04		16:43 (T73)	07:38		09:01 (T11)
	21:09			20:49	25	07:14 (T72)	20:06	17	07:48 (T9)	19:13			17:27	20	17:03 (T73)	17:03	70	16:38 (T74)
3	06:03			06:28		06:50 (T72)	06:59		07:29 (T9)	07:30			07:05		16:44 (T73)	07:40		09:01 (T11)
	21:09			20:48	23	07:13 (T72)	20:04	20	07:49 (T9)	19:11			17:25	18	17:02 (T73)	17:03	69	16:38 (T74)
4	06:03			06:29		06:51 (T72)	07:00		07:28 (T9)	07:31			07:06		16:46 (T73)	07:41		09:01 (T11)
	21:09			20:47	22	07:13 (T72)	20:03	22	07:50 (T9)	19:10			17:24	14	17:00 (T73)	17:03	67	16:37 (T74)
5	06:04			06:30		06:52 (T72)	07:01		07:27 (T9)	07:32			07:07		16:49 (T73)	07:41		09:01 (T11)
	21:08			20:46	20	07:12 (T72)	20:01	24	07:51 (T9)	19:08			17:23	11	17:00 (T73)	17:03	66	16:37 (T74)
6	06:05			06:31		06:53 (T72)	07:02		07:26 (T9)	07:33			07:08			07:42		09:01 (T11)
	21:08			20:45	18	07:11 (T72)	19:58	25	07:51 (T9)	19:06			17:22			17:02	66	16:37 (T74)
7	06:05			06:32		06:54 (T72)	07:03		07:25 (T9)	07:34			07:10			07:43		09:01 (T11)
	21:08			20:44	16	07:10 (T72)	19:56	26	07:51 (T9)	19:05			17:21			17:02	63	10:04 (T11)
8	06:06		06:57 (T72)	06:33		06:55 (T72)	07:04		07:25 (T9)	07:35			07:11		16:27 (T74)	07:44		09:02 (T11)
	21:08	1	06:58 (T72)	20:42	14	07:09 (T72)	19:54	26	07:51 (T9)	19:03			17:20	9	16:36 (T74)	17:02	63	10:05 (T11)
9	06:07		06:54 (T72)	06:34		06:56 (T72)	07:05		07:26 (T9)	07:36			07:12		16:24 (T74)	07:45		09:02 (T11)
	21:07	8	07:02 (T72)	20:41	11	07:07 (T72)	19:52	24	07:50 (T9)	19:02			17:19	14	16:38 (T74)	17:02	64	10:06 (T11)
10	06:07		06:53 (T72)	06:35		06:57 (T72)	07:06		07:27 (T9)	07:37			07:13		16:23 (T74)	07:46		09:02 (T11)
	21:07	11	07:04 (T72)	20:40	7	07:04 (T72)	19:51	23	07:50 (T9)	19:00			17:18	16	16:39 (T74)	17:02	65	10:07 (T11)
11	06:08		06:51 (T72)	06:36			07:07		07:28 (T9)	07:38			07:14		16:22 (T74)	07:47		09:03 (T11)
	21:06	14	07:05 (T72)	20:39			19:49	21	07:49 (T9)	18:58			17:17	20	16:42 (T74)	17:02	64	10:07 (T11)
12	06:09		06:51 (T72)	06:37			07:08		07:29 (T9)	07:39			07:16		16:21 (T74)	07:48		09:02 (T11)
	21:06	15	07:06 (T72)	20:37			19:47	19	07:48 (T9)	18:57			17:16	21	16:42 (T74)	17:03	65	10:07 (T11)
13	06:09		06:50 (T72)	06:38			07:09		07:29 (T9)	07:40			07:17		09:17 (T11)	07:49		09:03 (T11)
	21:06	18	07:08 (T72)	20:36			19:46	17	07:46 (T9)	18:55			17:15	37	16:43 (T74)	17:03	65	10:08 (T11)
14	06:10		06:50 (T72)	06:39			07:10		07:30 (T9)	07:42			07:18		09:13 (T11)	07:49		09:04 (T11)
	21:05	19	07:09 (T72)	20:35			19:44	15	07:45 (T9)	18:54			17:14	46	16:43 (T74)	17:03	65	10:09 (T11)
15	06:11		06:49 (T72)	06:40			07:11		07:31 (T9)	07:43		17:51 (T73)	07:19		09:11 (T11)	07:50		09:04 (T11)
	21:04	20	07:09 (T72)	20:33			19:42	12	07:43 (T9)	18:52	13	18:04 (T73)	17:13	53	16:45 (T74)	17:03	65	10:09 (T11)
16	06:12		06:48 (T72)	06:41			07:12		07:32 (T9)	07:44		17:48 (T73)	07:20		09:09 (T11)	07:51		09:04 (T11)
	21:04	22	07:10 (T72)	20:32			19:41	8	07:40 (T9)	18:50	18	18:06 (T73)	17:12	58	16:45 (T74)	17:03	65	10:09 (T11)
17	06:13		06:48 (T72)	06:42			07:13			07:45		17:45 (T73)	07:22		09:07 (T11)	07:51		09:05 (T11)
	21:03	23	07:11 (T72)	20:30			19:39			18:49	22	18:07 (T73)	17:11	62	16:45 (T74)	17:04	65	10:10 (T11)
18	06:13		06:48 (T72)	06:43			07:14			07:46		17:44 (T73)	07:23		09:06 (T11)	07:52		09:06 (T11)
	21:03	24	07:12 (T72)	20:29			19:37			18:47	24	18:08 (T73)	17:10	65	16:45 (T74)	17:04	65	10:11 (T11)
19	06:14		06:47 (T72)	06:44			07:15			07:47		17:43 (T73)	07:24		09:05 (T11)	07:53		09:05 (T11)
	21:02	26	07:13 (T72)	20:28			19:35			18:46	27	18:10 (T73)	17:10	68	16:46 (T74)	17:04	66	10:11 (T11)
20	06:15		06:46 (T72)	06:45			07:16			07:48		17:42 (T73)	07:25		09:04 (T11)	07:53		09:06 (T11)
	21:01	26	07:12 (T72)	20:26			19:34			18:44	28	18:10 (T73)	17:09	69	16:45 (T74)	17:05	66	10:12 (T11)
21	06:16		06:46 (T72)	06:46			07:17			07:49		17:41 (T73)	07:26		09:03 (T11)	07:54		09:06 (T11)
	21:01	27	07:13 (T72)	20:25			19:32			18:43	30	18:11 (T73)	17:08	71	16:44 (T74)	17:05	66	10:12 (T11)
22	06:17		06:46 (T72)	06:47			07:18			07:51		17:40 (T73)	07:27		09:02 (T11)	07:54		09:07 (T11)
	21:00	28	07:14 (T72)	20:23			19:30			18:41	31	18:11 (T73)	17:08	72	16:43 (T74)	17:06	66	10:13 (T11)
23	06:18		06:46 (T72)	06:48			07:19			07:52		17:39 (T73)	07:29		09:03 (T11)	07:55		09:07 (T11)
	20:59	28	07:14 (T72)	20:22			19:28			18:40	32	18:11 (T73)	17:07	72	16:43 (T74)	17:06	66	10:13 (T11)
24	06:19		06:46 (T72)	06:49			07:20			07:53		17:40 (T73)	07:30		09:02 (T11)	07:55		09:08 (T11)
	20:58	28	07:14 (T72)	20:20			19:27			18:39	32	18:12 (T73)	17:07	72	16:42 (T74)	17:07	66	10:14 (T11)
25	06:19		06:46 (T72)	06:50			07:21			07:54		17:39 (T73)	07:31		09:01 (T11)	07:56		09:08 (T11)
	20:57	29	07:15 (T72)	20:19			19:25			18:37	32	18:11 (T73)	17:06	73	16:41 (T74)	17:07	66	10:14 (T11)
26	06:20		06:46 (T72)	06:51			07:22			07:55		17:39 (T73)	07:32		09:01 (T11)	07:56		09:09 (T11)
	20:56	29	07:15 (T72)	20:17			19:23			18:36	32	18:11 (T73)	17:05	71	16:40 (T74)	17:08	65	10:14 (T11)
27	06:21		06:45 (T72)	06:52			07:24			07:56		17:39 (T73)	07:33		09:01 (T11)	07:56		09:09 (T11)
	20:55	29	07:14 (T72)	20:15			19:22			18:34	31	18:10 (T73)	17:05	72	16:40 (T74)	17:09	65	10:14 (T11)
28	06:22		06:45 (T72)	06:53			07:25			07:58		17:40 (T73)	07:34		09:01 (T11)	07:57		09:10 (T11)
	20:55	30	07:15 (T72)	20:14			19:20			18:33	30	18:10 (T73)	17:05	72	16:40 (T74)	17:09	65	10:15 (T11)
29	06:23		06:45 (T72)	06:54			07:26			07:59		17:40 (T73)	07:35		09:01 (T11)	07:57		09:10 (T11)
	20:54	30	07:15 (T72)	20:12			19:18			18:32	29	18:09 (T73)	17:04	72	16:40 (T74)	17:10	66	10:16 (T11)
30	06:24		06:46 (T72)	06:55			07:27			08:00		17:40 (T73)	07:36		09:01 (T11)	07:57		09:11 (T11)
	20:53	29	07:15 (T72)	20:11			19:17			18:30	27	18:07 (T73)	17:04	71	16:39 (T74)	17:11	65	10:16 (T11)
31	06:25		06:47 (T72)	06:56		07:37 (T9)				08:01		17:41 (T73)				07:57		09:11 (T11)
	20:52	27	07:14 (T72)	20:09	6	07:43 (T9)				18:29	24	18:05 (T73)				17:12	65	10:16 (T11)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		541			188			313			462			1342			2036	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.70			0.70			0.64			0.71			0.61			0.53	
Total reduction		0.45			0.41			0.36			0.33			0.18			0.11	
Total, real		242			77			114			151			236			229	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1603 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7476)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:58		15:38 (T13)	07:44		17:11 (T12)	07:07	07:16			06:30		19:11 (T10)	06:01		19:57 (T9)
	17:13	45	16:23 (T13)	17:47	12	17:23 (T12)	18:22	19:56			20:27	31	19:42 (T10)	20:57	26	20:23 (T9)
2	07:58		15:39 (T13)	07:43		17:10 (T12)	07:06	07:14			06:29		19:12 (T10)	06:01		19:57 (T9)
	17:13	44	16:23 (T13)	17:48	14	17:24 (T12)	18:23	19:57			20:28	28	19:40 (T10)	20:58	25	20:22 (T9)
3	07:58		15:39 (T13)	07:42		17:09 (T12)	07:04	07:13			06:27		19:13 (T10)	06:00		19:57 (T9)
	17:14	45	16:24 (T13)	17:50	17	17:26 (T12)	18:24	19:58			20:29	26	19:39 (T10)	20:59	26	20:23 (T9)
4	07:58		15:40 (T13)	07:41		17:08 (T12)	07:03	07:11			06:26		19:15 (T10)	06:00		19:58 (T9)
	17:15	44	16:24 (T13)	17:51	19	17:27 (T12)	18:25	19:59			20:30	22	19:37 (T10)	20:59	25	20:23 (T9)
5	07:58		15:41 (T13)	07:40		17:07 (T12)	07:01	07:09			06:25		19:17 (T10)	05:59		19:58 (T9)
	17:16	43	16:24 (T13)	17:52	22	17:29 (T12)	18:26	20:00			20:31	19	19:36 (T10)	21:00	24	20:22 (T9)
6	07:58		15:41 (T13)	07:38		17:07 (T12)	06:59	07:08			06:24		19:20 (T10)	05:59		19:59 (T9)
	17:17	44	16:25 (T13)	17:54	23	17:30 (T12)	18:27	20:00			20:33	13	19:33 (T10)	21:01	23	20:22 (T9)
7	07:58		15:42 (T13)	07:37		17:05 (T12)	06:58	07:06			06:22		19:25 (T10)	05:59		20:00 (T9)
	17:18	43	16:25 (T13)	17:55	26	17:31 (T12)	18:29	20:01			20:34	9	20:11 (T9)	21:01	22	20:22 (T9)
8	07:58		15:43 (T13)	07:36		17:05 (T12)	07:56	07:05		19:26 (T10)	06:21		20:01 (T9)	05:59		20:01 (T9)
	17:19	43	16:26 (T13)	17:56	27	17:32 (T12)	19:30	20:03	12	19:38 (T10)	20:35	10	20:11 (T9)	21:02	21	20:22 (T9)
9	07:57		15:43 (T13)	07:35		17:05 (T12)	07:55	07:03		19:22 (T10)	06:20		19:59 (T9)	05:58		20:00 (T9)
	17:20	42	16:25 (T13)	17:57	29	17:34 (T12)	19:31	20:04	19	19:41 (T10)	20:36	14	20:13 (T9)	21:03	21	20:21 (T9)
10	07:57		15:44 (T13)	07:34		17:05 (T12)	07:53	07:01		19:19 (T10)	06:19		19:58 (T9)	05:58		20:01 (T9)
	17:21	41	16:25 (T13)	17:59	30	17:35 (T12)	19:32	20:05	23	19:42 (T10)	20:37	16	20:14 (T9)	21:03	20	20:21 (T9)
11	07:57		15:45 (T13)	07:33		17:06 (T12)	07:51	07:00		19:17 (T10)	06:18		19:57 (T9)	05:58		20:02 (T9)
	17:22	41	16:26 (T13)	18:00	29	17:35 (T12)	19:33	20:06	28	19:45 (T10)	20:38	18	20:15 (T9)	21:04	19	20:21 (T9)
12	07:57		15:45 (T13)	07:31		17:05 (T12)	07:50	06:58		19:15 (T10)	06:17		19:56 (T9)	05:58		20:03 (T9)
	17:23	40	16:25 (T13)	18:01	30	17:35 (T12)	19:34	20:07	30	19:45 (T10)	20:39	20	20:16 (T9)	21:04	18	20:21 (T9)
13	07:56		15:46 (T13)	07:30		17:06 (T12)	07:48	06:56		19:14 (T10)	06:16		19:55 (T9)	05:58		20:03 (T9)
	17:24	39	16:25 (T13)	18:02	29	17:35 (T12)	19:35	20:08	33	19:47 (T10)	20:40	21	20:16 (T9)	21:05	18	20:21 (T9)
14	07:56		15:48 (T13)	07:29		17:06 (T12)	07:46	06:55		19:12 (T10)	06:15		19:55 (T9)	05:58		20:04 (T9)
	17:25	38	16:26 (T13)	18:04	29	17:35 (T12)	19:36	20:09	35	19:47 (T10)	20:41	22	20:17 (T9)	21:05	17	20:21 (T9)
15	07:56		15:48 (T13)	07:27		17:06 (T12)	07:45	06:53		19:11 (T10)	06:14		19:54 (T9)	05:58		20:04 (T9)
	17:27	37	16:25 (T13)	18:05	27	17:33 (T12)	19:38	20:10	36	19:47 (T10)	20:42	24	20:18 (T9)	21:06	16	20:20 (T9)
16	07:55		15:50 (T13)	07:26		17:07 (T12)	07:43	06:52		19:11 (T10)	06:13		19:54 (T9)	05:58		20:05 (T9)
	17:28	35	16:25 (T13)	18:06	26	17:33 (T12)	19:39	20:11	37	19:48 (T10)	20:43	25	20:19 (T9)	21:06	15	20:20 (T9)
17	07:55		15:50 (T13)	07:25		17:09 (T12)	07:41	06:50		19:09 (T10)	06:12		19:53 (T9)	05:58		20:05 (T9)
	17:29	34	16:24 (T13)	18:07	24	17:33 (T12)	19:40	20:12	39	19:48 (T10)	20:44	27	20:20 (T9)	21:07	15	20:20 (T9)
18	07:54		15:52 (T13)	07:23		17:09 (T12)	07:40	06:49		19:09 (T10)	06:11		19:54 (T9)	05:58		20:05 (T9)
	17:30	32	16:24 (T13)	18:08	22	17:31 (T12)	19:41	20:13	39	19:48 (T10)	20:45	28	20:22 (T9)	21:07	15	20:20 (T9)
19	07:54		15:53 (T13)	07:22		17:11 (T12)	07:38	06:47		19:08 (T10)	06:10		19:54 (T9)	05:58		20:06 (T9)
	17:31	31	16:24 (T13)	18:10	19	17:30 (T12)	19:42	20:14	40	19:48 (T10)	20:46	28	20:22 (T9)	21:07	14	20:20 (T9)
20	07:53		15:54 (T13)	07:21		17:13 (T12)	07:36	06:46		19:08 (T10)	06:09		19:53 (T9)	05:58		20:07 (T9)
	17:32	28	16:22 (T13)	18:11	14	17:27 (T12)	19:43	20:15	40	19:48 (T10)	20:47	30	20:23 (T9)	21:08	14	20:21 (T9)
21	07:53		15:57 (T13)	07:19		17:17 (T12)	07:35	06:44		19:08 (T10)	06:08		19:53 (T9)	05:58		20:07 (T9)
	17:34	25	16:22 (T13)	18:12	6	17:23 (T12)	19:44	20:16	40	19:48 (T10)	20:48	31	20:24 (T9)	21:08	14	20:21 (T9)
22	07:52		15:58 (T13)	07:18			07:33	06:43		19:08 (T10)	06:07		19:53 (T9)	05:59		20:07 (T9)
	17:35	23	16:21 (T13)	18:13			19:45	20:18	40	19:48 (T10)	20:49	30	20:23 (T9)	21:08	14	20:21 (T9)
23	07:51		16:00 (T13)	07:16			07:31	06:41		19:08 (T10)	06:07		19:54 (T9)	05:59		20:07 (T9)
	17:36	19	16:19 (T13)	18:15			19:46	20:19	40	19:48 (T10)	20:50	30	20:24 (T9)	21:08	14	20:21 (T9)
24	07:50		16:03 (T13)	07:15			07:30	06:40		19:08 (T10)	06:06		19:54 (T9)	05:59		20:07 (T9)
	17:37	13	16:16 (T13)	18:16			19:47	20:20	39	19:47 (T10)	20:50	30	20:24 (T9)	21:09	15	20:22 (T9)
25	07:50			07:13			07:28	06:38		19:08 (T10)	06:05		19:53 (T9)	05:59		20:07 (T9)
	17:38			18:17			19:48	20:21	39	19:47 (T10)	20:51	30	20:23 (T9)	21:09	15	20:22 (T9)
26	07:49			07:12			07:26	06:37		19:08 (T10)	06:05		19:54 (T9)	06:00		20:07 (T9)
	17:40			18:18			19:50	20:22	38	19:46 (T10)	20:52	30	20:24 (T9)	21:09	15	20:22 (T9)
27	07:48			07:10			07:24	06:35		19:09 (T10)	06:04		19:54 (T9)	06:00		20:07 (T9)
	17:41			18:19			19:51	20:23	36	19:45 (T10)	20:53	29	20:23 (T9)	21:09	16	20:23 (T9)
28	07:47			07:09			07:23	06:34		19:09 (T10)	06:03		19:55 (T9)	06:00		20:07 (T9)
	17:42			18:20			19:52	20:24	36	19:45 (T10)	20:54	29	20:24 (T9)	21:09	16	20:23 (T9)
29	07:46						07:21	06:33		19:09 (T10)	06:03		19:55 (T9)	06:01		20:06 (T9)
	17:43						19:53	20:25	35	19:44 (T10)	20:55	28	20:23 (T9)	21:09	18	20:24 (T9)
30	07:46						07:19	06:31		19:10 (T10)	06:02		19:56 (T9)	06:01		20:07 (T9)
	17:45						19:54	20:26	33	19:43 (T10)	20:56	28	20:24 (T9)	21:09	18	20:25 (T9)
31	07:45		17:13 (T12)				07:18				06:02		19:56 (T9)			
	17:46	8	17:21 (T12)				19:55				20:56	27	20:23 (T9)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		877			474				787			753			549	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.74			0.71				0.58			0.56			0.55	
Total reduction		0.24			0.30				0.32			0.33			0.37	
Total, real		212			142				250			251			204	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1603 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7476)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:06 (T9)	06:26		20:07 (T9)	06:57		19:16 (T10)	07:28			07:02		16:35 (T12)	07:37		15:27 (T13)
	21:09	19	20:25 (T9)	20:50	19	20:26 (T9)	20:07	27	19:43 (T10)	19:15			17:28	30	17:05 (T12)	17:03	41	16:08 (T13)
2	06:02		20:06 (T9)	06:27		20:08 (T9)	06:58		19:18 (T10)	07:29			07:03		16:35 (T12)	07:38		15:27 (T13)
	21:09	20	20:26 (T9)	20:49	17	20:25 (T9)	20:06	23	19:41 (T10)	19:13			17:27	28	17:03 (T12)	17:03	41	16:08 (T13)
3	06:03		20:06 (T9)	06:28		20:09 (T9)	06:59		19:20 (T10)	07:30			07:05		16:35 (T12)	07:39		15:27 (T13)
	21:09	20	20:26 (T9)	20:48	15	20:24 (T9)	20:04	19	19:39 (T10)	19:11			17:25	27	17:02 (T12)	17:03	42	16:09 (T13)
4	06:03		20:06 (T9)	06:29		20:11 (T9)	07:00		19:23 (T10)	07:31			07:06		16:35 (T12)	07:40		15:27 (T13)
	21:08	21	20:27 (T9)	20:47	12	20:23 (T9)	20:02	12	19:35 (T10)	19:10			17:24	25	17:00 (T12)	17:03	43	16:10 (T13)
5	06:04		20:05 (T9)	06:30		20:13 (T9)	07:01			07:32			07:07		16:37 (T12)	07:41		15:27 (T13)
	21:08	22	20:27 (T9)	20:46	9	20:22 (T9)	20:01			19:08			17:23	23	17:00 (T12)	17:03	43	16:10 (T13)
6	06:05		20:05 (T9)	06:31		19:32 (T10)	07:02			07:33			07:08		16:37 (T12)	07:42		15:27 (T13)
	21:08	23	20:28 (T9)	20:45	11	20:20 (T9)	19:57			19:06			17:22	21	16:58 (T12)	17:02	44	16:11 (T13)
7	06:05		20:06 (T9)	06:32		19:28 (T10)	07:03			07:34			07:09		16:38 (T12)	07:43		15:28 (T13)
	21:08	23	20:29 (T9)	20:44	16	19:44 (T10)	19:56			19:05			17:21	19	16:57 (T12)	17:02	44	16:12 (T13)
8	06:06		20:05 (T9)	06:33		19:26 (T10)	07:04			07:35			07:11		16:40 (T12)	07:44		15:28 (T13)
	21:07	24	20:29 (T9)	20:42	20	19:46 (T10)	19:54			19:03			17:20	16	16:56 (T12)	17:02	44	16:12 (T13)
9	06:06		20:05 (T9)	06:34		19:24 (T10)	07:05			07:36			07:12		16:41 (T12)	07:45		15:28 (T13)
	21:07	25	20:30 (T9)	20:41	24	19:48 (T10)	19:52			19:01			17:19	14	16:55 (T12)	17:02	45	16:13 (T13)
10	06:07		20:05 (T9)	06:35		19:22 (T10)	07:06			07:37			07:13		16:42 (T12)	07:46		15:29 (T13)
	21:07	26	20:31 (T9)	20:40	27	19:49 (T10)	19:51			19:00			17:18	12	16:54 (T12)	17:02	44	16:13 (T13)
11	06:08		20:04 (T9)	06:36		19:21 (T10)	07:07			07:38			07:14		16:44 (T12)	07:47		15:28 (T13)
	21:06	26	20:30 (T9)	20:38	29	19:50 (T10)	19:49			18:58			17:17	8	16:52 (T12)	17:02	45	16:13 (T13)
12	06:09		20:04 (T9)	06:37		19:19 (T10)	07:08			07:39			07:15			07:48		15:29 (T13)
	21:06	27	20:31 (T9)	20:37	31	19:50 (T10)	19:47			18:57			17:16			17:02	45	16:14 (T13)
13	06:09		20:04 (T9)	06:38		19:18 (T10)	07:09			07:40			07:17			07:48		15:29 (T13)
	21:05	28	20:32 (T9)	20:36	33	19:51 (T10)	19:46			18:55			17:15			17:03	46	16:15 (T13)
14	06:10		20:04 (T9)	06:39		19:17 (T10)	07:10			07:41			07:18			07:49		15:30 (T13)
	21:05	29	20:33 (T9)	20:34	34	19:51 (T10)	19:44			18:53			17:14			17:03	45	16:15 (T13)
15	06:11		20:04 (T9)	06:40		19:16 (T10)	07:11			07:43			07:19			07:50		15:30 (T13)
	21:04	28	20:32 (T9)	20:33	36	19:52 (T10)	19:42			18:52			17:13			17:03	45	16:15 (T13)
16	06:12		20:04 (T9)	06:41		19:15 (T10)	07:12			07:44			07:20			07:51		15:30 (T13)
	21:04	29	20:33 (T9)	20:32	37	19:52 (T10)	19:40			18:50			17:12			17:03	46	16:16 (T13)
17	06:12		20:04 (T9)	06:42		19:14 (T10)	07:13			07:45			07:21			07:51		15:31 (T13)
	21:03	29	20:33 (T9)	20:30	39	19:53 (T10)	19:39			18:49			17:11			17:04	46	16:17 (T13)
18	06:13		20:04 (T9)	06:43		19:14 (T10)	07:14			07:46			07:23		15:37 (T13)	07:52		15:31 (T13)
	21:03	30	20:34 (T9)	20:29	39	19:53 (T10)	19:37			18:47			17:10	13	15:50 (T13)	17:04	46	16:17 (T13)
19	06:14		20:03 (T9)	06:44		19:13 (T10)	07:15			07:47			07:24		15:35 (T13)	07:53		15:32 (T13)
	21:02	30	20:33 (T9)	20:27	40	19:53 (T10)	19:35			18:46			17:10	19	15:54 (T13)	17:04	46	16:18 (T13)
20	06:15		20:03 (T9)	06:45		19:13 (T10)	07:16			07:48			07:25		15:33 (T13)	07:53		15:33 (T13)
	21:01	30	20:33 (T9)	20:26	40	19:53 (T10)	19:34			18:44			17:09	23	15:56 (T13)	17:05	45	16:18 (T13)
21	06:16		20:03 (T9)	06:46		19:13 (T10)	07:17			07:49		17:46 (T12)	07:26		15:32 (T13)	07:54		15:33 (T13)
	21:00	31	20:34 (T9)	20:24	40	19:53 (T10)	19:32			18:43	9	17:55 (T12)	17:08	25	15:57 (T13)	17:05	45	16:18 (T13)
22	06:17		20:03 (T9)	06:47		19:12 (T10)	07:18			07:50		17:43 (T12)	07:27		15:30 (T13)	07:54		15:34 (T13)
	21:00	31	20:34 (T9)	20:23	41	19:53 (T10)	19:30			18:41	15	17:58 (T12)	17:08	28	15:58 (T13)	17:06	45	16:19 (T13)
23	06:18		20:04 (T9)	06:48		19:12 (T10)	07:19			07:52		17:40 (T12)	07:28		15:30 (T13)	07:55		15:34 (T13)
	20:59	30	20:34 (T9)	20:21	40	19:52 (T10)	19:28			18:40	20	18:00 (T12)	17:07	31	16:01 (T13)	17:06	45	16:19 (T13)
24	06:18		20:04 (T9)	06:49		19:12 (T10)	07:20			07:53		17:40 (T12)	07:30		15:29 (T13)	07:55		15:34 (T13)
	20:58	29	20:33 (T9)	20:20	40	19:52 (T10)	19:27			18:38	22	18:02 (T12)	17:06	32	16:01 (T13)	17:07	46	16:20 (T13)
25	06:19		20:04 (T9)	06:50		19:12 (T10)	07:21			07:54		17:38 (T12)	07:31		15:28 (T13)	07:56		15:35 (T13)
	20:57	29	20:33 (T9)	20:18	39	19:51 (T10)	19:25			18:37	24	18:02 (T12)	17:06	34	16:02 (T13)	17:07	46	16:21 (T13)
26	06:20		20:04 (T9)	06:51		19:12 (T10)	07:22			07:55		17:37 (T12)	07:32		15:28 (T13)	07:56		15:35 (T13)
	20:56	27	20:31 (T9)	20:17	39	19:51 (T10)	19:23			18:36	26	18:03 (T12)	17:05	35	16:03 (T13)	17:08	46	16:21 (T13)
27	06:21		20:04 (T9)	06:52		19:12 (T10)	07:23			07:56		17:36 (T12)	07:33		15:27 (T13)	07:56		15:35 (T13)
	20:55	26	20:30 (T9)	20:15	38	19:50 (T10)	19:22			18:34	27	18:03 (T12)	17:05	37	16:04 (T13)	17:09	46	16:21 (T13)
28	06:22		20:04 (T9)	06:53		19:13 (T10)	07:24			07:57		17:35 (T12)	07:34		15:27 (T13)	07:57		15:36 (T13)
	20:54	25	20:29 (T9)	20:14	36	19:49 (T10)	19:20			18:33	28	18:03 (T12)	17:04	38	16:05 (T13)	17:09	46	16:22 (T13)
29	06:23		20:05 (T9)	06:54		19:13 (T10)	07:25			07:59		17:35 (T12)	07:35		15:28 (T13)	07:57		15:37 (T13)
	20:53	23	20:28 (T9)	20:12	35	19:48 (T10)	19:18			18:32	29	18:04 (T12)	17:04	38	16:06 (T13)	17:10	45	16:22 (T13)
30	06:24		20:05 (T9)	06:55		19:14 (T10)	07:27			08:00		17:35 (T12)	07:36		15:27 (T13)	07:57		15:37 (T13)
	20:52	23	20:28 (T9)	20:11	33	19:47 (T10)	19:16			18:30	29	18:04 (T12)	17:04	40	16:07 (T13)	17:11	46	16:23 (T13)
31	06:25		20:06 (T9)	06:56		19:15 (T10)				08:01		17:35 (T12)				07:57		15:38 (T13)
	20:51	21	20:27 (T9)	20:09	30	19:45 (T10)				18:29	29	18:04 (T12)				17:12	45	16:23 (T13)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		804			939			81			258			616			1387	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.58			0.58			0.71			0.73			0.74	
Total reduction		0.38			0.37			0.36			0.36			0.23			0.17	
Total, real		308			348			29			93			142			238	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1620 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7491)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:57	07:43		08:04 (T44)	07:07			07:16		07:35 (T77)	06:30			06:02		06:29 (T42)
	17:13	17:48	8	08:12 (T44)	18:22			19:56	29	08:04 (T77)	20:27			20:57	38	07:07 (T42)
2	07:57	07:42		08:03 (T44)	07:06			07:15		07:33 (T77)	06:29			06:01		06:29 (T42)
	17:14	17:49	12	08:15 (T44)	18:23			19:57	31	08:04 (T77)	20:28			20:58	39	07:08 (T42)
3	07:57	07:41		08:02 (T44)	07:04			07:13		07:32 (T77)	06:28			06:01		06:29 (T42)
	17:15	17:50	15	08:17 (T44)	18:24			19:58	33	08:05 (T77)	20:29			20:58	38	07:07 (T42)
4	07:58	07:40		08:01 (T44)	07:03			07:11		07:31 (T77)	06:26			06:00		06:29 (T42)
	17:16	17:51	17	08:18 (T44)	18:25			19:59	34	08:05 (T77)	20:30			20:59	39	07:08 (T42)
5	07:57	07:39		08:00 (T44)	07:01			07:10		07:31 (T77)	06:25			06:00		06:30 (T42)
	17:17	17:53	20	08:20 (T44)	18:26			20:00	35	08:06 (T77)	20:31			21:00	38	07:08 (T42)
6	07:57	07:38		07:58 (T44)	06:59			07:08		07:30 (T77)	06:24			06:00		06:29 (T42)
	17:18	17:54	22	08:20 (T44)	18:28			20:00	35	08:05 (T77)	20:32			21:01	38	07:07 (T42)
7	07:57	07:37		07:57 (T44)	06:58			07:06		07:29 (T77)	06:23			05:59		06:30 (T42)
	17:19	17:55	24	08:21 (T44)	18:29			20:01	36	08:05 (T77)	20:33			21:01	38	07:08 (T42)
8	07:57	07:36		07:56 (T44)	07:56			07:05		07:30 (T77)	06:22			05:59		06:30 (T42)
	17:20	17:56	25	08:21 (T44)	19:30			20:02	35	08:05 (T77)	20:34			21:02	38	07:08 (T42)
9	07:57	07:35		07:55 (T44)	07:55			07:03		07:29 (T77)	06:20			05:59		06:31 (T42)
	17:21	17:58	27	08:22 (T44)	19:31			20:04	35	08:04 (T77)	20:35			21:02	37	07:08 (T42)
10	07:57	07:34		07:54 (T44)	07:53			07:01		07:29 (T77)	06:19		06:42 (T42)	05:59		06:31 (T42)
	17:22	17:59	29	08:23 (T44)	19:32			20:05	34	08:03 (T77)	20:36	10	06:52 (T42)	21:03	38	07:09 (T42)
11	07:57	07:32		07:53 (T44)	07:51			07:00		07:29 (T77)	06:18		06:38 (T42)	05:58		06:32 (T42)
	17:23	18:00	29	08:22 (T44)	19:33			20:06	34	08:03 (T77)	20:38	16	06:54 (T42)	21:04	37	07:09 (T42)
12	07:56	07:31		07:53 (T44)	07:50			06:58		07:29 (T77)	06:17		06:37 (T42)	05:58		06:32 (T42)
	17:24	18:01	29	08:22 (T44)	19:34			20:07	33	08:02 (T77)	20:39	19	06:56 (T42)	21:04	37	07:09 (T42)
13	07:56	07:30		07:53 (T44)	07:48			06:57		07:30 (T77)	06:16		06:36 (T42)	05:58		06:31 (T42)
	17:25	18:03	30	08:23 (T44)	19:35			20:08	31	08:01 (T77)	20:40	22	06:58 (T42)	21:05	37	07:08 (T42)
14	07:56	07:29		07:54 (T44)	07:46			06:55		07:30 (T77)	06:15		06:36 (T42)	05:58		06:31 (T42)
	17:26	18:04	29	08:23 (T44)	19:37			20:09	29	07:59 (T77)	20:41	24	07:00 (T42)	21:05	37	07:08 (T42)
15	07:55	07:27		07:54 (T44)	07:45			06:53		07:32 (T77)	06:14		06:35 (T42)	05:58		06:32 (T42)
	17:27	18:05	28	08:22 (T44)	19:38			20:10	27	07:59 (T77)	20:42	26	07:01 (T42)	21:06	36	07:08 (T42)
16	07:55	07:26		07:54 (T44)	07:43			06:52		07:32 (T77)	06:13		06:34 (T42)	05:58		06:33 (T42)
	17:28	18:06	27	08:21 (T44)	19:39			20:11	24	07:56 (T77)	20:43	28	07:02 (T42)	21:06	37	07:10 (T42)
17	07:54	07:25		07:55 (T44)	07:41			06:50		07:34 (T77)	06:12		06:33 (T42)	05:58		06:33 (T42)
	17:29	18:07	25	08:20 (T44)	19:40			20:12	21	07:55 (T77)	20:44	30	07:03 (T42)	21:06	37	07:10 (T42)
18	07:54	07:23		07:56 (T44)	07:40			06:49		07:36 (T77)	06:11		06:32 (T42)	05:58		06:33 (T42)
	17:30	18:09	23	08:19 (T44)	19:41			20:13	16	07:52 (T77)	20:45	31	07:03 (T42)	21:07	37	07:10 (T42)
19	07:53	07:22		07:57 (T44)	07:38			06:47		07:40 (T77)	06:10		06:31 (T42)	05:58		06:33 (T42)
	17:32	18:10	21	08:18 (T44)	19:42			20:14	9	07:49 (T77)	20:45	33	07:04 (T42)	21:07	37	07:10 (T42)
20	07:53	07:21		07:58 (T44)	07:36			06:46			06:09		06:30 (T42)	05:59		06:33 (T42)
	17:33	18:11	18	08:16 (T44)	19:43			20:15			20:46	34	07:04 (T42)	21:07	37	07:10 (T42)
21	07:52	07:19		08:01 (T44)	07:35			06:44			06:09		06:30 (T42)	05:59		06:33 (T42)
	17:34	18:12	13	08:14 (T44)	19:44			20:16			20:47	35	07:05 (T42)	21:08	37	07:10 (T42)
22	07:52	07:18		08:06 (T44)	07:33			06:43			06:08		06:29 (T42)	05:59		06:33 (T42)
	17:35	18:14	2	08:08 (T44)	19:45			20:17			20:48	36	07:05 (T42)	21:08	37	07:10 (T42)
23	07:51	07:16			07:31			06:41			06:07		06:29 (T42)	05:59		06:34 (T42)
	17:36	18:15			19:46			20:18			20:49	36	07:05 (T42)	21:08	37	07:11 (T42)
24	07:50	07:15			07:30			06:40			06:06		06:28 (T42)	05:59		06:34 (T42)
	17:38	18:16			19:47			20:20			20:50	37	07:05 (T42)	21:08	37	07:11 (T42)
25	07:50	07:13			07:28			06:39			06:06		06:29 (T42)	06:00		06:34 (T42)
	17:39	18:17			19:49			20:21			20:51	37	07:06 (T42)	21:08	37	07:11 (T42)
26	07:49	07:12			07:26			06:37			06:05		06:28 (T42)	06:00		06:35 (T42)
	17:40	18:18			19:50			20:22			20:52	38	07:06 (T42)	21:08	37	07:12 (T42)
27	07:48	07:10			07:25		07:48 (T77)	06:36			06:04		06:29 (T42)	06:00		06:35 (T42)
	17:41	18:19			19:51	6	07:54 (T77)	20:23			20:53	38	07:07 (T42)	21:09	37	07:12 (T42)
28	07:47	07:09			07:23		07:43 (T77)	06:34			06:04		06:28 (T42)	06:01		06:35 (T42)
	17:43	18:21			19:52	15	07:58 (T77)	20:24			20:54	39	07:07 (T42)	21:09	36	07:11 (T42)
29	07:46				07:21		07:40 (T77)	06:33			06:03		06:29 (T42)	06:01		06:35 (T42)
	17:44				19:53	20	08:00 (T77)	20:25			20:54	38	07:07 (T42)	21:09	37	07:12 (T42)
30	07:45				07:20		07:39 (T77)	06:32			06:03		06:29 (T42)	06:02		06:35 (T42)
	17:45				19:54	24	08:03 (T77)	20:26			20:55	38	07:07 (T42)	21:09	37	07:12 (T42)
31	07:44				07:18		07:37 (T77)				06:02		06:29 (T42)			
	17:46				19:55	26	08:03 (T77)				20:56	39	07:08 (T42)			
Potential sun hours	297	297			370			399			448			453		
Total, worst case			473			91			561			684			1119	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.55			0.64			0.64			0.71			0.71	
Total reduction			0.22			0.28			0.33			0.40			0.45	
Total, real			102			25			184			273			502	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1620 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7491)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December
1	06:02	06:36 (T42)	06:26	06:48 (T42)	06:57	07:28 (T77)	07:28		07:02	07:23 (T44)	07:37
	21:09 37	07:13 (T42)	20:50 18	07:06 (T42)	20:07 34	08:02 (T77)	19:15		17:28 28	07:51 (T44)	17:04
2	06:03	06:35 (T42)	06:27	06:50 (T42)	06:58	07:28 (T77)	07:29		07:03	07:25 (T44)	07:38
	21:08 38	07:13 (T42)	20:49 14	07:04 (T42)	20:06 34	08:02 (T77)	19:13		17:27 27	07:52 (T44)	17:03
3	06:03	06:36 (T42)	06:28	06:54 (T42)	06:59	07:27 (T77)	07:30		07:04	07:26 (T44)	07:39
	21:08 37	07:13 (T42)	20:48 6	07:00 (T42)	20:04 35	08:02 (T77)	19:11		17:26 25	07:51 (T44)	17:03
4	06:04	06:35 (T42)	06:29		07:00	07:27 (T77)	07:31		07:06	07:27 (T44)	07:40
	21:08 38	07:13 (T42)	20:47		20:02 35	08:02 (T77)	19:10		17:24 23	07:50 (T44)	17:03
5	06:04	06:36 (T42)	06:30		07:01	07:26 (T77)	07:32		07:07	07:28 (T44)	07:41
	21:08 38	07:14 (T42)	20:46		20:01 36	08:02 (T77)	19:08		17:23 21	07:49 (T44)	17:03
6	06:05	06:36 (T42)	06:31		07:02	07:26 (T77)	07:33		07:08	07:30 (T44)	07:42
	21:08 38	07:14 (T42)	20:44		19:57 35	08:01 (T77)	19:06		17:22 19	07:49 (T44)	17:03
7	06:06	06:36 (T42)	06:32		07:03	07:26 (T77)	07:34		07:09	07:31 (T44)	07:43
	21:07 38	07:14 (T42)	20:43		19:56 35	08:01 (T77)	19:05		17:21 17	07:48 (T44)	17:03
8	06:06	06:37 (T42)	06:33		07:04	07:26 (T77)	07:35		07:10	07:32 (T44)	07:44
	21:07 38	07:15 (T42)	20:42		19:54 34	08:00 (T77)	19:03		17:20 14	07:46 (T44)	17:03
9	06:07	06:36 (T42)	06:34		07:05	07:26 (T77)	07:36		07:12	07:34 (T44)	07:45
	21:07 38	07:14 (T42)	20:41		19:52 33	07:59 (T77)	19:02		17:19 12	07:46 (T44)	17:03
10	06:08	06:36 (T42)	06:35		07:06	07:27 (T77)	07:37		07:13	07:35 (T44)	07:46
	21:06 39	07:15 (T42)	20:40		19:51 31	07:58 (T77)	19:00		17:18 8	07:43 (T44)	17:03
11	06:08	06:37 (T42)	06:36		07:07	07:28 (T77)	07:38		07:14		07:47
	21:06 38	07:15 (T42)	20:38		19:49 29	07:57 (T77)	18:58		17:17		17:03
12	06:09	06:36 (T42)	06:37		07:08	07:28 (T77)	07:39		07:15		07:47
	21:06 39	07:15 (T42)	20:37		19:47 27	07:55 (T77)	18:57		17:16		17:03
13	06:10	06:37 (T42)	06:38		07:09	07:29 (T77)	07:40		07:16		07:48
	21:05 38	07:15 (T42)	20:36		19:46 24	07:53 (T77)	18:55		17:15		17:03
14	06:10	06:37 (T42)	06:39		07:10	07:30 (T77)	07:41		07:18		07:49
	21:05 39	07:16 (T42)	20:34		19:44 21	07:51 (T77)	18:54		17:14		17:03
15	06:11	06:38 (T42)	06:40		07:11	07:31 (T77)	07:43		07:19		07:50
	21:04 38	07:16 (T42)	20:33		19:42 17	07:48 (T77)	18:52		17:13		17:03
16	06:12	06:37 (T42)	06:41		07:12	07:35 (T77)	07:44		07:20		07:50
	21:03 38	07:15 (T42)	20:32		19:40 9	07:44 (T77)	18:50		17:12		17:04
17	06:13	06:38 (T42)	06:42		07:13		07:45		07:21		07:51
	21:03 38	07:16 (T42)	20:30		19:39		18:49		17:12		17:04
18	06:14	06:38 (T42)	06:43		07:14		07:46		07:22		07:52
	21:02 38	07:16 (T42)	20:29		19:37		18:47		17:11		17:04
19	06:14	06:38 (T42)	06:44		07:15		07:47		07:24		07:52
	21:02 38	07:16 (T42)	20:27		19:35		18:46		17:10		17:05
20	06:15	06:39 (T42)	06:45		07:16		07:48	08:35 (T44)	07:25		07:53
	21:01 37	07:16 (T42)	20:26		19:34		18:44 7	08:42 (T44)	17:09		17:05
21	06:16	06:38 (T42)	06:46		07:17		07:49	08:31 (T44)	07:26		07:53
	21:00 37	07:15 (T42)	20:24		19:32		18:43 14	08:45 (T44)	17:09		17:06
22	06:17	06:39 (T42)	06:47		07:18		07:50	08:28 (T44)	07:27		07:54
	20:59 36	07:15 (T42)	20:23		19:30		18:42 19	08:47 (T44)	17:08		17:06
23	06:18	06:40 (T42)	06:48		07:19		07:52	08:27 (T44)	07:28		07:54
	20:59 35	07:15 (T42)	20:21		19:28		18:40 21	08:48 (T44)	17:07		17:07
24	06:19	06:41 (T42)	06:49	07:42 (T77)	07:20		07:53	08:25 (T44)	07:29		07:55
	20:58 33	07:14 (T42)	20:20 10	07:52 (T77)	19:27		18:39 24	08:49 (T44)	17:07		17:07
25	06:20	06:42 (T42)	06:50	07:38 (T77)	07:21		07:54	08:25 (T44)	07:30		07:55
	20:57 32	07:14 (T42)	20:18 17	07:55 (T77)	19:25		18:37 26	08:51 (T44)	17:06		17:08
26	06:21	06:43 (T42)	06:51	07:36 (T77)	07:22		07:55	08:24 (T44)	07:32		07:56
	20:56 30	07:13 (T42)	20:17 21	07:57 (T77)	19:23		18:36 27	08:51 (T44)	17:06		17:08
27	06:22	06:44 (T42)	06:52	07:34 (T77)	07:23		07:56	08:23 (T44)	07:33		07:56
	20:55 29	07:13 (T42)	20:15 24	07:58 (T77)	19:22		18:35 28	08:51 (T44)	17:05		17:09
28	06:23	06:45 (T42)	06:53	07:33 (T77)	07:24		07:57	08:22 (T44)	07:34		07:56
	20:54 27	07:12 (T42)	20:14 27	08:00 (T77)	19:20		18:33 29	08:51 (T44)	17:05		17:10
29	06:23	06:45 (T42)	06:54	07:31 (T77)	07:25		07:58	08:23 (T44)	07:35		07:57
	20:53 25	07:10 (T42)	20:12 29	08:00 (T77)	19:18		18:32 29	08:52 (T44)	17:04		17:10
30	06:24	06:46 (T42)	06:55	07:30 (T77)	07:27		08:00	08:23 (T44)	07:36		07:57
	20:52 23	07:09 (T42)	20:10 31	08:01 (T77)	19:16		18:31 29	08:52 (T44)	17:04		17:11
31	06:25	06:47 (T42)	06:56	07:29 (T77)			08:01	08:22 (T44)			07:57
	20:51 21	07:08 (T42)	20:09 32	08:01 (T77)			18:29 30	08:52 (T44)			17:12
Potential sun hours	460		429		375		345		297		287
Total, worst case	1088		229		469		283		194		
Sun reduction	0.66		0.61		0.59		0.48		0.30		
Oper. time red.	1.00		1.00		1.00		1.00		1.00		
Wind dir. red.	0.71		0.65		0.64		0.55		0.55		
Total reduction	0.46		0.39		0.37		0.26		0.16		
Total, real	503		90		175		73		31		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1666 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7530)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:57			07:43		16:30 (T45)	07:07	07:16			06:30		19:15 (T44)	06:01		19:11 (T44)
	17:13			17:47	45	17:15 (T45)	18:22	19:56			20:27	43	19:58 (T44)	20:57	52	20:03 (T44)
2	07:57			07:42		16:30 (T45)	07:06	07:14			06:29		19:14 (T44)	06:01		19:12 (T44)
	17:14			17:49	46	17:16 (T45)	18:23	19:57			20:28	45	19:59 (T44)	20:58	52	20:04 (T44)
3	07:57			07:41		16:29 (T45)	07:04	07:13			06:28		19:12 (T44)	06:01		19:12 (T44)
	17:15			17:50	48	17:17 (T45)	18:24	19:58			20:29	47	19:59 (T44)	20:58	51	20:03 (T44)
4	07:57			07:40		16:29 (T45)	07:02	07:11			06:26		19:11 (T44)	06:00		19:12 (T44)
	17:16			17:51	48	17:17 (T45)	18:25	19:59			20:30	49	20:00 (T44)	20:59	51	20:03 (T44)
5	07:57			07:39		16:28 (T45)	07:01	07:09			06:25		19:11 (T44)	06:00		19:13 (T44)
	17:17			17:52	48	17:16 (T45)	18:26	20:00			20:31	50	20:01 (T44)	21:00	50	20:03 (T44)
6	07:57			07:38		16:29 (T45)	06:59	07:08			06:24		19:10 (T44)	06:00		19:13 (T44)
	17:17			17:54	48	17:17 (T45)	18:27	20:00			20:32	51	20:01 (T44)	21:00	50	20:03 (T44)
7	07:57			07:37		16:29 (T45)	06:58	07:06			06:23		19:10 (T44)	05:59		19:14 (T44)
	17:18			17:55	48	17:17 (T45)	18:29	20:01			20:33	52	20:02 (T44)	21:01	49	20:03 (T44)
8	07:57			07:36		16:29 (T45)	07:56	07:05			06:22		19:09 (T44)	05:59		19:14 (T44)
	17:19			17:56	48	17:17 (T45)	19:30	20:02			20:34	54	20:03 (T44)	21:02	49	20:03 (T44)
9	07:57			07:35		16:30 (T45)	07:54	07:03			06:20		19:09 (T44)	05:59		19:15 (T44)
	17:20			17:58	48	17:18 (T45)	19:31	20:03			20:35	54	20:03 (T44)	21:02	48	20:03 (T44)
10	07:57			07:34		16:30 (T45)	07:53	07:01			06:19		19:08 (T44)	05:59		19:15 (T44)
	17:21			17:59	48	17:18 (T45)	19:32	20:05			20:36	54	20:02 (T44)	21:03	48	20:03 (T44)
11	07:57			07:32		16:30 (T45)	07:51	07:00			06:18		19:07 (T44)	05:58		19:16 (T44)
	17:23			18:00	47	17:17 (T45)	19:33	20:06			20:37	56	20:03 (T44)	21:03	47	20:03 (T44)
12	07:56			07:31		16:30 (T45)	07:50	06:58			06:17		19:07 (T44)	05:58		19:15 (T44)
	17:24			18:01	47	17:17 (T45)	19:34	20:07			20:38	56	20:03 (T44)	21:04	47	20:02 (T44)
13	07:56			07:30		16:31 (T45)	07:48	06:57			06:16		19:07 (T44)	05:58		19:16 (T44)
	17:25			18:02	46	17:17 (T45)	19:35	20:08			20:39	56	20:03 (T44)	21:05	47	20:03 (T44)
14	07:56			07:29		16:31 (T45)	07:46	06:55			06:15		19:07 (T44)	05:58		19:16 (T44)
	17:26			18:04	45	17:16 (T45)	19:36	20:09			20:40	56	20:03 (T44)	21:05	47	20:03 (T44)
15	07:55			07:27		16:32 (T45)	07:45	06:53			06:14		19:08 (T44)	05:58		19:17 (T44)
	17:27			18:05	43	17:15 (T45)	19:38	20:10			20:41	56	20:04 (T44)	21:05	46	20:03 (T44)
16	07:55			07:26		16:33 (T45)	07:43	06:52			06:13		19:08 (T44)	05:58		19:17 (T44)
	17:28			18:06	42	17:15 (T45)	19:39	20:11			20:42	56	20:04 (T44)	21:06	46	20:03 (T44)
17	07:54		16:43 (T45)	07:25		16:33 (T45)	07:41	06:50			06:12		19:07 (T44)	05:58		19:18 (T44)
	17:29	12	16:55 (T45)	18:07	41	17:14 (T45)	19:40	20:12			20:43	57	20:04 (T44)	21:06	46	20:04 (T44)
18	07:54		16:40 (T45)	07:23		16:35 (T45)	07:40	06:49			06:11		19:07 (T44)	05:58		19:18 (T44)
	17:30	17	16:57 (T45)	18:09	38	17:13 (T45)	19:41	20:13			20:44	57	20:04 (T44)	21:07	46	20:04 (T44)
19	07:53		16:39 (T45)	07:22		16:36 (T45)	07:38	06:47			06:10		19:07 (T44)	05:58		19:18 (T44)
	17:32	21	17:00 (T45)	18:10	36	17:12 (T45)	19:42	20:14			20:45	57	20:04 (T44)	21:07	46	20:04 (T44)
20	07:53		16:37 (T45)	07:20		16:37 (T45)	07:36	06:46			06:09		19:07 (T44)	05:59		19:18 (T44)
	17:33	25	17:02 (T45)	18:11	33	17:10 (T45)	19:43	20:15			20:46	57	20:04 (T44)	21:07	46	20:04 (T44)
21	07:52		16:36 (T45)	07:19		16:39 (T45)	07:35	06:44			06:09		19:07 (T44)	05:59		19:19 (T44)
	17:34	27	17:03 (T45)	18:12	30	17:09 (T45)	19:44	20:16			20:47	57	20:04 (T44)	21:07	45	20:04 (T44)
22	07:52		16:35 (T45)	07:18		16:41 (T45)	07:33	06:43			06:08		19:08 (T44)	05:59		19:18 (T44)
	17:35	31	17:06 (T45)	18:13	25	17:06 (T45)	19:45	20:17			20:48	56	20:04 (T44)	21:08	46	20:04 (T44)
23	07:51		16:34 (T45)	07:16		16:44 (T45)	07:31	06:41			06:07		19:08 (T44)	05:59		19:19 (T44)
	17:36	33	17:07 (T45)	18:15	20	17:04 (T45)	19:46	20:18			20:49	56	20:04 (T44)	21:08	46	20:05 (T44)
24	07:50		16:33 (T45)	07:15		16:47 (T45)	07:30	06:40		19:31 (T44)	06:06		19:08 (T44)	05:59		19:19 (T44)
	17:38	35	17:08 (T45)	18:16	13	17:00 (T45)	19:47	20:19	12	19:43 (T44)	20:50	56	20:04 (T44)	21:08	46	20:05 (T44)
25	07:49		16:32 (T45)	07:13			07:28	06:38		19:27 (T44)	06:06		19:09 (T44)	06:00		19:19 (T44)
	17:39	37	17:09 (T45)	18:17			19:48	20:21	21	19:48 (T44)	20:51	55	20:04 (T44)	21:08	46	20:05 (T44)
26	07:49		16:32 (T45)	07:12			07:26	06:37		19:23 (T44)	06:05		19:09 (T44)	06:00		19:20 (T44)
	17:40	38	17:10 (T45)	18:18			19:50	20:22	27	19:50 (T44)	20:52	55	20:04 (T44)	21:08	46	20:06 (T44)
27	07:48		16:32 (T45)	07:10			07:24	06:36		19:21 (T44)	06:04		19:10 (T44)	06:00		19:20 (T44)
	17:41	40	17:12 (T45)	18:19			19:51	20:23	31	19:52 (T44)	20:53	54	20:04 (T44)	21:08	46	20:06 (T44)
28	07:47		16:31 (T45)	07:09			07:23	06:34		19:19 (T44)	06:04		19:10 (T44)	06:01		19:19 (T44)
	17:42	42	17:13 (T45)	18:21			19:52	20:24	35	19:54 (T44)	20:54	54	20:04 (T44)	21:08	47	20:06 (T44)
29	07:46		16:31 (T45)				07:21	06:33		19:17 (T44)	06:03		19:10 (T44)	06:01		19:20 (T44)
	17:44	42	17:13 (T45)				19:53	20:25	38	19:55 (T44)	20:54	53	20:03 (T44)	21:08	47	20:07 (T44)
30	07:45		16:30 (T45)				07:19	06:32		19:16 (T44)	06:02		19:10 (T44)	06:02		19:20 (T44)
	17:45	44	17:14 (T45)				19:54	20:26	40	19:56 (T44)	20:55	54	20:04 (T44)	21:08	47	20:07 (T44)
31	07:44		16:30 (T45)				07:18				06:02		19:10 (T44)			
	17:46	45	17:15 (T45)				19:55				20:56	53	20:03 (T44)			
Potential sun hours	297			297			370	399			448			453		
Total, worst case		489			981				204			1666			1426	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.73			0.73				0.57			0.57			0.57	
Total reduction		0.23			0.30				0.30			0.33			0.37	
Total, real		113			292				62			554			532	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-08-29_Emerson SFAShadow receptor: 1666 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7530)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December
1	06:02		19:20 (T44)	06:26		19:18 (T44)	06:57	07:27			07:02		15:59 (T45)	07:37
	21:08	47	20:07 (T44)	20:50	55	20:13 (T44)	20:07	19:15			17:28	48	16:47 (T45)	17:04
2	06:03		19:20 (T44)	06:27		19:18 (T44)	06:58	07:29			07:03		15:59 (T45)	07:38
	21:08	47	20:07 (T44)	20:49	55	20:13 (T44)	20:06	19:13			17:27	48	16:47 (T45)	17:03
3	06:03		19:20 (T44)	06:28		19:18 (T44)	06:59	07:30			07:04		15:59 (T45)	07:39
	21:08	48	20:08 (T44)	20:48	55	20:13 (T44)	20:04	19:11			17:26	48	16:47 (T45)	17:03
4	06:04		19:19 (T44)	06:29		19:19 (T44)	07:00	07:31			07:06		15:59 (T45)	07:40
	21:08	49	20:08 (T44)	20:47	53	20:12 (T44)	20:02	19:10			17:24	48	16:47 (T45)	17:03
5	06:04		19:20 (T44)	06:30		19:19 (T44)	07:01	07:32			07:07		15:58 (T45)	07:41
	21:08	49	20:09 (T44)	20:46	53	20:12 (T44)	20:01	19:08			17:23	49	16:47 (T45)	17:03
6	06:05		19:19 (T44)	06:31		19:20 (T44)	07:02	07:33			07:08		15:59 (T45)	07:42
	21:08	50	20:09 (T44)	20:44	51	20:11 (T44)	19:57	19:06			17:22	48	16:47 (T45)	17:03
7	06:05		19:20 (T44)	06:32		19:20 (T44)	07:03	07:34			07:09		15:59 (T45)	07:43
	21:07	49	20:09 (T44)	20:43	51	20:11 (T44)	19:56	19:05			17:21	48	16:47 (T45)	17:03
8	06:06		19:20 (T44)	06:33		19:21 (T44)	07:04	07:35			07:10		15:59 (T45)	07:44
	21:07	50	20:10 (T44)	20:42	49	20:10 (T44)	19:54	19:03			17:20	47	16:46 (T45)	17:03
9	06:07		19:19 (T44)	06:34		19:21 (T44)	07:05	07:36			07:12		15:59 (T45)	07:45
	21:07	51	20:10 (T44)	20:41	48	20:09 (T44)	19:52	19:01			17:19	47	16:46 (T45)	17:03
10	06:07		19:19 (T44)	06:35		19:22 (T44)	07:06	07:37			07:13		16:01 (T45)	07:46
	21:06	52	20:11 (T44)	20:39	46	20:08 (T44)	19:51	19:00			17:18	45	16:46 (T45)	17:03
11	06:08		19:19 (T44)	06:36		19:23 (T44)	07:07	07:38			07:14		16:01 (T45)	07:46
	21:06	52	20:11 (T44)	20:38	44	20:07 (T44)	19:49	18:58			17:17	45	16:46 (T45)	17:03
12	06:09		19:19 (T44)	06:37		19:24 (T44)	07:08	07:39			07:15		16:01 (T45)	07:47
	21:05	52	20:11 (T44)	20:37	42	20:06 (T44)	19:47	18:57			17:16	44	16:45 (T45)	17:03
13	06:10		19:19 (T44)	06:38		19:25 (T44)	07:09	07:40			07:16		16:03 (T45)	07:48
	21:05	53	20:12 (T44)	20:36	40	20:05 (T44)	19:45	18:55			17:15	42	16:45 (T45)	17:03
14	06:10		19:19 (T44)	06:39		19:26 (T44)	07:10	07:41			07:18		16:03 (T45)	07:49
	21:04	53	20:12 (T44)	20:34	37	20:03 (T44)	19:44	18:54			17:14	41	16:44 (T45)	17:03
15	06:11		19:19 (T44)	06:40		19:27 (T44)	07:11	07:42			07:19		16:04 (T45)	07:50
	21:04	54	20:13 (T44)	20:33	35	20:02 (T44)	19:42	18:52			17:13	40	16:44 (T45)	17:03
16	06:12		19:18 (T44)	06:41		19:29 (T44)	07:12	07:44			07:20		16:05 (T45)	07:50
	21:03	54	20:12 (T44)	20:31	31	20:00 (T44)	19:40	18:50			17:12	38	16:43 (T45)	17:04
17	06:13		19:18 (T44)	06:42		19:30 (T44)	07:13	07:45			07:21		16:06 (T45)	07:51
	21:03	55	20:13 (T44)	20:30	26	19:56 (T44)	19:39	18:49			17:11	37	16:43 (T45)	17:04
18	06:14		19:18 (T44)	06:43		19:33 (T44)	07:14	07:46		17:17 (T45)	07:22		16:07 (T45)	07:52
	21:02	55	20:13 (T44)	20:29	20	19:53 (T44)	19:37	18:47	16	17:33 (T45)	17:11	35	16:42 (T45)	17:04
19	06:14		19:18 (T44)	06:44		19:38 (T44)	07:15	07:47		17:13 (T45)	07:23		16:08 (T45)	07:52
	21:01	56	20:14 (T44)	20:27	10	19:48 (T44)	19:35	18:46	23	17:36 (T45)	17:10	33	16:41 (T45)	17:05
20	06:15		19:18 (T44)	06:45			07:16	07:48		17:11 (T45)	07:25		16:09 (T45)	07:53
	21:01	56	20:14 (T44)	20:26			19:33	18:44	27	17:38 (T45)	17:09	31	16:40 (T45)	17:05
21	06:16		19:18 (T44)	06:46			07:17	07:49		17:09 (T45)	07:26		16:12 (T45)	07:53
	21:00	56	20:14 (T44)	20:24			19:32	18:43	31	17:40 (T45)	17:09	27	16:39 (T45)	17:06
22	06:17		19:18 (T44)	06:47			07:18	07:50		17:07 (T45)	07:27		16:13 (T45)	07:54
	20:59	56	20:14 (T44)	20:23			19:30	18:41	34	17:41 (T45)	17:08	25	16:38 (T45)	17:06
23	06:18		19:18 (T44)	06:48			07:19	07:51		17:06 (T45)	07:28		16:15 (T45)	07:54
	20:58	56	20:14 (T44)	20:21			19:28	18:40	36	17:42 (T45)	17:07	21	16:36 (T45)	17:07
24	06:19		19:18 (T44)	06:49			07:20	07:53		17:04 (T45)	07:29		16:17 (T45)	07:55
	20:58	56	20:14 (T44)	20:20			19:27	18:39	39	17:43 (T45)	17:07	17	16:34 (T45)	17:07
25	06:20		19:18 (T44)	06:50			07:21	07:54		17:03 (T45)	07:30		16:21 (T45)	07:55
	20:57	57	20:15 (T44)	20:18			19:25	18:37	40	17:43 (T45)	17:06	12	16:33 (T45)	17:08
26	06:21		19:18 (T44)	06:51			07:22	07:55		17:03 (T45)	07:32			07:56
	20:56	57	20:15 (T44)	20:17			19:23	18:36	42	17:45 (T45)	17:06			17:08
27	06:22		19:18 (T44)	06:52			07:23	07:56		17:01 (T45)	07:33			07:56
	20:55	57	20:15 (T44)	20:15			19:21	18:34	44	17:45 (T45)	17:05			17:09
28	06:22		19:18 (T44)	06:53			07:24	07:57		17:00 (T45)	07:34			07:56
	20:54	57	20:15 (T44)	20:14			19:20	18:33	46	17:46 (T45)	17:05			17:10
29	06:23		19:17 (T44)	06:54			07:25	07:58		17:00 (T45)	07:35			07:57
	20:53	57	20:14 (T44)	20:12			19:18	18:32	46	17:46 (T45)	17:04			17:10
30	06:24		19:17 (T44)	06:55			07:26	08:00		17:00 (T45)	07:36			07:57
	20:52	57	20:14 (T44)	20:10			19:16	18:31	47	17:47 (T45)	17:04			17:11
31	06:25		19:18 (T44)	06:56				08:01		16:59 (T45)				07:57
	20:51	56	20:14 (T44)	20:09				18:29	48	17:47 (T45)				17:12
Potential sun hours	460			429			375	345			297			287
Total, worst case		1654			801				519			964		
Sun reduction		0.66			0.61				0.48			0.30		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.57			0.57				0.73			0.73		
Total reduction		0.38			0.36				0.36			0.22		
Total, real		636			285				186			215		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

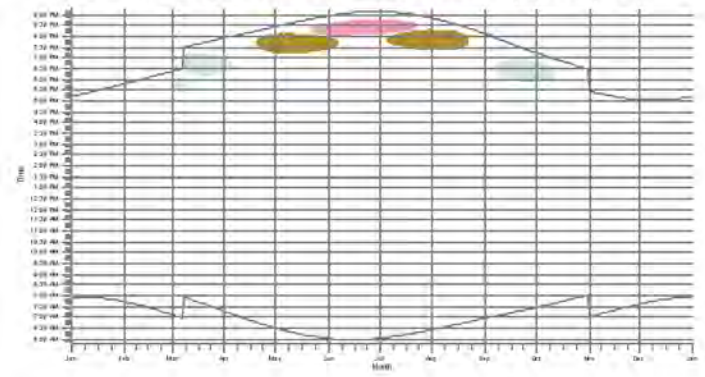
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

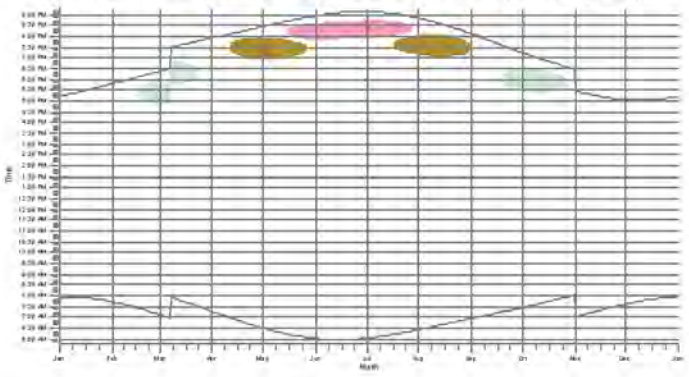
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

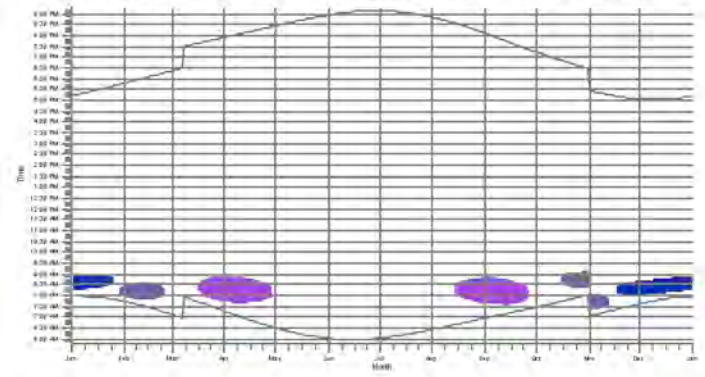
7: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6198)



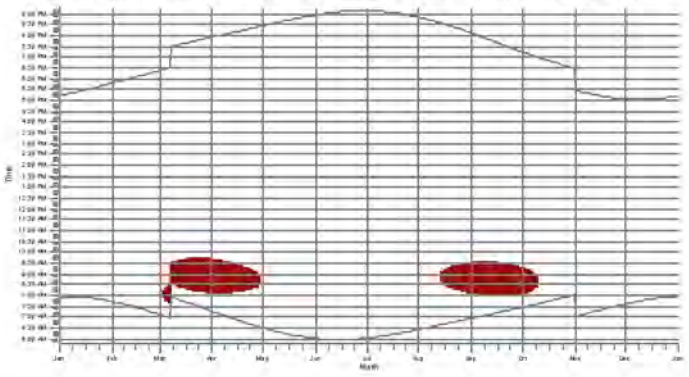
54: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6238)



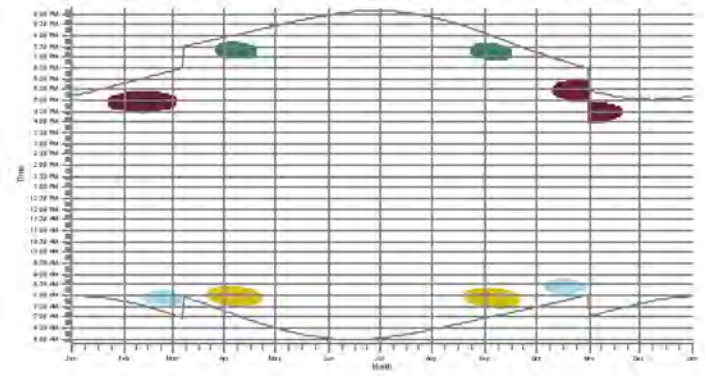
64: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6245)



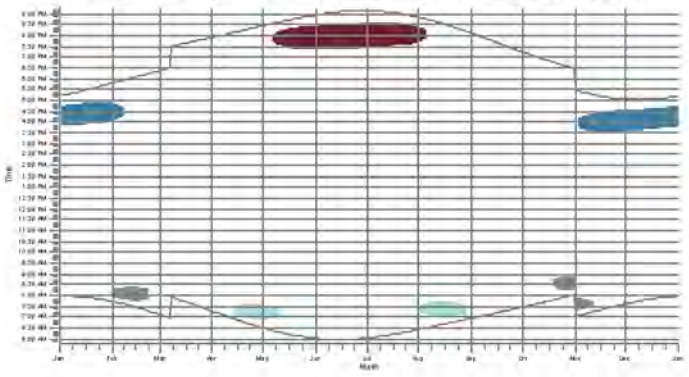
87: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6261)



91: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6265)



104: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6275)



WTGs

T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T28: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (624)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T49: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (645)
T57: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (653)
T59: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (655)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)
T78: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (672)

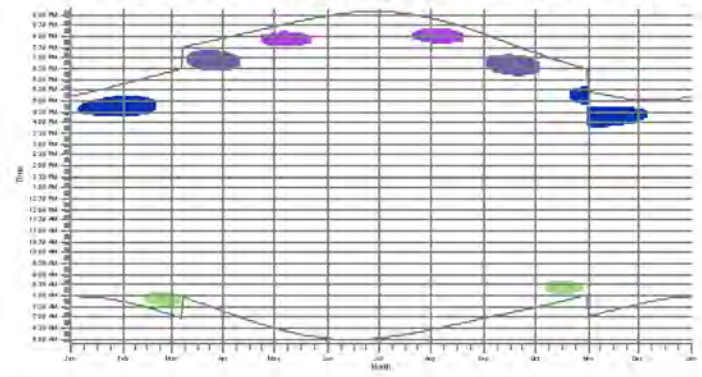
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

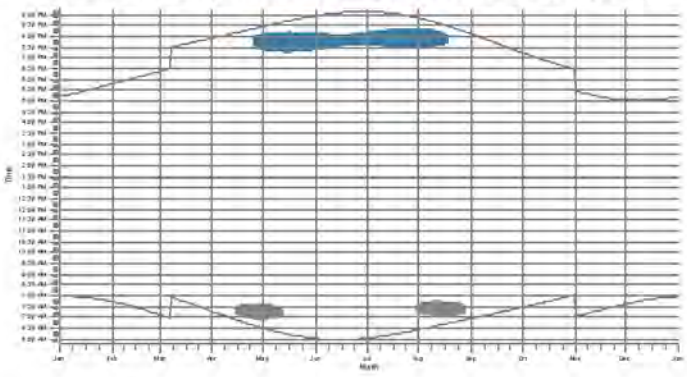
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

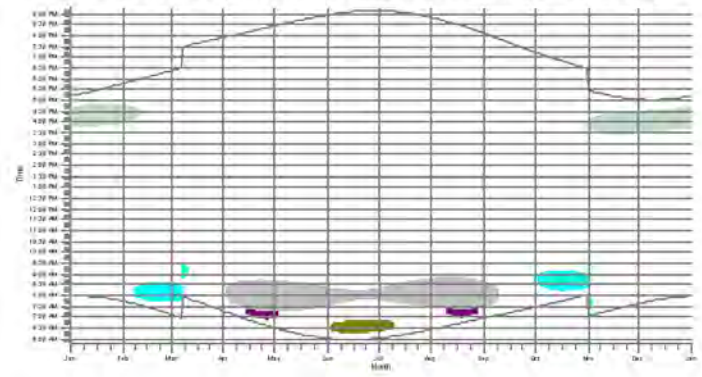
137: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6297)



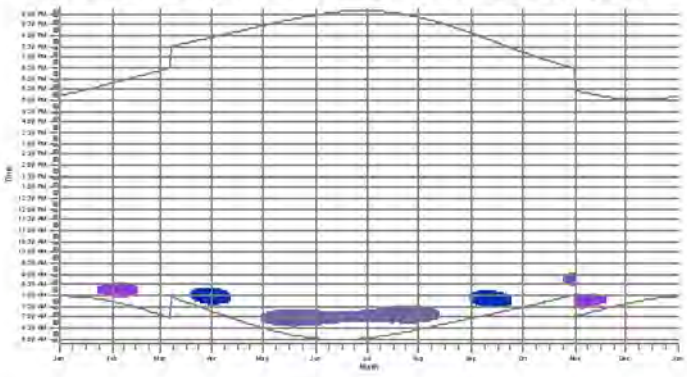
145: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6304)



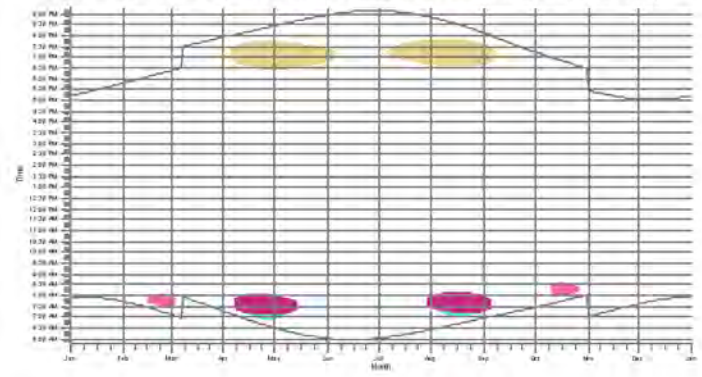
197: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6346)



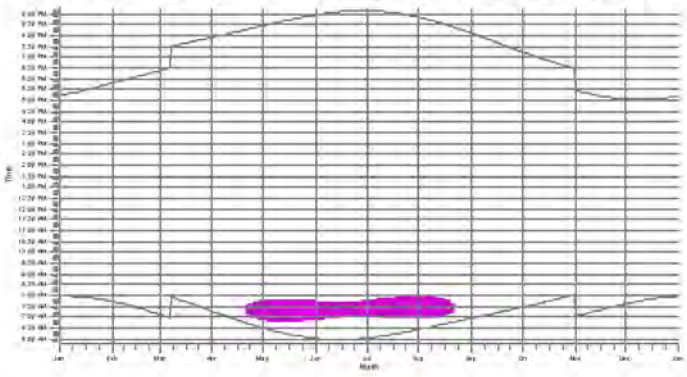
228: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6374)



232: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6378)



255: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6398)



WTGs

T7: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (603)
T8: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (604)
T9: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (605)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T11: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (607)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T39: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (635)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T54: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (650)
T55: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (651)
T56: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (652)
T58: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (654)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

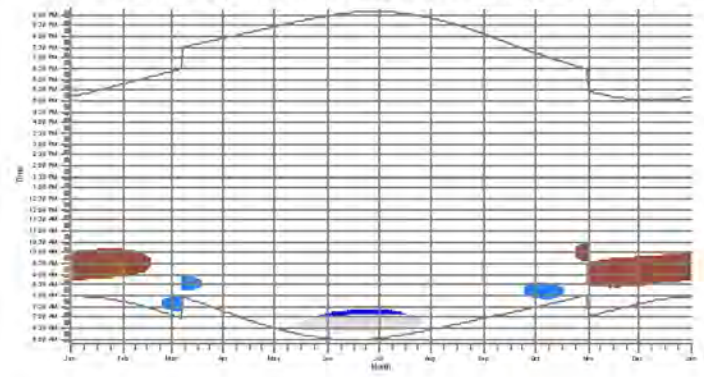
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

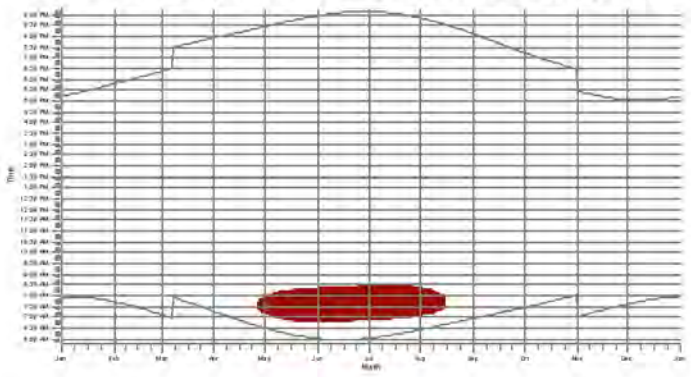
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

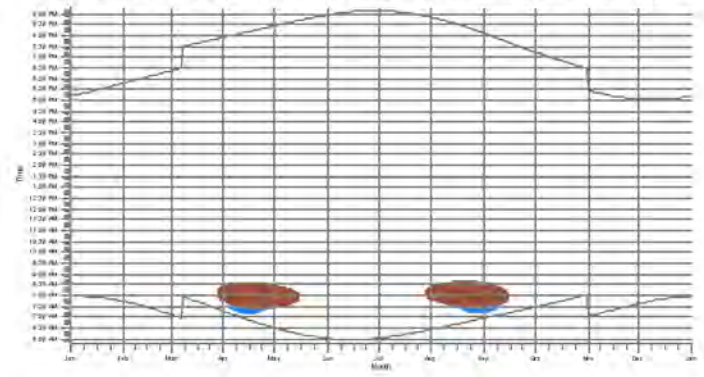
275: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6413)



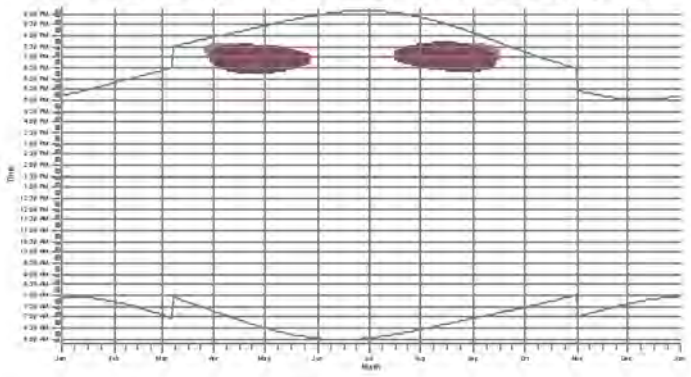
277: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6414)



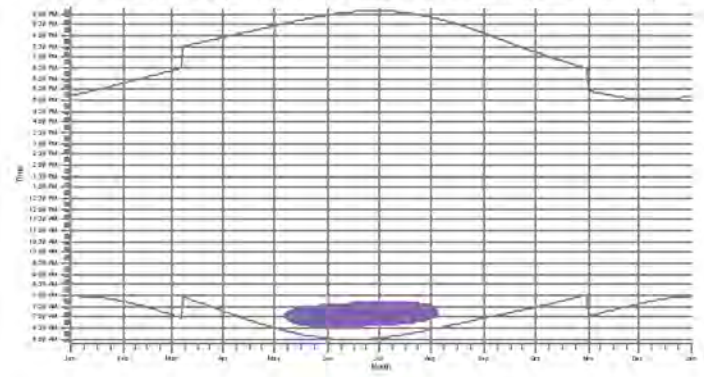
304: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6434)



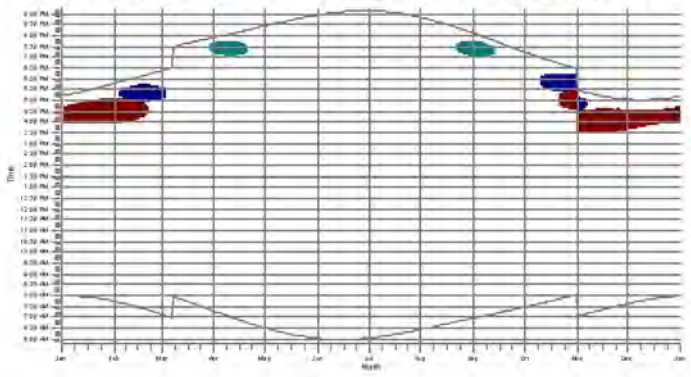
319: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6442)



328: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6450)



332: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6454)



WTGs

T3: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (599)
T4: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (600)
T5: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (601)
T34: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (630)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T43: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (639)
T49: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (645)
T62: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (658)
T79: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (673)
T87: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (680)

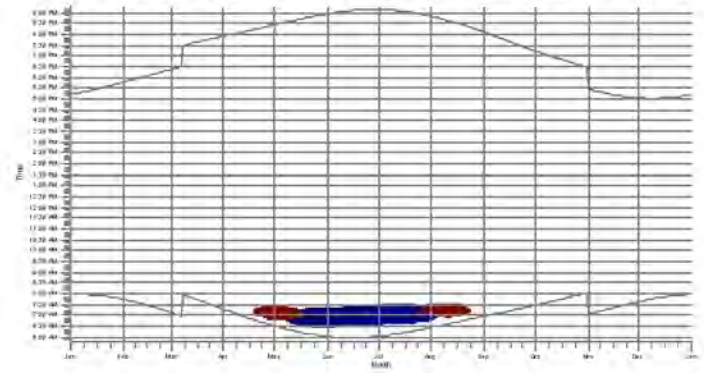
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

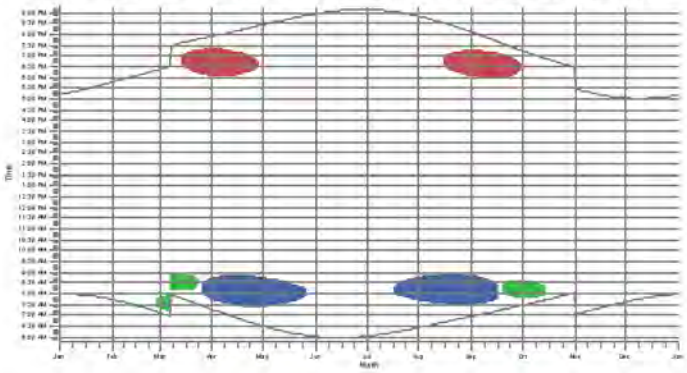
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

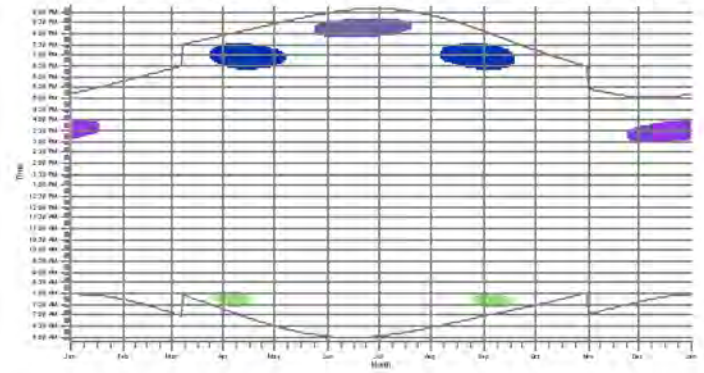
344: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6466)



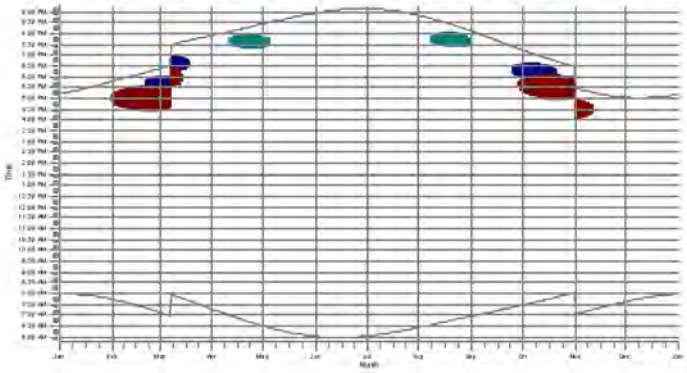
360: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6479)



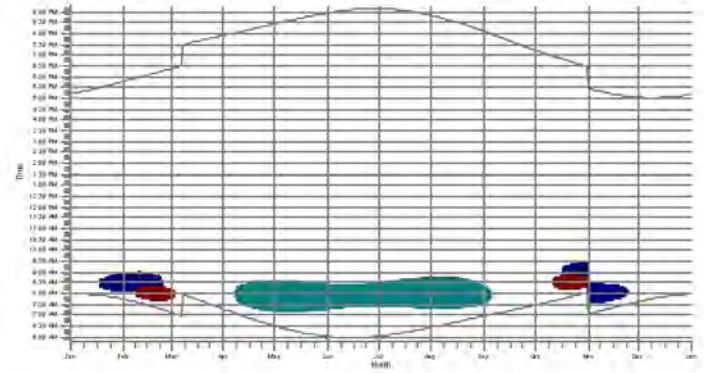
382: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6496)



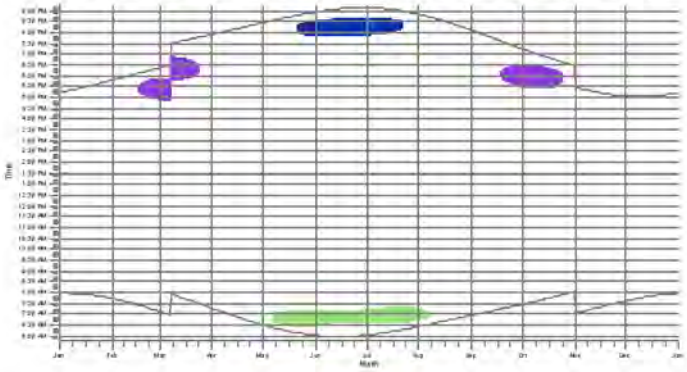
385: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6499)



390: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6504)



399: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6513)



WTGs

T3: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (599)
T4: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (600)
T5: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (601)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)
T84: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (677)
T85: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (678)
T86: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (679)

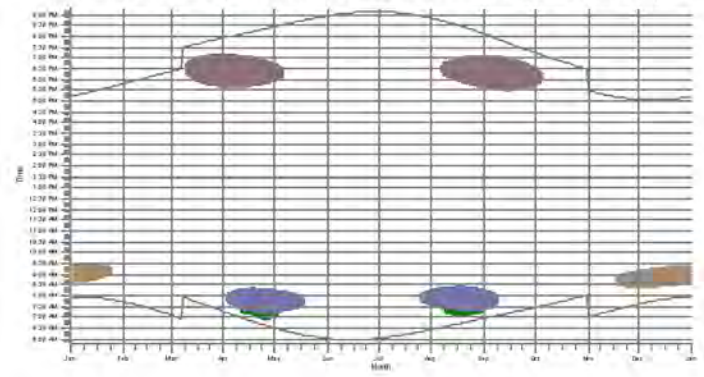
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

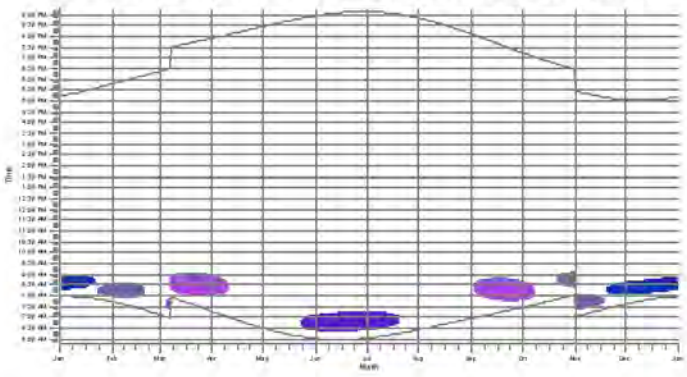
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

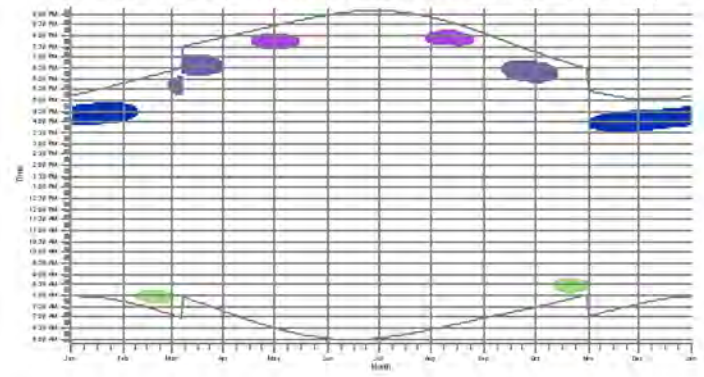
404: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6518)



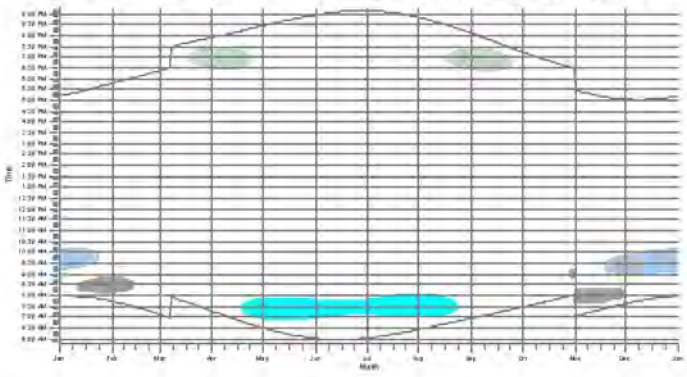
422: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6530)



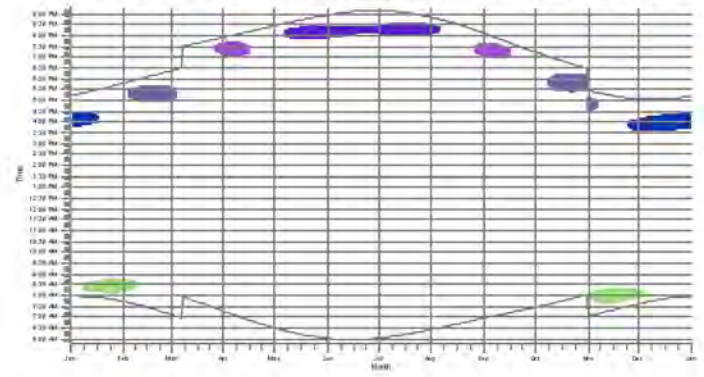
423: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6531)



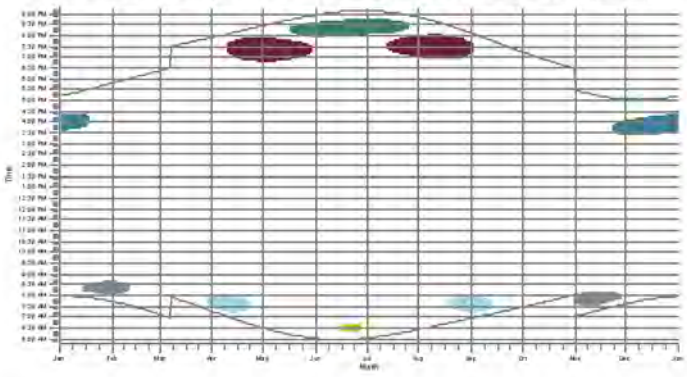
427: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6534)



477: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6572)



500: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6592)



WTGs

T67: VESTAS V150-5.6 5600 150.0 IOI hub: 105.0 m (TOT: 180.0 m) (594)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T11: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (607)
T12: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (608)
T13: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (609)
T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T28: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (624)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T40: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (636)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T68: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (663)
T69: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (664)
T71: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (665)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

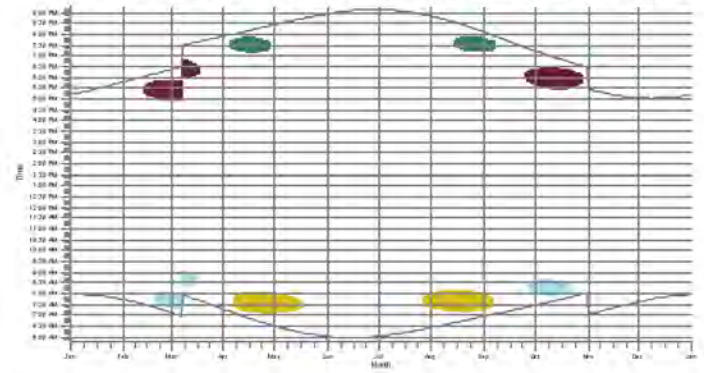
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

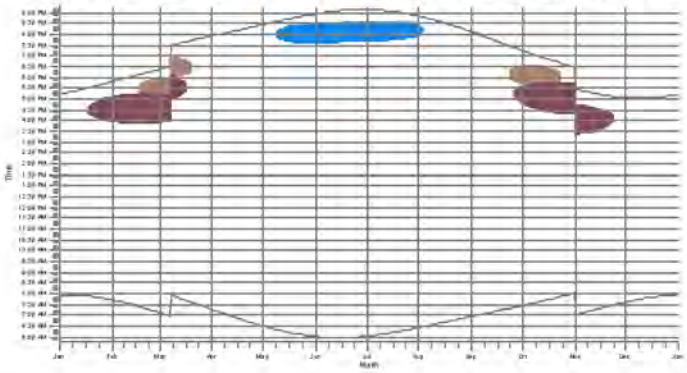
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

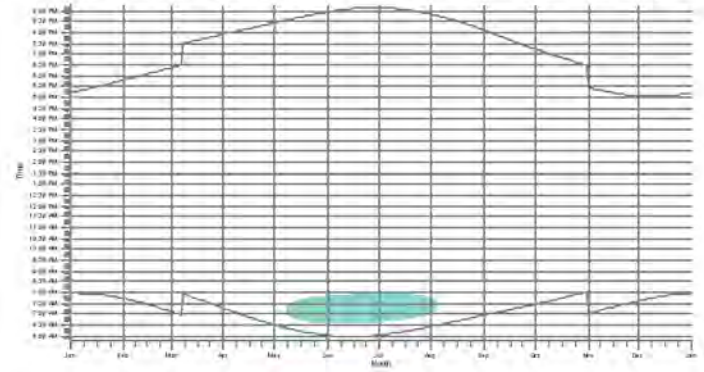
501: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6593)



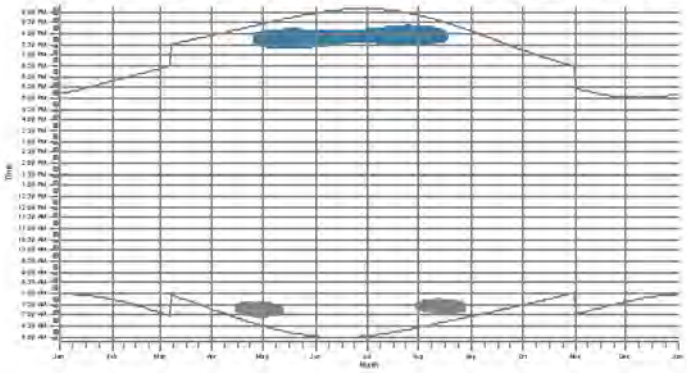
510: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6600)



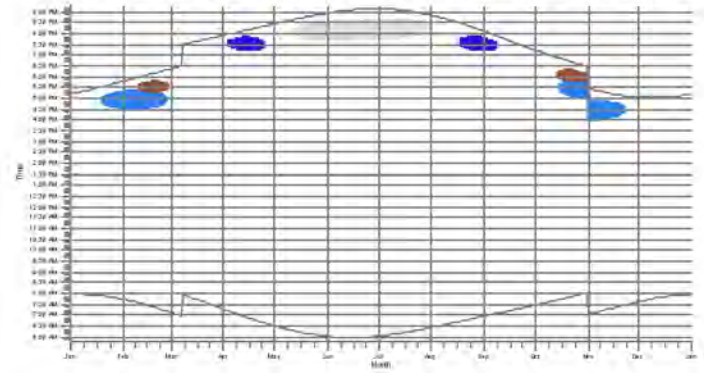
518: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6605)



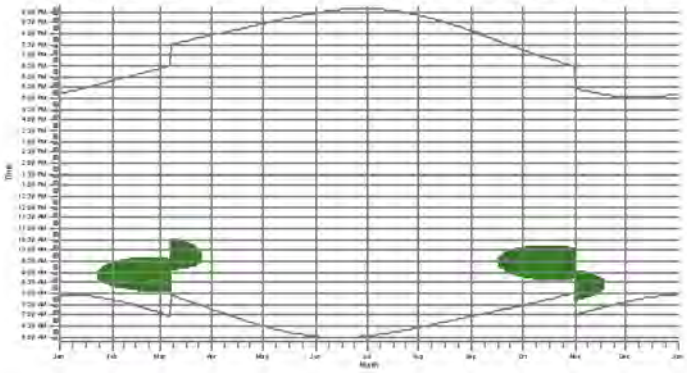
569: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6649)



570: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6650)



580: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6660)



WTGs

T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T28: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (624)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T34: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (630)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T46: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (642)
T60: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (656)
T62: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (658)
T63: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (659)
T79: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (673)
T87: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (680)

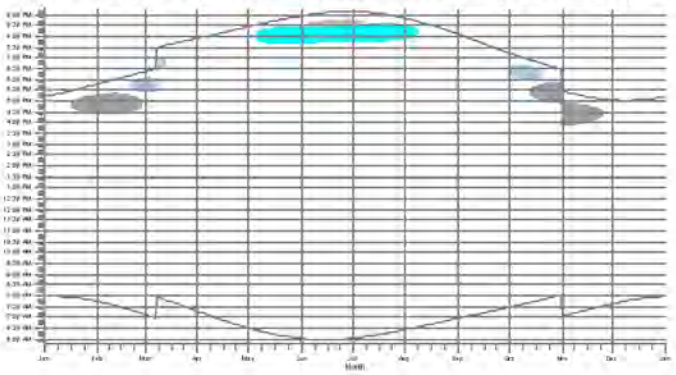
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

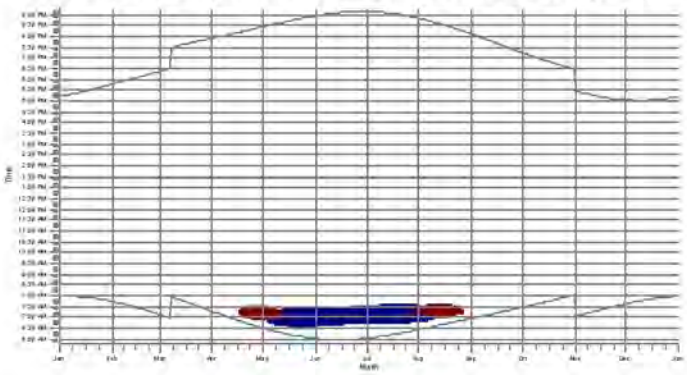
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

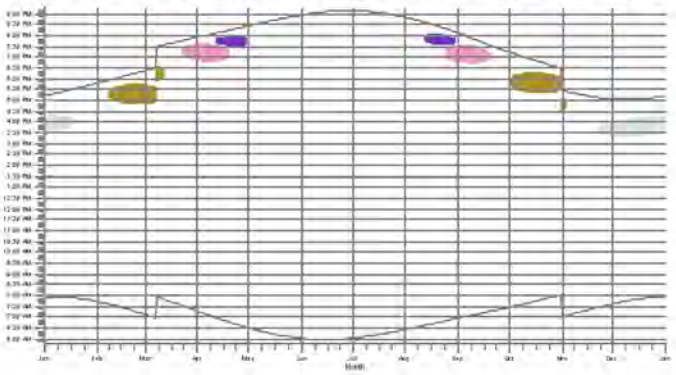
596: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6673)



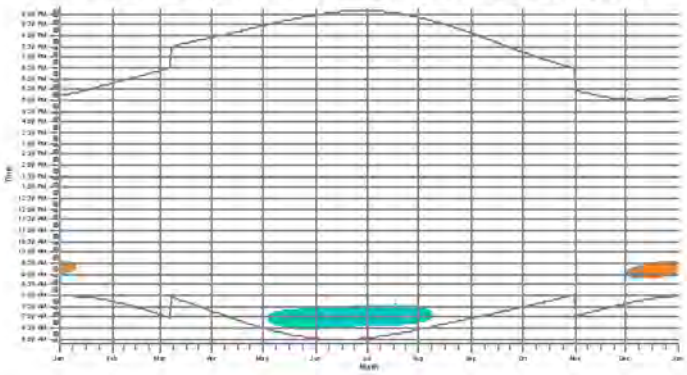
611: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6686)



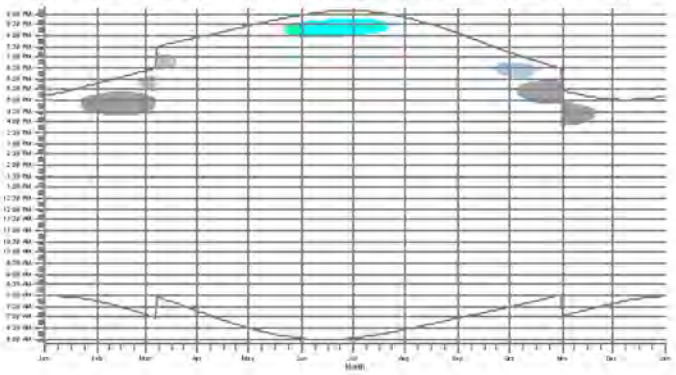
614: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6689)



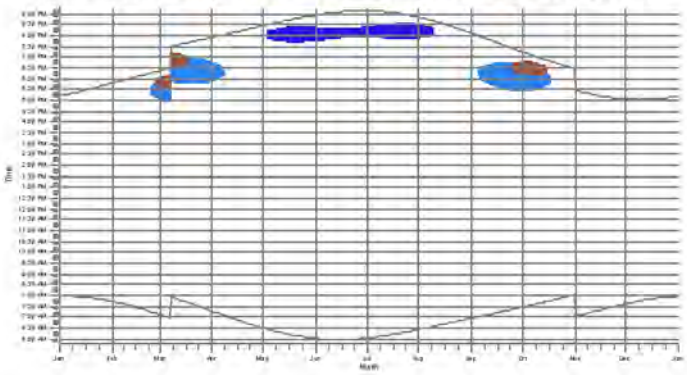
653: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6714)



688: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6741)



693: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6746)



WTGs

T4: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (600)
T5: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (601)
T9: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (605)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T12: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (608)
T13: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (609)
T18: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (614)
T21: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (617)
T34: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (630)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T53: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (649)
T57: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (653)
T59: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (655)
T78: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (672)

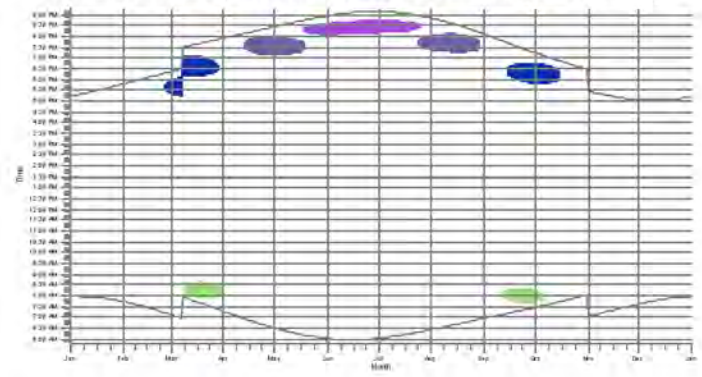
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

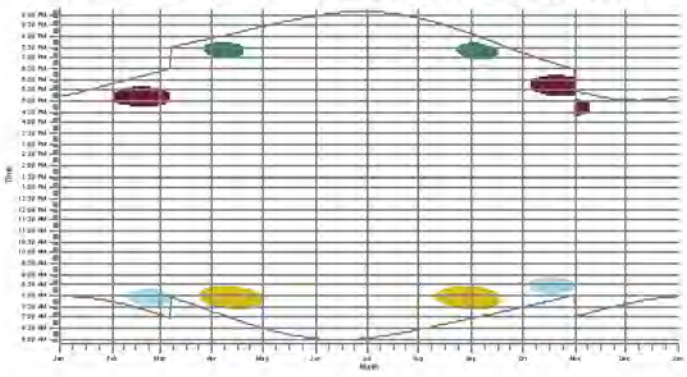
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

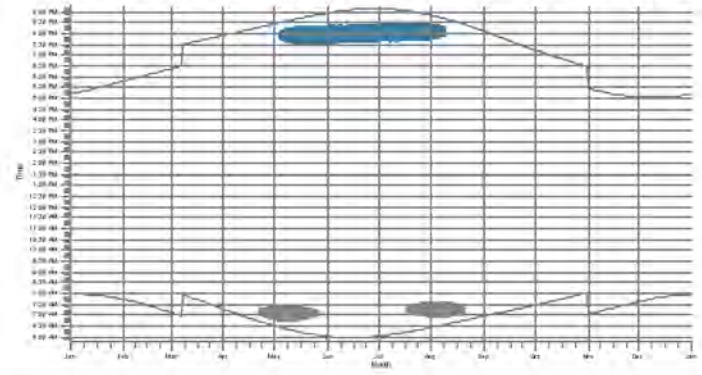
718: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6764)



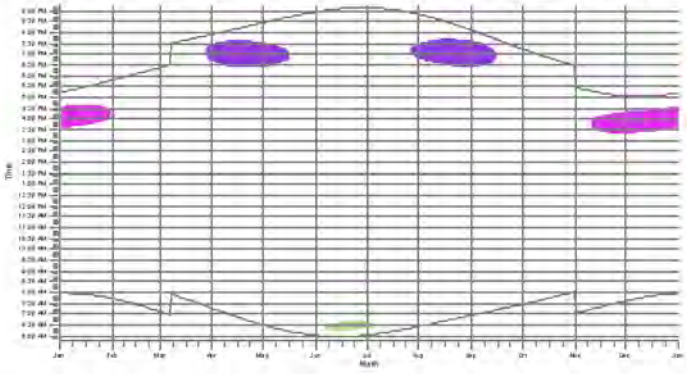
728: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6771)



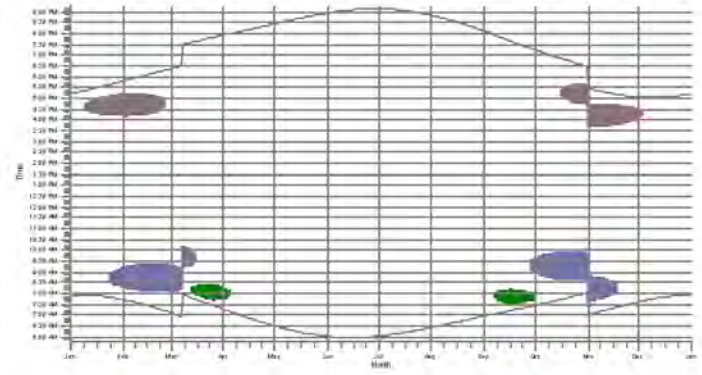
740: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6781)



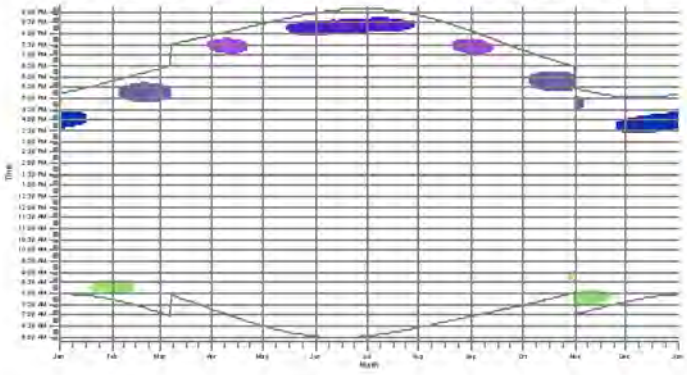
752: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6791)



770: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6804)



779: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6811)



WTGs

T67: VESTAS V150-5.6 5600 150.0 IOI hub: 105.0 m (TOT: 180.0 m) (594)
T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T28: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (624)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T40: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (636)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T45: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (641)
T68: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (663)
T69: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (664)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

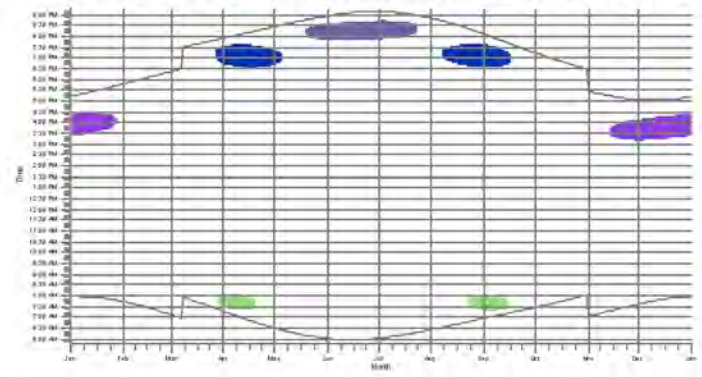
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

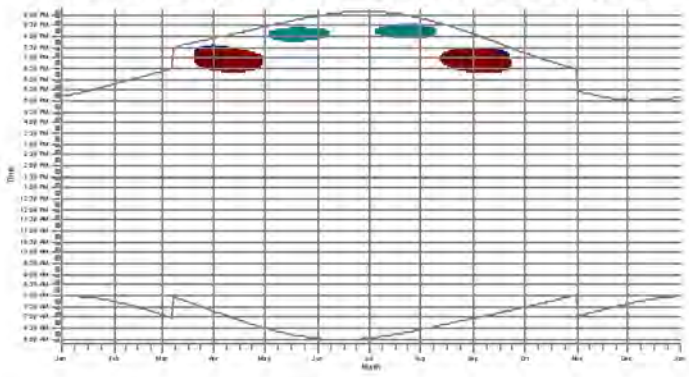
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

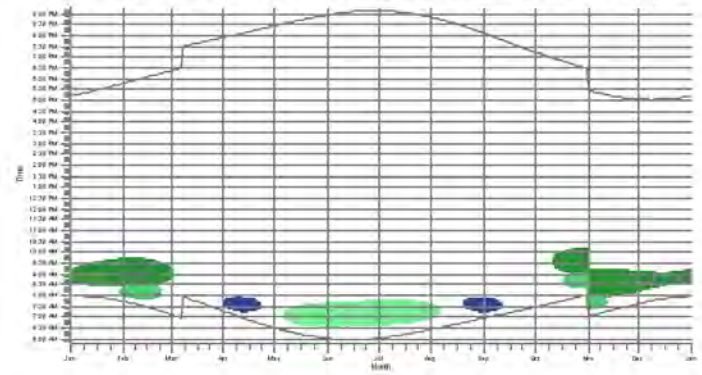
785: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6817)



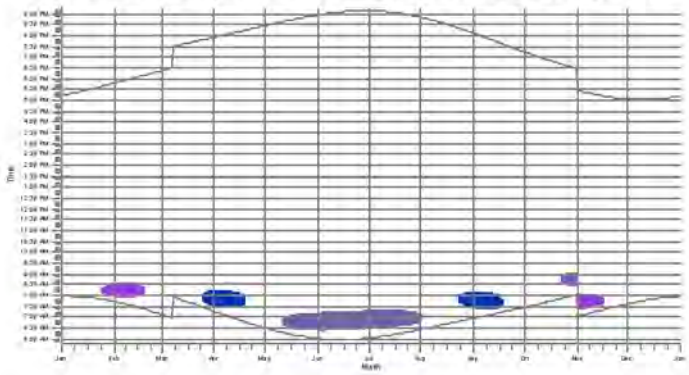
824: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6849)



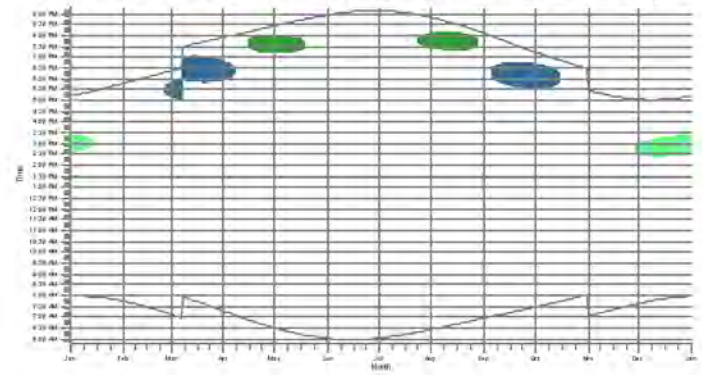
827: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6852)



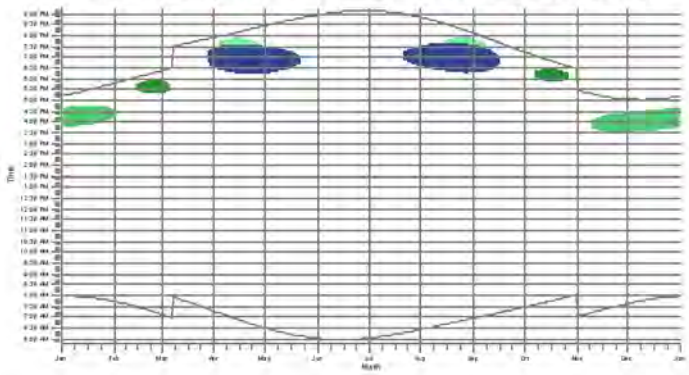
834: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6858)



855: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6876)



857: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6877)



WTGs

T3: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (599)
T4: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (600)
T5: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (601)
T17: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (613)
T19: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (615)
T24: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (620)
T25: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (621)
T26: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (622)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T75: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (669)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)
T20: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (681)

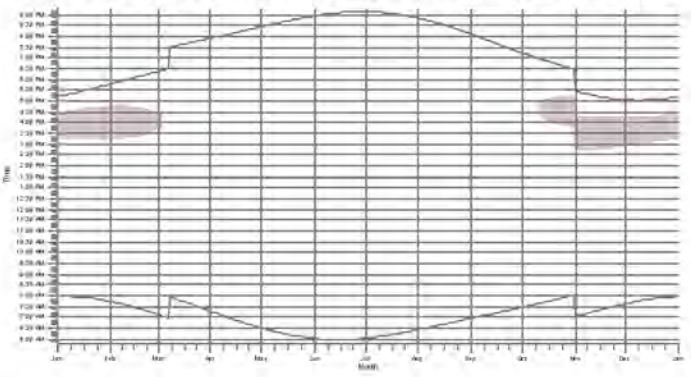
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

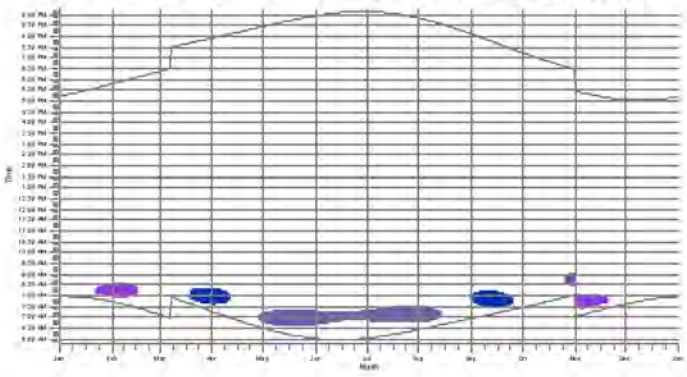
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

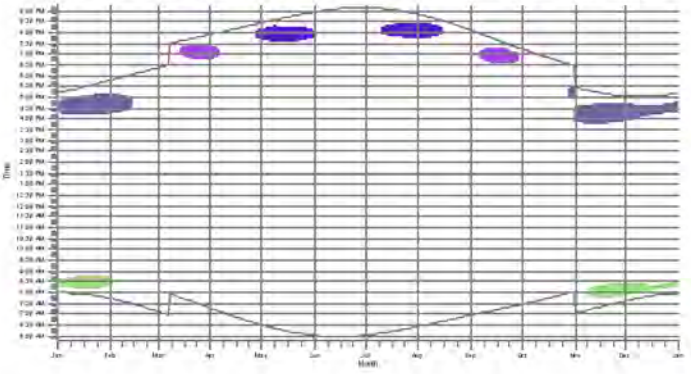
860: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6878)



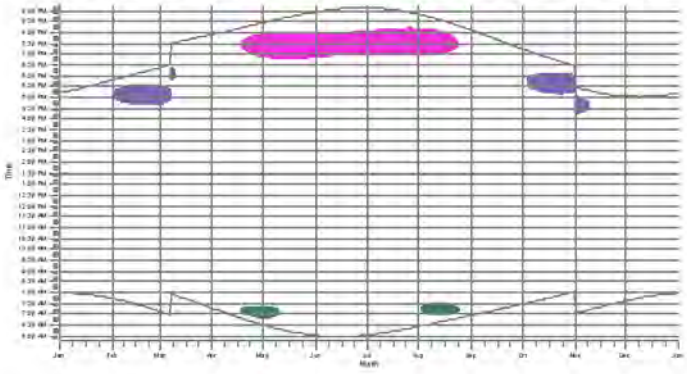
861: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6879)



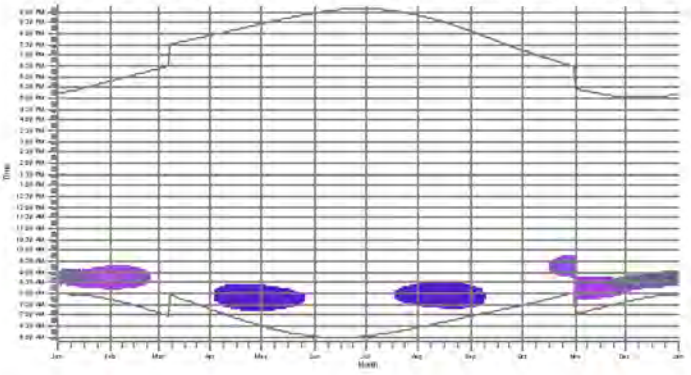
869: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6886)



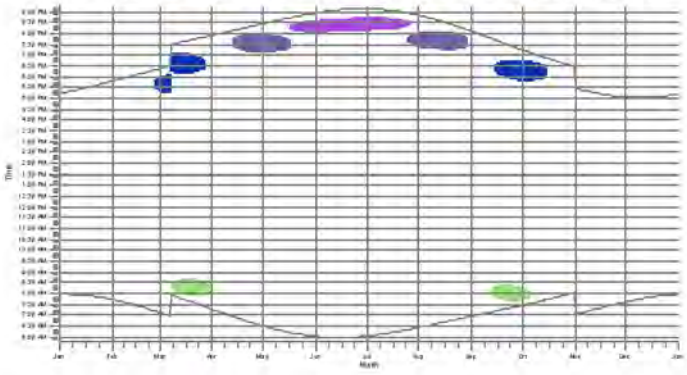
870: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6887)



879: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6895)



880: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6896)



WTGs

T23: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (619)
T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T29: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (625)
T32: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (628)
T40: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (636)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

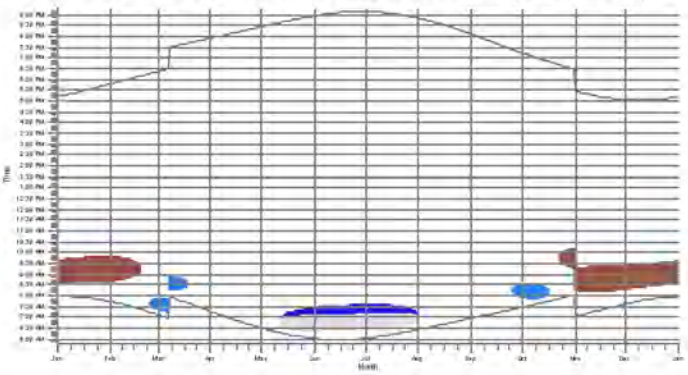
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

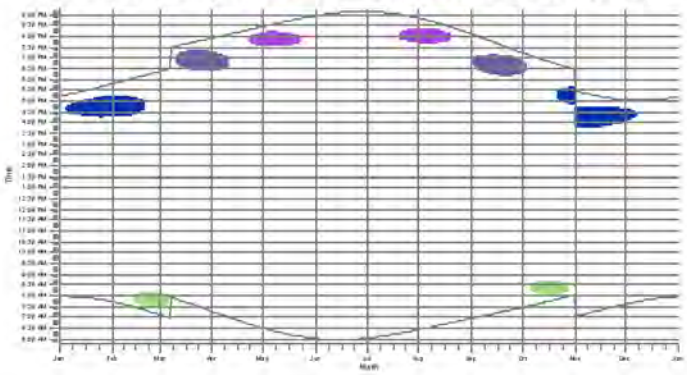
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

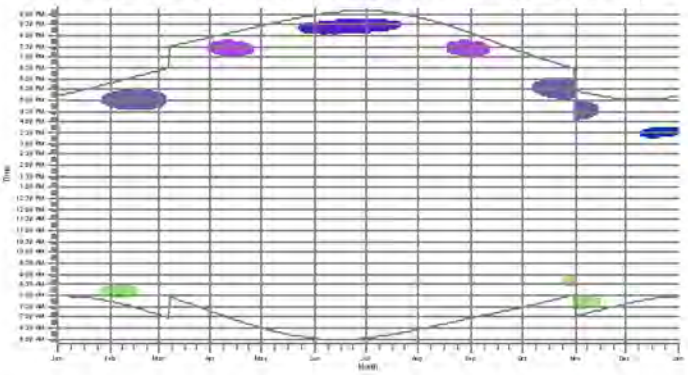
923: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6930)



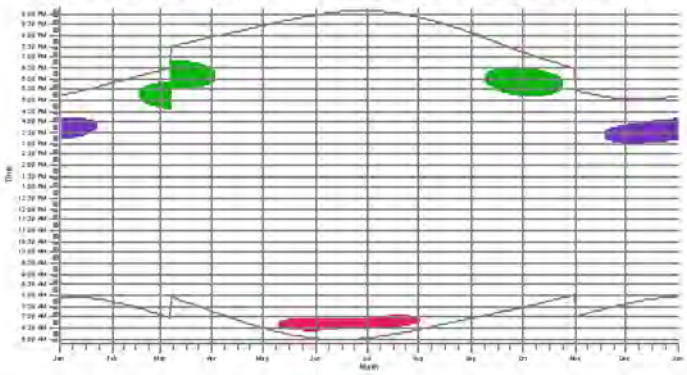
932: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6939)



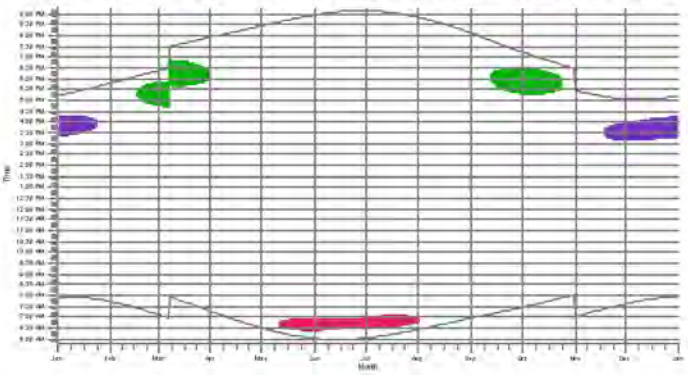
938: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6944)



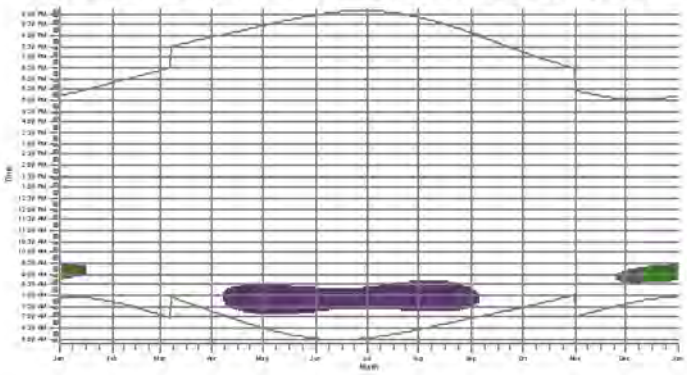
940: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6945)



941: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6946)



948: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6952)



WTGs

T34: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (630)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T40: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (636)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T51: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (647)
T52: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (648)
T53: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (649)
T61: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (657)
T63: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (659)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)
T87: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (680)

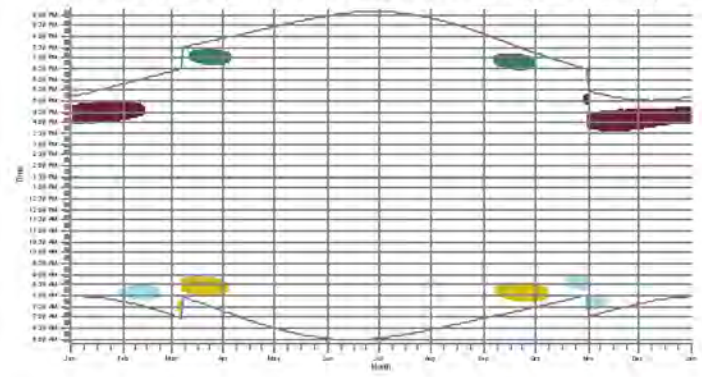
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

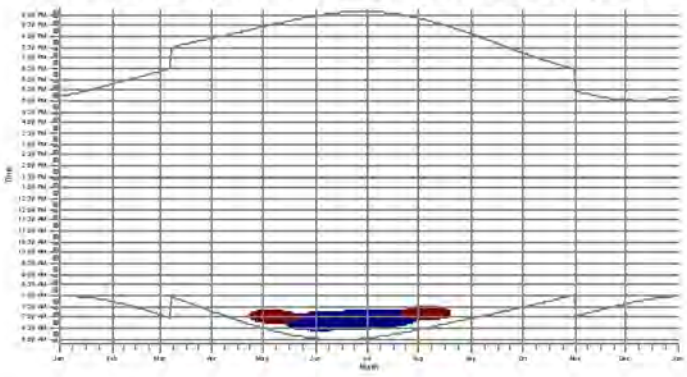
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

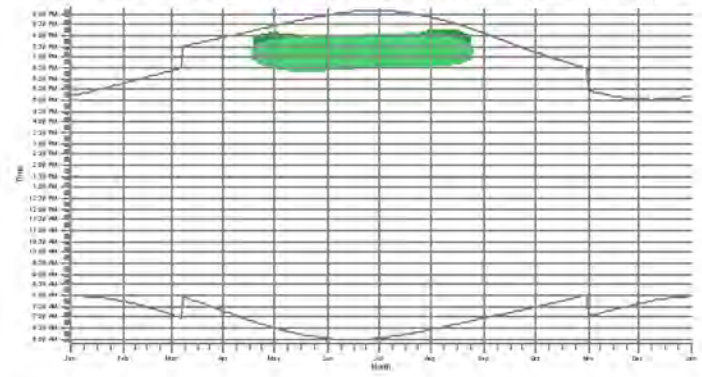
956: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6959)



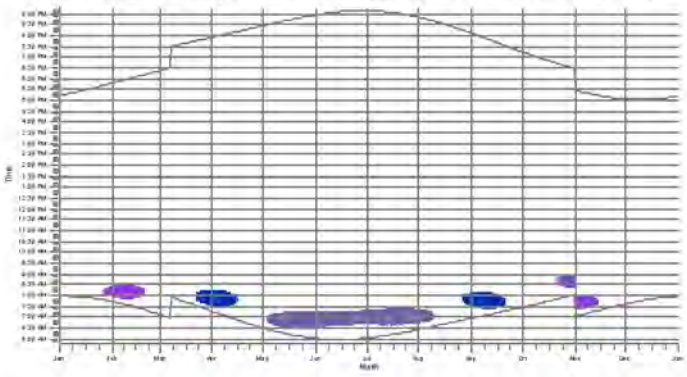
986: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6986)



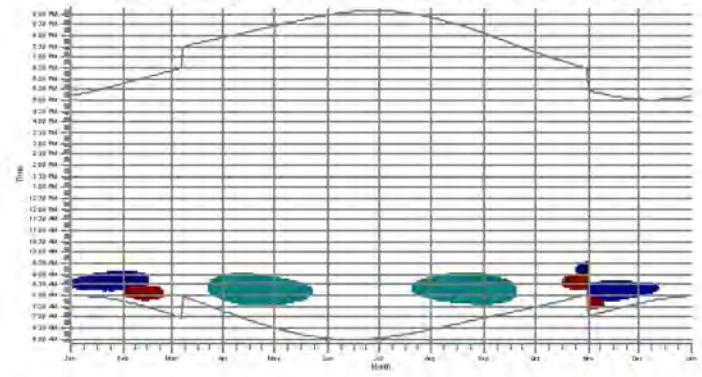
998: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (6994)



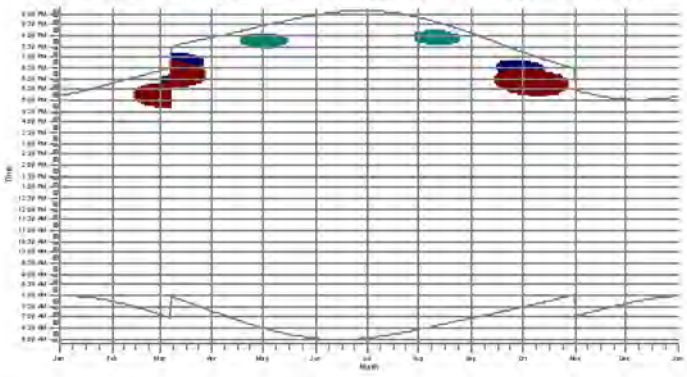
1022: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7016)



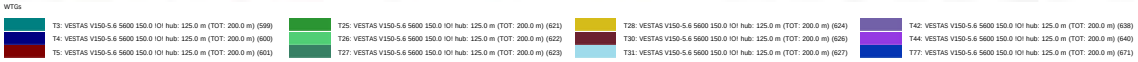
1030: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7022)



1040: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7031)



WTGs



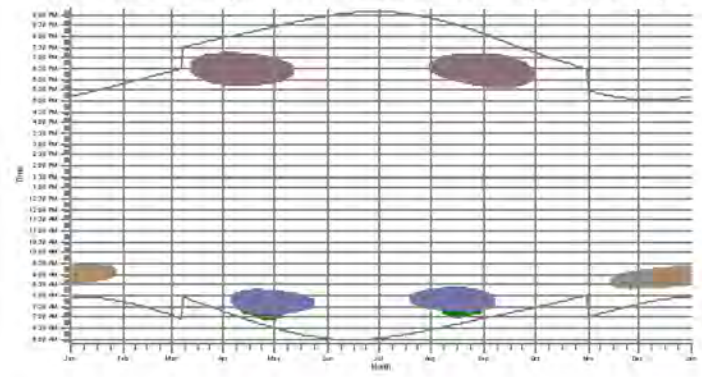
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

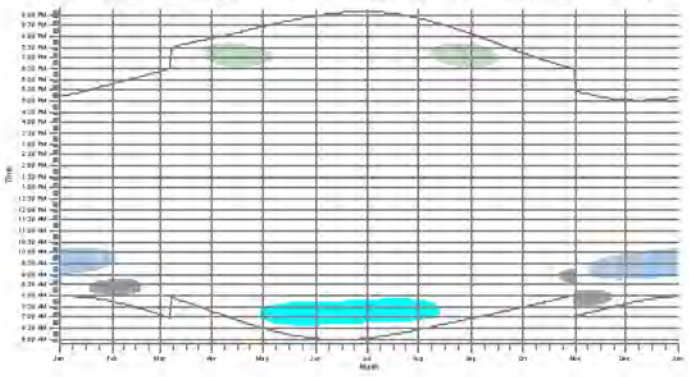
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

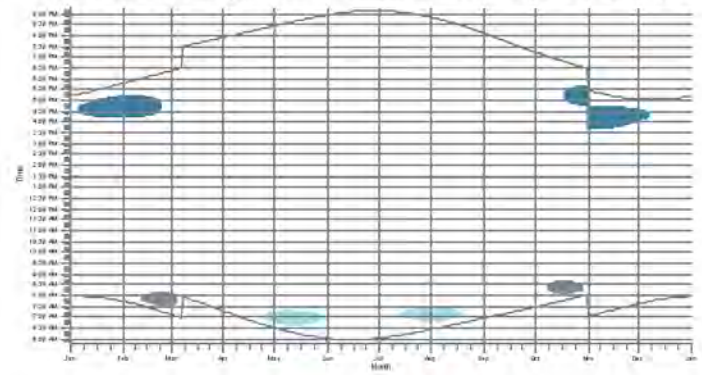
1043: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7033)



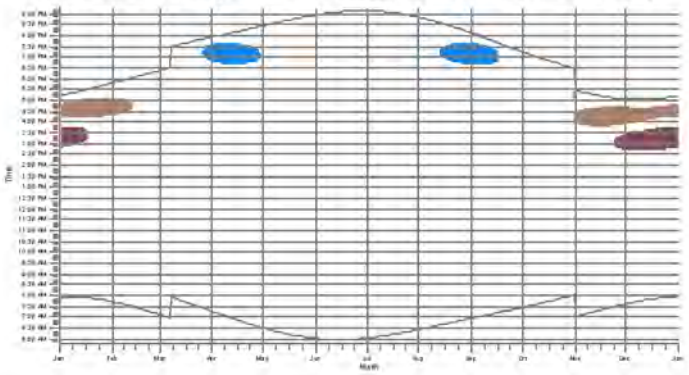
1056: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7044)



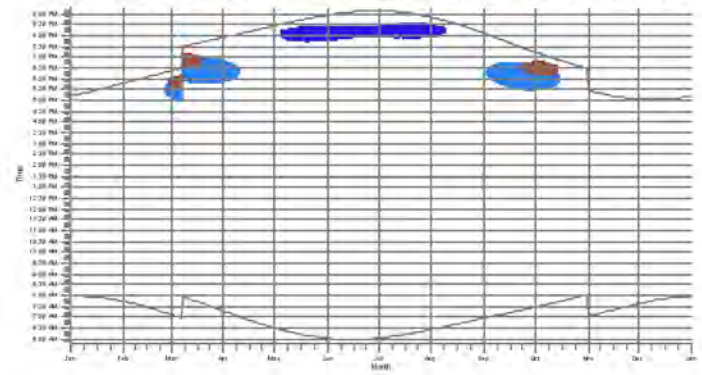
1067: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7053)



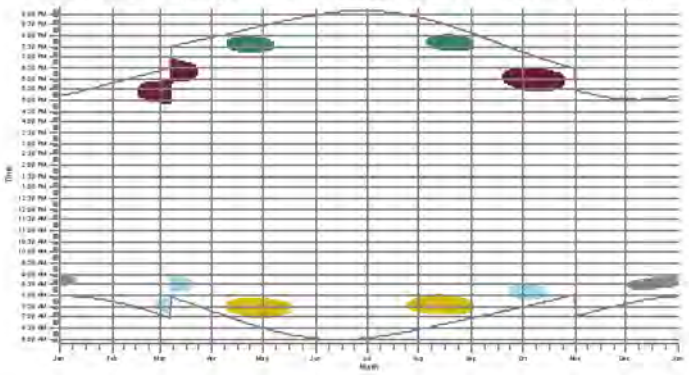
1085: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7068)



1106: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7088)



1136: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7113)



WTGs

T67: VESTAS V150-5.6 5600 150.0 IOI hub: 105.0 m (TOT: 180.0 m) (594)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T11: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (607)
T12: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (608)
T13: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (609)
T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T28: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (624)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T34: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (630)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T60: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (656)
T62: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (658)
T68: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (663)
T69: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (664)
T71: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (665)
T79: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (673)

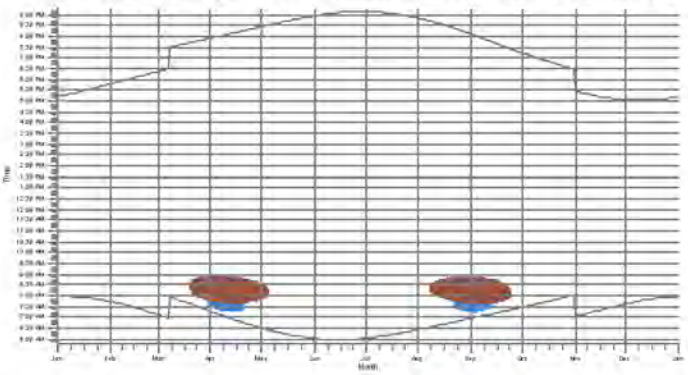
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

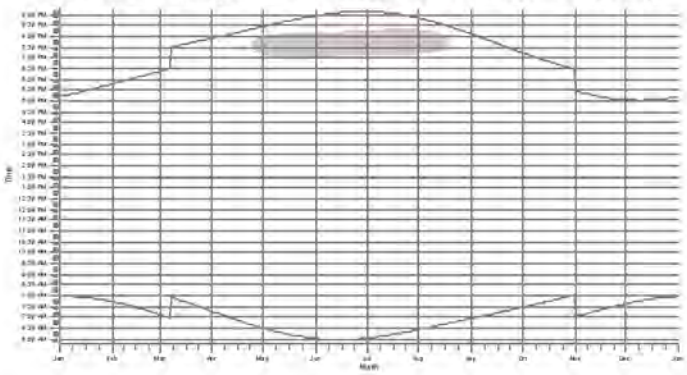
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

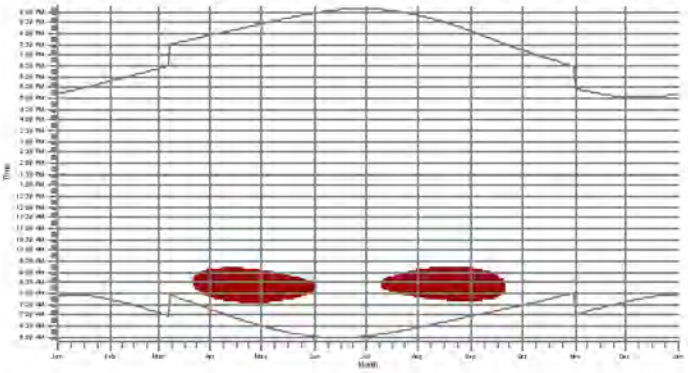
1137: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7114)



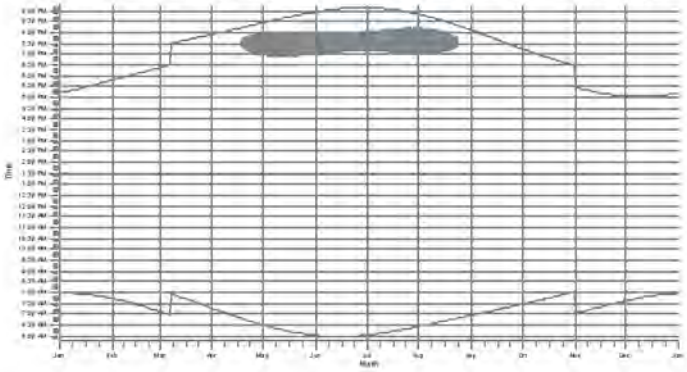
1146: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7121)



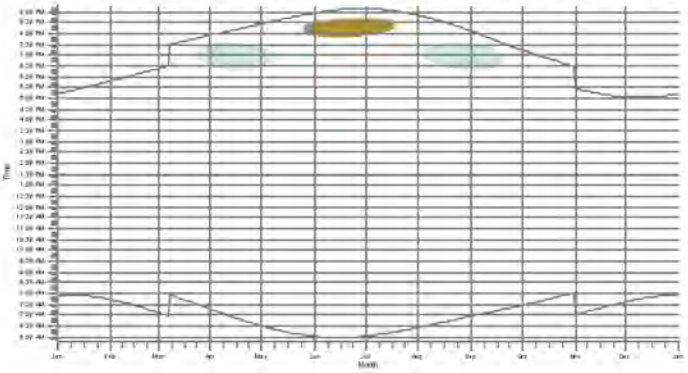
1151: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7125)



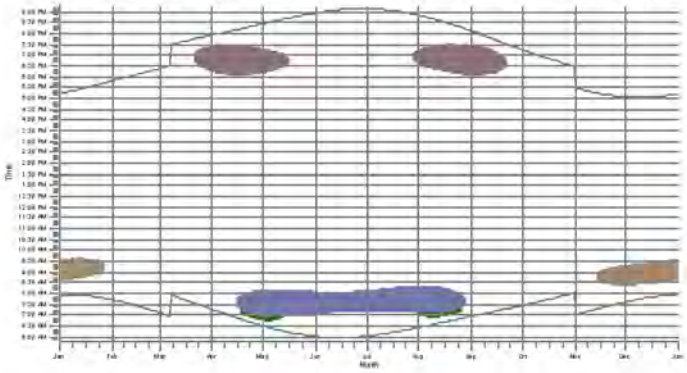
1158: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7130)



1174: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7143)



1179: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7147)



WTGs

T67: VESTAS V150-5.6 5600 150.0 IOI hub: 105.0 m (TOT: 180.0 m) (594)
T23: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (619)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T49: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (645)
T59: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (655)
T68: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (663)
T69: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (664)
T71: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (665)
T78: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (672)

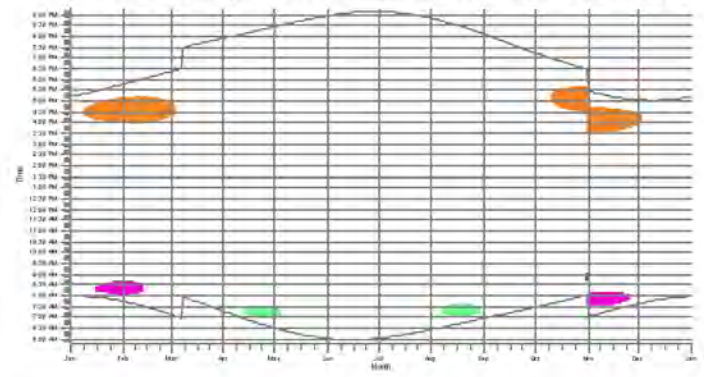
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

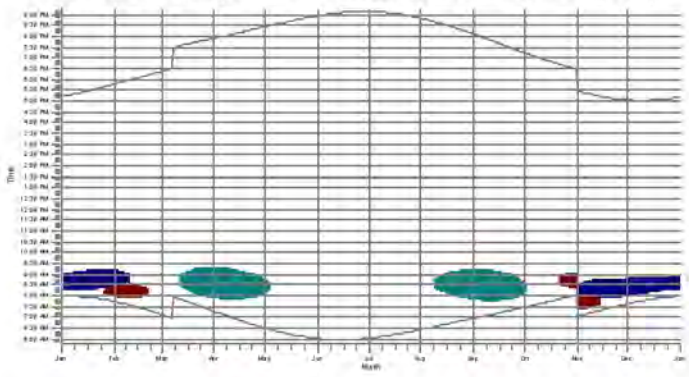
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

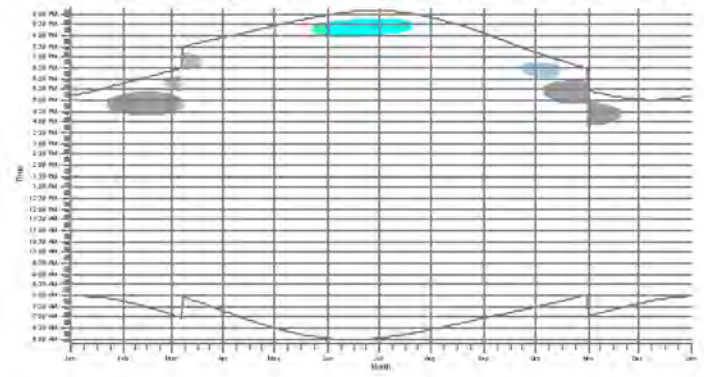
1204: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7169)



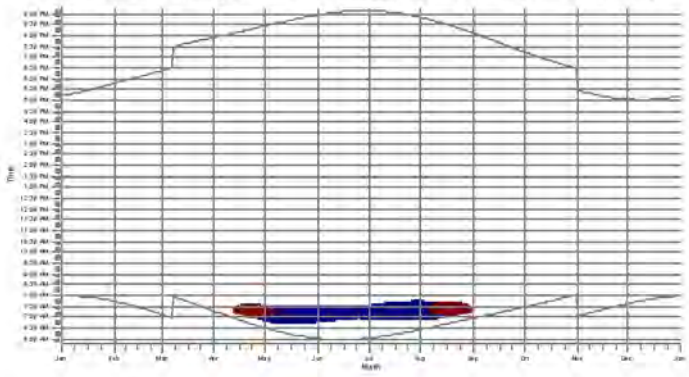
1236: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7193)



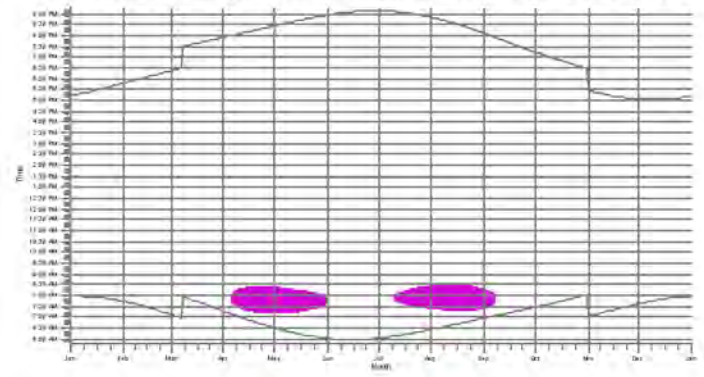
1237: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7194)



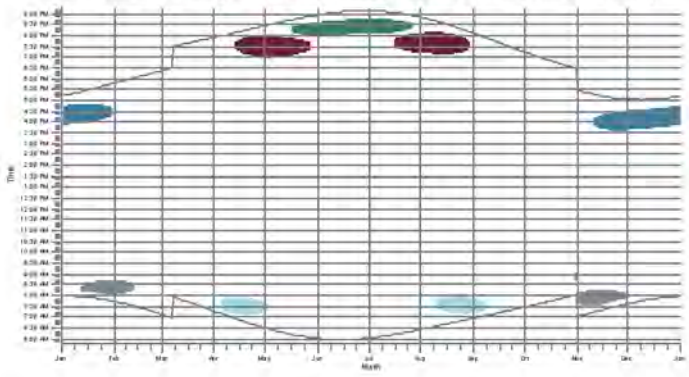
1253: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7208)



1264: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7214)



1269: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7219)



WTGs

T3: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (599)
T4: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (600)
T5: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (601)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T12: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (608)
T13: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (609)
T21: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (617)
T22: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (618)
T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T35: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (631)
T36: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (632)
T39: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (635)
T20: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (681)

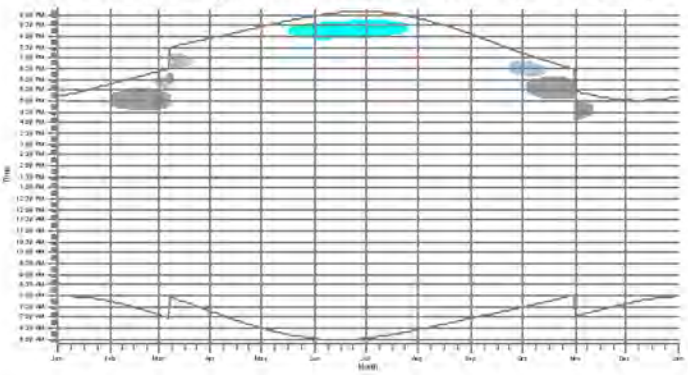
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

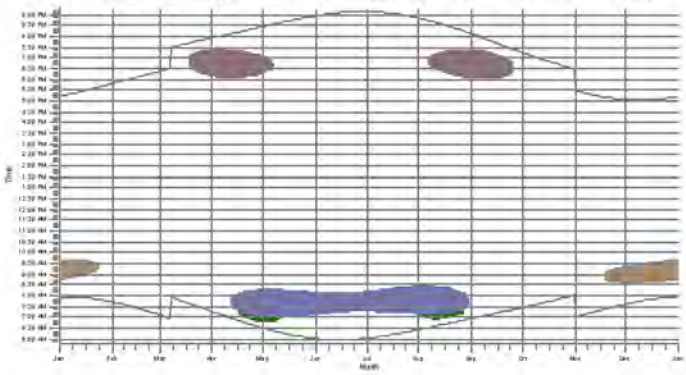
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

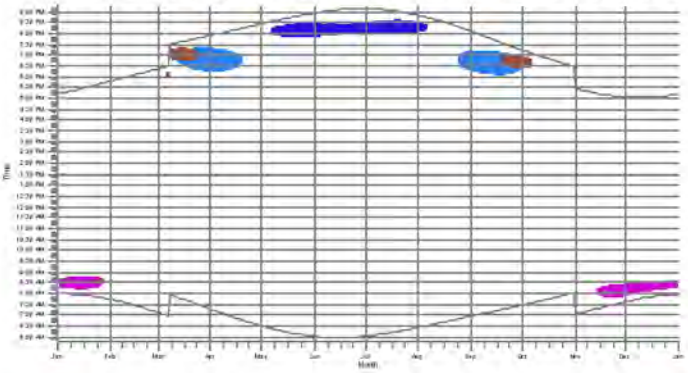
1314: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7257)



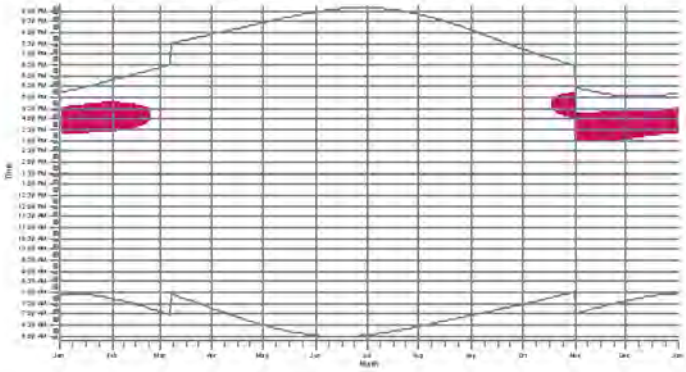
1375: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7298)



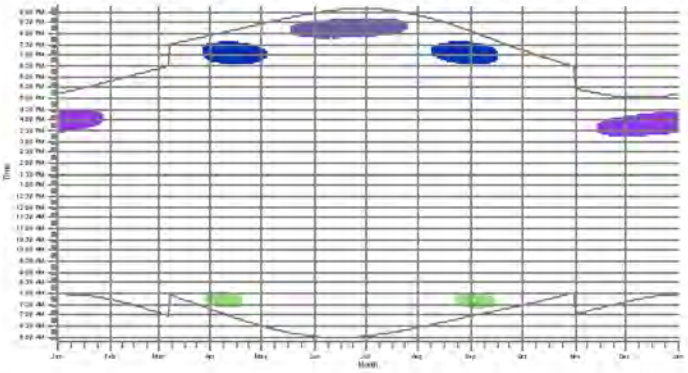
1396: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7313)



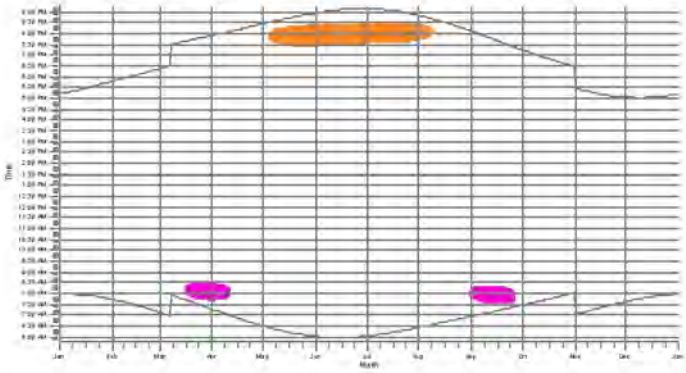
1422: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7334)



1431: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7342)



1438: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7348)



WTGs

T67: VESTAS V150-5.6 5600 150.0 IOI hub: 105.0 m (TOT: 180.0 m) (594)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T12: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (608)
T13: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (609)
T21: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (617)
T22: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (618)
T34: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (630)
T37: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (633)
T38: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (634)
T39: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (635)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T48: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (644)
T68: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (663)
T69: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (664)
T71: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (665)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

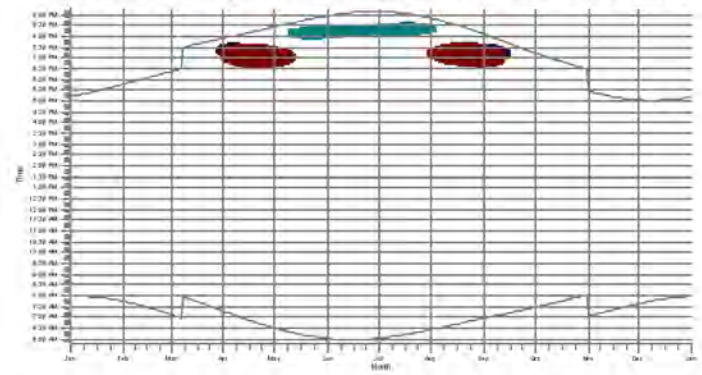
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

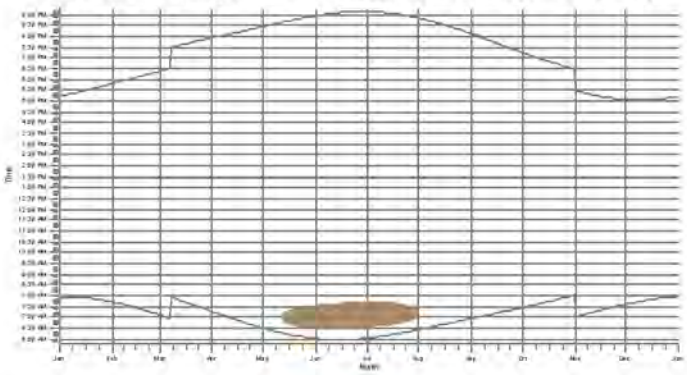
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

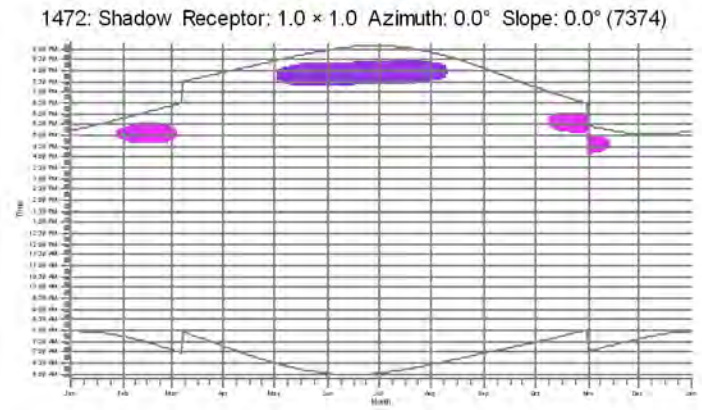
1461: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7365)



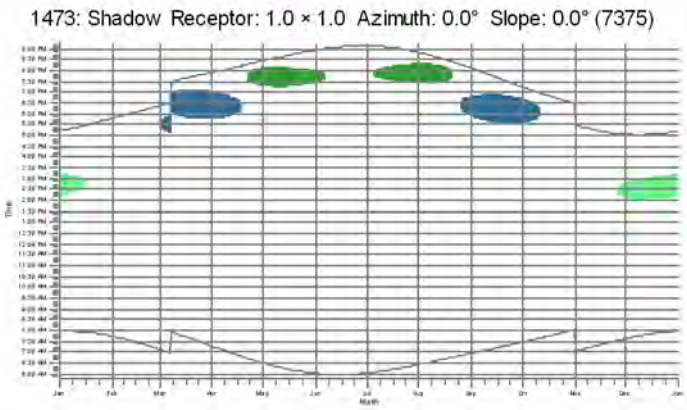
1468: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7370)



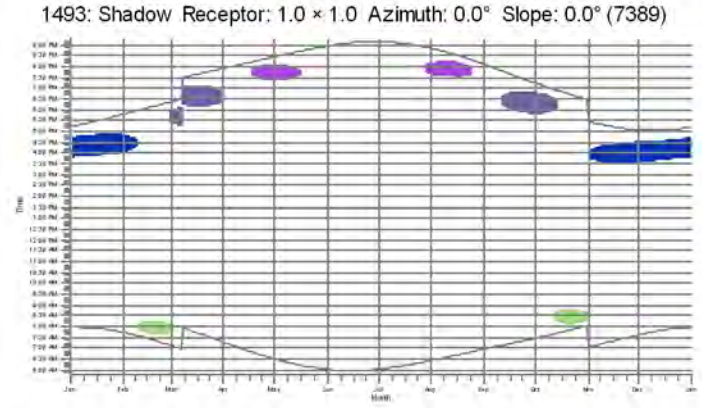
1472: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7374)



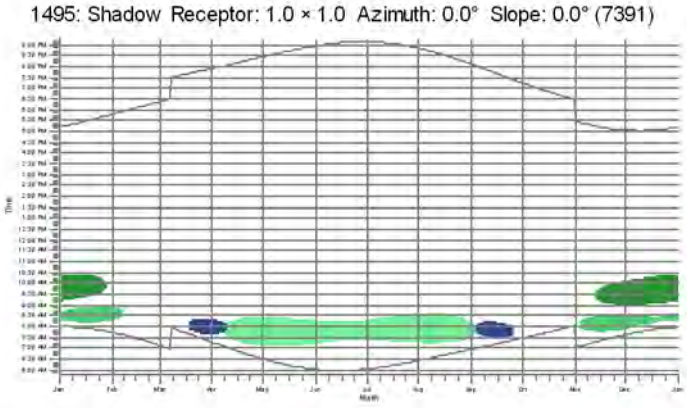
1473: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7375)



1493: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7389)



1495: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7391)



WTGs

T3: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (599)
T4: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (600)
T5: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (601)
T17: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (613)
T19: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (615)
T24: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (620)
T25: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (621)
T26: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (622)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T45: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (641)
T71: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (665)
T75: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (669)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)
T20: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (681)

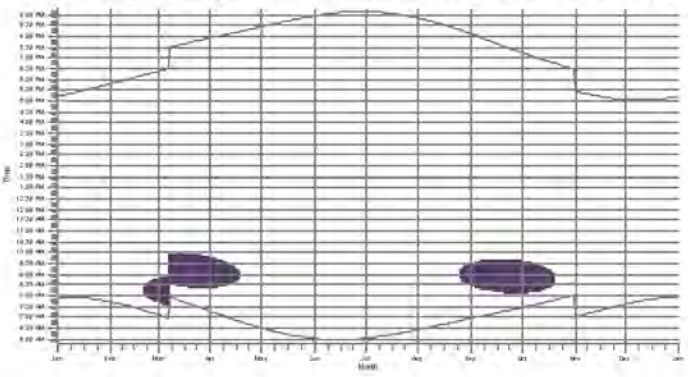
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

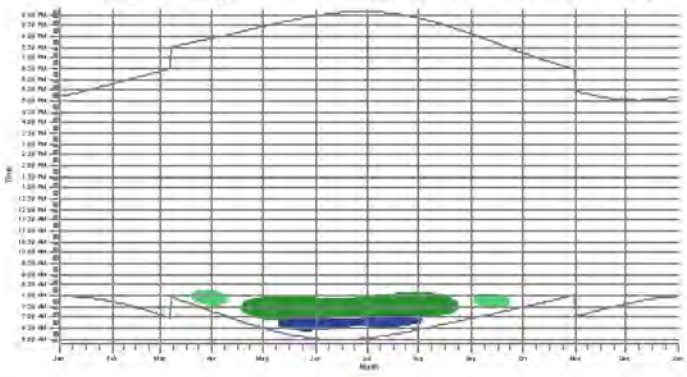
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

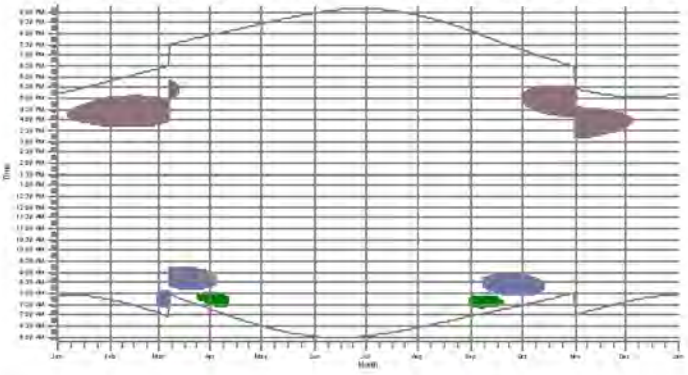
1526: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7414)



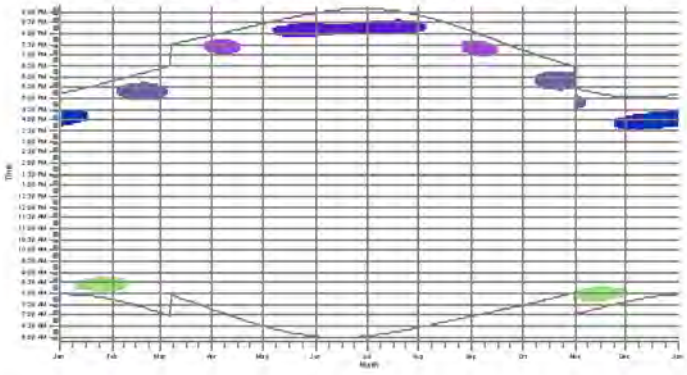
1531: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7419)



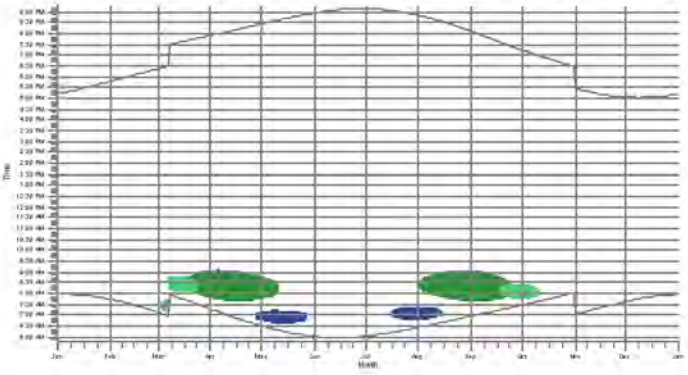
1549: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7434)



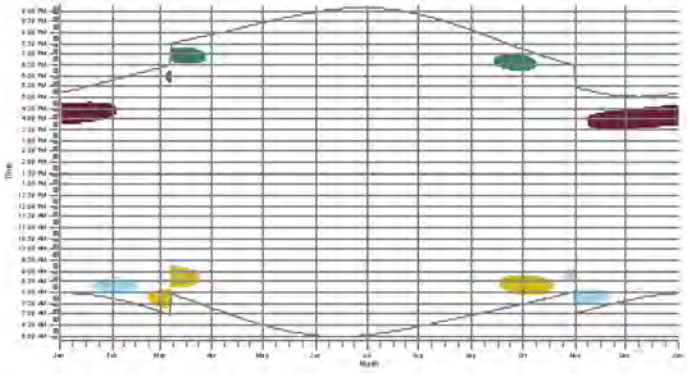
1551: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7436)



1552: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7437)



1568: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7445)



WTGs

T67: VESTAS V150-5.6 5600 150.0 IOI hub: 105.0 m (TOT: 180.0 m) (594)
T25: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (621)
T26: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (622)
T27: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (623)
T28: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (624)
T30: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (626)
T31: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (627)
T40: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (636)
T41: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (637)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T61: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (657)
T68: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (663)
T69: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (664)
T75: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (669)
T76: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (670)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

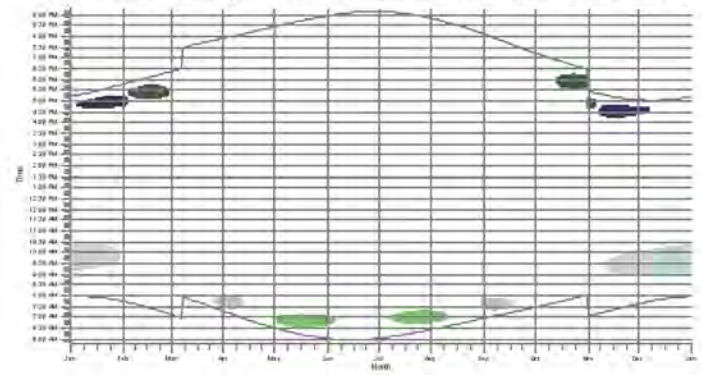
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/3/2019 6:03 PM/3.2.737

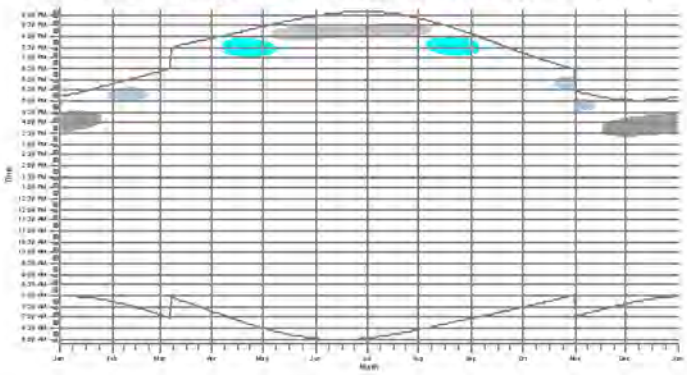
SHADOW - Calendar, graphical

Calculation: 2019-08-29_Emerson SFA

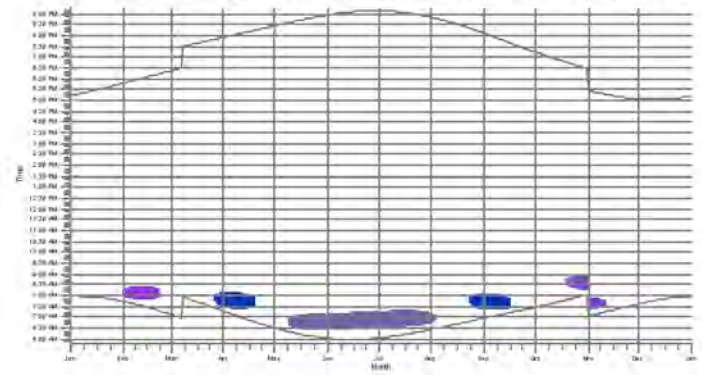
1583: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7458)



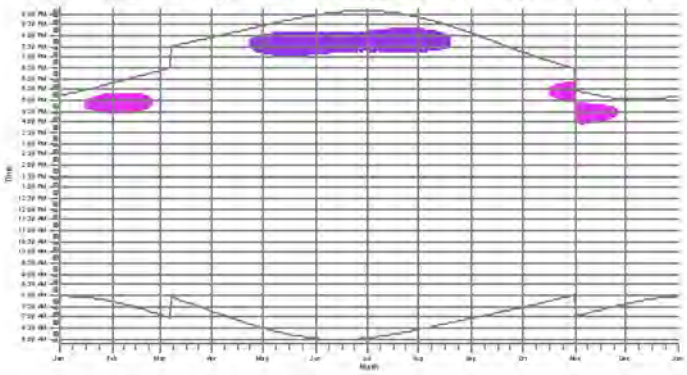
1603: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7476)



1620: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7491)



1666: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7530)



WTGs

T9: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (605)
T10: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (606)
T11: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (607)
T12: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (608)
T13: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (609)
T42: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (638)
T44: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (640)
T45: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (641)
T72: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (666)
T73: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (667)
T74: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (668)
T77: VESTAS V150-5.6 5600 150.0 IOI hub: 125.0 m (TOT: 200.0 m) (671)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

Assumptions for shadow calculations

Maximum distance for influence	1,580	m
Minimum sun height over horizon for influence	3	°
Day step for calculation	1	days
Time step for calculation	1	minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067

W	WNW	NW	NNW	Sum
738	557	368	264	8,760

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_2018-10-16_Emerson SFA_2.wpo (5)
Obstacles not used in calculation
Eye height for map: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 17

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	RPM
			[m]					[kW]	[m]	[m]	[RPM]
T1	349,610	4,577,737	217.3	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T10	350,596	4,574,852	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T11	349,346	4,574,706	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T12	350,350	4,574,226	220.4	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T13	350,857	4,574,161	220.5	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T14	357,937	4,573,872	214.1	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T15	358,653	4,573,775	212.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T16	359,025	4,573,635	210.6	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T17	354,188	4,573,276	218.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T18	353,140	4,572,979	220.4	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T19	354,497	4,572,964	218.3	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T2	351,853	4,577,442	218.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T20	354,715	4,572,600	220.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T21	353,014	4,572,078	226.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T22	354,553	4,571,744	222.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T23	352,819	4,569,529	230.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T24	348,396	4,569,363	238.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T25	348,244	4,568,858	238.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T26	348,798	4,568,694	238.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T27	351,228	4,567,779	236.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T28	352,926	4,567,712	231.2	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T29	349,444	4,567,624	240.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T3	358,825	4,576,927	210.6	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T30	351,584	4,567,411	236.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T31	353,180	4,567,359	230.1	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T32	349,341	4,567,218	240.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T33	353,823	4,567,087	229.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T34	346,474	4,567,059	239.4	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T35	351,585	4,566,709	236.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T36	353,266	4,566,658	230.3	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T37	346,951	4,566,553	241.9	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T38	346,312	4,566,449	244.1	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T39	348,733	4,565,759	240.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T4	359,059	4,576,484	209.8	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T40	350,634	4,563,323	239.1	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T41	350,633	4,562,919	238.6	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	RPM
			[m]					[kW]	[m]	[m]	[RPM]
T42	350,980	4,562,522	238.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T43	346,461	4,562,366	252.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T44	351,176	4,561,655	240.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T45	351,138	4,561,116	241.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T46	350,550	4,560,477	242.1	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T47	346,548	4,559,973	249.4	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T48	348,005	4,557,521	254.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T49	350,518	4,557,129	252.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T5	359,405	4,576,468	208.5	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T50	347,093	4,557,038	257.2	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T51	347,967	4,556,813	256.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T52	346,198	4,556,139	262.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T53	346,199	4,555,776	263.2	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T54	351,385	4,555,703	254.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T55	350,877	4,555,552	254.1	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T56	349,645	4,555,532	258.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T57	346,776	4,555,489	261.4	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T58	351,517	4,554,997	256.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T59	347,062	4,554,879	262.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T6	349,536	4,575,674	218.4	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T60	353,545	4,553,056	260.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T61	348,088	4,552,977	268.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T62	353,545	4,552,541	262.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T63	348,267	4,552,275	270.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T64	346,500	4,551,303	274.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T65	348,263	4,551,051	272.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T66	351,881	4,550,874	267.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T67	351,296	4,550,732	266.7	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T68	350,723	4,550,571	269.1	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T69	349,753	4,550,478	270.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T7	350,758	4,575,598	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T70	347,305	4,550,131	275.5	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T71	350,744	4,549,945	268.1	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T72	350,171	4,575,540	218.8	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T73	347,988	4,574,744	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T74	347,821	4,574,437	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T75	348,951	4,569,244	238.0	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T76	352,771	4,562,205	239.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T77	351,065	4,562,197	240.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T78	346,973	4,555,202	262.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T79	353,883	4,552,527	261.5	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T8	351,344	4,575,426	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T80	346,667	4,547,606	290.6	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T81	346,668	4,546,855	291.6	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T82	346,447	4,545,876	284.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T83	346,772	4,545,781	287.8	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T84	354,248	4,576,820	216.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T85	353,297	4,576,782	220.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T86	354,685	4,576,614	216.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T87	346,898	4,567,229	238.0	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0
T9	350,345	4,575,175	219.3	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 5.5-158-5,500	5,500	158.0	107.5	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
2	351,971	4,551,976	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3	352,230	4,569,172	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
5	353,658	4,568,766	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
6	351,513	4,556,129	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
7	347,724	4,554,982	261.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
8	354,816	4,551,509	259.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
9	353,048	4,577,587	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
10	347,147	4,569,722	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
11	347,408	4,556,393	259.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
12	347,106	4,553,301	263.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
13	352,114	4,565,265	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
15	345,797	4,566,154	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
16	353,657	4,569,026	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
17	345,291	4,561,441	254.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
19	352,856	4,570,343	233.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
20	352,798	4,565,458	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
21	347,892	4,569,862	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
23	352,606	4,553,875	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
25	348,655	4,566,909	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
26	350,575	4,556,102	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
27	350,270	4,551,427	265.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
28	346,094	4,550,068	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
29	357,524	4,574,391	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
30	357,523	4,574,412	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
31	358,610	4,574,557	212.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
32	359,196	4,575,959	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
33	352,420	4,572,652	229.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
34	353,513	4,571,307	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
35	356,876	4,574,320	216.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
36	356,604	4,574,142	216.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
37	346,674	4,548,267	286.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
38	354,582	4,551,944	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
39	350,352	4,554,193	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
40	351,670	4,549,484	270.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
41	355,503	4,576,077	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
42	359,820	4,572,362	208.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
43	359,948	4,573,474	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
44	352,845	4,577,517	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
45	353,876	4,576,036	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
46	352,002	4,569,123	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
47	347,527	4,551,727	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
48	348,421	4,558,912	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
49	356,218	4,576,260	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
50	357,955	4,577,125	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
51	350,566	4,565,854	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
52	347,575	4,545,306	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
53	345,869	4,563,307	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
54	347,645	4,555,057	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
56	350,180	4,548,624	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
57	353,835	4,575,824	219.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
58	350,022	4,568,482	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
59	348,436	4,557,851	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
62	354,167	4,578,198	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
63	350,113	4,562,562	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
64	350,095	4,562,953	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
65	346,363	4,565,208	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
66	347,752	4,570,146	235.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
68	350,087	4,554,842	256.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
70	347,562	4,570,399	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
71	351,992	4,553,073	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
72	352,661	4,551,610	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
74	357,991	4,577,122	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
75	351,886	4,572,221	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
76	350,397	4,572,776	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
77	354,598	4,572,195	221.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
78	348,304	4,573,128	223.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
79	346,838	4,560,484	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
80	348,422	4,578,302	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
83	355,544	4,571,708	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
85	346,043	4,560,379	252.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
86	349,686	4,560,271	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
87	350,142	4,557,205	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
88	349,856	4,578,512	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
89	357,466	4,574,287	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
90	360,302	4,574,299	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
91	352,181	4,567,715	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
93	348,569	4,554,584	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
94	345,801	4,567,370	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
95	346,311	4,567,623	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
96	354,709	4,576,167	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
98	351,676	4,563,037	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
99	354,114	4,565,428	230.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
100	350,070	4,564,063	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
102	348,139	4,556,289	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
103	355,457	4,572,148	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
104	352,174	4,567,157	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
106	347,924	4,564,968	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
107	354,055	4,566,057	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
110	356,502	4,573,493	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
111	357,296	4,574,297	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
112	345,753	4,562,890	250.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
113	353,826	4,577,333	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
114	345,801	4,567,317	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
115	347,685	4,570,183	233.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
116	351,846	4,578,748	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
118	351,972	4,570,994	231.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
119	356,431	4,573,515	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
120	351,512	4,569,660	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
122	347,671	4,570,389	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
123	351,043	4,554,129	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
124	353,404	4,577,741	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
127	345,817	4,566,194	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
129	352,674	4,554,779	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
130	352,437	4,551,955	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
131	360,024	4,577,342	209.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
132	351,530	4,578,710	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
133	352,046	4,549,462	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
134	352,624	4,553,662	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
135	346,967	4,574,989	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
137	351,700	4,562,581	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
139	355,024	4,566,656	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
140	348,175	4,570,335	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
141	354,876	4,551,637	258.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
142	354,016	4,575,678	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
143	349,258	4,568,017	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
144	347,943	4,573,987	221.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
145	352,318	4,566,469	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
146	348,848	4,569,916	237.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
147	347,596	4,570,141	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
148	349,858	4,558,561	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
149	346,701	4,565,405	245.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
150	347,798	4,573,124	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
151	350,383	4,572,986	224.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
152	353,894	4,577,969	210.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
153	354,049	4,572,266	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
154	345,664	4,561,060	253.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
155	350,006	4,562,178	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
156	351,088	4,558,585	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
157	357,719	4,574,646	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
158	357,851	4,574,638	215.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
159	351,996	4,569,421	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
160	356,588	4,573,619	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
161	344,808	4,555,561	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
162	354,329	4,568,216	228.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
163	345,306	4,545,729	285.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
165	347,693	4,565,281	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
166	345,199	4,561,430	254.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
167	345,464	4,560,913	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
168	354,333	4,551,170	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
169	352,673	4,551,172	265.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
170	346,468	4,549,738	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
171	358,318	4,576,290	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
172	351,808	4,578,358	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
173	352,713	4,565,517	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
174	349,233	4,576,495	219.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
176	347,395	4,569,750	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
178	346,203	4,558,869	253.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
179	350,401	4,578,410	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
180	355,544	4,572,258	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
181	355,665	4,572,405	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
182	346,259	4,545,337	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
183	345,964	4,561,199	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
185	354,436	4,551,418	260.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
186	353,969	4,576,188	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
187	346,571	4,561,321	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
189	352,257	4,576,347	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
191	348,169	4,570,098	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
192	347,724	4,570,118	235.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
193	348,855	4,551,861	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
195	345,622	4,552,512	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
196	354,235	4,578,242	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
197	349,904	4,575,140	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
198	345,218	4,567,181	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
199	345,881	4,567,518	238.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
200	350,589	4,556,069	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
201	347,989	4,545,233	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
202	348,870	4,576,511	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
203	352,717	4,565,375	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
204	346,375	4,560,736	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
205	352,943	4,555,276	255.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
206	354,095	4,551,863	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
207	347,145	4,549,677	278.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
209	352,520	4,576,339	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
210	347,452	4,569,757	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
211	346,262	4,560,367	252.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
212	350,086	4,561,425	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
213	352,869	4,554,555	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
214	350,084	4,556,125	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
215	356,654	4,574,331	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
216	357,357	4,574,299	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
217	357,572	4,574,389	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
218	358,235	4,574,692	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
220	346,936	4,548,248	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
221	351,732	4,561,166	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
222	351,041	4,556,215	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
223	354,169	4,570,124	226.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
224	351,028	4,557,704	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
225	347,418	4,556,330	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
227	349,910	4,567,290	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
228	350,100	4,562,231	240.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
229	346,647	4,552,551	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
230	352,864	4,577,559	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
231	353,959	4,575,917	219.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
232	350,152	4,555,457	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
233	353,769	4,551,995	261.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
234	351,988	4,569,306	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
235	347,681	4,570,145	234.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
236	353,873	4,568,579	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
237	349,858	4,549,572	272.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
239	347,980	4,548,181	282.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
240	345,557	4,545,630	283.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
241	347,959	4,565,262	243.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
242	345,899	4,560,556	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
243	354,541	4,551,300	259.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
244	348,842	4,578,319	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
245	354,001	4,566,061	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
246	345,882	4,568,507	237.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
248	347,591	4,565,296	243.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
249	354,445	4,551,153	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
250	357,794	4,577,110	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
251	355,981	4,572,718	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
252	350,125	4,573,402	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
253	353,814	4,578,116	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
254	345,816	4,565,902	244.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
255	348,095	4,565,598	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
258	345,058	4,545,318	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
259	347,256	4,563,342	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
260	347,905	4,564,854	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
261	349,127	4,556,190	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
262	345,273	4,551,786	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
263	350,188	4,578,550	218.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
264	352,613	4,577,227	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
265	352,044	4,569,134	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
266	347,300	4,569,738	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
268	352,390	4,560,308	238.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
270	354,171	4,574,759	218.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
271	359,876	4,574,368	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
272	349,837	4,578,271	219.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
273	347,060	4,573,920	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
275	345,961	4,566,804	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
277	350,140	4,557,015	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
278	347,266	4,545,387	291.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
279	346,614	4,562,783	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
280	352,048	4,570,388	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
281	349,773	4,573,347	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
283	350,133	4,559,428	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
284	355,437	4,572,104	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
285	348,957	4,576,500	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
286	357,907	4,577,123	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
287	350,430	4,572,693	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
288	350,071	4,557,308	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
289	356,127	4,576,785	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
291	352,144	4,569,061	234.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
293	349,992	4,564,270	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
294	348,087	4,570,209	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
295	347,576	4,570,429	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
298	352,907	4,568,928	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
299	354,483	4,577,656	212.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
300	354,048	4,578,008	210.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
301	345,895	4,560,480	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
303	355,639	4,571,586	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
304	345,777	4,566,429	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
305	347,708	4,567,596	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
310	348,787	4,556,261	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
312	351,558	4,549,360	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
313	357,884	4,576,036	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
314	348,896	4,549,284	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
315	354,609	4,566,484	226.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
317	353,167	4,570,701	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
319	354,350	4,552,485	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
320	352,345	4,576,711	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
321	348,092	4,570,309	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
322	347,805	4,570,109	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
323	347,673	4,570,121	234.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
324	352,600	4,553,553	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
325	352,676	4,550,799	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
327	347,192	4,548,158	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
328	345,881	4,562,145	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
329	345,780	4,562,224	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
330	353,508	4,551,897	262.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
331	348,807	4,549,619	273.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
332	359,914	4,576,818	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
333	347,552	4,565,759	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
334	347,837	4,558,618	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
335	349,549	4,556,225	254.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
336	347,205	4,554,311	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
337	354,012	4,577,983	211.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
338	345,885	4,568,343	236.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
339	347,559	4,545,255	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
340	347,894	4,564,883	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
341	347,556	4,565,765	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
342	354,869	4,551,676	257.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
343	354,878	4,570,381	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
344	358,324	4,576,201	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
346	350,374	4,564,617	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
347	346,924	4,549,759	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
348	346,988	4,565,325	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
349	345,596	4,561,006	253.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
350	347,544	4,550,966	271.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
351	346,663	4,562,849	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
352	353,322	4,577,656	214.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
353	351,983	4,569,366	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
354	347,584	4,565,292	243.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
355	347,723	4,570,179	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
356	353,100	4,560,695	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
357	348,847	4,558,644	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
359	358,247	4,577,901	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
360	353,807	4,576,810	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
361	351,211	4,558,529	247.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
362	352,684	4,552,529	262.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
364	350,394	4,572,944	224.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
365	352,339	4,573,592	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
366	349,125	4,576,496	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
367	345,301	4,565,438	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
368	347,800	4,569,850	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
369	349,018	4,554,113	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
370	346,541	4,562,806	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
371	348,720	4,573,901	221.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
372	349,827	4,568,777	238.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
373	347,630	4,570,191	233.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
376	353,695	4,571,653	225.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
377	358,358	4,574,946	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
378	348,168	4,570,526	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
380	348,063	4,570,148	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
381	346,386	4,561,128	250.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
382	351,627	4,562,173	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
383	348,565	4,555,317	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
384	352,691	4,552,943	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
385	359,920	4,576,696	209.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
386	353,974	4,562,887	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
387	350,248	4,551,465	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
388	347,555	4,569,766	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
389	346,202	4,558,849	253.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
390	358,397	4,576,871	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
391	354,018	4,575,635	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
392	345,116	4,545,363	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
393	346,855	4,565,400	243.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
394	350,220	4,578,295	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
395	351,856	4,578,925	220.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
396	349,397	4,568,206	241.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
397	352,789	4,577,937	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
398	347,660	4,570,210	233.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
399	351,771	4,561,830	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
400	351,952	4,569,438	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
401	346,036	4,562,819	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
402	350,114	4,559,700	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
403	351,996	4,549,454	268.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
404	350,142	4,550,519	270.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
405	354,192	4,574,827	219.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
406	353,503	4,575,941	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
407	354,282	4,576,189	216.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
408	350,070	4,557,364	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
410	347,011	4,552,480	273.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
411	354,832	4,551,345	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
412	351,450	4,549,498	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
413	352,008	4,578,698	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
415	355,829	4,577,665	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
416	354,024	4,575,861	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
417	347,565	4,551,197	273.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
418	345,797	4,567,453	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
420	352,645	4,577,524	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
421	353,437	4,576,097	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
422	350,017	4,563,022	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
423	351,657	4,562,647	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
424	349,619	4,556,157	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
425	358,284	4,574,699	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
426	351,581	4,572,652	229.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
427	349,978	4,574,706	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
428	357,582	4,574,324	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
429	350,093	4,562,379	241.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
430	352,497	4,555,013	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
432	350,293	4,578,380	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
434	355,984	4,572,830	219.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
435	349,987	4,564,393	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
437	347,510	4,553,283	262.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
438	350,531	4,569,056	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
439	347,651	4,570,131	234.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
440	354,332	4,553,838	258.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
441	347,401	4,546,746	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
442	353,964	4,566,128	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
443	347,472	4,568,103	238.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
444	355,571	4,571,787	221.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
445	346,062	4,550,304	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
447	345,885	4,567,227	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
448	350,422	4,572,712	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
449	355,749	4,572,534	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
451	346,278	4,567,619	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
452	353,823	4,568,555	233.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
453	354,508	4,551,383	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
454	349,368	4,549,669	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
456	348,946	4,578,328	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
457	349,849	4,578,580	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
458	355,632	4,572,237	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
459	347,334	4,569,736	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
460	353,426	4,561,634	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
461	347,380	4,553,095	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
462	353,851	4,578,050	211.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
463	355,870	4,571,208	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
464	356,623	4,574,339	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
466	346,153	4,545,432	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
467	345,810	4,565,930	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
468	347,779	4,565,267	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
469	347,714	4,570,152	234.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
474	352,129	4,569,071	235.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
475	346,741	4,562,791	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
476	345,887	4,567,695	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
477	351,774	4,562,837	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
478	346,753	4,561,495	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
479	347,562	4,556,232	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
480	354,887	4,551,539	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
481	353,057	4,550,640	259.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
482	350,482	4,549,391	272.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
483	357,511	4,576,100	215.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
484	349,426	4,573,471	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
485	357,997	4,574,685	214.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
486	353,261	4,577,671	214.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
487	352,803	4,572,744	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
488	345,898	4,560,486	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
489	345,814	4,567,816	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
490	349,535	4,566,246	239.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
491	357,902	4,577,210	214.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
492	352,270	4,567,998	234.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
494	355,427	4,572,058	220.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
495	357,092	4,574,309	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
496	346,100	4,547,861	290.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
498	350,157	4,554,825	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
499	355,679	4,571,604	221.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
500	352,193	4,567,289	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
501	352,253	4,567,621	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
502	347,479	4,570,300	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
503	347,480	4,567,871	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
504	345,632	4,560,981	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
507	353,932	4,578,049	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
508	349,773	4,569,705	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
509	354,625	4,567,394	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
510	354,258	4,552,740	260.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
512	356,177	4,572,974	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
513	353,169	4,577,735	216.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
515	353,042	4,570,841	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
516	348,871	4,573,395	222.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
517	349,922	4,573,377	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
518	350,097	4,560,304	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
519	346,998	4,556,297	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
520	348,931	4,553,155	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
521	348,820	4,554,397	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
523	359,180	4,574,345	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
524	352,880	4,577,931	218.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
526	345,628	4,561,056	253.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
527	350,189	4,551,977	264.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
528	351,177	4,549,585	270.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
529	351,459	4,550,162	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
530	349,876	4,578,899	215.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
531	350,411	4,578,458	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
532	360,683	4,576,054	204.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
533	345,465	4,565,556	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
534	348,156	4,569,886	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
535	350,129	4,558,088	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
536	351,377	4,548,969	270.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
538	350,359	4,572,943	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
539	345,241	4,546,338	292.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
540	348,209	4,570,076	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
541	350,217	4,556,764	252.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
542	354,503	4,551,220	259.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
543	352,674	4,550,401	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
544	345,907	4,565,791	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
545	346,793	4,558,645	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
546	351,275	4,554,269	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
547	352,590	4,577,641	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
548	345,388	4,565,187	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
549	346,730	4,565,814	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
550	347,711	4,570,182	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
551	345,695	4,559,201	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
552	357,589	4,574,590	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
553	348,963	4,576,139	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
554	358,665	4,576,046	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
555	358,247	4,577,626	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
556	354,941	4,570,369	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
557	347,670	4,570,347	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
558	345,685	4,561,006	252.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
559	350,106	4,561,367	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
560	351,184	4,554,207	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
561	351,222	4,578,701	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
562	354,467	4,572,202	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
563	349,640	4,576,668	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
564	352,166	4,568,451	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
566	345,738	4,562,229	252.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
567	351,790	4,560,113	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
569	352,313	4,566,468	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
570	347,602	4,566,895	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
571	351,039	4,560,143	243.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
572	350,127	4,558,552	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
573	346,646	4,552,558	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
574	353,743	4,576,210	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
575	349,349	4,563,858	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
576	351,691	4,561,059	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
577	354,146	4,562,143	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
578	354,189	4,561,900	235.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
579	354,323	4,551,800	251.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
580	347,938	4,552,465	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
581	359,611	4,576,021	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
582	352,574	4,565,450	232.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
583	348,983	4,551,490	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
584	345,263	4,551,791	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
585	347,648	4,570,158	233.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
586	352,685	4,553,323	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
588	357,682	4,574,744	215.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
590	346,401	4,565,410	244.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
591	348,074	4,570,160	236.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
592	348,167	4,570,444	232.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
593	345,851	4,559,631	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
594	353,143	4,569,988	228.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
595	356,183	4,576,161	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
596	351,467	4,574,491	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
597	353,699	4,575,477	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
598	354,146	4,576,189	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
599	349,349	4,568,095	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
601	354,621	4,573,824	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
602	351,979	4,569,374	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
604	345,568	4,545,687	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
605	346,550	4,562,812	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
606	347,411	4,569,815	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
607	345,468	4,560,743	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
608	348,758	4,552,313	269.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
609	351,597	4,549,496	271.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
610	351,794	4,578,679	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
611	358,321	4,576,229	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
612	347,842	4,546,710	292.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
613	351,116	4,557,711	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
614	347,647	4,555,453	260.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
615	348,752	4,553,216	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
617	350,625	4,576,196	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
618	346,904	4,573,988	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
619	354,364	4,551,235	261.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
620	352,744	4,550,496	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
621	354,141	4,574,854	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
622	358,491	4,575,609	212.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
624	351,945	4,563,446	235.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
625	347,256	4,545,343	290.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
626	345,557	4,566,604	241.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
627	354,352	4,569,796	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
628	351,675	4,561,259	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
629	351,796	4,578,897	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
630	350,079	4,563,539	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
631	348,032	4,569,818	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
632	350,124	4,559,017	246.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
634	355,466	4,571,860	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
635	352,223	4,569,064	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
636	350,040	4,567,048	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
639	345,728	4,565,326	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
641	347,114	4,547,050	295.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
643	352,046	4,569,307	237.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
645	347,659	4,570,157	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
647	354,357	4,553,863	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
648	348,676	4,552,509	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
650	352,901	4,570,406	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
652	351,520	4,551,282	266.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
653	352,439	4,572,720	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
654	348,917	4,549,246	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
655	347,961	4,565,210	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
656	354,130	4,568,440	228.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
657	352,549	4,577,023	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
658	353,903	4,575,974	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
659	353,749	4,571,891	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
660	347,869	4,573,129	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
661	352,003	4,569,150	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
662	345,252	4,551,767	276.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
663	346,961	4,562,776	248.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
664	347,202	4,563,018	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
665	346,372	4,567,707	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
668	356,804	4,574,343	216.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
669	356,639	4,574,023	217.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
670	357,864	4,577,126	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
677	350,216	4,578,420	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
678	351,836	4,571,816	230.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
679	355,494	4,572,184	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
680	349,988	4,564,379	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
681	347,228	4,569,729	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
682	350,572	4,556,104	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
683	348,790	4,552,039	266.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
684	357,523	4,574,436	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
685	358,134	4,574,682	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
686	353,119	4,577,664	216.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
687	355,907	4,572,735	219.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
688	351,382	4,574,432	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
689	354,486	4,567,965	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
690	354,434	4,551,385	261.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
691	347,450	4,551,641	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
692	345,873	4,563,308	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
693	347,455	4,566,665	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
695	355,574	4,571,691	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
696	358,967	4,575,963	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
697	347,588	4,570,390	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
698	347,581	4,570,257	232.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
699	348,796	4,567,729	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
701	350,255	4,549,296	273.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
702	352,940	4,577,907	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
703	347,736	4,562,612	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
704	348,047	4,565,834	241.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
705	347,747	4,570,178	234.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
706	348,019	4,554,197	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
708	348,755	4,578,314	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
710	352,013	4,570,611	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
711	350,046	4,558,631	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
713	349,986	4,556,214	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
714	352,661	4,551,611	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
716	353,512	4,570,481	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
717	354,102	4,578,129	209.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
718	351,772	4,562,341	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
720	345,298	4,557,378	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
721	350,572	4,578,916	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
722	351,812	4,563,174	234.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
723	348,823	4,554,301	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
724	351,366	4,554,327	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
725	357,423	4,574,294	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
726	360,189	4,574,323	206.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
727	355,489	4,577,244	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
728	352,266	4,567,695	236.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
729	355,432	4,572,149	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
730	346,951	4,573,920	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
731	357,180	4,574,303	216.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
733	350,097	4,560,005	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
734	352,687	4,552,846	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
735	356,521	4,573,514	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
737	346,035	4,544,924	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
738	351,573	4,549,097	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
739	358,324	4,576,393	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
740	352,339	4,566,412	235.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
742	353,657	4,577,655	213.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
743	346,219	4,567,625	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
744	354,622	4,567,620	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
745	351,916	4,578,753	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
746	346,907	4,575,336	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
747	357,511	4,574,526	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
748	358,323	4,576,143	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
749	352,680	4,565,496	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
750	354,818	4,566,508	226.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
752	351,708	4,561,611	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
753	348,394	4,558,597	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
755	354,014	4,577,451	214.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
756	352,344	4,576,714	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
757	345,192	4,545,287	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
759	347,644	4,569,840	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
760	350,014	4,562,092	240.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
761	350,112	4,559,235	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
762	352,686	4,550,451	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
764	359,958	4,577,418	209.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
765	351,858	4,578,988	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
766	351,805	4,571,238	231.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
767	345,595	4,560,990	253.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
769	351,240	4,554,240	258.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
770	350,305	4,550,810	266.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
772	345,803	4,567,357	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
774	345,689	4,561,039	253.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
775	345,658	4,561,062	253.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
776	349,866	4,578,224	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
777	357,834	4,574,637	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
778	347,604	4,570,156	233.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
779	351,702	4,562,804	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
780	351,470	4,551,732	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
781	352,675	4,550,109	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
782	354,246	4,578,189	208.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
783	353,943	4,577,980	210.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
784	352,790	4,565,323	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
785	351,697	4,562,153	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
787	346,742	4,556,724	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
788	350,126	4,558,014	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
789	350,409	4,572,991	224.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
791	348,167	4,570,415	232.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
793	346,580	4,554,244	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
794	350,342	4,549,535	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
795	352,204	4,576,277	219.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
796	358,321	4,576,318	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
797	358,304	4,578,085	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
798	349,949	4,568,273	238.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
799	357,840	4,574,680	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
801	346,788	4,558,585	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
803	347,732	4,573,126	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
804	347,095	4,545,273	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
805	345,200	4,545,754	284.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
806	347,245	4,562,813	246.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
808	350,107	4,559,776	243.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
809	348,596	4,555,286	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
810	347,885	4,549,723	276.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
811	352,500	4,574,832	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
812	360,051	4,573,010	209.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
813	352,633	4,577,746	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
814	347,671	4,573,443	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
815	345,355	4,546,628	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
816	347,422	4,569,751	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
817	357,784	4,574,631	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
818	347,101	4,573,981	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
819	348,151	4,570,106	236.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
821	353,214	4,551,893	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
822	349,687	4,552,409	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
823	350,203	4,551,016	265.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
824	359,982	4,576,463	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
825	346,359	4,549,648	278.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
826	345,797	4,567,414	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
827	347,844	4,569,157	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
828	348,483	4,558,714	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
829	351,792	4,578,780	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
830	346,461	4,565,471	245.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
831	347,707	4,570,121	235.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
832	348,011	4,569,871	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
834	350,160	4,562,184	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
835	350,115	4,558,492	248.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
837	353,220	4,575,704	221.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
838	354,569	4,576,160	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
840	349,999	4,565,708	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
841	351,578	4,549,458	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
843	348,796	4,576,511	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
844	352,351	4,576,345	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
845	353,144	4,570,004	228.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
846	347,570	4,566,093	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
847	346,990	4,558,715	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
848	347,355	4,553,143	264.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
849	355,951	4,572,682	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
850	349,117	4,549,568	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
851	346,438	4,549,702	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
852	345,721	4,565,328	245.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
853	355,477	4,572,161	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
854	355,417	4,571,916	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
855	355,022	4,573,074	218.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
857	349,431	4,569,208	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
860	353,139	4,569,793	229.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
861	350,095	4,562,235	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
862	352,036	4,572,642	229.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
863	352,909	4,577,564	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
864	345,799	4,567,218	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
865	345,996	4,561,840	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
866	352,704	4,554,608	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
868	357,332	4,574,297	216.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
869	351,656	4,562,959	236.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
870	349,964	4,567,481	238.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
871	350,129	4,550,974	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
872	345,753	4,568,254	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
873	348,818	4,556,197	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
874	354,812	4,551,533	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
875	354,426	4,551,131	260.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
876	349,995	4,573,422	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
877	356,530	4,574,459	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
878	353,805	4,578,177	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
879	350,101	4,563,273	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
880	351,782	4,562,341	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
881	352,663	4,551,458	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
882	346,721	4,545,308	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
883	346,809	4,565,397	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
885	347,510	4,552,119	273.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
886	346,091	4,549,639	275.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
887	346,965	4,562,776	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
889	345,780	4,554,139	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
890	352,190	4,549,472	270.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
891	352,515	4,578,738	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
892	356,767	4,574,339	216.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
893	357,575	4,574,410	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
894	358,181	4,574,696	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
895	353,149	4,577,675	216.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
896	347,575	4,546,627	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
897	346,214	4,545,413	289.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
898	347,675	4,570,149	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
899	353,957	4,568,099	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
901	351,464	4,551,664	266.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
902	347,679	4,548,237	283.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
903	352,520	4,577,112	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
904	350,139	4,578,425	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
905	347,938	4,573,106	223.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
907	347,277	4,569,738	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
908	346,325	4,567,718	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
909	345,809	4,567,858	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
911	346,620	4,554,278	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
912	349,778	4,569,906	237.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
914	354,903	4,576,237	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
916	354,630	4,567,471	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
917	351,808	4,560,091	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
919	350,381	4,572,964	224.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
921	349,801	4,578,266	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
922	355,631	4,571,598	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
923	345,895	4,566,816	240.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
924	347,593	4,570,274	232.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
925	348,055	4,567,696	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
926	349,672	4,560,262	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
927	350,163	4,549,957	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
928	357,148	4,574,305	217.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
929	357,881	4,574,678	215.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
930	354,060	4,578,082	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
931	352,252	4,568,752	234.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
932	351,695	4,562,580	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
933	350,487	4,564,709	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
934	345,683	4,561,023	253.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
935	351,045	4,558,290	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
936	350,427	4,579,034	217.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
937	347,123	4,573,906	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
938	351,593	4,562,809	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
940	346,662	4,556,274	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
941	346,699	4,556,285	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
942	345,119	4,555,767	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
943	355,419	4,577,211	216.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
944	358,264	4,576,067	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
945	355,392	4,572,153	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
946	351,472	4,551,632	267.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
948	347,638	4,552,918	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
949	353,368	4,577,748	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
950	354,680	4,566,505	227.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
951	351,682	4,560,860	241.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
952	345,999	4,549,935	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
954	360,174	4,573,916	206.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
955	352,895	4,577,886	218.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
956	352,186	4,567,835	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
958	347,235	4,548,163	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
959	345,203	4,565,546	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
960	346,011	4,544,926	284.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
961	346,802	4,563,189	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
962	351,590	4,566,165	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
963	354,867	4,551,706	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
964	347,633	4,554,303	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
965	348,961	4,573,771	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
966	350,914	4,576,328	221.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
967	352,685	4,565,427	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
968	345,811	4,566,113	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
969	347,751	4,569,838	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
970	354,336	4,553,542	256.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
971	347,619	4,546,710	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
972	357,519	4,574,552	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
973	352,326	4,576,558	218.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
974	360,032	4,576,959	208.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
975	347,161	4,567,645	239.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
976	347,793	4,570,125	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
977	348,093	4,570,528	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
978	346,459	4,560,988	251.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
979	350,253	4,548,933	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
980	347,182	4,546,195	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
981	347,687	4,570,125	234.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
982	346,100	4,550,230	275.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
983	354,673	4,570,223	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
985	353,836	4,577,882	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
986	358,324	4,576,168	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
987	355,624	4,572,345	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
988	350,003	4,565,251	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
990	345,606	4,561,043	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
992	350,254	4,554,770	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
993	352,037	4,573,772	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
994	348,814	4,550,416	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
997	353,860	4,576,204	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
998	349,188	4,568,594	238.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
999	345,898	4,567,282	239.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1000	346,353	4,562,940	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1002	346,842	4,575,344	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1003	349,887	4,578,256	219.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1004	358,897	4,575,970	210.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1005	354,501	4,567,102	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1006	352,816	4,561,551	239.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1007	352,167	4,552,998	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1008	347,527	4,553,226	265.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1009	347,050	4,573,981	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1010	348,894	4,576,687	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1011	353,865	4,575,707	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1012	347,547	4,569,819	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1013	346,750	4,567,586	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1014	347,558	4,566,094	241.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1016	356,170	4,576,511	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1017	358,312	4,577,993	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1018	353,559	4,571,374	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1019	352,094	4,576,282	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1020	353,758	4,576,127	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1021	352,615	4,565,593	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1022	350,084	4,562,200	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1023	351,855	4,578,894	220.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1024	348,058	4,570,129	236.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1025	351,248	4,552,131	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1028	347,018	4,575,643	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1029	353,909	4,575,563	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1030	358,398	4,576,931	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1031	347,664	4,570,192	233.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1032	352,414	4,566,196	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1033	352,669	4,576,334	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1034	351,887	4,578,752	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1035	350,072	4,564,060	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1036	351,844	4,563,189	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1038	350,094	4,562,068	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1039	352,245	4,549,448	270.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1040	359,913	4,576,629	208.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1041	352,999	4,575,300	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1042	354,143	4,562,647	235.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1043	350,142	4,550,503	271.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1044	350,138	4,551,042	264.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1045	350,020	4,555,293	255.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1046	351,791	4,578,807	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1047	351,500	4,569,368	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1048	348,862	4,551,191	268.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1049	348,050	4,569,879	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1052	353,392	4,575,782	220.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1053	351,953	4,569,336	237.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1054	351,997	4,563,400	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1055	351,589	4,556,129	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1056	349,990	4,574,656	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1058	352,618	4,565,404	232.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1059	347,742	4,553,279	267.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1060	351,470	4,551,566	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1061	345,713	4,565,364	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1062	354,877	4,551,600	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1063	350,278	4,578,437	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1065	352,773	4,577,533	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1066	350,575	4,566,210	238.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1067	352,148	4,567,052	235.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1068	351,670	4,563,033	236.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1069	345,342	4,561,445	254.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1070	345,820	4,558,760	254.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1072	358,335	4,574,658	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1073	352,044	4,568,916	235.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1074	347,642	4,570,135	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1075	347,914	4,569,868	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1076	353,763	4,568,752	230.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1077	345,885	4,560,119	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1079	356,077	4,572,844	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1080	350,092	4,564,453	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1081	352,770	4,565,542	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1082	347,370	4,567,520	240.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1083	351,284	4,558,502	246.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1084	351,539	4,557,672	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1085	354,254	4,553,007	259.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1086	355,850	4,571,264	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1087	355,021	4,576,211	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1088	350,416	4,572,759	225.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1089	355,825	4,572,628	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1090	355,710	4,572,466	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1091	346,439	4,567,620	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1092	348,416	4,558,915	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1094	346,811	4,548,270	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1095	360,068	4,572,915	209.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1096	359,105	4,576,036	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1097	358,073	4,577,202	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1098	350,690	4,556,090	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1099	354,424	4,551,354	261.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1100	356,678	4,573,662	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1101	358,038	4,574,686	214.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1102	353,054	4,577,649	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1103	350,109	4,562,559	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1104	346,516	4,545,426	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1105	345,804	4,567,260	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1106	347,448	4,566,657	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1107	347,733	4,570,150	234.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1108	348,018	4,554,207	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1109	351,472	4,549,995	265.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1110	355,673	4,572,156	219.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1111	355,507	4,571,788	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1112	356,215	4,576,303	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1113	347,292	4,565,303	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1114	350,221	4,556,192	252.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1115	357,985	4,577,207	214.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1117	349,916	4,573,710	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1118	350,013	4,562,364	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1119	345,792	4,566,007	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1120	354,437	4,551,564	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1123	348,415	4,573,104	223.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1124	350,315	4,566,303	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1125	352,429	4,566,126	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1126	347,162	4,562,920	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1127	345,882	4,567,698	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1128	350,169	4,548,801	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1129	348,218	4,545,360	285.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1130	353,192	4,577,651	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1131	352,776	4,572,423	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1132	356,988	4,574,315	217.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1133	352,893	4,577,905	218.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1134	354,181	4,578,116	209.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1135	349,998	4,564,598	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1136	352,183	4,567,587	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1137	345,804	4,566,473	242.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1138	348,312	4,578,328	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1139	349,930	4,578,372	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1140	355,532	4,571,761	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1141	350,624	4,572,696	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1143	354,660	4,576,156	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1144	350,034	4,569,643	238.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1146	353,375	4,569,349	229.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1148	351,705	4,554,548	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1149	350,089	4,554,841	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1150	347,591	4,560,908	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1151	350,135	4,557,137	252.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1153	357,250	4,574,297	216.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1154	350,479	4,564,704	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1155	352,683	4,552,800	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1156	350,050	4,567,872	238.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1158	353,825	4,566,506	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1160	356,029	4,577,219	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1161	347,628	4,570,372	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1162	352,673	4,552,347	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1164	346,137	4,562,885	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1166	353,104	4,570,939	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1167	347,680	4,570,190	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1168	345,618	4,560,981	253.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1169	347,251	4,554,344	264.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1170	351,474	4,578,708	218.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1171	358,277	4,573,337	214.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1172	352,783	4,577,306	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1173	348,186	4,570,084	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1174	347,604	4,554,855	261.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1175	351,258	4,554,136	258.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1177	345,821	4,566,197	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1178	352,046	4,549,461	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1179	350,209	4,550,467	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1181	351,038	4,554,215	258.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1182	351,304	4,578,706	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1183	347,609	4,573,941	221.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1184	347,149	4,573,210	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1185	349,348	4,576,426	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1186	349,293	4,576,490	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1188	348,161	4,570,177	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1189	347,373	4,569,808	237.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1190	345,804	4,566,058	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1191	345,520	4,566,585	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1192	355,306	4,566,664	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1193	349,201	4,576,494	219.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1194	360,020	4,575,590	209.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1195	358,322	4,576,063	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1196	346,947	4,574,899	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1197	350,779	4,566,294	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1198	352,668	4,565,517	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1199	345,595	4,561,016	253.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1200	352,022	4,560,145	239.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1201	345,969	4,552,596	271.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1202	354,195	4,578,214	208.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1203	349,510	4,568,221	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1204	353,482	4,572,366	223.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1206	345,235	4,546,346	292.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1207	345,674	4,561,056	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1210	357,581	4,574,470	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1211	353,769	4,572,075	225.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1212	352,705	4,553,713	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1213	354,842	4,551,381	257.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1215	352,458	4,576,342	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1217	354,376	4,551,272	261.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1218	352,005	4,569,424	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1219	355,517	4,572,218	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1220	347,709	4,573,124	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1221	347,627	4,570,134	234.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1224	345,826	4,565,981	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1225	347,824	4,565,279	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1226	345,682	4,561,488	252.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1227	345,484	4,560,819	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1228	351,481	4,556,074	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1229	354,027	4,576,192	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1231	351,546	4,551,216	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1232	354,175	4,561,977	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1233	350,055	4,559,074	246.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1234	345,901	4,559,672	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1235	350,363	4,578,401	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1236	358,395	4,576,976	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1237	351,379	4,574,429	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1238	352,297	4,576,348	219.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1239	359,624	4,575,927	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1240	352,411	4,569,664	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1241	349,338	4,549,590	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1242	347,095	4,545,324	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1243	345,168	4,561,610	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1244	349,175	4,553,214	265.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1245	352,136	4,551,836	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1246	346,830	4,573,771	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1248	347,479	4,569,761	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1249	346,779	4,565,277	243.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1250	351,843	4,578,681	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1252	353,500	4,575,602	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1253	358,320	4,576,267	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1254	358,491	4,575,633	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1256	351,797	4,578,961	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1257	353,289	4,577,680	214.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1259	347,739	4,570,112	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1260	345,979	4,562,021	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1262	354,960	4,551,831	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1264	348,206	4,565,701	240.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1265	347,565	4,550,586	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1266	345,992	4,545,396	287.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1267	351,022	4,557,701	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1268	350,248	4,578,439	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1269	352,276	4,567,249	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1270	347,931	4,564,830	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1271	350,227	4,562,388	240.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1272	354,246	4,565,729	228.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1273	347,644	4,570,172	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1274	345,485	4,560,725	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1276	350,555	4,554,570	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1277	357,398	4,574,300	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1278	354,143	4,568,427	228.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1279	347,098	4,562,757	248.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1280	347,942	4,565,220	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1281	350,116	4,559,347	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1282	350,262	4,549,509	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1283	353,762	4,575,943	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1284	352,679	4,553,274	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1285	347,633	4,549,675	276.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1286	348,424	4,549,694	276.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1287	356,203	4,576,380	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1288	357,823	4,577,115	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1289	358,092	4,577,540	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1290	355,541	4,572,159	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1292	347,989	4,565,118	243.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1294	346,798	4,558,584	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1297	348,811	4,578,313	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1298	354,581	4,551,245	258.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1299	346,347	4,549,613	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1300	353,356	4,551,990	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1301	350,250	4,550,020	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1302	346,513	4,548,253	287.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1303	355,486	4,571,825	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1304	347,837	4,573,129	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1305	352,286	4,576,990	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1306	359,008	4,575,963	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1308	351,971	4,569,293	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1309	346,437	4,567,694	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1310	348,471	4,556,199	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1311	354,517	4,551,519	257.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1312	353,092	4,577,660	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1313	355,863	4,572,683	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1314	351,448	4,574,421	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1315	358,097	4,574,685	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1317	352,017	4,569,146	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1318	345,917	4,565,508	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1319	345,782	4,567,136	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1321	348,422	4,558,313	250.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1323	348,467	4,573,099	223.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1324	348,370	4,566,386	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1325	354,510	4,566,408	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1328	352,916	4,577,908	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1329	352,043	4,570,445	233.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1330	352,583	4,565,914	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1331	346,827	4,545,389	291.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1332	352,478	4,560,286	238.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1334	349,875	4,578,351	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1335	347,020	4,573,915	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1338	347,734	4,570,178	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1339	347,578	4,570,226	232.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1341	349,982	4,556,205	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1343	355,017	4,576,152	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1344	350,010	4,562,367	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1345	347,601	4,570,413	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1347	347,999	4,564,656	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1348	348,160	4,570,227	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1349	349,066	4,558,615	248.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1350	347,815	4,556,316	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1351	348,895	4,549,403	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1352	350,610	4,572,677	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1353	357,202	4,574,311	216.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1354	350,137	4,564,494	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1355	346,242	4,560,350	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1356	351,403	4,554,329	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1358	354,165	4,577,470	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1359	352,015	4,563,908	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1360	353,587	4,569,083	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1361	347,104	4,562,688	249.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1362	346,362	4,567,630	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1363	347,494	4,570,326	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1364	348,982	4,567,795	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1366	354,611	4,576,155	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1367	345,485	4,560,962	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1370	351,483	4,559,210	242.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1371	353,589	4,572,370	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1372	345,992	4,545,396	287.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1373	347,290	4,563,408	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1374	345,885	4,568,329	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1375	350,231	4,550,485	271.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1377	348,529	4,556,773	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1378	355,954	4,577,216	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1379	350,006	4,565,708	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1380	354,191	4,553,314	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1381	345,441	4,550,912	280.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1383	357,528	4,574,500	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1384	358,323	4,576,107	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1385	350,095	4,562,633	241.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1386	345,788	4,562,902	250.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1387	347,869	4,570,099	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1388	345,637	4,560,983	253.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1389	347,600	4,555,737	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1390	351,061	4,554,234	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1391	351,859	4,578,957	220.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1395	345,808	4,566,059	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1396	347,556	4,566,591	241.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1397	347,855	4,564,935	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1398	346,597	4,565,036	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1399	354,006	4,578,035	210.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1400	350,415	4,572,952	224.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1402	347,808	4,560,287	248.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1404	351,906	4,549,468	269.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1405	354,270	4,578,207	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1406	354,351	4,576,296	216.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1408	347,569	4,569,824	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1409	350,123	4,558,015	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1410	347,726	4,554,730	261.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1411	349,873	4,578,274	219.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1412	346,676	4,575,067	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1414	354,785	4,566,560	226.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1415	348,094	4,570,357	233.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1416	354,831	4,551,465	259.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1417	345,548	4,562,856	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1418	348,233	4,573,842	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1420	350,027	4,568,647	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1421	347,616	4,570,171	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1422	348,378	4,557,828	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1423	352,688	4,550,290	267.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1424	352,566	4,574,894	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1425	355,568	4,572,190	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1426	349,996	4,563,528	241.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1428	351,562	4,549,433	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1429	348,034	4,546,569	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1430	347,148	4,545,327	292.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1431	351,708	4,562,154	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1432	353,029	4,555,212	254.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1433	352,391	4,576,346	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1434	347,529	4,552,120	272.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1435	351,829	4,549,549	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1436	358,346	4,574,917	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1437	352,220	4,576,349	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1438	353,706	4,571,799	224.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1439	347,702	4,565,289	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1440	345,249	4,561,438	254.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1441	346,559	4,554,245	268.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1442	348,773	4,551,313	268.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1443	352,974	4,578,399	221.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1445	350,004	4,574,032	221.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1446	349,651	4,568,420	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1449	353,148	4,575,587	221.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1450	355,974	4,571,123	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1451	346,608	4,561,617	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1452	352,981	4,551,903	264.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1454	351,451	4,578,703	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1455	358,363	4,574,803	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1456	354,464	4,576,157	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1457	347,522	4,569,765	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1458	347,978	4,569,873	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1459	349,959	4,562,006	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1460	351,290	4,554,155	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1461	359,982	4,576,414	207.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1462	352,961	4,576,162	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1463	351,964	4,569,430	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1466	346,447	4,565,283	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1467	352,215	4,551,836	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1468	350,232	4,549,730	271.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1469	351,963	4,578,755	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1470	358,325	4,576,345	212.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1471	352,098	4,570,229	233.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1472	351,796	4,561,416	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1473	354,963	4,573,041	218.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1475	357,658	4,577,146	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1477	352,714	4,565,528	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1478	347,145	4,549,691	278.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1480	345,513	4,562,343	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1481	345,336	4,551,451	276.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1482	355,563	4,576,291	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1483	352,961	4,577,593	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1484	353,535	4,576,082	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1486	346,029	4,561,917	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1488	351,862	4,556,118	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1490	355,515	4,571,870	221.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1491	357,308	4,574,297	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1492	357,529	4,574,363	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1493	351,652	4,562,645	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1494	348,015	4,565,192	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1495	347,920	4,569,295	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1496	345,809	4,568,267	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1497	351,823	4,554,627	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1498	354,806	4,551,589	259.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1499	350,117	4,558,516	248.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1500	345,766	4,558,760	255.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1501	348,400	4,557,206	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1504	347,839	4,569,856	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1505	351,549	4,550,227	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1507	346,604	4,545,293	289.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1508	350,326	4,578,397	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1509	349,023	4,566,495	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1510	350,603	4,556,169	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1511	354,523	4,551,436	258.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1512	345,249	4,551,701	277.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1514	356,505	4,574,446	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1515	350,210	4,562,374	240.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1517	351,907	4,551,977	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1518	350,198	4,550,943	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1519	353,361	4,571,305	227.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1520	348,062	4,573,114	223.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1521	356,496	4,574,347	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1523	347,786	4,565,267	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1524	347,961	4,570,074	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1525	351,118	4,554,067	259.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1526	347,715	4,553,088	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1527	349,201	4,566,249	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1528	355,650	4,571,521	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1529	345,976	4,545,429	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1530	347,740	4,562,575	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1531	347,665	4,568,723	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1532	347,003	4,556,299	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1533	355,392	4,571,998	221.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1534	350,413	4,572,970	224.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1535	353,820	4,577,911	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1538	353,183	4,572,579	226.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1539	357,920	4,574,680	215.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1540	353,237	4,577,669	215.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1541	354,750	4,576,152	216.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1542	352,101	4,569,081	235.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1543	349,717	4,569,993	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1545	351,812	4,563,164	234.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1546	354,625	4,567,434	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1547	345,688	4,561,023	253.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1548	347,745	4,553,886	258.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1549	350,111	4,550,708	267.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1550	346,950	4,574,335	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1551	351,766	4,562,830	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1552	347,796	4,568,881	239.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1553	357,113	4,574,303	217.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1554	352,205	4,568,182	235.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1559	353,257	4,577,760	215.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1561	345,647	4,560,978	252.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1562	352,265	4,554,891	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1564	350,683	4,554,438	256.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1567	358,259	4,574,305	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1568	352,194	4,567,903	235.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1569	347,564	4,570,235	232.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1570	345,571	4,555,696	262.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1571	355,714	4,571,570	221.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1572	356,484	4,573,462	219.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1573	352,895	4,577,936	218.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1574	345,179	4,565,533	245.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1575	351,460	4,549,844	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1576	347,917	4,564,725	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1577	347,660	4,554,179	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1578	353,536	4,577,769	212.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1579	350,350	4,572,973	224.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1580	353,834	4,551,732	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1581	354,557	4,551,203	259.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1583	349,015	4,575,139	219.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1584	356,566	4,573,571	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1585	347,126	4,546,276	290.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1586	345,822	4,567,489	239.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1587	348,381	4,570,019	237.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1588	352,223	4,576,388	219.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1589	352,653	4,565,430	233.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1590	348,093	4,570,603	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1591	351,459	4,550,161	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1592	346,159	4,567,667	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1593	347,696	4,570,181	233.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1594	352,489	4,551,940	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1595	345,904	4,565,792	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1596	351,576	4,578,714	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1598	350,057	4,559,456	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1599	350,117	4,559,517	244.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1601	355,603	4,572,322	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1602	354,176	4,572,221	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1603	351,451	4,574,702	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1604	345,301	4,550,492	278.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1605	354,983	4,570,382	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1606	352,263	4,568,399	235.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1607	349,292	4,568,050	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1609	347,671	4,570,368	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1610	346,481	4,561,034	251.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1612	350,438	4,578,472	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1613	357,522	4,574,586	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1614	358,587	4,576,053	212.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1615	347,004	4,575,457	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1616	347,798	4,570,143	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1617	348,166	4,570,376	233.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1618	346,143	4,562,882	254.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1619	347,129	4,562,958	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1620	350,090	4,562,167	240.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1621	350,110	4,559,140	246.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1622	353,821	4,576,206	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1623	345,586	4,558,867	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1624	352,066	4,556,035	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1625	346,637	4,565,406	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1626	356,176	4,576,461	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1627	353,593	4,570,299	228.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1628	354,094	4,575,373	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1629	352,365	4,566,198	233.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1631	350,223	4,551,183	266.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1632	351,853	4,578,864	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1633	351,347	4,578,692	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1634	346,986	4,573,983	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1635	353,984	4,575,723	218.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1636	349,977	4,566,054	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1637	347,547	4,551,757	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1638	347,364	4,569,745	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1639	354,328	4,553,297	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1640	346,345	4,552,287	270.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1641	352,125	4,573,708	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1642	356,623	4,573,677	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1643	351,986	4,569,424	236.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1647	346,532	4,561,170	250.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
1648	354,079	4,576,189	218.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1649	354,500	4,551,413	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1650	347,659	4,570,128	234.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1651	347,509	4,569,818	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1652	351,122	4,557,713	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1653	350,311	4,575,995	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1654	347,394	4,548,574	282.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1655	348,235	4,545,325	286.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1656	347,510	4,565,937	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1657	350,678	4,558,472	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1659	351,706	4,578,667	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1661	345,989	4,561,988	252.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1662	349,989	4,561,296	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1663	347,605	4,546,711	294.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1664	360,728	4,575,977	204.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1665	351,953	4,569,321	237.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1666	351,776	4,561,467	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1667	348,486	4,558,724	250.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1668	348,467	4,578,804	214.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1669	351,794	4,578,841	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1670	354,771	4,570,239	224.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1671	352,602	4,576,337	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1672	350,083	4,563,534	241.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1673	348,613	4,555,346	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1674	348,095	4,569,885	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1679	351,037	4,548,393	276.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1688	345,110	4,559,813	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1693	344,776	4,556,490	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1694	345,062	4,559,825	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1709	352,364	4,549,521	270.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1728	347,361	4,570,291	231.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1733	345,301	4,550,350	278.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1761	344,908	4,557,028	260.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1795	347,109	4,569,934	235.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1841	349,823	4,570,383	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1848	354,286	4,562,440	234.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1853	348,245	4,570,809	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1872	344,796	4,556,730	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1876	352,439	4,549,510	272.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1887	348,409	4,570,882	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1899	351,507	4,548,672	270.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1906	352,395	4,549,468	272.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1909	358,312	4,578,214	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1953	347,420	4,570,356	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1979	347,016	4,569,924	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1993	354,286	4,551,008	260.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2014	344,634	4,556,139	264.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2016	352,654	4,549,501	271.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2041	348,092	4,572,941	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2049	348,326	4,570,843	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2053	347,162	4,569,789	237.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2075	354,365	4,551,085	260.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2093	351,575	4,548,699	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2107	347,390	4,570,352	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2147	360,140	4,575,179	210.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2171	346,995	4,569,842	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2172	347,050	4,569,926	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2175	345,217	4,547,164	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2190	352,483	4,578,830	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2200	354,349	4,578,345	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2213	347,413	4,570,326	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2229	358,239	4,578,320	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2235	354,400	4,551,111	260.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2252	346,979	4,569,920	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2268	344,987	4,562,731	252.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
2301	347,000	4,573,166	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2302	347,137	4,569,965	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2303	352,455	4,549,457	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2319	355,071	4,551,553	255.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2346	354,240	4,551,065	260.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2353	348,212	4,570,805	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2388	347,344	4,570,260	231.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2409	358,249	4,578,240	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2443	344,981	4,562,732	252.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2452	347,418	4,570,343	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2463	346,968	4,573,171	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2488	355,097	4,551,556	255.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2495	346,992	4,569,923	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2516	348,155	4,570,784	231.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2539	354,853	4,551,294	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2554	347,195	4,569,783	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2556	352,322	4,549,473	271.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2561	348,293	4,570,841	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2586	360,301	4,575,237	208.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2590	351,513	4,548,569	272.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2612	347,374	4,570,273	231.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2619	347,383	4,570,344	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2645	355,158	4,551,917	255.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2659	347,085	4,569,933	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2690	344,796	4,556,731	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2694	354,380	4,578,379	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2704	360,782	4,575,905	205.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2706	352,469	4,549,417	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2714	348,366	4,570,936	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2743	358,243	4,578,278	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2759	346,939	4,569,927	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2761	345,125	4,546,946	289.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2817	347,130	4,569,792	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2820	348,450	4,576,551	216.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2835	347,088	4,573,178	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2844	347,589	4,570,498	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2845	354,309	4,551,024	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2848	347,303	4,573,094	222.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2860	354,189	4,551,015	260.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2877	348,373	4,570,864	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2880	347,368	4,570,247	231.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2899	352,366	4,549,470	272.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2964	345,235	4,547,905	288.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2974	350,422	4,569,724	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2980	360,368	4,575,226	208.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2982	345,925	4,563,813	244.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
2992	344,880	4,556,946	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3007	352,512	4,549,465	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3020	346,918	4,575,861	217.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3021	352,567	4,549,530	271.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3022	345,218	4,547,164	288.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3054	347,892	4,570,768	230.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3055	347,830	4,570,737	231.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3056	347,953	4,570,791	230.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3057	347,995	4,570,802	230.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3058	348,032	4,570,818	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3059	348,096	4,570,846	230.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3060	347,941	4,570,660	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3061	348,043	4,570,740	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3062	347,788	4,570,650	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3063	347,761	4,570,638	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3064	347,714	4,570,620	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3065	347,826	4,570,664	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3066	347,852	4,570,674	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3067	347,881	4,570,685	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
3068	347,681	4,570,610	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3069	347,684	4,570,679	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3070	347,723	4,570,694	231.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3071	347,782	4,570,717	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3072	348,188	4,570,681	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3073	348,450	4,570,885	231.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3074	347,640	4,570,667	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3075	347,610	4,570,655	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3076	347,581	4,570,645	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3077	347,553	4,570,636	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3078	347,520	4,570,626	231.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3079	347,490	4,570,617	231.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3080	347,458	4,570,612	230.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3081	347,534	4,570,552	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3082	347,585	4,570,564	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3083	347,622	4,570,586	232.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3084	347,429	4,570,528	231.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3085	347,473	4,570,531	231.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3086	347,505	4,570,547	231.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3097	347,293	4,569,805	237.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3098	347,227	4,569,792	237.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3099	351,250	4,569,492	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3102	348,584	4,573,096	223.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3103	348,537	4,573,102	223.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3105	348,113	4,573,107	223.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3106	347,985	4,573,110	223.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3107	347,828	4,573,066	224.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3108	346,905	4,573,171	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3109	346,936	4,573,169	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3122	346,832	4,573,838	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3123	346,865	4,573,867	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3124	346,684	4,573,818	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3125	346,756	4,573,680	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3126	346,743	4,573,653	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3127	346,732	4,573,625	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3128	346,719	4,573,595	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3129	346,707	4,573,571	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3130	346,693	4,573,537	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3131	346,678	4,573,496	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3132	346,662	4,573,467	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3133	346,651	4,573,441	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3134	346,641	4,573,411	220.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3137	346,935	4,574,288	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3138	346,842	4,574,171	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3139	346,900	4,575,303	218.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3140	346,899	4,575,368	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3141	346,901	4,575,396	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3142	346,936	4,575,565	215.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3146	353,856	4,576,137	221.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3147	353,831	4,575,960	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3149	354,727	4,551,718	245.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3151	347,393	4,570,512	230.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3152	350,486	4,578,382	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3153	350,490	4,578,431	218.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3154	351,036	4,578,518	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3155	351,155	4,578,584	219.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3157	351,894	4,569,312	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3158	352,127	4,569,261	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3159	351,921	4,578,819	220.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3160	347,430	4,570,609	230.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3161	354,378	4,578,283	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3162	356,086	4,576,568	216.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3163	354,323	4,578,324	208.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3164	345,904	4,565,110	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3165	346,866	4,569,672	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
3166	346,921	4,569,760	236.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3167	346,948	4,569,769	236.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3168	346,997	4,569,765	237.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3169	346,991	4,569,814	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3170	347,010	4,569,870	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3171	347,038	4,569,876	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3172	347,063	4,569,842	235.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3173	347,056	4,569,792	236.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3174	347,098	4,569,780	236.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3175	352,011	4,570,555	233.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3176	352,029	4,570,499	234.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3177	350,000	4,573,310	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3178	348,429	4,573,022	223.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3179	346,853	4,573,929	220.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3180	347,453	4,576,215	218.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3181	348,227	4,578,259	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3183	354,819	4,551,411	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3184	354,820	4,551,314	258.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3185	354,582	4,551,225	258.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3186	354,461	4,551,233	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3187	354,444	4,551,196	260.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3188	354,404	4,551,321	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3189	353,827	4,551,619	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3190	353,902	4,551,593	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3191	353,992	4,551,475	256.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3192	353,840	4,551,519	261.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3193	353,864	4,551,464	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3194	353,856	4,551,415	258.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3195	354,207	4,551,370	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3196	354,215	4,551,312	259.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3197	354,195	4,551,269	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3198	354,011	4,551,376	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3199	354,085	4,551,351	256.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3200	354,031	4,551,325	260.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3201	354,119	4,551,195	262.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3202	354,006	4,551,218	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3203	354,080	4,551,115	263.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3204	353,980	4,551,145	263.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3205	353,888	4,551,216	259.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3206	353,921	4,551,111	263.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3207	353,874	4,551,088	264.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3208	353,882	4,550,961	263.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3209	353,753	4,551,013	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3210	353,747	4,550,967	262.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3212	353,595	4,551,129	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3213	353,740	4,551,191	258.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3214	353,744	4,551,242	258.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3218	354,032	4,550,969	262.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3219	353,992	4,550,987	258.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3224	352,559	4,549,465	274.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3228	351,681	4,557,772	248.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3229	354,527	4,551,468	256.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3230	348,185	4,569,886	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3231	348,165	4,570,467	232.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3232	348,094	4,570,265	234.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3233	353,082	4,570,453	231.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3234	350,657	4,573,439	222.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3235	348,180	4,573,148	223.2	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3236	358,255	4,577,595	214.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

Calculation Results

Shadow receptor

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
2	0:00	0	0:00	0:00
3	0:00	0	0:00	0:00
5	0:00	0	0:00	0:00
6	26:22	52	0:37	4:52
7	115:29	191	0:48	39:11
8	0:00	0	0:00	0:00
9	27:26	100	0:29	6:13
10	30:30	88	0:27	5:07
11	26:07	87	0:28	7:04
12	20:43	59	0:36	5:06
13	0:00	0	0:00	0:00
15	20:50	73	0:27	8:58
16	9:51	37	0:20	3:20
17	0:00	0	0:00	0:00
19	0:00	0	0:00	0:00
20	0:00	0	0:00	0:00
21	63:26	100	0:49	9:17
23	16:18	44	0:28	2:03
25	54:43	80	0:52	24:51
26	65:21	133	0:52	14:19
27	27:07	84	0:31	3:59
28	12:41	38	0:28	4:31
29	41:45	97	0:43	6:07
30	30:53	86	0:34	4:34
31	1:31	12	0:10	0:14
32	0:00	0	0:00	0:00
33	88:00	144	0:47	26:10
34	33:32	83	0:31	15:06
35	16:02	46	0:31	3:46
36	9:02	34	0:24	2:27
37	0:00	0	0:00	0:00
38	11:34	44	0:20	3:57
39	0:00	0	0:00	0:00
40	37:27	79	0:38	12:55
41	7:20	44	0:14	2:29
42	0:00	0	0:00	0:00
43	30:11	56	0:45	9:55
44	27:33	82	0:36	7:58
45	0:00	0	0:00	0:00
46	25:53	60	0:33	11:56
47	44:22	102	0:36	8:24
48	0:00	0	0:00	0:00
49	7:03	32	0:20	2:17
50	34:24	94	0:36	7:58
51	0:00	0	0:00	0:00
52	27:27	75	0:29	9:24
53	0:00	0	0:00	0:00
54	143:13	217	0:54	48:11
56	0:00	0	0:00	0:00
57	0:00	0	0:00	0:00
58	26:04	90	0:28	6:22
59	113:04	115	1:22	24:49
62	0:00	0	0:00	0:00
63	60:14	142	0:42	15:22
64	128:53	212	1:07	33:58
65	0:00	0	0:00	0:00
66	17:42	58	0:23	2:23
68	8:32	33	0:23	3:08
70	0:00	0	0:00	0:00
71	6:30	29	0:20	2:09
72	4:14	20	0:16	0:41
74	45:21	120	0:38	10:20
75	13:56	40	0:30	4:13

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
76	0:00	0	0:00	0:00
77	0:00	0	0:00	0:00
78	0:00	0	0:00	0:00
79	0:00	0	0:00	0:00
80	10:52	38	0:25	2:20
83	16:59	42	0:33	5:44
85	77:58	102	0:53	11:37
86	35:50	71	0:42	14:16
87	141:30	122	1:31	42:25
88	0:00	0	0:00	0:00
89	101:52	128	1:02	15:59
90	11:58	46	0:24	2:48
91	127:45	155	1:25	39:13
93	6:24	29	0:19	2:05
94	70:38	175	0:44	15:30
95	75:22	119	0:53	12:17
96	13:57	56	0:22	4:44
98	120:02	186	1:13	28:10
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
102	0:00	0	0:00	0:00
103	30:00	84	0:34	9:13
104	180:48	266	0:54	53:47
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
110	9:12	39	0:22	3:39
111	72:22	132	0:49	12:17
112	56:20	94	0:44	8:17
113	93:13	62	2:05	13:50
114	66:34	168	0:45	15:58
115	16:11	58	0:21	2:11
116	0:00	0	0:00	0:00
118	0:00	0	0:00	0:00
119	7:49	36	0:20	3:02
120	7:48	30	0:23	2:26
122	0:00	0	0:00	0:00
123	0:00	0	0:00	0:00
124	6:20	29	0:20	1:56
127	46:33	103	0:44	20:48
129	14:51	44	0:30	4:50
130	23:37	90	0:21	10:37
131	10:21	36	0:26	3:11
132	0:00	0	0:00	0:00
133	13:52	49	0:25	4:41
134	31:59	94	0:35	4:54
135	51:50	134	0:38	10:07
137	146:16	270	0:51	41:31
139	17:34	55	0:29	5:55
140	0:00	0	0:00	0:00
141	0:00	0	0:00	0:00
142	0:00	0	0:00	0:00
143	34:20	48	0:54	4:42
144	11:05	54	0:17	5:08
145	95:31	142	1:15	34:05
146	0:00	0	0:00	0:00
147	6:25	26	0:18	0:46
148	0:00	0	0:00	0:00
149	0:00	0	0:00	0:00
150	0:00	0	0:00	0:00
151	0:00	0	0:00	0:00
152	0:00	0	0:00	0:00
153	87:13	163	0:46	23:44
154	0:00	0	0:00	0:00
155	71:20	192	0:37	26:33

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
156	0:00	0	0:00	0:00
157	4:05	20	0:15	0:28
158	6:01	28	0:17	0:43
159	28:10	57	0:40	10:30
160	10:08	38	0:24	3:49
161	28:33	115	0:24	12:03
162	26:32	84	0:26	5:52
163	21:06	62	0:31	7:43
165	27:59	71	0:31	12:47
166	0:00	0	0:00	0:00
167	5:20	26	0:15	0:38
168	0:00	0	0:00	0:00
169	33:57	62	0:49	10:16
170	36:41	74	0:39	16:46
171	58:00	111	0:44	23:18
172	0:00	0	0:00	0:00
173	0:00	0	0:00	0:00
174	0:00	0	0:00	0:00
176	15:25	42	0:31	3:47
178	0:00	0	0:00	0:00
179	18:20	46	0:30	3:17
180	69:10	149	0:39	22:46
181	67:27	193	0:34	21:29
182	0:00	0	0:00	0:00
183	0:00	0	0:00	0:00
185	0:00	0	0:00	0:00
186	4:44	25	0:14	2:12
187	0:00	0	0:00	0:00
189	38:56	86	0:34	17:31
191	0:00	0	0:00	0:00
192	16:56	66	0:22	2:23
193	0:00	0	0:00	0:00
195	0:00	0	0:00	0:00
196	0:00	0	0:00	0:00
197	286:51	328	1:38	92:10
198	27:46	104	0:26	5:35
199	80:58	142	0:46	13:47
200	59:18	110	0:54	13:47
201	22:06	86	0:25	7:37
202	0:00	0	0:00	0:00
203	0:00	0	0:00	0:00
204	0:00	0	0:00	0:00
205	7:41	31	0:22	2:20
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
209	21:08	75	0:22	6:33
210	17:49	46	0:32	4:15
211	63:46	72	1:06	8:46
212	35:35	97	0:33	11:29
213	11:09	42	0:23	3:41
214	50:12	123	0:36	8:16
215	9:55	36	0:25	2:27
216	87:28	130	0:53	14:08
217	30:46	86	0:33	4:37
218	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	77:12	142	1:00	24:31
222	22:52	72	0:32	3:46
223	8:04	35	0:21	2:08
224	9:53	28	0:26	1:40
225	24:24	81	0:28	7:06
227	80:40	138	1:02	28:38
228	89:01	210	0:41	31:42
229	9:49	41	0:22	4:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
230	27:11	83	0:35	7:32
231	0:00	0	0:00	0:00
232	159:58	154	2:07	55:50
233	0:00	0	0:00	0:00
234	33:31	71	0:39	13:38
235	15:56	66	0:21	2:15
236	0:00	0	0:00	0:00
237	47:11	88	0:41	21:16
239	10:49	40	0:25	2:55
240	49:36	109	0:41	19:53
241	0:00	0	0:00	0:00
242	35:51	64	0:40	4:52
243	0:00	0	0:00	0:00
244	42:27	84	0:36	6:03
245	0:00	0	0:00	0:00
246	0:00	0	0:00	0:00
248	27:59	86	0:28	12:31
249	0:00	0	0:00	0:00
250	23:04	75	0:31	5:49
251	16:28	65	0:25	5:27
252	0:00	0	0:00	0:00
253	0:00	0	0:00	0:00
254	1:20	20	0:06	0:37
255	74:06	125	0:51	30:41
258	17:20	67	0:23	7:40
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	20:14	65	0:25	6:56
262	11:06	38	0:26	2:41
263	0:00	0	0:00	0:00
264	104:33	195	0:48	25:29
265	24:00	56	0:33	11:06
266	17:15	59	0:28	3:39
268	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	29:07	88	0:29	6:06
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
275	167:02	223	1:08	39:16
277	169:48	122	1:36	72:47
278	14:53	50	0:24	5:02
279	9:19	24	0:30	1:29
280	0:00	0	0:00	0:00
281	0:00	0	0:00	0:00
283	0:00	0	0:00	0:00
284	21:30	51	0:35	6:22
285	16:28	50	0:24	2:08
286	30:30	89	0:35	7:12
287	0:00	0	0:00	0:00
288	95:42	101	1:14	24:22
289	7:31	31	0:22	2:26
291	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	0:00	0	0:00	0:00
295	0:00	0	0:00	0:00
298	0:00	0	0:00	0:00
299	19:05	52	0:26	3:30
300	0:00	0	0:00	0:00
301	53:24	88	0:42	7:41
303	14:23	40	0:30	4:47
304	72:50	87	1:13	26:24
305	31:10	64	0:42	8:40
310	28:04	58	0:35	3:44
312	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
313	19:26	66	0:26	8:28
314	0:00	0	0:00	0:00
315	10:07	36	0:25	3:23
317	0:00	0	0:00	0:00
319	116:55	120	1:17	40:43
320	24:08	52	0:38	8:46
321	0:00	0	0:00	0:00
322	19:19	60	0:24	2:37
323	14:18	70	0:21	2:05
324	22:41	56	0:35	4:28
325	44:16	92	0:46	14:58
327	24:44	46	0:40	4:28
328	88:57	99	1:03	39:28
329	64:12	97	0:54	25:23
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	137:03	180	1:14	34:20
333	24:23	90	0:27	8:24
334	0:00	0	0:00	0:00
335	8:04	35	0:21	1:32
336	0:00	0	0:00	0:00
337	0:00	0	0:00	0:00
338	0:00	0	0:00	0:00
339	16:21	59	0:23	5:35
340	0:00	0	0:00	0:00
341	25:30	91	0:27	8:46
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	76:12	130	0:44	32:59
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	71:49	100	1:08	25:58
351	0:00	0	0:00	0:00
352	20:01	69	0:25	3:44
353	29:15	61	0:39	11:13
354	27:41	86	0:27	12:23
355	16:31	54	0:22	2:11
356	0:00	0	0:00	0:00
357	0:00	0	0:00	0:00
359	0:00	0	0:00	0:00
360	235:39	173	2:24	81:47
361	0:00	0	0:00	0:00
362	24:38	56	0:38	8:34
364	0:00	0	0:00	0:00
365	43:04	80	0:39	6:07
366	2:21	16	0:11	0:16
367	0:00	0	0:00	0:00
368	70:03	108	0:46	10:35
369	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	13:12	48	0:22	4:28
372	54:08	141	0:35	18:29
373	0:00	0	0:00	0:00
376	36:34	90	0:38	13:12
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
380	0:00	0	0:00	0:00
381	0:00	0	0:00	0:00
382	154:40	203	1:33	50:28
383	25:06	78	0:33	9:10
384	65:21	126	0:45	19:29
385	111:07	143	1:24	34:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
386	15:17	58	0:26	3:25
387	27:12	79	0:30	3:55
388	28:30	55	0:45	6:25
389	0:00	0	0:00	0:00
390	200:55	244	1:15	67:22
391	0:00	0	0:00	0:00
392	17:56	63	0:25	7:50
393	0:00	0	0:00	0:00
394	28:48	54	0:39	5:22
395	0:00	0	0:00	0:00
396	14:10	56	0:21	4:50
397	25:02	65	0:35	6:04
398	0:00	0	0:00	0:00
399	144:49	175	1:11	53:07
400	24:14	53	0:38	8:55
401	66:43	78	1:02	9:23
402	0:00	0	0:00	0:00
403	16:25	56	0:26	5:34
404	260:09	212	2:20	83:15
405	0:00	0	0:00	0:00
406	3:33	32	0:09	1:39
407	9:52	43	0:19	3:20
408	97:14	106	1:12	21:21
410	37:41	106	0:31	15:35
411	0:00	0	0:00	0:00
412	8:39	35	0:19	2:53
413	0:00	0	0:00	0:00
415	0:00	0	0:00	0:00
416	0:00	0	0:00	0:00
417	59:06	105	0:51	17:38
418	70:29	165	0:43	13:32
420	32:35	59	0:46	10:49
421	26:42	86	0:26	11:58
422	143:50	258	0:58	42:57
423	153:28	253	0:53	41:09
424	9:02	36	0:23	1:52
425	0:00	0	0:00	0:00
426	7:14	32	0:21	1:44
427	232:42	299	1:03	71:22
428	68:29	113	1:01	10:16
429	72:44	194	0:41	19:52
430	24:44	81	0:37	8:21
432	11:42	34	0:26	2:02
434	16:05	64	0:24	5:11
435	0:00	0	0:00	0:00
437	61:28	85	0:57	13:04
438	0:00	0	0:00	0:00
439	13:32	72	0:21	1:59
440	0:00	0	0:00	0:00
441	43:39	71	0:50	14:37
442	0:00	0	0:00	0:00
443	23:58	76	0:25	10:54
444	15:29	40	0:32	5:09
445	11:01	36	0:27	3:17
447	81:38	163	0:52	21:27
448	0:00	0	0:00	0:00
449	48:47	159	0:32	14:17
451	60:28	101	0:52	10:42
452	0:00	0	0:00	0:00
453	0:00	0	0:00	0:00
454	9:38	37	0:23	3:39
456	37:44	68	0:40	5:11
457	0:00	0	0:00	0:00
458	54:19	144	0:35	18:06

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
459	13:50	45	0:29	3:24
460	0:00	0	0:00	0:00
461	49:18	95	0:50	13:04
462	0:00	0	0:00	0:00
463	12:12	48	0:23	4:08
464	9:19	36	0:24	2:18
466	6:05	23	0:20	2:49
467	6:09	38	0:13	2:52
468	16:08	52	0:25	7:29
469	17:10	62	0:22	2:21
474	0:00	0	0:00	0:00
475	44:02	56	0:59	8:06
476	29:20	82	0:33	5:26
477	120:05	270	0:44	32:24
478	0:00	0	0:00	0:00
479	18:17	68	0:24	5:51
480	0:00	0	0:00	0:00
481	15:33	44	0:30	5:03
482	0:00	0	0:00	0:00
483	0:00	0	0:00	0:00
484	0:00	0	0:00	0:00
485	0:00	0	0:00	0:00
486	24:34	76	0:27	4:28
487	13:25	55	0:22	5:49
488	52:42	86	0:42	7:31
489	16:28	52	0:29	3:03
490	34:54	84	0:36	7:46
491	31:11	97	0:34	6:41
492	127:43	171	1:07	27:09
494	21:38	49	0:36	6:39
495	27:54	63	0:39	5:41
496	61:36	82	0:59	14:29
498	9:57	37	0:24	3:41
499	13:03	39	0:28	4:23
500	164:52	269	1:14	51:29
501	130:45	145	1:25	43:40
502	0:00	0	0:00	0:00
503	10:22	36	0:22	1:48
504	0:00	0	0:00	0:00
507	0:00	0	0:00	0:00
508	35:50	96	0:36	9:00
509	49:34	131	0:43	14:29
510	241:12	239	1:53	74:42
512	5:54	27	0:20	1:48
513	23:04	75	0:25	4:28
515	0:00	0	0:00	0:00
516	0:00	0	0:00	0:00
517	0:00	0	0:00	0:00
518	112:57	101	1:20	50:06
519	93:48	203	0:45	26:53
520	27:57	54	0:42	8:51
521	0:00	0	0:00	0:00
523	29:21	80	0:34	6:39
524	19:09	54	0:32	5:00
526	0:00	0	0:00	0:00
527	0:00	0	0:00	0:00
528	0:00	0	0:00	0:00
529	69:06	128	0:49	22:58
530	0:00	0	0:00	0:00
531	6:38	26	0:19	1:07
532	13:57	48	0:26	4:38
533	0:00	0	0:00	0:00
534	35:07	70	0:35	4:50
535	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
536	0:00	0	0:00	0:00
538	0:00	0	0:00	0:00
539	23:27	90	0:26	7:52
540	0:00	0	0:00	0:00
541	0:00	0	0:00	0:00
542	0:00	0	0:00	0:00
543	25:07	84	0:25	8:23
544	0:00	0	0:00	0:00
545	0:00	0	0:00	0:00
546	0:00	0	0:00	0:00
547	36:54	63	0:48	11:37
548	0:00	0	0:00	0:00
549	0:00	0	0:00	0:00
550	16:24	56	0:22	2:11
551	0:00	0	0:00	0:00
552	23:47	62	0:28	3:14
553	86:30	115	0:53	13:22
554	11:07	39	0:22	5:11
555	0:00	0	0:00	0:00
556	0:00	0	0:00	0:00
557	0:00	0	0:00	0:00
558	0:00	0	0:00	0:00
559	39:20	103	0:34	13:23
560	0:00	0	0:00	0:00
561	0:00	0	0:00	0:00
562	15:10	77	0:22	5:09
563	0:00	0	0:00	0:00
564	43:48	70	0:54	7:41
566	52:37	84	0:51	20:26
567	13:53	46	0:27	4:34
569	97:21	142	1:13	34:44
570	123:21	206	0:57	39:54
571	0:00	0	0:00	0:00
572	0:00	0	0:00	0:00
573	9:43	40	0:22	3:56
574	42:28	85	0:38	19:11
575	9:49	38	0:24	2:19
576	96:27	149	1:05	31:49
577	9:13	34	0:24	3:05
578	9:15	36	0:23	3:00
579	0:00	0	0:00	0:00
580	126:14	121	1:23	28:01
581	0:00	0	0:00	0:00
582	0:00	0	0:00	0:00
583	55:11	108	0:46	12:14
584	10:56	38	0:26	2:39
585	0:00	0	0:00	0:00
586	56:19	134	0:41	10:48
588	0:00	0	0:00	0:00
590	0:00	0	0:00	0:00
591	0:00	0	0:00	0:00
592	0:00	0	0:00	0:00
593	33:06	61	0:41	15:14
594	17:01	36	0:36	2:56
595	8:02	36	0:20	2:38
596	135:41	223	0:54	42:39
597	0:00	0	0:00	0:00
598	0:00	0	0:00	0:00
599	0:00	0	0:00	0:00
601	3:27	16	0:16	0:33
602	28:23	59	0:39	10:50
604	44:21	94	0:42	17:00
605	0:00	0	0:00	0:00
606	16:21	45	0:31	3:41

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
607	21:17	70	0:25	3:01
608	69:32	85	1:04	24:11
609	33:08	72	0:37	11:22
610	0:00	0	0:00	0:00
611	78:05	136	0:44	33:18
612	13:53	42	0:29	4:39
613	25:03	48	0:39	4:34
614	95:28	187	0:51	28:14
615	46:27	72	0:52	14:19
617	16:34	50	0:30	4:14
618	27:44	66	0:33	12:45
619	0:00	0	0:00	0:00
620	61:03	128	0:41	21:04
621	0:00	0	0:00	0:00
622	0:00	0	0:00	0:00
624	20:17	72	0:26	6:18
625	1:18	18	0:06	0:25
626	60:19	135	0:45	21:22
627	5:23	25	0:19	1:38
628	93:51	148	1:05	27:32
629	0:00	0	0:00	0:00
630	76:56	117	1:01	17:34
631	66:32	98	0:53	9:38
632	0:00	0	0:00	0:00
634	19:30	44	0:35	6:24
635	0:00	0	0:00	0:00
636	57:02	90	0:52	19:08
639	0:00	0	0:00	0:00
641	100:26	107	1:14	30:15
643	44:15	87	0:42	18:24
645	0:00	0	0:00	0:00
647	0:00	0	0:00	0:00
648	94:30	109	1:08	26:17
650	0:00	0	0:00	0:00
652	97:54	86	1:38	14:29
653	83:50	134	0:52	33:15
654	0:00	0	0:00	0:00
655	0:00	0	0:00	0:00
656	17:54	78	0:26	3:49
657	53:02	108	0:46	15:12
658	0:00	0	0:00	0:00
659	76:54	135	0:49	24:38
660	0:00	0	0:00	0:00
661	36:06	71	0:39	16:29
662	10:38	38	0:26	2:37
663	85:48	98	1:00	17:45
664	24:26	50	0:36	4:29
665	67:59	86	0:56	9:41
668	13:38	42	0:29	3:13
669	9:54	35	0:25	3:02
670	27:14	84	0:33	6:30
677	0:00	0	0:00	0:00
678	15:34	46	0:29	6:01
679	50:12	112	0:37	16:21
680	0:00	0	0:00	0:00
681	25:39	77	0:26	4:32
682	65:26	133	0:51	14:18
683	70:11	84	1:00	24:25
684	18:06	69	0:28	2:55
685	0:00	0	0:00	0:00
686	33:02	101	0:26	6:12
687	19:03	68	0:26	6:17
688	130:16	194	1:03	40:04
689	16:44	69	0:24	4:37

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
690	0:00	0	0:00	0:00
691	64:37	137	0:38	12:23
692	0:00	0	0:00	0:00
693	110:00	222	1:07	33:42
695	15:54	41	0:32	5:22
696	0:00	0	0:00	0:00
697	0:00	0	0:00	0:00
698	0:00	0	0:00	0:00
699	94:45	138	0:53	19:08
701	0:00	0	0:00	0:00
702	15:52	47	0:30	4:28
703	10:45	37	0:27	3:18
704	36:01	60	0:46	11:25
705	16:24	52	0:22	2:09
706	0:00	0	0:00	0:00
708	31:06	86	0:33	4:46
710	0:00	0	0:00	0:00
711	0:00	0	0:00	0:00
713	40:21	110	0:32	6:30
714	4:01	20	0:16	0:39
716	0:00	0	0:00	0:00
717	0:00	0	0:00	0:00
718	128:01	215	1:19	42:11
720	0:00	0	0:00	0:00
721	0:00	0	0:00	0:00
722	60:53	146	0:37	15:41
723	0:00	0	0:00	0:00
724	0:00	0	0:00	0:00
725	97:50	128	0:58	15:25
726	18:03	66	0:27	3:57
727	46:50	104	0:39	10:19
728	128:01	143	1:29	40:49
729	25:29	69	0:35	7:20
730	1:41	18	0:07	0:47
731	43:38	89	0:44	8:36
733	0:00	0	0:00	0:00
734	67:06	129	0:45	22:21
735	9:26	38	0:22	3:42
737	0:00	0	0:00	0:00
738	0:00	0	0:00	0:00
739	41:36	80	0:44	15:25
740	100:23	126	1:15	36:48
742	0:00	0	0:00	0:00
743	47:15	84	0:48	8:56
744	54:55	121	0:40	12:08
745	0:00	0	0:00	0:00
746	16:52	51	0:30	3:06
747	18:25	82	0:26	2:47
748	62:16	117	0:43	27:28
749	0:00	0	0:00	0:00
750	20:31	80	0:22	6:59
752	147:41	213	1:08	44:44
753	0:00	0	0:00	0:00
755	16:29	40	0:30	2:55
756	24:01	52	0:38	8:43
757	22:21	69	0:26	10:14
759	42:36	86	0:45	7:33
760	76:31	197	0:37	27:28
761	0:00	0	0:00	0:00
762	45:18	106	0:40	15:23
764	12:20	41	0:27	3:26
765	0:00	0	0:00	0:00
766	0:00	0	0:00	0:00
767	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
769	0:00	0	0:00	0:00
770	222:50	221	2:08	53:09
772	70:19	176	0:44	15:44
774	0:00	0	0:00	0:00
775	0:00	0	0:00	0:00
776	0:00	0	0:00	0:00
777	8:05	32	0:19	0:58
778	1:30	12	0:09	0:10
779	130:37	270	0:55	37:39
780	0:00	0	0:00	0:00
781	15:39	63	0:22	5:21
782	0:00	0	0:00	0:00
783	0:00	0	0:00	0:00
784	0:00	0	0:00	0:00
785	169:28	223	1:30	53:02
787	25:04	73	0:29	6:53
788	0:00	0	0:00	0:00
789	0:00	0	0:00	0:00
791	0:00	0	0:00	0:00
793	0:00	0	0:00	0:00
794	0:00	0	0:00	0:00
795	29:16	74	0:32	13:21
796	51:53	99	0:44	20:19
797	0:00	0	0:00	0:00
798	29:28	95	0:29	9:01
799	0:21	6	0:04	0:02
801	0:00	0	0:00	0:00
803	0:00	0	0:00	0:00
804	0:00	0	0:00	0:00
805	16:29	55	0:28	5:56
806	40:36	84	0:42	9:39
808	0:00	0	0:00	0:00
809	21:58	56	0:34	8:37
810	0:00	0	0:00	0:00
811	25:26	72	0:28	8:45
812	7:24	39	0:16	2:30
813	33:16	62	0:44	10:00
814	0:00	0	0:00	0:00
815	34:10	115	0:27	7:16
816	16:31	44	0:32	4:01
817	0:00	0	0:00	0:00
818	0:00	0	0:00	0:00
819	0:00	0	0:00	0:00
821	0:00	0	0:00	0:00
822	6:53	28	0:21	2:16
823	110:07	138	1:27	18:22
824	85:37	144	1:02	29:30
825	20:32	59	0:28	9:29
826	70:45	169	0:43	14:29
827	254:29	270	1:42	65:29
828	0:00	0	0:00	0:00
829	0:00	0	0:00	0:00
830	0:00	0	0:00	0:00
831	16:27	68	0:22	2:20
832	43:38	88	0:39	6:09
834	98:36	196	0:44	36:18
835	0:00	0	0:00	0:00
837	0:00	0	0:00	0:00
838	25:44	78	0:26	8:54
840	9:19	34	0:25	3:07
841	17:43	53	0:26	6:01
843	0:00	0	0:00	0:00
844	35:07	75	0:37	16:01
845	6:55	22	0:23	1:07

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
846	22:02	75	0:26	6:28
847	0:00	0	0:00	0:00
848	38:43	72	0:48	10:37
849	17:32	65	0:25	5:47
850	0:00	0	0:00	0:00
851	27:55	66	0:34	12:50
852	0:00	0	0:00	0:00
853	38:08	97	0:33	12:12
854	21:43	47	0:37	6:53
855	113:53	173	1:06	37:16
857	156:59	215	1:20	47:06
860	150:21	133	1:19	35:18
861	84:26	204	0:41	29:40
862	41:41	119	0:33	11:43
863	26:19	86	0:34	7:02
864	64:17	140	0:46	17:28
865	0:00	0	0:00	0:00
866	16:17	51	0:28	5:26
868	81:56	131	0:52	13:29
869	132:20	220	1:16	33:14
870	175:18	207	1:23	59:56
871	107:34	157	1:00	19:19
872	0:57	10	0:07	0:06
873	38:01	70	0:37	5:15
874	0:00	0	0:00	0:00
875	0:00	0	0:00	0:00
876	0:00	0	0:00	0:00
877	7:43	33	0:21	1:49
878	0:00	0	0:00	0:00
879	186:44	233	1:08	48:30
880	126:14	214	1:18	41:33
881	55:20	93	0:44	11:13
882	0:00	0	0:00	0:00
883	0:00	0	0:00	0:00
885	51:28	109	0:43	17:33
886	29:22	88	0:28	13:08
887	85:47	98	1:00	17:46
889	0:22	13	0:02	0:10
890	9:05	39	0:21	3:00
891	0:00	0	0:00	0:00
892	12:33	40	0:28	3:01
893	18:11	66	0:29	3:02
894	0:00	0	0:00	0:00
895	32:09	93	0:27	5:53
896	51:19	130	0:40	14:36
897	0:00	0	0:00	0:00
898	15:43	66	0:21	2:13
899	18:14	54	0:33	5:25
901	0:00	0	0:00	0:00
902	30:13	87	0:33	6:18
903	89:16	142	0:53	27:19
904	0:00	0	0:00	0:00
905	0:00	0	0:00	0:00
907	19:44	67	0:28	3:54
908	67:10	88	0:52	9:38
909	17:01	54	0:30	2:56
911	0:00	0	0:00	0:00
912	32:09	88	0:33	6:47
914	0:00	0	0:00	0:00
916	40:19	96	0:42	11:29
917	13:36	46	0:27	4:29
919	0:00	0	0:00	0:00
921	0:00	0	0:00	0:00
922	14:34	40	0:30	4:52

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
923	177:31	235	1:01	46:12
924	0:00	0	0:00	0:00
925	30:36	84	0:45	8:42
926	34:48	71	0:42	13:55
927	66:39	84	1:02	22:56
928	33:07	70	0:42	6:26
929	0:00	0	0:00	0:00
930	0:00	0	0:00	0:00
931	0:00	0	0:00	0:00
932	147:56	272	0:51	42:01
933	0:00	0	0:00	0:00
934	0:00	0	0:00	0:00
935	0:00	0	0:00	0:00
936	0:00	0	0:00	0:00
937	0:00	0	0:00	0:00
938	119:16	202	1:20	36:12
940	151:48	239	1:14	47:35
941	144:00	235	1:09	45:02
942	43:57	117	0:33	17:22
943	51:03	108	0:42	11:22
944	41:20	104	0:30	18:22
945	25:17	58	0:36	6:44
946	0:00	0	0:00	0:00
948	177:40	198	1:20	65:18
949	6:45	29	0:21	2:03
950	8:43	34	0:23	2:55
951	92:54	132	1:05	31:54
952	11:04	38	0:25	4:08
954	20:38	63	0:30	6:30
955	17:47	49	0:33	5:03
956	141:29	189	1:22	36:11
958	30:47	54	0:43	5:43
959	0:00	0	0:00	0:00
960	0:00	0	0:00	0:00
961	0:00	0	0:00	0:00
962	0:00	0	0:00	0:00
963	0:00	0	0:00	0:00
964	0:00	0	0:00	0:00
965	22:39	95	0:23	8:42
966	8:45	38	0:21	2:08
967	0:00	0	0:00	0:00
968	23:48	78	0:28	10:29
969	67:32	113	0:48	10:35
970	46:54	102	0:42	10:10
971	41:42	107	0:38	11:39
972	21:10	78	0:26	3:04
973	27:09	61	0:38	10:40
974	89:50	148	0:50	20:37
975	70:25	58	1:35	13:00
976	18:37	58	0:24	2:30
977	0:00	0	0:00	0:00
978	0:00	0	0:00	0:00
979	0:00	0	0:00	0:00
980	99:55	139	0:59	23:15
981	15:21	68	0:22	2:12
982	12:27	38	0:29	3:55
983	0:00	0	0:00	0:00
985	0:00	0	0:00	0:00
986	69:38	122	0:44	30:31
987	60:35	174	0:35	19:13
988	13:15	51	0:24	4:29
990	0:00	0	0:00	0:00
992	12:47	42	0:27	4:49
993	40:31	124	0:29	8:48

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
994	30:53	83	0:39	10:48
997	29:40	66	0:36	13:39
998	193:38	142	1:32	67:29
999	88:56	193	0:52	21:14
1000	0:00	0	0:00	0:00
1002	18:47	70	0:28	3:16
1003	0:00	0	0:00	0:00
1004	0:00	0	0:00	0:00
1005	69:32	127	0:53	23:18
1006	0:00	0	0:00	0:00
1007	16:05	64	0:24	4:55
1008	63:01	83	0:59	14:58
1009	3:51	23	0:13	1:47
1010	0:00	0	0:00	0:00
1011	0:00	0	0:00	0:00
1012	30:02	62	0:44	6:11
1013	80:23	70	1:25	12:01
1014	22:02	75	0:26	6:30
1016	7:10	30	0:21	2:24
1017	0:00	0	0:00	0:00
1018	34:50	96	0:32	15:20
1019	40:26	130	0:28	15:58
1020	17:50	56	0:26	8:16
1021	0:00	0	0:00	0:00
1022	89:05	199	0:40	32:54
1023	0:00	0	0:00	0:00
1024	0:00	0	0:00	0:00
1025	0:00	0	0:00	0:00
1028	5:33	24	0:17	0:39
1029	0:00	0	0:00	0:00
1030	170:57	236	1:14	47:01
1031	0:00	0	0:00	0:00
1032	23:57	50	0:43	10:02
1033	0:00	0	0:00	0:00
1034	0:00	0	0:00	0:00
1035	0:00	0	0:00	0:00
1036	57:17	140	0:37	14:38
1038	64:01	174	0:38	22:49
1039	0:00	0	0:00	0:00
1040	107:37	136	1:24	35:04
1041	0:00	0	0:00	0:00
1042	8:48	35	0:24	2:42
1043	271:03	218	2:23	86:45
1044	86:09	136	0:52	14:01
1045	61:49	143	0:40	23:23
1046	0:00	0	0:00	0:00
1047	8:12	34	0:22	3:02
1048	89:51	141	0:59	22:20
1049	34:01	84	0:31	4:51
1052	0:00	0	0:00	0:00
1053	27:43	61	0:38	10:50
1054	19:37	82	0:25	6:03
1055	50:06	64	1:16	9:14
1056	256:10	292	1:07	75:08
1058	0:00	0	0:00	0:00
1059	153:35	129	1:21	25:06
1060	0:00	0	0:00	0:00
1061	0:00	0	0:00	0:00
1062	0:00	0	0:00	0:00
1063	0:00	0	0:00	0:00
1065	23:14	49	0:39	7:41
1066	23:19	65	0:29	10:44
1067	122:48	209	0:57	33:49
1068	121:27	187	1:13	28:37

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1069	0:00	0	0:00	0:00
1070	0:00	0	0:00	0:00
1072	0:00	0	0:00	0:00
1073	0:00	0	0:00	0:00
1074	0:31	7	0:06	0:03
1075	58:35	98	0:48	8:30
1076	0:00	0	0:00	0:00
1077	36:54	61	0:47	10:22
1079	7:17	30	0:22	2:14
1080	0:00	0	0:00	0:00
1081	0:00	0	0:00	0:00
1082	117:49	136	1:17	28:31
1083	0:00	0	0:00	0:00
1084	21:25	60	0:33	5:04
1085	122:21	168	1:08	31:42
1086	11:39	44	0:23	3:55
1087	0:00	0	0:00	0:00
1088	0:00	0	0:00	0:00
1089	39:39	134	0:29	11:09
1090	55:03	186	0:33	16:49
1091	100:12	107	1:04	15:07
1092	0:00	0	0:00	0:00
1094	0:00	0	0:00	0:00
1095	0:00	0	0:00	0:00
1096	0:00	0	0:00	0:00
1097	63:16	152	0:41	12:14
1098	64:58	85	1:17	13:42
1099	0:00	0	0:00	0:00
1100	11:58	42	0:26	4:29
1101	0:00	0	0:00	0:00
1102	31:29	112	0:28	6:22
1103	60:39	145	0:42	15:23
1104	0:00	0	0:00	0:00
1105	65:06	148	0:46	16:47
1106	115:33	243	1:06	35:57
1107	17:30	60	0:22	2:22
1108	0:00	0	0:00	0:00
1109	39:44	63	0:50	13:27
1110	50:06	122	0:33	17:08
1111	17:53	42	0:34	5:59
1112	7:00	32	0:20	2:16
1113	8:39	38	0:20	3:35
1114	34:29	89	0:33	5:49
1115	41:26	129	0:37	8:25
1117	30:02	70	0:34	13:46
1118	56:01	155	0:37	16:10
1119	22:10	66	0:26	10:09
1120	0:00	0	0:00	0:00
1123	0:00	0	0:00	0:00
1124	14:54	50	0:26	6:13
1125	0:00	0	0:00	0:00
1126	48:17	76	0:45	9:29
1127	28:58	82	0:33	5:21
1128	0:00	0	0:00	0:00
1129	7:40	33	0:20	2:30
1130	32:52	94	0:28	5:54
1131	118:33	95	1:31	17:04
1132	20:58	53	0:35	4:38
1133	17:55	52	0:32	4:56
1134	0:00	0	0:00	0:00
1135	0:00	0	0:00	0:00
1136	141:38	176	1:25	45:24
1137	78:38	85	1:23	27:02
1138	8:33	35	0:23	1:53

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1139	0:00	0	0:00	0:00
1140	17:08	42	0:33	5:44
1141	0:00	0	0:00	0:00
1143	18:51	75	0:24	6:29
1144	23:23	77	0:29	5:48
1146	96:54	118	0:58	33:52
1148	0:00	0	0:00	0:00
1149	8:29	33	0:23	3:07
1150	0:00	0	0:00	0:00
1151	164:46	143	1:32	58:30
1153	56:22	108	0:47	10:24
1154	0:00	0	0:00	0:00
1155	71:25	140	0:45	25:15
1156	75:05	151	0:50	21:02
1158	116:17	136	1:05	40:21
1160	9:28	38	0:23	2:28
1161	0:00	0	0:00	0:00
1162	35:00	81	0:37	13:34
1164	0:00	0	0:00	0:00
1166	0:00	0	0:00	0:00
1167	0:00	0	0:00	0:00
1168	0:00	0	0:00	0:00
1169	0:00	0	0:00	0:00
1170	0:00	0	0:00	0:00
1171	63:46	95	0:49	28:28
1172	80:58	154	0:52	16:33
1173	0:00	0	0:00	0:00
1174	101:15	147	0:59	35:00
1175	0:00	0	0:00	0:00
1177	47:52	104	0:45	21:23
1178	13:56	50	0:25	4:42
1179	297:26	263	2:11	99:40
1181	0:00	0	0:00	0:00
1182	0:00	0	0:00	0:00
1183	0:00	0	0:00	0:00
1184	0:00	0	0:00	0:00
1185	0:00	0	0:00	0:00
1186	0:00	0	0:00	0:00
1188	0:00	0	0:00	0:00
1189	14:57	43	0:30	3:29
1190	28:08	79	0:27	12:44
1191	55:57	129	0:46	20:10
1192	8:28	37	0:21	2:46
1193	0:00	0	0:00	0:00
1194	0:00	0	0:00	0:00
1195	37:50	98	0:32	16:45
1196	43:44	105	0:38	10:21
1197	24:52	59	0:33	11:29
1198	0:00	0	0:00	0:00
1199	0:00	0	0:00	0:00
1200	8:14	35	0:21	2:40
1201	0:00	0	0:00	0:00
1202	0:00	0	0:00	0:00
1203	23:46	75	0:25	8:11
1204	141:40	201	1:34	35:42
1206	22:47	86	0:26	7:36
1207	0:00	0	0:00	0:00
1210	20:17	76	0:29	3:09
1211	71:07	156	0:48	22:15
1212	38:27	74	0:37	5:22
1213	0:00	0	0:00	0:00
1215	26:00	79	0:30	10:34
1217	0:00	0	0:00	0:00
1218	28:45	57	0:40	10:42

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
1219	63:17	131	0:40	20:51
1220	0:00	0	0:00	0:00
1221	3:31	19	0:14	0:24
1224	14:29	54	0:22	6:42
1225	14:05	47	0:23	6:33
1226	0:00	0	0:00	0:00
1227	18:17	52	0:25	2:22
1228	80:48	68	1:49	14:39
1229	0:00	0	0:00	0:00
1231	162:16	110	1:57	26:14
1232	9:01	35	0:23	2:58
1233	0:00	0	0:00	0:00
1234	44:16	69	0:47	20:14
1235	15:36	42	0:28	2:46
1236	162:30	217	1:12	40:18
1237	129:23	192	1:03	39:44
1238	38:54	82	0:36	17:37
1239	0:00	0	0:00	0:00
1240	89:23	95	1:13	24:20
1241	9:34	39	0:22	3:46
1242	0:00	0	0:00	0:00
1243	0:23	14	0:02	0:10
1244	15:49	43	0:32	4:53
1245	11:35	55	0:17	5:21
1246	0:00	0	0:00	0:00
1248	22:26	47	0:40	5:18
1249	0:00	0	0:00	0:00
1250	0:00	0	0:00	0:00
1252	0:00	0	0:00	0:00
1253	69:05	144	0:44	28:35
1254	0:00	0	0:00	0:00
1256	0:00	0	0:00	0:00
1257	19:19	67	0:24	3:43
1259	17:33	66	0:22	2:28
1260	0:00	0	0:00	0:00
1262	0:07	7	0:01	0:02
1264	76:25	98	1:01	28:59
1265	6:01	20	0:23	0:58
1266	27:27	58	0:36	12:39
1267	9:41	28	0:26	1:38
1268	0:00	0	0:00	0:00
1269	178:31	288	1:19	52:00
1270	0:00	0	0:00	0:00
1271	104:24	199	0:49	28:43
1272	0:00	0	0:00	0:00
1273	0:00	0	0:00	0:00
1274	21:53	72	0:26	3:07
1276	38:19	80	0:37	17:24
1277	93:51	128	0:56	14:50
1278	15:51	62	0:25	3:28
1279	69:15	116	0:51	15:48
1280	0:00	0	0:00	0:00
1281	0:00	0	0:00	0:00
1282	0:00	0	0:00	0:00
1283	0:00	0	0:00	0:00
1284	63:30	140	0:41	12:10
1285	0:00	0	0:00	0:00
1286	23:02	67	0:31	7:49
1287	7:00	31	0:20	2:19
1288	24:33	79	0:31	6:04
1289	36:09	68	0:37	4:58
1290	45:44	108	0:35	15:14
1292	0:00	0	0:00	0:00
1294	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1297	40:02	88	0:35	5:50
1298	0:00	0	0:00	0:00
1299	12:23	48	0:21	5:46
1300	0:00	0	0:00	0:00
1301	85:28	93	1:11	26:19
1302	0:00	0	0:00	0:00
1303	18:37	43	0:34	6:11
1304	0:00	0	0:00	0:00
1305	18:31	45	0:35	5:08
1306	0:00	0	0:00	0:00
1308	32:42	70	0:38	13:24
1309	67:16	80	1:00	9:30
1310	14:17	49	0:27	2:28
1311	0:00	0	0:00	0:00
1312	32:41	105	0:27	6:18
1313	21:19	72	0:28	7:02
1314	114:39	182	0:59	36:58
1315	0:00	0	0:00	0:00
1317	32:34	67	0:38	14:56
1318	0:00	0	0:00	0:00
1319	62:57	124	0:53	19:16
1321	0:00	0	0:00	0:00
1323	0:00	0	0:00	0:00
1324	7:12	30	0:21	2:25
1325	12:54	42	0:27	4:11
1328	16:53	50	0:31	4:41
1329	0:00	0	0:00	0:00
1330	0:00	0	0:00	0:00
1331	0:00	0	0:00	0:00
1332	2:19	27	0:07	0:46
1334	0:00	0	0:00	0:00
1335	0:00	0	0:00	0:00
1338	16:34	54	0:22	2:11
1339	0:00	0	0:00	0:00
1341	40:11	111	0:32	6:31
1343	0:00	0	0:00	0:00
1344	55:29	155	0:37	15:57
1345	0:00	0	0:00	0:00
1347	0:00	0	0:00	0:00
1348	0:00	0	0:00	0:00
1349	0:00	0	0:00	0:00
1350	11:10	38	0:22	1:57
1351	0:00	0	0:00	0:00
1352	0:00	0	0:00	0:00
1353	47:42	97	0:45	9:02
1354	0:00	0	0:00	0:00
1355	80:51	84	1:10	11:27
1356	0:00	0	0:00	0:00
1358	29:19	60	0:36	5:31
1359	9:08	37	0:23	2:32
1360	17:10	46	0:28	5:51
1361	53:04	82	0:52	14:27
1362	88:43	112	0:57	13:45
1363	0:00	0	0:00	0:00
1364	70:25	85	1:04	18:26
1366	24:32	81	0:25	8:29
1367	0:00	0	0:00	0:00
1370	0:00	0	0:00	0:00
1371	101:41	164	1:12	26:47
1372	27:31	58	0:36	12:41
1373	0:00	0	0:00	0:00
1374	0:00	0	0:00	0:00
1375	281:51	258	2:05	96:24
1377	80:16	92	1:18	27:29

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
1378	11:21	44	0:25	2:50
1379	9:09	34	0:25	3:03
1380	49:41	74	0:53	15:02
1381	33:18	100	0:33	14:36
1383	17:49	68	0:27	2:46
1384	49:35	109	0:35	21:57
1385	81:01	173	0:46	27:45
1386	57:15	86	0:46	8:11
1387	19:30	54	0:25	2:34
1388	0:00	0	0:00	0:00
1389	89:12	194	0:47	23:17
1390	0:00	0	0:00	0:00
1391	0:00	0	0:00	0:00
1395	28:16	79	0:28	12:48
1396	93:57	235	0:53	28:23
1397	0:00	0	0:00	0:00
1398	0:00	0	0:00	0:00
1399	0:00	0	0:00	0:00
1400	0:00	0	0:00	0:00
1402	9:07	33	0:24	2:47
1404	22:19	69	0:29	7:36
1405	0:00	0	0:00	0:00
1406	37:40	87	0:33	13:03
1408	32:22	66	0:45	6:27
1409	0:00	0	0:00	0:00
1410	58:42	114	0:49	19:40
1411	0:00	0	0:00	0:00
1412	23:43	85	0:28	5:00
1414	30:31	93	0:30	10:26
1415	0:00	0	0:00	0:00
1416	0:00	0	0:00	0:00
1417	24:15	60	0:36	4:43
1418	0:00	0	0:00	0:00
1420	48:11	160	0:28	12:15
1421	0:00	0	0:00	0:00
1422	132:28	118	1:31	29:23
1423	10:08	40	0:23	3:20
1424	22:03	74	0:27	7:34
1425	56:56	124	0:37	19:07
1426	81:20	129	0:54	16:56
1428	7:31	37	0:16	2:31
1429	23:53	106	0:23	6:16
1430	0:00	0	0:00	0:00
1431	170:51	224	1:29	53:26
1432	6:40	29	0:21	2:06
1433	30:57	69	0:35	14:11
1434	56:28	116	0:44	19:14
1435	23:21	65	0:32	7:54
1436	0:00	0	0:00	0:00
1437	37:54	90	0:33	16:57
1438	99:58	152	0:52	34:23
1439	29:03	72	0:31	13:15
1440	0:00	0	0:00	0:00
1441	0:00	0	0:00	0:00
1442	99:50	146	1:04	24:43
1443	0:00	0	0:00	0:00
1445	72:35	114	0:59	30:47
1446	39:43	81	0:42	13:26
1449	0:00	0	0:00	0:00
1450	10:37	48	0:20	3:35
1451	0:00	0	0:00	0:00
1452	0:00	0	0:00	0:00
1454	0:00	0	0:00	0:00
1455	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
1456	20:50	65	0:26	7:09
1457	25:45	51	0:43	5:56
1458	47:53	92	0:41	6:48
1459	69:51	206	0:32	20:52
1460	0:00	0	0:00	0:00
1461	98:17	174	1:03	33:52
1462	13:08	56	0:19	6:05
1463	25:22	54	0:38	9:23
1466	0:00	0	0:00	0:00
1467	7:13	44	0:14	3:21
1468	87:20	92	1:10	39:14
1469	0:00	0	0:00	0:00
1470	47:49	91	0:44	18:18
1471	12:05	36	0:25	1:30
1472	152:33	226	0:58	49:27
1473	152:17	211	1:15	50:46
1475	17:15	67	0:26	4:21
1477	0:00	0	0:00	0:00
1478	0:00	0	0:00	0:00
1480	23:19	52	0:38	8:11
1481	13:03	39	0:30	3:57
1482	45:51	100	0:43	15:45
1483	26:14	89	0:32	6:32
1484	26:37	74	0:29	12:09
1486	0:00	0	0:00	0:00
1488	103:05	96	1:21	21:32
1490	17:25	43	0:33	5:42
1491	75:44	132	0:50	12:41
1492	56:22	107	0:53	8:22
1493	155:18	255	0:53	41:44
1494	0:00	0	0:00	0:00
1495	223:25	282	1:19	60:47
1496	0:00	0	0:00	0:00
1497	0:00	0	0:00	0:00
1498	0:00	0	0:00	0:00
1499	0:00	0	0:00	0:00
1500	0:00	0	0:00	0:00
1501	98:55	125	1:07	21:28
1504	68:38	105	0:47	10:12
1505	88:51	160	0:43	30:12
1507	0:00	0	0:00	0:00
1508	11:20	34	0:25	1:58
1509	0:00	0	0:00	0:00
1510	71:34	115	1:01	13:49
1511	0:00	0	0:00	0:00
1512	10:29	37	0:26	2:39
1514	7:20	33	0:21	1:46
1515	102:21	205	0:48	28:17
1517	0:00	0	0:00	0:00
1518	162:27	163	1:37	30:15
1519	17:17	59	0:26	7:27
1520	0:00	0	0:00	0:00
1521	7:12	32	0:21	1:48
1523	15:17	51	0:24	7:06
1524	16:45	47	0:26	2:08
1525	0:00	0	0:00	0:00
1526	136:52	119	1:30	38:36
1527	33:34	56	0:45	6:17
1528	14:37	43	0:29	4:45
1529	42:15	75	0:41	19:11
1530	10:40	36	0:26	3:21
1531	145:09	176	1:20	59:10
1532	93:06	204	0:44	26:42
1533	23:16	50	0:37	7:13

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1534	0:00	0	0:00	0:00
1535	0:00	0	0:00	0:00
1538	17:35	72	0:24	6:48
1539	0:00	0	0:00	0:00
1540	27:40	80	0:29	4:57
1541	0:00	0	0:00	0:00
1542	0:00	0	0:00	0:00
1543	8:34	38	0:21	2:05
1545	63:01	148	0:38	16:08
1546	49:36	134	0:43	14:03
1547	0:00	0	0:00	0:00
1548	0:00	0	0:00	0:00
1549	238:44	225	1:36	64:40
1550	71:25	152	0:42	29:29
1551	124:40	281	0:44	34:18
1552	139:45	167	1:19	48:01
1553	29:40	65	0:40	6:00
1554	82:11	131	0:59	15:05
1559	8:12	32	0:23	2:30
1561	0:00	0	0:00	0:00
1562	57:27	141	0:49	19:27
1564	0:00	0	0:00	0:00
1567	92:44	60	2:11	14:41
1568	127:52	179	1:18	31:01
1569	0:00	0	0:00	0:00
1570	84:29	156	0:58	29:54
1571	12:21	39	0:28	4:06
1572	9:07	39	0:21	3:39
1573	18:25	54	0:32	4:48
1574	0:00	0	0:00	0:00
1575	45:59	73	0:51	15:27
1576	0:00	0	0:00	0:00
1577	0:00	0	0:00	0:00
1578	0:00	0	0:00	0:00
1579	0:00	0	0:00	0:00
1580	0:00	0	0:00	0:00
1581	0:00	0	0:00	0:00
1583	129:47	235	1:08	29:38
1584	10:00	38	0:23	3:50
1585	57:30	113	0:48	13:09
1586	72:55	154	0:43	13:06
1587	0:00	0	0:00	0:00
1588	32:49	93	0:33	14:21
1589	0:00	0	0:00	0:00
1590	0:00	0	0:00	0:00
1591	68:57	128	0:49	22:55
1592	40:16	79	0:44	7:21
1593	16:22	58	0:21	2:12
1594	22:24	83	0:22	10:06
1595	0:00	0	0:00	0:00
1596	0:00	0	0:00	0:00
1598	0:00	0	0:00	0:00
1599	0:00	0	0:00	0:00
1601	58:01	170	0:36	18:23
1602	47:45	93	0:48	8:37
1603	118:46	268	0:47	34:52
1604	0:00	0	0:00	0:00
1605	0:00	0	0:00	0:00
1606	34:42	90	0:31	6:28
1607	0:00	0	0:00	0:00
1609	0:00	0	0:00	0:00
1610	0:00	0	0:00	0:00
1612	6:46	27	0:19	1:08
1613	22:15	70	0:26	3:08

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
1614	27:09	63	0:34	12:31
1615	30:58	78	0:32	4:25
1616	17:34	54	0:24	2:18
1617	0:00	0	0:00	0:00
1618	0:00	0	0:00	0:00
1619	33:57	60	0:42	6:25
1620	87:58	190	0:41	33:13
1621	0:00	0	0:00	0:00
1622	35:08	73	0:38	16:04
1623	0:00	0	0:00	0:00
1624	49:47	77	0:57	13:43
1625	0:00	0	0:00	0:00
1626	7:13	30	0:21	2:25
1627	0:00	0	0:00	0:00
1628	0:00	0	0:00	0:00
1629	23:36	61	0:36	10:47
1631	21:59	68	0:32	4:26
1632	0:00	0	0:00	0:00
1633	0:00	0	0:00	0:00
1634	14:53	47	0:25	6:56
1635	0:00	0	0:00	0:00
1636	9:18	33	0:25	2:51
1637	31:55	89	0:32	6:31
1638	14:23	40	0:30	3:34
1639	32:45	60	0:45	10:12
1640	0:00	0	0:00	0:00
1641	42:36	125	0:31	8:42
1642	10:30	39	0:25	3:55
1643	27:09	57	0:39	10:06
1647	0:00	0	0:00	0:00
1648	0:00	0	0:00	0:00
1649	0:00	0	0:00	0:00
1650	13:44	72	0:21	2:00
1651	26:43	57	0:41	5:41
1652	25:01	48	0:39	4:33
1653	150:56	142	1:41	27:30
1654	0:00	0	0:00	0:00
1655	7:28	34	0:20	2:27
1656	27:55	96	0:25	9:08
1657	0:00	0	0:00	0:00
1659	0:00	0	0:00	0:00
1661	0:00	0	0:00	0:00
1662	31:17	95	0:30	11:13
1663	42:14	106	0:39	11:51
1664	13:53	50	0:25	4:41
1665	28:37	64	0:38	11:22
1666	163:25	237	1:00	52:39
1667	0:00	0	0:00	0:00
1668	0:00	0	0:00	0:00
1669	0:00	0	0:00	0:00
1670	0:00	0	0:00	0:00
1671	16:18	50	0:23	2:58
1672	79:05	119	1:02	18:04
1673	21:14	52	0:35	8:03
1674	34:35	78	0:33	4:53
1679	0:00	0	0:00	0:00
1688	6:36	29	0:20	2:25
1693	7:33	32	0:22	1:58
1694	5:56	29	0:19	2:10
1709	0:00	0	0:00	0:00
1728	5:14	25	0:16	0:37
1733	0:00	0	0:00	0:00
1761	16:43	72	0:23	2:24
1795	8:44	34	0:23	1:59

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
1841	0:00	0	0:00	0:00
1848	6:42	29	0:21	2:05
1853	0:00	0	0:00	0:00
1872	7:59	34	0:22	1:52
1876	0:00	0	0:00	0:00
1887	0:00	0	0:00	0:00
1899	0:00	0	0:00	0:00
1906	0:00	0	0:00	0:00
1909	0:00	0	0:00	0:00
1953	0:00	0	0:00	0:00
1979	7:07	31	0:21	1:43
1993	0:00	0	0:00	0:00
2014	6:12	28	0:19	2:05
2016	0:00	0	0:00	0:00
2041	0:00	0	0:00	0:00
2049	0:00	0	0:00	0:00
2053	20:13	70	0:24	3:38
2075	0:00	0	0:00	0:00
2093	0:00	0	0:00	0:00
2107	0:00	0	0:00	0:00
2147	0:00	0	0:00	0:00
2171	6:49	30	0:21	1:41
2172	7:39	32	0:22	1:48
2175	18:11	73	0:22	6:18
2190	0:00	0	0:00	0:00
2200	0:00	0	0:00	0:00
2213	0:00	0	0:00	0:00
2229	0:00	0	0:00	0:00
2235	0:00	0	0:00	0:00
2252	6:37	30	0:20	1:37
2268	6:56	30	0:21	1:48
2301	0:00	0	0:00	0:00
2302	9:14	36	0:23	1:57
2303	0:00	0	0:00	0:00
2319	0:00	0	0:00	0:00
2346	0:00	0	0:00	0:00
2353	0:00	0	0:00	0:00
2388	12:33	40	0:23	1:34
2409	0:00	0	0:00	0:00
2443	6:54	30	0:21	1:48
2452	0:00	0	0:00	0:00
2463	0:00	0	0:00	0:00
2488	0:00	0	0:00	0:00
2495	6:47	30	0:21	1:39
2516	0:00	0	0:00	0:00
2539	0:00	0	0:00	0:00
2554	18:21	66	0:26	3:28
2556	0:00	0	0:00	0:00
2561	0:00	0	0:00	0:00
2586	0:00	0	0:00	0:00
2590	0:00	0	0:00	0:00
2612	7:11	30	0:18	0:52
2619	0:00	0	0:00	0:00
2645	26:38	80	0:26	9:13
2659	8:12	32	0:22	1:53
2690	8:00	34	0:22	1:52
2694	0:00	0	0:00	0:00
2704	13:24	52	0:23	4:32
2706	0:00	0	0:00	0:00
2714	0:00	0	0:00	0:00
2743	0:00	0	0:00	0:00
2759	6:08	29	0:20	1:30
2761	6:40	29	0:20	2:07
2817	22:38	75	0:25	3:53

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
2820	20:16	52	0:28	2:39
2835	0:00	0	0:00	0:00
2844	0:00	0	0:00	0:00
2845	0:00	0	0:00	0:00
2848	0:00	0	0:00	0:00
2860	0:00	0	0:00	0:00
2877	0:00	0	0:00	0:00
2880	12:19	40	0:23	1:32
2899	0:00	0	0:00	0:00
2964	7:43	31	0:23	2:04
2974	5:51	28	0:19	1:47
2980	0:00	0	0:00	0:00
2982	0:00	0	0:00	0:00
2992	11:29	50	0:23	1:51
3007	0:00	0	0:00	0:00
3020	0:00	0	0:00	0:00
3021	0:00	0	0:00	0:00
3022	18:20	73	0:23	6:22
3054	0:00	0	0:00	0:00
3055	0:00	0	0:00	0:00
3056	0:00	0	0:00	0:00
3057	0:00	0	0:00	0:00
3058	0:00	0	0:00	0:00
3059	0:00	0	0:00	0:00
3060	0:00	0	0:00	0:00
3061	0:00	0	0:00	0:00
3062	0:00	0	0:00	0:00
3063	0:00	0	0:00	0:00
3064	0:00	0	0:00	0:00
3065	0:00	0	0:00	0:00
3066	0:00	0	0:00	0:00
3067	0:00	0	0:00	0:00
3068	0:00	0	0:00	0:00
3069	0:00	0	0:00	0:00
3070	0:00	0	0:00	0:00
3071	0:00	0	0:00	0:00
3072	0:00	0	0:00	0:00
3073	0:00	0	0:00	0:00
3074	0:00	0	0:00	0:00
3075	0:00	0	0:00	0:00
3076	0:00	0	0:00	0:00
3077	0:00	0	0:00	0:00
3078	0:00	0	0:00	0:00
3079	0:00	0	0:00	0:00
3080	0:00	0	0:00	0:00
3081	0:00	0	0:00	0:00
3082	0:00	0	0:00	0:00
3083	0:00	0	0:00	0:00
3084	0:00	0	0:00	0:00
3085	0:00	0	0:00	0:00
3086	0:00	0	0:00	0:00
3097	12:27	40	0:28	3:01
3098	13:57	55	0:26	3:01
3099	4:55	26	0:17	1:42
3102	0:00	0	0:00	0:00
3103	0:00	0	0:00	0:00
3105	0:00	0	0:00	0:00
3106	0:00	0	0:00	0:00
3107	0:00	0	0:00	0:00
3108	0:00	0	0:00	0:00
3109	0:00	0	0:00	0:00
3122	0:00	0	0:00	0:00
3123	0:39	13	0:04	0:18
3124	8:34	44	0:16	3:59

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case			Shadow, expected values
	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
3125	0:00	0	0:00	0:00
3126	0:00	0	0:00	0:00
3127	0:00	0	0:00	0:00
3128	0:00	0	0:00	0:00
3129	0:00	0	0:00	0:00
3130	0:00	0	0:00	0:00
3131	0:00	0	0:00	0:00
3132	0:00	0	0:00	0:00
3133	0:00	0	0:00	0:00
3134	0:00	0	0:00	0:00
3137	67:53	145	0:41	28:23
3138	47:33	122	0:37	20:21
3139	21:52	74	0:30	3:53
3140	17:02	54	0:29	2:58
3141	17:49	58	0:29	2:59
3142	25:15	62	0:29	3:25
3146	7:33	36	0:17	3:31
3147	0:00	0	0:00	0:00
3149	0:00	0	0:00	0:00
3151	0:00	0	0:00	0:00
3152	31:04	66	0:33	5:58
3153	22:24	53	0:31	4:08
3154	0:00	0	0:00	0:00
3155	0:00	0	0:00	0:00
3157	23:44	56	0:35	9:20
3158	62:55	93	0:47	28:01
3159	0:00	0	0:00	0:00
3160	0:00	0	0:00	0:00
3161	0:00	0	0:00	0:00
3162	8:23	32	0:23	2:47
3163	0:00	0	0:00	0:00
3164	0:00	0	0:00	0:00
3165	5:19	26	0:18	1:25
3166	5:52	27	0:19	1:31
3167	6:11	27	0:20	1:35
3168	25:28	93	0:23	4:17
3169	24:17	86	0:23	3:59
3170	6:59	30	0:21	1:43
3171	16:00	63	0:22	2:51
3172	19:31	70	0:22	3:21
3173	25:42	83	0:25	4:15
3174	26:08	82	0:26	4:21
3175	0:00	0	0:00	0:00
3176	0:00	0	0:00	0:00
3177	0:00	0	0:00	0:00
3178	0:00	0	0:00	0:00
3179	16:29	53	0:25	7:39
3180	0:00	0	0:00	0:00
3181	7:08	31	0:21	1:45
3183	0:00	0	0:00	0:00
3184	0:00	0	0:00	0:00
3185	0:00	0	0:00	0:00
3186	0:00	0	0:00	0:00
3187	0:00	0	0:00	0:00
3188	0:00	0	0:00	0:00
3189	0:00	0	0:00	0:00
3190	0:00	0	0:00	0:00
3191	0:00	0	0:00	0:00
3192	0:00	0	0:00	0:00
3193	0:00	0	0:00	0:00
3194	0:00	0	0:00	0:00
3195	0:00	0	0:00	0:00
3196	0:00	0	0:00	0:00
3197	0:00	0	0:00	0:00

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
3198	0:00	0	0:00	0:00
3199	0:00	0	0:00	0:00
3200	0:00	0	0:00	0:00
3201	0:00	0	0:00	0:00
3202	0:00	0	0:00	0:00
3203	0:00	0	0:00	0:00
3204	0:00	0	0:00	0:00
3205	0:00	0	0:00	0:00
3206	0:00	0	0:00	0:00
3207	0:00	0	0:00	0:00
3208	0:00	0	0:00	0:00
3209	0:00	0	0:00	0:00
3210	0:00	0	0:00	0:00
3212	0:00	0	0:00	0:00
3213	0:00	0	0:00	0:00
3214	0:00	0	0:00	0:00
3218	0:00	0	0:00	0:00
3219	0:00	0	0:00	0:00
3224	0:00	0	0:00	0:00
3228	16:26	56	0:28	3:45
3229	0:00	0	0:00	0:00
3230	33:14	66	0:36	4:32
3231	0:00	0	0:00	0:00
3232	0:00	0	0:00	0:00
3233	0:00	0	0:00	0:00
3234	0:00	0	0:00	0:00
3235	0:00	0	0:00	0:00
3236	0:00	0	0:00	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
T1	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (682)	143:05	24:35
T10	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (711)	265:29	96:30
T11	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (712)	227:24	55:49
T12	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (713)	161:20	44:57
T13	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (714)	255:10	73:39
T14	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (715)	290:57	57:38
T15	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (716)	130:14	25:40
T16	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (717)	182:44	56:26
T17	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (718)	77:07	26:42
T18	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (719)	137:07	46:15
T19	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (720)	185:49	63:45
T2	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (705)	228:45	73:24
T20	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (704)	206:34	72:06
T21	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (721)	519:20	131:02
T22	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (685)	393:33	111:12
T23	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (686)	528:14	162:35
T24	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (687)	409:33	120:02
T25	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (722)	481:45	135:54
T26	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (723)	404:50	123:01
T27	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (724)	266:53	77:25
T28	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (725)	291:49	80:39
T29	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (688)	297:40	86:40
T3	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (683)	402:27	131:07
T30	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (689)	295:50	87:11
T31	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (726)	220:18	59:13
T32	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (727)	313:08	95:10
T33	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (728)	191:45	56:22
T34	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (690)	388:13	107:17
T35	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (729)	258:09	78:50
T36	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (730)	271:45	88:30
T37	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (691)	287:29	89:03

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-04_Emerson GE Turbines

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
T38	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (692)	366:21	99:20
T39	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (693)	340:14	112:34
T4	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (684)	319:21	101:08
T40	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (731)	323:08	111:21
T41	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (732)	383:03	109:54
T42	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (733)	488:28	152:49
T43	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (734)	518:17	135:39
T44	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (735)	431:53	127:15
T45	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (736)	435:18	127:34
T46	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (737)	208:47	76:38
T47	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (694)	263:22	60:20
T48	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (695)	130:04	28:57
T49	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (738)	524:46	170:24
T5	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (706)	447:57	140:48
T50	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (696)	29:48	8:05
T51	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (739)	228:39	69:42
T52	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (740)	214:15	66:42
T53	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (741)	211:13	59:33
T54	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (742)	296:30	66:23
T55	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (697)	241:51	62:53
T56	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (743)	263:53	74:25
T57	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (698)	106:03	33:06
T58	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (744)	162:24	58:07
T59	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (699)	198:44	63:07
T6	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (707)	112:20	21:49
T60	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (745)	410:24	121:09
T61	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (746)	611:08	177:57
T62	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (700)	258:01	73:45
T63	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (701)	434:05	125:29
T64	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (747)	151:19	48:31
T65	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (748)	308:39	83:20
T66	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (749)	318:55	76:02
T67	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (750)	190:24	54:57
T68	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (751)	514:05	146:33
T69	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (752)	463:46	131:48
T7	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (708)	125:31	24:55
T70	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (753)	116:36	43:02
T71	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (754)	465:06	152:50
T72	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (755)	52:36	14:18
T73	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (756)	155:51	44:55
T74	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (757)	175:08	54:28
T75	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (702)	321:44	91:31
T76	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (758)	214:18	64:02
T77	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (759)	415:19	117:44
T78	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (760)	219:05	65:10
T79	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (761)	408:44	123:34
T8	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (709)	92:51	27:11
T80	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (762)	155:52	36:39
T81	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (763)	199:21	64:24
T82	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (764)	238:47	74:18
T83	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (703)	181:55	56:42
T84	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (765)	270:35	77:55
T85	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (766)	453:06	128:23
T86	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (767)	230:54	68:15
T87	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (768)	586:32	140:10
T9	GE WIND ENERGY GE 5.5-158 5500 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (710)	184:49	68:37

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7693)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March		April		May		June	
1	07:57	07:43	07:07		07:16	18:40 (T59)	06:31	19:21 (T78)	06:02	19:39 (T78)
	17:13	17:48	18:22		19:56	3 18:43 (T59)	20:27	44 20:05 (T78)	20:57	33 20:32 (T57)
2	07:57	07:42	07:06	17:44 (T59)	07:15		06:29	19:21 (T78)	06:01	19:43 (T78)
	17:14	17:49	18:23	10 17:54 (T59)	19:57		20:28	45 20:06 (T78)	20:58	28 20:33 (T57)
3	07:57	07:41	07:04	17:40 (T59)	07:13		06:28	19:21 (T78)	06:01	20:10 (T57)
	17:15	17:50	18:24	19 17:59 (T59)	19:58		20:29	46 20:07 (T78)	20:58	24 20:34 (T57)
4	07:57	07:40	07:03	17:37 (T59)	07:11		06:27	19:21 (T78)	06:01	20:09 (T57)
	17:16	17:52	18:25	25 18:02 (T59)	19:59		20:30	47 20:08 (T78)	20:59	25 20:34 (T57)
5	07:57	07:39	07:01	17:34 (T59)	07:10		06:25	19:20 (T78)	06:00	20:10 (T57)
	17:17	17:53	18:27	29 18:03 (T59)	20:00		20:31	48 20:08 (T78)	21:00	25 20:35 (T57)
6	07:57	07:38	06:59	17:32 (T59)	07:08		06:24	19:20 (T78)	06:00	20:10 (T57)
	17:18	17:54	18:28	33 18:05 (T59)	20:00		20:32	48 20:08 (T78)	21:00	26 20:36 (T57)
7	07:57	07:37	06:58	17:30 (T59)	07:06		06:23	19:20 (T78)	06:00	20:10 (T57)
	17:19	17:55	18:29	36 18:06 (T59)	20:01		20:33	48 20:08 (T78)	21:01	27 20:37 (T57)
8	07:57	07:36	07:56	18:28 (T59)	07:05		06:22	19:20 (T78)	05:59	20:09 (T57)
	17:20	17:57	19:30	39 19:07 (T59)	20:02		20:34	48 20:08 (T78)	21:02	28 20:37 (T57)
9	07:57	07:35	07:55	18:28 (T59)	07:03		06:21	19:20 (T78)	05:59	20:10 (T57)
	17:21	17:58	19:31	40 19:08 (T59)	20:04		20:35	48 20:08 (T78)	21:02	27 20:37 (T57)
10	07:57	07:34	07:53	18:26 (T59)	07:02		06:20	19:20 (T78)	05:59	20:10 (T57)
	17:22	17:59	19:32	43 19:09 (T59)	20:05		20:36	47 20:07 (T78)	21:03	28 20:38 (T57)
11	07:57	07:32	07:51	18:26 (T59)	07:00		06:18	19:21 (T78)	05:59	20:10 (T57)
	17:23	18:00	19:33	44 19:10 (T59)	20:06		20:37	46 20:07 (T78)	21:03	29 20:39 (T57)
12	07:56	07:31	07:50	18:25 (T59)	06:58		06:17	19:21 (T78)	05:59	20:10 (T57)
	17:24	18:02	19:34	45 19:10 (T59)	20:07		20:38	46 20:07 (T78)	21:04	29 20:39 (T57)
13	07:56	07:30	07:48	18:24 (T59)	06:57		06:16	19:21 (T78)	05:59	20:11 (T57)
	17:25	18:03	19:36	46 19:10 (T59)	20:08		20:39	45 20:06 (T78)	21:04	29 20:40 (T57)
14	07:56	07:29	07:46	18:24 (T59)	06:55		06:15	19:22 (T78)	05:59	20:11 (T57)
	17:26	18:04	19:37	46 19:10 (T59)	20:09		20:41	44 20:06 (T78)	21:05	29 20:40 (T57)
15	07:55	07:27	07:45	18:23 (T59)	06:54		06:14	19:22 (T78)	05:59	20:11 (T57)
	17:27	18:05	19:38	47 19:10 (T59)	20:10		20:42	44 20:06 (T78)	21:05	29 20:40 (T57)
16	07:55	07:26	07:43	18:22 (T59)	06:52		06:13	19:22 (T78)	05:59	20:11 (T57)
	17:28	18:06	19:39	48 19:10 (T59)	20:11		20:42	43 20:05 (T78)	21:06	30 20:41 (T57)
17	07:54	07:25	07:41	18:23 (T59)	06:51		06:12	19:23 (T78)	05:59	20:11 (T57)
	17:30	18:08	19:40	47 19:10 (T59)	20:12		20:43	41 20:04 (T78)	21:06	30 20:41 (T57)
18	07:54	07:23	07:40	18:22 (T59)	06:49	19:41 (T78)	06:12	19:23 (T78)	05:59	20:11 (T57)
	17:31	18:09	19:41	47 19:09 (T59)	20:13	11 19:52 (T78)	20:44	41 20:04 (T78)	21:07	30 20:41 (T57)
19	07:53	07:22	07:38	18:22 (T59)	06:48	19:37 (T78)	06:11	19:24 (T78)	05:59	20:11 (T57)
	17:32	18:10	19:42	47 19:09 (T59)	20:14	16 19:53 (T78)	20:45	39 20:03 (T78)	21:07	30 20:41 (T57)
20	07:53	07:21	07:36	18:22 (T59)	06:46	19:34 (T78)	06:10	19:25 (T78)	05:59	20:11 (T57)
	17:33	18:11	19:43	46 19:08 (T59)	20:15	20 19:54 (T78)	20:46	38 20:03 (T78)	21:07	31 20:42 (T57)
21	07:52	07:19	07:35	18:22 (T59)	06:45	19:32 (T78)	06:09	19:26 (T78)	05:59	20:12 (T57)
	17:34	18:13	19:44	46 19:08 (T59)	20:16	23 19:55 (T78)	20:47	38 20:24 (T57)	21:07	31 20:43 (T57)
22	07:52	07:18	07:33	18:22 (T59)	06:43	19:29 (T78)	06:08	19:26 (T78)	05:59	20:12 (T57)
	17:35	18:14	19:45	45 19:07 (T59)	20:17	26 19:55 (T78)	20:48	41 20:24 (T57)	21:08	31 20:43 (T57)
23	07:51	07:16	07:31	18:22 (T59)	06:42	19:28 (T78)	06:07	19:27 (T78)	06:00	20:12 (T57)
	17:37	18:15	19:46	43 19:05 (T59)	20:18	29 19:57 (T78)	20:49	43 20:25 (T57)	21:08	30 20:42 (T57)
24	07:50	07:15	07:30	18:24 (T59)	06:40	19:27 (T78)	06:07	19:29 (T78)	06:00	20:12 (T57)
	17:38	18:16	19:48	41 19:05 (T59)	20:20	31 19:58 (T78)	20:50	43 20:27 (T57)	21:08	30 20:42 (T57)
25	07:49	07:13	07:28	18:24 (T59)	06:39	19:25 (T78)	06:06	19:29 (T78)	06:00	20:13 (T57)
	17:39	18:17	19:49	40 19:04 (T59)	20:21	34 19:59 (T78)	20:51	44 20:27 (T57)	21:08	30 20:43 (T57)
26	07:49	07:12	07:26	18:24 (T59)	06:37	19:25 (T78)	06:05	19:30 (T78)	06:00	20:13 (T57)
	17:40	18:18	19:50	38 19:02 (T59)	20:22	35 20:00 (T78)	20:52	43 20:27 (T57)	21:08	30 20:43 (T57)
27	07:48	07:10	07:25	18:26 (T59)	06:36	19:23 (T78)	06:05	19:32 (T78)	06:01	20:13 (T57)
	17:42	18:20	19:51	35 19:01 (T59)	20:23	37 20:00 (T78)	20:53	43 20:29 (T57)	21:08	30 20:43 (T57)
28	07:47	07:09	07:23	18:27 (T59)	06:35	19:23 (T78)	06:04	19:32 (T78)	06:01	20:14 (T57)
	17:43	18:21	19:52	32 18:59 (T59)	20:24	39 20:02 (T78)	20:54	42 20:29 (T57)	21:08	29 20:43 (T57)
29	07:46		07:21	18:28 (T59)	06:33	19:22 (T78)	06:03	19:34 (T78)	06:02	20:14 (T57)
	17:44		19:53	28 18:56 (T59)	20:25	41 20:03 (T78)	20:54	41 20:30 (T57)	21:08	29 20:43 (T57)
30	07:45		07:20	18:31 (T59)	06:32	19:21 (T78)	06:03	19:35 (T78)	06:02	20:14 (T57)
	17:45		19:54	23 18:54 (T59)	20:26	42 20:03 (T78)	20:55	40 20:31 (T57)	21:08	29 20:43 (T57)
31	07:44		07:18	18:34 (T59)			06:02	19:38 (T78)		
	17:47		19:55	17 18:51 (T59)			20:56	37 20:32 (T57)		
Potential sun hours	297	297	370		399		448		452	
Total, worst case				1125		387		1351		866
Sun reduction				0.44		0.52		0.57		0.64
Oper. time red.				1.00		1.00		1.00		1.00
Wind dir. red.				0.66		0.57		0.57		0.54
Total reduction				0.29		0.30		0.33		0.35
Total, real				331		116		439		301

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 7 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7693)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:03		20:14 (T57)	06:27	19:31 (T78)	06:58		07:28	18:03 (T59)	07:02	07:37
	21:08	29	20:43 (T57)	20:50 47	20:18 (T78)	20:07		19:15 46	18:49 (T59)	17:28	07:04
2	06:03		20:15 (T57)	06:28	19:30 (T78)	06:59		07:29	18:03 (T59)	07:03	07:38
	21:08	28	20:43 (T57)	20:49 47	20:17 (T78)	20:06		19:13 45	18:48 (T59)	17:27	07:04
3	06:04		20:15 (T57)	06:29	19:30 (T78)	07:00		07:30	18:05 (T59)	07:04	07:39
	21:08	28	20:43 (T57)	20:48 47	20:17 (T78)	20:04		19:12 43	18:48 (T59)	17:26	07:04
4	06:04		20:16 (T57)	06:30	19:30 (T78)	07:01		07:31	18:05 (T59)	07:06	07:40
	21:08	27	20:43 (T57)	20:47 47	20:17 (T78)	20:02		19:10 41	18:46 (T59)	17:25	07:03
5	06:05		20:15 (T57)	06:31	19:30 (T78)	07:02		07:32	18:06 (T59)	07:07	07:41
	21:08	27	20:42 (T57)	20:46 47	20:17 (T78)	20:01		19:08 39	18:45 (T59)	17:23	07:03
6	06:05		20:16 (T57)	06:32	19:29 (T78)	07:03		07:33	18:06 (T59)	07:08	07:42
	21:08	26	20:42 (T57)	20:44 48	20:17 (T78)	19:57		19:07 38	18:44 (T59)	17:22	07:03
7	06:06		20:16 (T57)	06:33	19:29 (T78)	07:04		07:34	18:07 (T59)	07:09	07:43
	21:07	25	20:41 (T57)	20:43 48	20:17 (T78)	19:56		19:05 35	18:42 (T59)	17:21	07:03
8	06:07		20:16 (T57)	06:34	19:29 (T78)	07:05		07:35	18:08 (T59)	07:10	07:44
	21:07	26	20:42 (T57)	20:42 48	20:17 (T78)	19:54		19:03 32	18:40 (T59)	17:20	07:03
9	06:07		20:17 (T57)	06:34	19:29 (T78)	07:06		07:36	18:10 (T59)	07:12	07:45
	21:07	25	20:42 (T57)	20:41 48	20:17 (T78)	19:52		19:02 28	18:38 (T59)	17:19	07:03
10	06:08		20:17 (T57)	06:35	19:29 (T78)	07:06		07:37	18:12 (T59)	07:13	07:46
	21:06	24	20:41 (T57)	20:40 46	20:15 (T78)	19:51		19:00 23	18:35 (T59)	17:18	07:03
11	06:09		19:49 (T78)	06:36	19:29 (T78)	07:07		07:38	18:15 (T59)	07:14	07:46
	21:06	32	20:41 (T57)	20:38 45	20:14 (T78)	19:49		18:59 16	18:31 (T59)	17:17	07:03
12	06:09		19:47 (T78)	06:37	19:30 (T78)	07:08	18:26 (T59)	07:39		07:15	07:47
	21:05	34	20:40 (T57)	20:37 43	20:13 (T78)	19:47 16	18:42 (T59)	18:57		17:16	17:03
13	06:10		19:44 (T78)	06:38	19:30 (T78)	07:09	18:23 (T59)	07:40		07:16	07:48
	21:05	38	20:39 (T57)	20:36 42	20:12 (T78)	19:46 22	18:45 (T59)	18:55		17:15	17:03
14	06:11		19:43 (T78)	06:39	19:30 (T78)	07:10	18:20 (T59)	07:41		07:18	07:49
	21:04	40	20:39 (T57)	20:34 40	20:10 (T78)	19:44 27	18:47 (T59)	18:54		17:14	17:04
15	06:12		19:42 (T78)	06:40	19:31 (T78)	07:11	18:17 (T59)	07:43		07:19	07:50
	21:04	42	20:39 (T57)	20:33 38	20:09 (T78)	19:42 31	18:48 (T59)	18:52		17:13	17:04
16	06:12		19:42 (T78)	06:41	19:31 (T78)	07:12	18:15 (T59)	07:44		07:20	07:50
	21:03	41	20:38 (T57)	20:32 37	20:08 (T78)	19:40 34	18:49 (T59)	18:51		17:13	17:04
17	06:13		19:40 (T78)	06:43	19:32 (T78)	07:13	18:13 (T59)	07:45		07:21	07:51
	21:03	43	20:37 (T57)	20:30 35	20:07 (T78)	19:39 37	18:50 (T59)	18:49		17:12	17:04
18	06:14		19:39 (T78)	06:44	19:32 (T78)	07:14	18:12 (T59)	07:46		07:22	07:52
	21:02	44	20:37 (T57)	20:29 33	20:05 (T78)	19:37 39	18:51 (T59)	18:48		17:11	17:05
19	06:15		19:38 (T78)	06:45	19:33 (T78)	07:15	18:10 (T59)	07:47		07:23	07:52
	21:01	43	20:36 (T57)	20:27 31	20:04 (T78)	19:35 41	18:51 (T59)	18:46		17:10	17:05
20	06:16		19:38 (T78)	06:46	19:34 (T78)	07:16	18:09 (T59)	07:48		07:25	07:53
	21:01	43	20:36 (T57)	20:26 28	20:02 (T78)	19:34 43	18:52 (T59)	18:45		17:10	17:05
21	06:16		19:37 (T78)	06:47	19:35 (T78)	07:17	18:08 (T59)	07:49		07:26	07:53
	21:00	42	20:35 (T57)	20:24 26	20:01 (T78)	19:32 44	18:52 (T59)	18:43		17:09	17:06
22	06:17		19:37 (T78)	06:48	19:37 (T78)	07:18	18:07 (T59)	07:50		07:27	07:54
	20:59	40	20:35 (T57)	20:23 23	20:00 (T78)	19:30 45	18:52 (T59)	18:42		17:08	17:06
23	06:18		19:35 (T78)	06:49	19:38 (T78)	07:19	18:06 (T59)	07:52		07:28	07:54
	20:58	37	20:12 (T78)	20:21 19	19:57 (T78)	19:29 46	18:52 (T59)	18:40		17:08	17:07
24	06:19		19:35 (T78)	06:50	19:41 (T78)	07:20	18:05 (T59)	07:53		07:29	07:55
	20:58	38	20:13 (T78)	20:20 15	19:56 (T78)	19:27 47	18:52 (T59)	18:39		17:07	17:07
25	06:20		19:34 (T78)	06:51	19:45 (T78)	07:21	18:05 (T59)	07:54		07:30	07:55
	20:57	40	20:14 (T78)	20:18 9	19:54 (T78)	19:25 47	18:52 (T59)	18:37		17:07	17:08
26	06:21		19:34 (T78)	06:52		07:23	18:04 (T59)	07:55		07:32	07:56
	20:56	41	20:15 (T78)	20:17		19:23 48	18:52 (T59)	18:36		17:06	17:09
27	06:22		19:33 (T78)	06:53		07:24	18:04 (T59)	07:56		07:33	07:56
	20:55	42	20:15 (T78)	20:15		19:22 47	18:51 (T59)	18:35		17:06	17:09
28	06:23		19:33 (T78)	06:54		07:25	18:03 (T59)	07:57		07:34	07:56
	20:54	43	20:16 (T78)	20:14		19:20 48	18:51 (T59)	18:33		17:05	17:10
29	06:24		19:32 (T78)	06:55		07:26	18:03 (T59)	07:58		07:35	07:57
	20:53	44	20:16 (T78)	20:12		19:18 47	18:50 (T59)	18:32		17:05	17:11
30	06:25		19:32 (T78)	06:56		07:27	18:03 (T59)	08:00		07:36	07:57
	20:52	45	20:17 (T78)	20:10		19:17 46	18:49 (T59)	18:31		17:04	17:12
31	06:26		19:32 (T78)	06:57				08:01			07:57
	20:51	45	20:17 (T78)	20:09				18:30			17:12
Potential sun hours	459			428		375		345		297	287
Total, worst case		1122			937		755		386		
Sun reduction		0.66			0.61		0.59		0.48		
Oper. time red.		1.00			1.00		1.00		1.00		
Wind dir. red.		0.56			0.57		0.66		0.66		
Total reduction		0.37			0.35		0.39		0.32		
Total, real		415			328		298		124		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7736)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:57	07:43		07:07		17:00 (T59)	07:16		19:04 (T78)	06:02	19:59 (T57)
	17:13	17:48		18:22	52	17:52 (T59)	19:56		19:56 (T78)	20:57	33 20:32 (T57)
2	07:57	07:42		07:06		16:59 (T59)	07:15		19:04 (T78)	06:01	20:00 (T57)
	17:14	17:49		18:23	52	17:51 (T59)	19:57		19:56 (T78)	20:58	33 20:33 (T57)
3	07:57	07:41		07:04		16:59 (T59)	07:13		19:04 (T78)	06:01	20:00 (T57)
	17:15	17:50		18:24	53	17:52 (T59)	19:58		19:56 (T78)	20:58	34 20:34 (T57)
4	07:57	07:40		07:03		16:59 (T59)	07:11		19:05 (T78)	06:01	20:00 (T57)
	17:16	17:52		18:25	52	17:51 (T59)	19:59		19:56 (T78)	20:59	34 20:34 (T57)
5	07:57	07:39		07:01		16:58 (T59)	07:10		19:04 (T78)	06:00	20:00 (T57)
	17:17	17:53		18:27	52	17:50 (T59)	20:00		19:55 (T78)	21:00	35 20:35 (T57)
6	07:57	07:38		06:59		16:59 (T59)	07:08		19:05 (T78)	06:00	20:00 (T57)
	17:18	17:54		18:28	51	17:50 (T59)	20:00		19:54 (T78)	21:00	36 20:36 (T57)
7	07:57	07:37		06:58		16:59 (T59)	07:06		19:06 (T78)	06:00	20:01 (T57)
	17:19	17:55		18:29	51	17:50 (T59)	20:01		19:54 (T78)	21:01	36 20:37 (T57)
8	07:57	07:36		07:56		17:59 (T59)	07:05		19:06 (T78)	05:59	20:00 (T57)
	17:20	17:57		19:30	50	18:49 (T59)	20:02		19:53 (T78)	21:02	36 20:36 (T57)
9	07:57	07:35		07:55		18:00 (T59)	07:03	19:29 (T78)	19:07 (T78)	05:59	20:01 (T57)
	17:21	17:58		19:31	48	18:48 (T59)	20:04	11 19:40 (T78)	19:53 (T78)	21:02	35 20:36 (T57)
10	07:57	07:34		07:53		18:00 (T59)	07:02	19:25 (T78)	19:08 (T78)	05:59	20:01 (T57)
	17:22	17:59		19:32	47	18:47 (T59)	20:05	19 19:44 (T78)	19:52 (T78)	21:03	36 20:37 (T57)
11	07:57	07:32		07:51		18:01 (T59)	07:00	19:21 (T78)	19:08 (T78)	05:59	20:01 (T57)
	17:23	18:00		19:33	46	18:47 (T59)	20:06	24 19:45 (T78)	19:51 (T78)	21:03	36 20:37 (T57)
12	07:56	07:31		07:50		18:01 (T59)	06:58	19:18 (T78)	19:09 (T78)	05:59	20:01 (T57)
	17:24	18:02		19:34	44	18:45 (T59)	20:07	27 19:45 (T78)	19:50 (T78)	21:04	36 20:37 (T57)
13	07:56	07:30		07:48		18:02 (T59)	06:57	19:16 (T78)	19:10 (T78)	05:59	20:02 (T57)
	17:25	18:03		19:36	42	18:44 (T59)	20:08	31 19:47 (T78)	19:50 (T78)	21:04	36 20:38 (T57)
14	07:56	07:29	17:20 (T59)	07:46		18:04 (T59)	06:55	19:14 (T78)	19:11 (T78)	05:59	20:02 (T57)
	17:26	18:04	12 17:32 (T59)	19:37	39	18:43 (T59)	20:09	33 19:47 (T78)	19:49 (T78)	21:05	36 20:38 (T57)
15	07:55	07:27	17:16 (T59)	07:45		18:04 (T59)	06:54	19:13 (T78)	19:12 (T78)	05:59	20:02 (T57)
	17:27	18:05	21 17:37 (T59)	19:38	37	18:41 (T59)	20:10	36 19:49 (T78)	19:47 (T78)	21:05	36 20:38 (T57)
16	07:55	07:26	17:14 (T59)	07:43		18:06 (T59)	06:52	19:11 (T78)	19:13 (T78)	05:59	20:02 (T57)
	17:28	18:06	26 17:40 (T59)	19:39	33	18:39 (T59)	20:11	39 19:50 (T78)	20:19 (T57)	21:06	36 20:38 (T57)
17	07:54	07:25	17:11 (T59)	07:41		18:08 (T59)	06:51	19:10 (T78)	19:14 (T78)	05:59	20:02 (T57)
	17:30	18:08	30 17:41 (T59)	19:40	29	18:37 (T59)	20:12	41 19:51 (T78)	20:20 (T57)	21:06	36 20:38 (T57)
18	07:54	07:23	17:09 (T59)	07:40		18:10 (T59)	06:49	19:09 (T78)	19:16 (T78)	05:59	20:03 (T57)
	17:31	18:09	34 17:43 (T59)	19:41	24	18:34 (T59)	20:13	43 19:52 (T78)	20:21 (T57)	21:07	35 20:38 (T57)
19	07:53	07:22	17:08 (T59)	07:38		18:13 (T59)	06:48	19:08 (T78)	19:17 (T78)	05:59	20:03 (T57)
	17:32	18:10	37 17:45 (T59)	19:42	17	18:30 (T59)	20:14	45 19:53 (T78)	20:22 (T57)	21:07	35 20:38 (T57)
20	07:53	07:21	17:06 (T59)	07:36			06:46	19:07 (T78)	19:20 (T78)	05:59	20:03 (T57)
	17:33	18:11	40 17:46 (T59)	19:43			20:15	47 19:54 (T78)	20:23 (T57)	21:07	36 20:39 (T57)
21	07:52	07:19	17:05 (T59)	07:35			06:45	19:07 (T78)	19:22 (T78)	05:59	20:04 (T57)
	17:34	18:13	43 17:48 (T59)	19:44			20:16	48 19:55 (T78)	20:24 (T57)	21:07	36 20:40 (T57)
22	07:52	07:18	17:04 (T59)	07:33			06:43	19:05 (T78)	19:25 (T78)	05:59	20:04 (T57)
	17:35	18:14	44 17:48 (T59)	19:45			20:17	50 19:55 (T78)	20:24 (T57)	21:08	36 20:40 (T57)
23	07:51	07:16	17:03 (T59)	07:31			06:42	19:05 (T78)	20:01 (T57)	06:00	20:04 (T57)
	17:37	18:15	46 17:49 (T59)	19:46			20:18	52 19:57 (T78)	20:25 (T57)	21:08	35 20:39 (T57)
24	07:50	07:15	17:02 (T59)	07:30			06:40	19:05 (T78)	20:02 (T57)	06:00	20:04 (T57)
	17:38	18:16	47 17:49 (T59)	19:48			20:20	53 19:58 (T78)	20:27 (T57)	21:08	35 20:39 (T57)
25	07:49	07:13	17:02 (T59)	07:28			06:39	19:04 (T78)	20:01 (T57)	06:00	20:04 (T57)
	17:39	18:17	48 17:50 (T59)	19:49			20:21	54 19:58 (T78)	20:27 (T57)	21:08	36 20:40 (T57)
26	07:49	07:12	17:00 (T59)	07:26			06:37	19:04 (T78)	20:00 (T57)	06:00	20:04 (T57)
	17:40	18:18	50 17:50 (T59)	19:50			20:22	54 19:58 (T78)	20:27 (T57)	21:08	36 20:40 (T57)
27	07:48	07:10	17:00 (T59)	07:25			06:36	19:03 (T78)	20:00 (T57)	06:01	20:04 (T57)
	17:42	18:20	51 17:51 (T59)	19:51			20:23	54 19:57 (T78)	20:29 (T57)	21:08	36 20:40 (T57)
28	07:47	07:09	16:59 (T59)	07:23			06:35	19:04 (T78)	20:00 (T57)	06:01	20:05 (T57)
	17:43	18:21	52 17:51 (T59)	19:52			20:24	53 19:57 (T78)	20:29 (T57)	21:08	36 20:41 (T57)
29	07:46			07:21			06:33	19:04 (T78)	20:00 (T57)	06:02	20:05 (T57)
	17:44			19:53			20:25	53 19:57 (T78)	20:54	30 20:30 (T57)	21:08	36 20:41 (T57)
30	07:45			07:20			06:32	19:03 (T78)	06:03	20:00 (T57)	06:02	20:06 (T57)
	17:45			19:54			20:26	53 19:56 (T78)	20:55	31 20:31 (T57)	21:08	35 20:41 (T57)
31	07:44			07:18					06:02	20:00 (T57)		
	17:47			19:55					20:56	32 20:32 (T57)		
Potential sun hours	297	297		370			399		448		452	
Total, worst case			581		819			920		1219		1063
Sun reduction			0.40		0.44			0.52		0.57		0.64
Oper. time red.			1.00		1.00			1.00		1.00		1.00
Wind dir. red.			0.69		0.69			0.57		0.57		0.54
Total reduction			0.28		0.31			0.30		0.33		0.35
Total, real			163		253			279		398		375

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7736)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:03		20:05 (T57)	06:27		19:20 (T78)	06:58		19:20 (T78)	07:28		17:40 (T59)	07:02	07:37
	21:08	36	20:41 (T57)	20:50	41	20:01 (T78)	20:07	24	19:44 (T78)	19:15	44	18:24 (T59)	17:28	17:04
2	06:03		20:06 (T57)	06:28		19:18 (T78)	06:59		19:23 (T78)	07:29		17:39 (T59)	07:03	07:38
	21:08	36	20:42 (T57)	20:49	43	20:01 (T78)	20:06	19	19:42 (T78)	19:13	45	18:24 (T59)	17:27	17:04
3	06:04		20:06 (T57)	06:29		19:17 (T78)	07:00		19:27 (T78)	07:30		17:39 (T59)	07:04	07:39
	21:08	36	20:42 (T57)	20:48	45	20:02 (T78)	20:04	11	19:38 (T78)	19:12	47	18:26 (T59)	17:26	17:04
4	06:04		20:06 (T57)	06:30		19:16 (T78)	07:01			07:31		17:38 (T59)	07:06	07:40
	21:08	36	20:42 (T57)	20:47	47	20:03 (T78)	20:02			19:10	48	18:26 (T59)	17:25	17:03
5	06:05		20:06 (T57)	06:31		19:16 (T78)	07:02			07:32		17:37 (T59)	07:07	07:41
	21:08	36	20:42 (T57)	20:46	47	20:03 (T78)	20:01			19:08	49	18:26 (T59)	17:23	17:03
6	06:05		20:07 (T57)	06:32		19:15 (T78)	07:03			07:33		17:36 (T59)	07:08	07:42
	21:08	35	20:42 (T57)	20:44	49	20:04 (T78)	19:57			19:07	50	18:26 (T59)	17:22	17:03
7	06:06		20:06 (T57)	06:33		19:14 (T78)	07:04			07:34		17:35 (T59)	07:09	07:43
	21:07	35	20:41 (T57)	20:43	50	20:04 (T78)	19:56			19:05	51	18:26 (T59)	17:21	17:03
8	06:07		20:07 (T57)	06:34		19:14 (T78)	07:05			07:35		17:34 (T59)	07:10	07:44
	21:07	35	20:42 (T57)	20:42	50	20:04 (T78)	19:54			19:03	52	18:26 (T59)	17:20	17:03
9	06:07		20:07 (T57)	06:35		19:13 (T78)	07:06			07:36		17:34 (T59)	07:12	07:45
	21:07	35	20:42 (T57)	20:41	52	20:05 (T78)	19:52			19:02	52	18:26 (T59)	17:19	17:03
10	06:08		20:07 (T57)	06:35		19:13 (T78)	07:06			07:37		17:33 (T59)	07:13	07:46
	21:06	34	20:41 (T57)	20:40	52	20:05 (T78)	19:51			19:00	52	18:25 (T59)	17:18	17:03
11	06:09		20:08 (T57)	06:36		19:13 (T78)	07:07			07:38		17:33 (T59)	07:14	07:46
	21:06	33	20:41 (T57)	20:38	52	20:05 (T78)	19:49			18:59	52	18:25 (T59)	17:17	17:03
12	06:09		20:08 (T57)	06:37		19:12 (T78)	07:08			07:39		17:32 (T59)	07:15	07:47
	21:05	32	20:40 (T57)	20:37	53	20:05 (T78)	19:47			18:57	52	18:24 (T59)	17:16	17:03
13	06:10		20:08 (T57)	06:38		19:12 (T78)	07:09			07:40		17:32 (T59)	07:16	07:48
	21:05	31	20:39 (T57)	20:36	53	20:05 (T78)	19:46			18:55	52	18:24 (T59)	17:15	17:03
14	06:11		20:08 (T57)	06:39		19:12 (T78)	07:10			07:41		17:33 (T59)	07:18	07:49
	21:05	31	20:39 (T57)	20:34	53	20:05 (T78)	19:44			18:54	51	18:24 (T59)	17:14	17:04
15	06:12		20:09 (T57)	06:40		19:11 (T78)	07:11			07:43		17:33 (T59)	07:19	07:50
	21:04	30	20:39 (T57)	20:33	54	20:05 (T78)	19:42			18:52	50	18:23 (T59)	17:13	17:04
16	06:12		20:10 (T57)	06:42		19:11 (T78)	07:12			07:44		17:33 (T59)	07:20	07:50
	21:03	28	20:38 (T57)	20:32	54	20:05 (T78)	19:40			18:51	50	18:23 (T59)	17:13	17:04
17	06:13		20:09 (T57)	06:43		19:11 (T78)	07:13			07:45		17:33 (T59)	07:21	07:51
	21:03	28	20:37 (T57)	20:30	54	20:05 (T78)	19:39			18:49	49	18:22 (T59)	17:12	17:04
18	06:14		20:10 (T57)	06:44		19:11 (T78)	07:14			07:46		17:34 (T59)	07:22	07:52
	21:02	27	20:37 (T57)	20:29	53	20:04 (T78)	19:37			18:48	47	18:21 (T59)	17:11	17:05
19	06:15		20:11 (T57)	06:45		19:11 (T78)	07:15			07:47		17:34 (T59)	07:24	07:52
	21:01	25	20:36 (T57)	20:27	53	20:04 (T78)	19:35			18:46	45	18:19 (T59)	17:10	17:05
20	06:16		20:12 (T57)	06:46		19:11 (T78)	07:16			07:48		17:35 (T59)	07:25	07:53
	21:01	24	20:36 (T57)	20:26	51	20:02 (T78)	19:34			18:45	44	18:19 (T59)	17:10	17:05
21	06:16		19:38 (T78)	06:47		19:11 (T78)	07:17			07:49		17:36 (T59)	07:26	07:53
	21:00	28	20:35 (T57)	20:24	50	20:01 (T78)	19:32			18:43	42	18:18 (T59)	17:09	17:06
22	06:17		19:34 (T78)	06:48		19:11 (T78)	07:18			07:50		17:37 (T59)	07:27	07:54
	20:59	35	20:35 (T57)	20:23	49	20:00 (T78)	19:30			18:42	39	18:16 (T59)	17:08	17:06
23	06:18		19:30 (T78)	06:49		19:11 (T78)	07:19			07:52		17:38 (T59)	07:28	07:54
	20:58	39	20:33 (T57)	20:21	46	19:57 (T78)	19:29			18:40	36	18:14 (T59)	17:08	17:07
24	06:19		19:28 (T78)	06:50		19:11 (T78)	07:20		17:58 (T59)	07:53		17:39 (T59)	07:29	07:55
	20:58	40	20:32 (T57)	20:20	45	19:56 (T78)	19:27	14	18:12 (T59)	18:39	34	18:13 (T59)	17:07	17:07
25	06:20		19:27 (T78)	06:51		19:12 (T78)	07:22		17:54 (T59)	07:54		17:42 (T59)	07:30	07:55
	20:57	42	20:32 (T57)	20:18	42	19:54 (T78)	19:25	22	18:16 (T59)	18:37	29	18:11 (T59)	17:07	17:08
26	06:21		19:26 (T78)	06:52		19:12 (T78)	07:23		17:50 (T59)	07:55		17:44 (T59)	07:32	07:56
	20:56	42	20:31 (T57)	20:17	41	19:53 (T78)	19:23	28	18:18 (T59)	18:36	25	18:09 (T59)	17:06	17:09
27	06:22		19:24 (T78)	06:53		19:13 (T78)	07:24		17:48 (T59)	07:56		17:47 (T59)	07:33	07:56
	20:55	42	20:30 (T57)	20:15	38	19:51 (T78)	19:22	32	18:20 (T59)	18:35	18	18:05 (T59)	17:06	17:09
28	06:23		19:23 (T78)	06:54		19:14 (T78)	07:25		17:46 (T59)	07:57		17:51 (T59)	07:34	07:56
	20:54	41	20:30 (T57)	20:14	36	19:50 (T78)	19:20	35	18:21 (T59)	18:33	9	18:00 (T59)	17:05	17:10
29	06:24		19:22 (T78)	06:55		19:15 (T78)	07:26		17:44 (T59)	07:58			07:35	07:57
	20:53	37	19:59 (T78)	20:12	33	19:48 (T78)	19:18	38	18:22 (T59)	18:32			17:05	17:11
30	06:25		19:21 (T78)	06:56		19:16 (T78)	07:27		17:42 (T59)	08:00			07:36	07:57
	20:52	39	20:00 (T78)	20:10	31	19:47 (T78)	19:17	41	18:23 (T59)	18:31			17:04	17:12
31	06:26		19:20 (T78)	06:57		19:18 (T78)				08:01				07:57
	20:51	41	20:01 (T78)	20:09	27	19:45 (T78)				18:30				17:12
Potential sun hours	459			428			375			345			297	287
Total, worst case		1069			1444			264			1214			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.55			0.57			0.67			0.69			
Total reduction		0.37			0.36			0.40			0.34			
Total, real		395			513			106			410			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7743)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May	June
1	07:57		08:20 (T77)	07:43		08:04 (T42)	07:07		07:16	07:40 (T41)	06:30	06:01
	17:13	29	08:49 (T77)	17:48	20	08:24 (T42)	18:22		19:56	66	08:46 (T41)	20:27	20:57
2	07:57		08:20 (T77)	07:43		08:03 (T42)	07:06		07:15	07:40 (T41)	06:29	06:01
	17:14	29	08:49 (T77)	17:49	22	08:25 (T42)	18:23		19:57	66	08:46 (T41)	20:28	20:58
3	07:57		08:20 (T77)	07:42		08:02 (T42)	07:04		07:13	07:40 (T41)	06:28	06:01
	17:15	30	08:50 (T77)	17:50	24	08:26 (T42)	18:24		19:58	66	08:46 (T41)	20:29	20:58
4	07:58		08:20 (T77)	07:40		08:01 (T42)	07:03		07:11	07:39 (T41)	06:26	06:00
	17:16	30	08:50 (T77)	17:51	26	08:27 (T42)	18:25		19:59	66	08:45 (T41)	20:30	20:59
5	07:58		08:20 (T77)	07:39		08:00 (T42)	07:01		07:10	07:40 (T41)	06:25	06:00
	17:17	30	08:50 (T77)	17:53	28	08:28 (T42)	18:26		20:00	65	08:45 (T41)	20:31	21:00
6	07:57		08:20 (T77)	07:38		07:58 (T42)	06:59		07:08	07:39 (T41)	06:24	06:00
	17:18	31	08:51 (T77)	17:54	29	08:27 (T42)	18:28		20:00	65	08:44 (T41)	20:32	21:01
7	07:57		08:19 (T77)	07:37		07:57 (T42)	06:58		07:06	07:39 (T41)	06:23	05:59
	17:18	31	08:50 (T77)	17:55	31	08:28 (T42)	18:29		20:01	64	08:43 (T41)	20:33	21:01
8	07:57		08:20 (T77)	07:36		07:56 (T42)	07:56		07:05	07:39 (T41)	06:22	05:59
	17:19	31	08:51 (T77)	17:56	33	08:29 (T42)	19:30		20:02	64	08:43 (T41)	20:34	21:02
9	07:57		08:21 (T77)	07:35		07:55 (T42)	07:55		07:03	07:39 (T41)	06:20	05:59
	17:20	30	08:51 (T77)	17:58	34	08:29 (T42)	19:31		20:04	63	08:42 (T41)	20:35	21:02
10	07:57		08:22 (T77)	07:34		07:54 (T42)	07:53		07:01	07:39 (T41)	06:19	05:59
	17:22	30	08:52 (T77)	17:59	35	08:29 (T42)	19:32		20:05	62	08:41 (T41)	20:37	21:03
11	07:57		08:21 (T77)	07:32		07:52 (T42)	07:51		07:00	07:40 (T41)	06:18	05:58
	17:23	30	08:51 (T77)	18:00	37	08:29 (T42)	19:33		20:06	61	08:41 (T41)	20:38	21:04
12	07:56		08:23 (T77)	07:31		07:51 (T42)	07:50		06:58	07:39 (T41)	06:17	05:58
	17:24	29	08:52 (T77)	18:01	38	08:29 (T42)	19:34		20:07	60	08:39 (T41)	20:39	21:04
13	07:56		08:24 (T77)	07:30		07:52 (T42)	07:48	08:15 (T41)	06:57	07:40 (T41)	06:16	05:58
	17:25	28	08:52 (T77)	18:03	37	08:29 (T42)	19:35	9	08:24 (T41)	20:08	59	08:39 (T41)	20:40	21:05
14	07:56		08:24 (T77)	07:29		07:52 (T42)	07:46		08:09 (T41)	06:55		07:40 (T41)	06:15	05:58
	17:26	27	08:51 (T77)	18:04	37	08:29 (T42)	19:37	22	08:31 (T41)	20:09	57	08:37 (T41)	20:41	21:05
15	07:55		08:25 (T77)	07:27		07:52 (T42)	07:45		08:04 (T41)	06:53		07:42 (T41)	06:14	05:58
	17:27	27	08:52 (T77)	18:05	36	08:28 (T42)	19:38	30	08:34 (T41)	20:10	54	08:36 (T41)	20:42	21:06
16	07:55		08:26 (T77)	07:26		07:53 (T42)	07:43		08:02 (T41)	06:52		07:42 (T41)	06:13	05:58
	17:28	25	08:51 (T77)	18:06	34	08:27 (T42)	19:39	34	08:36 (T41)	20:11	53	08:35 (T41)	20:43	21:06
17	07:54		08:27 (T77)	07:25		07:53 (T42)	07:41		08:00 (T41)	06:50		07:43 (T41)	06:12	05:58
	17:29	24	08:51 (T77)	18:07	33	08:26 (T42)	19:40	38	08:38 (T41)	20:12	51	08:34 (T41)	20:44	21:06
18	07:54		08:28 (T77)	07:23		07:54 (T42)	07:40		07:59 (T41)	06:49		07:44 (T41)	06:11	05:58
	17:30	22	08:50 (T77)	18:09	31	08:25 (T42)	19:41	41	08:40 (T41)	20:13	48	08:32 (T41)	20:45	21:07
19	07:53		08:30 (T77)	07:22		07:56 (T42)	07:38		07:57 (T41)	06:47		07:45 (T41)	06:10	05:58
	17:32	20	08:50 (T77)	18:10	29	08:25 (T42)	19:42	44	08:41 (T41)	20:14	46	08:31 (T41)	20:46	21:07
20	07:53		08:31 (T77)	07:21		07:56 (T42)	07:36		07:55 (T41)	06:46		07:46 (T41)	06:09	05:59
	17:33	18	08:49 (T77)	18:11	26	08:22 (T42)	19:43	47	08:42 (T41)	20:15	42	08:28 (T41)	20:46	21:07
21	07:52		08:32 (T77)	07:19		07:59 (T42)	07:35		07:54 (T41)	06:44		07:48 (T41)	06:09	05:59
	17:34	15	08:47 (T77)	18:12	22	08:21 (T42)	19:44	50	08:44 (T41)	20:16	39	08:27 (T41)	20:47	21:08
22	07:52		08:36 (T77)	07:18		08:00 (T42)	07:33		07:52 (T41)	06:43		07:49 (T41)	06:08	05:59
	17:35	10	08:46 (T77)	18:14	18	08:18 (T42)	19:45	52	08:44 (T41)	20:17	35	08:24 (T41)	20:48	21:08
23	07:51			07:16		08:04 (T42)	07:31		07:50 (T41)	06:41		07:51 (T41)	06:07	05:59
	17:36			18:15	11	08:15 (T42)	19:46	55	08:45 (T41)	20:18	31	08:22 (T41)	20:49	21:08
24	07:50			07:15			07:30		07:49 (T41)	06:40		07:53 (T41)	06:06	05:59
	17:38			18:16			19:47	57	08:46 (T41)	20:20	26	08:19 (T41)	20:50	21:08
25	07:50			07:13			07:28		07:47 (T41)	06:39		07:57 (T41)	06:06	06:00
	17:39			18:17			19:49	59	08:46 (T41)	20:21	18	08:15 (T41)	20:51	21:08
26	07:49		08:09 (T42)	07:12			07:26		07:45 (T41)	06:37		08:03 (T41)	06:05	06:00
	17:40	3	08:12 (T42)	18:18			19:50	61	08:46 (T41)	20:22	6	08:09 (T41)	20:52	21:08
27	07:48		08:09 (T42)	07:10			07:25		07:44 (T41)	06:36			06:04	06:00
	17:41	7	08:16 (T42)	18:19			19:51	63	08:47 (T41)	20:23			20:53	21:09
28	07:47		08:08 (T42)	07:09			07:23		07:43 (T41)	06:34			06:04	06:01
	17:43	10	08:18 (T42)	18:21			19:52	64	08:47 (T41)	20:24			20:54	21:09
29	07:46		08:07 (T42)				07:21		07:42 (T41)	06:33			06:03	06:01
	17:44	13	08:20 (T42)				19:53	65	08:47 (T41)	20:25			20:55	21:09
30	07:45		08:06 (T42)				07:20		07:41 (T41)	06:32			06:02	06:02
	17:45	16	08:22 (T42)				19:54	65	08:46 (T41)	20:26			20:55	21:09
31	07:44		08:05 (T42)				07:18		07:41 (T41)				06:02	
	17:46	18	08:23 (T42)				19:55	66	08:47 (T41)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		643			671			922			1333			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.52			0.55			0.62			0.62			
Total reduction		0.16			0.21			0.27			0.32			
Total, real		103			144			246			421			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7743)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December		
1	06:02	06:26			06:57		07:39 (T41)	07:28			07:02		07:23 (T42)	07:37		08:04 (T77)
	21:09	20:50			20:07	61	08:40 (T41)	19:15			17:28	35	07:58 (T42)	17:04	29	08:33 (T77)
2	06:03	06:27			06:58		07:38 (T41)	07:29			07:03		07:25 (T42)	07:38		08:05 (T77)
	21:08	20:49			20:06	62	08:40 (T41)	19:13			17:27	34	07:59 (T42)	17:03	30	08:35 (T77)
3	06:03	06:28			06:59		07:37 (T41)	07:30			07:04		07:26 (T42)	07:39		08:05 (T77)
	21:08	20:48			20:04	63	08:40 (T41)	19:11			17:26	32	07:58 (T42)	17:03	30	08:35 (T77)
4	06:04	06:29			07:00		07:36 (T41)	07:31			07:06		07:27 (T42)	07:40		08:05 (T77)
	21:08	20:47			20:02	64	08:40 (T41)	19:10			17:24	31	07:58 (T42)	17:03	31	08:36 (T77)
5	06:04	06:30			07:01		07:36 (T41)	07:32			07:07		07:28 (T42)	07:41		08:05 (T77)
	21:08	20:46			20:01	65	08:41 (T41)	19:08			17:23	29	07:57 (T42)	17:03	31	08:36 (T77)
6	06:05	06:31			07:02		07:35 (T41)	07:33			07:08		07:30 (T42)	07:42		08:06 (T77)
	21:08	20:45			19:57	66	08:41 (T41)	19:06			17:22	28	07:58 (T42)	17:03	31	08:37 (T77)
7	06:06	06:32			07:03		07:35 (T41)	07:34			07:09		07:31 (T42)	07:43		08:07 (T77)
	21:07	20:43			19:56	65	08:40 (T41)	19:05			17:21	26	07:57 (T42)	17:03	30	08:37 (T77)
8	06:06	06:33			07:04		07:34 (T41)	07:35			07:10		07:32 (T42)	07:44		08:07 (T77)
	21:07	20:42			19:54	66	08:40 (T41)	19:03			17:20	24	07:56 (T42)	17:03	30	08:37 (T77)
9	06:07	06:34			07:05		07:34 (T41)	07:36			07:12		07:34 (T42)	07:45		08:08 (T77)
	21:07	20:41			19:52	66	08:40 (T41)	19:02			17:19	22	07:56 (T42)	17:03	30	08:38 (T77)
10	06:08	06:35			07:06		07:34 (T41)	07:37			07:13		07:35 (T42)	07:46		08:09 (T77)
	21:06	20:40			19:51	66	08:40 (T41)	19:00			17:18	20	07:55 (T42)	17:03	29	08:38 (T77)
11	06:08	06:36			07:07		07:33 (T41)	07:38			07:14		07:36 (T42)	07:47		08:10 (T77)
	21:06	20:38			19:49	67	08:40 (T41)	18:58			17:17	18	07:54 (T42)	17:03	29	08:39 (T77)
12	06:09	06:37			07:08		07:32 (T41)	07:39			07:15		07:37 (T42)	07:47		08:11 (T77)
	21:06	20:37			19:47	66	08:38 (T41)	18:57			17:16	15	07:52 (T42)	17:03	28	08:39 (T77)
13	06:10	06:38			07:09		07:32 (T41)	07:40			07:16		07:39 (T42)	07:48		08:12 (T77)
	21:05	20:36			19:46	66	08:38 (T41)	18:55			17:15	13	07:52 (T42)	17:03	28	08:40 (T77)
14	06:10	06:39			07:10		07:32 (T41)	07:41			07:18		07:40 (T42)	07:49		08:12 (T77)
	21:05	20:34			19:44	65	08:37 (T41)	18:54			17:14	10	07:50 (T42)	17:03	28	08:40 (T77)
15	06:11	06:40			07:11		07:32 (T41)	07:43			07:19		07:41 (T42)	07:50		08:13 (T77)
	21:04	20:33			19:42	64	08:36 (T41)	18:52			17:13	7	07:48 (T42)	17:03	28	08:41 (T77)
16	06:12	06:41			07:12		07:32 (T41)	07:44			07:20		07:43 (T42)	07:50		08:14 (T77)
	21:04	20:32			19:40	64	08:36 (T41)	18:50			17:12	3	07:46 (T42)	17:04	27	08:41 (T77)
17	06:13	06:42		08:08 (T41)	07:13		07:33 (T41)	07:45			07:21			07:51		08:14 (T77)
	21:03	20:30	10	08:18 (T41)	19:39	62	08:35 (T41)	18:49			17:11			17:04	27	08:41 (T77)
18	06:14	06:43		08:01 (T41)	07:14		07:34 (T41)	07:46			07:22			07:52		08:15 (T77)
	21:02	20:29	21	08:22 (T41)	19:37	60	08:34 (T41)	18:47			17:11			17:04	27	08:42 (T77)
19	06:14	06:44		07:58 (T41)	07:15		07:35 (T41)	07:47		08:33 (T42)	07:24			07:52		08:16 (T77)
	21:02	20:27	27	08:25 (T41)	19:35	58	08:33 (T41)	18:46	14	08:47 (T42)	17:10			17:05	27	08:43 (T77)
20	06:15	06:45		07:55 (T41)	07:16		07:36 (T41)	07:48		08:31 (T42)	07:25		08:11 (T77)	07:53		08:16 (T77)
	21:01	20:26	32	08:27 (T41)	19:34	55	08:31 (T41)	18:44	20	08:51 (T42)	17:09	10	08:21 (T77)	17:05	27	08:43 (T77)
21	06:16	06:46		07:53 (T41)	07:17		07:37 (T41)	07:49		08:29 (T42)	07:26		08:08 (T77)	07:53		08:17 (T77)
	21:00	20:24	36	08:29 (T41)	19:32	53	08:30 (T41)	18:43	23	08:52 (T42)	17:09	15	08:23 (T77)	17:06	27	08:44 (T77)
22	06:17	06:47		07:51 (T41)	07:18		07:38 (T41)	07:50		08:27 (T42)	07:27		08:07 (T77)	07:54		08:17 (T77)
	20:59	20:23	40	08:31 (T41)	19:30	51	08:29 (T41)	18:42	27	08:54 (T42)	17:08	18	08:25 (T77)	17:06	27	08:44 (T77)
23	06:18	06:48		07:49 (T41)	07:19		07:39 (T41)	07:52		08:25 (T42)	07:28		08:06 (T77)	07:54		08:18 (T77)
	20:59	20:21	43	08:32 (T41)	19:28	48	08:27 (T41)	18:40	29	08:54 (T42)	17:07	20	08:26 (T77)	17:07	27	08:45 (T77)
24	06:19	06:49		07:48 (T41)	07:20		07:40 (T41)	07:53		08:24 (T42)	07:29		08:05 (T77)	07:55		08:18 (T77)
	20:58	20:20	46	08:34 (T41)	19:27	45	08:25 (T41)	18:39	31	08:55 (T42)	17:07	22	08:27 (T77)	17:07	27	08:45 (T77)
25	06:20	06:50		07:46 (T41)	07:21		07:41 (T41)	07:54		08:23 (T42)	07:31		08:05 (T77)	07:55		08:18 (T77)
	20:57	20:18	49	08:35 (T41)	19:25	42	08:23 (T41)	18:37	34	08:57 (T42)	17:06	24	08:29 (T77)	17:08	27	08:45 (T77)
26	06:21	06:51		07:45 (T41)	07:22		07:42 (T41)	07:55		08:22 (T42)	07:32		08:05 (T77)	07:56		08:19 (T77)
	20:56	20:17	51	08:36 (T41)	19:23	39	08:21 (T41)	18:36	35	08:57 (T42)	17:06	25	08:30 (T77)	17:08	27	08:46 (T77)
27	06:22	06:52		07:44 (T41)	07:23		07:43 (T41)	07:56		08:22 (T42)	07:33		08:04 (T77)	07:56		08:19 (T77)
	20:55	20:15	53	08:37 (T41)	19:22	36	08:19 (T41)	18:35	35	08:57 (T42)	17:05	27	08:31 (T77)	17:09	27	08:46 (T77)
28	06:23	06:53		07:42 (T41)	07:24		07:44 (T41)	07:57		08:21 (T42)	07:34		08:04 (T77)	07:56		08:19 (T77)
	20:54	20:14	55	08:37 (T41)	19:20	32	08:16 (T41)	18:33	37	08:58 (T42)	17:05	27	08:31 (T77)	17:10	28	08:47 (T77)
29	06:23	06:54		07:41 (T41)	07:25		07:47 (T41)	07:59		08:21 (T42)	07:35		08:04 (T77)	07:57		08:19 (T77)
	20:53	20:12	57	08:38 (T41)	19:18	25	08:12 (T41)	18:32	38	08:59 (T42)	17:04	28	08:32 (T77)	17:10	28	08:47 (T77)
30	06:24	06:55		07:40 (T41)	07:27		07:51 (T41)	08:00		08:21 (T42)	07:36		08:04 (T77)	07:57		08:20 (T77)
	20:52	20:10	59	08:39 (T41)	19:16	16	08:07 (T41)	18:31	38	08:59 (T42)	17:04	29	08:33 (T77)	17:11	28	08:48 (T77)
31	06:25	06:56		07:39 (T41)				08:01		08:22 (T42)				07:57		08:20 (T77)
	20:51	20:09	60	08:39 (T41)				18:29	36	08:58 (T42)				17:12	28	08:48 (T77)
Potential sun hours	460	429			375			345			297			287		
Total, worst case			639			1658			397			592			878	
Sun reduction			0.61			0.59			0.48			0.30			0.22	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.62			0.62			0.55			0.54			0.52	
Total reduction			0.37			0.36			0.26			0.16			0.11	
Total, real			237			594			102			93			99	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 87 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7760)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May	June
1	07:57	07:43			07:07		07:36 (T49)	07:16		08:03 (T49)	06:30	06:02
	17:13	17:48			18:22	43	08:19 (T49)	19:56	88	09:31 (T49)	20:27	20:57
2	07:57	07:42			07:06		07:33 (T49)	07:15		08:02 (T49)	06:29	06:01
	17:14	17:49			18:23	48	08:21 (T49)	19:57	88	09:30 (T49)	20:28	20:58
3	07:57	07:41			07:04		07:30 (T49)	07:13		08:03 (T49)	06:28	06:01
	17:15	17:50			18:24	53	08:23 (T49)	19:58	86	09:29 (T49)	20:29	20:58
4	07:57	07:40			07:03		07:28 (T49)	07:11		08:03 (T49)	06:27	06:00
	17:16	17:51			18:25	57	08:25 (T49)	19:59	85	09:28 (T49)	20:30	20:59
5	07:57	07:39			07:01		07:26 (T49)	07:10		08:04 (T49)	06:25	06:00
	17:17	17:53			18:26	61	08:27 (T49)	20:00	84	09:28 (T49)	20:31	21:00
6	07:57	07:38			06:59		07:24 (T49)	07:08		08:03 (T49)	06:24	06:00
	17:18	17:54			18:28	65	08:29 (T49)	20:00	83	09:26 (T49)	20:32	21:00
7	07:57	07:37			06:58		07:22 (T49)	07:06		08:03 (T49)	06:23	05:59
	17:19	17:55			18:29	67	08:29 (T49)	20:01	82	09:25 (T49)	20:33	21:01
8	07:57	07:36			07:56		08:20 (T49)	07:05		08:04 (T49)	06:22	05:59
	17:20	17:56			19:30	70	09:30 (T49)	20:02	80	09:24 (T49)	20:34	21:02
9	07:57	07:35			07:55		08:19 (T49)	07:03		08:04 (T49)	06:21	05:59
	17:21	17:58			19:31	73	09:32 (T49)	20:03	79	09:23 (T49)	20:35	21:02
10	07:57	07:34			07:53		08:17 (T49)	07:01		08:04 (T49)	06:19	05:59
	17:22	17:59			19:32	75	09:32 (T49)	20:05	77	09:21 (T49)	20:36	21:03
11	07:57	07:32			07:51		08:16 (T49)	07:00		08:05 (T49)	06:18	05:59
	17:23	18:00			19:33	77	09:33 (T49)	20:06	75	09:20 (T49)	20:37	21:03
12	07:56	07:31			07:50		08:15 (T49)	06:58		08:06 (T49)	06:17	05:59
	17:24	18:01			19:34	79	09:34 (T49)	20:07	73	09:19 (T49)	20:38	21:04
13	07:56	07:30			07:48		08:14 (T49)	06:57		08:07 (T49)	06:16	05:58
	17:25	18:03			19:35	80	09:34 (T49)	20:08	71	09:18 (T49)	20:39	21:04
14	07:56	07:29			07:46		08:12 (T49)	06:55		08:07 (T49)	06:15	05:58
	17:26	18:04			19:37	83	09:35 (T49)	20:09	69	09:16 (T49)	20:40	21:05
15	07:55	07:27			07:45		08:12 (T49)	06:54		08:08 (T49)	06:14	05:58
	17:27	18:05			19:38	84	09:36 (T49)	20:10	67	09:15 (T49)	20:41	21:05
16	07:55	07:26			07:43		08:11 (T49)	06:52		08:09 (T49)	06:13	05:58
	17:28	18:06			19:39	85	09:36 (T49)	20:11	64	09:13 (T49)	20:42	21:06
17	07:54	07:25			07:41		08:09 (T49)	06:50		08:10 (T49)	06:12	05:58
	17:29	18:08			19:40	87	09:36 (T49)	20:12	62	09:12 (T49)	20:43	21:06
18	07:54	07:23			07:40		08:09 (T49)	06:49		08:11 (T49)	06:11	05:58
	17:31	18:09			19:41	87	09:36 (T49)	20:13	58	09:09 (T49)	20:44	21:07
19	07:53	07:22			07:38		08:08 (T49)	06:47		08:13 (T49)	06:10	05:59
	17:32	18:10			19:42	88	09:36 (T49)	20:14	55	09:08 (T49)	20:45	21:07
20	07:53	07:20			07:36		08:07 (T49)	06:46		08:14 (T49)	06:10	05:59
	17:33	18:11			19:43	89	09:36 (T49)	20:15	51	09:05 (T49)	20:46	21:07
21	07:52	07:19			07:35		08:07 (T49)	06:44		08:15 (T49)	06:09	05:59
	17:34	18:12			19:44	89	09:36 (T49)	20:16	49	09:04 (T49)	20:47	21:07
22	07:52	07:18			07:33		08:06 (T49)	06:43		08:17 (T49)	06:08	05:59
	17:35	18:14			19:45	90	09:36 (T49)	20:17	44	09:01 (T49)	20:48	21:08
23	07:51	07:16			07:31		08:05 (T49)	06:41		08:19 (T49)	06:07	05:59
	17:36	18:15			19:46	90	09:35 (T49)	20:18	39	08:58 (T49)	20:49	21:08
24	07:50	07:15			07:30		08:06 (T49)	06:40		08:21 (T49)	06:06	06:00
	17:38	18:16			19:47	90	09:36 (T49)	20:19	34	08:55 (T49)	20:50	21:08
25	07:49	07:13			07:28		08:05 (T49)	06:39		08:24 (T49)	06:06	06:00
	17:39	18:17			19:48	90	09:35 (T49)	20:21	28	08:52 (T49)	20:51	21:08
26	07:49	07:12		07:49 (T49)	07:26		08:04 (T49)	06:37		08:28 (T49)	06:05	06:00
	17:40	18:18	17	08:06 (T49)	19:50	90	09:34 (T49)	20:22	20	08:48 (T49)	20:52	21:08
27	07:48	07:10		07:43 (T49)	07:25		08:04 (T49)	06:36			06:04	06:01
	17:41	18:19	29	08:12 (T49)	19:51	91	09:35 (T49)	20:23			20:53	21:08
28	07:47	07:09		07:39 (T49)	07:23		08:04 (T49)	06:34			06:04	06:01
	17:43	18:21	36	08:15 (T49)	19:52	90	09:34 (T49)	20:24			20:54	21:08
29	07:46				07:21		08:03 (T49)	06:33			06:03	06:01
	17:44				19:53	90	09:33 (T49)	20:25			20:54	21:08
30	07:45				07:20		08:04 (T49)	06:32			06:03	06:02
	17:45				19:54	89	09:33 (T49)	20:26			20:55	21:08
31	07:44				07:18		08:03 (T49)				06:02	
	17:46				19:55	89	09:32 (T49)				20:56	
Potential sun hours	297	297			370			399			448	452
Total, worst case			82			2439			1691			
Sun reduction			0.40			0.44			0.52			
Oper. time red.			1.00			1.00			1.00			
Wind dir. red.			0.58			0.58			0.58			
Total reduction			0.23			0.25			0.30			
Total, real			19			617			506			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 87 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7760)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November	December
1	06:02	06:26			06:57		08:04 (T49)	07:28		07:53 (T49)	07:02	07:37
	21:08	20:50			20:07	75	09:19 (T49)	19:15	80	09:13 (T49)	17:28	17:04
2	06:03	06:27			06:58		08:03 (T49)	07:29		07:54 (T49)	07:03	07:38
	21:08	20:49			20:06	77	09:20 (T49)	19:13	78	09:12 (T49)	17:27	17:04
3	06:03	06:28			06:59		08:02 (T49)	07:30		07:55 (T49)	07:04	07:39
	21:08	20:48			20:04	79	09:21 (T49)	19:11	76	09:11 (T49)	17:26	17:03
4	06:04	06:29			07:00		08:01 (T49)	07:31		07:56 (T49)	07:06	07:40
	21:08	20:47			20:02	80	09:21 (T49)	19:10	74	09:10 (T49)	17:24	17:03
5	06:04	06:30			07:01		08:00 (T49)	07:32		07:57 (T49)	07:07	07:41
	21:08	20:46			20:01	82	09:22 (T49)	19:08	72	09:09 (T49)	17:23	17:03
6	06:05	06:31			07:02		08:00 (T49)	07:33		07:58 (T49)	07:08	07:42
	21:08	20:44			19:57	82	09:22 (T49)	19:06	69	09:07 (T49)	17:22	17:03
7	06:06	06:32			07:03		07:59 (T49)	07:34		07:59 (T49)	07:09	07:43
	21:07	20:43			19:56	84	09:23 (T49)	19:05	66	09:05 (T49)	17:21	17:03
8	06:06	06:33			07:04		07:58 (T49)	07:35		08:00 (T49)	07:10	07:44
	21:07	20:42			19:54	85	09:23 (T49)	19:03	63	09:03 (T49)	17:20	17:03
9	06:07	06:34			07:05		07:57 (T49)	07:36		08:02 (T49)	07:12	07:45
	21:07	20:41			19:52	87	09:24 (T49)	19:02	59	09:01 (T49)	17:19	17:03
10	06:08	06:35			07:06		07:57 (T49)	07:37		08:03 (T49)	07:13	07:46
	21:06	20:39			19:51	87	09:24 (T49)	19:00	56	08:59 (T49)	17:18	17:03
11	06:08	06:36			07:07		07:56 (T49)	07:38		08:05 (T49)	07:14	07:46
	21:06	20:38			19:49	88	09:24 (T49)	18:58	51	08:56 (T49)	17:17	17:03
12	06:09	06:37			07:08		07:54 (T49)	07:39		08:07 (T49)	07:15	07:47
	21:05	20:37			19:47	89	09:23 (T49)	18:57	46	08:53 (T49)	17:16	17:03
13	06:10	06:38			07:09		07:54 (T49)	07:40		08:09 (T49)	07:16	07:48
	21:05	20:36			19:45	89	09:23 (T49)	18:55	41	08:50 (T49)	17:15	17:03
14	06:11	06:39			07:10		07:53 (T49)	07:41		08:12 (T49)	07:18	07:49
	21:04	20:34			19:44	90	09:23 (T49)	18:54	34	08:46 (T49)	17:14	17:03
15	06:11	06:40			07:11		07:53 (T49)	07:42		08:18 (T49)	07:19	07:49
	21:04	20:33			19:42	90	09:23 (T49)	18:52	25	08:43 (T49)	17:13	17:04
16	06:12	06:41		08:41 (T49)	07:12		07:53 (T49)	07:44		08:25 (T49)	07:20	07:50
	21:03	20:31	8	08:49 (T49)	19:40	90	09:23 (T49)	18:51	9	08:34 (T49)	17:12	17:04
17	06:13	06:42		08:34 (T49)	07:13		07:52 (T49)	07:45			07:21	07:51
	21:03	20:30	22	08:56 (T49)	19:39	91	09:23 (T49)	18:49			17:12	17:04
18	06:14	06:43		08:30 (T49)	07:14		07:52 (T49)	07:46			07:22	07:52
	21:02	20:29	29	08:59 (T49)	19:37	90	09:22 (T49)	18:47			17:11	17:04
19	06:15	06:44		08:27 (T49)	07:15		07:52 (T49)	07:47			07:23	07:52
	21:01	20:27	35	09:02 (T49)	19:35	90	09:22 (T49)	18:46			17:10	17:05
20	06:15	06:45		08:23 (T49)	07:16		07:52 (T49)	07:48			07:25	07:53
	21:01	20:26	41	09:04 (T49)	19:34	90	09:22 (T49)	18:45			17:09	17:05
21	06:16	06:46		08:21 (T49)	07:17		07:52 (T49)	07:49			07:26	07:53
	21:00	20:24	45	09:06 (T49)	19:32	89	09:21 (T49)	18:43			17:09	17:06
22	06:17	06:47		08:19 (T49)	07:18		07:51 (T49)	07:50			07:27	07:54
	20:59	20:23	49	09:08 (T49)	19:30	90	09:21 (T49)	18:42			17:08	17:06
23	06:18	06:48		08:17 (T49)	07:19		07:51 (T49)	07:51			07:28	07:54
	20:58	20:21	52	09:09 (T49)	19:28	89	09:20 (T49)	18:40			17:07	17:07
24	06:19	06:49		08:15 (T49)	07:20		07:51 (T49)	07:53			07:29	07:55
	20:58	20:20	56	09:11 (T49)	19:27	89	09:20 (T49)	18:39			17:07	17:07
25	06:20	06:50		08:14 (T49)	07:21		07:52 (T49)	07:54			07:30	07:55
	20:57	20:18	58	09:12 (T49)	19:25	87	09:19 (T49)	18:37			17:06	17:08
26	06:21	06:51		08:12 (T49)	07:22		07:52 (T49)	07:55			07:31	07:56
	20:56	20:17	62	09:14 (T49)	19:23	86	09:18 (T49)	18:36			17:06	17:09
27	06:22	06:52		08:11 (T49)	07:23		07:52 (T49)	07:56			07:33	07:56
	20:55	20:15	64	09:15 (T49)	19:22	85	09:17 (T49)	18:35			17:05	17:09
28	06:23	06:53		08:09 (T49)	07:24		07:52 (T49)	07:57			07:34	07:56
	20:54	20:14	67	09:16 (T49)	19:20	84	09:16 (T49)	18:33			17:05	17:10
29	06:24	06:54		08:08 (T49)	07:25		07:53 (T49)	07:58			07:35	07:56
	20:53	20:12	69	09:17 (T49)	19:18	82	09:15 (T49)	18:32			17:05	17:11
30	06:25	06:55		08:07 (T49)	07:27		07:53 (T49)	08:00			07:36	07:57
	20:52	20:10	71	09:18 (T49)	19:17	81	09:14 (T49)	18:31			17:04	17:11
31	06:26	06:56		08:05 (T49)				08:01				07:57
	20:51	20:09	74	09:19 (T49)				18:29				17:12
Potential sun hours	459	428			375			345			297	287
Total, worst case			802			2577			899			
Sun reduction			0.61			0.59			0.48			
Oper. time red.			1.00			1.00			1.00			
Wind dir. red.			0.58			0.58			0.58			
Total reduction			0.35			0.34			0.28			
Total, real			281			875			248			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 91 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7764)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May	June
1	07:57			07:43		16:38 (T30)	07:07		07:35 (T31)	07:16		07:35 (T28)	06:30	06:01
	17:13			17:47	43	17:21 (T30)	18:22	28	08:03 (T31)	19:56	73	19:34 (T27)	20:27	20:57
2	07:57			07:43		16:37 (T30)	07:06		07:36 (T31)	07:14		07:33 (T28)	06:29	06:01
	17:14			17:49	45	17:22 (T30)	18:23	25	08:01 (T31)	19:57	77	19:35 (T27)	20:28	20:58
3	07:58			07:41		16:37 (T30)	07:04		07:37 (T31)	07:13		07:32 (T28)	06:28	06:00
	17:15			17:50	45	17:22 (T30)	18:24	22	07:59 (T31)	19:58	81	19:37 (T27)	20:29	20:58
4	07:58			07:40		16:37 (T30)	07:02		07:40 (T31)	07:11		07:30 (T28)	06:26	06:00
	17:15			17:51	46	17:23 (T30)	18:25	18	07:58 (T31)	19:59	83	19:37 (T27)	20:30	20:59
5	07:58			07:39		16:37 (T30)	07:01		07:42 (T31)	07:09		07:30 (T28)	06:25	06:00
	17:16			17:52	47	17:24 (T30)	18:26	12	07:54 (T31)	20:00	84	19:38 (T27)	20:31	21:00
6	07:58			07:38		16:35 (T30)	06:59			07:08		07:30 (T28)	06:24	05:59
	17:17			17:54	48	17:23 (T30)	18:27			20:00	85	19:40 (T27)	20:32	21:01
7	07:57			07:37		16:36 (T30)	06:58			07:06		07:30 (T28)	06:23	05:59
	17:18			17:55	48	17:24 (T30)	18:29			20:01	85	19:40 (T27)	20:33	21:01
8	07:57			07:36		16:36 (T30)	07:56			07:05		07:30 (T28)	06:21	05:59
	17:19			17:56	48	17:24 (T30)	19:30			20:02	84	19:40 (T27)	20:34	21:02
9	07:57			07:35		16:36 (T30)	07:54			07:03		07:30 (T28)	06:20	05:59
	17:20			17:57	49	17:25 (T30)	19:31			20:03	82	19:39 (T27)	20:35	21:02
10	07:57			07:34		16:36 (T30)	07:53			07:01		07:30 (T28)	06:19	05:58
	17:21			17:59	49	17:25 (T30)	19:32			20:05	81	19:38 (T27)	20:37	21:03
11	07:57			07:32		07:52 (T31)	07:51			07:00		07:31 (T28)	06:18	05:58
	17:22			18:00	54	17:24 (T30)	19:33			20:06	78	19:37 (T27)	20:38	21:04
12	07:56			07:31		07:51 (T31)	07:50			06:58		07:31 (T28)	06:17	05:58
	17:23			18:01	58	17:25 (T30)	19:34			20:07	74	19:36 (T27)	20:39	21:04
13	07:56			07:30		07:50 (T31)	07:48			06:56		07:32 (T28)	06:16	05:58
	17:25			18:02	61	17:25 (T30)	19:35			20:08	71	19:35 (T27)	20:40	21:05
14	07:56			07:29		07:49 (T31)	07:46			06:55		07:32 (T28)	06:15	05:58
	17:26			18:04	63	17:25 (T30)	19:36			20:09	67	19:33 (T27)	20:41	21:05
15	07:55			07:27		07:47 (T31)	07:45			06:53		07:33 (T28)	06:14	05:58
	17:27			18:05	64	17:24 (T30)	19:38			20:10	61	19:31 (T27)	20:42	21:06
16	07:55			07:26		07:46 (T31)	07:43			06:52		07:34 (T28)	06:13	05:58
	17:28			18:06	65	17:24 (T30)	19:39			20:11	56	19:30 (T27)	20:43	21:06
17	07:55			07:25		07:44 (T31)	07:41			06:50		07:35 (T28)	06:12	05:58
	17:29			18:07	67	17:23 (T30)	19:40			20:12	46	19:26 (T27)	20:44	21:06
18	07:54			07:23		07:43 (T31)	07:40			06:49		07:37 (T28)	06:11	05:58
	17:30			18:09	67	17:22 (T30)	19:41			20:13	36	19:23 (T27)	20:45	21:07
19	07:53			07:22		07:42 (T31)	07:38			06:47		07:39 (T28)	06:10	05:58
	17:31			18:10	67	17:22 (T30)	19:42			20:14	22	08:01 (T28)	20:46	21:07
20	07:53			07:21		07:40 (T31)	07:36		07:55 (T28)	06:46		07:42 (T28)	06:09	05:58
	17:33			18:11	67	17:20 (T30)	19:43	9	08:04 (T28)	20:15	16	07:58 (T28)	20:46	21:07
21	07:52		16:50 (T30)	07:19		07:39 (T31)	07:35		07:54 (T28)	06:44			06:08	05:59
	17:34	13	17:03 (T30)	18:12	67	17:20 (T30)	19:44	15	08:09 (T28)	20:16			20:47	21:08
22	07:52		16:48 (T30)	07:18		07:37 (T31)	07:33		07:52 (T28)	06:43			06:08	05:59
	17:35	19	17:07 (T30)	18:13	66	17:18 (T30)	19:45	20	08:12 (T28)	20:17			20:48	21:08
23	07:51		16:46 (T30)	07:16		07:36 (T31)	07:31		07:50 (T28)	06:41			06:07	05:59
	17:36	23	17:09 (T30)	18:15	64	17:17 (T30)	19:46	23	08:13 (T28)	20:18			20:49	21:08
24	07:50		16:44 (T30)	07:15		07:34 (T31)	07:30		07:49 (T28)	06:40			06:06	05:59
	17:37	26	17:10 (T30)	18:16	61	17:14 (T30)	19:47	27	08:16 (T28)	20:20			20:50	21:08
25	07:50		16:43 (T30)	07:13		07:33 (T31)	07:28		07:47 (T28)	06:38			06:05	06:00
	17:39	29	17:12 (T30)	18:17	59	17:13 (T30)	19:48	38	19:27 (T27)	20:21			20:51	21:08
26	07:49		16:42 (T30)	07:12		07:33 (T31)	07:26		07:45 (T28)	06:37			06:05	06:00
	17:40	32	17:14 (T30)	18:18	51	17:09 (T30)	19:50	45	19:28 (T27)	20:22			20:52	21:09
27	07:48		16:41 (T30)	07:10		07:34 (T31)	07:24		07:43 (T28)	06:36			06:04	06:00
	17:41	35	17:16 (T30)	18:19	40	17:05 (T30)	19:51	52	19:29 (T27)	20:23			20:53	21:09
28	07:47		16:40 (T30)	07:09		07:34 (T31)	07:23		07:42 (T28)	06:34			06:03	06:01
	17:42	37	17:17 (T30)	18:20	30	08:04 (T31)	19:52	56	19:30 (T27)	20:24			20:54	21:09
29	07:46		16:40 (T30)				07:21		07:40 (T28)	06:33			06:03	06:01
	17:44	38	17:18 (T30)				19:53	61	19:31 (T27)	20:25			20:55	21:09
30	07:45		16:39 (T30)				07:19		07:38 (T28)	06:31			06:02	06:01
	17:45	40	17:19 (T30)				19:54	66	19:32 (T27)	20:26			20:55	21:09
31	07:44		16:38 (T30)				07:18		07:37 (T28)				06:02	
	17:46	42	17:20 (T30)				19:55	71	19:34 (T27)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		334			1539			588			1342			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.72			0.68			0.62			0.63			
Total reduction		0.23			0.27			0.27			0.33			
Total, real		76			422			161			441			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 91 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7764)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December
1	06:02	06:26			06:57		07:30 (T28)	07:27			07:02		16:05 (T30)	07:37
	21:09	20:50			20:07	78	19:36 (T27)	19:15			17:28	49	16:54 (T30)	17:04
2	06:02	06:27			06:58		07:29 (T28)	07:29			07:03		16:06 (T30)	07:38
	21:08	20:49			20:06	81	19:37 (T27)	19:13			17:27	49	16:55 (T30)	17:03
3	06:03	06:28			06:59		07:28 (T28)	07:30			07:04		16:05 (T30)	07:39
	21:08	20:48			20:04	82	19:37 (T27)	19:11			17:25	49	16:54 (T30)	17:03
4	06:04	06:29			07:00		07:27 (T28)	07:31			07:06		16:05 (T30)	07:40
	21:08	20:47			20:02	84	19:37 (T27)	19:10			17:24	49	16:54 (T30)	17:03
5	06:04	06:30			07:01		07:27 (T28)	07:32			07:07		16:05 (T30)	07:41
	21:08	20:46			20:01	85	19:37 (T27)	19:08			17:23	48	16:53 (T30)	17:03
6	06:05	06:31			07:02		07:26 (T28)	07:33			07:08		16:06 (T30)	07:42
	21:08	20:45			19:57	85	19:36 (T27)	19:06			17:22	48	16:54 (T30)	17:03
7	06:05	06:32			07:03		07:26 (T28)	07:34			07:09		16:07 (T30)	07:43
	21:07	20:43			19:56	84	19:34 (T27)	19:05			17:21	46	16:53 (T30)	17:02
8	06:06	06:33			07:04		07:25 (T28)	07:35		08:21 (T31)	07:10		16:07 (T30)	07:44
	21:07	20:42			19:54	84	19:33 (T27)	19:03	5	08:26 (T31)	17:20	45	16:52 (T30)	17:02
9	06:07	06:34			07:05		07:25 (T28)	07:36		08:16 (T31)	07:12		16:08 (T30)	07:45
	21:07	20:41			19:52	81	19:30 (T27)	19:01	15	08:31 (T31)	17:19	44	16:52 (T30)	17:02
10	06:07	06:35			07:06		07:26 (T28)	07:37		08:13 (T31)	07:13		16:09 (T30)	07:46
	21:06	20:40			19:51	77	19:28 (T27)	19:00	20	08:33 (T31)	17:18	43	16:52 (T30)	17:02
11	06:08	06:36			07:07		07:27 (T28)	07:38		08:11 (T31)	07:14		16:09 (T30)	07:47
	21:06	20:38			19:49	75	19:27 (T27)	18:58	23	08:34 (T31)	17:17	42	16:51 (T30)	17:02
12	06:09	06:37			07:08		07:28 (T28)	07:39		08:09 (T31)	07:15		16:10 (T30)	07:47
	21:06	20:37			19:47	70	19:25 (T27)	18:57	26	08:35 (T31)	17:16	40	16:50 (T30)	17:03
13	06:09	06:38			07:09		07:29 (T28)	07:40		08:07 (T31)	07:16		16:12 (T30)	07:48
	21:05	20:36			19:45	66	19:23 (T27)	18:55	29	08:36 (T31)	17:15	38	16:50 (T30)	17:03
14	06:10	06:39			07:10		07:30 (T28)	07:41		08:07 (T31)	07:18		16:12 (T30)	07:49
	21:05	20:34			19:44	62	19:22 (T27)	18:53	31	08:38 (T31)	17:14	37	16:49 (T30)	17:03
15	06:11	06:40			07:11		07:31 (T28)	07:42		08:06 (T31)	07:19		16:13 (T30)	07:50
	21:04	20:33			19:42	57	19:20 (T27)	18:52	46	17:40 (T30)	17:13	35	16:48 (T30)	17:03
16	06:12	06:41			07:12		07:32 (T28)	07:44		08:05 (T31)	07:20		16:15 (T30)	07:50
	21:04	20:32			19:40	52	19:18 (T27)	18:50	54	17:43 (T30)	17:12	32	16:47 (T30)	17:03
17	06:13	06:42			07:13		07:33 (T28)	07:45		08:05 (T31)	07:21		16:17 (T30)	07:51
	21:03	20:30			19:39	48	19:17 (T27)	18:49	59	17:45 (T30)	17:11	29	16:46 (T30)	17:04
18	06:13	06:43			07:14		07:34 (T28)	07:46		08:06 (T31)	07:22		16:18 (T30)	07:52
	21:02	20:29			19:37	40	19:15 (T27)	18:47	63	17:47 (T30)	17:11	26	16:44 (T30)	17:04
19	06:14	06:44			07:15		07:35 (T28)	07:47		08:07 (T31)	07:24		16:20 (T30)	07:52
	21:02	20:27			19:35	30	19:13 (T27)	18:46	65	17:48 (T30)	17:10	23	16:43 (T30)	17:04
20	06:15	06:45			07:16		07:36 (T28)	07:48		08:09 (T31)	07:25		16:23 (T30)	07:53
	21:01	20:26			19:33	24	08:00 (T28)	18:44	67	17:50 (T30)	17:09	19	16:42 (T30)	17:05
21	06:16	06:46			07:17		07:37 (T28)	07:49		08:10 (T31)	07:26		16:25 (T30)	07:53
	21:00	20:24			19:32	21	07:58 (T28)	18:43	67	17:51 (T30)	17:08	14	16:39 (T30)	17:05
22	06:17	06:47		07:51 (T28)	07:18		07:38 (T28)	07:50		08:11 (T31)	07:27		16:31 (T30)	07:54
	20:59	20:23	5	07:56 (T28)	19:30	17	07:55 (T28)	18:41	68	17:51 (T30)	17:08	2	16:33 (T30)	17:06
23	06:18	06:48		07:45 (T28)	07:19		07:39 (T28)	07:51		08:12 (T31)	07:28			07:54
	20:59	20:21	17	08:02 (T28)	19:28	11	07:50 (T28)	18:40	68	17:52 (T30)	17:07			17:06
24	06:19	06:49		07:42 (T28)	07:20			07:53		08:13 (T31)	07:29			07:55
	20:58	20:20	23	08:05 (T28)	19:27			18:39	67	17:52 (T30)	17:07			17:07
25	06:20	06:50		07:40 (T28)	07:21			07:54		08:15 (T31)	07:31			07:55
	20:57	20:18	37	19:26 (T27)	19:25			18:37	66	17:53 (T30)	17:06			17:07
26	06:20	06:51		07:38 (T28)	07:22			07:55		08:16 (T31)	07:32			07:56
	20:56	20:17	47	19:30 (T27)	19:23			18:36	66	17:54 (T30)	17:05			17:08
27	06:21	06:52		07:36 (T28)	07:23			07:56		08:17 (T31)	07:33			07:56
	20:55	20:15	56	19:32 (T27)	19:21			18:34	65	17:54 (T30)	17:05			17:09
28	06:22	06:53		07:34 (T28)	07:24			07:57		08:18 (T31)	07:34			07:56
	20:54	20:14	62	19:33 (T27)	19:20			18:33	62	17:54 (T30)	17:05			17:09
29	06:23	06:54		07:33 (T28)	07:25			07:58		08:20 (T31)	07:35			07:57
	20:53	20:12	67	19:34 (T27)	19:18			18:32	60	17:55 (T30)	17:04			17:10
30	06:24	06:55		07:32 (T28)	07:26			08:00		08:21 (T31)	07:36			07:57
	20:52	20:10	71	19:35 (T27)	19:16			18:30	56	17:54 (T30)	17:04			17:11
31	06:25	06:56		07:31 (T28)				08:01		08:22 (T31)				07:57
	20:51	20:09	75	19:36 (T27)				18:29	53	17:54 (T30)				17:12
Potential sun hours	460	429			375			345			297			287
Total, worst case			460			1394			1201			807		
Sun reduction			0.61			0.59			0.48			0.30		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.63			0.63			0.65			0.72		
Total reduction			0.39			0.37			0.32			0.22		
Total, real			178			521			379			177		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 104 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7774)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:57		15:54 (T35)	07:43		08:04 (T36)	07:07	07:16			06:30		06:55 (T31)	06:01		19:32 (T30)
	17:13	52	16:46 (T35)	17:47	39	16:47 (T35)	18:22	19:56			20:27	32	07:27 (T31)	20:57	53	20:25 (T30)
2	07:57		15:55 (T35)	07:43		08:03 (T36)	07:06	07:14			06:29		06:56 (T31)	06:01		19:32 (T30)
	17:14	52	16:47 (T35)	17:49	39	16:46 (T35)	18:23	19:57			20:28	30	07:26 (T31)	20:58	54	20:26 (T30)
3	07:58		15:55 (T35)	07:41		08:02 (T36)	07:04	07:13			06:28		06:56 (T31)	06:00		19:32 (T30)
	17:15	52	16:47 (T35)	17:50	37	16:44 (T35)	18:24	19:58			20:29	29	07:25 (T31)	20:58	53	20:25 (T30)
4	07:58		15:56 (T35)	07:40		08:01 (T36)	07:02	07:11			06:26		06:57 (T31)	06:00		19:32 (T30)
	17:15	52	16:48 (T35)	17:51	34	16:42 (T35)	18:25	19:59			20:30	27	07:24 (T31)	20:59	54	20:26 (T30)
5	07:58		15:56 (T35)	07:39		08:00 (T36)	07:01	07:09			06:25		06:58 (T31)	06:00		19:33 (T30)
	17:16	52	16:48 (T35)	17:52	28	16:38 (T35)	18:26	20:00			20:31	25	07:23 (T31)	21:00	53	20:26 (T30)
6	07:57		15:57 (T35)	07:38		07:58 (T36)	06:59	07:08			06:24		07:00 (T31)	05:59		19:32 (T30)
	17:17	52	16:49 (T35)	17:54	18	08:16 (T36)	18:27	20:00			20:32	21	07:21 (T31)	21:01	54	20:26 (T30)
7	07:57		15:57 (T35)	07:37		07:57 (T36)	06:58	07:06			06:23		07:02 (T31)	05:59		19:33 (T30)
	17:18	52	16:49 (T35)	17:55	20	08:17 (T36)	18:29	20:01			20:33	32	20:05 (T30)	21:01	53	20:26 (T30)
8	07:57		15:57 (T35)	07:36		07:56 (T36)	07:56	07:05			06:21		07:03 (T31)	05:59		19:33 (T30)
	17:19	52	16:49 (T35)	17:56	21	08:17 (T36)	19:30	20:02			20:34	34	20:07 (T30)	21:02	54	20:27 (T30)
9	07:57		15:57 (T35)	07:35		07:55 (T36)	07:54	07:03			06:20		07:07 (T31)	05:59		19:34 (T30)
	17:20	53	16:50 (T35)	17:57	23	08:18 (T36)	19:31	20:03			20:35	31	20:10 (T30)	21:02	53	20:27 (T30)
10	07:57		15:58 (T35)	07:34		07:54 (T36)	07:53	07:01			06:19		19:42 (T30)	05:58		19:33 (T30)
	17:21	52	16:50 (T35)	17:59	24	08:18 (T36)	19:32	20:05			20:36	30	20:12 (T30)	21:03	53	20:26 (T30)
11	07:57		15:58 (T35)	07:32		07:52 (T36)	07:51	07:00			06:18		19:40 (T30)	05:58		19:33 (T30)
	17:22	52	16:50 (T35)	18:00	26	08:18 (T36)	19:33	20:06			20:38	33	20:13 (T30)	21:04	54	20:27 (T30)
12	07:56		15:58 (T35)	07:31		07:51 (T36)	07:50	06:58		07:17 (T31)	06:17		19:39 (T30)	05:58		19:34 (T30)
	17:23	53	16:51 (T35)	18:01	27	08:18 (T36)	19:34	20:07	2	07:19 (T31)	20:39	35	20:14 (T30)	21:04	53	20:27 (T30)
13	07:56		15:59 (T35)	07:30		07:50 (T36)	07:48	06:56		07:16 (T31)	06:16		19:38 (T30)	05:58		19:34 (T30)
	17:25	53	16:52 (T35)	18:02	28	08:18 (T36)	19:35	20:08	8	07:24 (T31)	20:40	37	20:15 (T30)	21:05	53	20:27 (T30)
14	07:56		15:59 (T35)	07:29		07:49 (T36)	07:46	06:55		07:14 (T31)	06:15		19:37 (T30)	05:58		19:34 (T30)
	17:26	52	16:51 (T35)	18:04	29	08:18 (T36)	19:36	20:09	11	07:25 (T31)	20:41	39	20:16 (T30)	21:05	53	20:27 (T30)
15	07:55		16:00 (T35)	07:27		07:48 (T36)	07:45	06:53		07:12 (T31)	06:14		19:36 (T30)	05:58		19:34 (T30)
	17:27	52	16:52 (T35)	18:05	29	08:17 (T36)	19:38	20:10	14	07:26 (T31)	20:42	41	20:17 (T30)	21:06	54	20:28 (T30)
16	07:55		16:00 (T35)	07:26		07:49 (T36)	07:43	06:52		07:11 (T31)	06:13		19:35 (T30)	05:58		19:34 (T30)
	17:28	52	16:52 (T35)	18:06	27	08:16 (T36)	19:39	20:11	17	07:28 (T31)	20:43	43	20:18 (T30)	21:06	54	20:28 (T30)
17	07:55		16:01 (T35)	07:25		07:49 (T36)	07:41	06:50		07:09 (T31)	06:12		19:35 (T30)	05:58		19:35 (T30)
	17:29	52	16:53 (T35)	18:07	26	08:15 (T36)	19:40	20:12	19	07:28 (T31)	20:44	45	20:20 (T30)	21:06	53	20:28 (T30)
18	07:54		16:01 (T35)	07:23		07:51 (T36)	07:40	06:49		07:08 (T31)	06:11		19:35 (T30)	05:58		19:35 (T30)
	17:30	51	16:52 (T35)	18:09	23	08:14 (T36)	19:41	20:13	21	07:29 (T31)	20:45	45	20:20 (T30)	21:07	54	20:41 (T27)
19	07:53		16:02 (T35)	07:22		07:52 (T36)	07:38	06:47		07:06 (T31)	06:10		19:34 (T30)	05:58		19:36 (T30)
	17:31	51	16:53 (T35)	18:10	21	08:13 (T36)	19:42	20:14	23	07:29 (T31)	20:46	47	20:21 (T30)	21:07	54	20:42 (T27)
20	07:53		16:03 (T35)	07:21		07:54 (T36)	07:36	06:46		07:05 (T31)	06:09		19:33 (T30)	05:58		19:36 (T30)
	17:33	50	16:53 (T35)	18:11	16	08:10 (T36)	19:43	20:15	25	07:30 (T31)	20:46	48	20:21 (T30)	21:07	54	20:42 (T27)
21	07:52		16:03 (T35)	07:19		07:57 (T36)	07:35	06:44		07:03 (T31)	06:08		19:33 (T30)	05:59		19:36 (T30)
	17:34	49	16:52 (T35)	18:12	10	08:07 (T36)	19:44	20:16	27	07:30 (T31)	20:47	48	20:21 (T30)	21:08	54	20:42 (T27)
22	07:52		16:04 (T35)	07:18			07:33	06:43		07:02 (T31)	06:08		19:33 (T30)	05:59		19:36 (T30)
	17:35	49	16:53 (T35)	18:13			19:45	20:17	28	07:30 (T31)	20:48	49	20:22 (T30)	21:08	54	20:42 (T27)
23	07:51		16:05 (T35)	07:16			07:31	06:41		07:01 (T31)	06:07		19:32 (T30)	05:59		19:36 (T30)
	17:36	48	16:53 (T35)	18:15			19:46	20:18	30	07:31 (T31)	20:49	50	20:22 (T30)	21:08	54	20:42 (T27)
24	07:50		16:05 (T35)	07:15			07:30	06:40		06:59 (T31)	06:06		19:32 (T30)	05:59		19:37 (T30)
	17:37	47	16:52 (T35)	18:16			19:47	20:20	31	07:30 (T31)	20:50	51	20:23 (T30)	21:08	54	20:43 (T27)
25	07:50		16:06 (T35)	07:13			07:28	06:38		06:58 (T31)	06:05		19:32 (T30)	06:00		19:37 (T30)
	17:39	46	16:52 (T35)	18:17			19:48	20:21	32	07:30 (T31)	20:51	52	20:24 (T30)	21:08	54	20:43 (T27)
26	07:49		16:08 (T35)	07:12			07:26	06:37		06:56 (T31)	06:05		19:32 (T30)	06:00		19:37 (T30)
	17:40	44	16:52 (T35)	18:18			19:50	20:22	33	07:29 (T31)	20:52	51	20:23 (T30)	21:09	53	20:30 (T30)
27	07:48		16:09 (T35)	07:10			07:24	06:36		06:55 (T31)	06:04		19:31 (T30)	06:00		19:37 (T30)
	17:41	43	16:52 (T35)	18:19			19:51	20:23	34	07:29 (T31)	20:53	52	20:23 (T30)	21:09	54	20:31 (T30)
28	07:47		16:10 (T35)	07:09			07:23	06:34		06:54 (T31)	06:03		19:32 (T30)	06:01		19:37 (T30)
	17:42	41	16:51 (T35)	18:20			19:52	20:24	35	07:29 (T31)	20:54	52	20:24 (T30)	21:09	54	20:31 (T30)
29	07:46		16:11 (T35)				07:21	06:33		06:54 (T31)	06:03		19:31 (T30)	06:01		19:38 (T30)
	17:44	39	16:50 (T35)				19:53	20:25	34	07:28 (T31)	20:55	53	20:24 (T30)	21:09	53	20:31 (T30)
30	07:45		08:06 (T36)				07:19	06:31		06:54 (T31)	06:02		19:32 (T30)	06:01		19:38 (T30)
	17:45	38	16:49 (T35)				19:54	20:26	34	07:28 (T31)	20:55	53	20:25 (T30)	21:09	53	20:31 (T30)
31	07:44		08:05 (T36)				07:18				06:02		19:31 (T30)			
	17:46	39	16:48 (T35)				19:55				20:56	54	20:25 (T30)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		1522			545				458			1269			1607	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.74			0.59				0.67			0.57			0.55	
Total reduction		0.24			0.25				0.36			0.34			0.37	
Total, real		362			134				166			431			593	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 104 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7774)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02		19:38 (T30)	06:26		19:50 (T30)	06:57	07:27			07:02		07:23 (T36)	07:37		15:41 (T35)
	21:09	54	20:32 (T30)	20:50	34	20:24 (T30)	20:07	19:15			17:28	24	07:47 (T36)	17:04	52	16:33 (T35)
2	06:02		19:38 (T30)	06:27		19:52 (T30)	06:58	07:29			07:03		07:25 (T36)	07:38		15:41 (T35)
	21:08	54	20:32 (T30)	20:49	31	20:23 (T30)	20:06	19:13			17:27	23	07:48 (T36)	17:03	53	16:34 (T35)
3	06:03		19:39 (T30)	06:28		19:53 (T30)	06:59	07:30			07:04		07:26 (T36)	07:39		15:41 (T35)
	21:08	53	20:32 (T30)	20:48	29	20:22 (T30)	20:04	19:11			17:25	21	07:47 (T36)	17:03	53	16:34 (T35)
4	06:04		19:38 (T30)	06:29		07:16 (T31)	07:00	07:31			07:06		07:27 (T36)	07:40		15:42 (T35)
	21:08	54	20:32 (T30)	20:47	34	20:20 (T30)	20:02	19:10			17:24	20	07:47 (T36)	17:03	52	16:34 (T35)
5	06:04		19:39 (T30)	06:30		07:13 (T31)	07:01	07:32			07:07		07:28 (T36)	07:41		15:42 (T35)
	21:08	54	20:33 (T30)	20:46	34	20:17 (T30)	20:01	19:08			17:23	18	07:46 (T36)	17:03	53	16:35 (T35)
6	06:05		19:39 (T30)	06:31		07:11 (T31)	07:02	07:33			07:08		07:30 (T36)	07:42		15:43 (T35)
	21:08	53	20:32 (T30)	20:45	31	20:13 (T30)	19:57	19:06			17:22	30	16:09 (T35)	17:03	52	16:35 (T35)
7	06:05		19:39 (T30)	06:32		07:09 (T31)	07:03	07:34			07:09		07:31 (T36)	07:43		15:43 (T35)
	21:07	54	20:33 (T30)	20:43	22	07:31 (T31)	19:56	19:05			17:21	35	16:12 (T35)	17:02	52	16:35 (T35)
8	06:06		19:39 (T30)	06:33		07:08 (T31)	07:04	07:35			07:10		07:32 (T36)	07:44		15:44 (T35)
	21:07	53	20:32 (T30)	20:42	25	07:33 (T31)	19:54	19:03			17:20	37	16:14 (T35)	17:02	52	16:36 (T35)
9	06:07		19:39 (T30)	06:34		07:06 (T31)	07:05	07:36			07:12		07:34 (T36)	07:45		15:43 (T35)
	21:07	54	20:33 (T30)	20:41	28	07:34 (T31)	19:52	19:01			17:19	39	16:17 (T35)	17:02	52	16:35 (T35)
10	06:07		19:40 (T30)	06:35		07:05 (T31)	07:06	07:37			07:13		07:35 (T36)	07:46		15:44 (T35)
	21:06	53	20:33 (T30)	20:40	30	07:35 (T31)	19:51	19:00			17:18	39	16:18 (T35)	17:02	52	16:36 (T35)
11	06:08		19:39 (T30)	06:36		07:04 (T31)	07:07	07:38			07:14		07:36 (T36)	07:47		15:44 (T35)
	21:06	53	20:32 (T30)	20:38	31	07:35 (T31)	19:49	18:58			17:17	39	16:19 (T35)	17:03	52	16:36 (T35)
12	06:09		19:40 (T30)	06:37		07:04 (T31)	07:08	07:39			07:15		07:37 (T36)	07:47		15:45 (T35)
	21:06	53	20:33 (T30)	20:37	32	07:36 (T31)	19:47	18:57			17:16	38	16:20 (T35)	17:03	52	16:37 (T35)
13	06:09		19:40 (T30)	06:38		07:03 (T31)	07:09	07:40			07:16		15:43 (T35)	07:48		15:46 (T35)
	21:05	53	20:33 (T30)	20:36	33	07:36 (T31)	19:45	18:55			17:15	39	16:22 (T35)	17:03	51	16:37 (T35)
14	06:10		19:41 (T30)	06:39		07:01 (T31)	07:10	07:41			07:18		15:42 (T35)	07:49		15:46 (T35)
	21:05	52	20:33 (T30)	20:34	35	07:36 (T31)	19:44	18:53			17:14	41	16:23 (T35)	17:03	51	16:37 (T35)
15	06:11		19:40 (T30)	06:40		07:01 (T31)	07:11	07:42			07:19		15:41 (T35)	07:50		15:46 (T35)
	21:04	53	20:33 (T30)	20:33	35	07:36 (T31)	19:42	18:52			17:13	43	16:24 (T35)	17:03	51	16:37 (T35)
16	06:12		19:41 (T30)	06:41		07:02 (T31)	07:12	07:44			07:20		15:41 (T35)	07:50		15:47 (T35)
	21:04	52	20:33 (T30)	20:32	34	07:36 (T31)	19:40	18:50			17:12	44	16:25 (T35)	17:03	51	16:38 (T35)
17	06:13		19:41 (T30)	06:42		07:03 (T31)	07:13	07:45			07:21		15:40 (T35)	07:51		15:48 (T35)
	21:03	52	20:33 (T30)	20:30	33	07:36 (T31)	19:39	18:49			17:11	46	16:26 (T35)	17:04	50	16:38 (T35)
18	06:13		19:42 (T30)	06:43		07:04 (T31)	07:14	07:46			07:22		15:39 (T35)	07:52		15:48 (T35)
	21:02	51	20:33 (T30)	20:29	32	07:36 (T31)	19:37	18:47			17:11	47	16:26 (T35)	17:04	50	16:38 (T35)
19	06:14		19:42 (T30)	06:44		07:05 (T31)	07:15	07:47			07:24		15:39 (T35)	07:52		15:49 (T35)
	21:02	51	20:33 (T30)	20:27	31	07:36 (T31)	19:35	18:46			17:10	48	16:27 (T35)	17:04	50	16:39 (T35)
20	06:15		19:42 (T30)	06:45		07:06 (T31)	07:16	07:48			07:25		15:39 (T35)	07:53		15:49 (T35)
	21:01	50	20:32 (T30)	20:26	30	07:36 (T31)	19:33	18:44			17:09	49	16:28 (T35)	17:05	50	16:39 (T35)
21	06:16		19:42 (T30)	06:46		07:07 (T31)	07:17	07:49		08:27 (T36)	07:26		15:39 (T35)	07:53		15:50 (T35)
	21:00	50	20:32 (T30)	20:24	28	07:35 (T31)	19:32	18:43	12	08:39 (T36)	17:08	49	16:28 (T35)	17:05	49	16:39 (T35)
22	06:17		19:43 (T30)	06:47		07:08 (T31)	07:18	07:50		08:24 (T36)	07:27		15:39 (T35)	07:54		15:50 (T35)
	20:59	49	20:32 (T30)	20:23	27	07:35 (T31)	19:30	18:41	17	08:41 (T36)	17:08	50	16:29 (T35)	17:06	49	16:39 (T35)
23	06:18		19:43 (T30)	06:48		07:09 (T31)	07:19	07:51		08:22 (T36)	07:28		15:38 (T35)	07:54		15:51 (T35)
	20:59	49	20:32 (T30)	20:21	25	07:34 (T31)	19:28	18:40	21	08:43 (T36)	17:07	51	16:29 (T35)	17:06	50	16:41 (T35)
24	06:19		19:44 (T30)	06:49		07:10 (T31)	07:20	07:53		08:20 (T36)	07:29		15:38 (T35)	07:55		15:51 (T35)
	20:58	47	20:31 (T30)	20:20	23	07:33 (T31)	19:27	18:39	24	08:44 (T36)	17:07	51	16:29 (T35)	17:07	50	16:41 (T35)
25	06:20		19:45 (T30)	06:50		07:11 (T31)	07:21	07:54		08:20 (T36)	07:31		15:39 (T35)	07:55		15:51 (T35)
	20:57	46	20:31 (T30)	20:18	21	07:32 (T31)	19:25	18:37	26	08:46 (T36)	17:06	52	16:31 (T35)	17:08	50	16:41 (T35)
26	06:20		19:45 (T30)	06:51		07:12 (T31)	07:22	07:55		08:18 (T36)	07:32		15:39 (T35)	07:56		15:52 (T35)
	20:56	45	20:30 (T30)	20:17	19	07:31 (T31)	19:23	18:36	28	08:46 (T36)	17:05	52	16:31 (T35)	17:08	50	16:42 (T35)
27	06:21		19:45 (T30)	06:52		07:13 (T31)	07:23	07:56		08:17 (T36)	07:33		15:39 (T35)	07:56		15:52 (T35)
	20:55	44	20:29 (T30)	20:15	17	07:30 (T31)	19:21	18:34	29	08:46 (T36)	17:05	52	16:31 (T35)	17:09	51	16:43 (T35)
28	06:22		19:46 (T30)	06:53		07:14 (T31)	07:24	07:57		08:18 (T36)	07:34		15:39 (T35)	07:56		15:52 (T35)
	20:54	42	20:28 (T30)	20:14	14	07:28 (T31)	19:20	18:33	29	08:47 (T36)	17:05	52	16:31 (T35)	17:09	51	16:43 (T35)
29	06:23		19:47 (T30)	06:54		07:15 (T31)	07:25	07:58		08:20 (T36)	07:35		15:39 (T35)	07:57		15:52 (T35)
	20:53	40	20:27 (T30)	20:12	11	07:26 (T31)	19:18	18:32	28	08:48 (T36)	17:04	53	16:32 (T35)	17:10	51	16:43 (T35)
30	06:24		19:48 (T30)	06:55		07:16 (T31)	07:26	08:00		08:21 (T36)	07:36		15:40 (T35)	07:57		15:54 (T35)
	20:52	39	20:27 (T30)	20:10	7	07:23 (T31)	19:16	18:30	27	08:48 (T36)	17:04	52	16:32 (T35)	17:11	51	16:45 (T35)
31	06:25		19:49 (T30)	06:56		07:17 (T31)		08:01		08:22 (T36)				07:57		15:54 (T35)
	20:51	37	20:26 (T30)	20:09	2	07:19 (T31)		18:29	25	08:47 (T36)				17:12	52	16:46 (T35)
Potential sun hours	460			429			375	345			297			287		
Total, worst case		1544			818				266			1234			1585	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.55			0.65				0.55			0.71			0.74	
Total reduction		0.38			0.41				0.28			0.22			0.17	
Total, real		588			337				73			275			268	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 137 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7798)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		16:26 (T77)	07:43		16:24 (T77)	07:07		07:36 (T76)	07:16		18:34 (T42)	06:30		19:38 (T41)	06:01
	17:13	21	16:47 (T77)	17:47	51	17:15 (T77)	18:22	26	08:02 (T76)	19:56	41	19:15 (T42)	20:27	27	20:05 (T41)	20:57
2	07:57		16:26 (T77)	07:42		16:25 (T77)	07:06		07:36 (T76)	07:14		18:35 (T42)	06:29		19:38 (T41)	06:01
	17:14	22	16:48 (T77)	17:49	50	17:15 (T77)	18:23	24	08:00 (T76)	19:57	39	19:14 (T42)	20:28	28	20:06 (T41)	20:58
3	07:57		16:26 (T77)	07:41		16:25 (T77)	07:04		07:37 (T76)	07:13		18:37 (T42)	06:28		19:37 (T41)	06:01
	17:15	23	16:49 (T77)	17:50	50	17:15 (T77)	18:24	21	07:58 (T76)	19:58	36	19:13 (T42)	20:29	29	20:06 (T41)	20:58
4	07:57		16:26 (T77)	07:40		16:26 (T77)	07:02		07:40 (T76)	07:11		18:37 (T42)	06:26		19:37 (T41)	06:00
	17:16	24	16:50 (T77)	17:51	49	17:15 (T77)	18:25	16	07:56 (T76)	19:59	34	19:11 (T42)	20:30	31	20:08 (T41)	20:59
5	07:57		16:26 (T77)	07:39		16:26 (T77)	07:01		07:43 (T76)	07:09		18:39 (T42)	06:25		19:38 (T41)	06:00
	17:17	25	16:51 (T77)	17:52	48	17:14 (T77)	18:26	8	07:51 (T76)	20:00	29	19:08 (T42)	20:31	31	20:09 (T41)	21:00
6	07:57		16:26 (T77)	07:38		16:26 (T77)	06:59			07:08		18:41 (T42)	06:24		19:38 (T41)	05:59
	17:17	26	16:52 (T77)	17:54	47	17:13 (T77)	18:27			20:00	25	19:06 (T42)	20:32	32	20:10 (T41)	21:00
7	07:57		16:24 (T77)	07:37		16:27 (T77)	06:58			07:06		18:43 (T42)	06:23		19:38 (T41)	05:59
	17:18	28	16:52 (T77)	17:55	46	17:13 (T77)	18:29			20:01	20	19:03 (T42)	20:33	33	20:11 (T41)	21:01
8	07:57		16:24 (T77)	07:36		16:28 (T77)	07:56		18:55 (T42)	07:05		18:48 (T42)	06:22		19:38 (T41)	05:59
	17:19	29	16:53 (T77)	17:56	45	17:13 (T77)	19:30	13	19:08 (T42)	20:02	11	18:59 (T42)	20:34	33	20:11 (T41)	21:02
9	07:57		16:24 (T77)	07:35		16:29 (T77)	07:54		18:51 (T42)	07:03			06:20		19:39 (T41)	05:59
	17:20	30	16:54 (T77)	17:57	43	17:12 (T77)	19:31	19	19:10 (T42)	20:03			20:35	31	20:10 (T41)	21:02
10	07:57		16:24 (T77)	07:34		16:30 (T77)	07:53		18:47 (T42)	07:01			06:19		19:38 (T41)	05:59
	17:21	32	16:56 (T77)	17:59	42	17:12 (T77)	19:32	23	19:10 (T42)	20:05			20:36	31	20:09 (T41)	21:03
11	07:57		16:24 (T77)	07:32		16:30 (T77)	07:51		18:45 (T42)	07:00			06:18		19:39 (T41)	05:58
	17:23	32	16:56 (T77)	18:00	40	17:10 (T77)	19:33	26	19:11 (T42)	20:06			20:37	29	20:08 (T41)	21:04
12	07:56		16:24 (T77)	07:31		07:51 (T76)	07:50		18:43 (T42)	06:58			06:17		19:40 (T41)	05:58
	17:24	34	16:58 (T77)	18:01	41	17:09 (T77)	19:34	30	19:13 (T42)	20:07			20:38	28	20:08 (T41)	21:04
13	07:56		16:24 (T77)	07:30		07:50 (T76)	07:48		18:41 (T42)	06:57			06:16		19:40 (T41)	05:58
	17:25	35	16:59 (T77)	18:02	42	17:08 (T77)	19:35	33	19:14 (T42)	20:08			20:39	27	20:07 (T41)	21:05
14	07:56		16:23 (T77)	07:29		07:48 (T76)	07:46		18:39 (T42)	06:55			06:15		19:41 (T41)	05:58
	17:26	37	17:00 (T77)	18:04	43	17:06 (T77)	19:36	36	19:15 (T42)	20:09			20:40	25	20:06 (T41)	21:05
15	07:55		16:23 (T77)	07:27		07:47 (T76)	07:45		18:39 (T42)	06:53			06:14		19:42 (T41)	05:58
	17:27	38	17:01 (T77)	18:05	42	17:04 (T77)	19:38	37	19:16 (T42)	20:10			20:42	23	20:05 (T41)	21:05
16	07:55		16:23 (T77)	07:26		07:46 (T76)	07:43		18:37 (T42)	06:52			06:13		19:44 (T41)	05:58
	17:28	39	17:02 (T77)	18:06	39	17:02 (T77)	19:39	40	19:17 (T42)	20:11			20:42	21	20:05 (T41)	21:06
17	07:54		16:23 (T77)	07:25		07:44 (T76)	07:41		18:36 (T42)	06:50			06:12		19:45 (T41)	05:58
	17:29	41	17:04 (T77)	18:07	34	16:58 (T77)	19:40	42	19:18 (T42)	20:12			20:43	19	20:04 (T41)	21:06
18	07:54		16:23 (T77)	07:23		07:43 (T76)	07:40		18:36 (T42)	06:49			06:11		19:47 (T41)	05:58
	17:30	42	17:05 (T77)	18:09	21	08:04 (T76)	19:41	44	19:20 (T42)	20:13			20:44	15	20:02 (T41)	21:07
19	07:53		16:23 (T77)	07:22		07:42 (T76)	07:38		18:35 (T42)	06:47			06:10		19:49 (T41)	05:58
	17:32	44	17:07 (T77)	18:10	23	08:05 (T76)	19:42	46	19:21 (T42)	20:14			20:45	10	19:59 (T41)	21:07
20	07:53		16:23 (T77)	07:20		07:40 (T76)	07:36		18:34 (T42)	06:46			06:09			05:59
	17:33	44	17:07 (T77)	18:11	25	08:05 (T76)	19:43	47	19:21 (T42)	20:15			20:46			21:07
21	07:52		16:22 (T77)	07:19		07:39 (T76)	07:35		18:34 (T42)	06:44			06:09			05:59
	17:34	46	17:08 (T77)	18:12	27	08:06 (T76)	19:44	49	19:23 (T42)	20:16			20:47			21:08
22	07:52		16:23 (T77)	07:18		07:37 (T76)	07:33		18:33 (T42)	06:43		19:50 (T41)	06:08			05:59
	17:35	47	17:10 (T77)	18:13	28	08:05 (T76)	19:45	50	19:23 (T42)	20:17	6	19:56 (T41)	20:48			21:08
23	07:51		16:23 (T77)	07:16		07:36 (T76)	07:31		18:32 (T42)	06:41		19:47 (T41)	06:07			05:59
	17:36	48	17:11 (T77)	18:15	30	08:06 (T76)	19:46	50	19:22 (T42)	20:18	10	19:57 (T41)	20:49			21:08
24	07:50		16:22 (T77)	07:15		07:34 (T76)	07:30		18:33 (T42)	06:40		19:45 (T41)	06:06			05:59
	17:38	50	17:12 (T77)	18:16	31	08:05 (T76)	19:47	50	19:23 (T42)	20:19	13	19:58 (T41)	20:50			21:08
25	07:49		16:22 (T77)	07:13		07:33 (T76)	07:28		18:32 (T42)	06:38		19:44 (T41)	06:06			06:00
	17:39	50	17:12 (T77)	18:17	32	08:05 (T76)	19:48	50	19:22 (T42)	20:21	15	19:59 (T41)	20:51			21:08
26	07:49		16:22 (T77)	07:12		07:33 (T76)	07:26		18:32 (T42)	06:37		19:42 (T41)	06:05			06:00
	17:40	51	17:13 (T77)	18:18	31	08:04 (T76)	19:50	49	19:21 (T42)	20:22	17	19:59 (T41)	20:52			21:08
27	07:48		16:23 (T77)	07:10		07:34 (T76)	07:24		18:32 (T42)	06:36		19:41 (T41)	06:04			06:00
	17:41	51	17:14 (T77)	18:19	30	08:04 (T76)	19:51	48	19:20 (T42)	20:23	20	20:01 (T41)	20:53			21:08
28	07:47		16:23 (T77)	07:09		07:34 (T76)	07:23		18:33 (T42)	06:34		19:40 (T41)	06:04			06:01
	17:42	51	17:14 (T77)	18:21	28	08:02 (T76)	19:52	47	19:20 (T42)	20:24	22	20:02 (T41)	20:54			21:09
29	07:46		16:23 (T77)				07:21		18:33 (T42)	06:33		19:39 (T41)	06:03			06:01
	17:44	51	17:14 (T77)				19:53	46	19:19 (T42)	20:25	23	20:02 (T41)	20:54			21:09
30	07:45		16:24 (T77)				07:19		18:33 (T42)	06:32		19:39 (T41)	06:02			06:02
	17:45	50	17:14 (T77)				19:54	44	19:17 (T42)	20:26	25	20:04 (T41)	20:55			21:08
31	07:44		16:24 (T77)				07:18		18:34 (T42)				06:02			
	17:46	51	17:15 (T77)				19:55	43	19:17 (T42)				20:56			
Potential sun hours	297			297			370			399			448			453
Total, worst case		1192			1058			1057			386			503		
Sun reduction		0.31			0.40			0.44			0.52			0.57		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.73			0.67			0.64			0.62			0.57		
Total reduction		0.23			0.27			0.29			0.33			0.33		
Total, real		275			289			306			127			166		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 137 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7798)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		06:26		19:50 (T41)	06:57			07:27		18:21 (T42)	07:02	
	21:08		20:50	29	20:19 (T41)	20:07			19:15	31	18:52 (T42)	17:28	42
2	06:03		06:27		19:49 (T41)	06:58			07:29		18:22 (T42)	07:03	
	21:08		20:49	30	20:19 (T41)	20:06			19:13	28	18:50 (T42)	17:27	44
3	06:03		06:28		19:49 (T41)	06:59			07:30		18:24 (T42)	07:04	
	21:08		20:48	31	20:20 (T41)	20:04			19:11	25	18:49 (T42)	17:26	46
4	06:04		06:29		19:48 (T41)	07:00		18:45 (T42)	07:31		18:26 (T42)	07:06	
	21:08		20:47	32	20:20 (T41)	20:02	11	18:56 (T42)	19:10	21	18:47 (T42)	17:24	46
5	06:04		06:30		19:48 (T41)	07:01		18:41 (T42)	07:32		18:30 (T42)	07:07	
	21:08		20:46	33	20:21 (T41)	20:01	19	19:00 (T42)	19:08	16	18:46 (T42)	17:23	47
6	06:05		06:31		19:48 (T41)	07:02		18:37 (T42)	07:33		18:36 (T42)	07:08	
	21:08		20:44	32	20:20 (T41)	19:57	25	19:02 (T42)	19:06	5	18:41 (T42)	17:22	48
7	06:05		06:32		19:47 (T41)	07:03		18:35 (T42)	07:34			07:09	
	21:07		20:43	32	20:19 (T41)	19:56	29	19:04 (T42)	19:05			17:21	49
8	06:06		06:33		19:47 (T41)	07:04		18:33 (T42)	07:35			07:10	
	21:07		20:42	31	20:18 (T41)	19:54	33	19:06 (T42)	19:03			17:20	50
9	06:07		06:34		19:47 (T41)	07:05		18:31 (T42)	07:36		08:16 (T76)	07:12	
	21:07		20:41	30	20:17 (T41)	19:52	36	19:07 (T42)	19:01	13	08:29 (T76)	17:19	51
10	06:07		06:35		19:47 (T41)	07:06		18:28 (T42)	07:37		08:13 (T76)	07:13	
	21:06		20:39	29	20:16 (T41)	19:51	39	19:07 (T42)	19:00	18	08:31 (T76)	17:18	51
11	06:08		06:36		19:47 (T41)	07:07		18:27 (T42)	07:38		08:11 (T76)	07:14	
	21:06		20:38	27	20:14 (T41)	19:49	41	19:08 (T42)	18:58	22	08:33 (T76)	17:17	50
12	06:09		06:37		19:47 (T41)	07:08		18:25 (T42)	07:39		08:09 (T76)	07:15	
	21:06		20:37	26	20:13 (T41)	19:47	43	19:08 (T42)	18:57	25	08:34 (T76)	17:16	51
13	06:10		06:38		19:47 (T41)	07:09		18:24 (T42)	07:40		08:08 (T76)	07:16	
	21:05		20:36	25	20:12 (T41)	19:45	45	19:09 (T42)	18:55	27	08:35 (T76)	17:15	51
14	06:10		06:39		19:48 (T41)	07:10		18:23 (T42)	07:41		08:06 (T76)	07:18	
	21:05		20:34	23	20:11 (T41)	19:44	46	19:09 (T42)	18:54	29	08:35 (T76)	17:14	51
15	06:11		06:40		19:48 (T41)	07:11		18:22 (T42)	07:42		08:06 (T76)	07:19	
	21:04		20:33	21	20:09 (T41)	19:42	47	19:09 (T42)	18:52	31	08:37 (T76)	17:13	51
16	06:12		06:41		19:48 (T41)	07:12		18:21 (T42)	07:44		08:06 (T76)	07:20	
	21:03		20:31	19	20:07 (T41)	19:40	48	19:09 (T42)	18:50	31	08:37 (T76)	17:12	51
17	06:13		06:42		19:49 (T41)	07:13		18:20 (T42)	07:45		08:05 (T76)	07:21	
	21:03		20:30	17	20:06 (T41)	19:39	49	19:09 (T42)	18:49	32	08:37 (T76)	17:11	50
18	06:14		06:43		19:50 (T41)	07:14		18:20 (T42)	07:46		08:06 (T76)	07:22	
	21:02		20:29	14	20:04 (T41)	19:37	49	19:09 (T42)	18:47	31	08:37 (T76)	17:11	50
19	06:14		06:44		19:51 (T41)	07:15		18:19 (T42)	07:47		08:07 (T76)	07:23	
	21:02		20:27	12	20:03 (T41)	19:35	50	19:09 (T42)	18:46	29	08:36 (T76)	17:10	48
20	06:15		06:45		19:53 (T41)	07:16		18:19 (T42)	07:48		08:08 (T76)	07:25	
	21:01		20:26	9	20:02 (T41)	19:33	50	19:09 (T42)	18:44	28	08:36 (T76)	17:09	47
21	06:16		06:46		19:55 (T41)	07:17		18:18 (T42)	07:49		08:10 (T76)	07:26	
	21:00		20:24	5	20:00 (T41)	19:32	50	19:08 (T42)	18:43	26	08:36 (T76)	17:08	46
22	06:17		06:47			07:18		18:18 (T42)	07:50		08:11 (T76)	07:27	
	20:59		20:23			19:30	50	19:08 (T42)	18:41	25	08:36 (T76)	17:08	44
23	06:18		06:48			07:19		18:18 (T42)	07:51		08:12 (T76)	07:28	
	20:59		20:21			19:28	48	19:06 (T42)	18:40	23	08:35 (T76)	17:07	44
24	06:19		06:49		20:01 (T41)	07:20		18:18 (T42)	07:53		08:13 (T76)	07:29	
	20:58	7	20:20		20:08 (T41)	19:27	46	19:04 (T42)	18:39	28	17:24 (T77)	17:07	42
25	06:20		06:50		19:58 (T41)	07:21		18:18 (T42)	07:54		08:15 (T76)	07:30	
	20:57	13	20:18		20:11 (T41)	19:25	45	19:03 (T42)	18:37	37	17:30 (T77)	17:06	41
26	06:21		06:51		19:57 (T41)	07:22		18:18 (T42)	07:55		08:16 (T76)	07:32	
	20:56	16	20:17		20:13 (T41)	19:23	43	19:01 (T42)	18:36	40	17:33 (T77)	17:06	39
27	06:22		06:52		19:55 (T41)	07:23		18:18 (T42)	07:56		08:17 (T76)	07:33	
	20:55	20	20:15		20:15 (T41)	19:22	41	18:59 (T42)	18:34	43	17:35 (T77)	17:05	39
28	06:22		06:53		19:54 (T41)	07:24		18:19 (T42)	07:57		08:18 (T76)	07:34	
	20:54	22	20:14		20:16 (T41)	19:20	38	18:57 (T42)	18:33	43	17:36 (T77)	17:05	37
29	06:23		06:54		19:52 (T41)	07:25		18:19 (T42)	07:58		08:19 (T76)	07:35	
	20:53	24	20:12		20:16 (T41)	19:18	37	18:56 (T42)	18:32	43	17:37 (T77)	17:04	35
30	06:24		06:55		19:51 (T41)	07:26		18:20 (T42)	08:00		08:21 (T76)	07:36	
	20:52	26	20:10		20:17 (T41)	19:16	34	18:54 (T42)	18:30	41	17:39 (T77)	17:04	34
31	06:25		06:56		19:51 (T41)				08:01		17:00 (T77)		
	20:51	27	20:09		20:18 (T41)				18:29	40	17:40 (T77)		
Potential sun hours	460		429			375			345			297	
Total, worst case		155		507			1092			831			1375
Sun reduction		0.66		0.61			0.59			0.48			0.30
Oper. time red.		1.00		1.00			1.00			1.00			1.00
Wind dir. red.		0.57		0.57			0.65			0.62			0.73
Total reduction		0.38		0.35			0.39			0.30			0.22
Total, real		59		179			429			253			307

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 145 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7805)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:55 (T36)	06:01	19:33 (T35)	06:02	19:45 (T35)	06:26	19:34 (T35)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	72	20:05 (T35)	20:57 34	20:07 (T35)	21:09 22	20:07 (T35)	20:50 49	20:23 (T35)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:14		06:29		06:56 (T36)	06:01	19:34 (T35)	06:02	19:45 (T35)	06:27	07:17 (T36)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	73	20:06 (T35)	20:58 33	20:07 (T35)	21:08 23	20:08 (T35)	20:49 59	20:23 (T35)	20:06	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:28		06:55 (T36)	06:00	19:34 (T35)	06:03	19:45 (T35)	06:28	07:14 (T36)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58		20:29	73	20:06 (T35)	20:58 32	20:06 (T35)	21:08 24	20:09 (T35)	20:48 65	20:23 (T35)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		06:56 (T36)	06:00	19:35 (T35)	06:04	19:44 (T35)	06:29	07:12 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	75	20:08 (T35)	20:59 31	20:06 (T35)	21:08 25	20:09 (T35)	20:47 68	20:22 (T35)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		06:57 (T36)	06:00	19:36 (T35)	06:04	19:44 (T35)	06:30	07:10 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	74	20:09 (T35)	21:00 30	20:06 (T35)	21:08 26	20:10 (T35)	20:46 70	20:21 (T35)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		06:58 (T36)	05:59	19:36 (T35)	06:05	19:43 (T35)	06:31	07:09 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	73	20:10 (T35)	21:01 29	20:05 (T35)	21:08 27	20:10 (T35)	20:44 72	20:20 (T35)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06		06:23		07:00 (T36)	05:59	19:37 (T35)	06:05	19:43 (T35)	06:32	07:08 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:33	71	20:11 (T35)	21:01 27	20:04 (T35)	21:07 29	20:12 (T35)	20:43 72	20:19 (T35)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:05		06:21		07:01 (T36)	05:59	19:38 (T35)	06:06	19:42 (T35)	06:33	07:07 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	69	20:12 (T35)	21:02 26	20:04 (T35)	21:07 30	20:12 (T35)	20:42 73	20:18 (T35)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		07:02 (T36)	05:59	19:39 (T35)	06:07	19:42 (T35)	06:34	07:06 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	67	20:12 (T35)	21:02 25	20:04 (T35)	21:07 31	20:13 (T35)	20:41 73	20:17 (T35)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		07:04 (T36)	05:58	19:39 (T35)	06:07	19:41 (T35)	06:35	07:05 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	63	20:12 (T35)	21:03 24	20:03 (T35)	21:06 33	20:14 (T35)	20:40 73	20:16 (T35)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		07:08 (T36)	05:58	19:40 (T35)	06:08	19:40 (T35)	06:36	07:04 (T36)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	55	20:12 (T35)	21:04 22	20:02 (T35)	21:06 34	20:14 (T35)	20:38 74	20:15 (T35)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58	07:17 (T36)	06:17		19:23 (T35)	05:58	19:41 (T35)	06:09	19:40 (T35)	06:37	07:03 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07 4	07:21 (T36)	20:39	49	20:12 (T35)	21:04 21	20:02 (T35)	21:06 35	20:15 (T35)	20:37 72	20:13 (T35)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56	07:16 (T36)	06:16		19:23 (T35)	05:58	19:42 (T35)	06:09	19:40 (T35)	06:38	07:03 (T36)	07:09	07:40	07:16	07:48
	17:25	18:02	19:35	20:08 9	07:25 (T36)	20:40	49	20:12 (T35)	21:05 20	20:02 (T35)	21:05 36	20:16 (T35)	20:36 72	20:12 (T35)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55	07:14 (T36)	06:15		19:24 (T35)	05:58	19:42 (T35)	06:10	19:40 (T35)	06:39	07:01 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09 13	07:27 (T36)	20:41	48	20:12 (T35)	21:05 20	20:02 (T35)	21:05 37	20:17 (T35)	20:34 71	20:10 (T35)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53	07:12 (T36)	06:14		19:24 (T35)	05:58	19:43 (T35)	06:11	19:39 (T35)	06:40	07:01 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:38	20:10 16	07:28 (T36)	20:42	48	20:12 (T35)	21:06 18	20:01 (T35)	21:04 38	20:17 (T35)	20:33 69	20:09 (T35)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	07:11 (T36)	06:13		19:24 (T35)	05:58	19:44 (T35)	06:12	19:38 (T35)	06:41	07:02 (T36)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11 19	07:30 (T36)	20:43	48	20:12 (T35)	21:06 17	20:01 (T35)	21:04 40	20:18 (T35)	20:31 65	20:07 (T35)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	07:09 (T36)	06:12		19:25 (T35)	05:58	19:44 (T35)	06:13	19:38 (T35)	06:42	07:03 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12 21	07:30 (T36)	20:44	47	20:12 (T35)	21:06 17	20:01 (T35)	21:03 41	20:19 (T35)	20:30 62	20:06 (T35)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49	07:08 (T36)	06:11		19:25 (T35)	05:58	19:45 (T35)	06:13	19:38 (T35)	06:43	07:04 (T36)	07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13 24	07:32 (T36)	20:45	47	20:12 (T35)	21:07 16	20:01 (T35)	21:02 41	20:19 (T35)	20:29 58	20:05 (T35)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47	07:06 (T36)	06:10		19:25 (T35)	05:58	19:46 (T35)	06:14	19:38 (T35)	06:44	07:05 (T36)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14 26	07:32 (T36)	20:45	47	20:12 (T35)	21:07 15	20:01 (T35)	21:02 42	20:20 (T35)	20:27 52	20:03 (T35)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	07:05 (T36)	06:09		19:25 (T35)	05:58	19:46 (T35)	06:15	19:37 (T35)	06:45	07:06 (T36)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15 28	07:33 (T36)	20:46	46	20:11 (T35)	21:07 15	20:01 (T35)	21:01 43	20:20 (T35)	20:26 48	20:02 (T35)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	07:03 (T36)	06:08		19:26 (T35)	05:59	19:46 (T35)	06:16	19:36 (T35)	06:46	07:07 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16 29	07:32 (T36)	20:47	45	20:11 (T35)	21:08 15	20:01 (T35)	21:00 44	20:20 (T35)	20:24 40	20:00 (T35)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	07:02 (T36)	06:08		19:27 (T35)	05:59	19:46 (T35)	06:17	19:36 (T35)	06:47	07:08 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17 42	19:56 (T35)	20:48	44	20:11 (T35)	21:08 15	20:01 (T35)	20:59 45	20:21 (T35)	20:23 29	07:37 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	07:01 (T36)	06:07		19:27 (T35)	05:59	19:46 (T35)	06:18	19:36 (T35)	06:48	07:09 (T36)	07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18 48	19:57 (T35)	20:49	43	20:10 (T35)	21:08 15	20:01 (T35)	20:59 45	20:21 (T35)	20:21 27	07:36 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	06:59 (T36)	06:06		19:27 (T35)	05:59	19:47 (T35)	06:19	19:36 (T35)	06:49	07:10 (T36)	07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20 54	19:58 (T35)	20:50	43	20:10 (T35)	21:08 16	20:03 (T35)	20:58 46	20:22 (T35)	20:20 25	07:35 (T36)	19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	06:58 (T36)	06:05		19:28 (T35)	06:00	19:46 (T35)	06:20	19:36 (T35)	06:50	07:11 (T36)	07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21 58	19:59 (T35)	20:51	42	20:10 (T35)	21:08 17	20:03 (T35)	20:57 46	20:22 (T35)	20:18 23	07:34 (T36)	19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:56 (T36)	06:05		19:29 (T35)	06:00	19:46 (T35)	06:20	19:36 (T35)	06:51	07:12 (T36)	07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22 62	19:59 (T35)	20:52	40	20:09 (T35)	21:08 17	20:03 (T35)	20:56 47	20:23 (T35)	20:17 21	07:33 (T36)	19:23	18:36	17:06	17:08
27	07:48	07:10	07:24	06:36	06:55 (T36)	06:04		19:29 (T35)	06:00	19:46 (T35)	06:21	19:34 (T35)	06:52	07:13 (T36)	07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23 66	20:01 (T35)	20:53	40	20:09 (T35)	21:09 18	20:04 (T35)	20:55 48	20:22 (T35)	20:15 19	07:32 (T36)	19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	06:54 (T36)	06:03		19:30 (T35)	06:01	19:46 (T35)	06:22	19:34 (T35)	06:53	07:14 (T36)	07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24 69	20:02 (T35)	20:54	39	20:09 (T35)	21:09 18	20:04 (T35)	20:54 48	20:22 (T35)	20:14 16	07:30 (T36)	19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:54 (T36)	06:03		19:30 (T35)	06:01	19:46 (T35)	06:23	19:34 (T35)	06:54	07:15 (T36)	07:25	07:58	07:35	07:57
	17:44		19:53	20:25 70	20:02 (T35)	20:55	38	20:08 (T35)	21:09 20	20:06 (T35)	20:53 49	20:23 (T35)	20:12 13	07:28 (T36)	19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	06:54 (T36)	06:02		19:31 (T35)	06:01	19:45 (T35)	06:24	19:34 (T35)	06:55	07:16 (T36)	07:26	08:00	07:36	07:57
	17:45		19:54	20:26 73	20:04 (T35)	20:55	37	20:08 (T35)	21:09 21	20:06 (T35)	20:52 49	20:23 (T35)	20:10 9	07:25 (T36)	19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:32 (T35)			06:25	19:34 (T35)	06:56	07:17 (T36)		08:01		07:57
	17:46		19:55			20:56	35	20:07 (T35)			20:51 49	20:23 (T35)	20:09 4	07:21 (T36)		18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287	
Total, worst case					731		1640		644		1173		1543					
Sun reduction					0.52		0.57		0.64		0.66		0.61					
Oper. time red.					1.00		1.00		1.00		1.00		1.00					
Wind dir. red.					0.64		0.58		0.57		0.57		0.62					
Total reduction					0.33		0.33		0.36		0.37		0.38					
Total, real					243		546		234		439		583					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 197 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7850)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June		
1	07:58	15:49 (T11)	07:44		16:09 (T11)	07:07	07:44 (T10)	07:16	07:40 (T9)	06:30	07:04 (T8)	06:01	06:23 (T7)
	17:13	54 16:43 (T11)	17:47	37	16:46 (T11)	18:22	43 08:27 (T10)	19:56	43 08:23 (T9)	20:27	86 08:33 (T9)	20:57	46 08:08 (T9)
2	07:58	15:50 (T11)	07:43		16:11 (T11)	07:06	07:44 (T10)	07:14	07:37 (T9)	06:29	07:14 (T9)	06:01	06:22 (T7)
	17:14	54 16:44 (T11)	17:49	33	16:44 (T11)	18:23	42 08:26 (T10)	19:57	48 08:25 (T9)	20:28	78 08:32 (T9)	20:58	47 08:07 (T9)
3	07:58	15:50 (T11)	07:42		16:12 (T11)	07:04	07:46 (T10)	07:13	07:35 (T9)	06:27	07:13 (T9)	06:00	06:22 (T7)
	17:14	54 16:44 (T11)	17:50	31	16:43 (T11)	18:24	39 08:25 (T10)	19:58	52 08:27 (T9)	20:29	78 08:31 (T9)	20:59	45 08:06 (T9)
4	07:58	15:50 (T11)	07:41		08:02 (T10)	07:03	07:46 (T10)	07:11	07:33 (T9)	06:26	07:14 (T9)	06:00	06:22 (T7)
	17:15	55 16:45 (T11)	17:51	35	16:41 (T11)	18:25	37 08:23 (T10)	19:59	55 08:28 (T9)	20:30	77 08:31 (T9)	21:00	43 08:05 (T9)
5	07:58	15:51 (T11)	07:40		08:00 (T10)	07:01	07:47 (T10)	07:09	07:31 (T9)	06:25	07:14 (T9)	06:00	06:21 (T7)
	17:16	54 16:45 (T11)	17:52	38	16:39 (T11)	18:26	34 08:21 (T10)	20:00	58 08:29 (T9)	20:32	76 08:30 (T9)	21:00	41 08:03 (T9)
6	07:58	15:51 (T11)	07:39		07:59 (T10)	06:59	07:49 (T10)	07:08	07:29 (T9)	06:24	07:15 (T9)	05:59	06:21 (T7)
	17:17	55 16:46 (T11)	17:54	35	16:36 (T11)	18:27	30 08:19 (T10)	20:00	62 08:31 (T9)	20:33	75 08:30 (T9)	21:01	39 08:02 (T9)
7	07:58	15:52 (T11)	07:37		07:58 (T10)	06:58	07:51 (T10)	07:06	07:27 (T9)	06:23	07:15 (T9)	05:59	06:21 (T7)
	17:18	55 16:47 (T11)	17:55	23	08:21 (T10)	18:29	26 08:17 (T10)	20:02	65 08:32 (T9)	20:34	74 08:29 (T9)	21:02	37 08:01 (T9)
8	07:58	15:53 (T11)	07:36		07:56 (T10)	07:56	08:54 (T10)	07:05	07:27 (T9)	06:21	07:15 (T9)	05:59	06:21 (T7)
	17:19	54 16:47 (T11)	17:56	26	08:22 (T10)	19:30	20 09:14 (T10)	20:03	66 08:33 (T9)	20:35	73 08:28 (T9)	21:02	33 07:59 (T9)
9	07:57	15:52 (T11)	07:35		07:55 (T10)	07:55	08:57 (T10)	07:03	07:25 (T9)	06:20	07:15 (T9)	05:58	06:21 (T7)
	17:20	55 16:47 (T11)	17:57	29	08:24 (T10)	19:31	12 09:09 (T10)	20:04	68 08:33 (T9)	20:36	72 08:27 (T9)	21:03	27 07:56 (T9)
10	07:57	15:53 (T11)	07:34		07:54 (T10)	07:53		07:01	07:23 (T9)	06:19	07:16 (T9)	05:58	06:20 (T7)
	17:21	55 16:48 (T11)	17:59	31	08:25 (T10)	19:32		20:05	71 08:34 (T9)	20:37	71 08:27 (T9)	21:03	23 06:43 (T7)
11	07:57	15:54 (T11)	07:33		07:53 (T10)	07:51		07:00	07:23 (T9)	06:18	07:16 (T9)	05:58	06:20 (T7)
	17:22	54 16:48 (T11)	18:00	34	08:27 (T10)	19:33		20:06	72 08:35 (T9)	20:38	70 08:26 (T9)	21:04	24 06:44 (T7)
12	07:57	15:53 (T11)	07:31		07:51 (T10)	07:50		06:58	07:21 (T9)	06:17	07:17 (T9)	05:58	06:20 (T7)
	17:23	55 16:48 (T11)	18:01	36	08:27 (T10)	19:34		20:07	74 08:35 (T9)	20:39	68 08:25 (T9)	21:05	24 06:44 (T7)
13	07:56	15:54 (T11)	07:30		07:50 (T10)	07:48		06:57	07:21 (T9)	06:16	07:17 (T9)	05:58	06:20 (T7)
	17:24	55 16:49 (T11)	18:02	38	08:28 (T10)	19:35		20:08	75 08:36 (T9)	20:40	68 08:25 (T9)	21:05	25 06:45 (T7)
14	07:56	15:55 (T11)	07:29		07:49 (T10)	07:46		06:55	07:14 (T8)	06:15	07:18 (T9)	05:58	06:20 (T7)
	17:26	55 16:50 (T11)	18:04	40	08:29 (T10)	19:37		20:09	80 08:36 (T9)	20:41	66 08:24 (T9)	21:05	25 06:45 (T7)
15	07:56	15:55 (T11)	07:28		07:47 (T10)	07:45		06:53	07:12 (T8)	06:14	07:19 (T9)	05:58	06:20 (T7)
	17:27	54 16:49 (T11)	18:05	42	08:29 (T10)	19:38		20:10	83 08:35 (T9)	20:42	64 08:23 (T9)	21:06	25 06:45 (T7)
16	07:55	15:56 (T11)	07:26		07:46 (T10)	07:43		06:52	07:11 (T8)	06:13	07:19 (T9)	05:58	06:20 (T7)
	17:28	54 16:50 (T11)	18:06	44	08:30 (T10)	19:39		20:11	85 08:36 (T9)	20:43	63 08:22 (T9)	21:06	26 06:46 (T7)
17	07:55	15:56 (T11)	07:25		07:45 (T10)	07:41		06:50	07:09 (T8)	06:12	07:21 (T9)	05:58	06:20 (T7)
	17:29	54 16:50 (T11)	18:07	46	08:31 (T10)	19:40		20:12	87 08:36 (T9)	20:44	61 08:22 (T9)	21:07	26 06:46 (T7)
18	07:54	15:57 (T11)	07:24		07:43 (T10)	07:40		06:49	07:08 (T8)	06:11	07:21 (T9)	05:58	06:20 (T7)
	17:30	54 16:51 (T11)	18:09	48	08:31 (T10)	19:41		20:13	88 08:36 (T9)	20:45	60 08:21 (T9)	21:07	26 06:46 (T7)
19	07:54	15:57 (T11)	07:22		07:43 (T10)	07:38		06:47	07:06 (T8)	06:10	07:22 (T9)	05:58	06:21 (T7)
	17:31	53 16:50 (T11)	18:10	48	08:31 (T10)	19:42		20:14	90 08:36 (T9)	20:46	58 08:20 (T9)	21:07	26 06:47 (T7)
20	07:53	15:57 (T11)	07:21		07:42 (T10)	07:36		06:46	07:05 (T8)	06:09	07:23 (T9)	05:58	06:21 (T7)
	17:32	53 16:50 (T11)	18:11	49	08:31 (T10)	19:43		20:15	91 08:36 (T9)	20:47	56 08:19 (T9)	21:08	26 06:47 (T7)
21	07:53	15:59 (T11)	07:19		07:42 (T10)	07:35		06:44	07:03 (T8)	06:08	07:23 (T9)	05:58	06:21 (T7)
	17:34	52 16:51 (T11)	18:12	49	08:31 (T10)	19:44		20:17	92 08:35 (T9)	20:48	55 08:18 (T9)	21:08	26 06:47 (T7)
22	07:52	15:59 (T11)	07:18		07:43 (T10)	07:33		06:43	07:02 (T8)	06:08	07:25 (T9)	05:59	06:21 (T7)
	17:35	51 16:50 (T11)	18:13	48	08:31 (T10)	19:45		20:18	94 08:36 (T9)	20:49	53 08:18 (T9)	21:08	26 06:47 (T7)
23	07:51	16:00 (T11)	07:16		07:42 (T10)	07:31		06:41	07:01 (T8)	06:07	07:26 (T9)	05:59	06:21 (T7)
	17:36	50 16:50 (T11)	18:15	49	08:31 (T10)	19:46		20:19	95 08:36 (T9)	20:50	51 08:17 (T9)	21:08	26 06:47 (T7)
24	07:51	16:00 (T11)	07:15		07:43 (T10)	07:30		06:40	06:59 (T8)	06:06	07:26 (T9)	05:59	06:22 (T7)
	17:37	50 16:50 (T11)	18:16	48	08:31 (T10)	19:47		20:20	96 08:35 (T9)	20:51	50 08:16 (T9)	21:09	26 06:48 (T7)
25	07:50	16:02 (T11)	07:13		07:42 (T10)	07:28		06:38	06:58 (T8)	06:05	07:28 (T9)	05:59	06:22 (T7)
	17:39	48 16:50 (T11)	18:17	48	08:30 (T10)	19:49		20:21	97 08:35 (T9)	20:51	48 08:16 (T9)	21:09	26 06:48 (T7)
26	07:49	16:02 (T11)	07:12		07:42 (T10)	07:26		06:37	06:56 (T8)	06:05	07:29 (T9)	06:00	06:22 (T7)
	17:40	48 16:50 (T11)	18:18	47	08:29 (T10)	19:50		20:22	98 08:34 (T9)	20:52	45 08:14 (T9)	21:09	26 06:48 (T7)
27	07:48	16:03 (T11)	07:10		07:43 (T10)	07:25		06:36	06:57 (T8)	06:04	07:29 (T9)	06:00	06:23 (T7)
	17:41	46 16:49 (T11)	18:19	46	08:29 (T10)	19:51		20:23	97 08:34 (T9)	20:53	44 08:13 (T9)	21:09	26 06:49 (T7)
28	07:47	16:04 (T11)	07:09		07:43 (T10)	07:23		06:34	06:59 (T8)	06:03	06:25 (T7)	06:00	06:23 (T7)
	17:42	45 16:49 (T11)	18:21	44	08:27 (T10)	19:52		20:24	95 08:34 (T9)	20:54	47 08:13 (T9)	21:09	25 06:48 (T7)
29	07:47	16:05 (T11)				07:21	07:51 (T9)	06:33	06:59 (T8)	06:03	06:24 (T7)	06:01	06:24 (T7)
	17:44	43 16:48 (T11)				19:53	22 08:13 (T9)	20:25	94 08:33 (T9)	20:55	47 08:11 (T9)	21:09	25 06:49 (T7)
30	07:46	16:06 (T11)				07:19	07:46 (T9)	06:31	07:01 (T8)	06:02	06:24 (T7)	06:01	06:24 (T7)
	17:45	41 16:47 (T11)				19:54	31 08:17 (T9)	20:26	92 08:33 (T9)	20:56	49 08:11 (T9)	21:09	24 06:48 (T7)
31	07:45	16:07 (T11)				07:18	07:43 (T9)			06:02	06:23 (T7)		
	17:46	39 16:46 (T11)				19:55	38 08:21 (T9)			20:57	48 08:09 (T9)		
Potential sun hours	297		297			370		399		449		453	
Total, worst case		1599		1122			374		2363		1931		890
Sun reduction		0.31		0.40			0.44		0.52		0.57		0.64
Oper. time red.		1.00		1.00			1.00		1.00		1.00		1.00
Wind dir. red.		0.74		0.58			0.58		0.65		0.65		0.71
Total reduction		0.23		0.24			0.26		0.34		0.38		0.46
Total, real		370		264			96		810		725		408

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 197 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7850)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		06:24 (T7)	06:26		07:27 (T9)	06:57		07:22 (T9)	07:28			07:02		07:24 (T10)	07:37		15:36 (T11)
	21:09	24	06:48 (T7)	20:50	69	08:36 (T9)	20:07	72	08:34 (T9)	19:15			17:28	31	07:55 (T10)	17:03	54	16:30 (T11)
2	06:02		06:25 (T7)	06:27		07:27 (T9)	06:58		07:22 (T9)	07:29			07:03		07:25 (T10)	07:38		15:36 (T11)
	21:09	23	06:48 (T7)	20:49	70	08:37 (T9)	20:06	71	08:33 (T9)	19:13			17:27	28	07:53 (T10)	17:03	55	16:31 (T11)
3	06:03		06:25 (T7)	06:28		07:26 (T9)	06:59		07:23 (T9)	07:30			07:05		07:26 (T10)	07:39		15:36 (T11)
	21:09	23	06:48 (T7)	20:48	72	08:38 (T9)	20:04	68	08:31 (T9)	19:11			17:25	25	07:51 (T10)	17:03	55	16:31 (T11)
4	06:03		06:26 (T7)	06:29		07:26 (T9)	07:00		07:24 (T9)	07:31		08:39 (T10)	17:06		07:27 (T10)	07:40		15:37 (T11)
	21:09	31	08:03 (T9)	20:47	72	08:38 (T9)	20:02	66	08:30 (T9)	19:10	4	08:43 (T10)	17:24	22	07:49 (T10)	17:03	54	16:31 (T11)
5	06:04		06:27 (T7)	06:30		07:25 (T9)	07:01		07:24 (T9)	07:32		08:32 (T10)	07:07		07:29 (T10)	07:41		15:37 (T11)
	21:08	35	08:06 (T9)	20:46	74	08:39 (T9)	20:01	65	08:29 (T9)	19:08	17	08:49 (T10)	17:23	34	16:06 (T11)	17:03	55	16:32 (T11)
6	06:05		06:27 (T7)	06:31		07:25 (T9)	07:02		07:25 (T9)	07:33		08:29 (T10)	07:08		07:30 (T10)	07:42		15:37 (T11)
	21:08	38	08:07 (T9)	20:45	74	08:39 (T9)	19:57	62	08:27 (T9)	19:06	23	08:52 (T10)	17:22	37	16:09 (T11)	17:02	55	16:32 (T11)
7	06:05		06:28 (T7)	06:32		07:24 (T9)	07:03		07:27 (T9)	07:34		08:26 (T10)	07:09		07:33 (T10)	07:43		15:38 (T11)
	21:08	41	08:10 (T9)	20:44	76	08:40 (T9)	19:56	58	08:25 (T9)	19:05	28	08:54 (T10)	17:21	34	16:11 (T11)	17:02	54	16:32 (T11)
8	06:06		06:28 (T7)	06:33		07:24 (T9)	07:04		07:28 (T9)	07:35		08:24 (T10)	07:11		15:43 (T11)	07:44		15:39 (T11)
	21:08	43	08:11 (T9)	20:42	76	08:40 (T9)	19:54	55	08:23 (T9)	19:03	32	08:56 (T10)	17:20	31	16:14 (T11)	17:02	54	16:33 (T11)
9	06:06		06:29 (T7)	06:34		07:23 (T9)	07:05		07:29 (T9)	07:36		08:22 (T10)	07:12		15:41 (T11)	07:45		15:39 (T11)
	21:07	44	08:13 (T9)	20:41	78	08:41 (T9)	19:52	52	08:21 (T9)	19:02	35	08:57 (T10)	17:19	34	16:15 (T11)	17:02	54	16:33 (T11)
10	06:07		06:30 (T7)	06:35		07:23 (T9)	07:06		07:31 (T9)	07:37		08:20 (T10)	07:13		15:40 (T11)	07:46		15:40 (T11)
	21:07	45	08:14 (T9)	20:40	78	08:41 (T9)	19:51	48	08:19 (T9)	19:00	38	08:58 (T10)	17:18	37	16:17 (T11)	17:02	54	16:34 (T11)
11	06:08		06:30 (T7)	06:36		07:23 (T9)	07:07		07:32 (T9)	07:38		08:19 (T10)	07:14		15:38 (T11)	07:47		15:40 (T11)
	21:06	46	08:15 (T9)	20:39	78	08:41 (T9)	19:49	44	08:16 (T9)	18:58	40	08:59 (T10)	17:17	39	16:17 (T11)	17:02	54	16:34 (T11)
12	06:09		06:31 (T7)	06:37		07:12 (T8)	07:08		07:34 (T9)	07:39		08:17 (T10)	07:16		15:38 (T11)	07:48		15:40 (T11)
	21:06	47	08:17 (T9)	20:37	87	08:41 (T9)	19:47	39	08:13 (T9)	18:57	42	08:59 (T10)	17:16	41	16:19 (T11)	17:03	54	16:34 (T11)
13	06:09		06:32 (T7)	06:38		07:09 (T8)	07:09		07:37 (T9)	07:40		08:17 (T10)	07:17		15:37 (T11)	07:49		15:41 (T11)
	21:05	48	08:18 (T9)	20:36	93	08:42 (T9)	19:46	32	08:09 (T9)	18:55	44	09:01 (T10)	17:15	43	16:20 (T11)	17:03	53	16:34 (T11)
14	06:10		06:33 (T7)	06:39		07:06 (T8)	07:10		07:41 (T9)	07:42		08:16 (T10)	07:18		15:36 (T11)	07:49		15:42 (T11)
	21:05	49	08:20 (T9)	20:35	95	08:41 (T9)	19:44	23	08:04 (T9)	18:54	45	09:01 (T10)	17:14	45	16:21 (T11)	17:03	53	16:35 (T11)
15	06:11		06:33 (T7)	06:40		07:05 (T8)	07:11		07:48 (T9)	07:43		08:15 (T10)	07:19		15:36 (T11)	07:50		15:42 (T11)
	21:04	47	08:20 (T9)	20:33	96	08:41 (T9)	19:42	8	07:56 (T9)	18:52	46	09:01 (T10)	17:13	46	16:22 (T11)	17:03	54	16:36 (T11)
16	06:12		06:34 (T7)	06:41		07:04 (T8)	07:12			07:44		08:14 (T10)	07:20		15:35 (T11)	07:51		15:42 (T11)
	21:04	46	08:22 (T9)	20:32	97	08:41 (T9)	19:40			18:50	48	09:02 (T10)	17:12	48	16:23 (T11)	17:03	53	16:35 (T11)
17	06:12		07:38 (T9)	06:42		07:03 (T8)	07:13			07:45		08:14 (T10)	07:21		15:35 (T11)	07:51		15:43 (T11)
	21:03	45	08:23 (T9)	20:30	98	08:41 (T9)	19:39			18:49	48	09:02 (T10)	17:11	48	16:23 (T11)	17:04	53	16:36 (T11)
18	06:13		07:38 (T9)	06:43		07:04 (T8)	07:14			07:46		08:13 (T10)	07:23		15:34 (T11)	07:52		15:44 (T11)
	21:03	46	08:24 (T9)	20:29	97	08:41 (T9)	19:37			18:47	48	09:01 (T10)	17:10	50	16:24 (T11)	17:04	53	16:37 (T11)
19	06:14		07:37 (T9)	06:44		07:05 (T8)	07:15			07:47		08:14 (T10)	07:24		15:35 (T11)	07:53		15:44 (T11)
	21:02	49	08:26 (T9)	20:27	96	08:41 (T9)	19:35			18:46	48	09:02 (T10)	17:10	50	16:25 (T11)	17:04	53	16:37 (T11)
20	06:15		07:36 (T9)	06:45		07:06 (T8)	07:16			07:48		08:13 (T10)	07:25		15:34 (T11)	07:53		15:45 (T11)
	21:01	50	08:26 (T9)	20:26	95	08:41 (T9)	19:34			18:44	49	09:02 (T10)	17:09	51	16:25 (T11)	17:05	53	16:38 (T11)
21	06:16		07:35 (T9)	06:46		07:07 (T8)	07:17			07:49		08:13 (T10)	07:26		15:34 (T11)	07:54		15:45 (T11)
	21:00	52	08:27 (T9)	20:25	93	08:40 (T9)	19:32			18:43	49	09:02 (T10)	17:08	52	16:26 (T11)	17:05	53	16:38 (T11)
22	06:17		07:34 (T9)	06:47		07:08 (T8)	07:18			07:51		08:13 (T10)	07:27		15:33 (T11)	07:54		15:46 (T11)
	21:00	54	08:28 (T9)	20:23	92	08:40 (T9)	19:30			18:41	48	09:01 (T10)	17:08	53	16:26 (T11)	17:06	53	16:39 (T11)
23	06:18		07:34 (T9)	06:48		07:09 (T8)	07:19			07:52		08:13 (T10)	07:29		15:34 (T11)	07:55		15:46 (T11)
	20:59	55	08:29 (T9)	20:22	91	08:40 (T9)	19:28			18:40	48	09:01 (T10)	17:07	53	16:27 (T11)	17:06	53	16:39 (T11)
24	06:19		07:33 (T9)	06:49		07:10 (T8)	07:20			07:53		08:14 (T10)	07:30		15:34 (T11)	07:55		15:46 (T11)
	20:58	57	08:30 (T9)	20:20	89	08:39 (T9)	19:27			18:39	47	09:01 (T10)	17:06	54	16:28 (T11)	17:07	53	16:39 (T11)
25	06:19		07:32 (T9)	06:50		07:11 (T8)	07:21			07:54		08:15 (T10)	07:31		15:34 (T11)	07:56		15:47 (T11)
	20:57	59	08:31 (T9)	20:18	88	08:39 (T9)	19:25			18:37	45	09:00 (T10)	17:06	54	16:28 (T11)	17:07	53	16:40 (T11)
26	06:20		07:32 (T9)	06:51		07:12 (T8)	07:22			07:55		08:16 (T10)	07:32		15:34 (T11)	07:56		15:47 (T11)
	20:56	60	08:32 (T9)	20:17	86	08:38 (T9)	19:23			18:36	44	09:00 (T10)	17:05	54	16:28 (T11)	17:08	53	16:40 (T11)
27	06:21		07:30 (T9)	06:52		07:13 (T8)	07:23			07:56		08:17 (T10)	07:33		15:34 (T11)	07:56		15:47 (T11)
	20:55	62	08:32 (T9)	20:15	85	08:38 (T9)	19:22			18:34	42	08:59 (T10)	17:05	54	16:28 (T11)	17:09	53	16:40 (T11)
28	06:22		07:30 (T9)	06:53		07:14 (T8)	07:25			07:58		08:19 (T10)	07:34		15:35 (T11)	07:57		15:48 (T11)
	20:54	63	08:33 (T9)	20:14	83	08:37 (T9)	19:20			18:33	40	08:59 (T10)	17:05	55	16:30 (T11)	17:09	54	16:42 (T11)
29	06:23		07:29 (T9)	06:54		07:15 (T8)	07:26			07:59		08:20 (T10)	07:35		15:35 (T11)	07:57		15:48 (T11)
	20:54	65	08:34 (T9)	20:12	79	08:36 (T9)	19:18			18:32	38	08:58 (T10)	17:04	55	16:30 (T11)	17:10	54	16:42 (T11)
30	06:24		07:28 (T9)	06:55		07:21 (T9)	07:27			08:00		08:21 (T10)	07:36		15:35 (T11)	07:57		15:49 (T11)
	20:53	67	08:35 (T9)	20:11	75	08:36 (T9)	19:16			18:30	36	08:57 (T10)	17:04	55	16:30 (T11)	17:11	53	16:42 (T11)
31	06:25		07:28 (T9)	06:56		07:21 (T9)				08:01		08:22 (T10)				07:57		15:49 (T11)
	20:51	68	08:36 (T9)	20:09	74	08:35 (T9)				18:29	33	08:55 (T10)				17:12	54	16:43 (T11)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		1482			2606			763			1105			1313			1663	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.66			0.65			0.65			0.56			0.72			0.74	
Total reduction		0.44			0.40			0.39			0.27			0.22			0.16	
Total, real		656			1048			296			298			286			273	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 228 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7878)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43	08:04 (T44)	07:07		07:16	07:37 (T77)	06:30	06:50 (T42)	06:02	06:39 (T42)
	17:13		17:48 24	08:28 (T44)	18:22		19:56 37	08:14 (T77)	20:27 18	07:08 (T42)	20:57 31	07:10 (T42)
2	07:57		07:42	08:03 (T44)	07:06		07:15	07:37 (T77)	06:29	06:49 (T42)	06:01	06:40 (T42)
	17:14		17:49 25	08:28 (T44)	18:23		19:57 36	08:13 (T77)	20:28 20	07:09 (T42)	20:58 30	07:10 (T42)
3	07:57		07:41	08:02 (T44)	07:04		07:13	07:38 (T77)	06:28	06:47 (T42)	06:01	06:40 (T42)
	17:15		17:50 27	08:29 (T44)	18:24		19:58 35	08:13 (T77)	20:29 23	07:10 (T42)	20:58 29	07:09 (T42)
4	07:58		07:40	08:01 (T44)	07:03		07:11	07:38 (T77)	06:26	06:46 (T42)	06:00	06:41 (T42)
	17:16		17:51 28	08:29 (T44)	18:25		19:59 33	08:11 (T77)	20:30 25	07:11 (T42)	20:59 28	07:09 (T42)
5	07:57		07:39	08:00 (T44)	07:01		07:10	07:40 (T77)	06:25	06:45 (T42)	06:00	06:43 (T42)
	17:17		17:53 29	08:29 (T44)	18:26		20:00 30	08:10 (T77)	20:31 27	07:12 (T42)	21:00 26	07:09 (T42)
6	07:57		07:38	07:58 (T44)	06:59		07:08	07:40 (T77)	06:24	06:44 (T42)	06:00	06:43 (T42)
	17:18		17:54 30	08:28 (T44)	18:28		20:00 29	08:09 (T77)	20:32 28	07:12 (T42)	21:01 25	07:08 (T42)
7	07:57		07:37	07:58 (T44)	06:58		07:06	07:41 (T77)	06:23	06:43 (T42)	05:59	06:43 (T42)
	17:19		17:55 30	08:28 (T44)	18:29		20:01 26	08:07 (T77)	20:33 30	07:13 (T42)	21:01 25	07:08 (T42)
8	07:57		07:36	07:59 (T44)	07:56		07:05	07:43 (T77)	06:22	06:42 (T42)	05:59	06:44 (T42)
	17:20		17:56 28	08:27 (T44)	19:30		20:02 22	08:05 (T77)	20:34 32	07:14 (T42)	21:02 24	07:08 (T42)
9	07:57		07:35	08:00 (T44)	07:55		07:03	07:44 (T77)	06:20	06:41 (T42)	05:59	06:45 (T42)
	17:21		17:58 27	08:27 (T44)	19:31		20:04 18	08:02 (T77)	20:35 33	07:14 (T42)	21:02 22	07:07 (T42)
10	07:57		07:34	08:01 (T44)	07:53		07:01	07:47 (T77)	06:19	06:40 (T42)	05:59	06:46 (T42)
	17:22		17:59 25	08:26 (T44)	19:32		20:05 11	07:58 (T77)	20:36 34	07:14 (T42)	21:03 21	07:07 (T42)
11	07:57		07:32	08:01 (T44)	07:51		07:00		06:18	06:38 (T42)	05:58	06:47 (T42)
	17:23		18:00 24	08:25 (T44)	19:33		20:06		20:38 36	07:14 (T42)	21:04 20	07:07 (T42)
12	07:56		07:31	08:03 (T44)	07:50		06:58		06:17	06:37 (T42)	05:58	06:48 (T42)
	17:24		18:01 21	08:24 (T44)	19:34		20:07		20:39 37	07:14 (T42)	21:04 19	07:07 (T42)
13	07:56		07:30	08:05 (T44)	07:48		06:57		06:16	06:36 (T42)	05:58	06:48 (T42)
	17:25		18:03 17	08:22 (T44)	19:35		20:08		20:40 38	07:14 (T42)	21:05 17	07:05 (T42)
14	07:56		07:29	08:08 (T44)	07:46		06:55		06:15	06:36 (T42)	05:58	06:48 (T42)
	17:26		18:04 12	08:20 (T44)	19:37		20:09		20:41 39	07:15 (T42)	21:05 17	07:05 (T42)
15	07:55		07:27		07:45		06:53		06:14	06:35 (T42)	05:58	06:49 (T42)
	17:27		18:05		19:38		20:10		20:42 40	07:15 (T42)	21:06 16	07:05 (T42)
16	07:55		07:26		07:43		06:52		06:13	06:34 (T42)	05:58	06:51 (T42)
	17:28		18:06		19:39		20:11		20:43 41	07:15 (T42)	21:06 15	07:06 (T42)
17	07:54		07:25		07:41		06:50		06:12	06:33 (T42)	05:58	06:51 (T42)
	17:29		18:07		19:40		20:12		20:44 41	07:14 (T42)	21:06 14	07:05 (T42)
18	07:54		07:23		07:40	07:59 (T77)	06:49		06:11	06:33 (T42)	05:58	06:51 (T42)
	17:30		18:09		19:41 8	08:07 (T77)	20:13		20:45 41	07:14 (T42)	21:07 14	07:05 (T42)
19	07:53		07:22		07:38	07:57 (T77)	06:47		06:10	06:33 (T42)	05:58	06:52 (T42)
	17:32		18:10		19:42 13	08:10 (T77)	20:14		20:45 41	07:14 (T42)	21:07 13	07:05 (T42)
20	07:53		07:21		07:36	07:55 (T77)	06:46		06:09	06:33 (T42)	05:59	06:52 (T42)
	17:33		18:11		19:43 16	08:11 (T77)	20:15		20:46 40	07:13 (T42)	21:07 13	07:05 (T42)
21	07:52	08:13 (T44)	07:19		07:35	07:54 (T77)	06:44		06:09	06:34 (T42)	05:59	06:52 (T42)
	17:34 3	08:16 (T44)	18:12		19:44 19	08:13 (T77)	20:16		20:47 40	07:14 (T42)	21:08 13	07:05 (T42)
22	07:52	08:13 (T44)	07:18		07:33	07:52 (T77)	06:43		06:08	06:35 (T42)	05:59	06:52 (T42)
	17:35 5	08:18 (T44)	18:14		19:45 22	08:14 (T77)	20:17		20:48 39	07:14 (T42)	21:08 13	07:05 (T42)
23	07:51	08:12 (T44)	07:16		07:31	07:50 (T77)	06:41		06:07	06:35 (T42)	05:59	06:53 (T42)
	17:36 8	08:20 (T44)	18:15		19:46 25	08:15 (T77)	20:18		20:49 38	07:13 (T42)	21:08 13	07:06 (T42)
24	07:50	08:11 (T44)	07:15		07:30	07:49 (T77)	06:40		06:06	06:35 (T42)	05:59	06:53 (T42)
	17:38 10	08:21 (T44)	18:16		19:47 27	08:16 (T77)	20:20		20:50 37	07:12 (T42)	21:08 13	07:06 (T42)
25	07:50	08:10 (T44)	07:13		07:28	07:47 (T77)	06:39		06:06	06:36 (T42)	06:00	06:52 (T42)
	17:39 12	08:22 (T44)	18:17		19:49 29	08:16 (T77)	20:21		20:51 37	07:13 (T42)	21:08 14	07:06 (T42)
26	07:49	08:09 (T44)	07:12		07:26	07:45 (T77)	06:37		06:05	06:36 (T42)	06:00	06:53 (T42)
	17:40 14	08:23 (T44)	18:18		19:50 31	08:16 (T77)	20:22		20:52 36	07:12 (T42)	21:08 15	07:08 (T42)
27	07:48	08:09 (T44)	07:10		07:25	07:44 (T77)	06:36		06:04	06:37 (T42)	06:00	06:52 (T42)
	17:41 16	08:25 (T44)	18:19		19:51 32	08:16 (T77)	20:23		20:53 35	07:12 (T42)	21:09 16	07:08 (T42)
28	07:47	08:08 (T44)	07:09		07:23	07:42 (T77)	06:34	06:54 (T42)	06:04	06:37 (T42)	06:01	06:52 (T42)
	17:43 18	08:26 (T44)	18:21		19:52 34	08:16 (T77)	20:24 7	07:01 (T42)	20:54 35	07:12 (T42)	21:09 16	07:08 (T42)
29	07:46	08:07 (T44)			07:21	07:40 (T77)	06:33	06:53 (T42)	06:03	06:38 (T42)	06:01	06:52 (T42)
	17:44 19	08:26 (T44)			19:53 35	08:15 (T77)	20:25 12	07:05 (T42)	20:54 34	07:12 (T42)	21:09 17	07:09 (T42)
30	07:45	08:06 (T44)			07:20	07:38 (T77)	06:32	06:51 (T42)	06:03	06:38 (T42)	06:02	06:51 (T42)
	17:45 21	08:27 (T44)			19:54 37	08:15 (T77)	20:26 15	07:06 (T42)	20:55 33	07:11 (T42)	21:09 19	07:10 (T42)
31	07:44	08:05 (T44)			07:18	07:38 (T77)			06:02	06:39 (T42)		
	17:46 23	08:28 (T44)			19:55 37	08:15 (T77)			20:56 32	07:11 (T42)		
Potential sun hours	297		297		370		399		448		453	
Total, worst case		149		347		365		311		1060		568
Sun reduction		0.31		0.40		0.44		0.52		0.57		0.64
Oper. time red.		1.00		1.00		1.00		1.00		1.00		1.00
Wind dir. red.		0.54		0.54		0.63		0.63		0.70		0.70
Total reduction		0.16		0.21		0.27		0.32		0.39		0.44
Total, real		24		73		99		101		415		250

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 228 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7878)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:51 (T42)	06:26		06:48 (T42)	06:57			07:28			07:02		07:30 (T44)	07:37	
	21:09	20	07:11 (T42)	20:50	36	07:24 (T42)	20:07			19:15			17:28	25	07:55 (T44)	17:04	
2	06:03		06:51 (T42)	06:27		06:49 (T42)	06:58		07:46 (T77)	07:29			07:03		07:30 (T44)	07:38	
	21:08	20	07:11 (T42)	20:49	35	07:24 (T42)	20:06	11	07:57 (T77)	19:13			17:27	27	07:57 (T44)	17:03	
3	06:03		06:51 (T42)	06:28		06:50 (T42)	06:59		07:42 (T77)	07:30			07:04		07:29 (T44)	07:39	
	21:08	21	07:12 (T42)	20:48	34	07:24 (T42)	20:04	18	08:00 (T77)	19:11			17:26	28	07:57 (T44)	17:03	
4	06:04		06:50 (T42)	06:29		06:51 (T42)	07:00		07:40 (T77)	07:31			07:06		07:28 (T44)	07:40	
	21:08	22	07:12 (T42)	20:47	32	07:23 (T42)	20:02	22	08:02 (T77)	19:10			17:24	30	07:58 (T44)	17:03	
5	06:04		06:50 (T42)	06:30		06:52 (T42)	07:01		07:38 (T77)	07:32			07:07		07:28 (T44)	07:41	
	21:08	24	07:14 (T42)	20:46	31	07:23 (T42)	20:01	26	08:04 (T77)	19:08			17:23	30	07:58 (T44)	17:03	
6	06:05		06:49 (T42)	06:31		06:53 (T42)	07:02		07:36 (T77)	07:33			07:08		07:30 (T44)	07:42	
	21:08	25	07:14 (T42)	20:44	29	07:22 (T42)	19:57	29	08:05 (T77)	19:06			17:22	29	07:59 (T44)	17:03	
7	06:06		06:49 (T42)	06:32		06:54 (T42)	07:03		07:35 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	26	07:15 (T42)	20:43	28	07:22 (T42)	19:56	31	08:06 (T77)	19:05			17:21	28	07:59 (T44)	17:03	
8	06:06		06:49 (T42)	06:33		06:55 (T42)	07:04		07:33 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	27	07:16 (T42)	20:42	26	07:21 (T42)	19:54	33	08:06 (T77)	19:03			17:20	26	07:58 (T44)	17:03	
9	06:07		06:48 (T42)	06:34		06:56 (T42)	07:05		07:32 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	28	07:16 (T42)	20:41	24	07:20 (T42)	19:52	35	08:07 (T77)	19:02			17:19	25	07:59 (T44)	17:03	
10	06:08		06:48 (T42)	06:35		06:57 (T42)	07:06		07:31 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	29	07:17 (T42)	20:40	22	07:19 (T42)	19:51	36	08:07 (T77)	19:00			17:18	24	07:59 (T44)	17:03	
11	06:08		06:48 (T42)	06:36		06:58 (T42)	07:07		07:31 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	30	07:18 (T42)	20:38	20	07:18 (T42)	19:49	36	08:07 (T77)	18:58			17:17	22	07:58 (T44)	17:03	
12	06:09		06:47 (T42)	06:37		06:59 (T42)	07:08		07:29 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	31	07:18 (T42)	20:37	17	07:16 (T42)	19:47	37	08:06 (T77)	18:57			17:16	21	07:58 (T44)	17:03	
13	06:10		06:47 (T42)	06:38		07:00 (T42)	07:09		07:29 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	32	07:19 (T42)	20:36	14	07:14 (T42)	19:46	37	08:06 (T77)	18:55			17:15	19	07:58 (T44)	17:03	
14	06:10		06:47 (T42)	06:39		07:01 (T42)	07:10		07:30 (T77)	07:41			07:18		07:40 (T44)	07:49	
	21:05	33	07:20 (T42)	20:34	11	07:12 (T42)	19:44	36	08:06 (T77)	18:54			17:14	18	07:58 (T44)	17:03	
15	06:11		06:47 (T42)	06:40		07:02 (T42)	07:11		07:31 (T77)	07:43			07:19		07:41 (T44)	07:50	
	21:04	34	07:21 (T42)	20:33	6	07:08 (T42)	19:42	34	08:05 (T77)	18:52			17:13	16	07:57 (T44)	17:03	
16	06:12		06:45 (T42)	06:41			07:12		07:32 (T77)	07:44			07:20		07:43 (T44)	07:50	
	21:03	36	07:21 (T42)	20:32			19:40	33	08:05 (T77)	18:50			17:12	14	07:57 (T44)	17:04	
17	06:13		06:45 (T42)	06:42			07:13		07:33 (T77)	07:45			07:21		07:44 (T44)	07:51	
	21:03	36	07:21 (T42)	20:30			19:39	31	08:04 (T77)	18:49			17:12	12	07:56 (T44)	17:04	
18	06:14		06:45 (T42)	06:43			07:14		07:34 (T77)	07:46			07:22		07:45 (T44)	07:52	
	21:02	37	07:22 (T42)	20:29			19:37	29	08:03 (T77)	18:47			17:11	10	07:55 (T44)	17:04	
19	06:14		06:45 (T42)	06:44			07:15		07:35 (T77)	07:47			07:24		07:46 (T44)	07:52	
	21:02	38	07:23 (T42)	20:27			19:35	27	08:02 (T77)	18:46			17:10	8	07:54 (T44)	17:05	
20	06:15		06:45 (T42)	06:45			07:16		07:36 (T77)	07:48			07:25		07:48 (T44)	07:53	
	21:01	38	07:23 (T42)	20:26			19:34	25	08:01 (T77)	18:44			17:09	6	07:54 (T44)	17:05	
21	06:16		06:44 (T42)	06:46			07:17		07:37 (T77)	07:49			07:26		07:49 (T44)	07:53	
	21:00	39	07:23 (T42)	20:24			19:32	23	08:00 (T77)	18:43			17:09	3	07:52 (T44)	17:06	
22	06:17		06:44 (T42)	06:47			07:18		07:38 (T77)	07:50			07:27			07:54	
	20:59	39	07:23 (T42)	20:23			19:30	20	07:58 (T77)	18:42			17:08			17:06	
23	06:18		06:44 (T42)	06:48			07:19		07:39 (T77)	07:52			07:28			07:54	
	20:59	40	07:24 (T42)	20:21			19:28	17	07:56 (T77)	18:40			17:07			17:07	
24	06:19		06:44 (T42)	06:49			07:20		07:40 (T77)	07:53			07:29			07:55	
	20:58	40	07:24 (T42)	20:20			19:27	14	07:54 (T77)	18:39			17:07			17:07	
25	06:20		06:44 (T42)	06:50			07:21		07:41 (T77)	07:54			07:30			07:55	
	20:57	41	07:25 (T42)	20:18			19:25	10	07:51 (T77)	18:37			17:06			17:08	
26	06:21		06:44 (T42)	06:51			07:22		07:42 (T77)	07:55			07:32			07:56	
	20:56	41	07:25 (T42)	20:17			19:23	3	07:45 (T77)	18:36			17:06			17:08	
27	06:22		06:44 (T42)	06:52			07:23			07:56		08:41 (T44)	07:33			07:56	
	20:55	41	07:25 (T42)	20:15			19:22			18:35	4	08:45 (T44)	17:05			17:09	
28	06:23		06:45 (T42)	06:53			07:24			07:57		08:36 (T44)	07:34			07:56	
	20:54	40	07:25 (T42)	20:14			19:20			18:33	13	08:49 (T44)	17:05			17:10	
29	06:23		06:45 (T42)	06:54			07:25			07:58		08:34 (T44)	07:35			07:57	
	20:53	39	07:24 (T42)	20:12			19:18			18:32	18	08:52 (T44)	17:04			17:10	
30	06:24		06:46 (T42)	06:55			07:27			08:00		08:33 (T44)	07:36			07:57	
	20:52	38	07:24 (T42)	20:10			19:16			18:31	21	08:54 (T44)	17:04			17:11	
31	06:25		06:47 (T42)	06:56						08:01		08:31 (T44)				07:57	
	20:51	37	07:24 (T42)	20:09						18:29	24	08:55 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1022			365			653			80			421			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.70			0.63			0.54			0.54			
Total reduction		0.45			0.42			0.36			0.25			0.16			
Total, real		464			153			237			20			67			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 232 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7882)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:57	07:43		07:07	07:36 (T58)	07:16		06:30		06:59 (T54)	06:02
	17:13	17:48		18:22	15 07:51 (T58)	19:56		20:27	119	19:45 (T56)	20:57
2	07:57	07:42		07:06	07:38 (T58)	07:15	19:07 (T56)	06:29		07:00 (T54)	06:01
	17:14	17:49		18:23	9 07:47 (T58)	19:57	18 19:25 (T56)	20:28	117	19:45 (T56)	20:57
3	07:57	07:41		07:04		07:13	19:03 (T56)	06:28		07:02 (T54)	06:01
	17:15	17:50		18:24		19:58	27 19:30 (T56)	20:29	112	19:44 (T56)	20:58
4	07:57	07:40		07:02		07:11	18:59 (T56)	06:27		07:04 (T54)	06:00
	17:16	17:51		18:25		19:59	34 19:33 (T56)	20:30	107	19:43 (T56)	20:59
5	07:57	07:39		07:01		07:10	18:57 (T56)	06:25		07:16 (T55)	06:00
	17:17	17:53		18:26		20:00	39 19:36 (T56)	20:31	93	19:43 (T56)	21:00
6	07:57	07:38		06:59		07:08	18:54 (T56)	06:24		07:17 (T55)	06:00
	17:18	17:54		18:28		20:00	43 19:37 (T56)	20:32	90	19:42 (T56)	21:00
7	07:57	07:37		06:58		07:06	07:29 (T55)	06:23		07:19 (T55)	05:59
	17:19	17:55		18:29		20:01	61 19:38 (T56)	20:33	85	19:42 (T56)	21:01
8	07:57	07:36		07:56		07:05	07:26 (T55)	06:22		07:21 (T55)	05:59
	17:20	17:56		19:30		20:02	71 19:40 (T56)	20:34	80	19:42 (T56)	21:02
9	07:57	07:35		07:55		07:03	07:23 (T55)	06:21		07:25 (T55)	05:59
	17:21	17:58		19:31		20:03	78 19:41 (T56)	20:35	71	19:41 (T56)	21:02
10	07:57	07:34		07:53		07:01	07:20 (T55)	06:19		18:40 (T56)	05:59
	17:22	17:59		19:32		20:05	85 19:41 (T56)	20:36	61	19:41 (T56)	21:03
11	07:56	07:32		07:51		07:00	07:19 (T55)	06:18		18:41 (T56)	05:59
	17:23	18:00		19:33		20:06	90 19:43 (T56)	20:37	59	19:40 (T56)	21:03
12	07:56	07:31		07:50		06:58	07:17 (T55)	06:17		18:41 (T56)	05:59
	17:24	18:01		19:34		20:07	95 19:43 (T56)	20:38	58	19:39 (T56)	21:04
13	07:56	07:30		07:48		06:57	07:16 (T55)	06:16		18:42 (T56)	05:58
	17:25	18:03		19:35		20:08	98 19:44 (T56)	20:39	57	19:39 (T56)	21:04
14	07:56	07:29	07:48 (T58)	07:46		06:55	07:14 (T55)	06:15		18:43 (T56)	05:58
	17:26	18:04	2 07:50 (T58)	19:37		20:09	103 19:45 (T56)	20:40	55	19:38 (T56)	21:05
15	07:55	07:27	07:47 (T58)	07:45		06:54	07:13 (T54)	06:14		18:44 (T56)	05:58
	17:27	18:05	5 07:52 (T58)	19:38		20:10	107 19:46 (T56)	20:41	53	19:37 (T56)	21:05
16	07:55	07:26	07:46 (T58)	07:43		06:52	07:11 (T54)	06:13		18:44 (T56)	05:58
	17:28	18:06	8 07:54 (T58)	19:39		20:11	108 19:45 (T56)	20:42	52	19:36 (T56)	21:06
17	07:54	07:25	07:44 (T58)	07:41		06:50	07:10 (T54)	06:12		18:45 (T56)	05:58
	17:29	18:08	11 07:55 (T58)	19:40		20:12	112 19:46 (T56)	20:43	50	19:35 (T56)	21:06
18	07:54	07:23	07:43 (T58)	07:40		06:49	07:08 (T54)	06:11		18:46 (T56)	05:59
	17:31	18:09	13 07:56 (T58)	19:41		20:13	115 19:46 (T56)	20:44	48	19:34 (T56)	21:06
19	07:53	07:22	07:42 (T58)	07:38		06:47	07:07 (T54)	06:10		18:47 (T56)	05:59
	17:32	18:10	15 07:57 (T58)	19:42		20:14	117 19:47 (T56)	20:45	46	19:33 (T56)	21:07
20	07:53	07:20	07:40 (T58)	07:36		06:46	07:05 (T54)	06:10		18:48 (T56)	05:59
	17:33	18:11	17 07:57 (T58)	19:43		20:15	119 19:46 (T56)	20:46	44	19:32 (T56)	21:07
21	07:52	07:19	07:39 (T58)	07:35		06:44	07:04 (T54)	06:09		18:50 (T56)	05:59
	17:34	18:12	18 07:57 (T58)	19:44		20:16	121 19:47 (T56)	20:47	42	19:32 (T56)	21:07
22	07:51	07:18	07:37 (T58)	07:33		06:43	07:02 (T54)	06:08		18:51 (T56)	05:59
	17:35	18:14	20 07:57 (T58)	19:45		20:17	122 19:46 (T56)	20:48	39	19:30 (T56)	21:08
23	07:51	07:16	07:36 (T58)	07:31		06:41	07:01 (T54)	06:07		18:52 (T56)	05:59
	17:37	18:15	21 07:57 (T58)	19:46		20:18	124 19:47 (T56)	20:49	37	19:29 (T56)	21:08
24	07:50	07:15	07:34 (T58)	07:30		06:40	06:59 (T54)	06:06		18:54 (T56)	06:00
	17:38	18:16	22 07:56 (T58)	19:47		20:19	125 19:46 (T56)	20:50	35	19:29 (T56)	21:08
25	07:49	07:13	07:33 (T58)	07:28		06:39	06:58 (T54)	06:06		18:55 (T56)	06:00
	17:39	18:17	23 07:56 (T58)	19:48		20:21	125 19:46 (T56)	20:51	32	19:27 (T56)	21:08
26	07:49	07:12	07:32 (T58)	07:26		06:37	06:57 (T54)	06:05		18:56 (T56)	06:00
	17:40	18:18	23 07:55 (T58)	19:50		20:22	126 19:46 (T56)	20:52	29	19:25 (T56)	21:08
27	07:48	07:10	07:33 (T58)	07:25		06:36	06:56 (T54)	06:04		18:58 (T56)	06:01
	17:41	18:19	21 07:54 (T58)	19:51		20:23	127 19:46 (T56)	20:53	26	19:24 (T56)	21:08
28	07:47	07:09	07:34 (T58)	07:23		06:34	06:56 (T54)	06:04		19:00 (T56)	06:01
	17:43	18:21	18 07:52 (T58)	19:52		20:24	125 19:46 (T56)	20:53	22	19:22 (T56)	21:08
29	07:46			07:21		06:33	06:57 (T54)	06:03		19:02 (T56)	06:01
	17:44			19:53		20:25	124 19:46 (T56)	20:54	19	19:21 (T56)	21:08
30	07:45			07:20		06:32	06:57 (T54)	06:03		19:05 (T56)	06:02
	17:45			19:54		20:26	122 19:45 (T56)	20:55	13	19:18 (T56)	21:08
31	07:44			07:18				06:02		19:10 (T56)	
	17:46			19:55				20:56	4	19:14 (T56)	
Potential sun hours	297	297		370		399		448			452
Total, worst case			237		24		2761		1755		
Sun reduction			0.40		0.44		0.52		0.57		
Oper. time red.			1.00		1.00		1.00		1.00		
Wind dir. red.			0.56		0.56		0.62		0.60		
Total reduction			0.23		0.25		0.32		0.34		
Total, real			54		6		892		604		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 232 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7882)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December
1	06:02			06:27		18:51 (T56)	06:57		07:18 (T55)	07:28			07:02	07:37
	21:08			20:50	58	19:49 (T56)	20:07	90	19:42 (T56)	19:15			17:28	07:04
2	06:03			06:27		18:50 (T56)	06:58		07:19 (T55)	07:29			07:03	07:38
	21:08			20:49	60	19:50 (T56)	20:06	84	19:40 (T56)	19:13			17:27	07:04
3	06:03			06:28		18:49 (T56)	06:59		07:21 (T55)	07:30			07:04	07:39
	21:08			20:48	61	19:50 (T56)	20:04	78	19:39 (T56)	19:11			17:26	07:03
4	06:04			06:29		07:33 (T55)	07:00		07:23 (T55)	07:31			07:05	07:40
	21:08			20:47	74	19:51 (T56)	20:02	71	19:37 (T56)	19:10			17:25	07:03
5	06:05			06:30		07:30 (T55)	07:01		07:26 (T55)	07:32			07:07	07:41
	21:08			20:46	81	19:51 (T56)	20:01	61	19:35 (T56)	19:08			17:23	07:03
6	06:05			06:31		07:28 (T55)	07:02		18:50 (T56)	07:33			07:08	07:42
	21:07			20:44	87	19:52 (T56)	19:57	43	19:33 (T56)	19:07			17:22	07:03
7	06:06			06:32		07:26 (T55)	07:03		18:51 (T56)	07:34			07:09	07:43
	21:07			20:43	91	19:52 (T56)	19:56	40	19:31 (T56)	19:05			17:21	07:03
8	06:06			06:33		07:18 (T54)	07:04		18:54 (T56)	07:35			07:10	07:44
	21:07			20:42	97	19:53 (T56)	19:54	34	19:28 (T56)	19:03			17:20	07:03
9	06:07			06:34		07:12 (T54)	07:05		18:56 (T56)	07:36			07:11	07:45
	21:07			20:41	110	19:53 (T56)	19:52	29	19:25 (T56)	19:02			17:19	07:03
10	06:08			06:35		07:10 (T54)	07:06		19:00 (T56)	07:37			07:13	07:45
	21:06			20:39	114	19:53 (T56)	19:51	20	19:20 (T56)	19:00			17:18	07:03
11	06:08			06:36		07:08 (T54)	07:07			07:38		08:16 (T58)	07:14	07:46
	21:06			20:38	117	19:53 (T56)	19:49			18:58	1	08:17 (T58)	17:17	07:03
12	06:09			06:37		07:07 (T54)	07:08			07:39		08:10 (T58)	07:15	07:47
	21:05			20:37	119	19:53 (T56)	19:47			18:57	12	08:22 (T58)	17:16	07:03
13	06:10		19:15 (T56)	06:38		07:06 (T54)	07:09			07:40		08:08 (T58)	07:16	07:48
	21:05	10	19:25 (T56)	20:36	121	19:53 (T56)	19:45			18:55	16	08:24 (T58)	17:15	07:03
14	06:11		19:12 (T56)	06:39		07:05 (T54)	07:10			07:41		08:06 (T58)	07:17	07:49
	21:04	16	19:28 (T56)	20:34	124	19:54 (T56)	19:44			18:54	19	08:25 (T58)	17:14	07:03
15	06:11		19:10 (T56)	06:40		07:04 (T54)	07:11			07:42		08:05 (T58)	07:19	07:49
	21:04	21	19:31 (T56)	20:33	125	19:53 (T56)	19:42			18:52	22	08:27 (T58)	17:13	07:04
16	06:12		19:08 (T56)	06:41		07:03 (T54)	07:12			07:44		08:04 (T58)	07:20	07:50
	21:03	25	19:33 (T56)	20:31	127	19:53 (T56)	19:40			18:51	24	08:28 (T58)	17:12	07:04
17	06:13		19:06 (T56)	06:42		07:04 (T54)	07:13			07:45		08:05 (T58)	07:21	07:51
	21:03	28	19:34 (T56)	20:30	126	19:53 (T56)	19:39			18:49	23	08:28 (T58)	17:12	07:04
18	06:14		19:05 (T56)	06:43		07:05 (T54)	07:14			07:46		08:06 (T58)	07:22	07:51
	21:02	31	19:36 (T56)	20:29	126	19:53 (T56)	19:37			18:48	22	08:28 (T58)	17:11	07:05
19	06:15		19:04 (T56)	06:44		07:06 (T54)	07:15			07:47		08:07 (T58)	07:23	07:52
	21:01	33	19:37 (T56)	20:27	125	19:53 (T56)	19:35			18:46	21	08:28 (T58)	17:10	07:05
20	06:15		19:03 (T56)	06:45		07:06 (T54)	07:16			07:48		08:08 (T58)	07:25	07:53
	21:01	36	19:39 (T56)	20:26	123	19:51 (T56)	19:34			18:45	19	08:27 (T58)	17:09	07:05
21	06:16		19:02 (T56)	06:46		07:07 (T54)	07:17			07:49		08:10 (T58)	07:26	07:53
	21:00	38	19:40 (T56)	20:24	122	19:51 (T56)	19:32			18:43	18	08:28 (T58)	17:09	07:06
22	06:17		19:00 (T56)	06:47		07:08 (T54)	07:18			07:50		08:11 (T58)	07:27	07:54
	20:59	40	19:40 (T56)	20:23	121	19:51 (T56)	19:30			18:42	16	08:27 (T58)	17:08	07:06
23	06:18		18:59 (T56)	06:48		07:09 (T54)	07:19			07:51		08:12 (T58)	07:28	07:54
	20:58	43	19:42 (T56)	20:21	118	19:50 (T56)	19:28			18:40	14	08:26 (T58)	17:07	07:07
24	06:19		18:58 (T56)	06:49		07:10 (T54)	07:20			07:53		08:13 (T58)	07:29	07:55
	20:58	45	19:43 (T56)	20:20	116	19:49 (T56)	19:27			18:39	12	08:25 (T58)	17:07	07:07
25	06:20		18:57 (T56)	06:50		07:11 (T54)	07:21			07:54		08:14 (T58)	07:30	07:55
	20:57	47	19:44 (T56)	20:18	115	19:49 (T56)	19:25			18:37	10	08:24 (T58)	17:06	07:08
26	06:21		18:56 (T56)	06:51		07:12 (T54)	07:22			07:55		08:16 (T58)	07:31	07:55
	20:56	49	19:45 (T56)	20:17	112	19:48 (T56)	19:23			18:36	7	08:23 (T58)	17:06	07:09
27	06:22		18:55 (T56)	06:52		07:13 (T54)	07:23			07:56		08:17 (T58)	07:33	07:56
	20:55	51	19:46 (T56)	20:15	109	19:47 (T56)	19:22			18:35	4	08:21 (T58)	17:05	07:09
28	06:23		18:55 (T56)	06:53		07:14 (T54)	07:24			07:57			07:34	07:56
	20:54	52	19:47 (T56)	20:14	105	19:46 (T56)	19:20			18:33			17:05	07:10
29	06:24		18:54 (T56)	06:54		07:15 (T55)	07:25			07:58			07:35	07:56
	20:53	54	19:48 (T56)	20:12	102	19:45 (T56)	19:18			18:32			17:05	07:11
30	06:25		18:53 (T56)	06:55		07:16 (T55)	07:27			08:00			07:36	07:57
	20:52	56	19:49 (T56)	20:10	98	19:44 (T56)	19:17			18:31			17:04	07:11
31	06:26		18:51 (T56)	06:56		07:17 (T55)				08:01				07:57
	20:51	57	19:48 (T56)	20:09	95	19:43 (T56)				18:29				17:12
Potential sun hours	459			428			375			345			297	287
Total, worst case		732			3279			550			260			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.59			0.62			0.61			0.56			
Total reduction		0.39			0.38			0.36			0.27			
Total, real		286			1242			197			70			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 255 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7903)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:44	07:07	07:16		06:30		06:52 (T39)	06:02		06:58 (T39)	06:02		07:11 (T39)	06:26		06:59 (T39)	06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56		20:27	46	07:38 (T39)	20:57	34	07:32 (T39)	21:09	20	07:31 (T39)	20:50	50	07:49 (T39)	20:07	19:15	17:28	17:04
2	07:58	07:43	07:06	07:15		06:29		06:52 (T39)	06:01		06:59 (T39)	06:03		07:10 (T39)	06:27		06:59 (T39)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	47	07:39 (T39)	20:58	33	07:32 (T39)	21:09	22	07:32 (T39)	20:49	51	07:50 (T39)	20:06	19:13	17:27	17:04
3	07:58	07:42	07:04	07:13		06:28		06:51 (T39)	06:01		06:59 (T39)	06:03		07:10 (T39)	06:28		06:59 (T39)	06:59	07:30	07:05	07:39
	17:15	17:50	18:24	19:58		20:29	48	07:39 (T39)	20:59	31	07:30 (T39)	21:08	23	07:33 (T39)	20:48	51	07:50 (T39)	20:04	19:12	17:26	17:03
4	07:58	07:41	07:03	07:11		06:26		06:50 (T39)	06:00		07:00 (T39)	06:04		07:09 (T39)	06:29		06:59 (T39)	07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59		20:30	49	07:39 (T39)	20:59	30	07:30 (T39)	21:08	24	07:33 (T39)	20:47	51	07:50 (T39)	20:02	19:10	17:24	17:03
5	07:58	07:40	07:01	07:10		06:25		06:50 (T39)	06:00		07:02 (T39)	06:04		07:09 (T39)	06:30		06:59 (T39)	07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00		20:31	49	07:39 (T39)	21:00	28	07:30 (T39)	21:08	25	07:34 (T39)	20:46	50	07:49 (T39)	20:01	19:08	17:23	17:03
6	07:58	07:38	06:59	07:08		06:24		06:50 (T39)	06:00		07:02 (T39)	06:05		07:08 (T39)	06:31		06:59 (T39)	07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00		20:32	50	07:40 (T39)	21:01	27	07:29 (T39)	21:08	27	07:35 (T39)	20:45	50	07:49 (T39)	19:57	19:07	17:22	17:03
7	07:58	07:37	06:58	07:06		06:23		06:49 (T39)	05:59		07:03 (T39)	06:06		07:08 (T39)	06:32		06:59 (T39)	07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:02		20:34	51	07:40 (T39)	21:01	26	07:29 (T39)	21:08	28	07:36 (T39)	20:43	50	07:49 (T39)	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05		06:22		06:49 (T39)	05:59		07:04 (T39)	06:06		07:08 (T39)	06:33		07:00 (T39)	07:04	07:35	07:11	07:44
	17:20	17:56	19:30	20:03		20:35	51	07:40 (T39)	21:02	24	07:28 (T39)	21:07	29	07:37 (T39)	20:42	49	07:49 (T39)	19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03		06:20		06:49 (T39)	05:59		07:05 (T39)	06:07		07:07 (T39)	06:34		07:00 (T39)	07:05	07:36	07:12	07:45
	17:21	17:58	19:31	20:04		20:36	51	07:40 (T39)	21:03	23	07:28 (T39)	21:07	30	07:37 (T39)	20:41	48	07:48 (T39)	19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01		06:19		06:49 (T39)	05:59		07:06 (T39)	06:08		07:07 (T39)	06:35		07:00 (T39)	07:06	07:37	07:13	07:46
	17:22	17:59	19:32	20:05		20:37	51	07:40 (T39)	21:03	22	07:28 (T39)	21:07	32	07:39 (T39)	20:40	48	07:48 (T39)	19:51	19:00	17:18	17:03
11	07:57	07:33	07:51	07:00		06:18		06:49 (T39)	05:58		07:07 (T39)	06:08		07:07 (T39)	06:36		07:01 (T39)	07:07	07:38	07:14	07:47
	17:23	18:00	19:33	20:06		20:38	51	07:40 (T39)	21:04	20	07:27 (T39)	21:06	33	07:40 (T39)	20:38	46	07:47 (T39)	19:49	18:58	17:17	17:03
12	07:57	07:31	07:50	06:58		06:17		06:49 (T39)	05:58		07:08 (T39)	06:09		07:05 (T39)	06:37		07:01 (T39)	07:08	07:39	07:15	07:48
	17:24	18:01	19:34	20:07		20:39	51	07:40 (T39)	21:04	19	07:27 (T39)	21:06	35	07:40 (T39)	20:37	46	07:47 (T39)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57		06:16		06:49 (T39)	05:58		07:08 (T39)	06:10		07:05 (T39)	06:38		07:02 (T39)	07:09	07:40	07:17	07:48
	17:25	18:03	19:36	20:08		20:40	51	07:40 (T39)	21:05	18	07:26 (T39)	21:05	36	07:41 (T39)	20:36	44	07:46 (T39)	19:46	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		06:50 (T39)	05:58		07:08 (T39)	06:10		07:05 (T39)	06:39		07:02 (T39)	07:10	07:42	07:18	07:49
	17:26	18:04	19:37	20:09		20:41	49	07:39 (T39)	21:05	17	07:25 (T39)	21:05	37	07:42 (T39)	20:34	43	07:45 (T39)	19:44	18:54	17:14	17:03
15	07:56	07:28	07:45	06:54		06:14		06:50 (T39)	05:58		07:09 (T39)	06:11		07:05 (T39)	06:40		07:03 (T39)	07:11	07:43	07:19	07:50
	17:27	18:05	19:38	20:10		20:42	49	07:39 (T39)	21:06	16	07:25 (T39)	21:04	38	07:43 (T39)	20:33	41	07:44 (T39)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13		06:50 (T39)	05:58		07:11 (T39)	06:12		07:04 (T39)	06:41		07:04 (T39)	07:12	07:44	07:20	07:51
	17:28	18:06	19:39	20:11		20:43	49	07:39 (T39)	21:06	14	07:25 (T39)	21:04	39	07:43 (T39)	20:32	39	07:43 (T39)	19:41	18:51	17:12	17:04
17	07:55	07:25	07:41	06:50		06:12		06:50 (T39)	05:58		07:11 (T39)	06:13		07:03 (T39)	06:42		07:05 (T39)	07:13	07:45	07:21	07:51
	17:29	18:08	19:40	20:12		20:44	48	07:38 (T39)	21:07	14	07:25 (T39)	21:03	41	07:44 (T39)	20:30	37	07:42 (T39)	19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49		06:11		06:50 (T39)	05:58		07:12 (T39)	06:14		07:03 (T39)	06:43		07:06 (T39)	07:14	07:46	07:23	07:52
	17:30	18:09	19:41	20:13		20:45	48	07:38 (T39)	21:07	13	07:25 (T39)	21:02	41	07:44 (T39)	20:29	34	07:40 (T39)	19:37	18:48	17:11	17:04
19	07:54	07:22	07:38	06:47		06:10		06:50 (T39)	05:58		07:12 (T39)	06:14		07:03 (T39)	06:44		07:07 (T39)	07:15	07:47	07:24	07:52
	17:32	18:10	19:42	20:14		20:46	47	07:37 (T39)	21:07	13	07:25 (T39)	21:02	42	07:45 (T39)	20:27	31	07:38 (T39)	19:35	18:46	17:10	17:05
20	07:53	07:21	07:36	06:46	07:16 (T39)	06:09		06:50 (T39)	05:59		07:13 (T39)	06:15		07:03 (T39)	06:45		07:08 (T39)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	2 07:18 (T39)	20:47	47	07:37 (T39)	21:08	11	07:24 (T39)	21:01	43	07:46 (T39)	20:26	27	07:35 (T39)	19:34	18:45	17:09	17:05
21	07:52	07:19	07:35	06:44	07:09 (T39)	06:09		06:52 (T39)	05:59		07:13 (T39)	06:16		07:01 (T39)	06:46		07:10 (T39)	07:17	07:49	07:26	07:54
	17:34	18:12	19:44	20:16	17 07:26 (T39)	20:48	45	07:37 (T39)	21:08	11	07:24 (T39)	21:00	45	07:46 (T39)	20:24	23	07:33 (T39)	19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43	07:05 (T39)	06:08		06:52 (T39)	05:59		07:13 (T39)	06:17		07:01 (T39)	06:47		07:13 (T39)	07:18	07:51	07:27	07:54
	17:35	18:14	19:45	20:18	23 07:28 (T39)	20:49	45	07:37 (T39)	21:08	11	07:24 (T39)	21:00	45	07:46 (T39)	20:23	16	07:29 (T39)	19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41	07:03 (T39)	06:07		06:52 (T39)	05:59		07:13 (T39)	06:18		07:01 (T39)	06:48			07:19	07:52	07:28	07:55
	17:36	18:15	19:46	20:19	28 07:31 (T39)	20:49	44	07:36 (T39)	21:08	13	07:26 (T39)	20:59	46	07:47 (T39)	20:21			19:29	18:40	17:07	17:07
24	07:50	07:15	07:30	06:40	07:00 (T39)	06:06		06:52 (T39)	05:59		07:13 (T39)	06:19		07:01 (T39)	06:49			07:20	07:53	07:30	07:55
	17:38	18:16	19:48	20:20	32 07:32 (T39)	20:50	43	07:35 (T39)	21:08	13	07:26 (T39)	20:58	47	07:48 (T39)	20:20			19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:39	06:59 (T39)	06:06		06:53 (T39)	06:00		07:13 (T39)	06:20		07:01 (T39)	06:50			07:21	07:54	07:31	07:55
	17:39	18:17	19:49	20:21	35 07:34 (T39)	20:51	42	07:35 (T39)	21:09	13	07:26 (T39)	20:57	47	07:48 (T39)	20:18			19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:58 (T39)	06:05		06:54 (T39)	06:00		07:13 (T39)	06:21		07:01 (T39)	06:51			07:23	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	37 07:35 (T39)	20:52	41	07:35 (T39)	21:09	14	07:27 (T39)	20:56	48	07:49 (T39)	20:17			19:23	18:36	17:06	17:08
27	07:48	07:10	07:25	06:36	06:56 (T39)	06:04		06:55 (T39)	06:00		07:12 (T39)	06:22		07:00 (T39)	06:52			07:24	07:56	07:33	07:56
	17:41	18:20	19:51	20:23	39 07:35 (T39)	20:53	40	07:35 (T39)	21:09	16	07:28 (T39)	20:55	49	07:49 (T39)	20:15			19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:34	06:55 (T39)	06:04		06:55 (T39)	06:01		07:12 (T39)	06:23		07:00 (T39)	06:53			07:25	07:57	07:34	07:57
	17:43	18:21	19:52	20:24	42 07:37 (T39)	20:54	39	07:34 (T39)	21:09	16	07:28 (T39)	20:54	49	07:49 (T39)	20:14			19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:54 (T39)	06:03		06:56 (T39)	06:01		07:12 (T39)	06:24		07:00 (T39)	06:54			07:26	07:59	07:35	07:57
	17:44		19:53	20:25	44 07:38 (T39)	20:55	38	07:34 (T39)	21:09	17	07:29 (T39)	20:53	50	07:50 (T39)	20:12			19:18	18:32	17:04	17:10
30	07:46		07:20	06:32	06:53 (T39)	06:03		06:57 (T39)	06:02		07:11 (T39)	06:24		06:59 (T39)	06:55			07:27	08:00	07:36	07:57
	17:45		19:54	20:26	44 07:37 (T39)	20:56	36	07:33 (T39)	21:09	19	07:30 (T39)	20:52	50	07:49 (T39)	20:11			19:17	18:31	17:04	17:11
31	07:45		07:18			06:02		06:58 (T39)				06:25		06:59 (T39)	06:56				08:01		07:57
	17:46		19:55			20:56	35	07:33 (T39)				20:51	50	07:49 (T39)	20:09				18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287
Total, worst case				343		1431		576		1171		925					
Sun reduction				0.52		0.57		0.64		0.66		0.61					
Oper. time red.				1.00		1.00		1.00		1.00		1.00					
Wind dir. red.				0.68		0.68		0.68		0.68		0.68					
Total reduction				0.35		0.39		0.44		0.45		0.42					
Total, real				122		557		252		527		385					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 275 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7918)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:58		08:45 (T38)	07:44		09:01 (T38)	07:07		07:27 (T37)	07:16	06:30			06:02		06:23 (T87)
	17:13	67	09:52 (T38)	17:48	53	09:54 (T38)	18:22	23	07:50 (T37)	19:56	20:27			20:57	41	07:04 (T34)
2	07:58		08:45 (T38)	07:43		09:02 (T38)	07:06		07:25 (T37)	07:15	06:29			06:01		06:23 (T87)
	17:14	67	09:52 (T38)	17:49	51	09:53 (T38)	18:23	26	07:51 (T37)	19:57	20:28			20:58	42	07:05 (T34)
3	07:58		08:45 (T38)	07:42		09:03 (T38)	07:04		07:24 (T37)	07:13	06:28			06:01		06:22 (T87)
	17:15	68	09:53 (T38)	17:50	49	09:52 (T38)	18:24	28	07:52 (T37)	19:58	20:29			20:59	43	07:05 (T34)
4	07:58		08:46 (T38)	07:41		09:04 (T38)	07:03		07:22 (T37)	07:11	06:27			06:00		06:22 (T87)
	17:16	67	09:53 (T38)	17:51	47	09:51 (T38)	18:25	29	07:51 (T37)	19:59	20:30			20:59	44	07:06 (T34)
5	07:58		08:46 (T38)	07:40		09:06 (T38)	07:01		07:21 (T37)	07:10	06:25			06:00		06:22 (T87)
	17:17	68	09:54 (T38)	17:53	44	09:50 (T38)	18:27	31	07:52 (T37)	20:01	20:32			21:00	45	07:07 (T34)
6	07:58		08:47 (T38)	07:39		09:07 (T38)	07:00		07:20 (T37)	07:08	06:24			06:00		06:22 (T87)
	17:18	67	09:54 (T38)	17:54	42	09:49 (T38)	18:28	32	07:52 (T37)	20:01	20:33			21:01	46	07:08 (T34)
7	07:58		08:47 (T38)	07:37		09:09 (T38)	06:58		07:19 (T37)	07:06	06:23			05:59		06:21 (T87)
	17:19	68	09:55 (T38)	17:55	38	09:47 (T38)	18:29	32	07:51 (T37)	20:02	20:34			21:02	47	07:08 (T34)
8	07:58		08:48 (T38)	07:36		09:10 (T38)	07:56		08:20 (T37)	07:05	06:22			05:59		06:21 (T87)
	17:20	68	09:56 (T38)	17:56	34	09:44 (T38)	19:30	31	08:51 (T37)	20:03	20:35			21:02	48	07:09 (T34)
9	07:57		08:47 (T38)	07:35		09:13 (T38)	07:55		08:20 (T37)	07:03	06:21			05:59		06:21 (T87)
	17:21	68	09:55 (T38)	17:58	29	09:42 (T38)	19:31	30	08:50 (T37)	20:04	20:36			21:03	49	07:10 (T34)
10	07:57		08:48 (T38)	07:34		09:16 (T38)	07:53		08:20 (T37)	07:02	06:19			05:59		06:21 (T87)
	17:22	68	09:56 (T38)	17:59	23	09:39 (T38)	19:32	29	08:49 (T37)	20:05	20:37			21:03	49	07:10 (T34)
11	07:57		08:49 (T38)	07:33		09:21 (T38)	07:52		08:21 (T37)	07:00	06:18			05:59		06:21 (T87)
	17:23	68	09:57 (T38)	18:00	13	09:34 (T38)	19:33	27	08:48 (T37)	20:06	20:38			21:04	50	07:11 (T34)
12	07:57		08:49 (T38)	07:31			07:50		08:21 (T37)	06:58	06:17			05:58		06:21 (T87)
	17:24	67	09:56 (T38)	18:01			19:34	26	08:47 (T37)	20:07	20:39			21:04	51	07:12 (T34)
13	07:56		08:49 (T38)	07:30			07:48		08:22 (T37)	06:57	06:16			05:58		06:21 (T87)
	17:25	68	09:57 (T38)	18:03			19:36	23	08:45 (T37)	20:08	20:40			21:05	51	07:12 (T34)
14	07:56		08:50 (T38)	07:29			07:47		08:24 (T37)	06:55	06:15		06:36 (T87)	05:58		06:21 (T87)
	17:26	68	09:58 (T38)	18:04			19:37	19	08:43 (T37)	20:09	20:41	4	06:40 (T87)	21:05	51	07:12 (T34)
15	07:56		08:50 (T38)	07:28			07:45		08:26 (T37)	06:54	06:14		06:35 (T87)	05:58		06:21 (T87)
	17:27	68	09:58 (T38)	18:05			19:38	14	08:40 (T37)	20:10	20:42	8	06:43 (T87)	21:06	52	07:13 (T34)
16	07:55		08:51 (T38)	07:26			07:43		08:30 (T37)	06:52	06:13		06:34 (T87)	05:58		06:21 (T87)
	17:28	67	09:58 (T38)	18:06			19:39	5	08:35 (T37)	20:11	20:43	10	06:44 (T87)	21:06	52	07:13 (T34)
17	07:55		08:51 (T38)	07:25			07:42			06:51	06:12		06:33 (T87)	05:58		06:21 (T87)
	17:29	67	09:58 (T38)	18:08			19:40			20:12	20:44	13	06:46 (T87)	21:07	52	07:13 (T34)
18	07:54		08:52 (T38)	07:24			07:40			06:49	06:11		06:32 (T87)	05:58		06:21 (T87)
	17:31	67	09:59 (T38)	18:09			19:41			20:13	20:45	15	06:47 (T87)	21:07	53	07:14 (T34)
19	07:54		08:52 (T38)	07:22			07:38			06:47	06:10		06:31 (T87)	05:59		06:21 (T87)
	17:32	66	09:58 (T38)	18:10			19:42			20:14	20:46	17	06:48 (T87)	21:07	53	07:14 (T34)
20	07:53		08:52 (T38)	07:21			07:37			06:46	06:10		06:30 (T87)	05:59		06:21 (T87)
	17:33	66	09:58 (T38)	18:11			19:43			20:16	20:47	18	06:48 (T87)	21:08	53	07:14 (T34)
21	07:53		08:53 (T38)	07:19			07:35			06:44	06:09		06:30 (T87)	05:59		06:21 (T87)
	17:34	66	09:59 (T38)	18:12			19:44			20:17	20:48	20	06:50 (T87)	21:08	53	07:14 (T34)
22	07:52		08:54 (T38)	07:18			07:33			06:43	06:08		06:29 (T87)	05:59		06:22 (T87)
	17:35	65	09:59 (T38)	18:14			19:45			20:18	20:49	21	06:50 (T87)	21:08	53	07:15 (T34)
23	07:51		08:54 (T38)	07:16			07:31			06:42	06:07		06:28 (T87)	05:59		06:22 (T87)
	17:36	64	09:58 (T38)	18:15			19:47			20:19	20:50	23	06:51 (T87)	21:08	53	07:15 (T34)
24	07:51		08:54 (T38)	07:15		07:35 (T37)	07:30			06:40	06:06		06:28 (T87)	06:00		06:22 (T87)
	17:38	64	09:58 (T38)	18:16	6	07:41 (T37)	19:48			20:20	20:50	24	06:52 (T87)	21:09	53	07:15 (T34)
25	07:50		08:56 (T38)	07:14		07:33 (T37)	07:28			06:39	06:06		06:27 (T87)	06:00		06:22 (T87)
	17:39	62	09:58 (T38)	18:17	12	07:45 (T37)	19:49			20:21	20:51	26	06:53 (T34)	21:09	52	07:14 (T34)
26	07:49		08:56 (T38)	07:12		07:32 (T37)	07:26			06:37	06:05		06:26 (T87)	06:00		06:23 (T87)
	17:40	62	09:58 (T38)	18:18	15	07:47 (T37)	19:50			20:22	20:52	29	06:55 (T34)	21:09	52	07:15 (T34)
27	07:48		08:57 (T38)	07:11		07:30 (T37)	07:25			06:36	06:04		06:26 (T87)	06:01		06:23 (T87)
	17:41	60	09:57 (T38)	18:20	18	07:48 (T37)	19:51			20:23	20:53	32	06:58 (T34)	21:09	52	07:15 (T34)
28	07:47		08:57 (T38)	07:09		07:28 (T37)	07:23			06:34	06:04		06:25 (T87)	06:01		06:23 (T87)
	17:43	60	09:57 (T38)	18:21	21	07:49 (T37)	19:52			20:24	20:54	34	06:59 (T34)	21:09	52	07:15 (T34)
29	07:47		08:58 (T38)				07:21			06:33	06:03		06:25 (T87)	06:01		06:24 (T87)
	17:44	58	09:56 (T38)				19:53			20:25	20:55	36	07:01 (T34)	21:09	51	07:15 (T34)
30	07:46		08:59 (T38)				07:20			06:32	06:03		06:24 (T87)	06:02		06:24 (T87)
	17:45	57	09:56 (T38)				19:54			20:26	20:56	38	07:02 (T34)	21:09	51	07:15 (T34)
31	07:45		09:00 (T38)				07:18				06:02		06:24 (T87)			
	17:46	55	09:55 (T38)				19:55				20:56	39	07:03 (T34)			
Potential sun hours	297			297			370			399	449			453		
Total, worst case		2021			495			405				407			1494	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.53			0.53			0.57				0.72			0.72	
Total reduction		0.16			0.20			0.24				0.39			0.44	
Total, real		314			100			97				158			652	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 275 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7918)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		06:25 (T87)	06:26			06:58			07:28		08:01 (T37)	07:02		08:45 (T38)	07:37		08:31 (T38)
	21:09	50	07:15 (T34)	20:50			20:07			19:15	25	08:26 (T37)	17:28	24	09:09 (T38)	17:04	68	09:39 (T38)
2	06:03		06:25 (T87)	06:27			06:59			07:29		08:00 (T37)	07:04		08:42 (T38)	07:38		08:31 (T38)
	21:09	50	07:15 (T34)	20:49			20:06			19:13	27	08:27 (T37)	17:27	30	09:12 (T38)	17:04	68	09:39 (T38)
3	06:03		06:26 (T87)	06:28			07:00			07:30		07:59 (T37)	07:05		08:40 (T38)	07:39		08:32 (T38)
	21:09	49	07:15 (T34)	20:48			20:04			19:12	28	08:27 (T37)	17:26	34	09:14 (T38)	17:03	67	09:39 (T38)
4	06:04		06:26 (T87)	06:29			07:01			07:31		07:58 (T37)	07:06		08:38 (T38)	07:40		08:32 (T38)
	21:08	48	07:14 (T34)	20:47			20:03			19:10	29	08:27 (T37)	17:25	38	09:16 (T38)	17:03	68	09:40 (T38)
5	06:04		06:27 (T87)	06:30			07:02			07:32		07:57 (T37)	07:07		08:37 (T38)	07:41		08:32 (T38)
	21:08	48	07:15 (T34)	20:46			20:01			19:08	30	08:27 (T37)	17:23	42	09:19 (T38)	17:03	68	09:40 (T38)
6	06:05		06:28 (T87)	06:31			07:03			07:33		07:56 (T37)	07:08		08:35 (T38)	07:42		08:33 (T38)
	21:08	47	07:15 (T34)	20:45			19:58			19:07	31	08:27 (T37)	17:22	45	09:20 (T38)	17:03	67	09:40 (T38)
7	06:06		06:28 (T87)	06:32			07:04			07:34		07:56 (T37)	07:09		08:34 (T38)	07:43		08:33 (T38)
	21:08	46	07:14 (T34)	20:44			19:56			19:05	31	08:27 (T37)	17:21	47	09:21 (T38)	17:03	68	09:41 (T38)
8	06:06		06:29 (T87)	06:33			07:05			07:35		07:55 (T37)	07:11		08:34 (T38)	07:44		08:34 (T38)
	21:07	45	07:14 (T34)	20:42			19:54			19:03	32	08:27 (T37)	17:20	49	09:23 (T38)	17:03	67	09:41 (T38)
9	06:07		06:29 (T87)	06:34			07:06			07:36		07:56 (T37)	07:12		08:33 (T38)	07:45		08:34 (T38)
	21:07	44	07:13 (T34)	20:41			19:53			19:02	30	08:26 (T37)	17:19	51	09:24 (T38)	17:03	68	09:42 (T38)
10	06:08		06:30 (T87)	06:35			07:07			07:37		07:57 (T37)	07:13		08:32 (T38)	07:46		08:35 (T38)
	21:07	43	07:13 (T34)	20:40			19:51			19:00	29	08:26 (T37)	17:18	53	09:25 (T38)	17:03	67	09:42 (T38)
11	06:08		06:31 (T87)	06:36			07:08			07:38		07:58 (T37)	07:14		08:31 (T38)	07:47		08:35 (T38)
	21:06	41	07:12 (T34)	20:39			19:49			18:59	27	08:25 (T37)	17:17	55	09:26 (T38)	17:03	67	09:42 (T38)
12	06:09		06:31 (T87)	06:37			07:09			07:39		08:00 (T37)	07:16		08:31 (T38)	07:48		08:35 (T38)
	21:06	40	07:11 (T34)	20:37			19:47			18:57	25	08:25 (T37)	17:16	57	09:28 (T38)	17:03	67	09:42 (T38)
13	06:10		06:32 (T87)	06:38			07:10			07:41		08:01 (T37)	07:17		08:30 (T38)	07:48		08:36 (T38)
	21:05	38	07:10 (T34)	20:36			19:46			18:55	23	08:24 (T37)	17:15	58	09:28 (T38)	17:03	67	09:43 (T38)
14	06:11		06:33 (T87)	06:39			07:11			07:42		08:02 (T37)	07:18		08:29 (T38)	07:49		08:37 (T38)
	21:05	37	07:10 (T34)	20:35			19:44			18:54	20	08:22 (T37)	17:14	60	09:29 (T38)	17:03	67	09:44 (T38)
15	06:11		06:34 (T87)	06:40			07:12			07:43		08:03 (T37)	07:19		08:30 (T38)	07:50		08:37 (T38)
	21:04	35	07:09 (T34)	20:33			19:42			18:52	17	08:20 (T37)	17:13	60	09:30 (T38)	17:03	66	09:43 (T38)
16	06:12		06:34 (T87)	06:41			07:13			07:44		08:04 (T37)	07:20		08:29 (T38)	07:51		08:37 (T38)
	21:04	33	07:07 (T34)	20:32			19:41			18:51	14	08:18 (T37)	17:12	62	09:31 (T38)	17:04	67	09:44 (T38)
17	06:13		06:35 (T87)	06:42			07:14			07:45		08:05 (T37)	07:21		08:29 (T38)	07:51		08:38 (T38)
	21:03	30	07:05 (T34)	20:30			19:39			18:49	10	08:15 (T37)	17:12	62	09:31 (T38)	17:04	67	09:45 (T38)
18	06:14		06:36 (T87)	06:43			07:15			07:46			07:23		08:28 (T38)	07:52		08:38 (T38)
	21:03	27	07:03 (T34)	20:29			19:37			18:48			17:11	64	09:32 (T38)	17:04	67	09:45 (T38)
19	06:15		06:37 (T87)	06:44			07:16			07:47			07:24		08:29 (T38)	07:53		08:39 (T38)
	21:02	25	07:02 (T87)	20:28			19:35			18:46			17:10	64	09:33 (T38)	17:05	67	09:46 (T38)
20	06:15		06:38 (T87)	06:45			07:17			07:48			07:25		08:29 (T38)	07:53		08:40 (T38)
	21:01	23	07:01 (T87)	20:26			19:34			18:45			17:09	65	09:34 (T38)	17:05	66	09:46 (T38)
21	06:16		06:39 (T87)	06:46			07:18			07:49			07:26		08:28 (T38)	07:54		08:40 (T38)
	21:00	22	07:01 (T87)	20:25			19:32			18:43			17:09	66	09:34 (T38)	17:06	66	09:46 (T38)
22	06:17		06:39 (T87)	06:47			07:19			07:51			07:27		08:28 (T38)	07:54		08:41 (T38)
	21:00	21	07:00 (T87)	20:23			19:30			18:42			17:08	66	09:34 (T38)	17:06	66	09:47 (T38)
23	06:18		06:40 (T87)	06:48			07:20			07:52			07:29		08:29 (T38)	07:55		08:41 (T38)
	20:59	19	06:59 (T87)	20:22			19:29			18:40			17:07	66	09:35 (T38)	17:07	66	09:47 (T38)
24	06:19		06:41 (T87)	06:49			07:21			07:53			07:30		08:29 (T38)	07:55		08:41 (T38)
	20:58	18	06:59 (T87)	20:20			19:27			18:39			17:07	67	09:36 (T38)	17:07	67	09:48 (T38)
25	06:20		06:42 (T87)	06:50			07:22			07:54			07:31		08:29 (T38)	07:56		08:42 (T38)
	20:57	16	06:58 (T87)	20:19			19:25			18:37			17:06	67	09:36 (T38)	17:08	67	09:49 (T38)
26	06:21		06:43 (T87)	06:51			07:23			07:55			07:32		08:29 (T38)	07:56		08:42 (T38)
	20:56	14	06:57 (T87)	20:17			19:23			18:36			17:06	67	09:36 (T38)	17:08	67	09:49 (T38)
27	06:22		06:44 (T87)	06:52			07:24			07:56			07:33		08:29 (T38)	07:56		08:42 (T38)
	20:55	12	06:56 (T87)	20:15			19:22			18:35			17:05	68	09:37 (T38)	17:09	67	09:49 (T38)
28	06:23		06:45 (T87)	06:53			07:25		08:09 (T37)	07:58			07:34		08:29 (T38)	07:57		08:43 (T38)
	20:54	9	06:54 (T87)	20:14			19:20	12	08:21 (T37)	18:33			17:05	68	09:37 (T38)	17:10	67	09:50 (T38)
29	06:24		06:46 (T87)	06:54			07:26		08:05 (T37)	07:59			07:35		08:30 (T38)	07:57		08:44 (T38)
	20:53	6	06:52 (T87)	20:12			19:18	18	08:23 (T37)	18:32			17:05	68	09:38 (T38)	17:11	67	09:51 (T38)
30	06:25		06:47 (T87)	06:56			07:27		08:03 (T37)	08:00			07:36		08:31 (T38)	07:57		08:44 (T38)
	20:53	1	06:48 (T87)	20:11			19:17	22	08:25 (T37)	18:31			17:04	67	09:38 (T38)	17:11	67	09:51 (T38)
31	06:25			06:57						08:01		09:49 (T38)				07:57		08:44 (T38)
	20:51			20:09						18:29	15	10:04 (T38)				17:12	67	09:51 (T38)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		937						52			443			1690			2078	
Sun reduction		0.66						0.59			0.48			0.30			0.22	
Oper. time red.		1.00						1.00			1.00			1.00			1.00	
Wind dir. red.		0.72						0.57			0.57			0.53			0.53	
Total reduction		0.45						0.32			0.26			0.15			0.11	
Total, real		421						17			115			254			229	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 277 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7919)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April			May			June			July			August			September	October	November	December
1	07:57	07:43	07:07	07:16			06:30		06:53 (T49)	06:02		06:38 (T49)	06:02		06:44 (T49)	06:26		06:53 (T49)	06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56			20:27	67	08:00 (T49)	20:57	95	08:13 (T49)	21:08	96	08:20 (T49)	20:50	85	08:18 (T49)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:15			06:29		06:52 (T49)	06:01		06:39 (T49)	06:03		06:44 (T49)	06:27		06:54 (T49)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57			20:28	69	08:01 (T49)	20:58	95	08:14 (T49)	21:08	95	08:19 (T49)	20:49	84	08:18 (T49)	20:06	19:13	17:27	17:04
3	07:57	07:41	07:04	07:13			06:28		06:51 (T49)	06:01		06:38 (T49)	06:03		06:45 (T49)	06:28		06:54 (T49)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58			20:29	71	08:02 (T49)	20:58	95	08:13 (T49)	21:08	95	08:20 (T49)	20:48	83	08:17 (T49)	20:04	19:11	17:26	17:03
4	07:57	07:40	07:03	07:11			06:27		06:49 (T49)	06:00		06:39 (T49)	06:04		06:44 (T49)	06:29		06:55 (T49)	07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59			20:30	74	08:03 (T49)	20:59	95	08:14 (T49)	21:08	96	08:20 (T49)	20:47	81	08:16 (T49)	20:02	19:10	17:25	17:03
5	07:57	07:39	07:01	07:10			06:25		06:48 (T49)	06:00		06:39 (T49)	06:04		06:45 (T49)	06:30		06:56 (T49)	07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00			20:31	76	08:04 (T49)	21:00	95	08:14 (T49)	21:08	95	08:20 (T49)	20:46	80	08:16 (T49)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08			06:24		06:47 (T49)	06:00		06:39 (T49)	06:05		06:46 (T49)	06:31		06:56 (T49)	07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00			20:32	78	08:05 (T49)	21:00	96	08:15 (T49)	21:08	95	08:21 (T49)	20:44	79	08:15 (T49)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06			06:23		06:46 (T49)	05:59		06:39 (T49)	06:06		06:45 (T49)	06:32		06:57 (T49)	07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:01			20:33	80	08:06 (T49)	21:01	95	08:14 (T49)	21:07	96	08:21 (T49)	20:43	77	08:14 (T49)	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05			06:22		06:46 (T49)	05:59		06:39 (T49)	06:06		06:46 (T49)	06:33		06:58 (T49)	07:04	07:35	07:10	07:44
	17:20	17:56	19:30	20:02			20:34	80	08:06 (T49)	21:02	96	08:15 (T49)	21:07	95	08:21 (T49)	20:42	75	08:13 (T49)	19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03			06:21		06:45 (T49)	05:59		06:40 (T49)	06:07		06:45 (T49)	06:34		06:59 (T49)	07:05	07:36	07:12	07:45
	17:21	17:58	19:31	20:03			20:35	82	08:07 (T49)	21:02	95	08:15 (T49)	21:07	96	08:21 (T49)	20:41	73	08:12 (T49)	19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01			06:19		06:44 (T49)	05:59		06:40 (T49)	06:08		06:46 (T49)	06:35		07:00 (T49)	07:06	07:37	07:13	07:46
	17:22	17:59	19:32	20:05			20:36	84	08:08 (T49)	21:03	95	08:15 (T49)	21:06	95	08:21 (T49)	20:39	71	08:11 (T49)	19:51	19:00	17:18	17:03
11	07:57	07:32	07:51	07:00			06:18		06:44 (T49)	05:59		06:40 (T49)	06:08		06:46 (T49)	06:36		07:01 (T49)	07:07	07:38	07:14	07:46
	17:23	18:00	19:33	20:06			20:37	84	08:08 (T49)	21:03	96	08:16 (T49)	21:06	96	08:22 (T49)	20:38	69	08:10 (T49)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58			06:17		06:43 (T49)	05:59		06:40 (T49)	06:09		06:47 (T49)	06:37		07:02 (T49)	07:08	07:39	07:15	07:47
	17:24	18:01	19:34	20:07			20:38	86	08:09 (T49)	21:04	96	08:16 (T49)	21:05	95	08:22 (T49)	20:37	66	08:08 (T49)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57			06:16		06:42 (T49)	05:58		06:41 (T49)	06:10		06:47 (T49)	06:38		07:04 (T49)	07:09	07:40	07:16	07:48
	17:25	18:03	19:35	20:08			20:39	87	08:09 (T49)	21:04	95	08:16 (T49)	21:05	94	08:21 (T49)	20:36	63	08:07 (T49)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55			06:15		06:42 (T49)	05:58		06:41 (T49)	06:11		06:47 (T49)	06:39		07:05 (T49)	07:10	07:41	07:18	07:49
	17:26	18:04	19:37	20:09			20:40	88	08:10 (T49)	21:05	95	08:16 (T49)	21:04	95	08:22 (T49)	20:34	60	08:05 (T49)	19:44	18:54	17:14	17:03
15	07:55	07:27	07:45	06:54			06:14		06:41 (T49)	05:58		06:41 (T49)	06:11		06:47 (T49)	06:40		07:07 (T49)	07:11	07:42	07:19	07:49
	17:27	18:05	19:38	20:10			20:41	89	08:10 (T49)	21:05	95	08:16 (T49)	21:04	95	08:22 (T49)	20:33	56	08:03 (T49)	19:42	18:52	17:13	17:04
16	07:55	07:26	07:43	06:52			06:13		06:41 (T49)	05:58		06:41 (T49)	06:12		06:48 (T49)	06:41		07:08 (T49)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11			20:42	89	08:10 (T49)	21:06	96	08:17 (T49)	21:03	94	08:22 (T49)	20:31	53	08:01 (T49)	19:40	18:51	17:12	17:04
17	07:54	07:25	07:41	06:50			06:12		06:40 (T49)	05:58		06:41 (T49)	06:13		06:47 (T49)	06:42		07:10 (T49)	07:13	07:45	07:21	07:51
	17:29	18:08	19:40	20:12			20:43	90	08:10 (T49)	21:06	96	08:17 (T49)	21:03	95	08:22 (T49)	20:30	49	07:59 (T49)	19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49			06:11		06:40 (T49)	05:58		06:41 (T49)	06:14		06:48 (T49)	06:43		07:13 (T49)	07:14	07:46	07:22	07:52
	17:31	18:09	19:41	20:13			20:44	91	08:11 (T49)	21:07	96	08:17 (T49)	21:02	94	08:22 (T49)	20:29	43	07:56 (T49)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47			06:10		06:39 (T49)	05:59		06:42 (T49)	06:15		06:48 (T49)	06:44		07:15 (T49)	07:15	07:47	07:23	07:52
	17:32	18:10	19:42	20:14			20:45	92	08:11 (T49)	21:07	95	08:17 (T49)	21:01	94	08:22 (T49)	20:27	38	07:53 (T49)	19:35	18:46	17:10	17:05
20	07:53	07:20	07:36	06:46			06:10		06:39 (T49)	05:59		06:42 (T49)	06:15		06:49 (T49)	06:45		07:18 (T49)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15			20:46	92	08:11 (T49)	21:07	95	08:17 (T49)	21:01	93	08:22 (T49)	20:26	30	07:48 (T49)	19:34	18:45	17:09	17:05
21	07:52	07:19	07:35	06:44			06:09		06:39 (T49)	05:59		06:42 (T49)	06:16		06:49 (T49)	06:46		07:23 (T49)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16			20:47	93	08:12 (T49)	21:07	95	08:17 (T49)	21:00	93	08:22 (T49)	20:24	20	07:43 (T49)	19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43		07:17 (T49)	06:08		06:39 (T49)	05:59		06:43 (T49)	06:17		06:49 (T49)	06:47			07:18	07:50	07:27	07:54
	17:35	18:14	19:45	20:17	22	07:39 (T49)	20:48	93	08:12 (T49)	21:08	95	08:18 (T49)	20:59	92	08:21 (T49)	20:23			19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41		07:12 (T49)	06:07		06:39 (T49)	05:59		06:43 (T49)	06:18		06:49 (T49)	06:48			07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18	32	07:44 (T49)	20:49	93	08:12 (T49)	21:08	95	08:18 (T49)	20:58	92	08:21 (T49)	20:21			19:28	18:40	17:07	17:07
24	07:50	07:15	07:30	06:40		07:08 (T49)	06:06		06:39 (T49)	06:00		06:42 (T49)	06:19		06:50 (T49)	06:49			07:20	07:53	07:29	07:55
	17:38	18:16	19:47	20:19	39	07:47 (T49)	20:50	94	08:13 (T49)	21:08	96	08:18 (T49)	20:58	91	08:21 (T49)	20:20			19:27	18:39	17:07	17:07
25	07:49	07:13	07:28	06:39		07:05 (T49)	06:06		06:39 (T49)	06:00		06:42 (T49)	06:20		06:50 (T49)	06:50			07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21	45	07:50 (T49)	20:51	93	08:12 (T49)	21:08	96	08:18 (T49)	20:57	91	08:21 (T49)	20:18			19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37		07:03 (T49)	06:05		06:38 (T49)	06:00		06:43 (T49)	06:21		06:51 (T49)	06:51			07:22	07:55	07:31	07:56
	17:40	18:18	19:50	20:22	49	07:52 (T49)	20:52	94	08:12 (T49)	21:08	96	08:19 (T49)	20:56	90	08:21 (T49)	20:17			19:23	18:36	17:06	17:09
27	07:48	07:10	07:25	06:36		07:00 (T49)	06:04		06:39 (T49)	06:01		06:43 (T49)	06:22		06:51 (T49)	06:52			07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	54	07:54 (T49)	20:53	94	08:13 (T49)	21:08	95	08:18 (T49)	20:55	90	08:21 (T49)	20:15			19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:34		06:59 (T49)	06:04		06:38 (T49)	06:01		06:44 (T49)	06:23		06:52 (T49)	06:53			07:24	07:57	07:34	07:56
	17:43	18:21	19:52	20:24	57	07:56 (T49)	20:54	95	08:13 (T49)	21:08	95	08:19 (T49)	20:54	89	08:21 (T49)	20:14			19:20	18:33	17:05	17:10
29	07:46		07:21	06:33		06:57 (T49)	06:03		06:39 (T49)	06:01		06:44 (T49)	06:24		06:52 (T49)	06:54			07:25	07:58	07:35	07:56
	17:44		19:53	20:25	61	07:58 (T49)	20:54	94	08:13 (T49)	21:08	95	08:19 (T49)	20:53	88	08:20 (T49)	20:12			19:18	18:32	17:05	17:11
30	07:45		07:20	06:32		06:55 (T49)	06:03		06:38 (T49)	06:02		06:44 (T49)	06:25		06:53 (T49)	06:55			07:27	08:00	07:36	07:57
	17:45		19:54	20:26	63	07:58 (T49)	20:55	95	08:13 (T49)	21:08	95	08:19 (T49)	20:52	87	08:20 (T49)	20:10			19:17	18:31	17:04	17:11
31	07:44		07:18				06:02		06:39 (T49)				06:26		06:52 (T49)	06:56				08:01		07:57
	17:46		19:55				20:56	95	08:14 (T49)				20:51	87	08:19 (T49)	20:09				18:29		17:12
Potential sun hours	297	297	370	399			448			452			459			428			375	345	297	287
Total, worst case					422			2682			2860			2889			1335					
Sun reduction					0.52			0.57			0.64			0.66			0.61					
Oper. time red.					1.00			1.00			1.00			1.00			1.00					
Wind dir. red.					0.69			0.69			0.69			0.69			0.69					
Total reduction					0.36			0.40			0.44			0.46			0.42					
Total, real					152			1060			1269			1322			565					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 319 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7948)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June
1	07:57	07:43	07:07			07:16		18:39 (T79)	06:30		18:26 (T79)	06:02
	17:13	17:48	18:22			19:56	55	19:34 (T62)	20:27	69	19:35 (T79)	20:56
2	07:57	07:42	07:05			07:14		18:37 (T79)	06:29		18:27 (T79)	06:01
	17:14	17:49	18:23			19:57	58	19:35 (T62)	20:28	68	19:35 (T79)	20:57
3	07:57	07:41	07:04			07:13		18:36 (T79)	06:28		18:27 (T79)	06:01
	17:15	17:50	18:24			19:58	61	19:37 (T62)	20:29	66	19:33 (T79)	20:58
4	07:57	07:40	07:02			07:11		18:34 (T79)	06:26		18:27 (T79)	06:00
	17:16	17:51	18:25			19:59	63	19:37 (T62)	20:30	66	19:33 (T79)	20:59
5	07:57	07:39	07:01			07:09		18:33 (T79)	06:25		18:28 (T79)	06:00
	17:17	17:53	18:26			20:00	64	19:37 (T62)	20:31	64	19:32 (T79)	20:59
6	07:57	07:38	06:59			07:08		18:32 (T79)	06:24		18:29 (T79)	06:00
	17:18	17:54	18:27			20:00	66	19:38 (T62)	20:32	62	19:31 (T79)	21:00
7	07:57	07:37	06:58			07:06		18:30 (T79)	06:23		18:30 (T79)	05:59
	17:19	17:55	18:29			20:01	69	19:39 (T79)	20:33	61	19:31 (T79)	21:01
8	07:57	07:36	07:56			07:05		18:29 (T79)	06:22		18:31 (T79)	05:59
	17:20	17:56	19:30			20:02	70	19:39 (T79)	20:34	59	19:30 (T79)	21:01
9	07:57	07:34	07:54			07:03		18:29 (T79)	06:20		18:32 (T79)	05:59
	17:21	17:58	19:31			20:03	71	19:40 (T79)	20:35	57	19:29 (T79)	21:02
10	07:56	07:33	07:53			07:01		18:27 (T79)	06:19		18:32 (T79)	05:59
	17:22	17:59	19:32			20:04	73	19:40 (T79)	20:36	55	19:27 (T79)	21:03
11	07:56	07:32	07:51			07:00		18:27 (T79)	06:18		18:33 (T79)	05:59
	17:23	18:00	19:33			20:05	73	19:40 (T79)	20:37	53	19:26 (T79)	21:03
12	07:56	07:31	07:49			06:58		18:26 (T79)	06:17		18:34 (T79)	05:58
	17:24	18:01	19:34			20:06	74	19:40 (T79)	20:38	51	19:25 (T79)	21:04
13	07:56	07:30	07:48			06:57		18:26 (T79)	06:16		18:35 (T79)	05:58
	17:25	18:02	19:35			20:07	75	19:41 (T79)	20:39	49	19:24 (T79)	21:04
14	07:55	07:28	07:46			06:55		18:25 (T79)	06:15		18:37 (T79)	05:58
	17:26	18:04	19:36			20:09	76	19:41 (T79)	20:40	46	19:23 (T79)	21:05
15	07:55	07:27	07:44			06:53		18:24 (T79)	06:14		18:39 (T79)	05:58
	17:27	18:05	19:37			20:10	76	19:40 (T79)	20:41	43	19:22 (T79)	21:05
16	07:54	07:26	07:43			06:52		18:24 (T79)	06:13		18:40 (T79)	05:58
	17:28	18:06	19:39			20:11	77	19:41 (T79)	20:42	41	19:21 (T79)	21:05
17	07:54	07:24	07:41			06:50		18:24 (T79)	06:12		18:42 (T79)	05:58
	17:29	18:07	19:40			20:12	76	19:40 (T79)	20:43	37	19:19 (T79)	21:06
18	07:54	07:23	07:39			06:49		18:24 (T79)	06:11		18:43 (T79)	05:58
	17:30	18:09	19:41			20:13	76	19:40 (T79)	20:44	35	19:18 (T79)	21:06
19	07:53	07:22	07:38			06:47		18:23 (T79)	06:10		18:45 (T79)	05:59
	17:32	18:10	19:42			20:14	77	19:40 (T79)	20:45	31	19:16 (T79)	21:07
20	07:52	07:20	07:36			06:46		18:24 (T79)	06:09		18:47 (T79)	05:59
	17:33	18:11	19:43			20:15	76	19:40 (T79)	20:46	27	19:14 (T79)	21:07
21	07:52	07:19	07:34			06:44		18:23 (T79)	06:09		18:50 (T79)	05:59
	17:34	18:12	19:44			20:16	76	19:39 (T79)	20:47	22	19:12 (T79)	21:07
22	07:51	07:17	07:33			06:43		18:23 (T79)	06:08		18:52 (T79)	05:59
	17:35	18:13	19:45			20:17	76	19:39 (T79)	20:48	17	19:09 (T79)	21:07
23	07:51	07:16	07:31			06:41		18:24 (T79)	06:07		18:57 (T79)	05:59
	17:36	18:15	19:46			20:18	75	19:39 (T79)	20:49	8	19:05 (T79)	21:08
24	07:50	07:14	07:29			06:40		18:23 (T79)	06:06			06:00
	17:38	18:16	19:47			20:19	75	19:38 (T79)	20:50			21:08
25	07:49	07:13	07:28		19:04 (T79)	06:38		18:24 (T79)	06:06			06:00
	17:39	18:17	19:48	10	19:14 (T79)	20:20	74	19:38 (T79)	20:51			21:08
26	07:48	07:11	07:26		18:56 (T79)	06:37		18:24 (T79)	06:05			06:00
	17:40	18:18	19:49	24	19:20 (T79)	20:21	73	19:37 (T79)	20:51			21:08
27	07:48	07:10	07:24		18:52 (T79)	06:36		18:24 (T79)	06:04			06:01
	17:41	18:19	19:50	36	19:28 (T62)	20:22	73	19:37 (T79)	20:52			21:08
28	07:47	07:08	07:23		18:49 (T79)	06:34		18:25 (T79)	06:04			06:01
	17:43	18:20	19:51	41	19:30 (T62)	20:23	72	19:37 (T79)	20:53			21:08
29	07:46		07:21		18:46 (T79)	06:33		18:24 (T79)	06:03			06:01
	17:44		19:53	45	19:31 (T62)	20:25	72	19:36 (T79)	20:54			21:08
30	07:45		07:19		18:43 (T79)	06:32		18:25 (T79)	06:03			06:02
	17:45		19:54	49	19:32 (T62)	20:26	70	19:35 (T79)	20:55			21:08
31	07:44		07:18		18:41 (T79)				06:02			
	17:46		19:55	53	19:34 (T62)				20:56			
Potential sun hours	297	297	370			399			448			452
Total, worst case				258			2142			1087		
Sun reduction				0.44			0.52			0.57		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.61			0.61			0.61		
Total reduction				0.27			0.32			0.35		
Total, real				69			681			378		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 319 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7948)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November	December
1	06:02			06:26		18:44 (T79)	06:57		18:26 (T79)	07:27	07:02	07:37
	21:08			20:50	52	19:36 (T79)	20:07	73	19:39 (T79)	19:15	17:28	17:04
2	06:03			06:27		18:43 (T79)	06:58		18:26 (T79)	07:28	07:03	07:38
	21:08			20:49	54	19:37 (T79)	20:05	73	19:39 (T79)	19:13	17:27	17:04
3	06:03			06:28		18:42 (T79)	06:59		18:27 (T79)	07:29	07:04	07:39
	21:08			20:48	56	19:38 (T79)	20:04	71	19:38 (T79)	19:11	17:26	17:03
4	06:04			06:29		18:41 (T79)	07:00		18:27 (T79)	07:30	07:05	07:40
	21:08			20:46	58	19:39 (T79)	20:02	70	19:37 (T79)	19:10	17:24	17:03
5	06:04			06:30		18:40 (T79)	07:01		18:27 (T79)	07:31	07:06	07:41
	21:07			20:45	60	19:40 (T79)	20:00	69	19:36 (T79)	19:08	17:23	17:03
6	06:05			06:31		18:39 (T79)	07:02		18:28 (T79)	07:33	07:08	07:42
	21:07			20:44	62	19:41 (T79)	19:57	67	19:35 (T79)	19:06	17:22	17:03
7	06:06			06:32		18:39 (T79)	07:03		18:29 (T79)	07:34	07:09	07:43
	21:07			20:43	62	19:41 (T79)	19:55	64	19:33 (T62)	19:05	17:21	17:03
8	06:06			06:33		18:38 (T79)	07:04		18:28 (T79)	07:35	07:10	07:43
	21:07			20:42	64	19:42 (T79)	19:54	63	19:31 (T62)	19:03	17:20	17:03
9	06:07			06:34		18:37 (T79)	07:05		18:29 (T79)	07:36	07:11	07:44
	21:06			20:40	65	19:42 (T79)	19:52	61	19:30 (T62)	19:01	17:19	17:03
10	06:08			06:35		18:36 (T79)	07:06		18:30 (T79)	07:37	07:12	07:45
	21:06			20:39	67	19:43 (T79)	19:50	58	19:28 (T62)	19:00	17:18	17:03
11	06:08			06:36		18:35 (T79)	07:07		18:31 (T79)	07:38	07:14	07:46
	21:06			20:38	68	19:43 (T79)	19:49	56	19:27 (T62)	18:58	17:17	17:03
12	06:09			06:37		18:34 (T79)	07:08		18:32 (T79)	07:39	07:15	07:47
	21:05			20:37	70	19:44 (T79)	19:47	53	19:25 (T62)	18:57	17:16	17:03
13	06:10			06:38		18:34 (T79)	07:09		18:34 (T79)	07:40	07:16	07:48
	21:05			20:35	70	19:44 (T79)	19:45	49	19:23 (T62)	18:55	17:15	17:03
14	06:11			06:39		18:33 (T79)	07:10		18:36 (T79)	07:41	07:17	07:48
	21:04			20:34	71	19:44 (T79)	19:44	46	19:22 (T62)	18:53	17:14	17:03
15	06:11			06:40		18:32 (T79)	07:11		18:38 (T79)	07:42	07:18	07:49
	21:04			20:33	73	19:45 (T79)	19:42	42	19:20 (T62)	18:52	17:13	17:03
16	06:12			06:41		18:31 (T79)	07:12		18:40 (T79)	07:43	07:20	07:50
	21:03			20:31	73	19:44 (T79)	19:40	38	19:18 (T62)	18:50	17:12	17:04
17	06:13			06:42		18:30 (T79)	07:13		18:44 (T79)	07:44	07:21	07:51
	21:02			20:30	74	19:44 (T79)	19:38	29	19:13 (T62)	18:49	17:12	17:04
18	06:14			06:43		18:30 (T79)	07:14		18:49 (T79)	07:46	07:22	07:51
	21:02			20:28	74	19:44 (T79)	19:37	14	19:03 (T79)	18:47	17:11	17:04
19	06:15			06:44		18:29 (T79)	07:15			07:47	07:23	07:52
	21:01			20:27	75	19:44 (T79)	19:35			18:46	17:10	17:05
20	06:15			06:45		18:29 (T79)	07:16			07:48	07:24	07:52
	21:00			20:25	75	19:44 (T79)	19:33			18:44	17:09	17:05
21	06:16		19:04 (T79)	06:46		18:28 (T79)	07:17			07:49	07:25	07:53
	21:00	13	19:17 (T79)	20:24	76	19:44 (T79)	19:32			18:43	17:09	17:06
22	06:17		19:01 (T79)	06:47		18:28 (T79)	07:18			07:50	07:27	07:53
	20:59	19	19:20 (T79)	20:22	76	19:44 (T79)	19:30			18:41	17:08	17:06
23	06:18		18:58 (T79)	06:48		18:27 (T79)	07:19			07:51	07:28	07:54
	20:58	25	19:23 (T79)	20:21	77	19:44 (T79)	19:28			18:40	17:07	17:07
24	06:19		18:56 (T79)	06:49		18:27 (T79)	07:20			07:52	07:29	07:54
	20:57	29	19:25 (T79)	20:19	77	19:44 (T79)	19:26			18:39	17:07	17:07
25	06:20		18:55 (T79)	06:50		18:27 (T79)	07:21			07:53	07:30	07:55
	20:56	32	19:27 (T79)	20:18	76	19:43 (T79)	19:25			18:37	17:06	17:08
26	06:21		18:53 (T79)	06:51		18:27 (T79)	07:22			07:55	07:31	07:55
	20:56	36	19:29 (T79)	20:16	76	19:43 (T79)	19:23			18:36	17:06	17:08
27	06:22		18:52 (T79)	06:52		18:26 (T79)	07:23			07:56	07:32	07:56
	20:55	39	19:31 (T79)	20:15	76	19:42 (T79)	19:21			18:34	17:05	17:09
28	06:23		18:50 (T79)	06:53		18:26 (T79)	07:24			07:57	07:33	07:56
	20:54	42	19:32 (T79)	20:13	76	19:42 (T79)	19:20			18:33	17:05	17:10
29	06:23		18:48 (T79)	06:54		18:26 (T79)	07:25			07:58	07:34	07:56
	20:53	44	19:32 (T79)	20:12	75	19:41 (T79)	19:18			18:32	17:04	17:11
30	06:24		18:47 (T79)	06:55		18:26 (T79)	07:26			07:59	07:36	07:56
	20:52	47	19:34 (T79)	20:10	75	19:41 (T79)	19:16			18:31	17:04	17:11
31	06:25		18:46 (T79)	06:56		18:26 (T79)				08:00		07:57
	20:51	49	19:35 (T79)	20:09	74	19:40 (T79)				18:29		17:12
Potential sun hours	459			428			375			345	298	288
Total, worst case		375			2157			996				
Sun reduction		0.66			0.61			0.59				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.61			0.61			0.61				
Total reduction		0.40			0.37			0.36				
Total, real		151			804			360				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 328 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7956)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May		June		July		August		September	October	November	December
1	07:57	07:44	07:07	07:16	06:30		06:02		06:28 (T43)	06:02	06:34 (T43)	06:27	06:48 (T43)	06:58	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27		20:57	62	07:30 (T43)	21:09 62	07:36 (T43)	20:50 43	07:31 (T43)	20:07	19:15	17:28	17:04
2	07:58	07:43	07:06	07:15	06:29		06:01		06:28 (T43)	06:03	06:33 (T43)	06:28	06:49 (T43)	06:59	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28		20:58	62	07:30 (T43)	21:09 63	07:36 (T43)	20:49 41	07:30 (T43)	20:06	19:13	17:27	17:04
3	07:58	07:42	07:04	07:13	06:28	06:56 (T43)	06:01		06:28 (T43)	06:03	06:34 (T43)	06:29	06:50 (T43)	07:00	07:30	07:05	07:39
	17:15	17:50	18:24	19:58	20:29 5	07:01 (T43)	20:59	63	07:31 (T43)	21:08 62	07:36 (T43)	20:48 38	07:28 (T43)	20:04	19:12	17:26	17:03
4	07:58	07:41	07:03	07:11	06:27	06:49 (T43)	06:00		06:28 (T43)	06:04	06:35 (T43)	06:29	06:51 (T43)	07:01	07:31	07:06	07:40
	17:16	17:52	18:25	19:59	20:30 18	07:07 (T43)	20:59	62	07:30 (T43)	21:08 62	07:37 (T43)	20:47 36	07:27 (T43)	20:03	19:10	17:25	17:03
5	07:58	07:40	07:01	07:10	06:25	06:46 (T43)	06:00		06:28 (T43)	06:05	06:34 (T43)	06:30	06:52 (T43)	07:02	07:32	07:07	07:41
	17:17	17:53	18:27	20:01	20:31 24	07:10 (T43)	21:00	63	07:31 (T43)	21:08 63	07:37 (T43)	20:46 34	07:26 (T43)	20:01	19:08	17:23	17:03
6	07:58	07:38	07:00	07:08	06:24	06:44 (T43)	06:00		06:29 (T43)	06:05	06:35 (T43)	06:31	06:53 (T43)	07:03	07:33	07:08	07:42
	17:18	17:54	18:28	20:01	20:33 29	07:13 (T43)	21:01	62	07:31 (T43)	21:08 62	07:37 (T43)	20:45 31	07:24 (T43)	19:58	19:07	17:22	17:03
7	07:58	07:37	06:58	07:06	06:23	06:43 (T43)	05:59		06:28 (T43)	06:06	06:35 (T43)	06:32	06:54 (T43)	07:04	07:34	07:09	07:43
	17:19	17:55	18:29	20:02	20:34 32	07:15 (T43)	21:01	63	07:31 (T43)	21:08 62	07:37 (T43)	20:43 28	07:22 (T43)	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22	06:42 (T43)	05:59		06:29 (T43)	06:06	06:35 (T43)	06:33	06:56 (T43)	07:05	07:35	07:11	07:44
	17:20	17:57	19:30	20:03	20:35 35	07:17 (T43)	21:02	62	07:31 (T43)	21:07 62	07:37 (T43)	20:42 23	07:19 (T43)	19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03	06:21	06:41 (T43)	05:59		06:29 (T43)	06:07	06:36 (T43)	06:34	07:00 (T43)	07:06	07:36	07:12	07:45
	17:21	17:58	19:31	20:04	20:36 37	07:18 (T43)	21:03	62	07:31 (T43)	21:07 62	07:38 (T43)	20:41 15	07:15 (T43)	19:53	19:02	17:19	17:03
10	07:57	07:34	07:53	07:02	06:20	06:40 (T43)	05:59		06:29 (T43)	06:08	06:35 (T43)	06:35		07:07	07:37	07:13	07:46
	17:22	17:59	19:32	20:05	20:37 39	07:19 (T43)	21:03	63	07:32 (T43)	21:07 62	07:37 (T43)	20:40		19:51	19:00	17:18	17:03
11	07:57	07:33	07:51	07:00	06:18	06:39 (T43)	05:59		06:29 (T43)	06:08	06:36 (T43)	06:36		07:08	07:38	07:14	07:47
	17:23	18:00	19:33	20:06	20:38 41	07:20 (T43)	21:04	63	07:32 (T43)	21:06 62	07:38 (T43)	20:38		19:49	18:59	17:17	17:03
12	07:57	07:31	07:50	06:58	06:17	06:38 (T43)	05:59		06:30 (T43)	06:09	06:36 (T43)	06:37		07:09	07:39	07:15	07:48
	17:24	18:02	19:35	20:07	20:39 43	07:21 (T43)	21:04	62	07:32 (T43)	21:06 62	07:38 (T43)	20:37		19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57	06:16	06:37 (T43)	05:58		06:30 (T43)	06:10	06:36 (T43)	06:38		07:10	07:41	07:17	07:48
	17:25	18:03	19:36	20:08	20:40 45	07:22 (T43)	21:05	62	07:32 (T43)	21:05 62	07:38 (T43)	20:36		19:46	18:55	17:15	17:03
14	07:56	07:29	07:47	06:55	06:15	06:36 (T43)	05:58		06:30 (T43)	06:11	06:36 (T43)	06:39		07:11	07:42	07:18	07:49
	17:26	18:04	19:37	20:09	20:41 47	07:23 (T43)	21:05	63	07:33 (T43)	21:05 62	07:38 (T43)	20:34		19:44	18:54	17:14	17:03
15	07:56	07:28	07:45	06:54	06:14	06:35 (T43)	05:58		06:30 (T43)	06:11	06:37 (T43)	06:40		07:12	07:43	07:19	07:50
	17:27	18:05	19:38	20:10	20:42 49	07:24 (T43)	21:06	63	07:33 (T43)	21:04 61	07:38 (T43)	20:33		19:42	18:52	17:13	17:04
16	07:55	07:26	07:43	06:52	06:13	06:34 (T43)	05:58		06:31 (T43)	06:12	06:37 (T43)	06:41		07:13	07:44	07:20	07:51
	17:28	18:06	19:39	20:11	20:43 50	07:24 (T43)	21:06	62	07:33 (T43)	21:04 61	07:38 (T43)	20:32		19:41	18:51	17:13	17:04
17	07:55	07:25	07:42	06:51	06:12	06:33 (T43)	05:58		06:31 (T43)	06:13	06:37 (T43)	06:42		07:14	07:45	07:21	07:51
	17:29	18:08	19:40	20:12	20:44 52	07:25 (T43)	21:07	62	07:33 (T43)	21:03 61	07:38 (T43)	20:30		19:39	18:49	17:12	17:04
18	07:54	07:24	07:40	06:49	06:11	06:32 (T43)	05:59		06:31 (T43)	06:14	06:37 (T43)	06:43		07:15	07:46	07:23	07:52
	17:31	18:09	19:41	20:13	20:45 53	07:25 (T43)	21:07	62	07:33 (T43)	21:02 61	07:38 (T43)	20:29		19:37	18:48	17:11	17:05
19	07:54	07:22	07:38	06:48	06:11	06:31 (T43)	05:59		06:31 (T43)	06:15	06:38 (T43)	06:44		07:16	07:47	07:24	07:52
	17:32	18:10	19:42	20:14	20:46 55	07:26 (T43)	21:07	62	07:33 (T43)	21:02 60	07:38 (T43)	20:27		19:35	18:46	17:10	17:05
20	07:53	07:21	07:37	06:46	06:10	06:31 (T43)	05:59		06:31 (T43)	06:16	06:38 (T43)	06:45		07:17	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	20:47 56	07:27 (T43)	21:08	62	07:33 (T43)	21:01 60	07:38 (T43)	20:26		19:34	18:45	17:09	17:05
21	07:52	07:19	07:35	06:45	06:09	06:30 (T43)	05:59		06:31 (T43)	06:16	06:39 (T43)	06:47		07:18	07:49	07:26	07:54
	17:34	18:13	19:44	20:17	20:48 57	07:27 (T43)	21:08	62	07:33 (T43)	21:00 59	07:38 (T43)	20:25		19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43	06:08	06:29 (T43)	05:59		06:32 (T43)	06:17	06:39 (T43)	06:48		07:19	07:51	07:27	07:54
	17:35	18:14	19:45	20:18	20:49 58	07:27 (T43)	21:08	62	07:34 (T43)	21:00 58	07:37 (T43)	20:23		19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:42	06:07	06:28 (T43)	05:59		06:32 (T43)	06:18	06:40 (T43)	06:49		07:20	07:52	07:28	07:55
	17:37	18:15	19:47	20:19	20:49 59	07:27 (T43)	21:08	62	07:34 (T43)	20:59 56	07:36 (T43)	20:22		19:29	18:40	17:08	17:07
24	07:50	07:15	07:30	06:40	06:07	06:29 (T43)	06:00		06:32 (T43)	06:19	06:41 (T43)	06:50		07:21	07:53	07:30	07:55
	17:38	18:16	19:48	20:20	20:50 59	07:28 (T43)	21:08	62	07:34 (T43)	20:58 55	07:36 (T43)	20:20		19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:39	06:06	06:28 (T43)	06:00		06:33 (T43)	06:20	06:42 (T43)	06:51		07:22	07:54	07:31	07:55
	17:39	18:17	19:49	20:21	20:51 60	07:28 (T43)	21:09	62	07:35 (T43)	20:57 54	07:36 (T43)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:05	06:28 (T43)	06:00		06:33 (T43)	06:21	06:43 (T43)	06:52		07:23	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	20:52 60	07:28 (T43)	21:09	62	07:35 (T43)	20:56 53	07:36 (T43)	20:17		19:23	18:36	17:06	17:09
27	07:48	07:10	07:25	06:36	06:04	06:28 (T43)	06:01		06:33 (T43)	06:22	06:44 (T43)	06:53		07:24	07:56	07:33	07:56
	17:41	18:20	19:51	20:23	20:53 61	07:29 (T43)	21:09	62	07:35 (T43)	20:55 51	07:35 (T43)	20:15		19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:35	06:04	06:28 (T43)	06:01		06:33 (T43)	06:23	06:45 (T43)	06:54		07:25	07:58	07:34	07:57
	17:43	18:21	19:52	20:24	20:54 61	07:29 (T43)	21:09	63	07:36 (T43)	20:54 50	07:35 (T43)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:03	06:28 (T43)	06:01		06:33 (T43)	06:24	06:46 (T43)	06:55		07:26	07:59	07:35	07:57
	17:44		19:53	20:25	20:55 62	07:30 (T43)	21:09	63	07:36 (T43)	20:53 48	07:34 (T43)	20:12		19:18	18:32	17:05	17:11
30	07:46		07:20	06:32	06:03	06:28 (T43)	06:02		06:33 (T43)	06:25	06:47 (T43)	06:56		07:27	08:00	07:36	07:57
	17:45		19:54	20:26	20:56 61	07:29 (T43)	21:09	62	07:35 (T43)	20:52 46	07:33 (T43)	20:11		19:17	18:31	17:04	17:11
31	07:45		07:18		06:02	06:28 (T43)				06:26	06:48 (T43)	06:57			08:01		07:57
	17:46		19:55		20:56 62	07:30 (T43)				20:51 45	07:33 (T43)	20:09			18:30		17:12
Potential sun hours	297	297	370	399	448		453			460		429		375	345	297	287
Total, worst case						1370		1869		1809		289					
Sun reduction						0.57		0.64		0.66		0.61					
Oper. time red.						1.00		1.00		1.00		1.00					
Wind dir. red.						0.71		0.71		0.71		0.71					
Total reduction						0.40		0.45		0.47		0.43					
Total, real						552		846		845		125					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 332 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7960)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June
1	07:57	15:59 (T5)	07:43	16:06 (T5)	07:07	17:20 (T4)	07:16	19:20 (T3)	06:30		06:01
	17:12 47	16:46 (T5)	17:47 59	17:05 (T5)	18:21 4	17:24 (T4)	19:56 14	19:34 (T3)	20:27		20:57
2	07:57	16:00 (T5)	07:42	16:06 (T5)	07:05		07:14	19:18 (T3)	06:28		06:00
	17:13 47	16:47 (T5)	17:48 59	17:05 (T5)	18:22		19:57 17	19:35 (T3)	20:28		20:58
3	07:57	16:00 (T5)	07:41	16:07 (T5)	07:04		07:12	19:16 (T3)	06:27		06:00
	17:14 48	16:48 (T5)	17:49 58	17:05 (T5)	18:24		19:58 20	19:36 (T3)	20:29		20:58
4	07:57	16:00 (T5)	07:40	16:08 (T5)	07:02		07:11	19:16 (T3)	06:26		05:59
	17:15 49	16:49 (T5)	17:51 63	17:27 (T4)	18:25		19:59 21	19:37 (T3)	20:30		20:59
5	07:57	16:00 (T5)	07:39	16:07 (T5)	07:01		07:09	19:14 (T3)	06:24		05:59
	17:16 50	16:50 (T5)	17:52 68	17:27 (T4)	18:26		20:00 24	19:38 (T3)	20:31		21:00
6	07:57	16:00 (T5)	07:38	16:08 (T5)	06:59		07:07	19:13 (T3)	06:23		05:59
	17:17 51	16:51 (T5)	17:53 71	17:29 (T4)	18:27		20:00 26	19:39 (T3)	20:32		21:01
7	07:57	16:00 (T5)	07:37	16:09 (T5)	06:57		07:06	19:13 (T3)	06:22		05:58
	17:18 51	16:51 (T5)	17:54 72	17:31 (T4)	18:28		20:01 28	19:41 (T3)	20:33		21:01
8	07:57	16:00 (T5)	07:36	16:11 (T5)	07:56		07:04	19:13 (T3)	06:21		05:58
	17:19 52	16:52 (T5)	17:56 72	17:32 (T4)	19:29		20:02 28	19:41 (T3)	20:34		21:02
9	07:57	16:00 (T5)	07:35	16:12 (T5)	07:54		07:02	19:12 (T3)	06:20		05:58
	17:20 54	16:54 (T5)	17:57 73	17:34 (T4)	19:30		20:03 30	19:42 (T3)	20:35		21:02
10	07:57	16:01 (T5)	07:33	16:12 (T5)	07:53		07:01	19:13 (T3)	06:19		05:58
	17:21 54	16:55 (T5)	17:58 74	17:34 (T4)	19:32		20:04 29	19:42 (T3)	20:36		21:03
11	07:57	16:00 (T5)	07:32	16:14 (T5)	07:51		06:59	19:12 (T3)	06:17		05:58
	17:22 55	16:55 (T5)	17:59 73	17:36 (T4)	19:33		20:05 29	19:41 (T3)	20:37		21:04
12	07:56	16:01 (T5)	07:31	16:15 (T5)	07:49		06:58	19:13 (T3)	06:16		05:57
	17:23 56	16:57 (T5)	18:01 73	17:37 (T4)	19:34		20:06 27	19:40 (T3)	20:38		21:04
13	07:56	16:01 (T5)	07:30	16:17 (T5)	07:48		06:56	19:13 (T3)	06:15		05:57
	17:24 57	16:58 (T5)	18:02 72	17:39 (T4)	19:35		20:07 26	19:39 (T3)	20:39		21:05
14	07:56	16:01 (T5)	07:28	16:18 (T5)	07:46		06:54	19:14 (T3)	06:14		05:57
	17:25 58	16:59 (T5)	18:03 71	17:40 (T4)	19:36		20:09 24	19:38 (T3)	20:40		21:05
15	07:55	16:01 (T5)	07:27	16:21 (T5)	07:44		06:53	19:15 (T3)	06:13		05:57
	17:26 59	17:00 (T5)	18:04 67	17:41 (T4)	19:37		20:10 21	19:36 (T3)	20:41		21:06
16	07:55	16:01 (T5)	07:26	16:24 (T5)	07:43		06:51	19:16 (T3)	06:12		05:57
	17:27 59	17:00 (T5)	18:06 63	17:42 (T4)	19:38		20:11 18	19:34 (T3)	20:42		21:06
17	07:54	16:01 (T5)	07:24	16:26 (T5)	07:41		06:50	19:18 (T3)	06:11		05:57
	17:28 60	17:01 (T5)	18:07 56	17:41 (T4)	19:39		20:12 14	19:32 (T3)	20:43		21:06
18	07:54	16:01 (T5)	07:23	16:32 (T5)	07:39		06:48	19:21 (T3)	06:10		05:57
	17:30 60	17:01 (T5)	18:08 47	17:42 (T4)	19:40		20:13 7	19:28 (T3)	20:44		21:07
19	07:53	16:02 (T5)	07:22	17:06 (T4)	07:38		06:47		06:10		05:58
	17:31 60	17:02 (T5)	18:09 35	17:41 (T4)	19:42		20:14		20:45		21:07
20	07:53	16:02 (T5)	07:20	17:06 (T4)	07:36		06:45		06:09		05:58
	17:32 60	17:02 (T5)	18:10 35	17:41 (T4)	19:43		20:15		20:46		21:07
21	07:52	16:01 (T5)	07:19	17:07 (T4)	07:34		06:44		06:08		05:58
	17:33 61	17:02 (T5)	18:12 34	17:41 (T4)	19:44		20:16		20:47		21:08
22	07:52	16:02 (T5)	07:17	17:07 (T4)	07:33		06:42		06:07		05:58
	17:34 62	17:04 (T5)	18:13 33	17:40 (T4)	19:45		20:17		20:48		21:08
23	07:51	16:02 (T5)	07:16	17:08 (T4)	07:31		06:41		06:06		05:58
	17:36 62	17:04 (T5)	18:14 31	17:39 (T4)	19:46		20:18		20:49		21:08
24	07:50	16:02 (T5)	07:14	17:09 (T4)	07:29		06:39		06:05		05:59
	17:37 62	17:04 (T5)	18:15 29	17:38 (T4)	19:47		20:19		20:50		21:08
25	07:49	16:02 (T5)	07:13	17:10 (T4)	07:27		06:38		06:05		05:59
	17:38 62	17:04 (T5)	18:16 27	17:37 (T4)	19:48		20:20		20:51		21:08
26	07:49	16:03 (T5)	07:11	17:11 (T4)	07:26		06:36		06:04		05:59
	17:39 61	17:04 (T5)	18:18 24	17:35 (T4)	19:49		20:21		20:52		21:08
27	07:48	16:04 (T5)	07:10	17:12 (T4)	07:24		06:35		06:03		06:00
	17:41 61	17:05 (T5)	18:19 20	17:32 (T4)	19:50		20:23		20:53		21:09
28	07:47	16:04 (T5)	07:08	17:15 (T4)	07:22		06:34		06:03		06:00
	17:42 61	17:05 (T5)	18:20 15	17:30 (T4)	19:51		20:24		20:54		21:09
29	07:46	16:04 (T5)			07:21		06:32		06:02		06:00
	17:43 61	17:05 (T5)			19:52		20:25		20:54		21:09
30	07:45	16:05 (T5)			07:19	19:26 (T3)	06:31		06:02		06:01
	17:44 60	17:05 (T5)			19:53 6	19:32 (T3)	20:26		20:55		21:09
31	07:44	16:05 (T5)			07:17	19:22 (T3)			06:01		
	17:46 60	17:05 (T5)			19:55 11	19:33 (T3)			20:56		
Potential sun hours	297		297		370		399		449		453
Total, worst case	1760		1474		21		403				
Sun reduction	0.31		0.40		0.44		0.52				
Oper. time red.	1.00		1.00		1.00		1.00				
Wind dir. red.	0.73		0.72		0.63		0.61				
Total reduction	0.23		0.29		0.28		0.32				
Total, real	403		430		6		129				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 332 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7960)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December	
1	06:01	06:26		06:57		19:11 (T3)	07:27		07:02		15:42 (T5)	07:37		15:42 (T5)
	21:08	20:50		20:07	29	19:40 (T3)	19:14		17:27	74	17:04 (T4)	17:03	55	16:37 (T5)
2	06:02	06:27		06:58		19:11 (T3)	07:28		07:03		15:40 (T5)	07:38		15:44 (T5)
	21:08	20:49		20:05	29	19:40 (T3)	19:13		17:26	73	17:02 (T4)	17:03	54	16:38 (T5)
3	06:02	06:28		06:59		19:10 (T3)	07:29		07:04		15:40 (T5)	07:39		15:44 (T5)
	21:08	20:48		20:04	30	19:40 (T3)	19:11		17:25	73	17:02 (T4)	17:02	54	16:38 (T5)
4	06:03	06:29		07:00		19:10 (T3)	07:30		07:05		15:39 (T5)	07:40		15:45 (T5)
	21:08	20:47		20:02	28	19:38 (T3)	19:09		17:24	71	17:00 (T4)	17:02	52	16:37 (T5)
5	06:03	06:30		07:01		19:09 (T3)	07:31		07:07		15:38 (T5)	07:41		15:46 (T5)
	21:08	20:46		20:00	28	19:37 (T3)	19:08		17:23	71	16:59 (T4)	17:02	51	16:37 (T5)
6	06:04	06:31		07:02		19:09 (T3)	07:32		07:08		15:38 (T5)	07:42		15:46 (T5)
	21:08	20:44		19:57	26	19:35 (T3)	19:06		17:21	68	16:58 (T4)	17:02	51	16:37 (T5)
7	06:05	06:31		07:03		19:09 (T3)	07:33		07:09		15:37 (T5)	07:43		15:47 (T5)
	21:07	20:43		19:55	24	19:33 (T3)	19:04		17:20	63	16:56 (T4)	17:02	50	16:37 (T5)
8	06:05	06:32		07:04		19:10 (T3)	07:35		07:10		15:37 (T5)	07:44		15:47 (T5)
	21:07	20:42		19:54	22	19:32 (T3)	19:03		17:19	58	16:35 (T5)	17:02	49	16:36 (T5)
9	06:06	06:34		07:05		19:10 (T3)	07:36		07:11		15:36 (T5)	07:45		15:48 (T5)
	21:07	20:41		19:52	20	19:30 (T3)	19:01		17:18	59	16:35 (T5)	17:02	48	16:36 (T5)
10	06:07	06:35		07:06		19:11 (T3)	07:37		07:13		15:36 (T5)	07:46		15:49 (T5)
	21:06	20:39		19:50	17	19:28 (T3)	18:59		17:17	60	16:36 (T5)	17:02	47	16:36 (T5)
11	06:07	06:36		07:07		19:12 (T3)	07:38		07:14		15:36 (T5)	07:46		15:49 (T5)
	21:06	20:38		19:49	15	19:27 (T3)	18:58		17:16	60	16:36 (T5)	17:02	47	16:36 (T5)
12	06:08	06:37		07:08		19:14 (T3)	07:39		07:15		15:36 (T5)	07:47		15:50 (T5)
	21:06	20:37		19:47	11	19:25 (T3)	18:56		17:15	60	16:36 (T5)	17:02	46	16:36 (T5)
13	06:09	06:38		07:09		19:16 (T3)	07:40	17:51 (T4)	07:16		15:36 (T5)	07:48		15:51 (T5)
	21:05	20:35		19:45	7	19:23 (T3)	18:55	10 18:01 (T4)	17:14	61	16:37 (T5)	17:02	46	16:37 (T5)
14	06:10	06:39		07:10			07:41	17:47 (T4)	07:17		15:36 (T5)	07:49		15:51 (T5)
	21:05	20:34		19:43			18:53	17 18:04 (T4)	17:13	61	16:37 (T5)	17:02	45	16:36 (T5)
15	06:10	06:40		07:11			07:42	17:44 (T4)	07:19		15:36 (T5)	07:50		15:52 (T5)
	21:04	20:33		19:42			18:51	22 18:06 (T4)	17:12	61	16:37 (T5)	17:03	44	16:36 (T5)
16	06:11	06:41		07:12			07:43	17:43 (T4)	07:20		15:36 (T5)	07:50		15:53 (T5)
	21:03	20:31		19:40			18:50	25 18:08 (T4)	17:12	61	16:37 (T5)	17:03	44	16:37 (T5)
17	06:12	06:42		07:13			07:44	17:41 (T4)	07:21		15:36 (T5)	07:51		15:53 (T5)
	21:03	20:30		19:38			18:48	28 18:09 (T4)	17:11	62	16:38 (T5)	17:03	44	16:37 (T5)
18	06:13	06:43		07:14			07:46	17:40 (T4)	07:22		15:36 (T5)	07:52		15:54 (T5)
	21:02	20:28		19:37			18:47	30 18:10 (T4)	17:10	62	16:38 (T5)	17:03	43	16:37 (T5)
19	06:14	06:44		07:15			07:47	17:38 (T4)	07:23		15:36 (T5)	07:52		15:55 (T5)
	21:02	20:27		19:35			18:45	32 18:10 (T4)	17:09	62	16:38 (T5)	17:04	43	16:38 (T5)
20	06:14	06:45		07:16			07:48	17:37 (T4)	07:25		15:37 (T5)	07:53		15:55 (T5)
	21:01	20:26		19:33			18:44	33 18:10 (T4)	17:08	62	16:39 (T5)	17:04	43	16:38 (T5)
21	06:15	06:46		07:17			07:49	17:37 (T4)	07:26		15:38 (T5)	07:53		15:56 (T5)
	21:00	20:24		19:31			18:42	35 18:12 (T4)	17:08	60	16:38 (T5)	17:05	43	16:39 (T5)
22	06:16	06:47		07:18			07:50	17:37 (T4)	07:27		15:38 (T5)	07:54		15:56 (T5)
	20:59	20:23		19:30			18:41	35 18:12 (T4)	17:07	60	16:38 (T5)	17:05	43	16:39 (T5)
23	06:17	06:48		07:19			07:51	17:36 (T4)	07:28		15:38 (T5)	07:54		15:57 (T5)
	20:59	20:21		19:28			18:39	35 18:11 (T4)	17:07	60	16:38 (T5)	17:06	43	16:40 (T5)
24	06:18	06:49		07:20			07:52	17:00 (T5)	07:29		15:38 (T5)	07:55		15:57 (T5)
	20:58	20:20		19:26			18:38	49 18:11 (T4)	17:06	60	16:38 (T5)	17:06	43	16:40 (T5)
25	06:19	06:50	19:24 (T3)	07:21			07:54	16:55 (T5)	07:30		15:39 (T5)	07:55		15:57 (T5)
	20:57	20:18	9 19:33 (T3)	19:25			18:37	59 18:11 (T4)	17:05	60	16:39 (T5)	17:07	43	16:40 (T5)
26	06:20	06:51	19:21 (T3)	07:22			07:55	16:53 (T5)	07:32		15:40 (T5)	07:56		15:58 (T5)
	20:56	20:16	14 19:35 (T3)	19:23			18:35	63 18:11 (T4)	17:05	59	16:39 (T5)	17:07	43	16:41 (T5)
27	06:21	06:52	19:18 (T3)	07:23			07:56	16:50 (T5)	07:33		15:40 (T5)	07:56		15:58 (T5)
	20:55	20:15	19 19:37 (T3)	19:21			18:34	68 18:11 (T4)	17:04	59	16:39 (T5)	17:08	44	16:42 (T5)
28	06:22	06:53	19:17 (T3)	07:24			07:57	16:48 (T5)	07:34		15:41 (T5)	07:56		15:58 (T5)
	20:54	20:13	21 19:38 (T3)	19:19			18:33	70 18:09 (T4)	17:04	58	16:39 (T5)	17:09	44	16:42 (T5)
29	06:23	06:54	19:14 (T3)	07:25			07:58	16:46 (T5)	07:35		15:41 (T5)	07:57		15:58 (T5)
	20:53	20:12	24 19:38 (T3)	19:18			18:31	72 18:08 (T4)	17:04	57	16:38 (T5)	17:10	45	16:43 (T5)
30	06:24	06:55	19:13 (T3)	07:26			07:59	16:45 (T5)	07:36		15:42 (T5)	07:57		15:59 (T5)
	20:52	20:10	26 19:39 (T3)	19:16			18:30	73 18:07 (T4)	17:03	56	16:38 (T5)	17:10	45	16:44 (T5)
31	06:25	06:56	19:12 (T3)				08:01	16:43 (T5)				07:57		15:59 (T5)
	20:51	20:09	27 19:39 (T3)				18:29	74 18:05 (T4)				17:11	46	16:45 (T5)
Potential sun hours	460	429		375			345		297			287		
Total, worst case			140		286			830		1871			1438	
Sun reduction			0.61		0.59			0.48		0.30			0.22	
Oper. time red.			1.00		1.00			1.00		1.00			1.00	
Wind dir. red.			0.61		0.61			0.72		0.73			0.73	
Total reduction			0.37		0.36			0.35		0.22			0.16	
Total, real			52		104			289		414			234	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 344 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7972)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57	07:43	07:07	07:16	06:30	06:49 (T5) 06:01	06:29 (T4) 06:01	06:36 (T4) 06:26	06:48 (T4) 06:57	07:27	07:02	07:37
	17:12	17:47	18:21	19:56	20:27 31	07:20 (T5) 20:57 43	07:12 (T4) 21:09 42	07:18 (T4) 20:50 35	07:23 (T5) 20:07	19:14	17:27	17:03
2	07:57	07:42	07:05	07:14	06:28	06:48 (T5) 06:00	06:29 (T4) 06:02	06:36 (T4) 06:27	06:49 (T4) 06:58	07:28	07:03	07:38
	17:13	17:48	18:22	19:57	20:28 31	07:19 (T5) 20:58 44	07:13 (T4) 21:08 42	07:18 (T4) 20:49 35	07:24 (T5) 20:05	19:13	17:26	17:03
3	07:57	07:41	07:04	07:12	06:27	06:47 (T5) 06:00	06:30 (T4) 06:02	06:36 (T4) 06:28	06:50 (T4) 06:59	07:29	07:04	07:39
	17:14	17:49	18:24	19:58	20:29 32	07:19 (T5) 20:58 43	07:13 (T4) 21:08 43	07:19 (T4) 20:48 35	07:25 (T5) 20:04	19:11	17:25	17:02
4	07:58	07:40	07:02	07:11	06:26	06:47 (T5) 05:59	06:30 (T4) 06:03	06:37 (T4) 06:29	06:50 (T4) 07:00	07:30	07:05	07:40
	17:15	17:51	18:25	19:59	20:30 32	07:19 (T5) 20:59 43	07:13 (T4) 21:08 42	07:19 (T4) 20:47 35	07:25 (T5) 20:02	19:09	17:24	17:02
5	07:58	07:39	07:01	07:09	06:25	06:46 (T5) 05:59	06:30 (T4) 06:04	06:36 (T4) 06:30	06:52 (T4) 07:01	07:31	07:07	07:41
	17:16	17:52	18:26	20:00	20:31 32	07:18 (T5) 21:00 43	07:13 (T4) 21:08 43	07:19 (T4) 20:46 34	07:26 (T5) 20:00	19:08	17:23	17:02
6	07:57	07:38	06:59	07:07	06:23	06:47 (T5) 05:59	06:31 (T4) 06:04	06:37 (T4) 06:31	06:55 (T4) 07:02	07:32	07:08	07:42
	17:17	17:53	18:27	20:00	20:32 30	07:17 (T5) 21:01 43	07:14 (T4) 21:08 43	07:20 (T4) 20:44 32	07:27 (T5) 19:57	19:06	17:21	17:02
7	07:57	07:37	06:57	07:06	06:22	06:44 (T4) 05:58	06:30 (T4) 06:05	06:36 (T4) 06:32	06:57 (T5) 07:03	07:34	07:09	07:43
	17:18	17:54	18:28	20:01	20:33 33	07:17 (T5) 21:01 43	07:13 (T4) 21:07 43	07:19 (T4) 20:43 30	07:27 (T5) 19:55	19:04	17:20	17:02
8	07:57	07:36	07:56	07:04	06:21	06:41 (T4) 05:58	06:31 (T4) 06:05	06:37 (T4) 06:33	06:56 (T5) 07:04	07:35	07:10	07:44
	17:19	17:56	19:29	20:02	20:34 35	07:16 (T5) 21:02 42	07:13 (T4) 21:07 43	07:20 (T4) 20:42 32	07:28 (T5) 19:54	19:03	17:19	17:02
9	07:57	07:35	07:54	07:03	06:20	06:40 (T4) 05:58	06:31 (T4) 06:06	06:37 (T4) 06:34	06:56 (T5) 07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03	20:35 35	07:15 (T5) 21:02 42	07:13 (T4) 21:07 44	07:21 (T4) 20:41 32	07:28 (T5) 19:52	19:01	17:18	17:02
10	07:57	07:34	07:53	07:01	06:19	06:39 (T4) 05:58	06:31 (T4) 06:07	06:37 (T4) 06:35	06:56 (T5) 07:06	07:37	07:13	07:46
	17:21	17:58	19:32	20:04	20:36 35	07:14 (T5) 21:03 43	07:14 (T4) 21:06 43	07:20 (T4) 20:39 32	07:28 (T5) 19:50	18:59	17:17	17:02
11	07:57	07:32	07:51	06:59	06:18	06:38 (T4) 05:58	06:32 (T4) 06:07	06:37 (T4) 06:36	06:57 (T5) 07:07	07:38	07:14	07:47
	17:22	17:59	19:33	20:05	20:37 35	07:13 (T5) 21:04 42	07:14 (T4) 21:06 44	07:21 (T4) 20:38 31	07:28 (T5) 19:49	18:58	17:16	17:02
12	07:56	07:31	07:49	06:58	06:16	06:37 (T4) 05:58	06:32 (T4) 06:08	06:38 (T4) 06:37	06:58 (T5) 07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:06	20:38 35	07:12 (T5) 21:04 42	07:14 (T4) 21:06 43	07:21 (T4) 20:37 30	07:28 (T5) 19:47	18:56	17:15	17:02
13	07:56	07:30	07:48	06:56	06:15	06:36 (T4) 05:57	06:33 (T4) 06:09	06:37 (T4) 06:38	06:59 (T5) 07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08	20:39 34	07:10 (T5) 21:05 41	07:14 (T4) 21:05 44	07:21 (T4) 20:36 29	07:28 (T5) 19:45	18:55	17:14	17:02
14	07:56	07:28	07:46	06:55	06:14	06:35 (T4) 05:57	06:33 (T4) 06:10	06:37 (T4) 06:39	07:00 (T5) 07:10	07:41	07:18	07:49
	17:25	18:03	19:36	20:09	20:41 32	07:07 (T4) 21:05 41	07:14 (T4) 21:05 44	07:21 (T4) 20:34 28	07:28 (T5) 19:44	18:53	17:13	17:02
15	07:55	07:27	07:44	06:53	06:13	06:34 (T4) 05:57	06:33 (T4) 06:10	06:38 (T4) 06:40	07:01 (T5) 07:11	07:42	07:19	07:50
	17:26	18:04	19:37	20:10	20:42 34	07:08 (T4) 21:06 42	07:15 (T4) 21:04 43	07:21 (T4) 20:33 27	07:28 (T5) 19:42	18:52	17:12	17:03
16	07:55	07:26	07:43	06:51	06:12	06:33 (T4) 05:57	06:33 (T4) 06:11	06:38 (T4) 06:41	07:02 (T5) 07:12	07:43	07:20	07:50
	17:27	18:06	19:38	20:11	20:43 36	07:09 (T4) 21:06 42	07:15 (T4) 21:03 44	07:22 (T4) 20:31 25	07:27 (T5) 19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	06:11	06:32 (T4) 05:57	06:34 (T4) 06:12	06:38 (T4) 06:42	07:03 (T5) 07:13	07:44	07:21	07:51
	17:29	18:07	19:39	20:12	20:44 37	07:09 (T4) 21:06 41	07:15 (T4) 21:03 43	07:21 (T4) 20:30 24	07:27 (T5) 19:38	18:48	17:11	17:03
18	07:54	07:23	07:39	06:48 07:07 (T5)	06:10	06:31 (T4) 05:58	06:34 (T4) 06:13	06:38 (T4) 06:43	07:04 (T5) 07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13 3	07:10 (T5) 20:44 38	07:09 (T4) 21:07 41	07:15 (T4) 21:02 43	07:21 (T4) 20:29 22	07:26 (T5) 19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47 07:06 (T5)	06:10	06:30 (T4) 05:58	06:34 (T4) 06:14	06:38 (T4) 06:44	07:05 (T5) 07:15	07:47	07:23	07:52
	17:31	18:09	19:42	20:14 8	07:14 (T5) 20:45 40	07:10 (T4) 21:07 41	07:15 (T4) 21:02 43	07:21 (T4) 20:27 20	07:25 (T5) 19:35	18:45	17:09	17:04
20	07:53	07:20	07:36	06:45 07:05 (T5)	06:09	06:30 (T4) 05:58	06:34 (T4) 06:15	06:39 (T4) 06:45	07:06 (T5) 07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15 11	07:16 (T5) 20:46 41	07:11 (T4) 21:07 41	07:15 (T4) 21:01 42	07:21 (T4) 20:26 18	07:24 (T5) 19:33	18:44	17:09	17:04
21	07:52	07:19	07:34	06:44 07:03 (T5)	06:08	06:29 (T4) 05:58	06:34 (T4) 06:15	06:39 (T4) 06:46	07:07 (T5) 07:17	07:49	07:26	07:53
	17:33	18:12	19:44	20:16 14	07:17 (T5) 20:47 42	07:11 (T4) 21:08 41	07:15 (T4) 21:00 42	07:21 (T4) 20:24 16	07:23 (T5) 19:31	18:42	17:08	17:05
22	07:52	07:17	07:33	06:42 07:02 (T5)	06:07	06:29 (T4) 05:58	06:35 (T4) 06:16	06:40 (T4) 06:47	07:08 (T5) 07:18	07:50	07:27	07:54
	17:34	18:13	19:45	20:17 16	07:18 (T5) 20:48 42	07:11 (T4) 21:08 41	07:16 (T4) 20:59 41	07:21 (T4) 20:23 13	07:21 (T5) 19:30	18:41	17:07	17:05
23	07:51	07:16	07:31	06:41 07:00 (T5)	06:06	06:28 (T4) 05:58	06:35 (T4) 06:17	06:39 (T4) 06:48	07:09 (T5) 07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18 18	07:18 (T5) 20:49 43	07:11 (T4) 21:08 41	07:16 (T4) 20:59 41	07:20 (T4) 20:21 10	07:19 (T5) 19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:39 06:59 (T5)	06:06	06:29 (T4) 05:59	06:35 (T4) 06:18	06:40 (T4) 06:49	07:10 (T5) 07:20	07:52	07:29	07:55
	17:37	18:15	19:47	20:19 20	07:19 (T5) 20:50 43	07:12 (T4) 21:08 41	07:16 (T4) 20:58 40	07:20 (T4) 20:20 7	07:17 (T5) 19:26	18:38	17:06	17:06
25	07:49	07:13	07:28	06:38 06:57 (T5)	06:05	06:29 (T4) 05:59	06:36 (T4) 06:19	06:41 (T4) 06:50	07:11 (T5) 07:21	07:54	07:30	07:55
	17:38	18:17	19:48	20:20 22	07:19 (T5) 20:51 43	07:12 (T4) 21:08 41	07:17 (T4) 20:57 39	07:20 (T4) 20:18 2	07:13 (T5) 19:25	18:37	17:05	17:07
26	07:49	07:12	07:26	06:36 06:56 (T5)	06:04	06:28 (T4) 05:59	06:35 (T4) 06:20	06:42 (T4) 06:51	07:22	07:55	07:32	07:56
	17:39	18:18	19:49	20:22 24	07:20 (T5) 20:52 44	07:12 (T4) 21:09 42	07:17 (T4) 20:56 38	07:20 (T4) 20:17	19:23	18:35	17:05	17:08
27	07:48	07:10	07:24	06:35 06:55 (T5)	06:04	06:29 (T4) 06:00	06:35 (T4) 06:21	06:43 (T4) 06:52	07:23	07:56	07:33	07:56
	17:41	18:19	19:50	20:23 26	07:21 (T5) 20:53 43	07:12 (T4) 21:09 42	07:17 (T4) 20:55 36	07:19 (T4) 20:15	19:21	18:34	17:05	17:08
28	07:47	07:08	07:22	06:34 06:53 (T5)	06:03	06:28 (T4) 06:00	06:36 (T4) 06:22	06:44 (T4) 06:53	07:24	07:57	07:34	07:56
	17:42	18:20	19:51	20:24 27	07:20 (T5) 20:54 44	07:12 (T4) 21:09 41	07:17 (T4) 20:54 35	07:19 (T4) 20:13	19:19	18:33	17:04	17:09
29	07:46		07:21	06:32 06:52 (T5)	06:02	06:29 (T4) 06:00	06:36 (T4) 06:23	06:45 (T4) 06:54	07:25	07:58	07:35	07:57
	17:43		19:52	20:25 28	07:20 (T5) 20:55 44	07:13 (T4) 21:09 41	07:17 (T4) 20:53 33	07:18 (T4) 20:12	19:18	18:31	17:04	17:10
30	07:45		07:19	06:31 06:51 (T5)	06:02	06:29 (T4) 06:01	06:36 (T4) 06:24	06:46 (T4) 06:55	07:26	08:00	07:36	07:57
	17:44		19:54	20:26 29	07:20 (T5) 20:55 43	07:12 (T4) 21:09 42	07:18 (T4) 20:52 33	07:19 (T5) 20:10	19:16	18:30	17:03	17:10
31	07:44		07:17		06:01	06:29 (T4)	06:25	06:47 (T4) 06:56		08:01		07:57
	17:46		19:55		20:56 44	07:13 (T4)	20:51 34	07:21 (T5) 20:09		18:29		17:11
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case				246	1163	1256	1273	634				
Sun reduction				0.52	0.57	0.64	0.66	0.61				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.68	0.70	0.71	0.71	0.68				
Total reduction				0.35	0.40	0.45	0.47	0.42				
Total, real				87	464	569	594	265				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 360 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7986)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June
1	07:58	07:44			07:07		07:27 (T86)	07:16		07:35 (T84)	06:30		07:24 (T84)	06:01
	17:12	17:47			18:21	21	07:48 (T86)	19:56	136	19:24 (T85)	20:27	70	08:34 (T84)	20:57
2	07:58	07:43			07:06		07:25 (T86)	07:14		07:33 (T84)	06:29		07:24 (T84)	06:00
	17:13	17:48			18:23	24	07:49 (T86)	19:57	137	19:23 (T85)	20:28	69	08:33 (T84)	20:58
3	07:58	07:42			07:04		07:23 (T86)	07:13		07:32 (T84)	06:27		07:25 (T84)	06:00
	17:14	17:50			18:24	26	07:49 (T86)	19:58	140	19:23 (T85)	20:29	67	08:32 (T84)	20:59
4	07:58	07:41			07:02		07:22 (T86)	07:11		07:31 (T84)	06:26		07:25 (T84)	06:00
	17:15	17:51			18:25	29	07:51 (T86)	19:59	140	19:22 (T85)	20:30	66	08:31 (T84)	20:59
5	07:58	07:39			07:01		07:20 (T86)	07:09		07:29 (T84)	06:25		07:26 (T84)	05:59
	17:16	17:52			18:26	31	07:51 (T86)	20:00	142	19:22 (T85)	20:31	64	08:30 (T84)	21:00
6	07:58	07:38			06:59		07:19 (T86)	07:08		07:29 (T84)	06:24		07:27 (T84)	05:59
	17:17	17:53			18:27	33	07:52 (T86)	20:00	143	19:22 (T85)	20:32	62	08:29 (T84)	21:01
7	07:58	07:37			06:58		07:17 (T86)	07:06		07:28 (T84)	06:22		07:27 (T84)	05:59
	17:18	17:55			18:28	34	07:51 (T86)	20:01	143	19:21 (T85)	20:33	61	08:28 (T84)	21:01
8	07:57	07:36			07:56		08:15 (T86)	07:04		07:26 (T84)	06:21		07:28 (T84)	05:58
	17:19	17:56			19:30	36	08:51 (T86)	20:02	143	19:19 (T85)	20:35	59	08:27 (T84)	21:02
9	07:57	07:35			07:54		08:14 (T86)	07:03		07:26 (T84)	06:20		07:29 (T84)	05:58
	17:20	17:57			19:31	38	08:52 (T86)	20:03	142	19:19 (T85)	20:36	56	08:25 (T84)	21:03
10	07:57	07:34			07:53		08:12 (T86)	07:01		07:25 (T84)	06:19		07:30 (T84)	05:58
	17:21	17:58			19:32	49	19:00 (T85)	20:05	142	19:18 (T85)	20:37	54	08:24 (T84)	21:03
11	07:57	07:33			07:51		08:10 (T86)	07:00		07:25 (T84)	06:18		07:31 (T84)	05:58
	17:22	18:00			19:33	63	19:06 (T85)	20:06	142	19:18 (T85)	20:38	52	08:23 (T84)	21:04
12	07:57	07:31			07:50		08:11 (T86)	06:58		07:24 (T84)	06:17		07:32 (T84)	05:58
	17:23	18:01			19:34	71	19:10 (T85)	20:07	140	19:16 (T85)	20:39	50	08:22 (T84)	21:04
13	07:56	07:30			07:48		08:11 (T86)	06:56		07:23 (T84)	06:16		07:34 (T84)	05:58
	17:24	18:02			19:35	75	19:12 (T85)	20:08	139	19:15 (T85)	20:40	47	08:21 (T84)	21:05
14	07:56	07:29			07:46		08:10 (T86)	06:55		07:23 (T84)	06:15		07:35 (T84)	05:58
	17:25	18:03			19:36	79	19:14 (T85)	20:09	137	19:14 (T85)	20:41	44	08:19 (T84)	21:05
15	07:56	07:27			07:45		08:12 (T86)	06:53		07:22 (T84)	06:14		07:36 (T84)	05:58
	17:26	18:05			19:37	81	19:16 (T85)	20:10	135	19:12 (T85)	20:42	41	08:17 (T84)	21:06
16	07:55	07:26			07:43		08:12 (T86)	06:52		07:23 (T84)	06:13		07:38 (T84)	05:58
	17:28	18:06			19:39	83	19:17 (T85)	20:11	132	19:12 (T85)	20:43	38	08:16 (T84)	21:06
17	07:55	07:25			07:41		08:12 (T86)	06:50		07:22 (T84)	06:12		07:39 (T84)	05:58
	17:29	18:07			19:40	84	19:18 (T85)	20:12	131	19:10 (T85)	20:44	35	08:14 (T84)	21:07
18	07:54	07:23			07:40		08:14 (T86)	06:49		07:22 (T84)	06:11		07:41 (T84)	05:58
	17:30	18:08			19:41	84	19:20 (T85)	20:13	128	19:09 (T85)	20:45	31	08:12 (T84)	21:07
19	07:54	07:22			07:38		08:15 (T86)	06:47		07:21 (T84)	06:10		07:44 (T84)	05:58
	17:31	18:10			19:42	84	19:21 (T85)	20:14	124	19:06 (T85)	20:46	26	08:10 (T84)	21:07
20	07:53	07:21			07:36		08:16 (T86)	06:45		07:22 (T84)	06:09		07:47 (T84)	05:58
	17:32	18:11			19:43	83	19:21 (T85)	20:15	120	19:05 (T85)	20:47	21	08:08 (T84)	21:08
21	07:52	07:19			07:34		08:19 (T86)	06:44		07:21 (T84)	06:08		07:50 (T84)	05:58
	17:33	18:12			19:44	80	19:23 (T85)	20:16	116	19:02 (T85)	20:48	14	08:04 (T84)	21:08
22	07:52	07:18			07:33		08:01 (T84)	06:42		07:22 (T84)	06:07			05:58
	17:35	18:13			19:45	94	19:23 (T85)	20:17	110	19:00 (T85)	20:49			21:08
23	07:51	07:16			07:31		07:56 (T84)	06:41		07:21 (T84)	06:07			05:59
	17:36	18:14			19:46	94	19:23 (T85)	20:19	105	18:57 (T85)	20:49			21:08
24	07:50	07:15			07:29		07:51 (T84)	06:40		07:22 (T84)	06:06			05:59
	17:37	18:16			19:47	102	19:23 (T85)	20:20	95	18:53 (T85)	20:50			21:09
25	07:50	07:13		07:33 (T86)	07:28		07:49 (T84)	06:38		07:22 (T84)	06:05			05:59
	17:38	18:17	5	07:38 (T86)	19:48	109	19:24 (T85)	20:21	78	18:45 (T85)	20:51			21:09
26	07:49	07:12		07:31 (T86)	07:26		07:46 (T84)	06:37		07:22 (T84)	06:04			06:00
	17:40	18:18	11	07:42 (T86)	19:49	114	19:24 (T85)	20:22	76	08:38 (T84)	20:52			21:09
27	07:48	07:10		07:30 (T86)	07:24		07:43 (T84)	06:35		07:22 (T84)	06:04			06:00
	17:41	18:19	15	07:45 (T86)	19:51	120	19:24 (T85)	20:23	75	08:37 (T84)	20:53			21:09
28	07:47	07:09		07:28 (T86)	07:23		07:42 (T84)	06:34		07:22 (T84)	06:03			06:00
	17:42	18:20	18	07:46 (T86)	19:52	124	19:25 (T85)	20:24	74	08:36 (T84)	20:54			21:09
29	07:46				07:21		07:40 (T84)	06:33		07:23 (T84)	06:02			06:01
	17:43				19:53	127	19:24 (T85)	20:25	72	08:35 (T84)	20:55			21:09
30	07:45				07:19		07:38 (T84)	06:31		07:23 (T84)	06:02			06:01
	17:45				19:54	131	19:24 (T85)	20:26	72	08:35 (T84)	20:56			21:09
31	07:45				07:18		07:37 (T84)				06:01			
	17:46				19:55	133	19:24 (T85)				20:56			
Potential sun hours	297	297			370			399			449			453
Total, worst case			49			2336			3609			1027		
Sun reduction			0.40			0.44			0.52			0.57		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.57			0.62			0.64			0.64		
Total reduction			0.23			0.27			0.33			0.36		
Total, real			11			640			1203			374		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 360 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7986)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December
1	06:02			06:26		07:43 (T84)	06:57		07:24 (T84)	07:27		07:50 (T86)	07:02	07:37
	21:09			20:50	50	08:33 (T84)	20:07	142	19:17 (T85)	19:15	72	18:50 (T85)	17:28	17:03
2	06:02			06:27		07:42 (T84)	06:58		07:24 (T84)	07:28		07:49 (T86)	07:03	07:38
	21:09			20:49	52	08:34 (T84)	20:06	142	19:17 (T85)	19:13	66	18:46 (T85)	17:26	17:03
3	06:03			06:28		07:40 (T84)	06:59		07:24 (T84)	07:30		07:49 (T86)	07:05	07:39
	21:09			20:48	55	08:35 (T84)	20:04	142	19:17 (T85)	19:11	57	18:41 (T85)	17:25	17:03
4	06:03			06:29		07:39 (T84)	07:00		07:24 (T84)	07:31		07:50 (T86)	07:06	07:40
	21:08			20:47	58	08:37 (T84)	20:02	144	19:18 (T85)	19:10	38	08:28 (T86)	17:24	17:02
5	06:04			06:30		07:38 (T84)	07:01		07:25 (T84)	07:32		07:52 (T86)	07:07	07:41
	21:08			20:46	60	08:38 (T84)	20:01	143	19:18 (T85)	19:08	37	08:29 (T86)	17:23	17:02
6	06:04			06:31		07:37 (T84)	07:02		07:24 (T84)	07:33		07:53 (T86)	07:08	07:42
	21:08			20:45	62	08:39 (T84)	19:57	143	19:17 (T85)	19:06	35	08:28 (T86)	17:22	17:02
7	06:05			06:32		07:37 (T84)	07:03		07:24 (T84)	07:34		07:54 (T86)	07:09	07:43
	21:08			20:43	62	08:39 (T84)	19:56	142	19:17 (T85)	19:05	34	08:28 (T86)	17:21	17:02
8	06:06			06:33		07:35 (T84)	07:04		07:25 (T84)	07:35		07:55 (T86)	07:11	07:44
	21:07			20:42	64	08:39 (T84)	19:54	141	19:17 (T85)	19:03	32	08:27 (T86)	17:19	17:02
9	06:06			06:34		07:34 (T84)	07:05		07:25 (T84)	07:36		07:56 (T86)	07:12	07:45
	21:07			20:41	66	08:40 (T84)	19:52	140	19:16 (T85)	19:01	30	08:26 (T86)	17:18	17:02
10	06:07			06:35		07:33 (T84)	07:06		07:26 (T84)	07:37		07:57 (T86)	07:13	07:46
	21:07			20:40	68	08:41 (T84)	19:51	138	19:16 (T85)	19:00	28	08:25 (T86)	17:17	17:02
11	06:08			06:36		07:32 (T84)	07:07		07:27 (T84)	07:38		07:58 (T86)	07:14	07:47
	21:06			20:38	70	08:42 (T84)	19:49	136	19:16 (T85)	18:58	25	08:23 (T86)	17:16	17:02
12	06:08			06:37		07:32 (T84)	07:08		07:28 (T84)	07:39		07:59 (T86)	07:15	07:48
	21:06			20:37	70	08:42 (T84)	19:47	133	19:15 (T85)	18:56	23	08:22 (T86)	17:15	17:02
13	06:09			06:38		07:31 (T84)	07:09		07:29 (T84)	07:40		08:00 (T86)	07:17	07:48
	21:05			20:36	72	08:43 (T84)	19:45	130	19:15 (T85)	18:55	20	08:20 (T86)	17:14	17:02
14	06:10			06:39		07:30 (T84)	07:10		07:30 (T84)	07:41		08:02 (T86)	07:18	07:49
	21:05			20:34	73	08:43 (T84)	19:44	128	19:14 (T85)	18:53	17	08:19 (T86)	17:14	17:03
15	06:11			06:40		07:30 (T84)	07:11		07:31 (T84)	07:42		08:03 (T86)	07:19	07:50
	21:04			20:33	74	08:44 (T84)	19:42	125	19:14 (T85)	18:52	14	08:17 (T86)	17:13	17:03
16	06:11			06:41		07:29 (T84)	07:12		07:32 (T84)	07:44		08:04 (T86)	07:20	07:51
	21:04			20:32	75	08:44 (T84)	19:40	120	19:13 (T85)	18:50	9	08:13 (T86)	17:12	17:03
17	06:12			06:42		07:28 (T84)	07:13		07:34 (T84)	07:45			07:21	07:51
	21:03			20:30	77	08:45 (T84)	19:39	115	19:12 (T85)	18:49			17:11	17:03
18	06:13			06:43		07:28 (T84)	07:14		07:36 (T84)	07:46			07:23	07:52
	21:02			20:29	85	18:54 (T85)	19:37	111	19:12 (T85)	18:47			17:10	17:04
19	06:14			06:44		07:27 (T84)	07:15		07:38 (T84)	07:47			07:24	07:53
	21:02			20:27	98	19:00 (T85)	19:35	104	19:11 (T85)	18:46			17:09	17:04
20	06:15			06:45		07:27 (T84)	07:16		07:41 (T84)	07:48			07:25	07:53
	21:01			20:26	105	19:03 (T85)	19:33	97	19:10 (T85)	18:44			17:09	17:05
21	06:16			06:46		07:26 (T84)	07:17		07:45 (T84)	07:49			07:26	07:54
	21:00			20:24	112	19:05 (T85)	19:32	94	19:09 (T85)	18:43			17:08	17:05
22	06:17		08:03 (T84)	06:47		07:26 (T84)	07:18		07:53 (T84)	07:50			07:27	07:54
	21:00	9	08:12 (T84)	20:23	116	19:07 (T85)	19:30	84	19:07 (T85)	18:41			17:07	17:05
23	06:17		07:59 (T84)	06:48		07:26 (T84)	07:19		08:01 (T86)	07:52			07:28	07:55
	20:59	17	08:16 (T84)	20:21	120	19:09 (T85)	19:28	81	19:06 (T85)	18:40			17:07	17:06
24	06:18		07:56 (T84)	06:49		07:25 (T84)	07:20		07:59 (T86)	07:53			07:30	07:55
	20:58	24	08:20 (T84)	20:20	124	19:10 (T85)	19:27	83	19:04 (T85)	18:38			17:06	17:07
25	06:19		07:53 (T84)	06:50		07:25 (T84)	07:21		07:57 (T86)	07:54			07:31	07:56
	20:57	28	08:21 (T84)	20:18	128	19:12 (T85)	19:25	84	19:03 (T85)	18:37			17:06	17:07
26	06:20		07:51 (T84)	06:51		07:25 (T84)	07:22		07:55 (T86)	07:55			07:32	07:56
	20:56	32	08:23 (T84)	20:17	131	19:13 (T85)	19:23	84	19:01 (T85)	18:36			17:05	17:08
27	06:21		07:49 (T84)	06:52		07:24 (T84)	07:23		07:54 (T86)	07:56			07:33	07:56
	20:55	36	08:25 (T84)	20:15	133	19:14 (T85)	19:21	83	18:59 (T85)	18:34			17:05	17:08
28	06:22		07:48 (T84)	06:53		07:24 (T84)	07:24		07:52 (T86)	07:57			07:34	07:57
	20:54	39	08:27 (T84)	20:14	135	19:14 (T85)	19:20	82	18:57 (T85)	18:33			17:04	17:09
29	06:23		07:46 (T84)	06:54		07:24 (T84)	07:25		07:51 (T86)	07:59			07:35	07:57
	20:53	43	08:29 (T84)	20:12	137	19:15 (T85)	19:18	80	18:55 (T85)	18:31			17:04	17:10
30	06:24		07:45 (T84)	06:55		07:24 (T84)	07:26		07:50 (T86)	08:00			07:36	07:57
	20:52	45	08:30 (T84)	20:10	139	19:16 (T85)	19:16	78	18:53 (T85)	18:30			17:04	17:11
31	06:25		07:44 (T84)	06:56		07:24 (T84)				08:01				07:57
	20:51	48	08:32 (T84)	20:09	140	19:16 (T85)				18:29				17:11
Potential sun hours	460			429			375			345			297	287
Total, worst case		321			2811			3449			537			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.64			0.64			0.58			
Total reduction		0.42			0.39			0.38			0.28			
Total, real		135			1098			1296			150			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 382 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8004)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		15:19 (T44)	07:43		07:07			07:16		07:35 (T76)	06:30		18:45 (T77)	06:01		19:55 (T42)
	17:13	37	15:56 (T44)	17:47		18:22			19:56	82	19:34 (T77)	20:27	28	19:13 (T77)	20:57	37	20:32 (T42)
2	07:57		15:20 (T44)	07:42		07:06			07:14		07:33 (T76)	06:29		18:48 (T77)	06:01		19:55 (T42)
	17:14	36	15:56 (T44)	17:49		18:23			19:57	85	19:34 (T77)	20:28	23	19:11 (T77)	20:58	38	20:33 (T42)
3	07:57		15:21 (T44)	07:41		07:04			07:13		07:32 (T76)	06:28		18:51 (T77)	06:01		19:54 (T42)
	17:15	35	15:56 (T44)	17:50		18:24			19:58	87	19:35 (T77)	20:29	15	19:06 (T77)	20:58	39	20:33 (T42)
4	07:57		15:22 (T44)	07:40		07:02			07:11		07:30 (T76)	06:26			06:00		19:55 (T42)
	17:16	34	15:56 (T44)	17:51		18:25			19:59	90	19:35 (T77)	20:30			20:59	39	20:34 (T42)
5	07:57		15:23 (T44)	07:39		07:01			07:09		07:28 (T76)	06:25			06:00		19:55 (T42)
	17:17	33	15:56 (T44)	17:52		18:26			20:00	92	19:35 (T77)	20:31			21:00	40	20:35 (T42)
6	07:57		15:25 (T44)	07:38		06:59			07:08		07:27 (T76)	06:24			06:00		19:54 (T42)
	17:17	31	15:56 (T44)	17:54		18:27			20:00	93	19:35 (T77)	20:32			21:00	41	20:35 (T42)
7	07:57		15:25 (T44)	07:37		06:58			07:06		07:27 (T76)	06:23			05:59		19:54 (T42)
	17:18	29	15:54 (T44)	17:55		18:29			20:01	93	19:35 (T77)	20:33			21:01	42	20:36 (T42)
8	07:57		15:27 (T44)	07:36		07:56			07:05		07:28 (T76)	06:22			05:59		19:54 (T42)
	17:19	27	15:54 (T44)	17:56		19:30			20:02	93	19:36 (T77)	20:34			21:02	43	20:37 (T42)
9	07:57		15:29 (T44)	07:35		07:54			07:03		07:28 (T76)	06:20			05:59		19:54 (T42)
	17:20	25	15:54 (T44)	17:58		19:31			20:03	91	19:35 (T77)	20:35			21:02	44	20:38 (T42)
10	07:57		15:31 (T44)	07:34		07:53			07:01		07:28 (T76)	06:19			05:59		19:55 (T42)
	17:21	22	15:53 (T44)	17:59		19:32			20:05	88	19:34 (T77)	20:36			21:03	43	20:38 (T42)
11	07:57		15:33 (T44)	07:32		07:51			07:00		07:29 (T76)	06:18			05:58		19:55 (T42)
	17:23	18	15:51 (T44)	18:00		19:33			20:06	87	19:35 (T77)	20:37			21:03	44	20:39 (T42)
12	07:56		15:36 (T44)	07:31		07:50			06:58		07:30 (T76)	06:17			05:58		19:54 (T42)
	17:24	13	15:49 (T44)	18:01		19:34			20:07	83	19:34 (T77)	20:38			21:04	45	20:39 (T42)
13	07:56		15:41 (T44)	07:30		07:48			06:57		07:33 (T76)	06:16			05:58		19:54 (T42)
	17:25	4	15:45 (T44)	18:02		19:35			20:08	78	19:34 (T77)	20:39			21:05	45	20:39 (T42)
14	07:56			07:29		07:46			06:55		07:36 (T76)	06:15			05:58		19:54 (T42)
	17:26			18:04		19:36			20:09	70	19:33 (T77)	20:40			21:05	45	20:39 (T42)
15	07:55			07:27		07:45			06:53		18:30 (T77)	06:14			05:58		19:54 (T42)
	17:27			18:05		19:38			20:10	62	19:32 (T77)	20:41			21:05	46	20:40 (T42)
16	07:55			07:26		07:43			06:52		18:31 (T77)	06:13			05:58		19:54 (T42)
	17:28			18:06		19:39			20:11	61	19:32 (T77)	20:42			21:06	46	20:40 (T42)
17	07:54			07:25		07:41			06:50		18:31 (T77)	06:12			05:58		19:55 (T42)
	17:29			18:07		19:40			20:12	60	19:31 (T77)	20:43			21:06	46	20:41 (T42)
18	07:54			07:23		07:40			06:49		18:32 (T77)	06:11			05:58		19:55 (T42)
	17:30			18:09		19:41			20:13	59	19:31 (T77)	20:44			21:07	47	20:42 (T42)
19	07:53			07:22		07:38			06:47		18:32 (T77)	06:10		20:09 (T42)	05:58		19:55 (T42)
	17:32			18:10		19:42			20:14	57	19:29 (T77)	20:45	13	20:22 (T42)	21:07	47	20:42 (T42)
20	07:53			07:20		07:36			06:46		18:32 (T77)	06:09		20:06 (T42)	05:59		19:55 (T42)
	17:33			18:11		19:43			20:15	57	19:29 (T77)	20:46	17	20:23 (T42)	21:07	47	20:42 (T42)
21	07:52			07:19		07:35		19:03 (T77)	06:44		18:34 (T77)	06:09		20:04 (T42)	05:59		19:56 (T42)
	17:34			18:12		19:44	13	19:16 (T77)	20:16	55	19:29 (T77)	20:47	19	20:23 (T42)	21:08	46	20:42 (T42)
22	07:52			07:18		07:33		18:57 (T77)	06:43		18:34 (T77)	06:08		20:03 (T42)	05:59		19:56 (T42)
	17:35			18:13		19:45	23	19:20 (T77)	20:17	53	19:27 (T77)	20:48	22	20:25 (T42)	21:08	46	20:42 (T42)
23	07:51			07:16		07:31		18:53 (T77)	06:41		18:35 (T77)	06:07		20:01 (T42)	05:59		19:56 (T42)
	17:36			18:15		19:46	30	19:23 (T77)	20:18	51	19:26 (T77)	20:49	24	20:25 (T42)	21:08	47	20:43 (T42)
24	07:50			07:15		07:30		18:50 (T77)	06:40		18:35 (T77)	06:06		20:00 (T42)	05:59		19:56 (T42)
	17:38			18:16		19:47	36	19:26 (T77)	20:19	50	19:25 (T77)	20:50	26	20:26 (T42)	21:08	47	20:43 (T42)
25	07:49			07:13		07:28		07:47 (T76)	06:38		18:36 (T77)	06:06		19:59 (T42)	06:00		19:56 (T42)
	17:39			18:17		19:48	43	19:27 (T77)	20:21	48	19:24 (T77)	20:51	28	20:27 (T42)	21:08	47	20:43 (T42)
26	07:49			07:12		07:26		07:45 (T76)	06:37		18:37 (T77)	06:05		19:58 (T42)	06:00		19:57 (T42)
	17:40			18:18		19:50	52	19:28 (T77)	20:22	45	19:22 (T77)	20:52	30	20:28 (T42)	21:08	46	20:43 (T42)
27	07:48			07:10		07:24		07:43 (T76)	06:36		18:38 (T77)	06:04		19:58 (T42)	06:00		19:57 (T42)
	17:41			18:19		19:51	58	19:29 (T77)	20:23	43	19:21 (T77)	20:53	31	20:29 (T42)	21:08	46	20:43 (T42)
28	07:47			07:09		07:23		07:42 (T76)	06:34		18:40 (T77)	06:04		19:57 (T42)	06:01		19:57 (T42)
	17:42			18:21		19:52	63	19:30 (T77)	20:24	39	19:19 (T77)	20:54	32	20:29 (T42)	21:09	46	20:43 (T42)
29	07:46					07:21		07:40 (T76)	06:33		18:41 (T77)	06:03		19:56 (T42)	06:01		19:58 (T42)
	17:44					19:53	69	19:31 (T77)	20:25	36	19:17 (T77)	20:54	34	20:30 (T42)	21:09	45	20:43 (T42)
30	07:45					07:19		07:38 (T76)	06:32		18:43 (T77)	06:02		19:56 (T42)	06:02		19:58 (T42)
	17:45					19:54	74	19:32 (T77)	20:26	32	19:15 (T77)	20:55	35	20:31 (T42)	21:08	45	20:43 (T42)
31	07:44					07:18		07:37 (T76)				06:02		19:55 (T42)			
	17:46					19:55	78	19:34 (T77)				20:56	36	20:31 (T42)			
Potential sun hours	297			297		370			399			448			453		
Total, worst case		344					539			2020			413			1325	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.74					0.63			0.63			0.55			0.54	
Total reduction		0.24					0.28			0.33			0.32			0.35	
Total, real		81					152			675			133			467	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 382 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8004)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		19:59 (T42)	06:26			06:57		07:28 (T76)	07:27	07:02			07:37		15:15 (T44)
	21:08	44	20:43 (T42)	20:50			20:07	87	19:34 (T77)	19:15	17:28			17:04	18	15:33 (T44)
2	06:03		19:59 (T42)	06:27			06:58		07:27 (T76)	07:29	07:03			07:38		15:13 (T44)
	21:08	44	20:43 (T42)	20:49			20:06	88	19:33 (T77)	19:13	17:27			17:03	22	15:35 (T44)
3	06:03		19:59 (T42)	06:28			06:59		07:26 (T76)	07:30	07:04			07:39		15:12 (T44)
	21:08	44	20:43 (T42)	20:48			20:04	91	19:33 (T77)	19:11	17:26			17:03	25	15:37 (T44)
4	06:04		19:59 (T42)	06:29			07:00		07:25 (T76)	07:31	07:06			07:40		15:12 (T44)
	21:08	43	20:42 (T42)	20:47			20:02	93	19:33 (T77)	19:10	17:24			17:03	27	15:39 (T44)
5	06:04		20:00 (T42)	06:30			07:01		07:24 (T76)	07:32	07:07			07:41		15:11 (T44)
	21:08	42	20:42 (T42)	20:46			20:01	93	19:32 (T77)	19:08	17:23			17:03	29	15:40 (T44)
6	06:05		20:00 (T42)	06:31			07:02		07:23 (T76)	07:33	07:08			07:42		15:10 (T44)
	21:08	42	20:42 (T42)	20:44			19:57	93	19:31 (T77)	19:06	17:22			17:03	31	15:41 (T44)
7	06:05		20:01 (T42)	06:32			07:03		07:24 (T76)	07:34	07:09			07:43		15:10 (T44)
	21:07	41	20:42 (T42)	20:43			19:56	92	19:31 (T77)	19:05	17:21			17:03	32	15:42 (T44)
8	06:06		20:02 (T42)	06:33			07:04		07:25 (T76)	07:35	07:10			07:44		15:09 (T44)
	21:07	40	20:42 (T42)	20:42			19:54	90	19:30 (T77)	19:03	17:20			17:03	34	15:43 (T44)
9	06:07		20:02 (T42)	06:34		19:05 (T77)	07:05		07:26 (T76)	07:36	07:12			07:45		15:09 (T44)
	21:07	39	20:41 (T42)	20:41	7	19:12 (T77)	19:52	88	19:29 (T77)	19:02	17:19			17:03	35	15:44 (T44)
10	06:07		20:02 (T42)	06:35		18:59 (T77)	07:06		07:26 (T76)	07:37	07:13			07:46		15:09 (T44)
	21:06	39	20:41 (T42)	20:39	18	19:17 (T77)	19:51	85	19:27 (T77)	19:00	17:18			17:03	36	15:45 (T44)
11	06:08		20:03 (T42)	06:36		18:56 (T77)	07:07		07:27 (T76)	07:38	07:14			07:46		15:09 (T44)
	21:06	38	20:41 (T42)	20:38	24	19:20 (T77)	19:49	81	19:26 (T77)	18:58	17:17			17:03	37	15:46 (T44)
12	06:09		20:03 (T42)	06:37		18:53 (T77)	07:08		07:28 (T76)	07:39	07:15			07:47		15:09 (T44)
	21:06	37	20:40 (T42)	20:37	30	19:23 (T77)	19:47	79	19:25 (T77)	18:57	17:16			17:03	38	15:47 (T44)
13	06:10		20:04 (T42)	06:38		18:51 (T77)	07:09		07:29 (T76)	07:40	07:16			07:48		15:10 (T44)
	21:05	36	20:40 (T42)	20:36	34	19:25 (T77)	19:45	74	19:23 (T77)	18:55	17:15			17:03	38	15:48 (T44)
14	06:10		20:05 (T42)	06:39		18:49 (T77)	07:10		07:30 (T76)	07:41	07:18			07:49		15:09 (T44)
	21:05	34	20:39 (T42)	20:34	37	19:26 (T77)	19:44	70	19:22 (T77)	18:54	17:14			17:03	39	15:48 (T44)
15	06:11		20:06 (T42)	06:40		18:47 (T77)	07:11		07:31 (T76)	07:42	07:19			07:50		15:09 (T44)
	21:04	33	20:39 (T42)	20:33	41	19:28 (T77)	19:42	65	19:20 (T77)	18:52	17:13			17:03	40	15:49 (T44)
16	06:12		20:06 (T42)	06:41		18:45 (T77)	07:12		07:32 (T76)	07:44	07:20			07:50		15:10 (T44)
	21:03	32	20:38 (T42)	20:31	43	19:28 (T77)	19:40	59	19:18 (T77)	18:50	17:12			17:04	40	15:50 (T44)
17	06:13		20:07 (T42)	06:42		18:43 (T77)	07:13		07:33 (T76)	07:45	07:21			07:51		15:10 (T44)
	21:03	30	20:37 (T42)	20:30	46	19:29 (T77)	19:39	54	19:17 (T77)	18:49	17:11			17:04	40	15:50 (T44)
18	06:14		20:08 (T42)	06:43		18:42 (T77)	07:14		07:34 (T76)	07:46	07:22			07:52		15:10 (T44)
	21:02	29	20:37 (T42)	20:29	48	19:30 (T77)	19:37	46	19:15 (T77)	18:47	17:11			17:04	41	15:51 (T44)
19	06:14		20:10 (T42)	06:44		18:41 (T77)	07:15		18:36 (T77)	07:47	07:23			07:52		15:11 (T44)
	21:01	27	20:37 (T42)	20:27	50	19:31 (T77)	19:35	37	19:13 (T77)	18:46	17:10			17:05	41	15:52 (T44)
20	06:15		20:11 (T42)	06:45		18:39 (T77)	07:16		18:38 (T77)	07:48	07:25			07:53		15:11 (T44)
	21:01	25	20:36 (T42)	20:26	52	19:31 (T77)	19:33	32	19:10 (T77)	18:44	17:09			17:05	41	15:52 (T44)
21	06:16		20:11 (T42)	06:46		18:38 (T77)	07:17		18:41 (T77)	07:49	07:26			07:53		15:12 (T44)
	21:00	24	20:35 (T42)	20:24	54	19:32 (T77)	19:32	26	19:07 (T77)	18:43	17:09			17:06	41	15:53 (T44)
22	06:17		20:13 (T42)	06:47		18:37 (T77)	07:18		18:45 (T77)	07:50	07:27			07:54		15:12 (T44)
	20:59	21	20:34 (T42)	20:23	56	19:33 (T77)	19:30	17	19:02 (T77)	18:41	17:08			17:06	41	15:53 (T44)
23	06:18		20:15 (T42)	06:48		18:36 (T77)	07:19			07:51	07:28			07:54		15:13 (T44)
	20:59	18	20:33 (T42)	20:21	57	19:33 (T77)	19:28			18:40	17:07			17:07	41	15:54 (T44)
24	06:19		20:18 (T42)	06:49		18:35 (T77)	07:20			07:53	07:29			07:55		15:13 (T44)
	20:58	15	20:33 (T42)	20:20	58	19:33 (T77)	19:27			18:39	17:07			17:07	41	15:54 (T44)
25	06:20		20:22 (T42)	06:50		18:34 (T77)	07:21			07:54	07:30			07:55		15:13 (T44)
	20:57	9	20:31 (T42)	20:18	60	19:34 (T77)	19:25			18:37	17:06			17:08	41	15:54 (T44)
26	06:21			06:51		18:34 (T77)	07:22			07:55	07:32			07:56		15:14 (T44)
	20:56			20:17	60	19:34 (T77)	19:23			18:36	17:06			17:08	41	15:55 (T44)
27	06:22			06:52		18:33 (T77)	07:23			07:56	07:33			07:56		15:15 (T44)
	20:55			20:15	61	19:34 (T77)	19:22			18:34	17:05			17:09	40	15:55 (T44)
28	06:22			06:53		18:32 (T77)	07:24			07:57	07:34			07:56		15:15 (T44)
	20:54			20:14	62	19:34 (T77)	19:20			18:33	17:05			17:10	40	15:55 (T44)
29	06:23			06:54		07:36 (T76)	07:25			07:58	07:35		15:22 (T44)	07:57		15:16 (T44)
	20:53			20:12	71	19:34 (T77)	19:18			18:32	17:04	3	15:25 (T44)	17:10	39	15:55 (T44)
30	06:24			06:55		07:33 (T76)	07:26			08:00	07:36		15:17 (T44)	07:57		15:17 (T44)
	20:52			20:10	78	19:34 (T77)	19:16			18:31	17:04	13	15:30 (T44)	17:11	39	15:56 (T44)
31	06:25			06:56		07:30 (T76)				08:01				07:57		15:18 (T44)
	20:51			20:09	84	19:34 (T77)				18:29				17:12	38	15:56 (T44)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		826			1131			1540				16			1126	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.54			0.62			0.63				0.74			0.74	
Total reduction		0.36			0.39			0.38				0.23			0.17	
Total, real		300			442			585				4			189	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 385 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8007)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June
1	07:57		07:43		16:43 (T5)	07:07		16:36 (T5)	07:16		06:30		19:32 (T3)	06:01
	17:12		17:47	40	17:23 (T5)	18:21	83	17:59 (T4)	19:56		20:27	13	19:45 (T3)	20:57
2	07:57		07:42		16:42 (T5)	07:05		16:37 (T5)	07:14		06:28		19:36 (T3)	06:00
	17:13		17:48	42	17:24 (T5)	18:22	83	18:00 (T4)	19:57		20:28	5	19:41 (T3)	20:58
3	07:57		07:41		16:41 (T5)	07:04		16:37 (T5)	07:12		06:27			06:00
	17:14		17:49	45	17:26 (T5)	18:24	83	18:00 (T4)	19:58		20:29			20:58
4	07:57		07:40		16:40 (T5)	07:02		16:39 (T5)	07:11		06:26			05:59
	17:15		17:51	47	17:27 (T5)	18:25	81	18:00 (T4)	19:59		20:30			20:59
5	07:57		07:39		16:38 (T5)	07:01		16:40 (T5)	07:09		06:24			05:59
	17:16		17:52	50	17:28 (T5)	18:26	80	18:00 (T4)	20:00		20:31			21:00
6	07:57		07:38		16:38 (T5)	06:59		16:40 (T5)	07:07		06:23			05:59
	17:17		17:53	51	17:29 (T5)	18:27	79	17:59 (T4)	20:00		20:32			21:00
7	07:57		07:37		16:37 (T5)	06:57		16:43 (T5)	07:06		06:22			05:58
	17:18		17:54	54	17:31 (T5)	18:28	76	17:59 (T4)	20:01		20:33			21:01
8	07:57		07:36		16:37 (T5)	07:56		17:44 (T5)	07:04		06:21			05:58
	17:19		17:56	55	17:32 (T5)	19:29	73	18:58 (T4)	20:02		20:34			21:02
9	07:57		07:35		16:36 (T5)	07:54		17:45 (T5)	07:02		06:20			05:58
	17:20		17:57	58	17:34 (T5)	19:30	68	18:57 (T4)	20:03		20:35			21:02
10	07:57		07:33		16:35 (T5)	07:53		17:48 (T5)	07:01		06:19			05:58
	17:21		17:58	59	17:34 (T5)	19:32	61	18:56 (T4)	20:04		20:36			21:03
11	07:57		07:32		16:35 (T5)	07:51		17:51 (T5)	06:59		06:17			05:58
	17:22		17:59	60	17:35 (T5)	19:33	53	18:55 (T4)	20:05	4	19:44 (T3)	20:37		21:04
12	07:56		07:31		16:34 (T5)	07:49		17:56 (T5)	06:58		19:36 (T3)	06:16		05:57
	17:23		18:01	62	17:36 (T5)	19:34	40	18:53 (T4)	20:06	10	19:46 (T3)	20:38		21:04
13	07:56		07:30		16:34 (T5)	07:48		18:29 (T4)	06:56		19:33 (T3)	06:15		05:57
	17:24		18:02	63	17:37 (T5)	19:35	23	18:52 (T4)	20:07	13	19:46 (T3)	20:39		21:05
14	07:56		07:28		16:33 (T5)	07:46		18:30 (T4)	06:54		19:32 (T3)	06:14		05:57
	17:25		18:03	63	17:36 (T5)	19:36	19	18:49 (T4)	20:09	16	19:48 (T3)	20:40		21:05
15	07:55		07:27		16:33 (T5)	07:44		18:33 (T4)	06:53		19:30 (T3)	06:13		05:57
	17:26		18:04	64	17:37 (T5)	19:37	12	18:45 (T4)	20:10	18	19:48 (T3)	20:41		21:06
16	07:55		07:26		16:34 (T5)	07:43			06:51		19:29 (T3)	06:12		05:57
	17:27		18:06	64	17:38 (T5)	19:38			20:11	20	19:49 (T3)	20:42		21:06
17	07:54		07:24		16:33 (T5)	07:41			06:50		19:28 (T3)	06:11		05:57
	17:28		18:07	64	17:37 (T5)	19:39			20:12	23	19:51 (T3)	20:43		21:06
18	07:54		07:23		16:33 (T5)	07:39			06:48		19:27 (T3)	06:10		05:57
	17:30		18:08	65	17:38 (T5)	19:40			20:13	24	19:51 (T3)	20:44		21:07
19	07:53		07:22		16:32 (T5)	07:38			06:47		19:27 (T3)	06:10		05:58
	17:31		18:09	65	17:37 (T5)	19:42			20:14	26	19:53 (T3)	20:45		21:07
20	07:53		07:20		16:33 (T5)	07:36			06:45		19:26 (T3)	06:09		05:58
	17:32		18:10	64	17:37 (T5)	19:43			20:15	27	19:53 (T3)	20:46		21:07
21	07:52		07:19		16:33 (T5)	07:34			06:44		19:26 (T3)	06:08		05:58
	17:33		18:12	77	17:50 (T4)	19:44			20:16	29	19:55 (T3)	20:47		21:08
22	07:52		07:17		16:33 (T5)	07:33			06:42		19:26 (T3)	06:07		05:58
	17:34		18:13	78	17:51 (T4)	19:45			20:17	30	19:56 (T3)	20:48		21:08
23	07:51		07:16		16:34 (T5)	07:31			06:41		19:26 (T3)	06:06		05:58
	17:36		18:14	78	17:52 (T4)	19:46			20:18	29	19:55 (T3)	20:49		21:08
24	07:50		07:14		16:33 (T5)	07:29			06:39		19:26 (T3)	06:05		05:59
	17:37		18:15	80	17:53 (T4)	19:47			20:19	29	19:55 (T3)	20:50		21:08
25	07:49		07:13		16:34 (T5)	07:27			06:38		19:26 (T3)	06:05		05:59
	17:38		18:16	81	17:55 (T4)	19:48			20:20	27	19:53 (T3)	20:51		21:08
26	07:49	16:54 (T5)	07:11		16:34 (T5)	07:26			06:36		19:27 (T3)	06:04		05:59
	17:39	16 17:10 (T5)	18:18	82	17:56 (T4)	19:49			20:21	26	19:53 (T3)	20:52		21:08
27	07:48	16:52 (T5)	07:10		16:34 (T5)	07:24			06:35		19:28 (T3)	06:03		06:00
	17:41	23 17:15 (T5)	18:19	82	17:56 (T4)	19:50			20:23	24	19:52 (T3)	20:53		21:09
28	07:47	16:50 (T5)	07:08		16:35 (T5)	07:22			06:34		19:28 (T3)	06:03		06:00
	17:42	27 17:17 (T5)	18:20	83	17:58 (T4)	19:51			20:24	22	19:50 (T3)	20:54		21:09
29	07:46	16:48 (T5)				07:21			06:32		19:29 (T3)	06:02		06:00
	17:43	31 17:19 (T5)				19:52			20:25	20	19:49 (T3)	20:54		21:09
30	07:45	16:46 (T5)				07:19			06:31		19:31 (T3)	06:02		06:01
	17:44	34 17:20 (T5)				19:53			20:26	17	19:48 (T3)	20:55		21:09
31	07:44	16:44 (T5)				07:17						06:01		
	17:46	37 17:21 (T5)				19:55						20:56		
Potential sun hours	297		297		370		399		449		453
Total, worst case		168		1776		914		434		18	
Sun reduction		0.31		0.40		0.44		0.52		0.57	
Oper. time red.		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.		0.72		0.71		0.70		0.57		0.57	
Total reduction		0.22		0.29		0.31		0.30		0.33	
Total, real		38		510		283		131		6	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 385 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8007)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December
1	06:01	06:26		06:57	19:39 (T3)	07:27	17:39 (T5)	07:02	16:05 (T5)	07:37
	21:08	20:50		20:07 4	19:43 (T3)	19:14 31	18:32 (T4)	17:27 59	17:04 (T5)	17:03
2	06:02	06:27		06:58		07:28	17:32 (T5)	07:03	16:05 (T5)	07:38
	21:08	20:49		20:05		19:13 48	18:33 (T4)	17:26 57	17:02 (T5)	17:03
3	06:02	06:28		06:59		07:29	17:27 (T5)	07:04	16:07 (T5)	07:39
	21:08	20:48		20:04		19:11 59	18:34 (T4)	17:25 55	17:02 (T5)	17:02
4	06:03	06:29		07:00		07:30	17:24 (T5)	07:05	16:07 (T5)	07:40
	21:08	20:47		20:02		19:09 65	18:34 (T4)	17:24 53	17:00 (T5)	17:02
5	06:03	06:30		07:01		07:31	17:21 (T5)	07:07	16:08 (T5)	07:41
	21:08	20:46		20:00		19:08 71	18:34 (T4)	17:23 51	16:59 (T5)	17:02
6	06:04	06:31		07:02		07:32	17:19 (T5)	07:08	16:09 (T5)	07:42
	21:08	20:44		19:57		19:06 76	18:35 (T4)	17:21 49	16:58 (T5)	17:02
7	06:05	06:32		07:03		07:33	17:17 (T5)	07:09	16:10 (T5)	07:43
	21:07	20:43		19:55		19:04 78	18:35 (T4)	17:20 47	16:57 (T5)	17:02
8	06:05	06:33		07:04		07:35	17:16 (T5)	07:10	16:11 (T5)	07:44
	21:07	20:42		19:54		19:03 79	18:35 (T4)	17:19 44	16:55 (T5)	17:02
9	06:06	06:34		07:05		07:36	17:14 (T5)	07:11	16:12 (T5)	07:45
	21:07	20:41		19:52		19:01 81	18:35 (T4)	17:18 42	16:54 (T5)	17:02
10	06:07	06:35		07:06		07:37	17:13 (T5)	07:13	16:14 (T5)	07:46
	21:06	20:39		19:50		18:59 82	18:35 (T4)	17:17 40	16:54 (T5)	17:02
11	06:07	06:36	19:44 (T3)	07:07		07:38	17:11 (T5)	07:14	16:15 (T5)	07:46
	21:06	20:38 8	19:52 (T3)	19:49		18:58 83	18:34 (T4)	17:16 37	16:52 (T5)	17:02
12	06:08	06:37	19:40 (T3)	07:08		07:39	17:10 (T5)	07:15	16:17 (T5)	07:47
	21:06	20:37 14	19:54 (T3)	19:47		18:56 84	18:34 (T4)	17:15 34	16:51 (T5)	17:02
13	06:09	06:38	19:38 (T3)	07:09		07:40	17:09 (T5)	07:16	16:20 (T5)	07:48
	21:05	20:35 18	19:56 (T3)	19:45		18:55 83	18:32 (T4)	17:14 31	16:51 (T5)	17:02
14	06:10	06:39	19:37 (T3)	07:10		07:41	17:07 (T5)	07:17	16:22 (T5)	07:49
	21:05	20:34 20	19:57 (T3)	19:43		18:53 83	18:30 (T4)	17:13 27	16:49 (T5)	17:02
15	06:10	06:40	19:36 (T3)	07:11		07:42	17:06 (T5)	07:19	16:24 (T5)	07:50
	21:04	20:33 22	19:58 (T3)	19:42		18:51 82	18:28 (T4)	17:12 23	16:47 (T5)	17:03
16	06:11	06:41	19:34 (T3)	07:12		07:43	17:06 (T5)	07:20	16:27 (T5)	07:50
	21:03	20:31 25	19:59 (T3)	19:40		18:50 82	18:28 (T4)	17:12 16	16:43 (T5)	17:03
17	06:12	06:42	19:33 (T3)	07:13		07:44	17:06 (T5)	07:21		07:51
	21:03	20:30 27	20:00 (T3)	19:38		18:48 80	18:26 (T4)	17:11		17:03
18	06:13	06:43	19:33 (T3)	07:14		07:46	17:05 (T5)	07:22		07:52
	21:02	20:28 27	20:00 (T3)	19:37		18:47 79	18:24 (T4)	17:10		17:03
19	06:14	06:44	19:32 (T3)	07:15		07:47	17:04 (T5)	07:23		07:52
	21:02	20:27 28	20:00 (T3)	19:35		18:45 78	18:22 (T4)	17:09		17:04
20	06:14	06:45	19:32 (T3)	07:16		07:48	17:03 (T5)	07:25		07:53
	21:01	20:26 28	20:00 (T3)	19:33		18:44 78	18:21 (T4)	17:08		17:04
21	06:15	06:46	19:31 (T3)	07:17		07:49	17:03 (T5)	07:26		07:53
	21:00	20:24 29	20:00 (T3)	19:31		18:42 76	18:19 (T4)	17:08		17:05
22	06:16	06:47	19:31 (T3)	07:18		07:50	17:03 (T5)	07:27		07:54
	20:59	20:23 28	19:59 (T3)	19:30		18:41 65	18:08 (T5)	17:07		17:05
23	06:17	06:48	19:31 (T3)	07:19		07:51	17:03 (T5)	07:28		07:54
	20:58	20:21 27	19:58 (T3)	19:28		18:39 65	18:08 (T5)	17:07		17:06
24	06:18	06:49	19:31 (T3)	07:20		07:52	17:03 (T5)	07:29		07:55
	20:58	20:20 25	19:56 (T3)	19:26		18:38 64	18:07 (T5)	17:06		17:06
25	06:19	06:50	19:31 (T3)	07:21		07:54	17:02 (T5)	07:30		07:55
	20:57	20:18 24	19:55 (T3)	19:25		18:37 65	18:07 (T5)	17:05		17:07
26	06:20	06:51	19:31 (T3)	07:22		07:55	17:03 (T5)	07:32		07:56
	20:56	20:16 22	19:53 (T3)	19:23		18:35 64	18:07 (T5)	17:05		17:07
27	06:21	06:52	19:31 (T3)	07:23		07:56	17:03 (T5)	07:33		07:56
	20:55	20:15 21	19:52 (T3)	19:21		18:34 64	18:07 (T5)	17:04		17:08
28	06:22	06:53	19:32 (T3)	07:24	18:16 (T4)	07:57	17:03 (T5)	07:34		07:56
	20:54	20:13 18	19:50 (T3)	19:19 9	18:25 (T4)	18:33 63	18:06 (T5)	17:04		17:09
29	06:23	06:54	19:32 (T3)	07:25	18:12 (T4)	07:58	17:03 (T5)	07:35		07:57
	20:53	20:12 16	19:48 (T3)	19:18 16	18:28 (T4)	18:31 62	18:05 (T5)	17:04		17:10
30	06:24	06:55	19:33 (T3)	07:26	18:09 (T4)	07:59	17:04 (T5)	07:36		07:57
	20:52	20:10 13	19:46 (T3)	19:16 21	18:30 (T4)	18:30 61	18:05 (T5)	17:03		17:10
31	06:25	06:56	19:35 (T3)			08:01	17:04 (T5)			07:57
	20:51	20:09 10	19:45 (T3)			18:29 61	18:05 (T5)			17:11
Potential sun hours	460	429		375		345		297		287
Total, worst case		450		50		2192		665		
Sun reduction		0.61		0.59		0.48		0.30		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.57		0.67		0.71		0.72		
Total reduction		0.35		0.40		0.34		0.22		
Total, real		159		20		749		144		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 390 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8012)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		08:06 (T4)	07:07		07:50 (T5)	07:16			06:30		07:09 (T3)	06:01		07:21 (T3)
	17:12			17:47	43	08:49 (T4)	18:21	9	07:59 (T5)	19:56			20:27	75	08:24 (T3)	20:57	49	08:10 (T3)
2	07:57			07:42		08:06 (T4)	07:05			07:14			06:28		07:09 (T3)	06:00		07:22 (T3)
	17:13			17:48	43	08:49 (T4)	18:22			19:57			20:28	75	08:24 (T3)	20:58	48	08:10 (T3)
3	07:57			07:41		08:06 (T4)	07:04			07:12			06:27		07:10 (T3)	06:00		07:23 (T3)
	17:14			17:49	43	08:49 (T4)	18:24			19:58			20:29	74	08:24 (T3)	20:58	47	08:10 (T3)
4	07:58			07:40		08:07 (T4)	07:02			07:11			06:26		07:10 (T3)	05:59		07:23 (T3)
	17:15			17:51	43	08:50 (T4)	18:25			19:59			20:30	74	08:24 (T3)	20:59	46	08:09 (T3)
5	07:58			07:39		08:07 (T4)	07:01			07:09			06:25		07:09 (T3)	05:59		07:24 (T3)
	17:16			17:52	43	08:50 (T4)	18:26			20:00			20:31	74	08:23 (T3)	21:00	45	08:09 (T3)
6	07:57			07:38		07:58 (T5)	06:59			07:07		07:52 (T3)	06:23		07:09 (T3)	05:59		07:25 (T3)
	17:17			17:53	46	08:49 (T4)	18:27			20:00	2	07:54 (T3)	20:32	74	08:23 (T3)	21:01	44	08:09 (T3)
7	07:57			07:37		07:57 (T5)	06:57			07:06		07:43 (T3)	06:22		07:09 (T3)	05:58		07:25 (T3)
	17:18			17:54	50	08:49 (T4)	18:28			20:01	21	08:04 (T3)	20:33	73	08:22 (T3)	21:01	43	08:08 (T3)
8	07:57			07:36		07:56 (T5)	07:56			07:04		07:38 (T3)	06:21		07:09 (T3)	05:58		07:26 (T3)
	17:19			17:56	53	08:49 (T4)	19:29			20:02	29	08:07 (T3)	20:34	73	08:22 (T3)	21:02	42	08:08 (T3)
9	07:57			07:35		07:55 (T5)	07:54			07:03		07:35 (T3)	06:20		07:10 (T3)	05:58		07:27 (T3)
	17:20			17:57	54	08:49 (T4)	19:30			20:03	36	08:11 (T3)	20:35	72	08:22 (T3)	21:02	40	08:07 (T3)
10	07:57			07:34		07:54 (T5)	07:53			07:01		07:32 (T3)	06:19		07:10 (T3)	05:58		07:27 (T3)
	17:21			17:58	55	08:49 (T4)	19:32			20:04	41	08:13 (T3)	20:36	72	08:22 (T3)	21:03	40	08:07 (T3)
11	07:57			07:32		07:52 (T5)	07:51			06:59		07:29 (T3)	06:18		07:10 (T3)	05:58		07:28 (T3)
	17:22			17:59	56	08:48 (T4)	19:33			20:05	45	08:14 (T3)	20:37	71	08:21 (T3)	21:04	39	08:07 (T3)
12	07:56			07:31		07:51 (T5)	07:49			06:58		07:27 (T3)	06:16		07:10 (T3)	05:58		07:29 (T3)
	17:23			18:01	57	08:48 (T4)	19:34			20:06	49	08:16 (T3)	20:38	71	08:21 (T3)	21:04	38	08:07 (T3)
13	07:56			07:30		07:50 (T5)	07:48			06:56		07:25 (T3)	06:15		07:11 (T3)	05:57		07:29 (T3)
	17:24			18:02	57	08:47 (T4)	19:35			20:08	52	08:17 (T3)	20:40	69	08:20 (T3)	21:05	38	08:07 (T3)
14	07:56			07:29		07:48 (T5)	07:46			06:55		07:24 (T3)	06:14		07:11 (T3)	05:57		07:30 (T3)
	17:25			18:03	58	08:46 (T4)	19:36			20:09	55	08:19 (T3)	20:41	69	08:20 (T3)	21:05	37	08:07 (T3)
15	07:55			07:27		07:47 (T5)	07:44			06:53		07:22 (T3)	06:13		07:11 (T3)	05:57		07:31 (T3)
	17:26			18:04	58	08:45 (T4)	19:37			20:10	58	08:20 (T3)	20:42	68	08:19 (T3)	21:06	35	08:06 (T3)
16	07:55		08:20 (T4)	07:26		07:46 (T5)	07:43			06:51		07:21 (T3)	06:12		07:11 (T3)	05:57		07:31 (T3)
	17:27	6	08:26 (T4)	18:06	58	08:44 (T4)	19:38			20:11	60	08:21 (T3)	20:43	68	08:19 (T3)	21:06	35	08:06 (T3)
17	07:54		08:17 (T4)	07:25		07:44 (T5)	07:41			06:50		07:19 (T3)	06:11		07:12 (T3)	05:57		07:31 (T3)
	17:29	13	08:30 (T4)	18:07	58	08:42 (T4)	19:39			20:12	62	08:21 (T3)	20:44	66	08:18 (T3)	21:06	35	08:06 (T3)
18	07:54		08:15 (T4)	07:23		07:43 (T5)	07:39			06:48		07:18 (T3)	06:10		07:12 (T3)	05:58		07:32 (T3)
	17:30	18	08:33 (T4)	18:08	57	08:41 (T4)	19:41			20:13	63	08:21 (T3)	20:45	66	08:18 (T3)	21:07	34	08:06 (T3)
19	07:53		08:15 (T4)	07:22		07:41 (T5)	07:38			06:47		07:17 (T3)	06:10		07:12 (T3)	05:58		07:32 (T3)
	17:31	20	08:35 (T4)	18:09	53	08:38 (T4)	19:42			20:14	65	08:22 (T3)	20:45	65	08:17 (T3)	21:07	34	08:06 (T3)
20	07:53		08:14 (T4)	07:20		07:40 (T5)	07:36			06:45		07:16 (T3)	06:09		07:14 (T3)	05:58		07:32 (T3)
	17:32	23	08:37 (T4)	18:11	48	08:35 (T4)	19:43			20:15	67	08:23 (T3)	20:46	63	08:17 (T3)	21:07	34	08:06 (T3)
21	07:52		08:13 (T4)	07:19		07:40 (T5)	07:34			06:44		07:15 (T3)	06:08		07:14 (T3)	05:58		07:32 (T3)
	17:33	25	08:38 (T4)	18:12	33	08:13 (T5)	19:44			20:16	68	08:23 (T3)	20:47	62	08:16 (T3)	21:08	34	08:06 (T3)
22	07:52		08:13 (T4)	07:17		07:40 (T5)	07:33			06:42		07:15 (T3)	06:07		07:14 (T3)	05:58		07:33 (T3)
	17:34	27	08:40 (T4)	18:13	32	08:12 (T5)	19:45			20:17	69	08:24 (T3)	20:48	62	08:16 (T3)	21:08	34	08:07 (T3)
23	07:51		08:12 (T4)	07:16		07:41 (T5)	07:31			06:41		07:13 (T3)	06:06		07:14 (T3)	05:58		07:33 (T3)
	17:36	29	08:41 (T4)	18:14	31	08:12 (T5)	19:46			20:18	71	08:24 (T3)	20:49	61	08:15 (T3)	21:08	34	08:07 (T3)
24	07:50		08:11 (T4)	07:15		07:41 (T5)	07:29			06:39		07:13 (T3)	06:06		07:16 (T3)	05:59		07:33 (T3)
	17:37	31	08:42 (T4)	18:15	29	08:10 (T5)	19:47			20:19	71	08:24 (T3)	20:50	59	08:15 (T3)	21:08	34	08:07 (T3)
25	07:49		08:10 (T4)	07:13		07:43 (T5)	07:28			06:38		07:12 (T3)	06:05		07:16 (T3)	05:59		07:34 (T3)
	17:38	33	08:43 (T4)	18:17	26	08:09 (T5)	19:48			20:20	72	08:24 (T3)	20:51	58	08:14 (T3)	21:08	34	08:08 (T3)
26	07:49		08:09 (T4)	07:12		07:43 (T5)	07:26			06:36		07:12 (T3)	06:04		07:16 (T3)	05:59		07:33 (T3)
	17:39	35	08:44 (T4)	18:18	24	08:07 (T5)	19:49			20:22	72	08:24 (T3)	20:52	57	08:13 (T3)	21:09	35	08:08 (T3)
27	07:48		08:09 (T4)	07:10		07:45 (T5)	07:24			06:35		07:12 (T3)	06:03		07:18 (T3)	06:00		07:33 (T3)
	17:41	37	08:46 (T4)	18:19	21	08:06 (T5)	19:50			20:23	73	08:25 (T3)	20:53	55	08:13 (T3)	21:09	35	08:08 (T3)
28	07:47		08:08 (T4)	07:09		07:47 (T5)	07:22			06:34		07:10 (T3)	06:03		07:18 (T3)	06:00		07:33 (T3)
	17:42	38	08:46 (T4)	18:20	16	08:03 (T5)	19:51			20:24	74	08:24 (T3)	20:54	54	08:12 (T3)	21:09	36	08:09 (T3)
29	07:46		08:07 (T4)				07:21			06:32		07:10 (T3)	06:02		07:19 (T3)	06:00		07:33 (T3)
	17:43	40	08:47 (T4)				19:52			20:25	74	08:24 (T3)	20:55	53	08:12 (T3)	21:09	37	08:10 (T3)
30	07:45		08:07 (T4)				07:19			06:31		07:10 (T3)	06:02		07:19 (T3)	06:01		07:33 (T3)
	17:44	41	08:48 (T4)				19:54			20:26	74	08:24 (T3)	20:55	52	08:11 (T3)	21:09	38	08:11 (T3)
31	07:44		08:07 (T4)				07:17						06:01		07:20 (T3)			
	17:46	41	08:48 (T4)				19:55						20:56	51	08:11 (T3)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		457			1245			9			1423			2036			1154	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.54			0.56			0.66			0.66			0.66	
Total reduction		0.16			0.21			0.24			0.34			0.37			0.42	
Total, real		74			265			2			480			753			479	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 390 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8012)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:01		07:32 (T3)	06:26		07:21 (T3)	06:57		07:28 (T3)	07:27		07:02		07:23 (T5)	07:37
	21:09	39	08:11 (T3)	20:50	71	08:32 (T3)	20:07	45	08:13 (T3)	19:14		17:27	55	08:18 (T4)	17:03
2	06:02		07:32 (T3)	06:27		07:21 (T3)	06:58		07:30 (T3)	07:28		07:03		07:25 (T5)	07:38
	21:08	39	08:11 (T3)	20:49	71	08:32 (T3)	20:05	41	08:11 (T3)	19:13		17:26	54	08:19 (T4)	17:03
3	06:02		07:32 (T3)	06:28		07:19 (T3)	06:59		07:32 (T3)	07:29		07:04		07:26 (T5)	07:39
	21:08	40	08:12 (T3)	20:48	72	08:31 (T3)	20:04	36	08:08 (T3)	19:11		17:25	52	08:19 (T4)	17:02
4	06:03		07:32 (T3)	06:29		07:19 (T3)	07:00		07:35 (T3)	07:30		07:05		07:27 (T5)	07:40
	21:08	41	08:13 (T3)	20:47	73	08:32 (T3)	20:02	30	08:05 (T3)	19:09		17:24	50	08:19 (T4)	17:02
5	06:04		07:31 (T3)	06:30		07:19 (T3)	07:01		07:39 (T3)	07:31		07:07		07:28 (T5)	07:41
	21:08	43	08:14 (T3)	20:46	73	08:32 (T3)	20:00	21	08:00 (T3)	19:08		17:23	45	08:19 (T4)	17:02
6	06:04		07:31 (T3)	06:31		07:19 (T3)	07:02		07:47 (T3)	07:32		07:08		07:37 (T4)	07:42
	21:08	44	08:15 (T3)	20:44	73	08:32 (T3)	19:57	4	07:51 (T3)	19:06		17:21	43	08:20 (T4)	17:02
7	06:05		07:30 (T3)	06:32		07:19 (T3)	07:03			07:34		07:09		07:36 (T4)	07:43
	21:07	45	08:15 (T3)	20:43	73	08:32 (T3)	19:55			19:04		17:20	44	08:20 (T4)	17:02
8	06:05		07:30 (T3)	06:33		07:18 (T3)	07:04			07:35		07:10		07:36 (T4)	07:44
	21:07	46	08:16 (T3)	20:42	74	08:32 (T3)	19:54			19:03		17:19	43	08:19 (T4)	17:02
9	06:06		07:30 (T3)	06:34		07:18 (T3)	07:05			07:36		07:12		07:37 (T4)	07:45
	21:07	47	08:17 (T3)	20:41	74	08:32 (T3)	19:52			19:01		17:18	43	08:20 (T4)	17:02
10	06:07		07:29 (T3)	06:35		07:18 (T3)	07:06			07:37		07:13		07:37 (T4)	07:46
	21:06	48	08:17 (T3)	20:39	74	08:32 (T3)	19:50			18:59		17:17	42	08:19 (T4)	17:02
11	06:07		07:29 (T3)	06:36		07:18 (T3)	07:07			07:38		07:14		07:38 (T4)	07:47
	21:06	49	08:18 (T3)	20:38	74	08:32 (T3)	19:49			18:58		17:16	41	08:19 (T4)	17:02
12	06:08		07:29 (T3)	06:37		07:18 (T3)	07:08			07:39		07:15		07:38 (T4)	07:47
	21:06	50	08:19 (T3)	20:37	74	08:32 (T3)	19:47			18:56		17:15	40	08:18 (T4)	17:02
13	06:09		07:28 (T3)	06:38		07:18 (T3)	07:09			07:40		08:22 (T5)	07:16		07:39 (T4)	07:48
	21:05	51	08:19 (T3)	20:36	74	08:32 (T3)	19:45			18:55	12	08:34 (T5)	17:14	40	08:19 (T4)	17:02
14	06:10		07:28 (T3)	06:39		07:18 (T3)	07:10			07:41		08:19 (T5)	07:18		07:40 (T4)	07:49
	21:05	52	08:20 (T3)	20:34	74	08:32 (T3)	19:44			18:53	18	08:37 (T5)	17:13	38	08:18 (T4)	17:02
15	06:10		07:27 (T3)	06:40		07:18 (T3)	07:11			07:42		08:16 (T5)	07:19		07:41 (T4)	07:50
	21:04	54	08:21 (T3)	20:33	74	08:32 (T3)	19:42			18:52	22	08:38 (T5)	17:12	36	08:17 (T4)	17:03
16	06:11		07:27 (T3)	06:41		07:18 (T3)	07:12			07:43		08:15 (T5)	07:20		07:43 (T4)	07:50
	21:04	55	08:22 (T3)	20:31	73	08:31 (T3)	19:40			18:50	25	08:40 (T5)	17:12	35	08:18 (T4)	17:03
17	06:12		07:26 (T3)	06:42		07:18 (T3)	07:13			07:44		08:14 (T5)	07:21		07:44 (T4)	07:51
	21:03	56	08:22 (T3)	20:30	73	08:31 (T3)	19:38			18:48	27	08:41 (T5)	17:11	33	08:17 (T4)	17:03
18	06:13		07:26 (T3)	06:43		07:19 (T3)	07:14			07:46		08:12 (T5)	07:22		07:45 (T4)	07:52
	21:02	57	08:23 (T3)	20:29	72	08:31 (T3)	19:37			18:47	30	08:42 (T5)	17:10	31	08:16 (T4)	17:04
19	06:14		07:25 (T3)	06:44		07:19 (T3)	07:15			07:47		08:11 (T5)	07:24		07:46 (T4)	07:52
	21:02	59	08:24 (T3)	20:27	71	08:30 (T3)	19:35			18:45	31	08:42 (T5)	17:09	29	08:15 (T4)	17:04
20	06:15		07:25 (T3)	06:45		07:19 (T3)	07:16			07:48		08:10 (T5)	07:25		07:48 (T4)	07:53
	21:01	60	08:25 (T3)	20:26	70	08:29 (T3)	19:33			18:44	33	08:43 (T5)	17:09	27	08:15 (T4)	17:04
21	06:15		07:25 (T3)	06:46		07:20 (T3)	07:17			07:49		08:11 (T5)	07:26		07:49 (T4)	07:53
	21:00	61	08:26 (T3)	20:24	69	08:29 (T3)	19:31			18:42	42	09:03 (T4)	17:08	25	08:14 (T4)	17:05
22	06:16		07:25 (T3)	06:47		07:20 (T3)	07:18			07:50		08:11 (T5)	07:27		07:50 (T4)	07:54
	20:59	62	08:27 (T3)	20:23	68	08:28 (T3)	19:30			18:41	50	09:07 (T4)	17:07	23	08:13 (T4)	17:05
23	06:17		07:23 (T3)	06:48		07:20 (T3)	07:19			07:51		08:12 (T5)	07:28		07:51 (T4)	07:54
	20:59	63	08:26 (T3)	20:21	67	08:27 (T3)	19:28			18:40	54	09:09 (T4)	17:07	20	08:11 (T4)	17:06
24	06:18		07:23 (T3)	06:49		07:21 (T3)	07:20			07:52		08:13 (T5)	07:29		07:52 (T4)	07:55
	20:58	64	08:27 (T3)	20:20	65	08:26 (T3)	19:26			18:38	57	09:11 (T4)	17:06	18	08:10 (T4)	17:06
25	06:19		07:23 (T3)	06:50		07:22 (T3)	07:21			07:54		08:14 (T5)	07:30		07:55 (T4)	07:55
	20:57	65	08:28 (T3)	20:18	63	08:25 (T3)	19:25			18:37	58	09:12 (T4)	17:05	14	08:09 (T4)	17:07
26	06:20		07:22 (T3)	06:51		07:22 (T3)	07:22			07:55		08:16 (T5)	07:32		07:58 (T4)	07:56
	20:56	66	08:28 (T3)	20:17	62	08:24 (T3)	19:23			18:35	58	09:14 (T4)	17:05	7	08:05 (T4)	17:08
27	06:21		07:22 (T3)	06:52		07:23 (T3)	07:23			07:56		08:17 (T5)	07:33			07:56
	20:55	67	08:29 (T3)	20:15	60	08:23 (T3)	19:21			18:34	58	09:15 (T4)	17:04			17:08
28	06:22		07:22 (T3)	06:53		07:24 (T3)	07:24			07:57		08:18 (T5)	07:34			07:56
	20:54	68	08:30 (T3)	20:13	57	08:21 (T3)	19:19			18:33	58	09:16 (T4)	17:04			17:09
29	06:23		07:22 (T3)	06:54		07:25 (T3)	07:25			07:58		08:19 (T5)	07:35			07:57
	20:53	68	08:30 (T3)	20:12	55	08:20 (T3)	19:18			18:31	57	09:16 (T4)	17:04			17:10
30	06:24		07:21 (T3)	06:55		07:26 (T3)	07:26			08:00		08:21 (T5)	07:36			07:57
	20:52	70	08:31 (T3)	20:10	52	08:18 (T3)	19:16			18:30	57	09:18 (T4)	17:03			17:10
31	06:25		07:21 (T3)	06:56		07:26 (T3)				08:01		08:22 (T5)				07:57
	20:51	70	08:31 (T3)	20:09	49	08:15 (T3)				18:29	56	09:18 (T4)				17:11
Potential sun hours	460			429			375			345			297			287
Total, worst case		1699			2124			177			803			928		
Sun reduction		0.66			0.61			0.59			0.48			0.30		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.66			0.66			0.66			0.55			0.53		
Total reduction		0.43			0.40			0.38			0.26			0.16		
Total, real		728			841			68			207			145		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 399 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8021)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April	May		June	
1	07:57	07:43		07:07		16:59 (T44)	07:16		06:01	06:31 (T76)
	17:13	17:47		18:22	58	17:57 (T44)	19:56		20:57	70 20:32 (T77)
2	07:57	07:42		07:06		16:58 (T44)	07:14		06:01	06:32 (T76)
	17:14	17:49		18:23	58	17:56 (T44)	19:57		20:58	70 20:33 (T77)
3	07:57	07:41		07:04		16:58 (T44)	07:13		06:01	06:31 (T76)
	17:15	17:50		18:24	58	17:56 (T44)	19:58		20:58	71 20:33 (T77)
4	07:57	07:40		07:02		16:58 (T44)	07:11		06:00	06:32 (T76)
	17:16	17:51		18:25	58	17:56 (T44)	19:59		20:59	70 20:34 (T77)
5	07:57	07:39		07:01		16:58 (T44)	07:09		06:00	06:33 (T76)
	17:17	17:52		18:26	58	17:56 (T44)	20:00		21:00	70 20:35 (T77)
6	07:57	07:38		06:59		16:58 (T44)	07:08		06:00	06:33 (T76)
	17:17	17:54		18:27	58	17:56 (T44)	20:00		21:00	70 20:35 (T77)
7	07:57	07:37		06:58		16:58 (T44)	07:06		05:59	06:34 (T76)
	17:18	17:55		18:29	57	17:55 (T44)	20:01		21:01	70 20:36 (T77)
8	07:57	07:36		07:56		17:58 (T44)	07:05		05:59	06:34 (T76)
	17:19	17:56		19:30	56	18:54 (T44)	20:02		21:02	71 20:37 (T77)
9	07:57	07:35		07:54		17:59 (T44)	07:03		05:59	06:35 (T76)
	17:20	17:57		19:31	55	18:54 (T44)	20:03		21:02	71 20:38 (T77)
10	07:57	07:34		07:53		17:58 (T44)	07:01		05:59	06:36 (T76)
	17:21	17:59		19:32	55	18:53 (T44)	20:05		21:03	70 20:38 (T77)
11	07:57	07:32		07:51		17:59 (T44)	07:00		05:58	06:36 (T76)
	17:23	18:00		19:33	53	18:52 (T44)	20:06		21:03	71 20:39 (T77)
12	07:56	07:31		07:50		18:00 (T44)	06:58		05:58	06:36 (T76)
	17:24	18:01		19:34	52	18:52 (T44)	20:07		21:04	69 20:38 (T77)
13	07:56	07:30	17:22 (T44)	07:48		18:00 (T44)	06:57		05:58	06:36 (T76)
	17:25	18:02	14 17:36 (T44)	19:35	50	18:50 (T44)	20:08		21:05	69 20:39 (T77)
14	07:56	07:29	17:17 (T44)	07:46		18:00 (T44)	06:55		05:58	06:37 (T76)
	17:26	18:04	22 17:39 (T44)	19:36	49	18:49 (T44)	20:09		21:05	68 20:39 (T77)
15	07:55	07:27	17:14 (T44)	07:45		18:02 (T44)	06:53		05:58	06:37 (T76)
	17:27	18:05	28 17:42 (T44)	19:38	46	18:48 (T44)	20:10		21:05	69 20:40 (T77)
16	07:55	07:26	17:13 (T44)	07:43		18:03 (T44)	06:52		05:58	06:38 (T76)
	17:28	18:06	31 17:44 (T44)	19:39	43	18:46 (T44)	20:11		21:06	68 20:40 (T77)
17	07:54	07:25	17:10 (T44)	07:41		18:04 (T44)	06:50		05:58	06:39 (T76)
	17:29	18:07	34 17:44 (T44)	19:40	40	18:44 (T44)	20:12		21:06	68 20:41 (T77)
18	07:54	07:23	17:09 (T44)	07:40		18:06 (T44)	06:49		05:58	06:39 (T76)
	17:30	18:09	37 17:46 (T44)	19:41	37	18:43 (T44)	20:13		21:07	69 20:42 (T77)
19	07:53	07:22	17:08 (T44)	07:38		18:07 (T44)	06:47		05:58	06:39 (T76)
	17:32	18:10	40 17:48 (T44)	19:42	34	18:41 (T44)	20:14		21:07	69 20:42 (T77)
20	07:53	07:20	17:06 (T44)	07:36		18:09 (T44)	06:46		05:59	06:40 (T76)
	17:33	18:11	42 17:48 (T44)	19:43	29	18:38 (T44)	20:15		21:07	68 20:42 (T77)
21	07:52	07:19	17:05 (T44)	07:35		18:12 (T44)	06:44		05:59	06:40 (T76)
	17:34	18:12	45 17:50 (T44)	19:44	23	18:35 (T44)	20:16		21:08	68 20:42 (T77)
22	07:52	07:18	17:03 (T44)	07:33		18:16 (T44)	06:43		05:59	06:40 (T76)
	17:35	18:13	48 17:51 (T44)	19:45	14	18:30 (T44)	20:17		21:08	68 20:42 (T77)
23	07:51	07:16	17:03 (T44)	07:31			06:41		05:59	06:40 (T76)
	17:36	18:15	50 17:53 (T44)	19:46			20:18		21:08	69 20:43 (T77)
24	07:50	07:15	17:01 (T44)	07:30			06:40		05:59	06:40 (T76)
	17:38	18:16	52 17:53 (T44)	19:47			20:19		21:08	69 20:43 (T77)
25	07:49	07:13	17:01 (T44)	07:28			06:38		06:00	06:40 (T76)
	17:39	18:17	54 17:55 (T44)	19:48			20:21		21:08	69 20:43 (T77)
26	07:49	07:12	17:00 (T44)	07:26			06:37		06:00	06:41 (T76)
	17:40	18:18	55 17:55 (T44)	19:50			20:22		21:08	68 20:43 (T77)
27	07:48	07:10	17:00 (T44)	07:24			06:36		06:00	06:40 (T76)
	17:41	18:19	56 17:56 (T44)	19:51			20:23		21:08	69 20:43 (T77)
28	07:47	07:09	16:59 (T44)	07:23			06:34		06:01	06:40 (T76)
	17:42	18:21	57 17:56 (T44)	19:52			20:24		21:08	69 20:43 (T77)
29	07:46			07:21			06:33		06:01	06:41 (T76)
	17:44			19:53			20:25		21:08	68 20:43 (T77)
30	07:45			07:19			06:32		06:02	06:40 (T76)
	17:45			19:54			20:26		21:08	70 20:43 (T77)
31	07:44			07:18						
	17:46			19:55						
Potential sun hours	297	297		370		399	448		453	
Total, worst case			665		1041			1178		2078
Sun reduction			0.40		0.44			0.57		0.64
Oper. time red.			1.00		1.00			1.00		1.00
Wind dir. red.			0.69		0.69			0.65		0.60
Total reduction			0.28		0.31			0.37		0.39
Total, real			185		319			439		804

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 399 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8021)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December
1	06:02		06:41 (T76)	06:26		06:48 (T76)	06:57			07:27		17:39 (T44)	07:02	07:37
	21:08	70	20:43 (T77)	20:50	24	07:12 (T76)	20:07			19:15	51	18:30 (T44)	17:28	17:04
2	06:03		06:40 (T76)	06:27		06:49 (T76)	06:58			07:29		17:37 (T44)	07:03	07:38
	21:08	71	20:43 (T77)	20:49	22	07:11 (T76)	20:06			19:13	53	18:30 (T44)	17:27	17:03
3	06:03		06:40 (T76)	06:28		06:50 (T76)	06:59			07:30		17:36 (T44)	07:04	07:39
	21:08	71	20:43 (T77)	20:48	20	07:10 (T76)	20:04			19:11	55	18:31 (T44)	17:26	17:03
4	06:04		06:40 (T76)	06:29		06:51 (T76)	07:00			07:31		17:35 (T44)	07:06	07:40
	21:08	70	20:42 (T77)	20:47	18	07:09 (T76)	20:02			19:10	56	18:31 (T44)	17:24	17:03
5	06:04		06:40 (T76)	06:30		06:52 (T76)	07:01			07:32		17:36 (T44)	07:07	07:41
	21:08	69	20:42 (T77)	20:46	16	07:08 (T76)	20:01			19:08	56	18:32 (T44)	17:23	17:03
6	06:05		06:39 (T76)	06:31		06:53 (T76)	07:02			07:33		17:35 (T44)	07:08	07:42
	21:08	71	20:42 (T77)	20:44	14	07:07 (T76)	19:57			19:06	57	18:32 (T44)	17:22	17:03
7	06:05		06:39 (T76)	06:32		06:54 (T76)	07:03			07:34		17:34 (T44)	07:09	07:43
	21:07	71	20:42 (T77)	20:43	11	07:05 (T76)	19:56			19:05	57	18:31 (T44)	17:21	17:03
8	06:06		06:40 (T76)	06:33		06:55 (T76)	07:04			07:35		17:33 (T44)	07:10	07:44
	21:07	70	20:42 (T77)	20:42	8	07:03 (T76)	19:54			19:03	58	18:31 (T44)	17:20	17:03
9	06:07		06:39 (T76)	06:34		06:56 (T76)	07:05			07:36		17:33 (T44)	07:12	07:45
	21:07	70	20:41 (T77)	20:41	3	06:59 (T76)	19:52			19:01	58	18:31 (T44)	17:19	17:03
10	06:07		06:39 (T76)	06:35			07:06			07:37		17:32 (T44)	07:13	07:46
	21:06	71	20:41 (T77)	20:39			19:51			19:00	59	18:31 (T44)	17:18	17:03
11	06:08		06:39 (T76)	06:36			07:07			07:38		17:32 (T44)	07:14	07:46
	21:06	71	20:41 (T77)	20:38			19:49			18:58	58	18:30 (T44)	17:17	17:03
12	06:09		06:38 (T76)	06:37			07:08			07:39		17:32 (T44)	07:15	07:47
	21:05	70	20:40 (T77)	20:37			19:47			18:57	57	18:29 (T44)	17:16	17:03
13	06:10		06:38 (T76)	06:38			07:09			07:40		17:32 (T44)	07:16	07:48
	21:05	70	20:40 (T77)	20:36			19:45			18:55	57	18:29 (T44)	17:15	17:03
14	06:10		06:39 (T76)	06:39			07:10			07:41		17:32 (T44)	07:18	07:49
	21:05	69	20:39 (T77)	20:34			19:44			18:54	56	18:28 (T44)	17:14	17:03
15	06:11		06:39 (T76)	06:40			07:11			07:42		17:33 (T44)	07:19	07:50
	21:04	69	20:39 (T77)	20:33			19:42			18:52	55	18:28 (T44)	17:13	17:03
16	06:12		06:38 (T76)	06:41			07:12			07:44		17:33 (T44)	07:20	07:50
	21:03	68	20:38 (T77)	20:31			19:40			18:50	54	18:27 (T44)	17:12	17:04
17	06:13		06:38 (T76)	06:42			07:13			07:45		17:33 (T44)	07:21	07:51
	21:03	67	20:37 (T77)	20:30			19:39			18:49	53	18:26 (T44)	17:11	17:04
18	06:14		06:38 (T76)	06:43			07:14			07:46		17:33 (T44)	07:22	07:52
	21:02	66	20:37 (T77)	20:29			19:37			18:47	51	18:24 (T44)	17:11	17:04
19	06:14		06:38 (T76)	06:44			07:15			07:47		17:34 (T44)	07:23	07:52
	21:01	66	20:37 (T77)	20:27			19:35			18:46	49	18:23 (T44)	17:10	17:05
20	06:15		06:38 (T76)	06:45			07:16			07:48		17:34 (T44)	07:25	07:53
	21:01	64	20:36 (T77)	20:26			19:33			18:44	47	18:21 (T44)	17:09	17:05
21	06:16		06:38 (T76)	06:46			07:17		18:03 (T44)	07:49		17:36 (T44)	07:26	07:53
	21:00	62	20:35 (T77)	20:24			19:32	11	18:14 (T44)	18:43	44	18:20 (T44)	17:09	17:06
22	06:17		06:39 (T76)	06:47			07:18		17:58 (T44)	07:50		17:37 (T44)	07:27	07:54
	20:59	60	20:34 (T77)	20:23			19:30	21	18:19 (T44)	18:41	42	18:19 (T44)	17:08	17:06
23	06:18		06:40 (T76)	06:48			07:19		17:54 (T44)	07:51		17:38 (T44)	07:28	07:54
	20:58	56	20:33 (T77)	20:21			19:28	27	18:21 (T44)	18:40	39	18:17 (T44)	17:07	17:07
24	06:19		06:41 (T76)	06:49			07:20		17:51 (T44)	07:53		17:39 (T44)	07:29	07:55
	20:58	54	20:33 (T77)	20:20			19:27	32	18:23 (T44)	18:39	36	18:15 (T44)	17:07	17:07
25	06:20		06:42 (T76)	06:50			07:21		17:49 (T44)	07:54		17:41 (T44)	07:30	07:55
	20:57	50	20:32 (T77)	20:18			19:25	36	18:25 (T44)	18:37	34	18:15 (T44)	17:06	17:08
26	06:21		06:43 (T76)	06:51			07:22		17:47 (T44)	07:55		17:43 (T44)	07:32	07:56
	20:56	45	20:31 (T77)	20:17			19:23	39	18:26 (T44)	18:36	30	18:13 (T44)	17:06	17:08
27	06:22		06:44 (T76)	06:52			07:23		17:45 (T44)	07:56		17:45 (T44)	07:33	07:56
	20:55	41	20:31 (T77)	20:15			19:21	42	18:27 (T44)	18:34	26	18:11 (T44)	17:05	17:09
28	06:22		06:45 (T76)	06:53			07:24		17:43 (T44)	07:57		17:48 (T44)	07:34	07:56
	20:54	29	07:14 (T76)	20:14			19:20	45	18:28 (T44)	18:33	20	18:08 (T44)	17:05	17:10
29	06:23		06:45 (T76)	06:54			07:25		17:41 (T44)	07:58		17:52 (T44)	07:35	07:57
	20:53	28	07:13 (T76)	20:12			19:18	48	18:29 (T44)	18:32	11	18:03 (T44)	17:04	17:10
30	06:24		06:46 (T76)	06:55			07:26		17:40 (T44)	08:00			07:36	07:57
	20:52	27	07:13 (T76)	20:10			19:16	50	18:30 (T44)	18:31			17:04	17:11
31	06:25		06:47 (T76)	06:56						08:01				07:57
	20:51	25	07:12 (T76)	20:09						18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		1861			136			351			1379			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.63			0.71			0.69			0.69			
Total reduction		0.42			0.43			0.41			0.33			
Total, real		775			59			144			462			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 404 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8026)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		08:35 (T71)	07:43		07:07		07:16		07:35 (T68)	06:30	07:02 (T67)	06:02
	17:13	44	09:19 (T71)	17:48		18:22		19:56	117	19:16 (T69)	20:27	93	18:41 (T69)	20:57
2	07:57		08:36 (T71)	07:42		07:06		07:15		07:34 (T68)	06:29		07:04 (T67)	06:01
	17:14	43	09:19 (T71)	17:49		18:23		19:57	120	19:16 (T69)	20:28	82	18:37 (T69)	20:57
3	07:57		08:36 (T71)	07:41		07:04		07:13		07:32 (T68)	06:28		07:06 (T67)	06:01
	17:15	44	09:20 (T71)	17:50		18:24		19:58	125	19:16 (T69)	20:29	64	18:29 (T69)	20:58
4	07:57		08:37 (T71)	07:40		07:02	17:29 (T69)	07:11		07:30 (T68)	06:27		07:16 (T68)	06:01
	17:16	43	09:20 (T71)	17:51		18:25	20 17:49 (T69)	19:59	127	19:15 (T69)	20:30	49	08:05 (T68)	20:59
5	07:57		08:38 (T71)	07:39		07:01	17:23 (T69)	07:10		07:29 (T68)	06:25		07:16 (T68)	06:00
	17:17	42	09:20 (T71)	17:53		18:26	31 17:54 (T69)	20:00	129	19:15 (T69)	20:31	48	08:04 (T68)	20:59
6	07:57		08:39 (T71)	07:38		06:59	17:20 (T69)	07:08		07:27 (T68)	06:24		07:18 (T68)	06:00
	17:18	41	09:20 (T71)	17:54		18:28	38 17:58 (T69)	20:00	132	19:14 (T69)	20:32	45	08:03 (T68)	21:00
7	07:57		08:40 (T71)	07:37		06:58	17:16 (T69)	07:06		07:25 (T68)	06:23		07:19 (T68)	06:00
	17:19	41	09:21 (T71)	17:55		18:29	44 18:00 (T69)	20:01	133	19:13 (T69)	20:33	43	08:02 (T68)	21:01
8	07:57		08:41 (T71)	07:36		07:56	18:13 (T69)	07:05		07:24 (T68)	06:22		07:20 (T68)	05:59
	17:20	40	09:21 (T71)	17:57		19:30	49 19:02 (T69)	20:02	135	19:13 (T69)	20:34	41	08:01 (T68)	21:01
9	07:57		08:42 (T71)	07:35		07:54	18:11 (T69)	07:03		07:22 (T68)	06:21		07:21 (T68)	05:59
	17:21	39	09:21 (T71)	17:58		19:31	54 19:05 (T69)	20:03	136	19:12 (T69)	20:35	39	08:00 (T68)	21:02
10	07:57		08:42 (T71)	07:33		07:53	18:08 (T69)	07:02		07:20 (T68)	06:20		07:23 (T68)	05:59
	17:22	38	09:20 (T71)	17:59		19:32	58 19:06 (T69)	20:04	137	19:11 (T69)	20:36	35	07:58 (T68)	21:03
11	07:56		08:43 (T71)	07:32		07:51	18:06 (T69)	07:00		07:19 (T68)	06:18		07:24 (T68)	05:59
	17:23	37	09:20 (T71)	18:00		19:33	61 19:07 (T69)	20:06	138	19:11 (T69)	20:37	33	07:57 (T68)	21:03
12	07:56		08:44 (T71)	07:31		07:50	18:05 (T69)	06:58		07:17 (T68)	06:17		07:26 (T68)	05:59
	17:24	36	09:20 (T71)	18:01		19:34	64 19:09 (T69)	20:07	139	19:10 (T69)	20:38	29	07:55 (T68)	21:04
13	07:56		08:45 (T71)	07:30		07:48	18:03 (T69)	06:57		07:16 (T68)	06:16		07:28 (T68)	05:59
	17:25	35	09:20 (T71)	18:03		19:35	67 19:10 (T69)	20:08	140	19:10 (T69)	20:39	25	07:53 (T68)	21:04
14	07:55		08:46 (T71)	07:28		07:46	18:01 (T69)	06:55		07:14 (T67)	06:15		07:30 (T68)	05:59
	17:26	34	09:20 (T71)	18:04		19:37	70 19:11 (T69)	20:09	139	19:08 (T69)	20:40	20	07:50 (T68)	21:05
15	07:55		08:47 (T71)	07:27		07:45	18:00 (T69)	06:54		07:13 (T67)	06:14		07:33 (T68)	05:59
	17:27	32	09:19 (T71)	18:05		19:38	73 19:13 (T69)	20:10	140	19:08 (T69)	20:41	13	07:46 (T68)	21:05
16	07:55		08:48 (T71)	07:26		07:43	17:58 (T69)	06:52		07:11 (T67)	06:13			05:59
	17:28	30	09:18 (T71)	18:06		19:39	75 19:13 (T69)	20:11	139	19:06 (T69)	20:42			21:06
17	07:54		08:49 (T71)	07:25		07:41	17:57 (T69)	06:51		07:10 (T67)	06:12			05:59
	17:30	28	09:17 (T71)	18:08		19:40	77 19:14 (T69)	20:12	139	19:06 (T69)	20:43			21:06
18	07:54		08:51 (T71)	07:23		07:40	17:56 (T69)	06:49		07:08 (T67)	06:11			05:59
	17:31	26	09:17 (T71)	18:09		19:41	79 19:15 (T69)	20:13	138	19:04 (T69)	20:44			21:06
19	07:53		08:53 (T71)	07:22		07:38	17:55 (T69)	06:47		07:07 (T67)	06:11			05:59
	17:32	22	09:15 (T71)	18:10		19:42	80 19:15 (T69)	20:14	137	19:03 (T69)	20:45			21:07
20	07:53		08:56 (T71)	07:20		07:36	17:53 (T69)	06:46		07:05 (T67)	06:10			05:59
	17:33	18	09:14 (T71)	18:11		19:43	82 19:15 (T69)	20:15	137	19:02 (T69)	20:46			21:07
21	07:52		08:58 (T71)	07:19		07:35	17:53 (T69)	06:44		07:04 (T67)	06:09			05:59
	17:34	14	09:12 (T71)	18:12		19:44	83 19:16 (T69)	20:16	136	19:01 (T69)	20:47			21:07
22	07:51		09:03 (T71)	07:18		07:33	17:52 (T69)	06:43		07:02 (T67)	06:08			05:59
	17:35	3	09:06 (T71)	18:14		19:45	84 19:16 (T69)	20:17	134	18:59 (T69)	20:48			21:07
23	07:51			07:16		07:31	17:51 (T69)	06:42		07:01 (T67)	06:07			06:00
	17:37			18:15		19:46	85 19:16 (T69)	20:18	133	18:58 (T69)	20:49			21:08
24	07:50			07:15		07:30	17:51 (T69)	06:40		06:59 (T67)	06:07			06:00
	17:38			18:16		19:47	86 19:17 (T69)	20:19	131	18:56 (T69)	20:50			21:08
25	07:49			07:13		07:28	17:50 (T69)	06:39		06:58 (T67)	06:06			06:00
	17:39			18:17		19:48	87 19:17 (T69)	20:20	128	18:54 (T69)	20:51			21:08
26	07:48			07:12		07:26	17:49 (T69)	06:37		06:58 (T67)	06:05			06:00
	17:40			18:18		19:50	88 19:17 (T69)	20:21	124	18:53 (T69)	20:52			21:08
27	07:48			07:10		07:25	17:49 (T69)	06:36		06:58 (T67)	06:05			06:01
	17:42			18:20		19:51	89 19:18 (T69)	20:23	120	18:51 (T69)	20:52			21:08
28	07:47			07:09		07:23	17:49 (T69)	06:35		06:59 (T67)	06:04			06:01
	17:43			18:21		19:52	88 19:17 (T69)	20:24	115	18:49 (T69)	20:53			21:08
29	07:46					07:21	17:48 (T69)	06:33		07:00 (T67)	06:03			06:02
	17:44					19:53	89 19:17 (T69)	20:25	108	18:47 (T69)	20:54			21:08
30	07:45					07:20	07:47 (T68)	06:32		07:00 (T67)	06:03			06:02
	17:45					19:54	96 19:17 (T69)	20:26	103	18:44 (T69)	20:55			21:08
31	07:44					07:18	07:39 (T68)				06:02			
	17:46					19:55	110 19:17 (T69)				20:56			
Potential sun hours	297			297		370		399			448			452
Total, worst case		730					2007		3909			659		
Sun reduction		0.31					0.44		0.52			0.57		
Oper. time red.		1.00					1.00		1.00			1.00		
Wind dir. red.		0.53					0.66		0.66			0.65		
Total reduction		0.16					0.28		0.34			0.37		
Total, real		118					570		1313			242		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 404 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8026)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:03			06:27		07:35 (T68)	06:57		07:18 (T68)	07:28		17:43 (T69)	07:02			07:37		08:25 (T71)
	21:08			20:50	30	08:05 (T68)	20:07	138	19:10 (T69)	19:15	66	18:49 (T69)	17:28			17:04	37	09:02 (T71)
2	06:03			06:28		07:33 (T68)	06:58		07:19 (T68)	07:29		17:44 (T69)	07:03			07:38		08:25 (T71)
	21:08			20:49	34	08:07 (T68)	20:05	137	19:10 (T69)	19:13	63	18:47 (T69)	17:27			17:04	38	09:03 (T71)
3	06:04			06:29		07:32 (T68)	06:59		07:20 (T68)	07:30		17:45 (T69)	07:04			07:39		08:25 (T71)
	21:08			20:48	36	08:08 (T68)	20:04	136	19:10 (T69)	19:11	60	18:45 (T69)	17:26			17:04	39	09:04 (T71)
4	06:04			06:30		07:30 (T68)	07:00		07:21 (T68)	07:31		17:47 (T69)	07:05			07:40		08:25 (T71)
	21:08			20:47	40	08:10 (T68)	20:02	135	19:10 (T69)	19:10	55	18:42 (T69)	17:25			17:03	40	09:05 (T71)
5	06:05			06:31		07:29 (T68)	07:01		07:22 (T68)	07:32		17:50 (T69)	07:07			07:41		08:25 (T71)
	21:08			20:45	42	08:11 (T68)	20:01	133	19:10 (T69)	19:08	51	18:41 (T69)	17:23			17:03	41	09:06 (T71)
6	06:05			06:31		07:28 (T68)	07:02		07:23 (T68)	07:33		17:52 (T69)	07:08			07:42		08:25 (T71)
	21:07			20:44	44	08:12 (T68)	19:57	132	19:10 (T69)	19:07	46	18:38 (T69)	17:22			17:03	41	09:06 (T71)
7	06:06			06:32		07:27 (T68)	07:03		07:24 (T68)	07:34		17:54 (T69)	07:09			07:43		08:25 (T71)
	21:07			20:43	46	08:13 (T68)	19:56	129	19:10 (T69)	19:05	41	18:35 (T69)	17:21			17:03	42	09:07 (T71)
8	06:07			06:33		07:26 (T68)	07:04		07:25 (T68)	07:35		17:57 (T69)	07:10			07:44		08:25 (T71)
	21:07			20:42	48	08:14 (T68)	19:54	127	19:10 (T69)	19:03	34	18:31 (T69)	17:20			17:03	43	09:08 (T71)
9	06:07			06:34		07:19 (T67)	07:05		07:26 (T68)	07:36		18:01 (T69)	07:11			07:44		08:25 (T71)
	21:06			20:41	54	08:15 (T68)	19:52	125	19:10 (T69)	19:02	26	18:27 (T69)	17:19			17:03	44	09:09 (T71)
10	06:08			06:35		07:14 (T67)	07:06		07:27 (T68)	07:37		18:08 (T69)	07:13			07:45		08:26 (T71)
	21:06			20:39	73	18:42 (T69)	19:51	122	19:10 (T69)	19:00	11	18:19 (T69)	17:18			17:03	43	09:09 (T71)
11	06:09			06:36		07:12 (T67)	07:07		07:28 (T68)	07:38			07:14			07:46		08:26 (T71)
	21:06			20:38	86	18:47 (T69)	19:49	118	19:09 (T69)	18:58			17:17			17:03	44	09:10 (T71)
12	06:09			06:37		07:10 (T67)	07:08		07:30 (T68)	07:39			07:15			07:47		08:26 (T71)
	21:05			20:37	96	18:50 (T69)	19:47	111	19:08 (T69)	18:57			17:16			17:03	44	09:10 (T71)
13	06:10			06:38		07:09 (T67)	07:09		07:35 (T68)	07:40			07:16			07:48		08:26 (T71)
	21:05			20:35	104	18:53 (T69)	19:45	100	19:07 (T69)	18:55			17:15			17:03	45	09:11 (T71)
14	06:11			06:39		07:08 (T67)	07:10		17:38 (T69)	07:41			07:17			07:49		08:27 (T71)
	21:04			20:34	109	18:55 (T69)	19:44	89	19:07 (T69)	18:54			17:14			17:04	44	09:11 (T71)
15	06:12			06:40		07:07 (T67)	07:11		17:38 (T69)	07:42			07:19			07:49		08:28 (T71)
	21:04			20:33	115	18:57 (T69)	19:42	88	19:06 (T69)	18:52			17:13			17:04	44	09:12 (T71)
16	06:12			06:41		07:06 (T67)	07:12		17:38 (T69)	07:44			07:20			07:50		08:27 (T71)
	21:03			20:31	121	18:59 (T69)	19:40	88	19:06 (T69)	18:51			17:13			17:04	45	09:12 (T71)
17	06:13			06:42		07:05 (T67)	07:13		17:37 (T69)	07:45			07:21			07:51		08:28 (T71)
	21:03			20:30	125	19:00 (T69)	19:39	88	19:05 (T69)	18:49			17:12			17:04	45	09:13 (T71)
18	06:14			06:43		07:05 (T67)	07:14		17:37 (T69)	07:46			07:22			07:51		08:29 (T71)
	21:02			20:28	129	19:02 (T69)	19:37	88	19:05 (T69)	18:48			17:11			17:05	45	09:14 (T71)
19	06:15			06:44		07:06 (T67)	07:15		17:37 (T69)	07:47			07:23			07:52		08:29 (T71)
	21:01			20:27	131	19:03 (T69)	19:35	87	19:04 (T69)	18:46			17:10			17:05	45	09:14 (T71)
20	06:16			06:45		07:07 (T67)	07:16		17:37 (T69)	07:48			07:24		08:38 (T71)	07:53		08:29 (T71)
	21:01			20:26	133	19:04 (T69)	19:34	86	19:03 (T69)	18:45			17:10	3	08:41 (T71)	17:05	46	09:15 (T71)
21	06:16			06:46		07:08 (T67)	07:17		17:37 (T69)	07:49			07:26		08:33 (T71)	07:53		08:29 (T71)
	21:00			20:24	135	19:05 (T69)	19:32	85	19:02 (T69)	18:43			17:09	14	08:47 (T71)	17:06	46	09:15 (T71)
22	06:17			06:47		07:08 (T67)	07:18		17:37 (T69)	07:50			07:27		08:32 (T71)	07:54		08:30 (T71)
	20:59			20:23	136	19:05 (T69)	19:30	84	19:01 (T69)	18:42			17:08	18	08:50 (T71)	17:06	46	09:16 (T71)
23	06:18			06:48		07:09 (T67)	07:19		17:38 (T69)	07:51			07:28		08:30 (T71)	07:54		08:30 (T71)
	20:58			20:21	137	19:06 (T69)	19:28	82	19:00 (T69)	18:40			17:08	22	08:52 (T71)	17:07	46	09:16 (T71)
24	06:19			06:49		07:10 (T67)	07:20		17:38 (T69)	07:53			07:29		08:28 (T71)	07:55		08:32 (T71)
	20:57			20:20	137	19:06 (T69)	19:27	81	18:59 (T69)	18:39			17:07	26	08:54 (T71)	17:07	45	09:17 (T71)
25	06:20			06:50		07:11 (T67)	07:21		17:38 (T69)	07:54			07:30		08:27 (T71)	07:55		08:32 (T71)
	20:57			20:18	138	19:07 (T69)	19:25	80	18:58 (T69)	18:37			17:06	28	08:55 (T71)	17:08	45	09:17 (T71)
26	06:21			06:51		07:12 (T67)	07:22		17:39 (T69)	07:55			07:31		08:26 (T71)	07:55		08:32 (T71)
	20:56			20:17	140	19:08 (T69)	19:23	77	18:56 (T69)	18:36			17:06	30	08:56 (T71)	17:09	45	09:17 (T71)
27	06:22			06:52		07:13 (T67)	07:23		17:39 (T69)	07:56			07:32		08:27 (T71)	07:56		08:33 (T71)
	20:55			20:15	139	19:08 (T69)	19:22	76	18:55 (T69)	18:35			17:06	32	08:59 (T71)	17:09	45	09:18 (T71)
28	06:23		07:47 (T68)	06:53		07:14 (T67)	07:24		17:40 (T69)	07:57			07:34		08:26 (T71)	07:56		08:33 (T71)
	20:54	7	07:54 (T68)	20:13	140	19:09 (T69)	19:20	74	18:54 (T69)	18:33			17:05	34	09:00 (T71)	17:10	45	09:18 (T71)
29	06:24		07:42 (T68)	06:54		07:15 (T67)	07:25		17:41 (T69)	07:58			07:35		08:26 (T71)	07:56		08:34 (T71)
	20:53	17	07:59 (T68)	20:12	139	19:09 (T69)	19:18	71	18:52 (T69)	18:32			17:05	35	09:01 (T71)	17:11	44	09:18 (T71)
30	06:25		07:40 (T68)	06:55		07:16 (T68)	07:26		17:42 (T69)	07:59			07:36		08:25 (T71)	07:56		08:34 (T71)
	20:52	22	08:02 (T68)	20:10	139	19:09 (T69)	19:17	68	18:50 (T69)	18:31			17:04	36	09:01 (T71)	17:12	45	09:19 (T71)
31	06:26		07:38 (T68)	06:56		07:17 (T68)				08:01						07:57		08:35 (T71)
	20:51	26	08:04 (T68)	20:09	139	19:10 (T69)				18:29						17:12	44	09:19 (T71)
Potential sun hours	459			428			375			345			298			288		
Total, worst case		72			3115			3035			453			278			1351	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.66			0.66			0.66			0.53			0.53	
Total reduction		0.42			0.39			0.38			0.31			0.16			0.11	
Total, real		31			1228			1156			140			43			155	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 422 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8041)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		08:20 (T77)	07:44		08:04 (T42)	07:07			07:16		08:02 (T41)	06:30			06:01		06:23 (T40)
	17:13	27	08:47 (T77)	17:48	24	08:28 (T42)	18:22			19:56	44	08:46 (T41)	20:27			20:57	40	07:03 (T40)
2	07:57		08:20 (T77)	07:43		08:03 (T42)	07:06		07:31 (T41)	07:15		08:03 (T41)	06:29			06:01		06:23 (T40)
	17:14	28	08:48 (T77)	17:49	26	08:29 (T42)	18:23	5	07:36 (T41)	19:57	41	08:44 (T41)	20:28			20:58	41	07:04 (T40)
3	07:57		08:20 (T77)	07:42		08:02 (T42)	07:04		07:24 (T41)	07:13		08:05 (T41)	06:28			06:01		06:22 (T40)
	17:15	28	08:48 (T77)	17:50	27	08:29 (T42)	18:24	19	07:43 (T41)	19:58	37	08:42 (T41)	20:29			20:58	42	07:04 (T40)
4	07:58		08:20 (T77)	07:40		08:01 (T42)	07:03		07:22 (T41)	07:11		08:06 (T41)	06:26			06:00		06:22 (T40)
	17:16	28	08:48 (T77)	17:51	29	08:30 (T42)	18:25	24	07:46 (T41)	19:59	34	08:40 (T41)	20:30			20:59	43	07:05 (T40)
5	07:58		08:20 (T77)	07:39		08:00 (T42)	07:01		07:20 (T41)	07:10		08:09 (T41)	06:25			06:00		06:22 (T40)
	17:17	29	08:49 (T77)	17:53	30	08:30 (T42)	18:26	28	07:48 (T41)	20:00	29	08:38 (T41)	20:31			21:00	44	07:06 (T40)
6	07:57		08:21 (T77)	07:38		07:58 (T42)	06:59		07:19 (T41)	07:08		08:11 (T41)	06:24			06:00		06:21 (T40)
	17:18	28	08:49 (T77)	17:54	31	08:29 (T42)	18:28	32	07:51 (T41)	20:00	23	08:34 (T41)	20:32			21:01	45	07:06 (T40)
7	07:57		08:21 (T77)	07:37		07:57 (T42)	06:58		07:17 (T41)	07:06		08:14 (T41)	06:23			05:59		06:21 (T40)
	17:18	27	08:48 (T77)	17:55	33	08:30 (T42)	18:29	35	07:52 (T41)	20:01	16	08:30 (T41)	20:33			21:01	45	07:06 (T40)
8	07:57		08:22 (T77)	07:36		07:56 (T42)	07:56		08:15 (T41)	07:05			06:22			05:59		06:21 (T40)
	17:19	27	08:49 (T77)	17:56	34	08:30 (T42)	19:30	38	08:53 (T41)	20:02			20:34			21:02	46	07:07 (T40)
9	07:57		08:23 (T77)	07:35		07:56 (T42)	07:55		08:14 (T41)	07:03			06:20			05:59		06:21 (T40)
	17:20	26	08:49 (T77)	17:58	34	08:30 (T42)	19:31	41	08:55 (T41)	20:04			20:35			21:02	47	07:08 (T40)
10	07:57		08:24 (T77)	07:34		07:57 (T42)	07:53		08:12 (T41)	07:01			06:19			05:59		06:21 (T40)
	17:22	25	08:49 (T77)	17:59	32	08:29 (T42)	19:32	43	08:55 (T41)	20:05			20:37			21:03	47	07:08 (T40)
11	07:57		08:24 (T77)	07:32		07:56 (T42)	07:51		08:11 (T41)	07:00			06:18			05:58		06:21 (T40)
	17:23	25	08:49 (T77)	18:00	32	08:28 (T42)	19:33	46	08:57 (T41)	20:06			20:38			21:04	47	07:08 (T40)
12	07:56		08:25 (T77)	07:31		07:57 (T42)	07:50		08:09 (T41)	06:58			06:17			05:58		06:21 (T40)
	17:24	24	08:49 (T77)	18:01	31	08:28 (T42)	19:34	48	08:57 (T41)	20:07			20:39			21:04	48	07:09 (T40)
13	07:56		08:26 (T77)	07:30		07:59 (T42)	07:48		08:07 (T41)	06:57			06:16			05:58		06:20 (T40)
	17:25	23	08:49 (T77)	18:03	28	08:27 (T42)	19:35	50	08:57 (T41)	20:08			20:40			21:05	48	07:08 (T40)
14	07:56		08:27 (T77)	07:29		08:00 (T42)	07:46		08:06 (T41)	06:55			06:15			05:58		06:20 (T40)
	17:26	21	08:48 (T77)	18:04	27	08:27 (T42)	19:37	52	08:58 (T41)	20:09			20:41			21:05	49	07:09 (T40)
15	07:55		08:28 (T77)	07:27		08:01 (T42)	07:45		08:04 (T41)	06:53			06:14			05:58		06:20 (T40)
	17:27	20	08:48 (T77)	18:05	24	08:25 (T42)	19:38	54	08:58 (T41)	20:10			20:42			21:06	49	07:09 (T40)
16	07:55		08:29 (T77)	07:26		08:03 (T42)	07:43		08:02 (T41)	06:52			06:13			05:58		06:21 (T40)
	17:28	18	08:47 (T77)	18:06	20	08:23 (T42)	19:39	56	08:58 (T41)	20:11			20:43			21:06	49	07:10 (T40)
17	07:55		08:31 (T77)	07:25		08:04 (T42)	07:41		08:01 (T41)	06:50			06:12			05:58		06:21 (T40)
	17:29	16	08:47 (T77)	18:07	16	08:20 (T42)	19:40	56	08:57 (T41)	20:12			20:44			21:06	49	07:10 (T40)
18	07:54		08:33 (T77)	07:23		08:08 (T42)	07:40		08:01 (T41)	06:49			06:11		06:33 (T40)	05:58		06:21 (T40)
	17:30	12	08:45 (T77)	18:09	9	08:17 (T42)	19:41	57	08:58 (T41)	20:13			20:45	12	06:45 (T40)	21:07	50	07:11 (T40)
19	07:53		08:36 (T77)	07:22			07:38		08:00 (T41)	06:47			06:10		06:31 (T40)	05:58		06:21 (T40)
	17:32	7	08:43 (T77)	18:10			19:42	57	08:57 (T41)	20:14			20:46	18	06:49 (T40)	21:07	50	07:11 (T40)
20	07:53			07:21			07:36		07:59 (T41)	06:46			06:09		06:30 (T40)	05:59		06:21 (T40)
	17:33			18:11			19:43	58	08:57 (T41)	20:15			20:46	21	06:51 (T40)	21:07	50	07:11 (T40)
21	07:52			07:19			07:35		08:00 (T41)	06:44			06:09		06:30 (T40)	05:59		06:21 (T40)
	17:34			18:12			19:44	57	08:57 (T41)	20:16			20:47	23	06:53 (T40)	21:08	50	07:11 (T40)
22	07:52		08:13 (T42)	07:18			07:33		07:59 (T41)	06:43			06:08		06:29 (T40)	05:59		06:21 (T40)
	17:35	2	08:15 (T42)	18:14			19:45	57	08:56 (T41)	20:17			20:48	26	06:55 (T40)	21:08	50	07:11 (T40)
23	07:51		08:12 (T42)	07:16			07:31		07:59 (T41)	06:41			06:07		06:28 (T40)	05:59		06:22 (T40)
	17:36	5	08:17 (T42)	18:15			19:46	56	08:55 (T41)	20:18			20:49	28	06:56 (T40)	21:08	50	07:12 (T40)
24	07:50		08:11 (T42)	07:15			07:30		08:00 (T41)	06:40			06:06		06:27 (T40)	05:59		06:22 (T40)
	17:38	8	08:19 (T42)	18:16			19:47	55	08:55 (T41)	20:20			20:50	30	06:57 (T40)	21:08	50	07:12 (T40)
25	07:50		08:10 (T42)	07:13			07:28		07:59 (T41)	06:39			06:06		06:27 (T40)	06:00		06:22 (T40)
	17:39	11	08:21 (T42)	18:17			19:49	55	08:54 (T41)	20:21			20:51	31	06:58 (T40)	21:08	49	07:11 (T40)
26	07:49		08:09 (T42)	07:12			07:26		07:59 (T41)	06:37			06:05		06:26 (T40)	06:00		06:23 (T40)
	17:40	13	08:22 (T42)	18:18			19:50	54	08:53 (T41)	20:22			20:52	33	06:59 (T40)	21:08	49	07:12 (T40)
27	07:48		08:09 (T42)	07:10			07:25		08:00 (T41)	06:36			06:04		06:26 (T40)	06:00		06:23 (T40)
	17:41	15	08:24 (T42)	18:19			19:51	53	08:53 (T41)	20:23			20:53	34	07:00 (T40)	21:09	49	07:12 (T40)
28	07:47		08:08 (T42)	07:09			07:23		08:00 (T41)	06:34			06:04		06:25 (T40)	06:01		06:23 (T40)
	17:43	17	08:25 (T42)	18:21			19:52	51	08:51 (T41)	20:24			20:54	36	07:01 (T40)	21:09	49	07:12 (T40)
29	07:46		08:07 (T42)				07:21		08:00 (T41)	06:33			06:03		06:25 (T40)	06:01		06:24 (T40)
	17:44	19	08:26 (T42)				19:53	50	08:50 (T41)	20:25			20:55	37	07:02 (T40)	21:09	48	07:12 (T40)
30	07:45		08:06 (T42)				07:20		08:01 (T41)	06:32			06:02		06:24 (T40)	06:02		06:24 (T40)
	17:45	21	08:27 (T42)				19:54	48	08:49 (T41)	20:26			20:55	38	07:02 (T40)	21:09	48	07:12 (T40)
31	07:44		08:05 (T42)				07:18		08:02 (T41)				06:02		06:24 (T40)			
	17:46	23	08:28 (T42)				19:55	46	08:48 (T41)				20:56	39	07:03 (T40)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		573			487			1381			224			406			1421	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.54			0.59			0.59			0.72			0.72	
Total reduction		0.16			0.21			0.25			0.30			0.40			0.45	
Total, real		91			102			345			66			162			635	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 422 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8041)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		06:25 (T40)	06:26			06:57			07:28		07:47 (T41)	07:02		07:25 (T42)	07:37		08:06 (T77)
	21:09	48	07:13 (T40)	20:50			20:07			19:15	49	08:36 (T41)	17:28	33	07:58 (T42)	17:04	25	08:31 (T77)
2	06:03		06:25 (T40)	06:27			06:58			07:29		07:48 (T41)	07:03		07:26 (T42)	07:38		08:07 (T77)
	21:08	47	07:12 (T40)	20:49			20:06			19:13	46	08:34 (T41)	17:27	33	07:59 (T42)	17:03	25	08:32 (T77)
3	06:03		06:26 (T40)	06:28			06:59			07:30		07:49 (T41)	07:04		07:26 (T42)	07:39		08:07 (T77)
	21:08	47	07:13 (T40)	20:48			20:04			19:11	44	08:33 (T41)	17:26	33	07:59 (T42)	17:03	26	08:33 (T77)
4	06:04		06:26 (T40)	06:29			07:00			07:31		07:51 (T41)	07:06		07:27 (T42)	07:40		08:07 (T77)
	21:08	46	07:12 (T40)	20:47			20:02			19:10	42	08:33 (T41)	17:24	32	07:59 (T42)	17:03	27	08:34 (T77)
5	06:04		06:27 (T40)	06:30			07:01		08:11 (T41)	07:32		07:52 (T41)	07:07		07:28 (T42)	07:41		08:07 (T77)
	21:08	46	07:13 (T40)	20:46			20:01	16	08:27 (T41)	19:08	39	08:31 (T41)	17:23	31	07:59 (T42)	17:03	27	08:34 (T77)
6	06:05		06:27 (T40)	06:31			07:02		08:07 (T41)	07:33		07:53 (T41)	07:08		07:30 (T42)	07:42		08:07 (T77)
	21:08	45	07:12 (T40)	20:45			19:57	23	08:30 (T41)	19:06	36	08:29 (T41)	17:22	30	08:00 (T42)	17:03	28	08:35 (T77)
7	06:06		06:28 (T40)	06:32			07:03		08:04 (T41)	07:34		07:54 (T41)	07:09		07:31 (T42)	07:43		08:07 (T77)
	21:07	44	07:12 (T40)	20:43			19:56	29	08:33 (T41)	19:05	33	08:27 (T41)	17:21	29	08:00 (T42)	17:03	29	08:36 (T77)
8	06:06		06:29 (T40)	06:33			07:04		08:01 (T41)	07:35		07:55 (T41)	07:10		07:32 (T42)	07:44		08:07 (T77)
	21:07	43	07:12 (T40)	20:42			19:54	34	08:35 (T41)	19:03	30	08:25 (T41)	17:20	27	07:59 (T42)	17:03	28	08:35 (T77)
9	06:07		06:29 (T40)	06:34			07:05		07:59 (T41)	07:36		07:56 (T41)	07:12		07:34 (T42)	07:45		08:08 (T77)
	21:07	43	07:12 (T40)	20:41			19:52	37	08:36 (T41)	19:02	26	08:22 (T41)	17:19	26	08:00 (T42)	17:03	28	08:36 (T77)
10	06:08		06:30 (T40)	06:35			07:06		07:57 (T41)	07:37		07:57 (T41)	07:13		07:35 (T42)	07:46		08:09 (T77)
	21:06	42	07:12 (T40)	20:40			19:51	41	08:38 (T41)	19:00	22	08:19 (T41)	17:18	24	07:59 (T42)	17:03	28	08:37 (T77)
11	06:08		06:31 (T40)	06:36			07:07		07:56 (T41)	07:38		08:00 (T41)	07:14		07:36 (T42)	07:47		08:10 (T77)
	21:06	41	07:12 (T40)	20:38			19:49	43	08:39 (T41)	18:58	14	08:14 (T41)	17:17	23	07:59 (T42)	17:03	27	08:37 (T77)
12	06:09		06:31 (T40)	06:37			07:08		07:53 (T41)	07:39			07:15		07:37 (T42)	07:47		08:11 (T77)
	21:06	40	07:11 (T40)	20:37			19:47	46	08:39 (T41)	18:57			17:16	21	07:58 (T42)	17:03	27	08:38 (T77)
13	06:10		06:32 (T40)	06:38			07:09		07:52 (T41)	07:40			07:16		07:39 (T42)	07:48		08:12 (T77)
	21:05	39	07:11 (T40)	20:36			19:46	47	08:39 (T41)	18:55			17:15	19	07:58 (T42)	17:03	27	08:39 (T77)
14	06:10		06:33 (T40)	06:39			07:10		07:51 (T41)	07:41			07:18		07:40 (T42)	07:49		08:12 (T77)
	21:05	38	07:11 (T40)	20:34			19:44	49	08:40 (T41)	18:54			17:14	17	07:57 (T42)	17:03	26	08:38 (T77)
15	06:11		06:34 (T40)	06:40			07:11		07:49 (T41)	07:43			07:19		07:41 (T42)	07:50		08:13 (T77)
	21:04	36	07:10 (T40)	20:33			19:42	52	08:41 (T41)	18:52			17:13	15	07:56 (T42)	17:03	26	08:39 (T77)
16	06:12		06:34 (T40)	06:41			07:12		07:48 (T41)	07:44			07:20		07:43 (T42)	07:50		08:14 (T77)
	21:04	35	07:09 (T40)	20:32			19:40	53	08:41 (T41)	18:50			17:12	13	07:56 (T42)	17:04	26	08:40 (T77)
17	06:13		06:35 (T40)	06:42			07:13		07:47 (T41)	07:45			07:21		07:44 (T42)	07:51		08:14 (T77)
	21:03	34	07:09 (T40)	20:30			19:39	54	08:41 (T41)	18:49			17:11	11	07:55 (T42)	17:04	26	08:40 (T77)
18	06:14		06:36 (T40)	06:43			07:14		07:47 (T41)	07:46			07:22		07:45 (T42)	07:52		08:15 (T77)
	21:02	32	07:08 (T40)	20:29			19:37	55	08:42 (T41)	18:47			17:11	8	07:53 (T42)	17:04	26	08:41 (T77)
19	06:14		06:37 (T40)	06:44			07:15		07:46 (T41)	07:47			07:24		07:46 (T42)	07:52		08:16 (T77)
	21:02	30	07:07 (T40)	20:27			19:35	56	08:42 (T41)	18:46			17:10	5	07:51 (T42)	17:05	26	08:42 (T77)
20	06:15		06:38 (T40)	06:45			07:16		07:45 (T41)	07:48			07:25		07:48 (T42)	07:53		08:16 (T77)
	21:01	29	07:07 (T40)	20:26			19:34	57	08:42 (T41)	18:44			17:09	2	07:50 (T42)	17:05	25	08:41 (T77)
21	06:16		06:38 (T40)	06:46			07:17		07:45 (T41)	07:49			07:26			07:53		08:17 (T77)
	21:00	27	07:05 (T40)	20:24			19:32	57	08:42 (T41)	18:43			17:09			17:06	25	08:42 (T77)
22	06:17		06:39 (T40)	06:47			07:18		07:44 (T41)	07:50			07:27			07:54		08:17 (T77)
	20:59	25	07:04 (T40)	20:23			19:30	57	08:41 (T41)	18:42			17:08			17:06	25	08:42 (T77)
23	06:18		06:40 (T40)	06:48			07:19		07:44 (T41)	07:52			07:28		08:12 (T77)	07:54		08:18 (T77)
	20:59	22	07:02 (T40)	20:21			19:28	57	08:41 (T41)	18:40			17:07	7	08:19 (T77)	17:07	25	08:43 (T77)
24	06:19		06:41 (T40)	06:49			07:20		07:43 (T41)	07:53		08:36 (T42)	07:29		08:10 (T77)	07:55		08:18 (T77)
	20:58	19	07:00 (T40)	20:20			19:27	58	08:41 (T41)	18:39	12	08:48 (T42)	17:07	12	08:22 (T77)	17:07	25	08:43 (T77)
25	06:20		06:42 (T40)	06:50			07:21		07:43 (T41)	07:54		08:34 (T42)	07:31		08:09 (T77)	07:55		08:18 (T77)
	20:57	16	06:58 (T40)	20:18			19:25	57	08:40 (T41)	18:37	18	08:52 (T42)	17:06	16	08:25 (T77)	17:08	26	08:44 (T77)
26	06:21		06:46 (T40)	06:51			07:22		07:43 (T41)	07:55		08:32 (T42)	07:32		08:08 (T77)	07:56		08:19 (T77)
	20:56	8	06:54 (T40)	20:17			19:23	57	08:40 (T41)	18:36	21	08:53 (T42)	17:06	18	08:26 (T77)	17:08	26	08:45 (T77)
27	06:22			06:52			07:23		07:43 (T41)	07:56		08:30 (T42)	07:33		08:07 (T77)	07:56		08:19 (T77)
	20:55			20:15			19:22	56	08:39 (T41)	18:35	25	08:55 (T42)	17:05	20	08:27 (T77)	17:09	26	08:45 (T77)
28	06:23			06:53			07:24		07:44 (T41)	07:57		08:28 (T42)	07:34		08:07 (T77)	07:56		08:19 (T77)
	20:54			20:14			19:20	54	08:38 (T41)	18:33	28	08:56 (T42)	17:05	21	08:28 (T77)	17:10	26	08:45 (T77)
29	06:23			06:54			07:26		07:45 (T41)	07:59		08:28 (T42)	07:35		08:06 (T77)	07:57		08:19 (T77)
	20:53			20:12			19:18	53	08:38 (T41)	18:32	29	08:57 (T42)	17:04	23	08:29 (T77)	17:10	26	08:45 (T77)
30	06:24			06:55			07:27		07:46 (T41)	08:00		08:27 (T42)	07:36		08:06 (T77)	07:57		08:20 (T77)
	20:52			20:10			19:16	51	08:37 (T41)	18:31	31	08:58 (T42)	17:04	24	08:30 (T77)	17:11	27	08:47 (T77)
31	06:25			06:56						08:01		08:26 (T42)				07:57		08:20 (T77)
	20:51			20:09						18:29	32	08:58 (T42)				17:12	27	08:47 (T77)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		922						1249			577			573			817	
Sun reduction		0.66						0.59			0.48			0.30			0.22	
Oper. time red.		1.00						1.00			1.00			1.00			1.00	
Wind dir. red.		0.72						0.59			0.57			0.54			0.52	
Total reduction		0.46						0.34			0.27			0.16			0.11	
Total, real		425						419			153			89			91	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 423 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8042)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June	
1	07:57		15:54 (T77)	07:43		16:14 (T77)	07:07		17:29 (T42)	07:16			06:30		19:30 (T41)	06:01	
	17:13	51	16:45 (T77)	17:47	34	16:48 (T77)	18:22	31	18:00 (T42)	19:56			20:27	34	20:04 (T41)	20:57	
2	07:57		15:55 (T77)	07:42		16:16 (T77)	07:06		17:27 (T42)	07:14			06:29		19:30 (T41)	06:01	
	17:14	51	16:46 (T77)	17:49	30	16:46 (T77)	18:23	34	18:01 (T42)	19:57			20:28	34	20:04 (T41)	20:58	
3	07:57		15:55 (T77)	07:41		16:18 (T77)	07:04		17:25 (T42)	07:13			06:28		19:30 (T41)	06:01	
	17:15	51	16:46 (T77)	17:50	27	16:45 (T77)	18:24	37	18:02 (T42)	19:58			20:29	33	20:03 (T41)	20:58	
4	07:57		15:56 (T77)	07:40		16:20 (T77)	07:02		17:25 (T42)	07:11			06:26		19:30 (T41)	06:00	
	17:16	51	16:47 (T77)	17:51	23	16:43 (T77)	18:25	39	18:04 (T42)	19:59			20:30	32	20:02 (T41)	20:59	
5	07:57		15:56 (T77)	07:39		16:23 (T77)	07:01		17:23 (T42)	07:09			06:25		19:31 (T41)	06:00	
	17:17	52	16:48 (T77)	17:52	17	16:40 (T77)	18:26	41	18:04 (T42)	20:00			20:31	31	20:02 (T41)	21:00	
6	07:57		15:56 (T77)	07:38		16:28 (T77)	06:59		17:23 (T42)	07:08			06:24		19:32 (T41)	05:59	
	17:17	52	16:48 (T77)	17:54	7	16:35 (T77)	18:27	43	18:06 (T42)	20:00			20:32	29	20:01 (T41)	21:00	
7	07:57		15:56 (T77)	07:37		07:57 (T76)	06:58		17:21 (T42)	07:06			06:23		19:33 (T41)	05:59	
	17:18	52	16:48 (T77)	17:55	3	08:00 (T76)	18:29	46	18:07 (T42)	20:01			20:33	27	20:00 (T41)	21:01	
8	07:57		15:57 (T77)	07:36		07:56 (T76)	07:56		18:20 (T42)	07:05			06:22		19:34 (T41)	05:59	
	17:19	52	16:49 (T77)	17:56	7	08:03 (T76)	19:30	48	19:08 (T42)	20:02			20:34	25	19:59 (T41)	21:02	
9	07:57		15:57 (T77)	07:35		07:55 (T76)	07:54		18:20 (T42)	07:03			06:20		19:35 (T41)	05:59	
	17:20	52	16:49 (T77)	17:57	10	08:05 (T76)	19:31	50	19:10 (T42)	20:03			20:35	23	19:58 (T41)	21:02	
10	07:57		15:58 (T77)	07:34		07:54 (T76)	07:53		18:19 (T42)	07:01			06:19		19:35 (T41)	05:59	
	17:21	52	16:50 (T77)	17:59	13	08:07 (T76)	19:32	51	19:10 (T42)	20:05			20:36	21	19:56 (T41)	21:03	
11	07:57		15:58 (T77)	07:32		07:52 (T76)	07:51		18:18 (T42)	07:00			06:18		19:37 (T41)	05:58	
	17:23	52	16:50 (T77)	18:00	15	08:07 (T76)	19:33	52	19:10 (T42)	20:06			20:37	17	19:54 (T41)	21:04	
12	07:56		15:58 (T77)	07:31		07:51 (T76)	07:50		18:19 (T42)	06:58			06:17		19:39 (T41)	05:58	
	17:24	52	16:50 (T77)	18:01	18	08:09 (T76)	19:34	52	19:11 (T42)	20:07			20:38	13	19:52 (T41)	21:04	
13	07:56		15:59 (T77)	07:30		07:50 (T76)	07:48		18:18 (T42)	06:57			06:16		19:44 (T41)	05:58	
	17:25	52	16:51 (T77)	18:02	20	08:10 (T76)	19:35	52	19:10 (T42)	20:08			20:39	3	19:47 (T41)	21:05	
14	07:56		15:59 (T77)	07:29		07:48 (T76)	07:46		18:17 (T42)	06:55			06:15			05:58	
	17:26	52	16:51 (T77)	18:04	22	08:10 (T76)	19:36	53	19:10 (T42)	20:09			20:41			21:05	
15	07:55		16:00 (T77)	07:27		07:47 (T76)	07:45		18:18 (T42)	06:53			06:14			05:58	
	17:27	52	16:52 (T77)	18:05	23	08:10 (T76)	19:38	52	19:10 (T42)	20:10			20:42			21:05	
16	07:55		16:00 (T77)	07:26		07:46 (T76)	07:43		18:18 (T42)	06:52		19:43 (T41)	06:13			05:58	
	17:28	51	16:51 (T77)	18:06	25	08:11 (T76)	19:39	51	19:09 (T42)	20:11	7	19:50 (T41)	20:42			21:06	
17	07:54		16:01 (T77)	07:25		07:44 (T76)	07:41		18:18 (T42)	06:50		19:40 (T41)	06:12			05:58	
	17:29	51	16:52 (T77)	18:07	26	08:10 (T76)	19:40	50	19:08 (T42)	20:12	10	19:50 (T41)	20:43			21:06	
18	07:54		16:01 (T77)	07:23		07:43 (T76)	07:40		18:18 (T42)	06:49		19:38 (T41)	06:11			05:58	
	17:30	51	16:52 (T77)	18:09	28	08:11 (T76)	19:41	50	19:08 (T42)	20:13	14	19:52 (T41)	20:44			21:07	
19	07:53		16:02 (T77)	07:22		07:42 (T76)	07:38		18:18 (T42)	06:47		19:36 (T41)	06:10			05:58	
	17:32	51	16:53 (T77)	18:10	29	08:11 (T76)	19:42	49	19:07 (T42)	20:14	16	19:52 (T41)	20:45			21:07	
20	07:53		16:02 (T77)	07:20		07:40 (T76)	07:36		18:18 (T42)	06:46		19:35 (T41)	06:09			05:59	
	17:33	50	16:52 (T77)	18:11	30	08:10 (T76)	19:43	48	19:06 (T42)	20:15	19	19:54 (T41)	20:46			21:07	
21	07:52		16:03 (T77)	07:19		07:41 (T76)	07:35		18:20 (T42)	06:44		19:34 (T41)	06:09			05:59	
	17:34	49	16:52 (T77)	18:12	29	08:10 (T76)	19:44	45	19:05 (T42)	20:16	21	19:55 (T41)	20:47			21:08	
22	07:52		16:04 (T77)	07:18		07:41 (T76)	07:33		18:20 (T42)	06:43		19:32 (T41)	06:08			05:59	
	17:35	49	16:53 (T77)	18:13	28	08:09 (T76)	19:45	44	19:04 (T42)	20:17	24	19:56 (T41)	20:48			21:08	
23	07:51		16:04 (T77)	07:16		07:42 (T76)	07:31		18:21 (T42)	06:41		19:32 (T41)	06:07			05:59	
	17:36	48	16:52 (T77)	18:15	26	08:08 (T76)	19:46	41	19:02 (T42)	20:18	25	19:57 (T41)	20:49			21:08	
24	07:50		16:05 (T77)	07:15		07:42 (T76)	07:30		18:22 (T42)	06:40		19:31 (T41)	06:06			05:59	
	17:38	47	16:52 (T77)	18:16	25	08:07 (T76)	19:47	39	19:01 (T42)	20:19	27	19:58 (T41)	20:50			21:08	
25	07:49		16:05 (T77)	07:13		07:44 (T76)	07:28		18:23 (T42)	06:38		19:31 (T41)	06:06			06:00	
	17:39	47	16:52 (T77)	18:17	37	17:55 (T42)	19:48	36	18:59 (T42)	20:21	28	19:59 (T41)	20:51			21:08	
26	07:49		16:06 (T77)	07:12		07:45 (T76)	07:26		18:24 (T42)	06:37		19:30 (T41)	06:05			06:00	
	17:40	45	16:51 (T77)	18:18	38	17:56 (T42)	19:50	33	18:57 (T42)	20:22	29	19:59 (T41)	20:52			21:08	
27	07:48		16:08 (T77)	07:10		07:48 (T76)	07:24		18:26 (T42)	06:36		19:30 (T41)	06:04			06:00	
	17:41	44	16:52 (T77)	18:19	38	17:58 (T42)	19:51	28	18:54 (T42)	20:23	31	20:01 (T41)	20:53			21:08	
28	07:47		16:09 (T77)	07:09		07:53 (T76)	07:23		18:29 (T42)	06:34		19:30 (T41)	06:04			06:01	
	17:42	42	16:51 (T77)	18:21	30	17:59 (T42)	19:52	23	18:52 (T42)	20:24	32	20:02 (T41)	20:54			21:09	
29	07:46		16:10 (T77)				07:21		18:32 (T42)	06:33		19:29 (T41)	06:03			06:01	
	17:44	40	16:50 (T77)				19:53	16	18:48 (T42)	20:25	33	20:02 (T41)	20:54			21:09	
30	07:45		16:11 (T77)				07:19			06:32		19:29 (T41)	06:02			06:02	
	17:45	39	16:50 (T77)				19:54			20:26	35	20:04 (T41)	20:55			21:09	
31	07:44		16:12 (T77)				07:18						06:02				
	17:46	37	16:49 (T77)				19:55						20:56				
Potential sun hours	297			297			370			399			448			453	
Total, worst case		1517			658			1234			351			322			
Sun reduction		0.31			0.40			0.44			0.52			0.57			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.74			0.61			0.67			0.57			0.57			
Total reduction		0.23			0.25			0.30			0.30			0.33			
Total, real		356			165			371			107			108			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 423 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8042)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		06:26		19:49 (T41)	06:57			07:27		17:57 (T42)	07:02	
	21:08		20:50	14	20:03 (T41)	20:07			19:15	52	18:49 (T42)	17:28	12
2	06:03		06:27		19:47 (T41)	06:58			07:29		17:57 (T42)	07:03	
	21:08		20:49	18	20:05 (T41)	20:06			19:13	52	18:49 (T42)	17:27	10
3	06:03		06:28		19:46 (T41)	06:59			07:30		17:57 (T42)	07:04	
	21:08		20:48	21	20:07 (T41)	20:04			19:11	51	18:48 (T42)	17:26	7
4	06:04		06:29		19:44 (T41)	07:00			07:31		17:57 (T42)	07:06	
	21:08		20:47	24	20:08 (T41)	20:02			19:10	50	18:47 (T42)	17:24	2
5	06:04		06:30		19:43 (T41)	07:01			07:32		17:58 (T42)	07:07	
	21:08		20:46	26	20:09 (T41)	20:01			19:08	48	18:46 (T42)	17:23	9
6	06:05		06:31		19:42 (T41)	07:02			07:33		17:58 (T42)	07:08	
	21:08		20:44	28	20:10 (T41)	19:57			19:06	46	18:44 (T42)	17:22	18
7	06:05		06:32		19:41 (T41)	07:03			07:34		17:58 (T42)	07:09	
	21:07		20:43	30	20:11 (T41)	19:56			19:05	45	18:43 (T42)	17:21	23
8	06:06		06:33		19:40 (T41)	07:04			07:35		17:58 (T42)	07:10	
	21:07		20:42	31	20:11 (T41)	19:54			19:03	43	18:41 (T42)	17:20	28
9	06:07		06:34		19:40 (T41)	07:05			07:36		17:59 (T42)	07:12	
	21:07		20:41	32	20:12 (T41)	19:52			19:01	40	18:39 (T42)	17:19	31
10	06:07		06:35		19:39 (T41)	07:06			07:37		17:59 (T42)	07:13	
	21:06		20:39	33	20:12 (T41)	19:51			19:00	38	18:37 (T42)	17:18	34
11	06:08		06:36		19:39 (T41)	07:07			07:38		18:00 (T42)	07:14	
	21:06		20:38	34	20:13 (T41)	19:49			18:58	36	18:36 (T42)	17:17	37
12	06:09		06:37		19:38 (T41)	07:08			07:39		18:01 (T42)	07:15	
	21:06		20:37	35	20:13 (T41)	19:47			18:57	33	18:34 (T42)	17:16	39
13	06:10		06:38		19:38 (T41)	07:09			07:40		18:02 (T42)	07:16	
	21:05		20:36	34	20:12 (T41)	19:45			18:55	30	18:32 (T42)	17:15	40
14	06:10		06:39		19:38 (T41)	07:10	18:23 (T42)		07:41		08:22 (T76)	07:18	
	21:05		20:34	33	20:11 (T41)	19:44	14	18:37 (T42)	18:54	35	18:30 (T42)	17:14	42
15	06:11		06:40		19:37 (T41)	07:11		18:19 (T42)	07:42		08:19 (T76)	07:19	
	21:04		20:33	32	20:09 (T41)	19:42	22	18:41 (T42)	18:52	39	18:30 (T42)	17:13	44
16	06:12		06:41		19:36 (T41)	07:12		18:16 (T42)	07:44		08:17 (T76)	07:20	
	21:03		20:31	31	20:07 (T41)	19:40	27	18:43 (T42)	18:50	37	18:28 (T42)	17:12	45
17	06:13		06:42		19:36 (T41)	07:13		18:13 (T42)	07:45		08:15 (T76)	07:21	
	21:03		20:30	30	20:06 (T41)	19:39	32	18:45 (T42)	18:49	33	18:24 (T42)	17:11	47
18	06:14		06:43		19:36 (T41)	07:14		18:11 (T42)	07:46		08:13 (T76)	07:22	
	21:02		20:29	28	20:04 (T41)	19:37	35	18:46 (T42)	18:47	26	08:39 (T76)	17:11	47
19	06:14		06:44		19:37 (T41)	07:15		18:09 (T42)	07:47		08:12 (T76)	07:23	
	21:02		20:27	26	20:03 (T41)	19:35	38	18:47 (T42)	18:46	27	08:39 (T76)	17:10	48
20	06:15		06:45		19:37 (T41)	07:16		18:07 (T42)	07:48		08:11 (T76)	07:25	
	21:01		20:26	25	20:02 (T41)	19:33	41	18:48 (T42)	18:44	28	08:39 (T76)	17:09	49
21	06:16		06:46		19:37 (T41)	07:17		18:06 (T42)	07:49		08:11 (T76)	07:26	
	21:00		20:24	23	20:00 (T41)	19:32	43	18:49 (T42)	18:43	30	08:41 (T76)	17:08	49
22	06:17		06:47		19:38 (T41)	07:18		18:04 (T42)	07:50		08:11 (T76)	07:27	
	20:59		20:23	21	19:59 (T41)	19:30	46	18:50 (T42)	18:41	30	08:41 (T76)	17:08	50
23	06:18		06:48		19:39 (T41)	07:19		18:03 (T42)	07:51		08:12 (T76)	07:28	
	20:59		20:21	18	19:57 (T41)	19:28	47	18:50 (T42)	18:40	29	08:41 (T76)	17:07	51
24	06:19		06:49		19:40 (T41)	07:20		18:02 (T42)	07:53		08:13 (T76)	07:29	
	20:58		20:20	16	19:56 (T41)	19:27	48	18:50 (T42)	18:39	27	08:40 (T76)	17:07	51
25	06:20		06:50		19:41 (T41)	07:21		18:01 (T42)	07:54		08:15 (T76)	07:30	
	20:57		20:18	13	19:54 (T41)	19:25	49	18:50 (T42)	18:37	26	08:41 (T76)	17:06	51
26	06:21		06:51		19:43 (T41)	07:22		18:00 (T42)	07:55		08:16 (T76)	07:32	
	20:56		20:17	10	19:53 (T41)	19:23	50	18:50 (T42)	18:36	25	08:41 (T76)	17:06	51
27	06:22		06:52		19:46 (T41)	07:23		17:59 (T42)	07:56		08:17 (T76)	07:33	
	20:55		20:15	5	19:51 (T41)	19:22	51	18:50 (T42)	18:34	23	08:40 (T76)	17:05	52
28	06:22		06:53			07:24		17:59 (T42)	07:57		08:18 (T76)	07:34	
	20:54		20:14			19:20	51	18:50 (T42)	18:33	21	08:39 (T76)	17:05	52
29	06:23		06:54			07:25		17:58 (T42)	07:58		08:19 (T76)	07:35	
	20:53		20:12			19:18	52	18:50 (T42)	18:32	19	08:38 (T76)	17:04	52
30	06:24		06:55			07:26		17:58 (T42)	08:00		08:21 (T76)	07:36	
	20:52		20:10			19:16	52	18:50 (T42)	18:30	17	08:38 (T76)	17:04	52
31	06:25	19:52 (T41)	06:56						08:01		08:22 (T76)		
	20:51	8 20:00 (T41)	20:09						18:29	15	08:37 (T76)		
Potential sun hours	460		429			375			345			297	
Total, worst case		8		671			698			1051			1123
Sun reduction		0.66		0.61			0.59			0.48			0.30
Oper. time red.		1.00		1.00			1.00			1.00			1.00
Wind dir. red.		0.57		0.57			0.67			0.62			0.73
Total reduction		0.39		0.36			0.40			0.31			0.23
Total, real		3		240			282			323			253

Table layout: For each day in each month the following matrix apply				
Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 427 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8046)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		09:10 (T12)	07:44		08:09 (T13)	07:07			07:16		18:35 (T11)	06:30		06:50 (T10)	06:01		06:23 (T8)
	17:13	51	10:01 (T12)	17:47	35	08:44 (T13)	18:22			19:56	56	19:31 (T11)	20:27	57	07:47 (T10)	20:57	47	07:39 (T10)
2	07:58		09:11 (T12)	07:43		08:09 (T13)	07:06			07:14		18:34 (T11)	06:29		06:50 (T10)	06:01		06:22 (T8)
	17:14	50	10:01 (T12)	17:49	35	08:44 (T13)	18:23			19:57	57	19:31 (T11)	20:28	57	07:47 (T10)	20:58	47	07:38 (T10)
3	07:58		09:12 (T12)	07:42		08:10 (T13)	07:04			07:13		18:35 (T11)	06:27		06:49 (T10)	06:00		06:22 (T8)
	17:14	49	10:01 (T12)	17:50	34	08:44 (T13)	18:24			19:58	56	19:31 (T11)	20:29	58	07:47 (T10)	20:59	47	07:38 (T10)
4	07:58		09:13 (T12)	07:41		08:11 (T13)	07:03			07:11		18:34 (T11)	06:26		06:49 (T10)	06:00		06:22 (T8)
	17:15	48	10:01 (T12)	17:51	32	08:43 (T13)	18:25			19:59	57	19:31 (T11)	20:30	58	07:47 (T10)	21:00	47	07:38 (T10)
5	07:58		09:14 (T12)	07:40		08:12 (T13)	07:01			07:09		18:34 (T11)	06:25		06:49 (T10)	06:00		06:21 (T8)
	17:16	47	10:01 (T12)	17:52	31	08:43 (T13)	18:26			20:00	56	19:30 (T11)	20:32	58	07:47 (T10)	21:00	47	07:37 (T10)
6	07:58		08:20 (T13)	07:39		08:13 (T13)	06:59			07:08		18:34 (T11)	06:24		06:49 (T10)	05:59		06:21 (T8)
	17:17	49	10:01 (T12)	17:54	29	08:42 (T13)	18:27			20:00	56	19:30 (T11)	20:33	58	07:47 (T10)	21:01	46	07:36 (T10)
7	07:58		08:20 (T13)	07:37		08:14 (T13)	06:58			07:06		18:34 (T11)	06:23		06:49 (T10)	05:59		06:21 (T8)
	17:18	50	10:01 (T12)	17:55	27	08:41 (T13)	18:29			20:01	55	19:29 (T11)	20:34	58	07:47 (T10)	21:02	45	07:36 (T10)
8	07:58		08:20 (T13)	07:36		08:15 (T13)	07:56			07:05		18:35 (T11)	06:21		06:48 (T10)	05:59		06:21 (T8)
	17:19	51	10:01 (T12)	17:56	24	08:39 (T13)	19:30			20:03	54	19:29 (T11)	20:35	58	07:46 (T10)	21:02	45	07:36 (T10)
9	07:57		08:19 (T13)	07:35		08:17 (T13)	07:55			07:03		18:34 (T11)	06:20		06:48 (T10)	05:58		06:21 (T8)
	17:20	52	10:00 (T12)	17:57	21	08:38 (T13)	19:31			20:04	54	19:28 (T11)	20:36	58	07:46 (T10)	21:03	45	07:36 (T10)
10	07:57		08:19 (T13)	07:34		08:19 (T13)	07:53			07:01		18:34 (T11)	06:19		06:48 (T10)	05:58		06:20 (T8)
	17:21	52	10:00 (T12)	17:59	17	08:36 (T13)	19:32			20:05	53	19:27 (T11)	20:37	58	07:46 (T10)	21:03	45	07:35 (T10)
11	07:57		08:19 (T13)	07:33		08:23 (T13)	07:51			07:00		18:35 (T11)	06:18		06:48 (T10)	05:58		06:20 (T8)
	17:22	53	10:00 (T12)	18:00	9	08:32 (T13)	19:33			20:06	52	19:27 (T11)	20:38	58	07:46 (T10)	21:04	44	07:35 (T10)
12	07:57		08:18 (T13)	07:31			07:50			06:58		18:35 (T11)	06:17		06:48 (T10)	05:58		06:20 (T8)
	17:23	51	09:58 (T12)	18:01			19:34			20:07	50	19:25 (T11)	20:39	58	07:46 (T10)	21:04	43	07:34 (T10)
13	07:56		08:18 (T13)	07:30			07:48			06:57		18:37 (T11)	06:16		06:48 (T10)	05:58		06:20 (T8)
	17:24	51	09:58 (T12)	18:02			19:35			20:08	48	19:25 (T11)	20:40	58	07:46 (T10)	21:05	42	07:34 (T10)
14	07:56		08:18 (T13)	07:29			07:46			06:55		18:37 (T11)	06:15		06:48 (T10)	05:58		06:20 (T8)
	17:26	50	09:58 (T12)	18:04			19:37			20:09	46	19:23 (T11)	20:41	57	07:45 (T10)	21:05	42	07:34 (T10)
15	07:56		08:17 (T13)	07:28			07:45			06:53		18:37 (T11)	06:14		06:48 (T10)	05:58		06:20 (T8)
	17:27	49	09:56 (T12)	18:05			19:38			20:10	44	19:21 (T11)	20:42	57	07:45 (T10)	21:06	42	07:34 (T10)
16	07:55		08:17 (T13)	07:26			07:43			06:52		07:16 (T10)	06:13		06:48 (T10)	05:58		06:20 (T8)
	17:28	47	09:55 (T12)	18:06			19:39			20:11	52	19:20 (T11)	20:43	57	07:45 (T10)	21:06	42	07:34 (T10)
17	07:55		08:16 (T13)	07:25			07:41		18:59 (T11)	06:50		07:10 (T10)	06:12		06:50 (T10)	05:58		06:20 (T8)
	17:29	45	09:53 (T12)	18:07			19:40	19	19:18 (T11)	20:12	59	19:18 (T11)	20:44	55	07:45 (T10)	21:07	41	07:34 (T10)
18	07:54		08:16 (T13)	07:24			07:40		18:55 (T11)	06:49		07:08 (T10)	06:11		06:50 (T10)	05:58		06:20 (T8)
	17:30	41	09:51 (T12)	18:09			19:41	25	19:20 (T11)	20:13	63	19:17 (T11)	20:45	55	07:45 (T10)	21:07	40	07:33 (T10)
19	07:54		08:15 (T13)	07:22			07:38		18:51 (T11)	06:47		07:06 (T10)	06:10		06:50 (T10)	05:58		06:21 (T8)
	17:31	35	09:47 (T12)	18:10			19:42	30	19:21 (T11)	20:14	61	19:14 (T11)	20:46	54	07:44 (T10)	21:07	40	07:34 (T10)
20	07:53		08:14 (T13)	07:21			07:36		18:49 (T11)	06:46		07:05 (T10)	06:09		06:50 (T10)	05:58		06:21 (T8)
	17:32	26	08:40 (T13)	18:11			19:43	32	19:21 (T11)	20:15	62	19:13 (T11)	20:47	54	07:44 (T10)	21:08	40	07:34 (T10)
21	07:53		08:14 (T13)	07:19			07:35		18:47 (T11)	06:44		07:03 (T10)	06:08		06:50 (T10)	05:58		06:21 (T8)
	17:34	27	08:41 (T13)	18:12			19:44	36	19:23 (T11)	20:17	59	19:09 (T11)	20:48	53	07:43 (T10)	21:08	40	07:34 (T10)
22	07:52		08:13 (T13)	07:18			07:33		18:45 (T11)	06:43		07:02 (T10)	06:08		06:52 (T10)	05:59		06:21 (T8)
	17:35	29	08:42 (T13)	18:13			19:45	39	19:24 (T11)	20:18	54	19:06 (T11)	20:49	51	07:43 (T10)	21:08	40	07:34 (T10)
23	07:51		08:12 (T13)	07:16			07:31		18:43 (T11)	06:41		07:01 (T10)	06:07		06:52 (T10)	05:59		06:21 (T8)
	17:36	30	08:42 (T13)	18:15			19:46	42	19:25 (T11)	20:19	42	07:43 (T10)	20:50	51	07:43 (T10)	21:08	40	07:34 (T10)
24	07:51		08:11 (T13)	07:15			07:30		18:42 (T11)	06:40		06:59 (T10)	06:06		06:52 (T10)	05:59		06:22 (T8)
	17:37	31	08:42 (T13)	18:16			19:47	44	19:26 (T11)	20:20	44	07:43 (T10)	20:51	50	07:42 (T10)	21:09	40	07:35 (T10)
25	07:50		08:11 (T13)	07:13			07:28		18:41 (T11)	06:38		06:58 (T10)	06:05		06:53 (T10)	05:59		06:22 (T8)
	17:39	33	08:44 (T13)	18:17			19:49	46	19:27 (T11)	20:21	46	07:44 (T10)	20:51	49	07:42 (T10)	21:09	40	07:35 (T10)
26	07:49		08:10 (T13)	07:12			07:26		18:39 (T11)	06:37		06:56 (T10)	06:05		06:54 (T10)	06:00		06:22 (T8)
	17:40	34	08:44 (T13)	18:18			19:50	49	19:28 (T11)	20:22	48	07:44 (T10)	20:52	47	07:41 (T10)	21:09	42	07:36 (T10)
27	07:48		08:09 (T13)	07:10			07:25		18:39 (T11)	06:36		06:55 (T10)	06:04		06:54 (T10)	06:00		06:23 (T8)
	17:41	35	08:44 (T13)	18:19			19:51	51	19:30 (T11)	20:23	50	07:45 (T10)	20:53	47	07:41 (T10)	21:09	42	07:37 (T10)
28	07:47		08:08 (T13)	07:09			07:23		18:38 (T11)	06:34		06:54 (T10)	06:03		06:55 (T10)	06:00		06:23 (T8)
	17:42	36	08:44 (T13)	18:21			19:52	52	19:30 (T11)	20:24	52	07:46 (T10)	20:54	46	07:41 (T10)	21:09	42	07:37 (T10)
29	07:47		08:07 (T13)				07:21		18:37 (T11)	06:33		06:52 (T10)	06:03		06:24 (T8)	06:01		06:24 (T8)
	17:44	37	08:44 (T13)				19:53	54	19:31 (T11)	20:25	54	07:46 (T10)	20:55	47	07:40 (T10)	21:09	42	07:38 (T10)
30	07:46		08:08 (T13)				07:19		18:36 (T11)	06:31		06:51 (T10)	06:02		06:24 (T8)	06:01		06:24 (T8)
	17:45	36	08:44 (T13)				19:54	55	19:31 (T11)	20:26	55	07:46 (T10)	20:56	48	07:40 (T10)	21:09	43	07:38 (T10)
31	07:45		08:08 (T13)				07:18		18:36 (T11)				06:02		06:23 (T8)			
	17:46	36	08:44 (T13)				19:55	56	19:32 (T11)				20:56	48	07:39 (T10)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1311			294			630			1595			1678			1288	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.52			0.63			0.65			0.68			0.69	
Total reduction		0.16			0.20			0.27			0.33			0.37			0.43	
Total, real		207			60			170			523			629			553	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 427 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8046)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:24 (T8)	06:26		06:58 (T10)	06:57		18:34 (T11)	07:28		
	21:09	43	07:38 (T10)	20:50	59	07:57 (T10)	20:07	52	19:26 (T11)	19:15		
2	06:02		06:25 (T8)	06:27		06:58 (T10)	06:58		18:33 (T11)	07:29		
	21:09	44	07:40 (T10)	20:49	59	07:57 (T10)	20:06	53	19:26 (T11)	19:13		
3	06:03		06:25 (T8)	06:28		06:58 (T10)	06:59		18:32 (T11)	07:30		
	21:09	45	07:40 (T10)	20:48	59	07:57 (T10)	20:04	54	19:26 (T11)	19:11		
4	06:03		06:26 (T8)	06:29		06:58 (T10)	07:00		18:32 (T11)	07:31		
	21:09	45	07:41 (T10)	20:47	59	07:57 (T10)	20:02	54	19:26 (T11)	19:10		
5	06:04		06:27 (T8)	06:30		06:58 (T10)	07:01		18:31 (T11)	07:32		
	21:08	46	07:42 (T10)	20:46	59	07:57 (T10)	20:01	55	19:26 (T11)	19:08		
6	06:05		06:27 (T8)	06:31		06:58 (T10)	07:02		18:30 (T11)	07:33		
	21:08	46	07:42 (T10)	20:45	59	07:57 (T10)	19:57	56	19:26 (T11)	19:06		
7	06:05		06:28 (T8)	06:32		06:58 (T10)	07:03		18:30 (T11)	07:34		
	21:08	46	07:43 (T10)	20:44	59	07:57 (T10)	19:56	56	19:26 (T11)	19:05		
8	06:06		06:28 (T8)	06:33		06:58 (T10)	07:04		18:29 (T11)	07:35		
	21:08	48	07:44 (T10)	20:42	59	07:57 (T10)	19:54	57	19:26 (T11)	19:03		
9	06:07		06:29 (T8)	06:34		06:58 (T10)	07:05		18:29 (T11)	07:36		
	21:07	48	07:45 (T10)	20:41	59	07:57 (T10)	19:52	56	19:25 (T11)	19:02		
10	06:07		06:30 (T8)	06:35		06:59 (T10)	07:06		18:28 (T11)	07:37		
	21:07	48	07:46 (T10)	20:40	57	07:56 (T10)	19:51	57	19:25 (T11)	19:00		
11	06:08		06:30 (T8)	06:36		06:59 (T10)	07:07		18:27 (T11)	07:38		
	21:06	48	07:46 (T10)	20:39	57	07:56 (T10)	19:49	57	19:24 (T11)	18:58		
12	06:09		06:31 (T8)	06:37		06:59 (T10)	07:08		18:27 (T11)	07:39		
	21:06	48	07:47 (T10)	20:37	56	07:55 (T10)	19:47	56	19:23 (T11)	18:57		
13	06:09		06:32 (T8)	06:38		07:00 (T10)	07:09		18:27 (T11)	07:40		
	21:05	47	07:48 (T10)	20:36	55	07:55 (T10)	19:46	55	19:22 (T11)	18:55		
14	06:10		06:33 (T8)	06:39		07:00 (T10)	07:10		18:27 (T11)	07:42		
	21:05	47	07:49 (T10)	20:35	53	07:53 (T10)	19:44	55	19:22 (T11)	18:54		
15	06:11		06:33 (T8)	06:40		07:01 (T10)	07:11		18:27 (T11)	07:43		
	21:04	47	07:49 (T10)	20:33	52	07:53 (T10)	19:42	53	19:20 (T11)	18:52		
16	06:12		07:03 (T10)	06:41		07:02 (T10)	07:12		18:27 (T11)	07:44		
	21:04	47	07:50 (T10)	20:32	50	07:52 (T10)	19:40	51	19:18 (T11)	18:50		
17	06:12		07:03 (T10)	06:42		07:03 (T10)	07:13		18:27 (T11)	07:45		
	21:03	47	07:50 (T10)	20:30	48	07:51 (T10)	19:39	50	19:17 (T11)	18:49		
18	06:13		07:03 (T10)	06:43		07:04 (T10)	07:14		18:28 (T11)	07:46		
	21:03	48	07:51 (T10)	20:29	46	07:50 (T10)	19:37	47	19:15 (T11)	18:47		
19	06:14		07:03 (T10)	06:44		07:05 (T10)	07:15		18:28 (T11)	07:47		
	21:02	49	07:52 (T10)	20:27	44	07:49 (T10)	19:35	45	19:13 (T11)	18:46		
20	06:15		07:02 (T10)	06:45		07:06 (T10)	07:16		18:29 (T11)	07:48		
	21:01	50	07:52 (T10)	20:26	41	07:47 (T10)	19:34	42	19:11 (T11)	18:44		
21	06:16		07:01 (T10)	06:46		07:07 (T10)	07:17		18:30 (T11)	07:49		
	21:00	52	07:53 (T10)	20:25	55	19:11 (T11)	19:32	40	19:10 (T11)	18:43		
22	06:17		07:01 (T10)	06:47		07:08 (T10)	07:18		18:31 (T11)	07:51		
	21:00	52	07:53 (T10)	20:23	59	19:14 (T11)	19:30	37	19:08 (T11)	18:41		
23	06:18		07:01 (T10)	06:48		07:09 (T10)	07:19		18:32 (T11)	07:52		
	20:59	53	07:54 (T10)	20:22	62	19:17 (T11)	19:28	34	19:06 (T11)	18:40		
24	06:19		07:01 (T10)	06:49		07:10 (T10)	07:20		18:34 (T11)	07:53		
	20:58	54	07:55 (T10)	20:20	63	19:19 (T11)	19:27	30	19:04 (T11)	18:39		
25	06:19		07:01 (T10)	06:50		07:11 (T10)	07:21		18:36 (T11)	07:54		
	20:57	54	07:55 (T10)	20:18	62	19:20 (T11)	19:25	27	19:03 (T11)	18:37		
26	06:20		07:00 (T10)	06:51		07:13 (T10)	07:22		18:39 (T11)	07:55		
	20:56	56	07:56 (T10)	20:17	60	19:21 (T11)	19:23	21	19:00 (T11)	18:36		
27	06:21		06:59 (T10)	06:52		07:19 (T10)	07:23		18:44 (T11)	07:56		
	20:55	56	07:55 (T10)	20:15	50	19:22 (T11)	19:22	11	18:55 (T11)	18:34		
28	06:22		06:59 (T10)	06:53		18:39 (T11)	07:24			07:58		
	20:54	57	07:56 (T10)	20:14	44	19:23 (T11)	19:20			18:33		
29	06:23		06:59 (T10)	06:54		18:38 (T11)	07:26			07:59		
	20:54	57	07:56 (T10)	20:12	46	19:24 (T11)	19:18			18:32		
30	06:24		06:59 (T10)	06:55		18:36 (T11)	07:27			08:00		
	20:53	57	07:56 (T10)	20:11	49	19:25 (T11)	19:16			18:30		
31	06:25		06:59 (T10)	06:56		18:35 (T11)				08:01	08:51 (T13)	
	20:51	57	07:56 (T10)	20:09	50	19:25 (T11)				18:29	11 09:02 (T13)	
Potential sun hours	460			429			375			345		297		287	
Total, worst case		1542			1690			1261			11		1048		1614
Sun reduction		0.66			0.61			0.59			0.48		0.30		0.22
Oper. time red.		1.00			1.00			1.00			1.00		1.00		1.00
Wind dir. red.		0.68			0.67			0.63			0.52		0.52		0.53
Total reduction		0.44			0.39			0.36			0.24		0.15		0.11
Total, real		673			667			457			3		160		181

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 477 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8085)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:52 (T77)	07:43		08:13 (T76)	07:07		17:10 (T42)	07:16		19:11 (T41)	06:30			06:01		20:00 (T40)
	17:13	32	16:24 (T77)	17:47	35	17:23 (T42)	18:22	23	17:33 (T42)	19:56	23	19:34 (T41)	20:27			20:57	24	20:24 (T40)
2	07:57		08:20 (T76)	07:42		08:14 (T76)	07:06		17:12 (T42)	07:14		19:10 (T41)	06:29			06:01		20:01 (T40)
	17:14	32	16:24 (T77)	17:49	38	17:25 (T42)	18:23	18	17:30 (T42)	19:57	25	19:35 (T41)	20:28			20:58	23	20:24 (T40)
3	07:57		08:20 (T76)	07:41		08:15 (T76)	07:04		17:16 (T42)	07:13		19:10 (T41)	06:28			06:01		20:02 (T40)
	17:15	34	16:25 (T77)	17:50	39	17:26 (T42)	18:24	8	17:24 (T42)	19:58	27	19:37 (T41)	20:29			20:58	21	20:23 (T40)
4	07:57		08:20 (T76)	07:40		08:17 (T76)	07:02			07:11		19:10 (T41)	06:26			06:00		20:03 (T40)
	17:16	34	16:25 (T77)	17:51	40	17:28 (T42)	18:25			19:59	27	19:37 (T41)	20:30			20:59	20	20:23 (T40)
5	07:57		08:20 (T76)	07:39		08:19 (T76)	07:01			07:09		19:09 (T41)	06:25		20:06 (T40)	06:00		20:04 (T40)
	17:16	35	16:25 (T77)	17:52	38	17:29 (T42)	18:26			20:00	29	19:38 (T41)	20:31	3	20:09 (T40)	21:00	19	20:23 (T40)
6	07:57		08:20 (T76)	07:38		08:21 (T76)	06:59			07:08		19:10 (T41)	06:24		20:03 (T40)	05:59		20:04 (T40)
	17:17	35	16:25 (T77)	17:54	36	17:30 (T42)	18:27			20:00	30	19:40 (T41)	20:32	7	20:10 (T40)	21:00	18	20:22 (T40)
7	07:57		08:19 (T76)	07:37		17:04 (T42)	06:58			07:06		19:09 (T41)	06:23		20:02 (T40)	05:59		20:05 (T40)
	17:18	35	16:24 (T77)	17:55	27	17:31 (T42)	18:29			20:01	31	19:40 (T41)	20:33	9	20:11 (T40)	21:01	17	20:22 (T40)
8	07:57		08:19 (T76)	07:36		17:04 (T42)	07:56			07:05		19:10 (T41)	06:22		20:00 (T40)	05:59		20:06 (T40)
	17:19	35	16:24 (T77)	17:56	29	17:33 (T42)	19:30			20:02	30	19:40 (T41)	20:34	12	20:12 (T40)	21:02	15	20:21 (T40)
9	07:57		08:19 (T76)	07:35		17:03 (T42)	07:54			07:03		19:10 (T41)	06:20		19:58 (T40)	05:59		20:07 (T40)
	17:20	34	16:23 (T77)	17:57	31	17:34 (T42)	19:31			20:03	29	19:39 (T41)	20:35	14	20:12 (T40)	21:02	14	20:21 (T40)
10	07:57		08:19 (T76)	07:34		17:03 (T42)	07:53			07:01		19:11 (T41)	06:19		19:58 (T40)	05:59		20:08 (T40)
	17:21	33	16:23 (T77)	17:59	33	17:36 (T42)	19:32			20:05	26	19:37 (T41)	20:36	15	20:13 (T40)	21:03	13	20:21 (T40)
11	07:57		08:18 (T76)	07:32		17:01 (T42)	07:51			07:00		19:12 (T41)	06:18		19:57 (T40)	05:58		20:09 (T40)
	17:23	33	16:22 (T77)	18:00	35	17:36 (T42)	19:33			20:06	24	19:36 (T41)	20:37	17	20:14 (T40)	21:04	11	20:20 (T40)
12	07:56		08:18 (T76)	07:31		17:01 (T42)	07:50			06:58		19:13 (T41)	06:17		19:56 (T40)	05:58		20:09 (T40)
	17:24	31	16:21 (T77)	18:01	37	17:38 (T42)	19:34			20:07	21	19:34 (T41)	20:38	19	20:15 (T40)	21:04	10	20:19 (T40)
13	07:56		08:18 (T76)	07:30		17:01 (T42)	07:48			06:57		19:15 (T41)	06:16		19:56 (T40)	05:58		20:10 (T40)
	17:25	28	16:20 (T77)	18:02	39	17:40 (T42)	19:35			20:08	17	19:32 (T41)	20:39	20	20:16 (T40)	21:05	8	20:18 (T40)
14	07:56		08:17 (T76)	07:29		17:00 (T42)	07:46			06:55		19:17 (T41)	06:15		19:55 (T40)	05:58		20:11 (T40)
	17:26	21	16:15 (T77)	18:04	40	17:40 (T42)	19:36			20:09	12	19:29 (T41)	20:41	22	20:17 (T40)	21:05	6	20:17 (T40)
15	07:55		08:17 (T76)	07:27		17:00 (T42)	07:45			06:53			06:14		19:55 (T40)	05:58		20:13 (T40)
	17:27	19	08:36 (T76)	18:05	42	17:42 (T42)	19:38			20:10			20:42	23	20:18 (T40)	21:05	3	20:16 (T40)
16	07:55		08:16 (T76)	07:26		17:01 (T42)	07:43			06:52			06:13		19:56 (T40)	05:58		
	17:28	20	08:36 (T76)	18:06	43	17:44 (T42)	19:39			20:11			20:42	24	20:20 (T40)	21:06		
17	07:54		08:16 (T76)	07:25		17:00 (T42)	07:41			06:50			06:12		19:56 (T40)	05:58		
	17:29	22	08:38 (T76)	18:07	43	17:43 (T42)	19:40			20:12			20:43	24	20:20 (T40)	21:06		
18	07:54		08:15 (T76)	07:23		17:00 (T42)	07:40			06:49			06:11		19:55 (T40)	05:58		
	17:30	23	08:38 (T76)	18:09	44	17:44 (T42)	19:41			20:13			20:44	26	20:21 (T40)	21:07		
19	07:53		08:15 (T76)	07:22		17:01 (T42)	07:38			06:47			06:10		19:55 (T40)	05:58		
	17:31	24	08:39 (T76)	18:10	43	17:44 (T42)	19:42			20:14			20:45	27	20:22 (T40)	21:07		
20	07:53		08:14 (T76)	07:20		17:01 (T42)	07:36			06:46			06:09		19:55 (T40)	05:58		
	17:33	25	08:39 (T76)	18:11	42	17:43 (T42)	19:43			20:15			20:46	28	20:23 (T40)	21:07		
21	07:52		08:13 (T76)	07:19		17:01 (T42)	07:35			06:44			06:09		19:55 (T40)	05:59		
	17:34	26	08:39 (T76)	18:12	42	17:43 (T42)	19:44			20:16			20:47	28	20:23 (T40)	21:08		
22	07:52		08:13 (T76)	07:18		17:01 (T42)	07:33			06:43			06:08		19:56 (T40)	05:59		
	17:35	27	08:40 (T76)	18:13	41	17:42 (T42)	19:45			20:17			20:48	29	20:25 (T40)	21:08		
23	07:51		08:12 (T76)	07:16		17:02 (T42)	07:31			06:41			06:07		19:56 (T40)	05:59		
	17:36	29	08:41 (T76)	18:15	39	17:41 (T42)	19:46			20:18			20:49	29	20:25 (T40)	21:08		
24	07:50		08:11 (T76)	07:15		17:03 (T42)	07:30			06:40			06:06		19:56 (T40)	05:59		
	17:37	30	08:41 (T76)	18:16	37	17:40 (T42)	19:47			20:19			20:50	30	20:26 (T40)	21:08		
25	07:49		08:10 (T76)	07:13		17:04 (T42)	07:28			06:38			06:06		19:57 (T40)	06:00		
	17:39	31	08:41 (T76)	18:17	36	17:40 (T42)	19:48			20:21			20:51	29	20:26 (T40)	21:08		
26	07:49		08:09 (T76)	07:12		17:05 (T42)	07:26		19:21 (T41)	06:37			06:05		19:57 (T40)	06:00		
	17:40	32	08:41 (T76)	18:18	33	17:38 (T42)	19:50	7	19:28 (T41)	20:22			20:52	29	20:26 (T40)	21:08		
27	07:48		08:10 (T76)	07:10		17:06 (T42)	07:24		19:18 (T41)	06:36			06:04		19:57 (T40)	06:00		20:17 (T40)
	17:41	31	08:41 (T76)	18:19	31	17:37 (T42)	19:51	11	19:29 (T41)	20:23			20:53	28	20:25 (T40)	21:08	1	20:18 (T40)
28	07:47		08:10 (T76)	07:09		17:07 (T42)	07:23		19:17 (T41)	06:34			06:04		19:58 (T40)	06:01		20:15 (T40)
	17:42	31	08:41 (T76)	18:21	28	17:35 (T42)	19:52	13	19:30 (T41)	20:24			20:54	27	20:25 (T40)	21:09	5	20:20 (T40)
29	07:46		08:10 (T76)				07:21		19:15 (T41)	06:33			06:03		19:58 (T40)	06:01		20:15 (T40)
	17:44	31	08:41 (T76)				19:53	16	19:31 (T41)	20:25			20:54	27	20:25 (T40)	21:09	7	20:22 (T40)
30	07:45		08:11 (T76)				07:19		19:13 (T41)	06:32			06:02		19:59 (T40)	06:02		20:13 (T40)
	17:45	30	08:41 (T76)				19:54	19	19:32 (T41)	20:26			20:55	26	20:25 (T40)	21:09	9	20:22 (T40)
31	07:44		08:12 (T76)				07:18		19:13 (T41)				06:02		19:59 (T40)			
	17:46	28	08:40 (T76)				19:55	21	19:34 (T41)				20:56	25	20:24 (T40)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		911			1041			136			351			597			244	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.60			0.69			0.65			0.62			0.55			0.55	
Total reduction		0.19			0.28			0.29			0.33			0.32			0.36	
Total, real		173			292			40			114			192			88	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 477 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8085)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:13 (T40)	06:26		20:07 (T40)	06:57		19:11 (T41)	07:27			07:02		16:32 (T42)	07:37		08:00 (T76)
	21:08	11	20:24 (T40)	20:50	18	20:25 (T40)	20:07	24	19:35 (T41)	19:15			17:28	32	17:04 (T42)	17:04	33	16:04 (T77)
2	06:03		20:12 (T40)	06:27		20:08 (T40)	06:58		19:09 (T41)	07:29			07:03		16:33 (T42)	07:38		08:01 (T76)
	21:08	12	20:24 (T40)	20:49	16	20:24 (T40)	20:06	27	19:36 (T41)	19:13			17:27	31	17:04 (T42)	17:03	34	16:05 (T77)
3	06:03		20:12 (T40)	06:28		20:09 (T40)	06:59		19:08 (T41)	07:30			07:04		16:34 (T42)	07:39		08:03 (T76)
	21:08	14	20:26 (T40)	20:48	14	20:23 (T40)	20:04	29	19:37 (T41)	19:11			17:26	28	17:02 (T42)	17:03	34	16:07 (T77)
4	06:04		20:11 (T40)	06:29		20:09 (T40)	07:00		19:07 (T41)	07:31			07:06		16:34 (T42)	07:40		08:04 (T76)
	21:08	15	20:26 (T40)	20:47	13	20:22 (T40)	20:02	30	19:37 (T41)	19:10			17:24	27	17:01 (T42)	17:03	35	16:09 (T77)
5	06:04		20:11 (T40)	06:30		20:11 (T40)	07:01		19:06 (T41)	07:32			07:07		07:50 (T76)	07:41		08:05 (T76)
	21:08	16	20:27 (T40)	20:46	10	20:21 (T40)	20:01	31	19:37 (T41)	19:08			17:23	36	16:59 (T42)	17:03	36	16:10 (T77)
6	06:05		20:10 (T40)	06:31		20:12 (T40)	07:02		19:06 (T41)	07:33			07:08		07:48 (T76)	07:42		08:06 (T76)
	21:08	18	20:28 (T40)	20:44	8	20:20 (T40)	19:57	30	19:36 (T41)	19:06			17:22	39	16:59 (T42)	17:03	35	16:11 (T77)
7	06:05		20:10 (T40)	06:32		20:14 (T40)	07:03		19:05 (T41)	07:34			07:09		07:46 (T76)	07:43		08:06 (T76)
	21:07	19	20:29 (T40)	20:43	5	20:19 (T40)	19:56	29	19:34 (T41)	19:05			17:21	39	16:57 (T42)	17:03	35	16:11 (T77)
8	06:06		20:10 (T40)	06:33		20:16 (T40)	07:04		19:05 (T41)	07:35			07:10		07:45 (T76)	07:44		08:07 (T76)
	21:07	20	20:30 (T40)	20:42	2	20:18 (T40)	19:54	28	19:33 (T41)	19:03			17:20	39	16:56 (T42)	17:03	34	16:12 (T77)
9	06:07		20:09 (T40)	06:34			07:05		19:05 (T41)	07:36			07:12		07:45 (T76)	07:45		08:08 (T76)
	21:07	21	20:30 (T40)	20:41			19:52	26	19:31 (T41)	19:01			17:19	38	16:56 (T42)	17:03	34	16:13 (T77)
10	06:07		20:09 (T40)	06:35			07:06		19:03 (T41)	07:37			07:13		07:44 (T76)	07:46		08:09 (T76)
	21:06	22	20:31 (T40)	20:39			19:51	25	19:28 (T41)	19:00			17:18	35	16:54 (T42)	17:03	32	16:13 (T77)
11	06:08		20:09 (T40)	06:36			07:07		19:04 (T41)	07:38		17:48 (T42)	07:14		07:43 (T76)	07:46		15:43 (T77)
	21:06	23	20:32 (T40)	20:38			19:49	23	19:27 (T41)	18:58	13	18:01 (T42)	17:17	28	08:11 (T76)	17:03	31	16:14 (T77)
12	06:09		20:08 (T40)	06:37			07:08		19:04 (T41)	07:39		17:44 (T42)	07:15		07:42 (T76)	07:47		15:43 (T77)
	21:06	24	20:32 (T40)	20:37			19:47	21	19:25 (T41)	18:57	20	18:04 (T42)	17:16	30	08:12 (T76)	17:03	32	16:15 (T77)
13	06:10		20:08 (T40)	06:38			07:09		19:04 (T41)	07:40		17:41 (T42)	07:16		07:42 (T76)	07:48		15:43 (T77)
	21:05	25	20:33 (T40)	20:36			19:45	19	19:23 (T41)	18:55	25	18:06 (T42)	17:15	31	08:13 (T76)	17:03	33	16:16 (T77)
14	06:10		20:08 (T40)	06:39			07:10		19:05 (T41)	07:41		17:39 (T42)	07:18		07:42 (T76)	07:49		15:43 (T77)
	21:05	26	20:34 (T40)	20:34			19:44	17	19:22 (T41)	18:54	29	18:08 (T42)	17:14	31	08:13 (T76)	17:03	33	16:16 (T77)
15	06:11		20:08 (T40)	06:40			07:11		19:06 (T41)	07:42		17:38 (T42)	07:19		07:42 (T76)	07:50		15:43 (T77)
	21:04	26	20:34 (T40)	20:33			19:42	14	19:20 (T41)	18:52	32	18:10 (T42)	17:13	31	08:13 (T76)	17:03	34	16:17 (T77)
16	06:12		20:07 (T40)	06:41			07:12		19:07 (T41)	07:44		17:37 (T42)	07:20		07:42 (T76)	07:50		15:44 (T77)
	21:03	27	20:34 (T40)	20:31			19:40	11	19:18 (T41)	18:50	34	18:11 (T42)	17:12	32	08:14 (T76)	17:04	34	16:18 (T77)
17	06:13		20:07 (T40)	06:42			07:13		19:09 (T41)	07:45		17:35 (T42)	07:21		07:44 (T76)	07:51		15:44 (T77)
	21:03	28	20:35 (T40)	20:30			19:39	8	19:17 (T41)	18:49	36	18:11 (T42)	17:11	31	08:15 (T76)	17:04	34	16:18 (T77)
18	06:14		20:07 (T40)	06:43			07:14		19:12 (T41)	07:46		17:34 (T42)	07:22		07:45 (T76)	07:52		15:44 (T77)
	21:02	28	20:35 (T40)	20:29			19:37	3	19:15 (T41)	18:47	38	18:12 (T42)	17:11	30	08:15 (T76)	17:04	35	16:19 (T77)
19	06:14		20:07 (T40)	06:44			07:15			07:47		17:33 (T42)	07:23		07:46 (T76)	07:52		15:45 (T77)
	21:02	29	20:36 (T40)	20:27			19:35			18:46	39	18:12 (T42)	17:10	29	08:15 (T76)	17:05	35	16:20 (T77)
20	06:15		20:07 (T40)	06:45			07:16			07:48		17:32 (T42)	07:25		07:48 (T76)	07:53		15:45 (T77)
	21:01	29	20:36 (T40)	20:26			19:33			18:44	40	18:12 (T42)	17:09	27	08:15 (T76)	17:05	35	16:20 (T77)
21	06:16		20:06 (T40)	06:46			07:17			07:49		17:32 (T42)	07:26		07:49 (T76)	07:53		15:46 (T77)
	21:00	29	20:35 (T40)	20:24			19:32			18:43	42	18:14 (T42)	17:08	26	08:15 (T76)	17:05	35	16:21 (T77)
22	06:17		20:06 (T40)	06:47			07:18			07:50		17:31 (T42)	07:27		07:50 (T76)	07:54		15:46 (T77)
	20:59	28	20:34 (T40)	20:23			19:30			18:41	43	18:14 (T42)	17:08	25	08:15 (T76)	17:06	35	16:21 (T77)
23	06:18		20:06 (T40)	06:48			07:19			07:51		17:31 (T42)	07:28		07:51 (T76)	07:54		15:47 (T77)
	20:59	27	20:33 (T40)	20:21			19:28			18:40	42	18:13 (T42)	17:07	24	08:15 (T76)	17:07	35	16:22 (T77)
24	06:19		20:06 (T40)	06:49			07:20			07:53		17:30 (T42)	07:29		07:52 (T76)	07:55		15:47 (T77)
	20:58	27	20:33 (T40)	20:20			19:27			18:39	43	18:13 (T42)	17:07	23	08:15 (T76)	17:07	35	16:22 (T77)
25	06:20		20:06 (T40)	06:50			07:21			07:54		17:31 (T42)	07:30		07:54 (T76)	07:55		15:47 (T77)
	20:57	26	20:32 (T40)	20:18			19:25			18:37	43	18:14 (T42)	17:06	22	08:16 (T76)	17:08	35	16:22 (T77)
26	06:21		20:06 (T40)	06:51			07:22			07:55		17:30 (T42)	07:32		07:55 (T76)	07:56		15:48 (T77)
	20:56	25	20:31 (T40)	20:17			19:23			18:36	43	18:13 (T42)	17:06	20	08:15 (T76)	17:08	35	16:23 (T77)
27	06:22		20:06 (T40)	06:52			07:23			07:56		17:30 (T42)	07:33		07:56 (T76)	07:56		15:49 (T77)
	20:55	25	20:31 (T40)	20:15			19:21			18:34	41	18:11 (T42)	17:05	19	08:15 (T76)	17:09	34	16:23 (T77)
28	06:22		20:06 (T40)	06:53			07:24			07:57		17:30 (T42)	07:34		07:57 (T76)	07:56		15:49 (T77)
	20:54	23	20:29 (T40)	20:14			19:20			18:33	40	18:10 (T42)	17:05	21	15:55 (T77)	17:10	34	16:23 (T77)
29	06:23		20:06 (T40)	06:54		19:18 (T41)	07:25			07:58		17:30 (T42)	07:35		07:58 (T76)	07:57		15:50 (T77)
	20:53	22	20:28 (T40)	20:12	12	19:30 (T41)	19:18			18:32	38	18:08 (T42)	17:04	28	15:59 (T77)	17:10	33	16:23 (T77)
30	06:24		20:06 (T40)	06:55		19:15 (T41)	07:26			08:00		17:31 (T42)	07:36		07:59 (T76)	07:57		15:51 (T77)
	20:52	21	20:27 (T40)	20:10	17	19:32 (T41)	19:16			18:30	36	18:07 (T42)	17:04	31	16:02 (T77)	17:11	33	16:24 (T77)
31	06:25		20:07 (T40)	06:56		19:13 (T41)				08:01		17:31 (T42)				07:57		15:52 (T77)
	20:51	19	20:26 (T40)	20:09	21	19:34 (T41)				18:29	35	18:06 (T42)				17:12	32	16:24 (T77)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		705			136			395			752			883			1054	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.58			0.62			0.71			0.58			0.73	
Total reduction		0.37			0.36			0.37			0.35			0.18			0.16	
Total, real		263			49			146			261			155			172	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 500 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8106)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:43 (T35)	07:43		08:04 (T36)	07:07			07:16		07:35 (T31)	06:30		18:59 (T30)	06:01		20:04 (T27)
	17:13	36	16:19 (T35)	17:47	29	08:33 (T36)	18:22			19:56	17	07:52 (T31)	20:27	52	19:51 (T30)	20:57	29	20:33 (T27)
2	07:57		15:44 (T35)	07:43		08:05 (T36)	07:06			07:14		07:33 (T31)	06:29		19:00 (T30)	06:01		20:04 (T27)
	17:14	35	16:19 (T35)	17:49	27	08:32 (T36)	18:23			19:57	19	07:52 (T31)	20:28	51	19:51 (T30)	20:58	30	20:34 (T27)
3	07:58		15:45 (T35)	07:41		08:06 (T36)	07:04			07:13		07:32 (T31)	06:28		18:59 (T30)	06:00		06:22 (T28)
	17:15	35	16:20 (T35)	17:50	26	08:32 (T36)	18:24			19:58	22	07:54 (T31)	20:29	51	19:50 (T30)	20:58	34	20:34 (T27)
4	07:58		15:46 (T35)	07:40		08:07 (T36)	07:02			07:11		07:30 (T31)	06:26		19:00 (T30)	06:00		06:22 (T28)
	17:15	34	16:20 (T35)	17:51	24	08:31 (T36)	18:25			19:59	24	07:54 (T31)	20:30	50	19:50 (T30)	20:59	38	20:35 (T27)
5	07:58		15:47 (T35)	07:39		08:08 (T36)	07:01			07:09		07:28 (T31)	06:25		19:00 (T30)	06:00		06:22 (T28)
	17:16	33	16:20 (T35)	17:52	23	08:31 (T36)	18:26			20:00	26	07:54 (T31)	20:31	49	19:49 (T30)	21:00	40	20:36 (T27)
6	07:58		15:48 (T35)	07:38		08:08 (T36)	06:59			07:08		07:27 (T31)	06:24		19:01 (T30)	05:59		06:21 (T28)
	17:17	32	16:20 (T35)	17:54	20	08:28 (T36)	18:27			20:00	28	07:55 (T31)	20:32	48	19:49 (T30)	21:01	43	20:36 (T27)
7	07:57		15:49 (T35)	07:37		08:10 (T36)	06:58			07:06		07:25 (T31)	06:23		19:01 (T30)	05:59		06:21 (T28)
	17:18	31	16:20 (T35)	17:55	17	08:27 (T36)	18:29			20:01	29	07:54 (T31)	20:33	48	19:49 (T30)	21:01	44	20:36 (T27)
8	07:57		15:49 (T35)	07:36		08:13 (T36)	07:56			07:05		07:24 (T31)	06:21		19:01 (T30)	05:59		06:21 (T28)
	17:19	30	16:19 (T35)	17:56	12	08:25 (T36)	19:30			20:02	31	07:55 (T31)	20:34	46	19:47 (T30)	21:02	45	20:37 (T27)
9	07:57		15:51 (T35)	07:35			07:54			07:03		07:22 (T31)	06:20		19:02 (T30)	05:59		06:21 (T28)
	17:20	28	16:19 (T35)	17:57			19:31			20:03	32	07:54 (T31)	20:35	45	19:47 (T30)	21:02	48	20:38 (T27)
10	07:57		15:52 (T35)	07:34			07:53			07:01		07:20 (T31)	06:19		19:03 (T30)	05:58		06:20 (T28)
	17:21	26	16:18 (T35)	17:59			19:32			20:05	50	19:37 (T30)	20:36	43	19:46 (T30)	21:03	48	20:38 (T27)
11	07:57		15:53 (T35)	07:32			07:51			07:00		07:19 (T31)	06:18		19:03 (T30)	05:58		06:20 (T28)
	17:22	24	16:17 (T35)	18:00			19:33			20:06	58	19:41 (T30)	20:38	42	19:45 (T30)	21:04	49	20:38 (T27)
12	07:56		08:18 (T36)	07:31			07:50			06:58		07:17 (T31)	06:17		19:04 (T30)	05:58		06:20 (T28)
	17:23	22	16:16 (T35)	18:01			19:34			20:07	65	19:43 (T30)	20:39	40	19:44 (T30)	21:04	51	20:39 (T27)
13	07:56		08:18 (T36)	07:30			07:48			06:56		07:17 (T31)	06:16		19:05 (T30)	05:58		06:20 (T28)
	17:25	21	16:16 (T35)	18:02			19:35			20:08	68	19:45 (T30)	20:40	38	19:43 (T30)	21:05	52	20:39 (T27)
14	07:56		08:17 (T36)	07:29			07:46			06:55		07:17 (T31)	06:15		19:06 (T30)	05:58		06:20 (T28)
	17:26	18	16:13 (T35)	18:04			19:36			20:09	70	19:46 (T30)	20:41	36	19:42 (T30)	21:05	52	20:40 (T27)
15	07:55		08:17 (T36)	07:27			07:45			06:53		07:17 (T31)	06:14		19:07 (T30)	05:58		06:20 (T28)
	17:27	14	16:11 (T35)	18:05			19:38			20:10	72	19:47 (T30)	20:42	38	20:18 (T27)	21:06	53	20:40 (T27)
16	07:55		08:16 (T36)	07:26			07:43			06:52		07:18 (T31)	06:13		19:08 (T30)	05:58		06:20 (T28)
	17:28	9	08:25 (T36)	18:06			19:39			20:11	73	19:49 (T30)	20:43	39	20:19 (T27)	21:06	53	20:40 (T27)
17	07:55		08:16 (T36)	07:25			07:41			06:50		07:19 (T31)	06:12		19:10 (T30)	05:58		06:20 (T28)
	17:29	10	08:26 (T36)	18:07			19:40			20:12	73	19:49 (T30)	20:44	40	20:21 (T27)	21:06	54	20:41 (T27)
18	07:54		08:15 (T36)	07:23			07:40			06:49		07:20 (T31)	06:11		19:12 (T30)	05:58		06:20 (T28)
	17:30	12	08:27 (T36)	18:09			19:41			20:13	72	19:50 (T30)	20:45	37	20:21 (T27)	21:07	55	20:41 (T27)
19	07:53		08:15 (T36)	07:22			07:38			06:47		07:21 (T31)	06:10		19:13 (T30)	05:58		06:21 (T28)
	17:31	13	08:28 (T36)	18:10			19:42			20:14	70	19:50 (T30)	20:46	37	20:22 (T27)	21:07	55	20:42 (T27)
20	07:53		08:14 (T36)	07:21			07:36			06:46		07:23 (T31)	06:09		19:15 (T30)	05:58		06:21 (T28)
	17:33	15	08:29 (T36)	18:11			19:43			20:15	68	19:51 (T30)	20:46	35	20:23 (T27)	21:07	55	20:42 (T27)
21	07:52		08:13 (T36)	07:19			07:35			06:44		07:25 (T31)	06:08		19:17 (T30)	05:59		06:21 (T28)
	17:34	16	08:29 (T36)	18:12			19:44			20:16	64	19:51 (T30)	20:47	32	20:23 (T27)	21:08	54	20:42 (T27)
22	07:52		08:13 (T36)	07:18			07:33			06:43		07:30 (T31)	06:08		19:22 (T30)	05:59		06:21 (T28)
	17:35	18	08:31 (T36)	18:13			19:45			20:17	55	19:52 (T30)	20:48	25	20:25 (T27)	21:08	54	20:42 (T27)
23	07:51		08:12 (T36)	07:16			07:31			06:41		19:01 (T30)	06:07		20:06 (T27)	05:59		06:21 (T28)
	17:36	19	08:31 (T36)	18:15			19:46			20:18	51	19:52 (T30)	20:49	20	20:26 (T27)	21:08	55	20:42 (T27)
24	07:50		08:11 (T36)	07:15			07:30			06:40		19:00 (T30)	06:06		20:05 (T27)	05:59		06:22 (T28)
	17:37	20	08:31 (T36)	18:16			19:47			20:20	52	19:52 (T30)	20:50	21	20:26 (T27)	21:08	55	20:43 (T27)
25	07:50		08:10 (T36)	07:13			07:28			06:38		19:00 (T30)	06:05		20:05 (T27)	06:00		06:22 (T28)
	17:39	22	08:32 (T36)	18:17			19:48			20:21	52	19:52 (T30)	20:51	23	20:28 (T27)	21:08	55	20:43 (T27)
26	07:49		08:10 (T36)	07:12			07:26			06:37		18:59 (T30)	06:05		20:04 (T27)	06:00		06:22 (T28)
	17:40	23	08:33 (T36)	18:18			19:50			20:22	53	19:52 (T30)	20:52	24	20:28 (T27)	21:09	54	20:43 (T27)
27	07:48		08:09 (T36)	07:10			07:24			06:36		18:59 (T30)	06:04		20:04 (T27)	06:00		06:23 (T28)
	17:41	24	08:33 (T36)	18:19			19:51			20:23	53	19:52 (T30)	20:53	24	20:28 (T27)	21:09	53	20:43 (T27)
28	07:47		08:08 (T36)	07:09			07:23			06:34		18:59 (T30)	06:03		20:04 (T27)	06:01		06:23 (T28)
	17:42	25	08:33 (T36)	18:20			19:52			20:24	53	19:52 (T30)	20:54	26	20:30 (T27)	21:09	52	20:43 (T27)
29	07:46		08:07 (T36)				07:21		07:40 (T31)	06:33		18:59 (T30)	06:03		20:04 (T27)	06:01		06:24 (T28)
	17:44	26	08:33 (T36)				19:53	6	07:46 (T31)	20:25	52	19:51 (T30)	20:55	26	20:30 (T27)	21:09	51	20:43 (T27)
30	07:45		08:06 (T36)				07:19		07:38 (T31)	06:31		18:59 (T30)	06:02		20:04 (T27)	06:01		06:24 (T28)
	17:45	27	08:33 (T36)				19:54	10	07:48 (T31)	20:26	52	19:51 (T30)	20:55	27	20:31 (T27)	21:09	51	20:43 (T27)
31	07:44		08:05 (T36)				07:18		07:37 (T31)				06:02		20:03 (T27)			
	17:46	28	08:33 (T36)				19:55	14	07:51 (T31)				20:56	28	20:31 (T27)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		726			178			30			1504			1141			1462	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.53			0.65			0.60			0.57			0.60	
Total reduction		0.20			0.22			0.29			0.32			0.33			0.39	
Total, real		149			38			9			481			375			572	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 500 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8106)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		06:25 (T28)	06:26		19:14 (T30)	06:57		07:18 (T31)	07:27	07:02			07:37		15:36 (T35)
	21:09	50	20:43 (T27)	20:50	41	19:55 (T30)	20:07	58	19:40 (T30)	19:15	17:28			17:04	24	16:00 (T35)
2	06:02		06:25 (T28)	06:27		19:14 (T30)	06:58		07:19 (T31)	07:29	07:03		07:47 (T36)	07:38		15:36 (T35)
	21:08	49	20:43 (T27)	20:49	42	19:56 (T30)	20:06	50	19:36 (T30)	19:13	17:27	4	07:51 (T36)	17:03	25	16:01 (T35)
3	06:03		06:26 (T28)	06:28		19:13 (T30)	06:59		07:20 (T31)	07:30	07:04		07:42 (T36)	07:39		15:35 (T35)
	21:08	48	20:43 (T27)	20:48	44	19:57 (T30)	20:04	32	07:52 (T31)	19:11	17:25	13	07:55 (T36)	17:03	27	16:02 (T35)
4	06:04		06:26 (T28)	06:29		19:12 (T30)	07:00		07:21 (T31)	07:31	07:06		07:40 (T36)	07:40		15:34 (T35)
	21:08	47	20:43 (T27)	20:47	45	19:57 (T30)	20:02	31	07:52 (T31)	19:10	17:24	17	07:57 (T36)	17:03	30	16:04 (T35)
5	06:04		06:27 (T28)	06:30		19:11 (T30)	07:01		07:22 (T31)	07:32	07:07		07:38 (T36)	07:41		15:34 (T35)
	21:08	45	20:43 (T27)	20:46	47	19:58 (T30)	20:01	30	07:52 (T31)	19:08	17:23	21	07:59 (T36)	17:03	31	16:05 (T35)
6	06:05		06:27 (T28)	06:31		19:11 (T30)	07:02		07:23 (T31)	07:33	07:08		07:38 (T36)	07:42		15:34 (T35)
	21:08	43	20:42 (T27)	20:45	47	19:58 (T30)	19:57	28	07:51 (T31)	19:06	17:22	23	08:01 (T36)	17:03	32	16:06 (T35)
7	06:05		06:28 (T28)	06:32		19:10 (T30)	07:03		07:24 (T31)	07:34	07:09		07:36 (T36)	07:43		15:34 (T35)
	21:07	41	20:42 (T27)	20:43	49	19:59 (T30)	19:56	26	07:50 (T31)	19:05	17:21	25	08:01 (T36)	17:02	33	16:07 (T35)
8	06:06		06:28 (T28)	06:33		19:10 (T30)	07:04		07:25 (T31)	07:35	07:10		07:35 (T36)	07:44		15:34 (T35)
	21:07	39	20:41 (T27)	20:42	49	19:59 (T30)	19:54	24	07:49 (T31)	19:03	17:20	27	08:02 (T36)	17:02	34	16:08 (T35)
9	06:07		06:29 (T28)	06:34		19:09 (T30)	07:05		07:25 (T31)	07:36	07:12		07:36 (T36)	07:45		15:33 (T35)
	21:07	36	20:41 (T27)	20:41	50	19:59 (T30)	19:52	22	07:47 (T31)	19:01	17:19	27	08:03 (T36)	17:02	35	16:08 (T35)
10	06:07		06:30 (T28)	06:35		19:09 (T30)	07:06		07:26 (T31)	07:37	07:13		07:35 (T36)	07:46		15:33 (T35)
	21:06	31	20:41 (T27)	20:40	51	20:00 (T30)	19:51	20	07:46 (T31)	19:00	17:18	29	08:04 (T36)	17:02	35	16:08 (T35)
11	06:08		20:11 (T27)	06:36		19:08 (T30)	07:07		07:27 (T31)	07:38	07:14		07:36 (T36)	07:47		15:33 (T35)
	21:06	29	20:40 (T27)	20:38	52	20:00 (T30)	19:49	17	07:44 (T31)	18:58	17:17	28	08:04 (T36)	17:03	36	16:09 (T35)
12	06:09		20:12 (T27)	06:37		19:08 (T30)	07:08		07:28 (T31)	07:39	07:15		07:37 (T36)	07:47		15:34 (T35)
	21:06	28	20:40 (T27)	20:37	52	20:00 (T30)	19:47	14	07:42 (T31)	18:57	17:16	27	08:04 (T36)	17:03	36	16:10 (T35)
13	06:09		20:12 (T27)	06:38		19:08 (T30)	07:09		07:29 (T31)	07:40	07:16		07:39 (T36)	07:48		15:34 (T35)
	21:05	28	20:40 (T27)	20:36	52	20:00 (T30)	19:45	11	07:40 (T31)	18:55	17:15	26	08:05 (T36)	17:03	37	16:11 (T35)
14	06:10		20:13 (T27)	06:39		19:06 (T30)	07:10		07:30 (T31)	07:41	07:18		07:40 (T36)	07:49		15:33 (T35)
	21:05	27	20:40 (T27)	20:34	53	19:59 (T30)	19:44	7	07:37 (T31)	18:53	17:14	25	08:05 (T36)	17:03	38	16:11 (T35)
15	06:11		20:12 (T27)	06:40		19:06 (T30)	07:11			07:42	07:19		07:41 (T36)	07:50		15:34 (T35)
	21:04	26	20:38 (T27)	20:33	53	19:59 (T30)	19:42			18:52	17:13	24	08:05 (T36)	17:03	38	16:12 (T35)
16	06:12		20:13 (T27)	06:41		19:06 (T30)	07:12			07:44	07:20		07:43 (T36)	07:50		15:35 (T35)
	21:04	25	20:38 (T27)	20:32	53	19:59 (T30)	19:40			18:50	17:12	23	08:06 (T36)	17:03	38	16:13 (T35)
17	06:13		20:14 (T27)	06:42		19:06 (T30)	07:13			07:45	07:21		07:44 (T36)	07:51		15:35 (T35)
	21:03	24	20:38 (T27)	20:30	52	19:58 (T30)	19:39			18:49	17:11	22	08:06 (T36)	17:04	39	16:14 (T35)
18	06:13		20:14 (T27)	06:43		19:06 (T30)	07:14			07:46	07:22		07:45 (T36)	07:52		15:35 (T35)
	21:02	23	20:37 (T27)	20:29	52	19:58 (T30)	19:37			18:47	17:11	20	08:05 (T36)	17:04	39	16:14 (T35)
19	06:14		20:15 (T27)	06:44		19:06 (T30)	07:15			07:47	07:24		07:46 (T36)	07:52		15:36 (T35)
	21:02	22	20:37 (T27)	20:27	51	19:57 (T30)	19:35			18:46	17:10	19	08:05 (T36)	17:04	39	16:15 (T35)
20	06:15		20:15 (T27)	06:45		19:06 (T30)	07:16			07:48	07:25		07:48 (T36)	07:53		15:36 (T35)
	21:01	20	20:35 (T27)	20:26	51	19:57 (T30)	19:33			18:44	17:09	18	08:06 (T36)	17:05	39	16:15 (T35)
21	06:16		20:15 (T27)	06:46		07:34 (T31)	07:17			07:49	07:26		07:49 (T36)	07:53		15:37 (T35)
	21:00	20	20:35 (T27)	20:24	57	19:56 (T30)	19:32			18:43	17:08	16	08:05 (T36)	17:05	39	16:16 (T35)
22	06:17		19:30 (T30)	06:47		07:29 (T31)	07:18			07:50	07:27		07:50 (T36)	07:54		15:37 (T35)
	20:59	28	20:34 (T27)	20:23	66	19:56 (T30)	19:30			18:41	17:08	15	08:05 (T36)	17:06	39	16:16 (T35)
23	06:18		19:27 (T30)	06:48		07:27 (T31)	07:19			07:51	07:28		07:51 (T36)	07:54		15:38 (T35)
	20:59	33	20:34 (T27)	20:21	68	19:55 (T30)	19:28			18:40	17:07	13	08:04 (T36)	17:06	39	16:17 (T35)
24	06:19		19:25 (T30)	06:49		07:25 (T31)	07:20			07:53	07:29		07:53 (T36)	07:55		15:38 (T35)
	20:58	36	20:33 (T27)	20:20	70	19:54 (T30)	19:27			18:39	17:07	12	08:05 (T36)	17:07	39	16:17 (T35)
25	06:20		19:23 (T30)	06:50		07:23 (T31)	07:21			07:54	07:31		07:54 (T36)	07:55		15:38 (T35)
	20:57	38	20:32 (T27)	20:18	72	19:53 (T30)	19:25			18:37	17:06	10	08:04 (T36)	17:08	39	16:17 (T35)
26	06:20		19:22 (T30)	06:51		07:21 (T31)	07:22			07:55	07:32		07:55 (T36)	07:56		15:39 (T35)
	20:56	38	20:32 (T27)	20:17	74	19:52 (T30)	19:23			18:36	17:05	9	08:04 (T36)	17:08	39	16:18 (T35)
27	06:21		19:19 (T30)	06:52		07:20 (T31)	07:23			07:56	07:33		07:56 (T36)	07:56		15:39 (T35)
	20:55	40	20:30 (T27)	20:15	72	19:50 (T30)	19:21			18:34	17:05	14	15:50 (T35)	17:09	39	16:18 (T35)
28	06:22		19:18 (T30)	06:53		07:19 (T31)	07:24			07:57	07:34		07:57 (T36)	07:56		15:40 (T35)
	20:54	39	20:29 (T27)	20:14	72	19:49 (T30)	19:20			18:33	17:05	18	15:53 (T35)	17:09	38	16:18 (T35)
29	06:23		19:17 (T30)	06:54		07:18 (T31)	07:25			07:58	07:35		07:58 (T36)	07:57		15:41 (T35)
	20:53	36	20:28 (T27)	20:12	70	19:47 (T30)	19:18			18:32	17:04	21	15:56 (T35)	17:10	38	16:19 (T35)
30	06:24		19:16 (T30)	06:55		07:17 (T31)	07:26			08:00	07:36		07:59 (T36)	07:57		15:42 (T35)
	20:52	37	19:53 (T30)	20:10	68	19:45 (T30)	19:16			18:30	17:04	22	15:57 (T35)	17:11	37	16:19 (T35)
31	06:25		19:15 (T30)	06:56		07:17 (T31)				08:01				07:57		15:42 (T35)
	20:51	39	19:54 (T30)	20:09	65	19:43 (T30)				18:29				17:12	37	16:19 (T35)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		1065			1740			370				568			1108	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.57			0.59			0.64				0.55			0.75	
Total reduction		0.38			0.37			0.39				0.17			0.17	
Total, real		408			635			143				96			185	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 501 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8107)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June
1	07:57	07:43			07:07		07:27 (T31)	07:16			06:30		07:05 (T28)	06:01
	17:13	17:47			18:22	78	17:52 (T30)	19:56			20:27	48	07:53 (T28)	20:57
2	07:57	07:43			07:06		07:25 (T31)	07:14			06:29		07:06 (T28)	06:01
	17:14	17:49			18:23	78	17:51 (T30)	19:57			20:28	46	07:52 (T28)	20:58
3	07:58	07:41			07:04		07:23 (T31)	07:13		19:31 (T27)	06:28		07:06 (T28)	06:00
	17:15	17:50			18:24	80	17:50 (T30)	19:58	6	19:37 (T27)	20:29	44	07:50 (T28)	20:58
4	07:58	07:40			07:02		07:22 (T31)	07:11		07:30 (T28)	06:26		07:07 (T28)	06:00
	17:15	17:51			18:25	80	17:50 (T30)	19:59	23	19:37 (T27)	20:30	42	07:49 (T28)	20:59
5	07:58	07:39			07:01		07:20 (T31)	07:09		07:28 (T28)	06:25		07:08 (T28)	06:00
	17:16	17:52			18:26	80	17:49 (T30)	20:00	32	19:38 (T27)	20:31	41	07:49 (T28)	21:00
6	07:58	07:38			06:59		07:21 (T31)	07:08		07:27 (T28)	06:24		07:09 (T28)	05:59
	17:17	17:54			18:27	78	17:49 (T30)	20:00	39	19:40 (T27)	20:32	39	07:48 (T28)	21:01
7	07:57	07:37			06:58		07:21 (T31)	07:06		07:25 (T28)	06:23		07:10 (T28)	05:59
	17:18	17:55			18:29	74	17:47 (T30)	20:01	45	19:40 (T27)	20:33	37	07:47 (T28)	21:01
8	07:57	07:36			07:56		08:21 (T31)	07:05		07:24 (T28)	06:21		07:10 (T28)	05:59
	17:19	17:56			19:30	71	18:46 (T30)	20:02	51	19:42 (T27)	20:34	34	07:44 (T28)	21:02
9	07:57	07:35			07:54		08:22 (T31)	07:03		07:22 (T28)	06:20		07:12 (T28)	05:59
	17:20	17:57			19:31	67	18:45 (T30)	20:03	55	19:43 (T27)	20:35	31	07:43 (T28)	21:02
10	07:57	07:34			07:53		08:23 (T31)	07:01		07:20 (T28)	06:19		07:13 (T28)	05:58
	17:21	17:59			19:32	61	18:43 (T30)	20:05	60	19:43 (T27)	20:37	28	07:41 (T28)	21:03
11	07:57	07:32			07:51		08:24 (T31)	07:00		07:19 (T28)	06:18		07:15 (T28)	05:58
	17:22	18:00			19:33	55	18:41 (T30)	20:06	64	19:45 (T27)	20:38	24	07:39 (T28)	21:04
12	07:56	07:31		17:26 (T30)	07:50		08:26 (T31)	06:58		07:17 (T28)	06:17		07:17 (T28)	05:58
	17:23	18:01	7	17:33 (T30)	19:34	47	18:39 (T30)	20:07	69	19:46 (T27)	20:39	20	07:37 (T28)	21:04
13	07:56	07:30		17:21 (T30)	07:48		08:28 (T31)	06:56		07:16 (T28)	06:16		07:20 (T28)	05:58
	17:25	18:02	17	17:38 (T30)	19:35	36	18:36 (T30)	20:08	72	19:47 (T27)	20:40	14	07:34 (T28)	21:05
14	07:56	07:29		17:19 (T30)	07:46		08:32 (T31)	06:55		07:14 (T28)	06:15			05:58
	17:26	18:04	22	17:41 (T30)	19:36	18	18:31 (T30)	20:09	76	19:48 (T27)	20:41			21:05
15	07:55	07:27		17:16 (T30)	07:45			06:53		07:12 (T28)	06:14			05:58
	17:27	18:05	26	17:42 (T30)	19:38			20:10	77	19:48 (T27)	20:42			21:06
16	07:55	07:26		17:14 (T30)	07:43			06:52		07:11 (T28)	06:13			05:58
	17:28	18:06	29	17:43 (T30)	19:39			20:11	81	19:50 (T27)	20:43			21:06
17	07:55	07:25		17:12 (T30)	07:41			06:50		07:09 (T28)	06:12			05:58
	17:29	18:07	32	17:44 (T30)	19:40			20:12	83	19:50 (T27)	20:44			21:06
18	07:54	07:23		07:43 (T31)	07:40			06:49		07:08 (T28)	06:11			05:58
	17:30	18:09	38	17:46 (T30)	19:41			20:13	83	19:50 (T27)	20:45			21:07
19	07:53	07:22		07:42 (T31)	07:38			06:47		07:06 (T28)	06:10			05:58
	17:31	18:10	45	17:48 (T30)	19:42			20:14	85	19:49 (T27)	20:46			21:07
20	07:53	07:21		07:40 (T31)	07:36			06:46		07:05 (T28)	06:09			05:58
	17:33	18:11	51	17:48 (T30)	19:43			20:15	84	19:48 (T27)	20:46			21:07
21	07:52	07:19		07:39 (T31)	07:35			06:44		07:03 (T28)	06:08			05:59
	17:34	18:12	56	17:50 (T30)	19:44			20:16	83	19:47 (T27)	20:47			21:08
22	07:52	07:18		07:37 (T31)	07:33			06:43		07:03 (T28)	06:08			05:59
	17:35	18:13	60	17:50 (T30)	19:45			20:17	81	19:46 (T27)	20:48			21:08
23	07:51	07:16		07:36 (T31)	07:31			06:41		07:04 (T28)	06:07			05:59
	17:36	18:15	64	17:51 (T30)	19:46			20:18	79	19:45 (T27)	20:49			21:08
24	07:50	07:15		07:34 (T31)	07:30			06:40		07:03 (T28)	06:06			05:59
	17:37	18:16	68	17:51 (T30)	19:47			20:20	76	19:43 (T27)	20:50			21:08
25	07:50	07:13		07:33 (T31)	07:28			06:38		07:03 (T28)	06:05			06:00
	17:39	18:17	71	17:52 (T30)	19:48			20:21	72	19:41 (T27)	20:51			21:08
26	07:49	07:12		07:31 (T31)	07:26			06:37		07:03 (T28)	06:05			06:00
	17:40	18:18	72	17:51 (T30)	19:50			20:22	64	19:37 (T27)	20:52			21:09
27	07:48	07:10		07:30 (T31)	07:24			06:36		07:03 (T28)	06:04			06:00
	17:41	18:19	75	17:52 (T30)	19:51			20:23	52	07:55 (T28)	20:53			21:09
28	07:47	07:09		07:28 (T31)	07:23			06:34		07:04 (T28)	06:03			06:01
	17:42	18:20	76	17:51 (T30)	19:52			20:24	51	07:55 (T28)	20:54			21:09
29	07:46				07:21			06:33		07:04 (T28)	06:03			06:01
	17:44				19:53			20:25	50	07:54 (T28)	20:55			21:09
30	07:45				07:19			06:31		07:04 (T28)	06:02			06:01
	17:45				19:54			20:26	49	07:53 (T28)	20:55			21:09
31	07:44				07:18						06:02			
	17:46				19:55						20:56			
Potential sun hours	297	297			370			399			449			453
Total, worst case			809			903			1742			448		
Sun reduction			0.40			0.44			0.52			0.57		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.66			0.64			0.64			0.66		
Total reduction			0.27			0.28			0.33			0.38		
Total, real			215			254			577			169		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 501 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8107)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		06:26	07:27 (T28)	06:57	07:18 (T28)	07:27	08:06 (T31)	07:02	07:37
	21:09		20:50 22	07:49 (T28)	20:07 64	19:44 (T27)	19:15 43	18:17 (T30)	17:28	17:04
2	06:02		06:27	07:25 (T28)	06:58	07:19 (T28)	07:29	08:03 (T31)	07:03	07:38
	21:08		20:49 26	07:51 (T28)	20:06 60	19:42 (T27)	19:13 52	18:18 (T30)	17:27	17:03
3	06:03		06:28	07:23 (T28)	06:59	07:20 (T28)	07:30	08:01 (T31)	07:04	07:39
	21:08		20:48 29	07:52 (T28)	20:04 55	19:41 (T27)	19:11 59	18:20 (T30)	17:25	17:03
4	06:03		06:29	07:22 (T28)	07:00	07:21 (T28)	07:31	08:00 (T31)	07:06	07:40
	21:08		20:47 32	07:54 (T28)	20:02 51	19:39 (T27)	19:10 64	18:21 (T30)	17:24	17:03
5	06:04		06:30	07:20 (T28)	07:01	07:22 (T28)	07:32	07:59 (T31)	07:07	07:41
	21:08		20:46 35	07:55 (T28)	20:01 46	19:38 (T27)	19:08 69	18:23 (T30)	17:23	17:03
6	06:05		06:31	07:19 (T28)	07:02	07:23 (T28)	07:33	07:58 (T31)	07:08	07:42
	21:08		20:45 38	07:57 (T28)	19:57 39	19:36 (T27)	19:06 72	18:23 (T30)	17:22	17:03
7	06:05		06:32	07:18 (T28)	07:03	07:24 (T28)	07:34	07:57 (T31)	07:09	07:43
	21:07		20:43 40	07:58 (T28)	19:56 32	19:34 (T27)	19:05 76	18:24 (T30)	17:21	17:02
8	06:06		06:33	07:17 (T28)	07:04	07:25 (T28)	07:35	07:56 (T31)	07:10	07:44
	21:07		20:42 42	07:59 (T28)	19:54 25	19:33 (T27)	19:03 78	18:24 (T30)	17:20	17:02
9	06:07		06:34	07:16 (T28)	07:05	07:27 (T28)	07:36	07:56 (T31)	07:12	07:45
	21:07		20:41 43	07:59 (T28)	19:52 10	19:30 (T27)	19:01 79	18:24 (T30)	17:19	17:02
10	06:07		06:35	07:15 (T28)	07:06		07:37	07:57 (T31)	07:13	07:46
	21:06		20:40 45	08:00 (T28)	19:51		19:00 80	18:25 (T30)	17:18	17:02
11	06:08		06:36	07:14 (T28)	07:07		07:38	07:58 (T31)	07:14	07:47
	21:06		20:38 47	08:01 (T28)	19:49		18:58 79	18:25 (T30)	17:17	17:02
12	06:09		06:37	07:14 (T28)	07:08		07:39	07:59 (T31)	07:15	07:47
	21:06		20:37 47	08:01 (T28)	19:47		18:57 78	18:24 (T30)	17:16	17:03
13	06:09		06:38	07:13 (T28)	07:09		07:40	08:00 (T31)	07:16	07:48
	21:05		20:36 49	08:02 (T28)	19:45		18:55 77	18:24 (T30)	17:15	17:03
14	06:10		06:39	07:11 (T28)	07:10		07:41	08:02 (T31)	07:18	07:49
	21:05		20:34 50	08:01 (T28)	19:44		18:53 76	18:25 (T30)	17:14	17:03
15	06:11		06:40	07:11 (T28)	07:11		07:42	08:03 (T31)	07:19	07:50
	21:04		20:33 51	08:02 (T28)	19:42		18:52 74	18:24 (T30)	17:13	17:03
16	06:12		06:41	07:10 (T28)	07:12		07:44	08:04 (T31)	07:20	07:50
	21:04		20:32 55	19:40 (T27)	19:40		18:50 72	18:24 (T30)	17:12	17:03
17	06:13		06:42	07:10 (T28)	07:13		07:45	08:05 (T31)	07:21	07:51
	21:03		20:30 66	19:45 (T27)	19:39		18:49 69	18:23 (T30)	17:11	17:04
18	06:13		06:43	07:09 (T28)	07:14		07:46	08:06 (T31)	07:22	07:52
	21:02		20:29 71	19:47 (T27)	19:37		18:47 67	18:23 (T30)	17:11	17:04
19	06:14		06:44	07:09 (T28)	07:15		07:47	08:07 (T31)	07:24	07:52
	21:02		20:27 76	19:49 (T27)	19:35		18:46 63	18:22 (T30)	17:10	17:04
20	06:15		06:45	07:08 (T28)	07:16		07:48	08:09 (T31)	07:25	07:53
	21:01		20:26 79	19:50 (T27)	19:33		18:44 60	18:22 (T30)	17:09	17:05
21	06:16		06:46	07:08 (T28)	07:17		07:49	08:10 (T31)	07:26	07:53
	21:00		20:24 82	19:51 (T27)	19:32		18:43 54	18:20 (T30)	17:08	17:05
22	06:17		06:47	07:08 (T28)	07:18		07:50	08:11 (T31)	07:27	07:54
	20:59		20:23 84	19:52 (T27)	19:30		18:41 49	18:18 (T30)	17:08	17:06
23	06:18		06:48	07:09 (T28)	07:19		07:51	08:12 (T31)	07:28	07:54
	20:59		20:21 84	19:52 (T27)	19:28		18:40 43	18:17 (T30)	17:07	17:06
24	06:19		06:49	07:10 (T28)	07:20		07:53	08:13 (T31)	07:29	07:55
	20:58		20:20 85	19:53 (T27)	19:27		18:39 36	18:15 (T30)	17:07	17:07
25	06:20		06:50	07:11 (T28)	07:21		07:54	17:43 (T30)	07:31	07:55
	20:57		20:18 84	19:53 (T27)	19:25		18:37 31	18:14 (T30)	17:06	17:07
26	06:20		06:51	07:12 (T28)	07:22		07:55	17:45 (T30)	07:32	07:56
	20:56		20:17 83	19:53 (T27)	19:23		18:36 28	18:13 (T30)	17:05	17:08
27	06:21		06:52	07:13 (T28)	07:23		07:56	17:46 (T30)	07:33	07:56
	20:55		20:15 81	19:52 (T27)	19:21		18:34 25	18:11 (T30)	17:05	17:09
28	06:22		06:53	07:14 (T28)	07:24		07:57	17:48 (T30)	07:34	07:56
	20:54		20:14 77	19:50 (T27)	19:20		18:33 22	18:10 (T30)	17:05	17:09
29	06:23		06:54	07:15 (T28)	07:25		07:58	17:52 (T30)	07:35	07:57
	20:53		20:12 75	19:49 (T27)	19:18		18:32 15	18:07 (T30)	17:04	17:10
30	06:24	07:34 (T28)	06:55	07:16 (T28)	07:26	08:09 (T31)	08:00	17:58 (T30)	07:36	07:57
	20:52 7	07:41 (T28)	20:10 71	19:47 (T27)	19:16 30	18:14 (T30)	18:30 2	18:00 (T30)	17:04	17:11
31	06:25	07:30 (T28)	06:56	07:17 (T28)			08:01			07:57
	20:51 16	07:46 (T28)	20:09 67	19:45 (T27)			18:29			17:12
Potential sun hours	460		429		375		345		297	287
Total, worst case	23		1816		412		1692			
Sun reduction	0.66		0.61		0.59		0.48			
Oper. time red.	1.00		1.00		1.00		1.00			
Wind dir. red.	0.66		0.64		0.63		0.65			
Total reduction	0.44		0.39		0.37		0.31			
Total, real	10		714		154		529			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 510 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8114)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		16:00 (T79)	07:07		16:04 (T79)	07:16		19:40 (T60)	06:30			06:02		19:40 (T60)
	17:13			17:48	76	17:16 (T79)	18:22	111	17:55 (T62)	19:56			20:27			20:56	50	20:30 (T60)
2	07:57			07:42		15:59 (T79)	07:05		16:05 (T79)	07:14		19:41 (T60)	06:29			06:01		19:41 (T60)
	17:14			17:49	77	17:16 (T79)	18:23	110	17:55 (T62)	19:57			20:28			20:57	50	20:31 (T60)
3	07:57			07:41		15:59 (T79)	07:04		16:06 (T79)	07:13		19:40 (T60)	06:28			06:01		19:40 (T60)
	17:15			17:50	78	17:17 (T79)	18:24	109	17:55 (T62)	19:58			20:29			20:58	50	20:30 (T60)
4	07:57		16:27 (T79)	07:40		15:59 (T79)	07:02		16:08 (T79)	07:11		19:41 (T60)	06:26			06:00		19:41 (T60)
	17:16	3	16:30 (T79)	17:51	79	17:18 (T79)	18:25	107	17:55 (T62)	19:59			20:30			20:59	50	20:31 (T60)
5	07:57		16:23 (T79)	07:39		15:59 (T79)	07:01		16:09 (T79)	07:09		19:41 (T60)	06:25			06:00		19:41 (T60)
	17:17	13	16:36 (T79)	17:53	79	17:18 (T79)	18:26	104	17:54 (T62)	20:00			20:31			20:59	50	20:31 (T60)
6	07:57		16:21 (T79)	07:38		15:58 (T79)	06:59		16:10 (T79)	07:08		19:41 (T60)	06:24		19:59 (T60)	06:00		19:41 (T60)
	17:18	18	16:39 (T79)	17:54	81	17:19 (T79)	18:27	100	17:53 (T62)	20:00			20:32	10	20:09 (T60)	21:00	50	20:31 (T60)
7	07:57		16:19 (T79)	07:37		15:58 (T79)	06:58		16:12 (T79)	07:06		19:41 (T60)	06:23		19:55 (T60)	05:59		19:41 (T60)
	17:19	23	16:42 (T79)	17:55	82	17:20 (T79)	18:29	96	17:53 (T62)	20:01			20:33	16	20:11 (T60)	21:01	50	20:31 (T60)
8	07:57		16:18 (T79)	07:36		15:58 (T79)	07:56		17:13 (T79)	07:05		19:42 (T60)	06:22		19:53 (T60)	05:59		19:42 (T60)
	17:20	26	16:44 (T79)	17:56	82	17:20 (T79)	19:30	92	18:52 (T62)	20:02			20:34	19	20:12 (T60)	21:01	49	20:31 (T60)
9	07:57		16:17 (T79)	07:35		15:57 (T79)	07:54		17:16 (T79)	07:03		19:42 (T60)	06:20		19:51 (T60)	05:59		19:42 (T60)
	17:21	30	16:47 (T79)	17:58	83	17:20 (T79)	19:31	86	18:52 (T62)	20:03			20:35	22	20:13 (T60)	21:02	50	20:32 (T60)
10	07:56		16:15 (T79)	07:33		15:58 (T79)	07:53		17:17 (T79)	07:01		19:43 (T60)	06:19		19:48 (T60)	05:59		19:43 (T60)
	17:22	33	16:48 (T79)	17:59	82	17:20 (T79)	19:32	82	18:51 (T62)	20:04			20:36	25	20:13 (T60)	21:03	49	20:32 (T60)
11	07:56		16:14 (T79)	07:32		15:58 (T79)	07:51		17:20 (T79)	07:00		19:43 (T60)	06:18		19:47 (T60)	05:59		19:43 (T60)
	17:23	36	16:50 (T79)	18:00	83	17:21 (T79)	19:33	73	18:49 (T62)	20:05			20:37	27	20:14 (T60)	21:03	49	20:32 (T60)
12	07:56		16:14 (T79)	07:31		15:58 (T79)	07:49		17:23 (T79)	06:58		19:43 (T60)	06:17		19:46 (T60)	05:58		19:43 (T60)
	17:24	38	16:52 (T79)	18:01	83	17:21 (T79)	19:34	65	18:48 (T62)	20:06			20:38	29	20:15 (T60)	21:04	50	20:33 (T60)
13	07:56		16:12 (T79)	07:30		15:57 (T79)	07:48		17:27 (T79)	06:57		19:44 (T60)	06:16		19:45 (T60)	05:58		19:44 (T60)
	17:25	41	16:53 (T79)	18:02	84	17:21 (T79)	19:35	54	18:46 (T62)	20:07			20:39	31	20:16 (T60)	21:04	49	20:33 (T60)
14	07:55		16:11 (T79)	07:28		15:58 (T79)	07:46		17:33 (T79)	06:55		19:43 (T60)	06:15		19:44 (T60)	05:58		19:43 (T60)
	17:26	44	16:55 (T79)	18:04	83	17:21 (T79)	19:36	37	18:44 (T62)	20:09			20:40	33	20:17 (T60)	21:05	49	20:32 (T60)
15	07:55		16:10 (T79)	07:27		15:58 (T79)	07:44		18:20 (T62)	06:53		19:44 (T60)	06:14		19:44 (T60)	05:58		19:44 (T60)
	17:27	46	16:56 (T79)	18:05	84	17:22 (T79)	19:37	22	18:42 (T62)	20:10			20:41	34	20:18 (T60)	21:05	49	20:33 (T60)
16	07:54		16:10 (T79)	07:26		15:57 (T79)	07:43		18:23 (T62)	06:52		19:43 (T60)	06:13		19:43 (T60)	05:58		19:44 (T60)
	17:28	48	16:58 (T79)	18:06	84	17:21 (T79)	19:39	16	18:39 (T62)	20:11			20:42	36	20:19 (T60)	21:05	49	20:33 (T60)
17	07:54		16:08 (T79)	07:24		15:58 (T79)	07:41			06:50		19:45 (T60)	06:12		19:43 (T60)	05:58		19:45 (T60)
	17:29	51	16:59 (T79)	18:07	93	17:40 (T62)	19:40			20:12			20:43	37	20:20 (T60)	21:06	48	20:33 (T60)
18	07:54		16:08 (T79)	07:23		15:59 (T79)	07:39			06:49		19:45 (T60)	06:11		19:42 (T60)	05:58		19:45 (T60)
	17:30	53	17:01 (T79)	18:09	100	17:44 (T62)	19:41			20:13			20:44	39	20:21 (T60)	21:06	48	20:33 (T60)
19	07:53		16:07 (T79)	07:22		15:58 (T79)	07:38			06:47		19:45 (T60)	06:10		19:41 (T60)	05:59		19:45 (T60)
	17:32	55	17:02 (T79)	18:10	106	17:46 (T62)	19:42			20:14			20:45	40	20:21 (T60)	21:07	48	20:33 (T60)
20	07:52		16:07 (T79)	07:20		15:59 (T79)	07:36			06:46		19:45 (T60)	06:09		19:41 (T60)	05:59		19:45 (T60)
	17:33	57	17:04 (T79)	18:11	110	17:49 (T62)	19:43			20:15			20:46	41	20:22 (T60)	21:07	49	20:34 (T60)
21	07:52		16:06 (T79)	07:19		15:59 (T79)	07:34			06:44		19:45 (T60)	06:09		19:41 (T60)	05:59		19:45 (T60)
	17:34	59	17:05 (T79)	18:12	110	17:49 (T62)	19:44			20:16			20:47	43	20:24 (T60)	21:07	49	20:34 (T60)
22	07:51		16:05 (T79)	07:17		16:00 (T79)	07:33			06:43		19:45 (T60)	06:08		19:41 (T60)	05:59		19:45 (T60)
	17:35	61	17:06 (T79)	18:13	111	17:51 (T62)	19:45			20:17			20:48	43	20:24 (T60)	21:07	49	20:34 (T60)
23	07:51		16:04 (T79)	07:16		16:00 (T79)	07:31			06:41		19:46 (T60)	06:07		19:40 (T60)	05:59		19:46 (T60)
	17:36	63	17:07 (T79)	18:15	112	17:52 (T62)	19:46			20:18			20:49	45	20:25 (T60)	21:08	48	20:34 (T60)
24	07:50		16:04 (T79)	07:14		16:01 (T79)	07:29			06:40		19:46 (T60)	06:06		19:40 (T60)	06:00		19:46 (T60)
	17:38	65	17:09 (T79)	18:16	112	17:53 (T62)	19:47			20:19			20:50	45	20:25 (T60)	21:08	48	20:34 (T60)
25	07:49		16:04 (T79)	07:13		16:01 (T79)	07:28			06:38		19:46 (T60)	06:06		19:40 (T60)	06:00		19:46 (T60)
	17:39	66	17:10 (T79)	18:17	112	17:53 (T62)	19:48			20:20			20:51	47	20:27 (T60)	21:08	48	20:34 (T60)
26	07:48		16:03 (T79)	07:11		16:02 (T79)	07:26			06:37		19:46 (T60)	06:05		19:40 (T60)	06:00		19:46 (T60)
	17:40	68	17:11 (T79)	18:18	112	17:54 (T62)	19:49			20:21			20:51	47	20:27 (T60)	21:08	49	20:35 (T60)
27	07:48		16:02 (T79)	07:10		16:02 (T79)	07:24			06:36		19:46 (T60)	06:04		19:41 (T60)	06:01		19:46 (T60)
	17:41	70	17:12 (T79)	18:19	112	17:54 (T62)	19:50			20:22			20:52	48	20:29 (T60)	21:08	49	20:35 (T60)
28	07:47		16:02 (T79)	07:08		16:03 (T79)	07:23			06:34		19:46 (T60)	06:04		19:40 (T60)	06:01		19:46 (T60)
	17:43	70	17:12 (T79)	18:20	112	17:55 (T62)	19:51			20:23			20:53	49	20:29 (T60)	21:08	49	20:35 (T60)
29	07:46		16:01 (T79)				07:21			06:33		19:47 (T60)	06:03		19:41 (T60)	06:01		19:47 (T60)
	17:44	72	17:13 (T79)				19:53			20:25			20:54	49	20:30 (T60)	21:08	49	20:36 (T60)
30	07:45		16:00 (T79)				07:19			06:32		19:46 (T60)	06:03		19:40 (T60)	06:02		19:46 (T60)
	17:45	74	17:14 (T79)				19:54			20:26			20:55	50	20:30 (T60)	21:08	50	20:36 (T60)
31	07:44		16:00 (T79)				07:18						06:02		19:41 (T60)			
	17:46	75	17:15 (T79)				19:55						20:56	50	20:31 (T60)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case		1358			2602			1264						955			1474	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.73			0.72			0.71						0.55			0.55	
Total reduction		0.23			0.30			0.32						0.32			0.36	
Total, real		314			770			405						308			534	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 510 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8114)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02	19:47 (T60)	06:26	19:57 (T60)	06:57		07:27	17:03 (T79)	07:02	15:27 (T79)	07:37	15:56 (T79)
	21:08 49	20:36 (T60)	20:50 28	20:25 (T60)	20:07		19:15 60	18:26 (T62)	17:28 83	16:50 (T79)	17:04 36	16:32 (T79)
2	06:03	19:47 (T60)	06:27	19:58 (T60)	06:58		07:28	16:59 (T79)	07:03	15:27 (T79)	07:38	15:58 (T79)
	21:08 49	20:36 (T60)	20:49 26	20:24 (T60)	20:05		19:13 70	18:27 (T62)	17:27 83	16:50 (T79)	17:04 33	16:31 (T79)
3	06:03	19:47 (T60)	06:28	19:59 (T60)	06:59		07:29	16:56 (T79)	07:04	15:27 (T79)	07:39	16:00 (T79)
	21:08 50	20:37 (T60)	20:48 24	20:23 (T60)	20:04		19:11 78	18:28 (T62)	17:26 82	16:49 (T79)	17:03 30	16:30 (T79)
4	06:04	19:47 (T60)	06:29	20:01 (T60)	07:00		07:30	16:53 (T79)	07:05	15:28 (T79)	07:40	16:02 (T79)
	21:08 50	20:37 (T60)	20:46 21	20:22 (T60)	20:02		19:10 84	18:28 (T62)	17:24 81	16:49 (T79)	17:03 26	16:28 (T79)
5	06:04	19:48 (T60)	06:30	20:03 (T60)	07:01		07:32	16:51 (T79)	07:06	15:28 (T79)	07:41	16:04 (T79)
	21:07 49	20:37 (T60)	20:45 18	20:21 (T60)	20:00		19:08 90	18:29 (T62)	17:23 81	16:49 (T79)	17:03 23	16:27 (T79)
6	06:05	19:47 (T60)	06:31	20:06 (T60)	07:02		07:33	16:48 (T79)	07:08	15:28 (T79)	07:42	16:07 (T79)
	21:07 50	20:37 (T60)	20:44 14	20:20 (T60)	19:57		19:06 95	18:29 (T62)	17:22 80	16:48 (T79)	17:03 18	16:25 (T79)
7	06:06	19:48 (T60)	06:32	20:10 (T60)	07:03		07:34	16:46 (T79)	07:09	15:30 (T79)	07:43	16:10 (T79)
	21:07 49	20:37 (T60)	20:43 8	20:18 (T60)	19:55		19:05 99	18:29 (T62)	17:21 79	16:49 (T79)	17:03 13	16:23 (T79)
8	06:06	19:48 (T60)	06:33		07:04		07:35	16:45 (T79)	07:10	15:30 (T79)	07:43	16:14 (T79)
	21:07 50	20:38 (T60)	20:42		19:54		19:03 103	18:30 (T62)	17:20 78	16:48 (T79)	17:03 5	16:19 (T79)
9	06:07	19:48 (T60)	06:34		07:05		07:36	16:43 (T79)	07:11	15:30 (T79)	07:44	
	21:06 50	20:38 (T60)	20:40		19:52		19:01 106	18:30 (T62)	17:19 77	16:47 (T79)	17:03	
10	06:08	19:48 (T60)	06:35		07:06		07:37	16:41 (T79)	07:12	15:31 (T79)	07:45	
	21:06 50	20:38 (T60)	20:39		19:50		19:00 108	18:29 (T62)	17:18 75	16:46 (T79)	17:03	
11	06:08	19:49 (T60)	06:36		07:07		07:38	16:40 (T79)	07:14	15:32 (T79)	07:46	
	21:06 49	20:38 (T60)	20:38		19:49		18:58 109	18:29 (T62)	17:17 75	16:47 (T79)	17:03	
12	06:09	19:48 (T60)	06:37		07:08		07:39	16:38 (T79)	07:15	15:32 (T79)	07:47	
	21:05 50	20:38 (T60)	20:37		19:47		18:57 111	18:29 (T62)	17:16 74	16:46 (T79)	17:03	
13	06:10	19:49 (T60)	06:38		07:09		07:40	16:37 (T79)	07:16	15:33 (T79)	07:48	
	21:05 49	20:38 (T60)	20:35		19:45		18:55 111	18:28 (T62)	17:15 72	16:45 (T79)	17:03	
14	06:11	19:49 (T60)	06:39		07:10		07:41	16:35 (T79)	07:17	15:35 (T79)	07:48	
	21:04 50	20:39 (T60)	20:34		19:44		18:53 112	18:27 (T62)	17:14 70	16:45 (T79)	17:03	
15	06:11	19:49 (T60)	06:40		07:11		07:42	16:34 (T79)	07:18	15:35 (T79)	07:49	
	21:04 50	20:39 (T60)	20:33		19:42		18:52 112	18:26 (T62)	17:13 69	16:44 (T79)	17:03	
16	06:12	19:49 (T60)	06:41		07:12		07:43	16:34 (T79)	07:20	15:36 (T79)	07:50	
	21:03 48	20:37 (T60)	20:31		19:40		18:50 113	18:27 (T62)	17:12 68	16:44 (T79)	17:04	
17	06:13	19:49 (T60)	06:42		07:13		07:44	16:33 (T79)	07:21	15:37 (T79)	07:51	
	21:02 48	20:37 (T60)	20:30		19:38		18:49 112	18:25 (T62)	17:12 66	16:43 (T79)	17:04	
18	06:14	19:50 (T60)	06:43		07:14		07:46	16:32 (T79)	07:22	15:38 (T79)	07:51	
	21:02 47	20:37 (T60)	20:28		19:37		18:47 112	18:24 (T62)	17:11 65	16:43 (T79)	17:04	
19	06:15	19:50 (T60)	06:44		07:15		07:47	16:31 (T79)	07:23	15:39 (T79)	07:52	
	21:01 46	20:36 (T60)	20:27		19:35		18:46 112	18:23 (T62)	17:10 63	16:42 (T79)	17:05	
20	06:15	19:51 (T60)	06:45		07:16		07:48	16:30 (T79)	07:24	15:40 (T79)	07:52	
	21:00 45	20:36 (T60)	20:25		19:33		18:44 111	18:21 (T62)	17:09 61	16:41 (T79)	17:05	
21	06:16	19:50 (T60)	06:46		07:17		07:49	16:29 (T79)	07:25	15:41 (T79)	07:53	
	21:00 44	20:34 (T60)	20:24		19:32		18:43 111	18:20 (T62)	17:09 59	16:40 (T79)	17:06	
22	06:17	19:51 (T60)	06:47		07:18		07:50	16:29 (T79)	07:27	15:43 (T79)	07:53	
	20:59 43	20:34 (T60)	20:22		19:30		18:41 109	18:19 (T62)	17:08 57	16:40 (T79)	17:06	
23	06:18	19:51 (T60)	06:48		07:19		07:51	16:29 (T79)	07:28	15:44 (T79)	07:54	
	20:58 42	20:33 (T60)	20:21		19:28		18:40 104	18:16 (T62)	17:07 55	16:39 (T79)	17:07	
24	06:19	19:52 (T60)	06:49		07:20		07:52	16:28 (T79)	07:29	15:45 (T79)	07:54	
	20:57 40	20:32 (T60)	20:19		19:26		18:39 100	18:13 (T62)	17:07 53	16:38 (T79)	17:07	
25	06:20	19:52 (T60)	06:50		07:21		07:53	16:28 (T79)	07:30	15:46 (T79)	07:55	
	20:56 40	20:32 (T60)	20:18		19:25		18:37 90	18:08 (T62)	17:06 51	16:37 (T79)	17:08	
26	06:21	19:53 (T60)	06:51		07:22		07:55	16:27 (T79)	07:31	15:48 (T79)	07:55	
	20:56 38	20:31 (T60)	20:16		19:23		18:36 84	17:51 (T79)	17:06 48	16:36 (T79)	17:08	
27	06:22	19:53 (T60)	06:52		07:23	18:06 (T62)	07:56	16:28 (T79)	07:32	15:49 (T79)	07:56	
	20:55 37	20:30 (T60)	20:15		19:21 13	18:19 (T62)	18:34 83	17:51 (T79)	17:05 46	16:35 (T79)	17:09	
28	06:23	19:54 (T60)	06:53		07:24	18:02 (T62)	07:57	16:27 (T79)	07:33	15:51 (T79)	07:56	
	20:54 35	20:29 (T60)	20:13		19:20 20	18:22 (T62)	18:33 84	17:51 (T79)	17:05 44	16:35 (T79)	17:10	
29	06:23	19:54 (T60)	06:54		07:25	17:59 (T62)	07:58	16:27 (T79)	07:34	15:53 (T79)	07:56	
	20:53 34	20:28 (T60)	20:12		19:18 25	18:24 (T62)	18:32 83	17:50 (T79)	17:04 41	16:34 (T79)	17:11	
30	06:24	19:55 (T60)	06:55		07:26	17:08 (T79)	07:59	16:27 (T79)	07:36	15:55 (T79)	07:56	
	20:52 32	20:27 (T60)	20:10		19:16 49	18:25 (T62)	18:31 83	17:50 (T79)	17:04 38	16:33 (T79)	17:11	
31	06:25	19:56 (T60)	06:56				08:00	16:28 (T79)			07:57	
	20:51 30	20:26 (T60)	20:09				18:29 83	17:51 (T79)			17:12	
Potential sun hours	459		428		375		345		298		288	
Total, worst case	1393		139		107		3022		1974		184	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.55		0.55		0.70		0.72		0.73		0.73	
Total reduction	0.37		0.35		0.42		0.35		0.22		0.16	
Total, real	521		48		45		1065		441		30	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 518 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8120)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16	06:30		06:02		06:28 (T46)	06:02	06:33 (T46)	06:26	06:48 (T46)	06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27		20:57	77	07:45 (T46)	21:08 79	07:52 (T46)	20:50 56	07:44 (T46)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:15	06:29	07:03 (T46)	06:01		06:28 (T46)	06:03	06:33 (T46)	06:27	06:49 (T46)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28 7	07:10 (T46)	20:58	77	07:45 (T46)	21:08 79	07:52 (T46)	20:49 53	07:42 (T46)	20:06	19:13	17:27	17:04
3	07:57	07:41	07:04	07:13	06:28	06:56 (T46)	06:01		06:28 (T46)	06:03	06:34 (T46)	06:28	06:50 (T46)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58	20:29 21	07:17 (T46)	20:58	77	07:45 (T46)	21:08 78	07:52 (T46)	20:48 51	07:41 (T46)	20:04	19:11	17:26	17:03
4	07:57	07:40	07:03	07:11	06:26	06:51 (T46)	06:00		06:28 (T46)	06:04	06:33 (T46)	06:29	06:51 (T46)	07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59	20:30 29	07:20 (T46)	20:59	78	07:46 (T46)	21:08 79	07:52 (T46)	20:47 49	07:40 (T46)	20:02	19:10	17:24	17:03
5	07:57	07:39	07:01	07:10	06:25	06:49 (T46)	06:00		06:28 (T46)	06:04	06:34 (T46)	06:30	06:53 (T46)	07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00	20:31 34	07:23 (T46)	21:00	78	07:46 (T46)	21:08 78	07:52 (T46)	20:46 45	07:38 (T46)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08	06:24	06:46 (T46)	06:00		06:29 (T46)	06:05	06:34 (T46)	06:31	06:55 (T46)	07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00	20:32 39	07:25 (T46)	21:00	78	07:47 (T46)	21:08 78	07:52 (T46)	20:44 41	07:36 (T46)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06	06:23	06:44 (T46)	05:59		06:28 (T46)	06:06	06:34 (T46)	06:32	06:57 (T46)	07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:01	20:33 43	07:27 (T46)	21:01	78	07:46 (T46)	21:07 78	07:52 (T46)	20:43 37	07:34 (T46)	19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22	06:43 (T46)	05:59		06:28 (T46)	06:06	06:35 (T46)	06:33	06:59 (T46)	07:04	07:35	07:10	07:44
	17:20	17:56	19:30	20:02	20:34 46	07:29 (T46)	21:02	79	07:47 (T46)	21:07 78	07:53 (T46)	20:42 33	07:32 (T46)	19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03	06:20	06:41 (T46)	05:59		06:28 (T46)	06:07	06:35 (T46)	06:34	07:02 (T46)	07:05	07:36	07:12	07:45
	17:21	17:58	19:31	20:04	20:35 50	07:31 (T46)	21:02	79	07:47 (T46)	21:07 77	07:52 (T46)	20:41 27	07:29 (T46)	19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01	06:19	06:40 (T46)	05:59		06:29 (T46)	06:08	06:35 (T46)	06:35	07:06 (T46)	07:06	07:37	07:13	07:46
	17:22	17:59	19:32	20:05	20:36 52	07:32 (T46)	21:03	78	07:47 (T46)	21:06 78	07:53 (T46)	20:40 18	07:24 (T46)	19:51	19:00	17:18	17:03
11	07:57	07:32	07:51	07:00	06:18	06:39 (T46)	05:59		06:29 (T46)	06:08	06:36 (T46)	06:36		07:07	07:38	07:14	07:46
	17:23	18:00	19:33	20:06	20:37 54	07:33 (T46)	21:04	79	07:48 (T46)	21:06 77	07:53 (T46)	20:38		19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58	06:17	06:38 (T46)	05:58		06:29 (T46)	06:09	06:36 (T46)	06:37		07:08	07:39	07:15	07:47
	17:24	18:01	19:34	20:07	20:38 56	07:34 (T46)	21:04	79	07:48 (T46)	21:06 76	07:52 (T46)	20:37		19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57	06:16	06:37 (T46)	05:58		06:29 (T46)	06:10	06:36 (T46)	06:38		07:09	07:40	07:16	07:48
	17:25	18:03	19:35	20:08	20:40 58	07:35 (T46)	21:05	79	07:48 (T46)	21:05 77	07:53 (T46)	20:36		19:46	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55	06:15	06:36 (T46)	05:58		06:30 (T46)	06:11	06:37 (T46)	06:39		07:10	07:41	07:18	07:49
	17:26	18:04	19:37	20:09	20:41 60	07:36 (T46)	21:05	79	07:49 (T46)	21:05 76	07:53 (T46)	20:34		19:44	18:54	17:14	17:03
15	07:55	07:27	07:45	06:54	06:14	06:35 (T46)	05:58		06:30 (T46)	06:11	06:38 (T46)	06:40		07:11	07:43	07:19	07:50
	17:27	18:05	19:38	20:10	20:42 62	07:37 (T46)	21:05	79	07:49 (T46)	21:04 75	07:53 (T46)	20:33		19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	06:13	06:34 (T46)	05:58		06:30 (T46)	06:12	06:37 (T46)	06:41		07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11	20:43 64	07:38 (T46)	21:06	79	07:49 (T46)	21:03 75	07:52 (T46)	20:31		19:40	18:51	17:12	17:04
17	07:54	07:25	07:41	06:50	06:12	06:33 (T46)	05:58		06:30 (T46)	06:13	06:38 (T46)	06:42		07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12	20:43 65	07:38 (T46)	21:06	79	07:49 (T46)	21:03 74	07:52 (T46)	20:30		19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49	06:11	06:32 (T46)	05:58		06:30 (T46)	06:14	06:38 (T46)	06:43		07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13	20:44 67	07:39 (T46)	21:07	79	07:49 (T46)	21:02 74	07:52 (T46)	20:29		19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47	06:10	06:31 (T46)	05:59		06:30 (T46)	06:15	06:39 (T46)	06:44		07:15	07:47	07:24	07:52
	17:32	18:10	19:42	20:14	20:45 68	07:39 (T46)	21:07	79	07:49 (T46)	21:02 73	07:52 (T46)	20:27		19:35	18:46	17:10	17:05
20	07:53	07:21	07:36	06:46	06:10	06:31 (T46)	05:59		06:30 (T46)	06:15	06:40 (T46)	06:45		07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	20:46 69	07:40 (T46)	21:07	79	07:49 (T46)	21:01 72	07:52 (T46)	20:26		19:34	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	06:09	06:31 (T46)	05:59		06:30 (T46)	06:16	06:39 (T46)	06:46		07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	20:47 70	07:41 (T46)	21:08	79	07:49 (T46)	21:00 72	07:51 (T46)	20:24		19:32	18:43	17:09	17:06
22	07:52	07:18	07:33	06:43	06:08	06:30 (T46)	05:59		06:30 (T46)	06:17	06:40 (T46)	06:47		07:18	07:50	07:27	07:54
	17:35	18:14	19:45	20:17	20:48 71	07:41 (T46)	21:08	79	07:49 (T46)	20:59 71	07:51 (T46)	20:23		19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41	06:07	06:29 (T46)	05:59		06:31 (T46)	06:18	06:41 (T46)	06:48		07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18	20:49 72	07:41 (T46)	21:08	79	07:50 (T46)	20:59 69	07:50 (T46)	20:21		19:28	18:40	17:07	17:07
24	07:50	07:15	07:30	06:40	06:06	06:29 (T46)	06:00		06:31 (T46)	06:19	06:41 (T46)	06:49		07:20	07:53	07:29	07:55
	17:38	18:16	19:47	20:20	20:50 72	07:41 (T46)	21:08	79	07:50 (T46)	20:58 69	07:50 (T46)	20:20		19:27	18:39	17:07	17:07
25	07:49	07:13	07:28	06:39	06:06	06:29 (T46)	06:00		06:31 (T46)	06:20	06:42 (T46)	06:50		07:21	07:54	07:30	07:55
	17:39	18:17	19:49	20:21	20:51 74	07:43 (T46)	21:08	79	07:50 (T46)	20:57 68	07:50 (T46)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:05	06:29 (T46)	06:00		06:32 (T46)	06:21	06:43 (T46)	06:51		07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22	20:52 74	07:43 (T46)	21:08	79	07:51 (T46)	20:56 66	07:49 (T46)	20:17		19:23	18:36	17:06	17:08
27	07:48	07:10	07:25	06:36	06:04	06:29 (T46)	06:01		06:32 (T46)	06:22	06:44 (T46)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	20:53 75	07:44 (T46)	21:08	79	07:51 (T46)	20:55 65	07:49 (T46)	20:15		19:22	18:35	17:05	17:09
28	07:47	07:09	07:23	06:34	06:04	06:28 (T46)	06:01		06:32 (T46)	06:23	06:45 (T46)	06:53		07:24	07:57	07:34	07:56
	17:43	18:21	19:52	20:24	20:54 75	07:43 (T46)	21:09	79	07:51 (T46)	20:54 63	07:48 (T46)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:03	06:29 (T46)	06:01		06:32 (T46)	06:24	06:46 (T46)	06:54		07:25	07:58	07:35	07:57
	17:44		19:53	20:25	20:54 75	07:44 (T46)	21:09	80	07:52 (T46)	20:53 61	07:47 (T46)	20:12		19:18	18:32	17:04	17:11
30	07:45		07:20	06:32	06:03	06:28 (T46)	06:02		06:32 (T46)	06:24	06:46 (T46)	06:55		07:27	08:00	07:36	07:57
	17:45		19:54	20:26	20:55 76	07:44 (T46)	21:09	79	07:51 (T46)	20:52 59	07:45 (T46)	20:10		19:16	18:31	17:04	17:11
31	07:44		07:18		06:02	06:28 (T46)				06:25	06:47 (T46)	06:56			08:01		07:57
	17:46		19:55		20:56 77	07:45 (T46)				20:51 58	07:45 (T46)	20:09			18:29		17:12
Potential sun hours	297	297	370	399	448		453			460		429		375	345	297	287
Total, worst case						1755		2360		2252		410					
Sun reduction						0.57		0.64		0.66		0.61					
Oper. time red.						1.00		1.00		1.00		1.00					
Wind dir. red.						0.71		0.71		0.71		0.71					
Total reduction						0.40		0.45		0.47		0.43					
Total, real						708		1069		1052		177					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 569 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8166)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:55 (T36)	06:01	19:32 (T35)	06:02	19:44 (T35)	06:26	19:34 (T35)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	72	20:05 (T35)	20:57 36	20:08 (T35)	21:09 25	20:09 (T35)	20:50 50	20:24 (T35)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:14		06:29		06:56 (T36)	06:01	19:33 (T35)	06:02	19:43 (T35)	06:27	07:18 (T36)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	72	20:06 (T35)	20:58 35	20:08 (T35)	21:08 27	20:10 (T35)	20:49 58	20:24 (T35)	20:06	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:28		06:55 (T36)	06:00	19:33 (T35)	06:03	19:43 (T35)	06:28	07:14 (T36)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58		20:29	73	20:06 (T35)	20:58 34	20:07 (T35)	21:08 28	20:11 (T35)	20:48 64	20:23 (T35)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		06:56 (T36)	06:00	19:34 (T35)	06:04	19:43 (T35)	06:29	07:12 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	73	20:08 (T35)	20:59 33	20:07 (T35)	21:08 28	20:11 (T35)	20:47 67	20:22 (T35)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		06:57 (T36)	06:00	19:35 (T35)	06:04	19:43 (T35)	06:30	07:10 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	72	20:09 (T35)	21:00 32	20:07 (T35)	21:08 29	20:12 (T35)	20:46 69	20:21 (T35)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		06:58 (T36)	05:59	19:35 (T35)	06:05	19:42 (T35)	06:31	07:09 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	72	20:10 (T35)	21:01 31	20:06 (T35)	21:08 30	20:12 (T35)	20:44 70	20:20 (T35)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06		06:23		07:00 (T36)	05:59	19:36 (T35)	06:05	19:42 (T35)	06:32	07:08 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:33	70	20:11 (T35)	21:01 30	20:06 (T35)	21:07 31	20:13 (T35)	20:43 71	20:19 (T35)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:05		06:21		07:01 (T36)	05:59	19:37 (T35)	06:06	19:41 (T35)	06:33	07:07 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	69	20:12 (T35)	21:02 29	20:06 (T35)	21:07 32	20:13 (T35)	20:42 72	20:18 (T35)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		07:02 (T36)	05:59	19:38 (T35)	06:07	19:41 (T35)	06:34	07:06 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	66	20:12 (T35)	21:02 28	20:06 (T35)	21:07 33	20:14 (T35)	20:41 72	20:17 (T35)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		07:05 (T36)	05:58	19:38 (T35)	06:07	19:41 (T35)	06:35	07:05 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	61	20:13 (T35)	21:03 27	20:05 (T35)	21:06 34	20:15 (T35)	20:40 73	20:16 (T35)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		07:10 (T36)	05:58	19:39 (T35)	06:08	19:40 (T35)	06:36	07:04 (T36)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	51	20:13 (T35)	21:04 26	20:05 (T35)	21:06 35	20:15 (T35)	20:38 72	20:15 (T35)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58	07:17 (T36)	06:17		19:24 (T35)	05:58	19:40 (T35)	06:09	19:40 (T35)	06:37	07:03 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07 4	07:21 (T36)	20:39	49	20:13 (T35)	21:04 24	20:04 (T35)	21:06 36	20:16 (T35)	20:37 72	20:13 (T35)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56	07:16 (T36)	06:16		19:24 (T35)	05:58	19:40 (T35)	06:09	19:39 (T35)	06:38	07:03 (T36)	07:09	07:40	07:16	07:48
	17:25	18:02	19:35	20:08 9	07:25 (T36)	20:40	49	20:13 (T35)	21:05 24	20:04 (T35)	21:05 38	20:17 (T35)	20:36 70	20:12 (T35)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55	07:14 (T36)	06:15		19:24 (T35)	05:58	19:41 (T35)	06:10	19:39 (T35)	06:39	07:01 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09 13	07:27 (T36)	20:41	49	20:13 (T35)	21:05 23	20:04 (T35)	21:05 39	20:18 (T35)	20:34 69	20:10 (T35)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53	07:12 (T36)	06:14		19:24 (T35)	05:58	19:41 (T35)	06:11	19:38 (T35)	06:40	07:01 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:38	20:10 16	07:28 (T36)	20:42	49	20:13 (T35)	21:06 23	20:04 (T35)	21:04 40	20:18 (T35)	20:33 68	20:09 (T35)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	07:11 (T36)	06:13		19:24 (T35)	05:58	19:42 (T35)	06:12	19:38 (T35)	06:41	07:02 (T36)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11 19	07:30 (T36)	20:43	48	20:12 (T35)	21:06 22	20:04 (T35)	21:04 41	20:19 (T35)	20:31 64	20:07 (T35)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	07:09 (T36)	06:12		19:25 (T35)	05:58	19:42 (T35)	06:13	19:38 (T35)	06:42	07:03 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12 21	07:30 (T36)	20:44	48	20:13 (T35)	21:06 22	20:04 (T35)	21:03 42	20:20 (T35)	20:30 61	20:06 (T35)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49	07:08 (T36)	06:11		19:25 (T35)	05:58	19:43 (T35)	06:13	19:38 (T35)	06:43	07:04 (T36)	07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13 23	07:31 (T36)	20:45	48	20:13 (T35)	21:07 20	20:03 (T35)	21:02 42	20:20 (T35)	20:29 56	20:05 (T35)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47	07:06 (T36)	06:10		19:25 (T35)	05:58	19:44 (T35)	06:14	19:38 (T35)	06:44	07:05 (T36)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14 25	07:31 (T36)	20:45	47	20:12 (T35)	21:07 20	20:04 (T35)	21:02 43	20:21 (T35)	20:27 51	20:03 (T35)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	07:05 (T36)	06:09		19:25 (T35)	05:58	19:44 (T35)	06:15	19:36 (T35)	06:45	07:06 (T36)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15 27	07:32 (T36)	20:46	47	20:12 (T35)	21:07 20	20:04 (T35)	21:01 45	20:21 (T35)	20:26 45	20:02 (T35)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	07:03 (T36)	06:08		19:25 (T35)	05:59	19:44 (T35)	06:16	19:36 (T35)	06:46	07:07 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16 29	07:32 (T36)	20:47	47	20:12 (T35)	21:08 20	20:04 (T35)	21:00 45	20:21 (T35)	20:24 30	07:37 (T36)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	07:02 (T36)	06:08		19:27 (T35)	05:59	19:44 (T35)	06:17	19:36 (T35)	06:47	07:08 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17 31	07:33 (T36)	20:48	45	20:12 (T35)	21:08 20	20:04 (T35)	20:59 46	20:22 (T35)	20:23 29	07:37 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	07:01 (T36)	06:07		19:27 (T35)	05:59	19:44 (T35)	06:18	19:36 (T35)	06:48	07:09 (T36)	07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18 46	19:57 (T35)	20:49	44	20:11 (T35)	21:08 20	20:04 (T35)	20:59 46	20:22 (T35)	20:21 27	07:36 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	06:59 (T36)	06:06		19:27 (T35)	05:59	19:45 (T35)	06:19	19:36 (T35)	06:49	07:10 (T36)	07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20 52	19:58 (T35)	20:50	44	20:11 (T35)	21:08 20	20:05 (T35)	20:58 47	20:23 (T35)	20:20 25	07:35 (T36)	19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	06:58 (T36)	06:05		19:28 (T35)	06:00	19:44 (T35)	06:20	19:36 (T35)	06:50	07:11 (T36)	07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21 57	19:59 (T35)	20:51	43	20:11 (T35)	21:08 22	20:06 (T35)	20:57 47	20:23 (T35)	20:18 23	07:34 (T36)	19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:56 (T36)	06:05		19:28 (T35)	06:00	19:44 (T35)	06:20	19:36 (T35)	06:51	07:12 (T36)	07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22 61	19:59 (T35)	20:52	43	20:11 (T35)	21:08 22	20:06 (T35)	20:56 48	20:24 (T35)	20:17 21	07:33 (T36)	19:23	18:36	17:06	17:08
27	07:48	07:10	07:24	06:36	06:55 (T36)	06:04		19:28 (T35)	06:00	19:45 (T35)	06:21	19:34 (T35)	06:52	07:13 (T36)	07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23 65	20:01 (T35)	20:53	42	20:10 (T35)	21:09 22	20:07 (T35)	20:55 49	20:23 (T35)	20:15 19	07:32 (T36)	19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	06:54 (T36)	06:03		19:30 (T35)	06:01	19:44 (T35)	06:22	19:34 (T35)	06:53	07:14 (T36)	07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24 68	20:02 (T35)	20:54	40	20:10 (T35)	21:09 23	20:07 (T35)	20:54 49	20:23 (T35)	20:14 16	07:30 (T36)	19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:54 (T36)	06:03		19:30 (T35)	06:01	19:44 (T35)	06:23	19:34 (T35)	06:54	07:15 (T36)	07:25	07:58	07:35	07:57
	17:44		19:53	20:25 69	20:02 (T35)	20:55	39	20:09 (T35)	21:09 24	20:08 (T35)	20:53 49	20:23 (T35)	20:12 13	07:28 (T36)	19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	06:54 (T36)	06:02		19:31 (T35)	06:01	19:44 (T35)	06:24	19:34 (T35)	06:55	07:16 (T36)	07:26	08:00	07:36	07:57
	17:45		19:54	20:26 71	20:04 (T35)	20:55	38	20:09 (T35)	21:09 24	20:08 (T35)	20:52 49	20:23 (T35)	20:10 9	07:25 (T36)	19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:31 (T35)			06:25	19:34 (T35)	06:56	07:17 (T36)		08:01		07:57
	17:46		19:55			20:56	37	20:08 (T35)			20:51 50	20:24 (T35)	20:09 3	07:20 (T36)		18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287	
Total, worst case					706		1647		756		1223		1509					
Sun reduction					0.52		0.57		0.64		0.66		0.61					
Oper. time red.					1.00		1.00		1.00		1.00		1.00					
Wind dir. red.					0.64		0.58		0.57		0.57		0.62					
Total reduction					0.33		0.33		0.36		0.37		0.38					
Total, real					235		548		274		457		571					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 570 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8167)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:58			07:44		16:38 (T37)	07:07	07:16			06:30			06:01		19:46 (T87)
	17:13			17:48	43	17:21 (T37)	18:22	19:56			20:27			20:57	47	20:33 (T87)
2	07:58			07:43		16:38 (T37)	07:06	07:15			06:29			06:01		19:46 (T87)
	17:14			17:49	43	17:21 (T37)	18:23	19:57			20:28			20:58	48	20:34 (T87)
3	07:58			07:42		16:38 (T37)	07:04	07:13		19:36 (T34)	06:28			06:01		19:46 (T87)
	17:15			17:50	44	17:22 (T37)	18:24	19:58	1	19:37 (T34)	20:29			20:59	48	20:34 (T87)
4	07:58			07:41		16:38 (T37)	07:03	07:11		19:30 (T34)	06:26			06:00		19:46 (T87)
	17:16			17:51	44	17:22 (T37)	18:25	19:59	7	19:37 (T34)	20:30			20:59	49	20:35 (T87)
5	07:58			07:40		16:38 (T37)	07:01	07:10		19:28 (T34)	06:25			06:00		19:47 (T87)
	17:17			17:53	45	17:23 (T37)	18:26	20:00	11	19:39 (T34)	20:31			21:00	49	20:36 (T87)
6	07:58			07:38		16:38 (T37)	07:00	07:08		19:26 (T34)	06:24			06:00		19:46 (T87)
	17:18			17:54	45	17:23 (T37)	18:28	20:00	14	19:40 (T34)	20:33			21:01	50	20:36 (T87)
7	07:58			07:37		16:37 (T37)	06:58	07:06		19:24 (T34)	06:23			05:59		19:47 (T87)
	17:19			17:55	45	17:22 (T37)	18:29	20:02	16	19:40 (T34)	20:34			21:01	49	20:36 (T87)
8	07:58			07:36		16:38 (T37)	07:56	07:05		19:23 (T34)	06:22			05:59		19:47 (T87)
	17:20			17:56	45	17:23 (T37)	19:30	20:03	19	19:42 (T34)	20:35			21:02	50	20:37 (T87)
9	07:57			07:35		16:38 (T37)	07:55	07:03		19:22 (T34)	06:20		20:05 (T87)	05:59		19:47 (T87)
	17:21			17:58	47	17:34 (T38)	19:31	20:04	21	19:43 (T34)	20:36	8	20:13 (T87)	21:03	51	20:38 (T87)
10	07:57			07:34		16:39 (T37)	07:53	07:02		19:22 (T34)	06:19		20:01 (T87)	05:59		19:48 (T87)
	17:22			17:59	50	17:36 (T38)	19:32	20:05	22	19:44 (T34)	20:37	13	20:14 (T87)	21:03	50	20:38 (T87)
11	07:57			07:33		16:39 (T37)	07:51	07:00		19:21 (T34)	06:18		19:59 (T87)	05:58		19:48 (T87)
	17:23			18:00	53	17:37 (T38)	19:33	20:06	24	19:45 (T34)	20:38	16	20:15 (T87)	21:04	50	20:38 (T87)
12	07:57			07:31		16:39 (T37)	07:50	06:58		19:20 (T34)	06:17		19:57 (T87)	05:58		19:48 (T87)
	17:24			18:01	55	17:38 (T38)	19:34	20:07	26	19:46 (T34)	20:39	19	20:16 (T87)	21:04	51	20:39 (T87)
13	07:56			07:30		16:40 (T37)	07:48	06:57		19:20 (T34)	06:16		19:55 (T87)	05:58		19:48 (T87)
	17:25			18:03	56	17:40 (T38)	19:36	20:08	27	19:47 (T34)	20:40	22	20:17 (T87)	21:05	50	20:38 (T87)
14	07:56			07:29		16:41 (T37)	07:46	06:55		19:20 (T34)	06:15		19:54 (T87)	05:58		19:48 (T87)
	17:26			18:04	55	17:41 (T38)	19:37	20:09	28	19:48 (T34)	20:41	24	20:18 (T87)	21:05	50	20:38 (T87)
15	07:56			07:28		16:41 (T37)	07:45	06:54		19:20 (T34)	06:14		19:53 (T87)	05:58		19:48 (T87)
	17:27			18:05	57	17:42 (T38)	19:38	20:10	28	19:48 (T34)	20:42	26	20:19 (T87)	21:06	50	20:38 (T87)
16	07:55			07:26		16:42 (T37)	07:43	06:52		19:20 (T34)	06:13		19:51 (T87)	05:58		19:49 (T87)
	17:28			18:06	56	17:43 (T38)	19:39	20:11	27	19:47 (T34)	20:43	29	20:20 (T87)	21:06	50	20:39 (T87)
17	07:55			07:25		16:44 (T37)	07:41	06:50		19:21 (T34)	06:12		19:50 (T87)	05:58		19:49 (T87)
	17:29			18:08	55	17:45 (T38)	19:40	20:12	25	19:46 (T34)	20:44	31	20:21 (T87)	21:07	51	20:40 (T87)
18	07:54		16:50 (T37)	07:24		16:44 (T37)	07:40	06:49		19:21 (T34)	06:11		19:50 (T87)	05:58		19:49 (T87)
	17:30	11	17:01 (T37)	18:09	55	17:46 (T38)	19:41	20:13	24	19:45 (T34)	20:45	31	20:21 (T87)	21:07	51	20:40 (T87)
19	07:54		16:48 (T37)	07:22		16:46 (T37)	07:38	06:47		19:23 (T34)	06:10		19:49 (T87)	05:58		19:49 (T87)
	17:32	17	17:05 (T37)	18:10	53	17:48 (T38)	19:42	20:14	21	19:44 (T34)	20:46	33	20:22 (T87)	21:07	51	20:40 (T87)
20	07:53		16:46 (T37)	07:21		16:47 (T37)	07:36	06:46		19:23 (T34)	06:09		19:48 (T87)	05:59		19:50 (T87)
	17:33	21	17:07 (T37)	18:11	48	17:47 (T38)	19:43	20:15	19	19:42 (T34)	20:47	35	20:23 (T87)	21:08	50	20:40 (T87)
21	07:53		16:45 (T37)	07:19		16:50 (T37)	07:35	06:44		19:25 (T34)	06:09		19:48 (T87)	05:59		19:50 (T87)
	17:34	24	17:09 (T37)	18:12	42	17:47 (T38)	19:44	20:17	15	19:40 (T34)	20:48	36	20:24 (T87)	21:08	50	20:40 (T87)
22	07:52		16:44 (T37)	07:18		16:53 (T37)	07:33	06:43		19:28 (T34)	06:08		19:48 (T87)	05:59		19:50 (T87)
	17:35	26	17:10 (T37)	18:14	34	17:45 (T38)	19:45	20:18	8	19:36 (T34)	20:49	37	20:25 (T87)	21:08	50	20:40 (T87)
23	07:51		16:43 (T37)	07:16		17:28 (T38)	07:31	06:41			06:07		19:47 (T87)	05:59		19:51 (T87)
	17:36	28	17:11 (T37)	18:15	16	17:44 (T38)	19:46	20:19			20:49	39	20:26 (T87)	21:08	50	20:41 (T87)
24	07:50		16:42 (T37)	07:15		17:30 (T38)	07:30	06:40			06:06		19:46 (T87)	05:59		19:50 (T87)
	17:38	30	17:12 (T37)	18:16	13	17:43 (T38)	19:48	20:20			20:50	40	20:26 (T87)	21:08	51	20:41 (T87)
25	07:50		16:42 (T37)	07:13		17:32 (T38)	07:28	06:39			06:06		19:47 (T87)	06:00		19:50 (T87)
	17:39	32	17:14 (T37)	18:17	7	17:39 (T38)	19:49	20:21			20:51	41	20:28 (T87)	21:09	51	20:41 (T87)
26	07:49		16:41 (T37)	07:12			07:26	06:37			06:05		19:46 (T87)	06:00		19:51 (T87)
	17:40	35	17:16 (T37)	18:18			19:50	20:22			20:52	42	20:28 (T87)	21:09	50	20:41 (T87)
27	07:48		16:40 (T37)	07:10			07:25	06:36			06:04		19:47 (T87)	06:00		19:51 (T87)
	17:41	37	17:17 (T37)	18:20			19:51	20:23			20:53	42	20:29 (T87)	21:09	50	20:41 (T87)
28	07:47		16:39 (T37)	07:09			07:23	06:34			06:04		19:46 (T87)	06:01		19:51 (T87)
	17:43	39	17:18 (T37)	18:21			19:52	20:24			20:54	44	20:30 (T87)	21:09	50	20:41 (T87)
29	07:46		16:39 (T37)				07:21	06:33			06:03		19:47 (T87)	06:01		19:52 (T87)
	17:44	40	17:19 (T37)				19:53	20:25			20:55	44	20:31 (T87)	21:09	50	20:42 (T87)
30	07:46		16:39 (T37)				07:20	06:32			06:03		19:46 (T87)	06:02		19:51 (T87)
	17:45	40	17:19 (T37)				19:54	20:26			20:56	45	20:31 (T87)	21:09	51	20:42 (T87)
31	07:45		16:38 (T37)				07:18				06:02		19:47 (T87)			
	17:46	42	17:20 (T37)				19:55				20:56	45	20:32 (T87)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		422			1106				383			742			1498	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.72			0.72				0.59			0.55			0.55	
Total reduction		0.23			0.30				0.32			0.32			0.36	
Total, real		98			328				122			239			541	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 570 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8167)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02	19:52 (T87)	06:26	20:07 (T87)	06:57	19:20 (T34)	07:28		07:02	16:08 (T37)	07:37	
	21:09	50	20:42 (T87)	20:50	18	20:25 (T87)	20:07	24	19:44 (T34)	19:15	17:28	50
2	06:03	19:52 (T87)	06:27	20:09 (T87)	06:58	19:20 (T34)	07:29		07:03	16:08 (T37)	07:38	
	21:09	50	20:42 (T87)	20:49	16	20:25 (T87)	20:06	22	19:42 (T34)	19:13	17:27	46
3	06:03	19:52 (T87)	06:28	20:12 (T87)	06:59	19:20 (T34)	07:30		07:05	16:07 (T37)	07:39	
	21:09	51	20:43 (T87)	20:48	12	20:24 (T87)	20:04	21	19:41 (T34)	19:12	17:26	45
4	06:04	19:52 (T87)	06:29	20:17 (T87)	07:00	19:20 (T34)	07:31		07:06	16:07 (T37)	07:40	
	21:08	50	20:42 (T87)	20:47	6	20:23 (T87)	20:02	19	19:39 (T34)	19:10	17:24	45
5	06:04	19:53 (T87)	06:30		07:01	19:21 (T34)	07:32		07:07	16:08 (T37)	07:41	
	21:08	50	20:43 (T87)	20:46			20:01	16	19:37 (T34)	19:08	17:23	45
6	06:05	19:52 (T87)	06:31		07:02	19:22 (T34)	07:33		07:08	16:08 (T37)	07:42	
	21:08	50	20:42 (T87)	20:45			19:58	14	19:36 (T34)	19:07	17:22	44
7	06:06	19:53 (T87)	06:32		07:03	19:23 (T34)	07:34		07:09	16:08 (T37)	07:43	
	21:08	49	20:42 (T87)	20:44			19:56	11	19:34 (T34)	19:05	17:21	44
8	06:06	19:54 (T87)	06:33		07:04	19:25 (T34)	07:35		07:11	16:09 (T37)	07:44	
	21:07	48	20:42 (T87)	20:42			19:54	8	19:33 (T34)	19:03	17:20	44
9	06:07	19:53 (T87)	06:34		07:05	19:29 (T34)	07:36		07:12	16:09 (T37)	07:45	
	21:07	48	20:41 (T87)	20:41			19:52	2	19:31 (T34)	19:02	17:19	43
10	06:08	19:54 (T87)	06:35		07:06		07:37		07:13	16:09 (T37)	07:46	
	21:07	47	20:41 (T87)	20:40			19:51			19:00	17:18	43
11	06:08	19:54 (T87)	06:36		07:07		07:38		07:14	16:09 (T37)	07:47	
	21:06	47	20:41 (T87)	20:38			19:49			18:58	17:17	42
12	06:09	19:54 (T87)	06:37		07:08		07:39		07:15	16:11 (T37)	07:48	
	21:06	46	20:40 (T87)	20:37			19:47			18:57	17:16	40
13	06:10	19:54 (T87)	06:38		07:09		07:40		07:17	16:11 (T37)	07:48	
	21:05	46	20:40 (T87)	20:36			19:46			18:55	17:15	40
14	06:10	19:55 (T87)	06:39		07:10		07:42		07:18	16:11 (T37)	07:49	
	21:05	45	20:40 (T87)	20:34			19:44			18:54	17:14	39
15	06:11	19:55 (T87)	06:40		07:11		07:43		07:19	16:13 (T37)	07:50	
	21:04	44	20:39 (T87)	20:33			19:42			18:52	17:13	37
16	06:12	19:55 (T87)	06:41		07:12		07:44		07:20	16:14 (T37)	07:51	
	21:04	43	20:38 (T87)	20:32			19:41			18:51	17:12	34
17	06:13	19:55 (T87)	06:42		07:13		07:45		18:02 (T38)	07:21	16:15 (T37)	07:51
	21:03	43	20:38 (T87)	20:30			19:39			18:49	10	18:12 (T38)
18	06:14	19:56 (T87)	06:43		07:14		07:46		18:00 (T38)	07:23	16:16 (T37)	07:52
	21:02	41	20:37 (T87)	20:29			19:37			18:48	14	18:14 (T38)
19	06:14	19:57 (T87)	06:44		07:15		07:47		17:28 (T37)	07:24	16:18 (T37)	07:53
	21:02	40	20:37 (T87)	20:27			19:35			18:46	25	18:16 (T38)
20	06:15	19:57 (T87)	06:45		07:16		07:48		17:23 (T37)	07:25	16:19 (T37)	07:53
	21:01	39	20:36 (T87)	20:26			19:34			18:45	37	18:17 (T38)
21	06:16	19:57 (T87)	06:46	19:32 (T34)	07:17		07:49		17:20 (T37)	07:26	16:20 (T37)	07:54
	21:00	38	20:35 (T87)	20:25	10	19:42 (T34)	19:32			18:43	45	18:18 (T38)
22	06:17	19:57 (T87)	06:47	19:29 (T34)	07:18		07:51		17:17 (T37)	07:27	16:22 (T37)	07:54
	21:00	37	20:34 (T87)	20:23	15	19:44 (T34)	19:30			18:42	51	18:18 (T38)
23	06:18	19:58 (T87)	06:48	19:27 (T34)	07:19		07:52		17:15 (T37)	07:28	16:25 (T37)	07:55
	20:59	36	20:34 (T87)	20:22	19	19:46 (T34)	19:29			18:40	54	18:17 (T38)
24	06:19	19:59 (T87)	06:49	19:25 (T34)	07:20		07:53		17:15 (T37)	07:30	16:27 (T37)	07:55
	20:58	34	20:33 (T87)	20:20	22	19:47 (T34)	19:27			18:39	54	18:16 (T38)
25	06:20	20:00 (T87)	06:50	19:24 (T34)	07:22		07:54		17:13 (T37)	07:31		07:56
	20:57	32	20:32 (T87)	20:18	24	19:48 (T34)	19:25			18:37	56	18:14 (T38)
26	06:21	20:01 (T87)	06:51	19:23 (T34)	07:23		07:55		17:12 (T37)	07:32		07:56
	20:56	31	20:32 (T87)	20:17	25	19:48 (T34)	19:23			18:36	56	18:13 (T38)
27	06:22	20:01 (T87)	06:52	19:22 (T34)	07:24		07:56		17:10 (T37)	07:33		07:56
	20:55	30	20:31 (T87)	20:15	27	19:49 (T34)	19:22			18:35	57	18:11 (T38)
28	06:23	20:02 (T87)	06:53	19:21 (T34)	07:25		07:58		17:10 (T37)	07:34		07:57
	20:54	28	20:30 (T87)	20:14	28	19:49 (T34)	19:20			18:33	57	18:11 (T38)
29	06:23	20:04 (T87)	06:54	19:21 (T34)	07:26		07:59		17:09 (T37)	07:35		07:57
	20:53	25	20:29 (T87)	20:12	28	19:49 (T34)	19:18			18:32	55	18:09 (T38)
30	06:24	20:04 (T87)	06:55	19:20 (T34)	07:27		08:00		17:09 (T37)	07:36		07:57
	20:52	23	20:27 (T87)	20:11	27	19:47 (T34)	19:17			18:31	54	18:07 (T38)
31	06:25	20:05 (T87)	06:56	19:20 (T34)			08:01		17:08 (T37)			07:57
	20:51	21	20:26 (T87)	20:09	25	19:45 (T34)				18:29	53	18:06 (T38)
Potential sun hours	460		429		375		345		297		287	
Total, worst case		1262		302		137		678		871		
Sun reduction		0.66		0.61		0.59		0.48		0.30		
Oper. time red.		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.		0.55		0.59		0.59		0.72		0.72		
Total reduction		0.37		0.37		0.36		0.35		0.22		
Total, real		470		111		49		240		195		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 576 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8173)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57			07:43		16:57 (T46)	07:07			07:16		18:53 (T45)	06:30		18:41 (T45)	06:01		
	17:13			17:47	26	17:23 (T46)	18:22			19:56	41	19:34 (T45)	20:27	54	19:35 (T45)	20:57		
2	07:57			07:42		16:57 (T46)	07:06			07:14		18:51 (T45)	06:29		18:42 (T45)	06:01		
	17:14			17:49	28	17:25 (T46)	18:23			19:57	44	19:35 (T45)	20:28	52	19:34 (T45)	20:58		
3	07:57			07:41		16:58 (T46)	07:04			07:13		18:49 (T45)	06:28		18:42 (T45)	06:01		
	17:15			17:50	28	17:26 (T46)	18:24			19:58	48	19:37 (T45)	20:29	50	19:32 (T45)	20:58		
4	07:57			07:40		16:59 (T46)	07:02			07:11		18:47 (T45)	06:26		18:43 (T45)	06:00		
	17:16			17:51	27	17:26 (T46)	18:25			19:59	50	19:37 (T45)	20:30	48	19:31 (T45)	20:59		
5	07:57			07:39		16:58 (T46)	07:01			07:10		18:46 (T45)	06:25		18:45 (T45)	06:00		
	17:17			17:52	27	17:25 (T46)	18:26			20:00	52	19:38 (T45)	20:31	45	19:30 (T45)	21:00		
6	07:57			07:38		16:59 (T46)	06:59			07:08		18:45 (T45)	06:24		18:46 (T45)	06:00		
	17:17			17:54	26	17:25 (T46)	18:27			20:00	55	19:40 (T45)	20:32	43	19:29 (T45)	21:00		
7	07:57			07:37		17:00 (T46)	06:58			07:06		18:43 (T45)	06:23		18:47 (T45)	05:59		
	17:18			17:55	24	17:24 (T46)	18:29			20:01	57	19:40 (T45)	20:33	41	19:28 (T45)	21:01		
8	07:57			07:36		17:02 (T46)	07:56			07:05		18:43 (T45)	06:22		18:49 (T45)	05:59		
	17:19			17:56	21	17:23 (T46)	19:30			20:02	59	19:42 (T45)	20:34	38	19:27 (T45)	21:02		
9	07:57			07:35		17:03 (T46)	07:54			07:03		18:42 (T45)	06:20		18:50 (T45)	05:59		
	17:20			17:58	19	17:22 (T46)	19:31			20:03	60	19:42 (T45)	20:35	35	19:25 (T45)	21:02		
10	07:57			07:34		17:06 (T46)	07:53			07:01		18:40 (T45)	06:19		18:51 (T45)	05:59		
	17:22			17:59	15	17:21 (T46)	19:32			20:05	62	19:42 (T45)	20:36	32	19:23 (T45)	21:03		
11	07:57			07:32		17:08 (T46)	07:51			07:00		18:40 (T45)	06:18		18:53 (T45)	05:58		
	17:23			18:00	9	17:17 (T46)	19:33			20:06	63	19:43 (T45)	20:37	28	19:21 (T45)	21:03		
12	07:56			07:31			07:50			06:58		18:39 (T45)	06:17		18:56 (T45)	05:58		
	17:24			18:01			19:34			20:07	63	19:42 (T45)	20:38	22	19:18 (T45)	21:04		
13	07:56			07:30			07:48			06:57		18:39 (T45)	06:16		18:59 (T45)	05:58		
	17:25			18:02			19:35			20:08	64	19:43 (T45)	20:39	16	19:15 (T45)	21:04		
14	07:56			07:29			07:46			06:55		18:38 (T45)	06:15		19:04 (T45)	05:58		
	17:26			18:04			19:36			20:09	65	19:43 (T45)	20:40	6	19:10 (T45)	21:05		
15	07:55			07:27			07:45			06:53		18:38 (T45)	06:14			05:58		
	17:27			18:05			19:38			20:10	65	19:43 (T45)	20:41			21:05		
16	07:55			07:26			07:43			06:52		18:38 (T45)	06:13			05:58		
	17:28			18:06			19:39			20:11	65	19:43 (T45)	20:42			21:06		
17	07:54		17:03 (T46)	07:25			07:41			06:50		18:37 (T45)	06:12			05:58		
	17:29	1	17:04 (T46)	18:07			19:40			20:12	65	19:42 (T45)	20:43			21:06		
18	07:54		17:01 (T46)	07:23			07:40			06:49		18:37 (T45)	06:11			05:58		
	17:30	4	17:05 (T46)	18:09			19:41			20:13	65	19:42 (T45)	20:44			21:07		
19	07:53		17:01 (T46)	07:22			07:38			06:47		18:37 (T45)	06:10			05:58		
	17:32	6	17:07 (T46)	18:10			19:42			20:14	64	19:41 (T45)	20:45			21:07		
20	07:53		16:59 (T46)	07:20			07:36			06:46		18:37 (T45)	06:09			05:59		
	17:33	8	17:07 (T46)	18:11			19:43			20:15	65	19:42 (T45)	20:46			21:07		
21	07:52		16:58 (T46)	07:19			07:35			06:44		18:38 (T45)	06:09			05:59		
	17:34	10	17:08 (T46)	18:12			19:44			20:16	64	19:42 (T45)	20:47			21:07		
22	07:52		16:57 (T46)	07:18			07:33			06:43		18:37 (T45)	06:08			05:59		
	17:35	12	17:09 (T46)	18:13			19:45			20:17	64	19:41 (T45)	20:48			21:08		
23	07:51		16:58 (T46)	07:16			07:31			06:41		18:38 (T45)	06:07			05:59		
	17:36	13	17:11 (T46)	18:15			19:46			20:18	63	19:41 (T45)	20:49			21:08		
24	07:50		16:57 (T46)	07:15			07:30			06:40		18:37 (T45)	06:06			05:59		
	17:38	16	17:13 (T46)	18:16			19:47			20:19	62	19:39 (T45)	20:50			21:08		
25	07:49		16:57 (T46)	07:13			07:28			06:38		18:38 (T45)	06:06			06:00		
	17:39	17	17:14 (T46)	18:17			19:48			20:21	61	19:39 (T45)	20:51			21:08		
26	07:49		16:56 (T46)	07:12			07:26			06:37		18:38 (T45)	06:05			06:00		
	17:40	19	17:15 (T46)	18:18			19:50			20:22	60	19:38 (T45)	20:52			21:08		
27	07:48		16:57 (T46)	07:10			07:24			06:36		18:38 (T45)	06:04			06:00		
	17:41	20	17:17 (T46)	18:19			19:51			20:23	60	19:38 (T45)	20:53			21:08		
28	07:47		16:57 (T46)	07:09			07:23		19:06 (T45)	06:34		18:39 (T45)	06:04			06:01		
	17:42	21	17:18 (T46)	18:21			19:52	20	19:26 (T45)	20:24	58	19:37 (T45)	20:54			21:08		
29	07:46		16:57 (T46)				07:21		19:01 (T45)	06:33		18:39 (T45)	06:03			06:01		
	17:44	22	17:19 (T46)				19:53	28	19:29 (T45)	20:25	57	19:36 (T45)	20:54			21:08		
30	07:45		16:57 (T46)				07:19		18:58 (T45)	06:32		18:40 (T45)	06:02			06:02		
	17:45	24	17:21 (T46)				19:54	33	19:31 (T45)	20:26	55	19:35 (T45)	20:55			21:08		
31	07:44		16:57 (T46)				07:18		18:56 (T45)				06:02					
	17:46	25	17:22 (T46)				19:55	38	19:34 (T45)				20:56					
Potential sun hours	297			297			370			399			448			453		
Total, worst case		218			250			119			1776			510				
Sun reduction		0.31			0.40			0.44			0.52			0.57				
Oper. time red.		1.00			1.00			1.00			1.00			1.00				
Wind dir. red.		0.72			0.72			0.61			0.61			0.61				
Total reduction		0.23			0.29			0.27			0.32			0.35				
Total, real		49			73			32			566			178				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 576 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8173)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02			06:26		19:05 (T45)	06:57		18:39 (T45)	07:27			07:02		16:34 (T46)	07:37	
	21:08			20:50	25	19:30 (T45)	20:07	63	19:42 (T45)	19:15			17:28	16	16:50 (T46)	17:04	
2	06:03			06:27		19:03 (T45)	06:58		18:39 (T45)	07:29			07:03		16:33 (T46)	07:38	
	21:08			20:49	29	19:32 (T45)	20:06	62	19:41 (T45)	19:13			17:27	19	16:52 (T46)	17:03	
3	06:03			06:28		19:01 (T45)	06:59		18:40 (T45)	07:30			07:04		16:31 (T46)	07:39	
	21:08			20:48	33	19:34 (T45)	20:04	60	19:40 (T45)	19:11			17:26	22	16:53 (T46)	17:03	
4	06:04			06:29		18:59 (T45)	07:00		18:40 (T45)	07:31			07:06		16:30 (T46)	07:40	
	21:08			20:47	36	19:35 (T45)	20:02	59	19:39 (T45)	19:10			17:24	24	16:54 (T46)	17:03	
5	06:04			06:30		18:58 (T45)	07:01		18:40 (T45)	07:32			07:07		16:29 (T46)	07:41	
	21:08			20:46	39	19:37 (T45)	20:01	57	19:37 (T45)	19:08			17:23	26	16:55 (T46)	17:03	
6	06:05			06:31		18:56 (T45)	07:02		18:41 (T45)	07:33			07:08		16:29 (T46)	07:42	
	21:08			20:44	42	19:38 (T45)	19:57	55	19:36 (T45)	19:06			17:22	27	16:56 (T46)	17:03	
7	06:06			06:32		18:55 (T45)	07:03		18:42 (T45)	07:34			07:09		16:28 (T46)	07:43	
	21:07			20:43	44	19:39 (T45)	19:56	52	19:34 (T45)	19:05			17:21	28	16:56 (T46)	17:03	
8	06:06			06:33		18:54 (T45)	07:04		18:42 (T45)	07:35			07:10		16:28 (T46)	07:44	
	21:07			20:42	46	19:40 (T45)	19:54	51	19:33 (T45)	19:03			17:20	28	16:56 (T46)	17:03	
9	06:07			06:34		18:53 (T45)	07:05		18:43 (T45)	07:36			07:12		16:27 (T46)	07:45	
	21:07			20:41	48	19:41 (T45)	19:52	48	19:31 (T45)	19:02			17:19	28	16:55 (T46)	17:03	
10	06:07			06:35		18:52 (T45)	07:06		18:44 (T45)	07:37			07:13		16:28 (T46)	07:46	
	21:06			20:39	50	19:42 (T45)	19:51	44	19:28 (T45)	19:00			17:18	26	16:54 (T46)	17:03	
11	06:08			06:36		18:51 (T45)	07:07		18:45 (T45)	07:38			07:14		16:28 (T46)	07:46	
	21:06			20:38	52	19:43 (T45)	19:49	42	19:27 (T45)	18:58			17:17	25	16:53 (T46)	17:03	
12	06:09			06:37		18:50 (T45)	07:08		18:46 (T45)	07:39			07:15		16:28 (T46)	07:47	
	21:05			20:37	54	19:44 (T45)	19:47	39	19:25 (T45)	18:57			17:16	24	16:52 (T46)	17:03	
13	06:10			06:38		18:49 (T45)	07:09		18:48 (T45)	07:40			07:16		16:29 (T46)	07:48	
	21:05			20:36	55	19:44 (T45)	19:45	35	19:23 (T45)	18:55			17:15	22	16:51 (T46)	17:03	
14	06:10			06:39		18:48 (T45)	07:10		18:51 (T45)	07:41			07:18		16:29 (T46)	07:49	
	21:04			20:34	57	19:45 (T45)	19:44	29	19:20 (T45)	18:54			17:14	21	16:50 (T46)	17:03	
15	06:11			06:40		18:47 (T45)	07:11		18:54 (T45)	07:42			07:19		16:29 (T46)	07:50	
	21:04			20:33	58	19:45 (T45)	19:42	22	19:16 (T45)	18:52			17:13	20	16:49 (T46)	17:03	
16	06:12			06:41		18:46 (T45)	07:12		19:00 (T45)	07:44			07:20		16:29 (T46)	07:50	
	21:03			20:31	60	19:46 (T45)	19:40	9	19:09 (T45)	18:50			17:12	19	16:48 (T46)	17:04	
17	06:13			06:42		18:44 (T45)	07:13			07:45			07:21		16:31 (T46)	07:51	
	21:03			20:30	61	19:45 (T45)	19:39			18:49			17:11	17	16:48 (T46)	17:04	
18	06:14			06:43		18:44 (T45)	07:14			07:46			07:22		16:31 (T46)	07:52	
	21:02			20:29	61	19:45 (T45)	19:37			18:47			17:11	16	16:47 (T46)	17:04	
19	06:14			06:44		18:43 (T45)	07:15			07:47			07:23		16:32 (T46)	07:52	
	21:01			20:27	62	19:45 (T45)	19:35			18:46			17:10	13	16:45 (T46)	17:05	
20	06:15			06:45		18:42 (T45)	07:16			07:48			07:25		16:32 (T46)	07:53	
	21:01			20:26	63	19:45 (T45)	19:33			18:44			17:09	12	16:44 (T46)	17:05	
21	06:16			06:46		18:42 (T45)	07:17			07:49			07:26		16:34 (T46)	07:53	
	21:00			20:24	63	19:45 (T45)	19:32			18:43			17:09	10	16:44 (T46)	17:06	
22	06:17			06:47		18:41 (T45)	07:18			07:50			07:27		16:35 (T46)	07:54	
	20:59			20:23	64	19:45 (T45)	19:30			18:41			17:08	9	16:44 (T46)	17:06	
23	06:18			06:48		18:41 (T45)	07:19			07:51			07:28		16:36 (T46)	07:54	
	20:58			20:21	64	19:45 (T45)	19:28			18:40			17:07	7	16:43 (T46)	17:07	
24	06:19			06:49		18:40 (T45)	07:20			07:53			07:29		16:38 (T46)	07:55	
	20:58			20:20	65	19:45 (T45)	19:27			18:39			17:07	4	16:42 (T46)	17:07	
25	06:20			06:50		18:40 (T45)	07:21			07:54			07:30		16:41 (T46)	07:55	
	20:57			20:18	65	19:45 (T45)	19:25			18:37			17:06	1	16:42 (T46)	17:08	
26	06:21			06:51		18:40 (T45)	07:22			07:55			07:32			07:56	
	20:56			20:17	65	19:45 (T45)	19:23			18:36			17:06			17:08	
27	06:22			06:52		18:40 (T45)	07:23			07:56			07:33			07:56	
	20:55			20:15	64	19:44 (T45)	19:22			18:34			17:05			17:09	
28	06:22			06:53		18:39 (T45)	07:24			07:57			07:34			07:56	
	20:54			20:14	65	19:44 (T45)	19:20			18:33			17:05			17:10	
29	06:23			06:54		18:39 (T45)	07:25			07:58			07:35			07:56	
	20:53			20:12	65	19:44 (T45)	19:18			18:32			17:04			17:10	
30	06:24		19:12 (T45)	06:55		18:39 (T45)	07:26			08:00			07:36			07:57	
	20:52	11	19:23 (T45)	20:10	64	19:43 (T45)	19:16			18:31			17:04			17:11	
31	06:25		19:08 (T45)	06:56		18:39 (T45)				08:01		17:37 (T46)				07:57	
	20:51	19	19:27 (T45)	20:09	63	19:42 (T45)				18:29	11	17:48 (T46)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		30			1682			727			11			464			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.61			0.61			0.61			0.72			0.72			
Total reduction		0.40			0.37			0.36			0.35			0.22			
Total, real		12			629			263			4			102			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 596 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8191)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:58			07:44		16:30 (T13)	07:07		17:33 (T12)	07:16	06:30			06:01		19:47 (T10)
	17:13			17:47	52	17:22 (T13)	18:22	27	18:00 (T12)	19:56	20:27			20:57	38	20:25 (T10)
2	07:58			07:43		16:30 (T13)	07:06		17:33 (T12)	07:14	06:29			06:01		19:47 (T10)
	17:13			17:48	53	17:23 (T13)	18:23	28	18:01 (T12)	19:57	20:28			20:58	39	20:33 (T9)
3	07:58			07:42		16:30 (T13)	07:04		17:33 (T12)	07:13	06:27		19:58 (T10)	06:00		19:48 (T10)
	17:14			17:50	53	17:23 (T13)	18:24	30	18:03 (T12)	19:58	20:29	9	20:07 (T10)	20:59	39	20:34 (T9)
4	07:58			07:41		16:30 (T13)	07:03		17:33 (T12)	07:11	06:26		19:56 (T10)	06:00		19:49 (T10)
	17:15			17:51	53	17:23 (T13)	18:25	30	18:03 (T12)	19:59	20:30	12	20:08 (T10)	20:59	40	20:35 (T9)
5	07:58			07:40		16:30 (T13)	07:01		17:33 (T12)	07:09	06:25		19:54 (T10)	05:59		19:49 (T10)
	17:16			17:52	54	17:24 (T13)	18:26	30	18:03 (T12)	20:00	20:31	15	20:09 (T10)	21:00	40	20:35 (T9)
6	07:58			07:38		16:30 (T13)	06:59		17:34 (T12)	07:08	06:24		19:52 (T10)	05:59		19:49 (T10)
	17:17			17:54	54	17:24 (T13)	18:27	29	18:03 (T12)	20:00	20:33	18	20:10 (T10)	21:01	42	20:36 (T9)
7	07:58			07:37		16:30 (T13)	06:58		17:34 (T12)	07:06	06:22		19:51 (T10)	05:59		19:50 (T10)
	17:18			17:55	53	17:23 (T13)	18:29	27	18:01 (T12)	20:01	20:34	20	20:11 (T10)	21:01	43	20:37 (T9)
8	07:58			07:36		16:30 (T13)	07:56		18:34 (T12)	07:05	06:21		19:49 (T10)	05:59		19:51 (T10)
	17:19			17:56	54	17:24 (T13)	19:30	26	19:00 (T12)	20:02	20:35	22	20:11 (T10)	21:02	43	20:38 (T9)
9	07:57			07:35		16:30 (T13)	07:55		18:36 (T12)	07:03	06:20		19:48 (T10)	05:58		19:50 (T10)
	17:20			17:57	54	17:24 (T13)	19:31	23	18:59 (T12)	20:04	20:36	25	20:13 (T10)	21:03	43	20:37 (T9)
10	07:57		16:47 (T13)	07:34		16:31 (T13)	07:53		18:38 (T12)	07:01	06:19		19:47 (T10)	05:58		19:51 (T10)
	17:21	5	16:52 (T13)	17:59	53	17:24 (T13)	19:32	18	18:56 (T12)	20:05	20:37	27	20:14 (T10)	21:03	43	20:38 (T9)
11	07:57		16:44 (T13)	07:33		16:32 (T13)	07:51		18:41 (T12)	07:00	06:18		19:47 (T10)	05:58		19:51 (T10)
	17:22	12	16:56 (T13)	18:00	52	17:24 (T13)	19:33	13	18:54 (T12)	20:06	20:38	28	20:15 (T10)	21:04	44	20:39 (T9)
12	07:57		16:41 (T13)	07:31		16:31 (T13)	07:50			06:58	06:17		19:46 (T10)	05:58		19:52 (T10)
	17:23	16	16:57 (T13)	18:01	52	17:23 (T13)	19:34			20:07	20:39	30	20:16 (T10)	21:04	43	20:39 (T9)
13	07:56		16:40 (T13)	07:30		16:32 (T13)	07:48			06:56	06:16		19:46 (T10)	05:58		19:52 (T10)
	17:24	18	16:58 (T13)	18:02	51	17:23 (T13)	19:35			20:08	20:40	30	20:16 (T10)	21:05	44	20:40 (T9)
14	07:56		16:39 (T13)	07:29		16:33 (T13)	07:46			06:55	06:15		19:45 (T10)	05:58		19:53 (T10)
	17:25	21	17:00 (T13)	18:04	49	17:22 (T13)	19:36			20:09	20:41	32	20:17 (T10)	21:05	43	20:40 (T9)
15	07:56		16:38 (T13)	07:27		16:33 (T13)	07:45			06:53	06:14		19:45 (T10)	05:58		19:53 (T10)
	17:27	23	17:01 (T13)	18:05	48	17:21 (T13)	19:38			20:10	20:42	33	20:18 (T10)	21:06	43	20:40 (T9)
16	07:55		16:37 (T13)	07:26		16:34 (T13)	07:43			06:52	06:13		19:44 (T10)	05:58		19:53 (T10)
	17:28	25	17:02 (T13)	18:06	47	17:21 (T13)	19:39			20:11	20:43	35	20:19 (T10)	21:06	44	20:41 (T9)
17	07:55		16:36 (T13)	07:25		16:36 (T13)	07:41			06:50	06:12		19:44 (T10)	05:58		19:54 (T10)
	17:29	27	17:03 (T13)	18:07	44	17:20 (T13)	19:40			20:12	20:44	36	20:20 (T10)	21:07	43	20:41 (T9)
18	07:54		16:36 (T13)	07:23		16:36 (T13)	07:40			06:49	06:11		19:45 (T10)	05:58		19:54 (T10)
	17:30	29	17:05 (T13)	18:08	42	17:18 (T13)	19:41			20:13	20:45	37	20:22 (T10)	21:07	43	20:41 (T9)
19	07:54		16:35 (T13)	07:22		16:38 (T13)	07:38			06:47	06:10		19:45 (T10)	05:58		19:54 (T10)
	17:31	31	17:06 (T13)	18:10	40	17:18 (T13)	19:42			20:14	20:46	37	20:22 (T10)	21:07	43	20:41 (T9)
20	07:53		16:34 (T13)	07:21		16:39 (T13)	07:36			06:46	06:09		19:44 (T10)	05:58		19:55 (T10)
	17:32	33	17:07 (T13)	18:11	42	17:48 (T12)	19:43			20:15	20:47	39	20:23 (T10)	21:08	44	20:43 (T9)
21	07:53		16:34 (T13)	07:19		16:41 (T13)	07:35			06:44	06:08		19:44 (T10)	05:58		19:55 (T10)
	17:34	35	17:09 (T13)	18:12	42	17:50 (T12)	19:44			20:16	20:48	40	20:24 (T10)	21:08	44	20:43 (T9)
22	07:52		16:33 (T13)	07:18		16:42 (T13)	07:33			06:43	06:07		19:44 (T10)	05:59		19:55 (T10)
	17:35	37	17:10 (T13)	18:13	42	17:51 (T12)	19:45			20:18	20:49	40	20:24 (T10)	21:08	44	20:43 (T9)
23	07:51		16:32 (T13)	07:16		16:45 (T13)	07:31			06:41	06:07		19:45 (T10)	05:59		19:55 (T10)
	17:36	39	17:11 (T13)	18:15	40	17:52 (T12)	19:46			20:19	20:50	41	20:26 (T10)	21:08	44	20:43 (T9)
24	07:50		16:32 (T13)	07:15		16:48 (T13)	07:30			06:40	06:06		19:45 (T10)	05:59		19:56 (T10)
	17:37	40	17:12 (T13)	18:16	35	17:53 (T12)	19:47			20:20	20:50	40	20:25 (T10)	21:09	43	20:43 (T9)
25	07:50		16:32 (T13)	07:13		16:54 (T13)	07:28			06:38	06:05		19:45 (T10)	05:59		19:56 (T10)
	17:38	42	17:14 (T13)	18:17	27	17:55 (T12)	19:48			20:21	20:51	40	20:25 (T10)	21:09	43	20:43 (T9)
26	07:49		16:31 (T13)	07:12		17:34 (T12)	07:26			06:37	06:05		19:45 (T10)	06:00		19:56 (T10)
	17:40	44	17:15 (T13)	18:18	22	17:56 (T12)	19:50			20:22	20:52	41	20:26 (T10)	21:09	43	20:43 (T9)
27	07:48		16:31 (T13)	07:10		17:34 (T12)	07:24			06:35	06:04		19:45 (T10)	06:00		19:56 (T10)
	17:41	45	17:16 (T13)	18:19	23	17:57 (T12)	19:51			20:23	20:53	40	20:25 (T10)	21:09	44	20:44 (T9)
28	07:47		16:31 (T13)	07:09		17:33 (T12)	07:23			06:34	06:03		19:46 (T10)	06:00		19:56 (T10)
	17:42	47	17:18 (T13)	18:20	25	17:58 (T12)	19:52			20:24	20:54	40	20:26 (T10)	21:09	43	20:43 (T9)
29	07:46		16:30 (T13)				07:21			06:33	06:03		19:46 (T10)	06:01		19:56 (T10)
	17:43	49	17:19 (T13)				19:53			20:25	20:55	39	20:25 (T10)	21:09	43	20:43 (T9)
30	07:46		16:30 (T13)				07:19			06:31	06:02		19:47 (T10)	06:01		19:56 (T10)
	17:45	50	17:20 (T13)				19:54			20:26	20:56	39	20:26 (T10)	21:09	43	20:43 (T9)
31	07:45		16:30 (T13)				07:18				06:02		19:47 (T10)			
	17:46	51	17:21 (T13)				19:55				20:56	38	20:25 (T10)			
Potential sun hours	297			297			370			399	449			453		
Total, worst case		719			1256			281				923			1278	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.72			0.72			0.68				0.56			0.55	
Total reduction		0.23			0.30			0.31				0.33			0.36	
Total, real		167			374			87				302			464	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 596 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8191)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02		19:56 (T10)	06:26		19:57 (T10)	06:57	07:28			07:02		16:01 (T13)	07:37		16:26 (T13)
	21:09	43	20:43 (T9)	20:50	29	20:26 (T10)	20:07	19:15			17:28	53	16:54 (T13)	17:03	13	16:39 (T13)
2	06:02		19:56 (T10)	06:27		19:58 (T10)	06:58	07:29		18:20 (T12)	07:03		16:00 (T13)	07:38		16:29 (T13)
	21:09	43	20:43 (T9)	20:49	27	20:25 (T10)	20:06	19:13	10	18:30 (T12)	17:27	53	16:53 (T13)	17:03	7	16:36 (T13)
3	06:03		19:56 (T10)	06:28		19:58 (T10)	06:59	07:30		18:17 (T12)	07:05		16:00 (T13)	07:39		
	21:09	43	20:43 (T9)	20:48	26	20:24 (T10)	20:04	19:11	17	18:34 (T12)	17:25	53	16:53 (T13)	17:03		
4	06:03		19:56 (T10)	06:29		19:59 (T10)	07:00	07:31		18:15 (T12)	07:06		15:59 (T13)	07:40		
	21:08	43	20:43 (T9)	20:47	24	20:23 (T10)	20:02	19:10	20	18:35 (T12)	17:24	54	16:53 (T13)	17:03		
5	06:04		19:55 (T10)	06:30		20:00 (T10)	07:01	07:32		18:13 (T12)	07:07		16:00 (T13)	07:41		
	21:08	43	20:42 (T9)	20:46	22	20:22 (T10)	20:01	19:08	24	18:37 (T12)	17:23	54	16:54 (T13)	17:03		
6	06:05		19:56 (T10)	06:31		20:01 (T10)	07:02	07:33		18:11 (T12)	07:08		16:00 (T13)	07:42		
	21:08	42	20:42 (T9)	20:45	20	20:21 (T10)	19:57	19:06	26	18:37 (T12)	17:22	54	16:54 (T13)	17:02		
7	06:05		19:56 (T10)	06:32		20:02 (T10)	07:03	07:34		18:10 (T12)	07:09		16:00 (T13)	07:43		
	21:08	40	20:42 (T9)	20:43	18	20:20 (T10)	19:56	19:05	28	18:38 (T12)	17:21	53	16:53 (T13)	17:02		
8	06:06		19:55 (T10)	06:33		20:04 (T10)	07:04	07:35		18:09 (T12)	07:11		16:01 (T13)	07:44		
	21:07	41	20:42 (T9)	20:42	14	20:18 (T10)	19:54	19:03	29	18:38 (T12)	17:20	53	16:54 (T13)	17:02		
9	06:06		19:55 (T10)	06:34		20:06 (T10)	07:05	07:36		18:08 (T12)	07:12		16:01 (T13)	07:45		
	21:07	41	20:42 (T9)	20:41	11	20:17 (T10)	19:52	19:01	30	18:38 (T12)	17:19	53	16:54 (T13)	17:02		
10	06:07		19:56 (T10)	06:35		20:09 (T10)	07:06	07:37		18:07 (T12)	07:13		16:01 (T13)	07:46		
	21:07	39	20:42 (T9)	20:40	7	20:16 (T10)	19:51	19:00	30	18:37 (T12)	17:18	52	16:53 (T13)	17:02		
11	06:08		19:55 (T10)	06:36			07:07	07:38		18:06 (T12)	07:14		16:01 (T13)	07:47		
	21:06	37	20:32 (T10)	20:38			19:49	18:58	29	18:35 (T12)	17:17	51	16:52 (T13)	17:02		
12	06:09		19:55 (T10)	06:37			07:08	07:39		18:06 (T12)	07:15		16:02 (T13)	07:48		
	21:06	38	20:33 (T10)	20:37			19:47	18:57	28	18:34 (T12)	17:16	50	16:52 (T13)	17:02		
13	06:09		19:55 (T10)	06:38			07:09	07:40		18:07 (T12)	07:17		16:02 (T13)	07:48		
	21:05	39	20:34 (T10)	20:36			19:46	18:55	26	18:33 (T12)	17:15	49	16:51 (T13)	17:03		
14	06:10		19:55 (T10)	06:39			07:10	07:41		18:07 (T12)	07:18		16:03 (T13)	07:49		
	21:05	39	20:34 (T10)	20:34			19:44	18:53	24	18:31 (T12)	17:14	46	16:49 (T13)	17:03		
15	06:11		19:55 (T10)	06:40			07:11	07:43		18:07 (T12)	07:19		16:04 (T13)	07:50		
	21:04	39	20:34 (T10)	20:33			19:42	18:52	22	18:29 (T12)	17:13	45	16:49 (T13)	17:03		
16	06:12		19:55 (T10)	06:41			07:12	07:44		18:07 (T12)	07:20		16:04 (T13)	07:51		
	21:04	39	20:34 (T10)	20:32			19:40	18:50	21	18:28 (T12)	17:12	44	16:48 (T13)	17:03		
17	06:12		19:55 (T10)	06:42			07:13	07:45		17:23 (T13)	07:21		16:05 (T13)	07:51		
	21:03	40	20:35 (T10)	20:30			19:39	18:49	31	18:26 (T12)	17:11	42	16:47 (T13)	17:04		
18	06:13		19:55 (T10)	06:43			07:14	07:46		17:18 (T13)	07:23		16:06 (T13)	07:52		
	21:03	40	20:35 (T10)	20:29			19:37	18:47	37	18:24 (T12)	17:10	40	16:46 (T13)	17:04		
19	06:14		19:54 (T10)	06:44			07:15	07:47		17:15 (T13)	07:24		16:07 (T13)	07:53		
	21:02	41	20:35 (T10)	20:27			19:35	18:46	40	18:22 (T12)	17:10	39	16:46 (T13)	17:04		
20	06:15		19:54 (T10)	06:45			07:16	07:48		17:13 (T13)	07:25		16:08 (T13)	07:53		
	21:01	41	20:35 (T10)	20:26			19:34	18:44	42	18:22 (T12)	17:09	37	16:45 (T13)	17:05		
21	06:16		19:54 (T10)	06:46			07:17	07:49		17:11 (T13)	07:26		16:09 (T13)	07:54		
	21:00	41	20:35 (T10)	20:24			19:32	18:43	43	18:20 (T12)	17:08	35	16:44 (T13)	17:05		
22	06:17		19:55 (T10)	06:47			07:18	07:50		17:09 (T13)	07:27		16:10 (T13)	07:54		
	21:00	40	20:35 (T10)	20:23			19:30	18:41	41	18:18 (T12)	17:08	33	16:43 (T13)	17:06		
23	06:18		19:55 (T10)	06:48			07:19	07:52		17:07 (T13)	07:28		16:12 (T13)	07:55		
	20:59	39	20:34 (T10)	20:21			19:28	18:40	41	17:48 (T13)	17:07	31	16:43 (T13)	17:06		
24	06:18		19:55 (T10)	06:49			07:20	07:53		17:07 (T13)	07:30		16:13 (T13)	07:55		
	20:58	38	20:33 (T10)	20:20			19:27	18:38	42	17:49 (T13)	17:06	29	16:42 (T13)	17:07		
25	06:19		19:55 (T10)	06:50			07:21	07:54		17:05 (T13)	07:31		16:14 (T13)	07:56		
	20:57	38	20:33 (T10)	20:18			19:25	18:37	45	17:50 (T13)	17:06	27	16:41 (T13)	17:07		
26	06:20		19:55 (T10)	06:51			07:22	07:55		17:04 (T13)	07:32		16:15 (T13)	07:56		
	20:56	36	20:31 (T10)	20:17			19:23	18:36	47	17:51 (T13)	17:05	25	16:40 (T13)	17:08		
27	06:21		19:55 (T10)	06:52			07:23	07:56		17:03 (T13)	07:33		16:17 (T13)	07:56		
	20:55	35	20:30 (T10)	20:15			19:22	18:34	48	17:51 (T13)	17:05	23	16:40 (T13)	17:09		
28	06:22		19:55 (T10)	06:53			07:24	07:57		17:02 (T13)	07:34		16:18 (T13)	07:57		
	20:54	34	20:29 (T10)	20:14			19:20	18:33	49	17:51 (T13)	17:04	21	16:39 (T13)	17:09		
29	06:23		19:56 (T10)	06:54			07:25	07:59		17:02 (T13)	07:35		16:21 (T13)	07:57		
	20:53	32	20:28 (T10)	20:12			19:18	18:32	50	17:52 (T13)	17:04	19	16:40 (T13)	17:10		
30	06:24		19:56 (T10)	06:55			07:27	08:00		17:01 (T13)	07:36		16:23 (T13)	07:57		
	20:52	32	20:28 (T10)	20:11			19:16	18:30	52	17:53 (T13)	17:04	16	16:39 (T13)	17:11		
31	06:25		19:56 (T10)	06:56				08:01		17:00 (T13)				07:57		
	20:51	31	20:27 (T10)	20:09				18:29	53	17:53 (T13)				17:12		
Potential sun hours	460			429			375	345			297			287		
Total, worst case		1207			198				1025			1234			20	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.55			0.56				0.71			0.72			0.72	
Total reduction		0.38			0.35				0.35			0.22			0.16	
Total, real		456			69				359			277			3	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 611 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8204)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:51 (T5)	06:01	06:36 (T4)	06:01	06:45 (T4)	06:26	06:48 (T4)	06:57	07:27	07:02	07:37
	17:12	17:47	18:21	19:56		20:27	31	07:22 (T5)	20:57 41	07:17 (T4)	21:09 36	07:21 (T4)	20:50 38	07:26 (T4)	20:07	19:14	17:27	17:03
2	07:57	07:42	07:05	07:14		06:28		06:50 (T4)	06:00	06:37 (T4)	06:02	06:44 (T4)	06:27	06:49 (T4)	06:58	07:28	07:03	07:38
	17:13	17:48	18:22	19:57		20:28	32	07:22 (T5)	20:58 40	07:17 (T4)	21:08 37	07:21 (T4)	20:49 37	07:26 (T4)	20:05	19:13	17:26	17:03
3	07:57	07:41	07:04	07:12		06:27		06:47 (T4)	06:00	06:38 (T4)	06:02	06:45 (T4)	06:28	06:50 (T4)	06:59	07:29	07:04	07:39
	17:14	17:49	18:24	19:58		20:29	35	07:22 (T5)	20:58 39	07:17 (T4)	21:08 37	07:22 (T4)	20:48 35	07:25 (T4)	20:04	19:11	17:25	17:02
4	07:58	07:40	07:02	07:11		06:26		06:46 (T4)	05:59	06:37 (T4)	06:03	06:45 (T4)	06:29	06:50 (T4)	07:00	07:30	07:05	07:40
	17:15	17:51	18:25	19:59		20:30	35	07:21 (T5)	20:59 40	07:17 (T4)	21:08 37	07:22 (T4)	20:47 34	07:24 (T5)	20:02	19:09	17:24	17:02
5	07:58	07:39	07:01	07:09		06:25		06:44 (T4)	05:59	06:38 (T4)	06:04	06:45 (T4)	06:30	06:51 (T4)	07:01	07:31	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	35	07:19 (T5)	21:00 39	07:17 (T4)	21:08 37	07:22 (T4)	20:46 35	07:26 (T5)	20:00	19:08	17:23	17:02
6	07:57	07:38	06:59	07:07		06:23		06:43 (T4)	05:59	06:39 (T4)	06:04	06:45 (T4)	06:31	06:52 (T4)	07:02	07:32	07:08	07:42
	17:17	17:53	18:27	20:00		20:32	35	07:18 (T5)	21:01 38	07:17 (T4)	21:08 38	07:23 (T4)	20:44 35	07:27 (T5)	19:57	19:06	17:21	17:02
7	07:57	07:37	06:57	07:06		06:22		06:42 (T4)	05:58	06:38 (T4)	06:05	06:44 (T4)	06:32	06:53 (T4)	07:03	07:34	07:09	07:43
	17:18	17:54	18:28	20:01		20:33	35	07:17 (T5)	21:01 38	07:16 (T4)	21:07 39	07:23 (T4)	20:43 35	07:28 (T5)	19:55	19:04	17:20	17:02
8	07:57	07:36	07:56	07:04		06:21		06:41 (T4)	05:58	06:39 (T4)	06:05	06:45 (T4)	06:33	06:54 (T4)	07:04	07:35	07:10	07:44
	17:19	17:56	19:29	20:02		20:34	34	07:15 (T5)	21:02 37	07:16 (T4)	21:07 39	07:24 (T4)	20:42 35	07:29 (T5)	19:54	19:03	17:19	17:02
9	07:57	07:35	07:54	07:03		06:20		06:40 (T4)	05:58	06:39 (T4)	06:06	06:45 (T4)	06:34	06:55 (T4)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	34	07:14 (T4)	21:02 38	07:17 (T4)	21:07 40	07:25 (T4)	20:41 35	07:30 (T5)	19:52	19:01	17:18	17:02
10	07:57	07:34	07:53	07:01		06:19		06:39 (T4)	05:58	06:40 (T4)	06:07	06:44 (T4)	06:35	06:56 (T4)	07:06	07:37	07:13	07:46
	17:21	17:58	19:32	20:04		20:36	36	07:15 (T4)	21:03 37	07:17 (T4)	21:06 40	07:24 (T4)	20:39 34	07:30 (T5)	19:50	18:59	17:17	17:02
11	07:57	07:32	07:51	06:59		06:18		06:38 (T4)	05:58	06:41 (T4)	06:07	06:44 (T4)	06:36	07:00 (T4)	07:07	07:38	07:14	07:47
	17:22	17:59	19:33	20:05		20:37	37	07:15 (T4)	21:04 36	07:17 (T4)	21:06 41	07:25 (T4)	20:38 31	07:31 (T5)	19:49	18:58	17:16	17:02
12	07:56	07:31	07:49	06:58		06:16		06:37 (T4)	05:58	06:41 (T4)	06:08	06:45 (T4)	06:37	06:59 (T5)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:06		20:38	39	07:16 (T4)	21:04 36	07:17 (T4)	21:06 41	07:26 (T4)	20:37 32	07:31 (T5)	19:47	18:56	17:15	17:02
13	07:56	07:30	07:48	06:56		06:15		06:36 (T4)	05:57	06:41 (T4)	06:09	06:44 (T4)	06:38	06:59 (T5)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08		20:39	40	07:16 (T4)	21:05 36	07:17 (T4)	21:05 41	07:25 (T4)	20:36 33	07:32 (T5)	19:45	18:55	17:14	17:02
14	07:56	07:28	07:46	06:55		06:14		06:35 (T4)	05:57	06:42 (T4)	06:10	06:44 (T4)	06:39	07:00 (T5)	07:10	07:41	07:18	07:49
	17:25	18:03	19:36	20:09		20:41	41	07:16 (T4)	21:05 35	07:17 (T4)	21:05 42	07:26 (T4)	20:34 32	07:32 (T5)	19:44	18:53	17:13	17:02
15	07:55	07:27	07:44	06:53		06:13		06:35 (T4)	05:57	06:42 (T4)	06:10	06:44 (T4)	06:40	07:01 (T5)	07:11	07:42	07:19	07:50
	17:26	18:04	19:37	20:10	3	07:15 (T5)	20:42 42	07:17 (T4)	21:06 35	07:17 (T4)	21:04 42	07:26 (T4)	20:33 31	07:32 (T5)	19:42	18:52	17:12	17:03
16	07:55	07:26	07:43	06:51		07:11 (T5)	06:12	06:34 (T4)	05:57	06:42 (T4)	06:11	06:44 (T4)	06:41	07:02 (T5)	07:12	07:43	07:20	07:50
	17:27	18:06	19:38	20:11	8	07:19 (T5)	20:43 43	07:17 (T4)	21:06 35	07:17 (T4)	21:03 43	07:27 (T4)	20:31 30	07:32 (T5)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50		07:09 (T5)	06:11	06:34 (T4)	05:57	06:43 (T4)	06:12	06:44 (T4)	06:42	07:03 (T5)	07:13	07:44	07:21	07:51
	17:29	18:07	19:39	20:12	11	07:20 (T5)	20:44 43	07:17 (T4)	21:06 34	07:17 (T4)	21:03 42	07:26 (T4)	20:30 28	07:31 (T5)	19:38	18:48	17:11	17:03
18	07:54	07:23	07:39	06:48		07:07 (T5)	06:10	06:34 (T4)	05:58	06:43 (T4)	06:13	06:44 (T4)	06:43	07:04 (T5)	07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13	14	07:21 (T5)	20:44 43	07:17 (T4)	21:07 34	07:17 (T4)	21:02 43	07:27 (T4)	20:29 27	07:31 (T5)	19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47		07:06 (T5)	06:10	06:34 (T4)	05:58	06:43 (T4)	06:14	06:44 (T4)	06:44	07:05 (T5)	07:15	07:47	07:23	07:52
	17:31	18:09	19:42	20:14	17	07:23 (T5)	20:45 43	07:17 (T4)	21:07 34	07:17 (T4)	21:02 43	07:27 (T4)	20:27 26	07:31 (T5)	19:35	18:45	17:09	17:04
20	07:53	07:20	07:36	06:45		07:05 (T5)	06:09	06:34 (T4)	05:58	06:43 (T4)	06:15	06:44 (T4)	06:45	07:06 (T5)	07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15	19	07:24 (T5)	20:46 44	07:18 (T4)	21:07 34	07:17 (T4)	21:01 44	07:28 (T4)	20:26 24	07:30 (T5)	19:33	18:44	17:09	17:04
21	07:52	07:19	07:34	06:44		07:03 (T5)	06:08	06:34 (T4)	05:58	06:43 (T4)	06:15	06:44 (T4)	06:46	07:07 (T5)	07:17	07:49	07:26	07:53
	17:33	18:12	19:44	20:16	21	07:24 (T5)	20:47 44	07:18 (T4)	21:08 34	07:17 (T4)	21:00 44	07:28 (T4)	20:24 22	07:29 (T5)	19:31	18:42	17:08	17:05
22	07:52	07:17	07:33	06:42		07:02 (T5)	06:07	06:34 (T4)	05:58	06:44 (T4)	06:16	06:45 (T4)	06:47	07:08 (T5)	07:18	07:50	07:27	07:54
	17:34	18:13	19:45	20:17	23	07:25 (T5)	20:48 43	07:17 (T4)	21:08 34	07:18 (T4)	20:59 43	07:28 (T4)	20:23 21	07:29 (T5)	19:30	18:41	17:07	17:05
23	07:51	07:16	07:31	06:41		07:00 (T5)	06:06	06:34 (T4)	05:58	06:44 (T4)	06:17	06:44 (T4)	06:48	07:09 (T5)	07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18	24	07:24 (T5)	20:49 43	07:17 (T4)	21:08 34	07:18 (T4)	20:59 43	07:27 (T4)	20:21 19	07:28 (T5)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:39		06:59 (T5)	06:06	06:35 (T4)	05:59	06:44 (T4)	06:18	06:44 (T4)	06:49	07:10 (T5)	07:20	07:52	07:29	07:55
	17:37	18:15	19:47	20:19	26	07:25 (T5)	20:50 43	07:18 (T4)	21:08 34	07:18 (T4)	20:58 43	07:27 (T4)	20:20 16	07:26 (T5)	19:26	18:38	17:06	17:06
25	07:49	07:13	07:28	06:38		06:57 (T5)	06:05	06:34 (T4)	05:59	06:45 (T4)	06:19	06:44 (T4)	06:50	07:11 (T5)	07:21	07:54	07:30	07:55
	17:38	18:17	19:48	20:20	27	07:24 (T5)	20:51 44	07:18 (T4)	21:08 34	07:19 (T4)	20:57 44	07:28 (T4)	20:18 14	07:25 (T5)	19:25	18:37	17:05	17:07
26	07:49	07:12	07:26	06:36		06:56 (T5)	06:04	06:34 (T4)	05:59	06:45 (T4)	06:20	06:45 (T4)	06:51	07:12 (T5)	07:22	07:55	07:32	07:56
	17:39	18:18	19:49	20:22	29	07:25 (T5)	20:52 43	07:17 (T4)	21:09 34	07:19 (T4)	20:56 43	07:28 (T4)	20:17 11	07:23 (T5)	19:23	18:35	17:05	17:08
27	07:48	07:10	07:24	06:35		06:55 (T5)	06:04	06:35 (T4)	06:00	06:44 (T4)	06:21	06:45 (T4)	06:52	07:13 (T5)	07:23	07:56	07:33	07:56
	17:41	18:19	19:50	20:23	30	07:25 (T5)	20:53 43	07:18 (T4)	21:09 35	07:19 (T4)	20:55 42	07:27 (T4)	20:15 8	07:21 (T5)	19:21	18:34	17:05	17:08
28	07:47	07:08	07:22	06:34		06:53 (T5)	06:03	06:35 (T4)	06:00	06:45 (T4)	06:22	06:45 (T4)	06:53	07:14 (T5)	07:24	07:57	07:34	07:56
	17:42	18:20	19:51	20:24	31	07:24 (T5)	20:54 42	07:17 (T4)	21:09 35	07:20 (T4)	20:54 42	07:27 (T4)	20:13 3	07:17 (T5)	19:19	18:33	17:04	17:09
29	07:46		07:21	06:32		06:52 (T5)	06:02	06:36 (T4)	06:00	06:45 (T4)	06:23	06:46 (T4)	06:54		07:25	07:58	07:35	07:57
	17:43		19:52	20:25	32	07:24 (T5)	20:55 42	07:18 (T4)	21:09 35	07:20 (T4)	20:53 41	07:27 (T4)	20:12		19:18	18:31	17:04	17:10
30	07:45		07:19	06:31		06:51 (T5)	06:02	06:35 (T4)	06:01	06:45 (T4)	06:24	06:46 (T4)	06:55		07:26	08:00	07:36	07:57
	17:44		19:54	20:26	33	07:24 (T5)	20:55 42	07:17 (T4)	21:09 36	07:21 (T4)	20:52 41	07:27 (T4)	20:10		19:16	18:30	17:03	17:10
31	07:44		07:17				06:01	06:36 (T4)			06:25	06:47 (T4)	06:56			08:01		07:57
	17:46		19:55				20:56 41	07:17 (T4)			20:51 40	07:27 (T4)	20:09			18:29		17:11
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287	
Total, worst case				348		1227		1081		1268		761						
Sun reduction				0.52		0.57		0.64		0.66		0.61						
Oper. time red.				1.00		1.00		1.00		1.00		1.00						
Wind dir. red.				0.67		0.70		0.70		0.70		0.68						
Total reduction				0.35		0.40		0.45		0.46		0.42						
Total, real				122		488		485		587		317						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 641 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8228)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May	June
1	07:57			07:43		16:38 (T81)	07:07		16:28 (T81)	07:16	06:31	06:02
	17:14			17:48	46	17:24 (T81)	18:22	70	17:38 (T81)	19:56	20:27	20:57
2	07:57			07:42		16:37 (T81)	07:06		16:28 (T81)	07:15	06:29	06:02
	17:14			17:49	49	17:26 (T81)	18:23	69	17:37 (T81)	19:57	20:28	20:57
3	07:57			07:41		16:36 (T81)	07:04		16:28 (T81)	07:13	06:28	06:01
	17:15			17:50	51	17:27 (T81)	18:24	68	17:36 (T81)	19:58	20:29	20:58
4	07:57			07:40		16:34 (T81)	07:03		16:29 (T81)	07:11	06:27	06:01
	17:16			17:52	53	17:27 (T81)	18:25	66	17:35 (T81)	19:59	20:30	20:59
5	07:57			07:39		16:33 (T81)	07:01		16:29 (T81)	07:10	06:26	06:00
	17:17			17:53	56	17:29 (T81)	18:27	65	17:34 (T81)	20:00	20:31	21:00
6	07:57			07:38		16:32 (T81)	06:59		16:31 (T81)	07:08	06:24	06:00
	17:18			17:54	58	17:30 (T81)	18:28	63	17:34 (T81)	20:00	20:32	21:00
7	07:57			07:37		16:32 (T81)	06:58		16:31 (T81)	07:07	06:23	06:00
	17:19			17:55	60	17:32 (T81)	18:29	61	17:32 (T81)	20:01	20:33	21:01
8	07:57			07:36		16:31 (T81)	07:56		17:32 (T81)	07:05	06:22	06:00
	17:20			17:57	62	17:33 (T81)	19:30	59	18:31 (T81)	20:02	20:34	21:01
9	07:57			07:35		16:31 (T81)	07:55		17:34 (T81)	07:03	06:21	05:59
	17:21			17:58	64	17:35 (T81)	19:31	56	18:30 (T81)	20:04	20:35	21:02
10	07:57			07:34		16:29 (T81)	07:53		17:35 (T81)	07:02	06:20	05:59
	17:22			17:59	66	17:35 (T81)	19:32	53	18:28 (T81)	20:05	20:36	21:03
11	07:56			07:32		16:29 (T81)	07:51		17:37 (T81)	07:00	06:19	05:59
	17:23			18:00	68	17:37 (T81)	19:33	50	18:27 (T81)	20:06	20:37	21:03
12	07:56			07:31		16:29 (T81)	07:50		17:38 (T81)	06:59	06:18	05:59
	17:24			18:02	69	17:38 (T81)	19:34	47	18:25 (T81)	20:07	20:38	21:04
13	07:56			07:30		16:28 (T81)	07:48		17:39 (T81)	06:57	06:17	05:59
	17:25			18:03	71	17:39 (T81)	19:36	43	18:22 (T81)	20:08	20:39	21:04
14	07:55			07:29		16:27 (T81)	07:46		17:42 (T81)	06:55	06:16	05:59
	17:26			18:04	71	17:38 (T81)	19:37	38	18:20 (T81)	20:09	20:40	21:05
15	07:55			07:27		16:27 (T81)	07:45		17:44 (T81)	06:54	06:15	05:59
	17:27			18:05	72	17:39 (T81)	19:38	33	18:17 (T81)	20:10	20:41	21:05
16	07:55			07:26		16:27 (T81)	07:43		17:47 (T81)	06:52	06:14	05:59
	17:29			18:07	73	17:40 (T81)	19:39	26	18:13 (T81)	20:11	20:42	21:06
17	07:54			07:25		16:26 (T81)	07:41		17:52 (T81)	06:51	06:13	05:59
	17:30			18:08	73	17:39 (T81)	19:40	17	18:09 (T81)	20:12	20:43	21:06
18	07:54			07:23		16:27 (T81)	07:40			06:49	06:12	05:59
	17:31			18:09	73	17:40 (T81)	19:41			20:13	20:44	21:06
19	07:53			07:22		16:27 (T81)	07:38			06:48	06:11	05:59
	17:32			18:10	74	17:41 (T81)	19:42			20:14	20:45	21:07
20	07:53			07:20		16:26 (T81)	07:36			06:46	06:10	05:59
	17:33			18:11	74	17:40 (T81)	19:43			20:15	20:46	21:07
21	07:52			07:19		16:26 (T81)	07:35			06:45	06:09	05:59
	17:34			18:13	74	17:40 (T81)	19:44			20:16	20:47	21:07
22	07:51			07:18		16:26 (T81)	07:33			06:43	06:08	06:00
	17:36			18:14	74	17:40 (T81)	19:45			20:17	20:48	21:07
23	07:51			07:16		16:26 (T81)	07:31			06:42	06:08	06:00
	17:37			18:15	74	17:40 (T81)	19:46			20:18	20:49	21:08
24	07:50		16:56 (T81)	07:15		16:26 (T81)	07:30			06:40	06:07	06:00
	17:38	9	17:05 (T81)	18:16	73	17:39 (T81)	19:48			20:19	20:50	21:08
25	07:49		16:51 (T81)	07:13		16:27 (T81)	07:28			06:39	06:06	06:00
	17:39	19	17:10 (T81)	18:17	73	17:40 (T81)	19:49			20:21	20:51	21:08
26	07:49		16:48 (T81)	07:12		16:26 (T81)	07:26			06:37	06:05	06:01
	17:41	26	17:14 (T81)	18:19	73	17:39 (T81)	19:50			20:22	20:52	21:08
27	07:48		16:45 (T81)	07:10		16:27 (T81)	07:25			06:36	06:05	06:01
	17:42	31	17:16 (T81)	18:20	72	17:39 (T81)	19:51			20:23	20:53	21:08
28	07:47		16:43 (T81)	07:09		16:27 (T81)	07:23			06:35	06:04	06:01
	17:43	35	17:18 (T81)	18:21	71	17:38 (T81)	19:52			20:24	20:53	21:08
29	07:46		16:42 (T81)				07:21			06:33	06:04	06:02
	17:44	38	17:20 (T81)				19:53			20:25	20:54	21:08
30	07:45		16:41 (T81)				07:20			06:32	06:03	06:02
	17:45	40	17:21 (T81)				19:54			20:26	20:55	21:08
31	07:44		16:39 (T81)				07:18				06:03	
	17:47	44	17:23 (T81)				19:55				20:56	
Potential sun hours	298			297			370			399	448	452
Total, worst case		242			1867			884				
Sun reduction		0.31			0.40			0.44				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.72			0.72			0.72				
Total reduction		0.22			0.29			0.31				
Total, real		54			534			278				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 641 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8228)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September			October			November			December
1	06:03	06:27	06:58			07:28		17:17 (T81)	07:02		15:59 (T81)	07:37
	21:08	20:50	20:07			19:15	45	18:02 (T81)	17:28	66	17:05 (T81)	17:04
2	06:03	06:28	06:59			07:29		17:15 (T81)	07:03		16:00 (T81)	07:38
	21:08	20:49	20:06			19:13	49	18:04 (T81)	17:27	63	17:03 (T81)	17:04
3	06:04	06:29	07:00			07:30		17:14 (T81)	07:04		16:01 (T81)	07:39
	21:08	20:48	20:04			19:12	52	18:06 (T81)	17:26	62	17:03 (T81)	17:04
4	06:04	06:30	07:01			07:31		17:12 (T81)	07:05		16:02 (T81)	07:40
	21:08	20:47	20:02			19:10	55	18:07 (T81)	17:25	59	17:01 (T81)	17:04
5	06:05	06:31	07:02			07:32		17:10 (T81)	07:07		16:02 (T81)	07:41
	21:08	20:45	20:01			19:08	58	18:08 (T81)	17:24	58	17:00 (T81)	17:03
6	06:06	06:32	07:03			07:33		17:09 (T81)	07:08		16:04 (T81)	07:42
	21:07	20:44	19:57			19:07	59	18:08 (T81)	17:23	55	16:59 (T81)	17:03
7	06:06	06:33	07:04			07:34		17:07 (T81)	07:09		16:05 (T81)	07:43
	21:07	20:43	19:56			19:05	62	18:09 (T81)	17:21	53	16:58 (T81)	17:03
8	06:07	06:34	07:05			07:35		17:06 (T81)	07:10		16:06 (T81)	07:44
	21:07	20:42	19:54			19:03	63	18:09 (T81)	17:20	51	16:57 (T81)	17:03
9	06:07	06:35	07:06			07:36		17:04 (T81)	07:11		16:07 (T81)	07:44
	21:06	20:41	19:52			19:02	66	18:10 (T81)	17:19	48	16:55 (T81)	17:03
10	06:08	06:36	07:07			07:37		17:03 (T81)	07:13		16:09 (T81)	07:45
	21:06	20:39	19:51			19:00	67	18:10 (T81)	17:18	46	16:55 (T81)	17:03
11	06:09	06:37	07:08			07:38		17:02 (T81)	07:14		16:10 (T81)	07:46
	21:06	20:38	19:49			18:59	68	18:10 (T81)	17:17	44	16:54 (T81)	17:03
12	06:10	06:38	07:09			07:39		17:01 (T81)	07:15		16:12 (T81)	07:47
	21:05	20:37	19:47			18:57	69	18:10 (T81)	17:16	40	16:52 (T81)	17:03
13	06:10	06:39	07:10			07:40		17:00 (T81)	07:16		16:13 (T81)	07:48
	21:05	20:35	19:46			18:55	71	18:11 (T81)	17:15	38	16:51 (T81)	17:04
14	06:11	06:40	07:11			07:41		17:00 (T81)	07:17		16:16 (T81)	07:49
	21:04	20:34	19:44			18:54	72	18:12 (T81)	17:14	35	16:51 (T81)	17:04
15	06:12	06:41	07:12			07:43		16:59 (T81)	07:19		16:18 (T81)	07:49
	21:04	20:33	19:42			18:52	73	18:12 (T81)	17:14	31	16:49 (T81)	17:04
16	06:13	06:42	07:13			07:44		16:59 (T81)	07:20		16:21 (T81)	07:50
	21:03	20:31	19:40			18:51	72	18:11 (T81)	17:13	25	16:46 (T81)	17:04
17	06:13	06:43	07:14			07:45		16:58 (T81)	07:21		16:25 (T81)	07:51
	21:03	20:30	19:39			18:49	73	18:11 (T81)	17:12	19	16:44 (T81)	17:05
18	06:14	06:44	07:14			07:46		16:57 (T81)	07:22		16:30 (T81)	07:51
	21:02	20:29	19:37			18:48	74	18:11 (T81)	17:11	9	16:39 (T81)	17:05
19	06:15	06:45	07:15			07:47		16:57 (T81)	07:23			07:52
	21:01	20:27	19:35			18:46	74	18:11 (T81)	17:10			17:05
20	06:16	06:46	07:16			07:48		16:56 (T81)	07:25			07:53
	21:01	20:26	19:34			18:45	74	18:10 (T81)	17:10			17:06
21	06:17	06:47	07:17			07:49		16:57 (T81)	07:26			07:53
	21:00	20:24	19:32			18:43	74	18:11 (T81)	17:09			17:06
22	06:18	06:48	07:18			07:50		16:57 (T81)	07:27			07:54
	20:59	20:23	19:30			18:42	74	18:11 (T81)	17:08			17:07
23	06:18	06:49	07:19			07:51		16:56 (T81)	07:28			07:54
	20:58	20:21	19:29			18:40	74	18:10 (T81)	17:08			17:07
24	06:19	06:50	07:21			07:53		16:56 (T81)	07:29			07:55
	20:57	20:20	19:27			18:39	74	18:10 (T81)	17:07			17:08
25	06:20	06:51	07:22			07:54		16:56 (T81)	07:30			07:55
	20:57	20:18	19:25			18:38	73	18:09 (T81)	17:07			17:08
26	06:21	06:52	07:23		17:36 (T81)	07:55		16:57 (T81)	07:31			07:55
	20:56	20:17	19:23	12	17:48 (T81)	18:36	72	18:09 (T81)	17:06			17:09
27	06:22	06:53	07:24		17:30 (T81)	07:56		16:57 (T81)	07:32			07:56
	20:55	20:15	19:22	24	17:54 (T81)	18:35	72	18:09 (T81)	17:06			17:10
28	06:23	06:54	07:25		17:26 (T81)	07:57		16:57 (T81)	07:34			07:56
	20:54	20:14	19:20	31	17:57 (T81)	18:34	71	18:08 (T81)	17:05			17:10
29	06:24	06:55	07:26		17:22 (T81)	07:58		16:57 (T81)	07:35			07:56
	20:53	20:12	19:18	37	17:59 (T81)	18:32	70	18:07 (T81)	17:05			17:11
30	06:25	06:56	07:27		17:20 (T81)	08:00		16:58 (T81)	07:36			07:57
	20:52	20:10	19:17	41	18:01 (T81)	18:31	69	18:07 (T81)	17:05			17:12
31	06:26	06:57				08:01		16:59 (T81)				07:57
	20:51	20:09				18:30	67	18:06 (T81)				17:13
Potential sun hours	459	428	375			345			298			288
Total, worst case				145			2086			802		
Sun reduction				0.59			0.48			0.30		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.72			0.72			0.72		
Total reduction				0.42			0.34			0.21		
Total, real				61			716			172		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 653 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8235)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March	April	May			June		
1	07:57		09:04 (T21)	07:44	07:07	07:16	06:30		06:50 (T18)	06:01		06:28 (T18)
	17:13	18	09:22 (T21)	17:47	18:22	19:56	20:27	7	06:57 (T18)	20:57	51	07:19 (T18)
2	07:58		09:05 (T21)	07:43	07:06	07:14	06:29		06:48 (T18)	06:01		06:27 (T18)
	17:13	16	09:21 (T21)	17:48	18:23	19:57	20:28	13	07:01 (T18)	20:58	51	07:18 (T18)
3	07:58		09:07 (T21)	07:42	07:04	07:13	06:27		06:47 (T18)	06:00		06:28 (T18)
	17:14	14	09:21 (T21)	17:50	18:24	19:58	20:29	17	07:04 (T18)	20:59	50	07:18 (T18)
4	07:58		09:09 (T21)	07:41	07:03	07:11	06:26		06:46 (T18)	06:00		06:28 (T18)
	17:15	11	09:20 (T21)	17:51	18:25	19:59	20:30	20	07:06 (T18)	20:59	51	07:19 (T18)
5	07:58		09:13 (T21)	07:39	07:01	07:09	06:25		06:45 (T18)	05:59		06:28 (T18)
	17:16	4	09:17 (T21)	17:52	18:26	20:00	20:31	23	07:08 (T18)	21:00	50	07:18 (T18)
6	07:58			07:38	06:59	07:08	06:24		06:44 (T18)	05:59		06:29 (T18)
	17:17			17:54	18:27	20:00	20:32	26	07:10 (T18)	21:01	49	07:18 (T18)
7	07:58			07:37	06:58	07:06	06:22		06:43 (T18)	05:59		06:29 (T18)
	17:18			17:55	18:29	20:01	20:33	28	07:11 (T18)	21:01	50	07:19 (T18)
8	07:57			07:36	07:56	07:04	06:21		06:41 (T18)	05:59		06:30 (T18)
	17:19			17:56	19:30	20:02	20:35	30	07:11 (T18)	21:02	49	07:19 (T18)
9	07:57			07:35	07:54	07:03	06:20		06:40 (T18)	05:58		06:29 (T18)
	17:20			17:57	19:31	20:04	20:36	32	07:12 (T18)	21:03	49	07:18 (T18)
10	07:57			07:34	07:53	07:01	06:19		06:39 (T18)	05:58		06:30 (T18)
	17:21			17:59	19:32	20:05	20:37	34	07:13 (T18)	21:03	48	07:18 (T18)
11	07:57			07:33	07:51	07:00	06:18		06:38 (T18)	05:58		06:30 (T18)
	17:22			18:00	19:33	20:06	20:38	36	07:14 (T18)	21:04	49	07:19 (T18)
12	07:57			07:31	07:50	06:58	06:17		06:37 (T18)	05:58		06:30 (T18)
	17:23			18:01	19:34	20:07	20:39	37	07:14 (T18)	21:04	49	07:19 (T18)
13	07:56			07:30	07:48	06:56	06:16		06:36 (T18)	05:58		06:31 (T18)
	17:24			18:02	19:35	20:08	20:40	39	07:15 (T18)	21:05	48	07:19 (T18)
14	07:56			07:29	07:46	06:55	06:15		06:35 (T18)	05:58		06:31 (T18)
	17:25			18:04	19:36	20:09	20:41	40	07:15 (T18)	21:05	48	07:19 (T18)
15	07:56			07:27	07:45	06:53	06:14		06:34 (T18)	05:58		06:31 (T18)
	17:27			18:05	19:38	20:10	20:42	41	07:15 (T18)	21:06	48	07:19 (T18)
16	07:55			07:26	07:43	06:52	06:13		06:33 (T18)	05:58		06:32 (T18)
	17:28			18:06	19:39	20:11	20:43	43	07:16 (T18)	21:06	47	07:19 (T18)
17	07:55			07:25	07:41	06:50	06:12		06:32 (T18)	05:58		06:32 (T18)
	17:29			18:07	19:40	20:12	20:44	44	07:16 (T18)	21:07	47	07:19 (T18)
18	07:54			07:23	07:40	06:49	06:11		06:32 (T18)	05:58		06:32 (T18)
	17:30			18:08	19:41	20:13	20:45	45	07:17 (T18)	21:07	47	07:19 (T18)
19	07:54			07:22	07:38	06:47	06:10		06:31 (T18)	05:58		06:32 (T18)
	17:31			18:10	19:42	20:14	20:46	46	07:17 (T18)	21:07	47	07:19 (T18)
20	07:53			07:21	07:36	06:46	06:09		06:30 (T18)	05:58		06:33 (T18)
	17:32			18:11	19:43	20:15	20:47	47	07:17 (T18)	21:08	47	07:20 (T18)
21	07:52			07:19	07:35	06:44	06:08		06:29 (T18)	05:58		06:33 (T18)
	17:34			18:12	19:44	20:16	20:48	48	07:17 (T18)	21:08	47	07:20 (T18)
22	07:52			07:18	07:33	06:43	06:07		06:28 (T18)	05:59		06:33 (T18)
	17:35			18:13	19:45	20:17	20:48	49	07:17 (T18)	21:08	47	07:20 (T18)
23	07:51			07:16	07:31	06:41	06:07		06:28 (T18)	05:59		06:33 (T18)
	17:36			18:14	19:46	20:19	20:49	50	07:18 (T18)	21:08	47	07:20 (T18)
24	07:50			07:15	07:29	06:40	06:06		06:27 (T18)	05:59		06:34 (T18)
	17:37			18:16	19:47	20:20	20:50	51	07:18 (T18)	21:08	47	07:21 (T18)
25	07:50			07:13	07:28	06:38	06:05		06:26 (T18)	05:59		06:34 (T18)
	17:38			18:17	19:48	20:21	20:51	51	07:17 (T18)	21:09	47	07:21 (T18)
26	07:49			07:12	07:26	06:37	06:05		06:26 (T18)	06:00		06:34 (T18)
	17:40			18:18	19:50	20:22	20:52	52	07:18 (T18)	21:09	47	07:21 (T18)
27	07:48			07:10	07:24	06:35	06:04		06:26 (T18)	06:00		06:34 (T18)
	17:41			18:19	19:51	20:23	20:53	52	07:18 (T18)	21:09	48	07:22 (T18)
28	07:47			07:09	07:23	06:34	06:03		06:27 (T18)	06:00		06:34 (T18)
	17:42			18:20	19:52	20:24	20:54	51	07:18 (T18)	21:09	48	07:22 (T18)
29	07:46				07:21	06:33	06:03		06:27 (T18)	06:01		06:34 (T18)
	17:43				19:53	20:25	20:55	51	07:18 (T18)	21:09	48	07:22 (T18)
30	07:45				07:19	06:31	06:02		06:27 (T18)	06:01		06:35 (T18)
	17:45				19:54	20:26	20:56	52	07:19 (T18)	21:09	48	07:23 (T18)
31	07:45				07:18		06:02		06:27 (T18)			
	17:46				19:55		20:56	51	07:18 (T18)			
Potential sun hours	297			297	370	399	449			453		
Total, worst case		63						1206			1449	
Sun reduction		0.31						0.57			0.64	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.53						0.71			0.71	
Total reduction		0.16						0.40			0.44	
Total, real		10						476			643	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 653 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8235)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September	October	November	December		
1	06:02		06:34 (T18)	06:26		06:48 (T18)	06:57	07:27	07:02	07:37		
	21:09	49	07:23 (T18)	20:50	37	07:25 (T18)	20:07	19:15	17:28	17:03		
2	06:02		06:35 (T18)	06:27		06:49 (T18)	06:58	07:29	07:03	07:38		
	21:09	48	07:23 (T18)	20:49	35	07:24 (T18)	20:06	19:13	17:27	17:03		
3	06:03		06:34 (T18)	06:28		06:50 (T18)	06:59	07:30	07:04	07:39		
	21:08	49	07:23 (T18)	20:48	33	07:23 (T18)	20:04	19:11	17:25	17:03		
4	06:03		06:35 (T18)	06:29		06:51 (T18)	07:00	07:31	07:06	07:40		
	21:08	49	07:24 (T18)	20:47	31	07:22 (T18)	20:02	19:10	17:24	17:03		
5	06:04		06:34 (T18)	06:30		06:52 (T18)	07:01	07:32	07:07	07:41		
	21:08	50	07:24 (T18)	20:46	29	07:21 (T18)	20:01	19:08	17:23	17:03		
6	06:05		06:35 (T18)	06:31		06:53 (T18)	07:02	07:33	07:08	07:42		
	21:08	50	07:25 (T18)	20:45	27	07:20 (T18)	19:57	19:06	17:22	17:02		
7	06:05		06:35 (T18)	06:32		06:54 (T18)	07:03	07:34	07:09	07:43		09:00 (T21)
	21:08	50	07:25 (T18)	20:43	25	07:19 (T18)	19:56	19:05	17:21	17:02	4	09:04 (T21)
8	06:06		06:35 (T18)	06:33		06:55 (T18)	07:04	07:35	07:11	07:44		08:57 (T21)
	21:07	50	07:25 (T18)	20:42	22	07:17 (T18)	19:54	19:03	17:20	17:02	10	09:07 (T21)
9	06:06		06:35 (T18)	06:34		06:56 (T18)	07:05	07:36	07:12	07:45		08:56 (T21)
	21:07	51	07:26 (T18)	20:41	19	07:15 (T18)	19:52	19:01	17:19	17:02	14	09:10 (T21)
10	06:07		06:36 (T18)	06:35		06:57 (T18)	07:06	07:37	07:13	07:46		08:55 (T21)
	21:07	50	07:26 (T18)	20:40	16	07:13 (T18)	19:51	19:00	17:18	17:02	15	09:10 (T21)
11	06:08		06:35 (T18)	06:36		06:57 (T18)	07:07	07:38	07:14	07:47		08:54 (T21)
	21:06	51	07:26 (T18)	20:38	12	07:09 (T18)	19:49	18:58	17:17	17:02	18	09:12 (T21)
12	06:09		06:35 (T18)	06:37		06:59 (T18)	07:08	07:39	07:15	07:48		08:54 (T21)
	21:06	51	07:26 (T18)	20:37	3	07:02 (T18)	19:47	18:57	17:16	17:02	19	09:13 (T21)
13	06:09		06:36 (T18)	06:38			07:09	07:40	07:17	07:48		08:54 (T21)
	21:05	51	07:27 (T18)	20:36			19:45	18:55	17:15	17:03	21	09:15 (T21)
14	06:10		06:36 (T18)	06:39			07:10	07:41	07:18	07:49		08:54 (T21)
	21:05	51	07:27 (T18)	20:34			19:44	18:53	17:14	17:03	22	09:16 (T21)
15	06:11		06:35 (T18)	06:40			07:11	07:43	07:19	07:50		08:54 (T21)
	21:04	52	07:27 (T18)	20:33			19:42	18:52	17:13	17:03	22	09:16 (T21)
16	06:12		06:36 (T18)	06:41			07:12	07:44	07:20	07:51		08:54 (T21)
	21:04	51	07:27 (T18)	20:32			19:40	18:50	17:12	17:03	23	09:17 (T21)
17	06:12		06:36 (T18)	06:42			07:13	07:45	07:21	07:51		08:54 (T21)
	21:03	51	07:27 (T18)	20:30			19:39	18:49	17:11	17:04	24	09:18 (T21)
18	06:13		06:36 (T18)	06:43			07:14	07:46	07:23	07:52		08:54 (T21)
	21:02	52	07:28 (T18)	20:29			19:37	18:47	17:10	17:04	25	09:19 (T21)
19	06:14		06:36 (T18)	06:44			07:15	07:47	07:24	07:52		08:55 (T21)
	21:02	51	07:27 (T18)	20:27			19:35	18:46	17:10	17:04	25	09:20 (T21)
20	06:15		06:37 (T18)	06:45			07:16	07:48	07:25	07:53		08:55 (T21)
	21:01	50	07:27 (T18)	20:26			19:33	18:44	17:09	17:05	25	09:20 (T21)
21	06:16		06:38 (T18)	06:46			07:17	07:49	07:26	07:54		08:55 (T21)
	21:00	49	07:27 (T18)	20:24			19:32	18:43	17:08	17:05	26	09:21 (T21)
22	06:17		06:39 (T18)	06:47			07:18	07:50	07:27	07:54		08:55 (T21)
	21:00	49	07:28 (T18)	20:23			19:30	18:41	17:08	17:06	26	09:21 (T21)
23	06:18		06:40 (T18)	06:48			07:19	07:52	07:28	07:55		08:56 (T21)
	20:59	48	07:28 (T18)	20:21			19:28	18:40	17:07	17:06	26	09:22 (T21)
24	06:18		06:41 (T18)	06:49			07:20	07:53	07:30	07:55		08:57 (T21)
	20:58	47	07:28 (T18)	20:20			19:27	18:38	17:06	17:07	25	09:22 (T21)
25	06:19		06:42 (T18)	06:50			07:21	07:54	07:31	07:56		08:58 (T21)
	20:57	46	07:28 (T18)	20:18			19:25	18:37	17:06	17:07	25	09:23 (T21)
26	06:20		06:42 (T18)	06:51			07:22	07:55	07:32	07:56		08:58 (T21)
	20:56	45	07:27 (T18)	20:17			19:23	18:36	17:05	17:08	24	09:22 (T21)
27	06:21		06:43 (T18)	06:52			07:23	07:56	07:33	07:56		08:59 (T21)
	20:55	43	07:26 (T18)	20:15			19:21	18:34	17:05	17:09	23	09:22 (T21)
28	06:22		06:44 (T18)	06:53			07:24	07:57	07:34	07:57		08:59 (T21)
	20:54	42	07:26 (T18)	20:14			19:20	18:33	17:04	17:09	23	09:22 (T21)
29	06:23		06:45 (T18)	06:54			07:25	07:59	07:35	07:57		09:01 (T21)
	20:53	41	07:26 (T18)	20:12			19:18	18:32	17:04	17:10	22	09:23 (T21)
30	06:24		06:46 (T18)	06:55			07:26	08:00	07:36	07:57		09:02 (T21)
	20:52	40	07:26 (T18)	20:10			19:16	18:30	17:04	17:11	21	09:23 (T21)
31	06:25		06:47 (T18)	06:56				08:01		07:57		09:03 (T21)
	20:51	38	07:25 (T18)	20:09				18:29		17:12	20	09:23 (T21)
Potential sun hours	460			429			375	345	297	287		
Total, worst case		1495			289						528	
Sun reduction		0.66			0.61						0.22	
Oper. time red.		1.00			1.00						1.00	
Wind dir. red.		0.71			0.71						0.53	
Total reduction		0.46			0.42						0.11	
Total, real		684			122						60	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 688 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8262)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58			07:44		16:27 (T13)	07:07		16:39 (T13)	07:16		20:02 (T10)	06:30			06:01		20:02 (T10)
	17:13			17:47	56	17:23 (T13)	18:22	57	18:00 (T12)	19:56			20:27			20:57	31	20:33 (T10)
2	07:58			07:43		16:27 (T13)	07:06		16:40 (T13)	07:14		20:01 (T10)	06:29			06:01		20:01 (T10)
	17:14			17:48	57	17:24 (T13)	18:23	55	18:01 (T12)	19:57			20:28			20:58	32	20:33 (T10)
3	07:58			07:42		16:26 (T13)	07:04		16:44 (T13)	07:13		20:01 (T10)	06:27			06:00		20:01 (T10)
	17:14			17:50	59	17:25 (T13)	18:24	51	18:03 (T12)	19:58			20:29			20:59	33	20:34 (T10)
4	07:58			07:41		16:26 (T13)	07:03		16:47 (T13)	07:11		20:02 (T10)	06:26			06:00		20:02 (T10)
	17:15			17:51	59	17:25 (T13)	18:25	44	18:03 (T12)	19:59			20:30			20:59	33	20:35 (T10)
5	07:58			07:40		16:26 (T13)	07:01		17:35 (T12)	07:09		20:01 (T10)	06:25			05:59		20:01 (T10)
	17:16			17:52	60	17:26 (T13)	18:26	29	18:04 (T12)	20:00			20:31			21:00	34	20:35 (T10)
6	07:58			07:38		16:26 (T13)	06:59		17:35 (T12)	07:08		20:01 (T10)	06:24			05:59		20:01 (T10)
	17:17			17:54	61	17:27 (T13)	18:27	31	18:06 (T12)	20:00			20:33			21:01	35	20:36 (T10)
7	07:58			07:37		16:25 (T13)	06:58		17:34 (T12)	07:06		20:01 (T10)	06:22			05:59		20:01 (T10)
	17:18			17:55	61	17:26 (T13)	18:29	33	18:07 (T12)	20:01			20:34			21:01	36	20:37 (T10)
8	07:58			07:36		16:25 (T13)	07:56		18:34 (T12)	07:05		20:02 (T10)	06:21			05:59		20:02 (T10)
	17:19			17:56	62	17:27 (T13)	19:30	34	19:08 (T12)	20:03			20:35			21:02	36	20:38 (T10)
9	07:57			07:35		16:25 (T13)	07:55		18:35 (T12)	07:03		20:01 (T10)	06:20			05:58		20:01 (T10)
	17:20			17:57	62	17:27 (T13)	19:31	33	19:08 (T12)	20:04			20:36			21:03	36	20:37 (T10)
10	07:57			07:34		16:25 (T13)	07:53		18:35 (T12)	07:01		20:01 (T10)	06:19			05:58		20:01 (T10)
	17:21			17:59	63	17:28 (T13)	19:32	32	19:07 (T12)	20:05			20:37			21:03	37	20:38 (T10)
11	07:57			07:33		16:26 (T13)	07:51		18:36 (T12)	07:00		20:01 (T10)	06:18			05:58		20:01 (T10)
	17:22			18:00	62	17:28 (T13)	19:33	31	19:07 (T12)	20:06			20:38			21:04	38	20:39 (T10)
12	07:57			07:31		16:25 (T13)	07:50		18:36 (T12)	06:58		20:02 (T10)	06:17			05:58		20:02 (T10)
	17:23			18:01	62	17:27 (T13)	19:34	30	19:06 (T12)	20:07			20:39			21:04	37	20:39 (T10)
13	07:56			07:30		16:26 (T13)	07:48		18:36 (T12)	06:56		20:02 (T10)	06:16			05:58		20:02 (T10)
	17:24			18:02	62	17:28 (T13)	19:35	28	19:04 (T12)	20:08			20:40			21:05	38	20:40 (T10)
14	07:56			07:29		16:26 (T13)	07:46		18:38 (T12)	06:55		20:02 (T10)	06:15			05:58		20:02 (T10)
	17:26			18:04	62	17:28 (T13)	19:36	25	19:03 (T12)	20:09			20:41			21:05	38	20:40 (T10)
15	07:56		16:45 (T13)	07:27		16:26 (T13)	07:45		18:39 (T12)	06:53		20:02 (T10)	06:14			05:58		20:02 (T10)
	17:27	11	16:56 (T13)	18:05	61	17:27 (T13)	19:38	22	19:01 (T12)	20:10			20:42			21:06	38	20:40 (T10)
16	07:55		16:43 (T13)	07:26		16:26 (T13)	07:43		18:41 (T12)	06:52		20:02 (T10)	06:13			05:58		20:02 (T10)
	17:28	17	17:00 (T13)	18:06	61	17:27 (T13)	19:39	17	18:58 (T12)	20:11			20:43			21:06	39	20:41 (T10)
17	07:55		16:40 (T13)	07:25		16:27 (T13)	07:41		18:44 (T12)	06:50		20:02 (T10)	06:12			05:58		20:02 (T10)
	17:29	23	17:03 (T13)	18:07	60	17:27 (T13)	19:40	10	18:54 (T12)	20:12			20:44			21:07	39	20:41 (T10)
18	07:54		16:39 (T13)	07:23		16:27 (T13)	07:40			06:49		20:02 (T10)	06:11		20:17 (T10)	05:58		20:02 (T10)
	17:30	26	17:05 (T13)	18:08	59	17:26 (T13)	19:41			20:13			20:45	5	20:22 (T10)	21:07	39	20:41 (T10)
19	07:54		16:37 (T13)	07:22		16:28 (T13)	07:38			06:47		20:02 (T10)	06:10		20:13 (T10)	05:58		20:02 (T10)
	17:31	29	17:06 (T13)	18:10	58	17:26 (T13)	19:42			20:14			20:46	9	20:22 (T10)	21:07	39	20:41 (T10)
20	07:53		16:36 (T13)	07:21		16:28 (T13)	07:36			06:46		20:03 (T10)	06:09		20:11 (T10)	05:58		20:03 (T10)
	17:32	31	17:07 (T13)	18:11	57	17:25 (T13)	19:43			20:15			20:47	12	20:23 (T10)	21:08	40	20:43 (T10)
21	07:53		16:35 (T13)	07:19		16:29 (T13)	07:35			06:44		20:03 (T10)	06:08		20:09 (T10)	05:58		20:03 (T10)
	17:34	34	17:09 (T13)	18:12	56	17:25 (T13)	19:44			20:16			20:48	15	20:24 (T10)	21:08	40	20:43 (T10)
22	07:52		16:34 (T13)	07:18		16:29 (T13)	07:33			06:43		20:03 (T10)	06:07		20:08 (T10)	05:59		20:03 (T10)
	17:35	36	17:10 (T13)	18:13	54	17:23 (T13)	19:45			20:18			20:49	17	20:25 (T10)	21:08	40	20:43 (T10)
23	07:51		16:33 (T13)	07:16		16:30 (T13)	07:31			06:41		20:03 (T10)	06:07		20:07 (T10)	05:59		20:03 (T10)
	17:36	38	17:11 (T13)	18:15	53	17:23 (T13)	19:46			20:19			20:50	19	20:26 (T10)	21:08	40	20:43 (T10)
24	07:50		16:32 (T13)	07:15		16:31 (T13)	07:30			06:40		20:04 (T10)	06:06		20:05 (T10)	05:59		20:04 (T10)
	17:37	40	17:12 (T13)	18:16	56	17:53 (T12)	19:47			20:20			20:50	21	20:26 (T10)	21:09	39	20:43 (T10)
25	07:50		16:32 (T13)	07:13		16:32 (T13)	07:28			06:38		20:04 (T10)	06:05		20:04 (T10)	05:59		20:04 (T10)
	17:38	42	17:14 (T13)	18:17	60	17:55 (T12)	19:48			20:21			20:51	23	20:27 (T10)	21:09	39	20:43 (T10)
26	07:49		16:31 (T13)	07:12		16:33 (T13)	07:26			06:37		20:04 (T10)	06:05		20:04 (T10)	06:00		20:04 (T10)
	17:40	44	17:15 (T13)	18:18	60	17:56 (T12)	19:50			20:22			20:52	24	20:28 (T10)	21:09	39	20:43 (T10)
27	07:48		16:30 (T13)	07:10		16:35 (T13)	07:24			06:35		20:05 (T10)	06:04		20:03 (T10)	06:00		20:05 (T10)
	17:41	46	17:16 (T13)	18:19	59	17:57 (T12)	19:51			20:23			20:53	26	20:29 (T10)	21:09	39	20:44 (T10)
28	07:47		16:29 (T13)	07:09		16:36 (T13)	07:23			06:34		20:05 (T10)	06:03		20:03 (T10)	06:00		20:05 (T10)
	17:42	49	17:18 (T13)	18:20	59	17:58 (T12)	19:52			20:24			20:54	27	20:30 (T10)	21:09	38	20:43 (T10)
29	07:46		16:29 (T13)				07:21			06:33		20:05 (T10)	06:03		20:02 (T10)	06:01		20:05 (T10)
	17:43	50	17:19 (T13)				19:53			20:25			20:55	28	20:30 (T10)	21:09	38	20:43 (T10)
30	07:46		16:28 (T13)				07:19			06:31		20:06 (T10)	06:02		20:03 (T10)	06:01		20:06 (T10)
	17:45	52	17:20 (T13)				19:54			20:26			20:56	29	20:32 (T10)	21:09	37	20:43 (T10)
31	07:45		16:28 (T13)				07:18						06:02		20:02 (T10)			
	17:46	53	17:21 (T13)				19:55						20:56	30	20:32 (T10)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		621			1661			562						285			1117	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.72			0.72			0.68						0.54			0.54	
Total reduction		0.23			0.30			0.31						0.32			0.35	
Total, real		143			493			173						90			396	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 688 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8262)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August	September		October		November		December
1	06:02	20:05 (T10)	06:26	06:57		07:28	18:15 (T12)	07:02	15:55 (T13)	07:37
	21:09 38	20:43 (T10)	20:50	20:07		19:15 29	18:44 (T12)	17:28 62	16:57 (T13)	17:03
2	06:02	20:06 (T10)	06:27	06:58		07:29	18:14 (T12)	07:03	15:55 (T13)	07:38
	21:09 37	20:43 (T10)	20:49	20:06		19:13 30	18:44 (T12)	17:27 62	16:57 (T13)	17:03
3	06:03	20:06 (T10)	06:28	06:59		07:30	18:14 (T12)	07:05	15:55 (T13)	07:39
	21:09 37	20:43 (T10)	20:48	20:04		19:11 32	18:46 (T12)	17:25 62	16:57 (T13)	17:03
4	06:03	20:07 (T10)	06:29	07:00		07:31	18:13 (T12)	07:06	15:55 (T13)	07:40
	21:08 36	20:43 (T10)	20:47	20:02		19:10 33	18:46 (T12)	17:24 61	16:56 (T13)	17:03
5	06:04	20:08 (T10)	06:30	07:01		07:32	18:12 (T12)	07:07	15:56 (T13)	07:41
	21:08 35	20:43 (T10)	20:46	20:01		19:08 34	18:46 (T12)	17:23 60	16:56 (T13)	17:03
6	06:05	20:07 (T10)	06:31	07:02		07:33	18:11 (T12)	07:08	15:56 (T13)	07:42
	21:08 35	20:42 (T10)	20:45	19:57		19:06 33	18:44 (T12)	17:22 60	16:56 (T13)	17:02
7	06:05	20:08 (T10)	06:32	07:03		07:34	18:11 (T12)	07:09	15:56 (T13)	07:43
	21:08 34	20:42 (T10)	20:43	19:56		19:05 31	18:42 (T12)	17:21 59	16:55 (T13)	17:02
8	06:06	20:08 (T10)	06:33	07:04		07:35	18:10 (T12)	07:11	15:57 (T13)	07:44
	21:07 34	20:42 (T10)	20:42	19:54		19:03 31	18:41 (T12)	17:20 59	16:56 (T13)	17:02
9	06:06	20:09 (T10)	06:34	07:05		07:36	17:25 (T13)	07:12	15:58 (T13)	07:45
	21:07 33	20:42 (T10)	20:41	19:52		19:01 40	18:39 (T12)	17:19 57	16:55 (T13)	17:02
10	06:07	20:09 (T10)	06:35	07:06		07:37	17:20 (T13)	07:13	15:58 (T13)	07:46
	21:07 33	20:42 (T10)	20:40	19:51		19:00 48	18:37 (T12)	17:18 56	16:54 (T13)	17:02
11	06:08	20:09 (T10)	06:36	07:07		07:38	17:16 (T13)	07:14	15:58 (T13)	07:47
	21:06 31	20:40 (T10)	20:38	19:49		18:58 53	18:35 (T12)	17:17 54	16:52 (T13)	17:02
12	06:09	20:10 (T10)	06:37	07:08		07:39	17:13 (T13)	07:15	16:00 (T13)	07:48
	21:06 30	20:40 (T10)	20:37	19:47		18:57 56	18:34 (T12)	17:16 52	16:52 (T13)	17:02
13	06:09	20:11 (T10)	06:38	07:09		07:40	17:11 (T13)	07:17	16:01 (T13)	07:48
	21:05 29	20:40 (T10)	20:36	19:46		18:55 58	18:33 (T12)	17:15 50	16:51 (T13)	17:03
14	06:10	20:12 (T10)	06:39	07:10		07:41	17:09 (T13)	07:18	16:01 (T13)	07:49
	21:05 28	20:40 (T10)	20:34	19:44		18:53 59	18:31 (T12)	17:14 48	16:49 (T13)	17:03
15	06:11	20:11 (T10)	06:40	07:11		07:43	17:07 (T13)	07:19	16:03 (T13)	07:50
	21:04 28	20:39 (T10)	20:33	19:42		18:52 59	18:29 (T12)	17:13 46	16:49 (T13)	17:03
16	06:12	20:12 (T10)	06:41	07:12		07:44	17:05 (T13)	07:20	16:04 (T13)	07:51
	21:04 26	20:38 (T10)	20:32	19:40		18:50 60	18:28 (T12)	17:12 44	16:48 (T13)	17:03
17	06:12	20:13 (T10)	06:42	07:13		07:45	17:03 (T13)	07:21	16:05 (T13)	07:51
	21:03 25	20:38 (T10)	20:30	19:39		18:49 59	18:26 (T12)	17:11 42	16:47 (T13)	17:04
18	06:13	20:14 (T10)	06:43	07:14		07:46	17:02 (T13)	07:23	16:06 (T13)	07:52
	21:03 24	20:38 (T10)	20:29	19:37		18:47 55	18:24 (T12)	17:10 40	16:46 (T13)	17:04
19	06:14	20:14 (T10)	06:44	07:15		07:47	17:01 (T13)	07:24	16:08 (T13)	07:53
	21:02 22	20:36 (T10)	20:27	19:35		18:46 53	17:54 (T13)	17:10 38	16:46 (T13)	17:04
20	06:15	20:16 (T10)	06:45	07:16		07:48	17:00 (T13)	07:25	16:09 (T13)	07:53
	21:01 20	20:36 (T10)	20:26	19:34		18:44 55	17:55 (T13)	17:09 36	16:45 (T13)	17:05
21	06:16	20:17 (T10)	06:46	07:17		07:49	16:59 (T13)	07:26	16:10 (T13)	07:54
	21:00 18	20:35 (T10)	20:24	19:32		18:43 56	17:55 (T13)	17:08 34	16:44 (T13)	17:05
22	06:17	20:18 (T10)	06:47	07:18		07:50	16:58 (T13)	07:27	16:12 (T13)	07:54
	21:00 17	20:35 (T10)	20:23	19:30		18:41 58	17:56 (T13)	17:08 31	16:43 (T13)	17:06
23	06:18	20:20 (T10)	06:48	07:19		07:52	16:57 (T13)	07:28	16:14 (T13)	07:55
	20:59 14	20:34 (T10)	20:21	19:28		18:40 59	17:56 (T13)	17:07 29	16:43 (T13)	17:06
24	06:18	20:22 (T10)	06:49	07:20		07:53	16:57 (T13)	07:30	16:16 (T13)	07:55
	20:58 11	20:33 (T10)	20:20	19:27		18:38 60	17:57 (T13)	17:06 26	16:42 (T13)	17:07
25	06:19	20:25 (T10)	06:50	07:21		07:54	16:57 (T13)	07:31	16:18 (T13)	07:56
	20:57 8	20:33 (T10)	20:18	19:25		18:37 60	17:57 (T13)	17:06 23	16:41 (T13)	17:07
26	06:20		06:51	07:22	18:28 (T12)	07:55	16:56 (T13)	07:32	16:21 (T13)	07:56
	20:56		20:17	19:23 7	18:35 (T12)	18:36 61	17:57 (T13)	17:05 17	16:38 (T13)	17:08
27	06:21		06:52	07:23	18:23 (T12)	07:56	16:55 (T13)	07:33	16:24 (T13)	07:56
	20:55		20:15	19:22 16	18:39 (T12)	18:34 62	17:57 (T13)	17:05 11	16:35 (T13)	17:09
28	06:22		06:53	07:24	18:20 (T12)	07:57	16:55 (T13)	07:34		07:57
	20:54		20:14	19:20 21	18:41 (T12)	18:33 62	17:57 (T13)	17:04		17:09
29	06:23		06:54	07:25	18:18 (T12)	07:59	16:55 (T13)	07:35		07:57
	20:53		20:12	19:18 24	18:42 (T12)	18:32 62	17:57 (T13)	17:04		17:10
30	06:24		06:55	07:27	18:16 (T12)	08:00	16:55 (T13)	07:36		07:57
	20:52		20:11	19:16 27	18:43 (T12)	18:30 62	17:57 (T13)	17:04		17:11
31	06:25		06:56			08:01	16:54 (T13)			07:57
	20:51		20:09			18:29 63	17:57 (T13)			17:12
Potential sun hours	460		429	375		345		297		287
Total, worst case		683			95		1573		1219	
Sun reduction		0.66			0.59		0.48		0.30	
Oper. time red.		1.00			1.00		1.00		1.00	
Wind dir. red.		0.54			0.67		0.71		0.72	
Total reduction		0.37			0.41		0.35		0.22	
Total, real		249			39		550		272	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 693 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8267)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:20 (T39)	07:44			07:07		17:10 (T37)	07:16		18:12 (T37)	06:30			06:02		19:55 (T34)
	17:13	12	08:32 (T39)	17:48			18:22	50	18:00 (T38)	19:56	26	18:38 (T37)	20:27			20:57	22	20:17 (T34)
2	07:58		08:20 (T39)	07:43			07:06		17:08 (T37)	07:15		18:16 (T37)	06:29			06:01		19:57 (T34)
	17:14	12	08:32 (T39)	17:49			18:23	53	18:01 (T38)	19:57	18	18:34 (T37)	20:28			20:58	20	20:17 (T34)
3	07:58		08:20 (T39)	07:42			07:04		17:07 (T37)	07:13		18:23 (T37)	06:28		20:01 (T34)	06:01		19:57 (T34)
	17:15	13	08:33 (T39)	17:50			18:24	56	18:03 (T38)	19:58	3	18:26 (T37)	20:29	6	20:07 (T34)	20:59	19	20:16 (T34)
4	07:58		08:20 (T39)	07:41			07:03		17:06 (T37)	07:11			06:26		19:58 (T34)	06:00		19:58 (T34)
	17:16	14	08:34 (T39)	17:51			18:25	58	18:04 (T38)	19:59			20:30	10	20:08 (T34)	20:59	18	20:16 (T34)
5	07:58		08:20 (T39)	07:40			07:01		17:04 (T37)	07:10			06:25		19:56 (T34)	06:00		19:59 (T34)
	17:17	14	08:34 (T39)	17:53			18:26	60	18:04 (T38)	20:00			20:31	13	20:09 (T34)	21:00	17	20:16 (T34)
6	07:58		08:20 (T39)	07:39			07:00		17:04 (T37)	07:08			06:24		19:54 (T34)	06:00		19:59 (T34)
	17:18	15	08:35 (T39)	17:54			18:28	62	18:06 (T38)	20:00			20:33	16	20:10 (T34)	21:01	15	20:14 (T34)
7	07:58		08:20 (T39)	07:37			06:58		17:02 (T37)	07:06			06:23		19:53 (T34)	05:59		20:01 (T34)
	17:19	15	08:35 (T39)	17:55			18:29	65	18:07 (T38)	20:02			20:34	18	20:11 (T34)	21:01	13	20:14 (T34)
8	07:58		08:20 (T39)	07:36			07:56		18:02 (T37)	07:05			06:22		19:52 (T34)	05:59		20:02 (T34)
	17:20	16	08:36 (T39)	17:56			19:30	67	19:09 (T38)	20:03			20:35	20	20:12 (T34)	21:02	11	20:13 (T34)
9	07:57		08:19 (T39)	07:35			07:55		18:01 (T37)	07:03			06:20		19:52 (T34)	05:59		20:04 (T34)
	17:21	17	08:36 (T39)	17:58			19:31	67	19:08 (T38)	20:04			20:36	21	20:13 (T34)	21:03	9	20:13 (T34)
10	07:57		08:19 (T39)	07:34			07:53		18:00 (T37)	07:02			06:19		19:51 (T34)	05:59		20:05 (T34)
	17:22	17	08:36 (T39)	17:59			19:32	67	19:07 (T38)	20:05			20:37	23	20:14 (T34)	21:03	7	20:12 (T34)
11	07:57		08:19 (T39)	07:33			07:51		18:00 (T37)	07:00			06:18		19:51 (T34)	05:58		
	17:23	18	08:37 (T39)	18:00			19:33	66	19:06 (T38)	20:06			20:38	24	20:15 (T34)	21:04		
12	07:57		08:18 (T39)	07:31			07:50		17:59 (T37)	06:58			06:17		19:50 (T34)	05:58		
	17:24	19	08:37 (T39)	18:01			19:34	66	19:05 (T38)	20:07			20:39	26	20:16 (T34)	21:04		
13	07:56		08:18 (T39)	07:30			07:48		17:59 (T37)	06:57			06:16		19:50 (T34)	05:58		
	17:25	19	08:37 (T39)	18:03			19:36	64	19:03 (T38)	20:08			20:40	27	20:17 (T34)	21:05		
14	07:56		08:18 (T39)	07:29			07:46		17:59 (T37)	06:55			06:15		19:50 (T34)	05:58		
	17:26	20	08:38 (T39)	18:04			19:37	63	19:02 (T38)	20:09			20:41	28	20:18 (T34)	21:05		
15	07:56		08:17 (T39)	07:28			07:45		17:59 (T37)	06:54			06:14		19:49 (T34)	05:58		
	17:27	20	08:37 (T39)	18:05			19:38	60	18:59 (T37)	20:10			20:42	30	20:19 (T34)	21:06		
16	07:55		08:18 (T39)	07:26			07:43		17:58 (T37)	06:52			06:13		19:49 (T34)	05:58		
	17:28	20	08:38 (T39)	18:06			19:39	61	18:59 (T37)	20:11			20:43	31	20:20 (T34)	21:06		
17	07:55		08:18 (T39)	07:25			07:41		17:59 (T37)	06:50			06:12		19:49 (T34)	05:58		
	17:29	19	08:37 (T39)	18:08			19:40	60	18:59 (T37)	20:12			20:44	32	20:21 (T34)	21:07		
18	07:54		08:19 (T39)	07:24			07:40		17:59 (T37)	06:49			06:11		19:49 (T34)	05:58		
	17:30	18	08:37 (T39)	18:09			19:41	59	18:58 (T37)	20:13			20:45	32	20:21 (T34)	21:07		
19	07:54		08:21 (T39)	07:22			07:38		17:58 (T37)	06:47			06:10		19:49 (T34)	05:58		
	17:32	16	08:37 (T39)	18:10			19:42	59	18:57 (T37)	20:14			20:46	32	20:21 (T34)	21:07		
20	07:53		08:22 (T39)	07:21			07:36		17:59 (T37)	06:46			06:09		19:49 (T34)	05:59		
	17:33	14	08:36 (T39)	18:11			19:43	58	18:57 (T37)	20:15			20:47	32	20:21 (T34)	21:08		
21	07:53		08:24 (T39)	07:19			07:35		17:59 (T37)	06:44			06:09		19:50 (T34)	05:59		
	17:34	11	08:35 (T39)	18:12			19:44	57	18:56 (T37)	20:17			20:48	31	20:21 (T34)	21:08		
22	07:52		08:26 (T39)	07:18			07:33		17:59 (T37)	06:43			06:08		19:50 (T34)	05:59		
	17:35	7	08:33 (T39)	18:14			19:45	56	18:55 (T37)	20:18			20:49	31	20:21 (T34)	21:08		
23	07:51			07:16		17:28 (T37)	07:31		18:00 (T37)	06:41			06:07		19:50 (T34)	05:59		
	17:36			18:15	10	17:38 (T37)	19:46	54	18:54 (T37)	20:19			20:49	31	20:21 (T34)	21:08		
24	07:50			07:15		17:23 (T37)	07:30		18:01 (T37)	06:40			06:06		19:50 (T34)	05:59		
	17:38			18:16	21	17:44 (T37)	19:48	52	18:53 (T37)	20:20			20:50	30	20:20 (T34)	21:08		
25	07:50			07:13		17:19 (T37)	07:28		18:01 (T37)	06:39			06:06		19:51 (T34)	06:00		
	17:39			18:17	28	17:47 (T37)	19:49	51	18:52 (T37)	20:21			20:51	29	20:20 (T34)	21:09		
26	07:49			07:12		17:15 (T37)	07:26		18:02 (T37)	06:37			06:05		19:51 (T34)	06:00		
	17:40			18:18	35	17:56 (T38)	19:50	48	18:50 (T37)	20:22			20:52	29	20:20 (T34)	21:09		
27	07:48			07:10		17:14 (T37)	07:25		18:04 (T37)	06:36			06:04		19:53 (T34)	06:00		
	17:41			18:20	44	17:58 (T38)	19:51	45	18:49 (T37)	20:23			20:53	27	20:20 (T34)	21:09		
28	07:47			07:09		17:11 (T37)	07:23		18:05 (T37)	06:34			06:04		19:53 (T34)	06:01		
	17:43			18:21	47	17:58 (T38)	19:52	42	18:47 (T37)	20:24			20:54	26	20:19 (T34)	21:09		
29	07:46						07:21		18:06 (T37)	06:33			06:03		19:54 (T34)	06:01		
	17:44						19:53	39	18:45 (T37)	20:25			20:55	25	20:19 (T34)	21:09		
30	07:46						07:20		18:08 (T37)	06:32			06:03		19:54 (T34)	06:02		
	17:45						19:54	36	18:44 (T37)	20:26			20:56	24	20:18 (T34)	21:09		
31	07:45						07:18		18:10 (T37)				06:02		19:55 (T34)			
	17:46						19:55	31	18:41 (T37)				20:56	23	20:18 (T34)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		346			185			1732			47			727			151	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.52			0.67			0.67			0.67			0.56			0.56	
Total reduction		0.16			0.27			0.30			0.35			0.32			0.36	
Total, real		55			50			512			16			230			54	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 693 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8267)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		20:00 (T34)	06:57			07:28		17:39 (T37)	07:02			07:37		08:01 (T39)
	21:09			20:50	25	20:25 (T34)	20:07			19:15	65	18:44 (T38)	17:28			17:04	18	08:19 (T39)
2	06:03		20:10 (T34)	06:27		20:00 (T34)	06:58			07:29		17:39 (T37)	07:03			07:38		08:02 (T39)
	21:09	5	20:15 (T34)	20:49	25	20:25 (T34)	20:06			19:13	66	18:45 (T38)	17:27			17:04	17	08:19 (T39)
3	06:03		20:09 (T34)	06:28		20:01 (T34)	06:59			07:30		17:39 (T37)	07:05			07:39		08:03 (T39)
	21:09	8	20:17 (T34)	20:48	23	20:24 (T34)	20:04			19:12	66	18:45 (T38)	17:26			17:03	17	08:20 (T39)
4	06:04		20:08 (T34)	06:29		20:02 (T34)	07:00			07:31		17:39 (T37)	07:06			07:40		08:04 (T39)
	21:08	10	20:18 (T34)	20:47	20	20:22 (T34)	20:02			19:10	66	18:45 (T38)	17:24			17:03	16	08:20 (T39)
5	06:04		20:07 (T34)	06:30		20:02 (T34)	07:01			07:32		17:39 (T37)	07:07			07:41		08:05 (T39)
	21:08	13	20:20 (T34)	20:46	19	20:21 (T34)	20:01			19:08	66	18:45 (T38)	17:23			17:03	16	08:21 (T39)
6	06:05		20:06 (T34)	06:31		20:03 (T34)	07:02			07:33		17:39 (T37)	07:08			07:42		08:06 (T39)
	21:08	14	20:20 (T34)	20:45	17	20:20 (T34)	19:58			19:07	65	18:44 (T38)	17:22			17:03	15	08:21 (T39)
7	06:06		20:06 (T34)	06:32		20:05 (T34)	07:03			07:34		17:39 (T37)	07:09			07:43		08:07 (T39)
	21:08	16	20:22 (T34)	20:44	14	20:19 (T34)	19:56			19:05	64	18:43 (T38)	17:21			17:03	14	08:21 (T39)
8	06:06		20:06 (T34)	06:33		20:06 (T34)	07:04			07:35		17:39 (T37)	07:11			07:44		08:08 (T39)
	21:07	17	20:23 (T34)	20:42	12	20:18 (T34)	19:54			19:03	62	18:41 (T38)	17:20			17:03	14	08:22 (T39)
9	06:07		20:04 (T34)	06:34		20:08 (T34)	07:05			07:36		17:40 (T37)	07:12			07:45		08:09 (T39)
	21:07	19	20:23 (T34)	20:41	9	20:17 (T34)	19:52			19:02	59	18:39 (T38)	17:19			17:03	13	08:22 (T39)
10	06:08		20:04 (T34)	06:35		20:11 (T34)	07:06		18:09 (T37)	07:37		17:40 (T37)	07:13			07:46		08:09 (T39)
	21:07	20	20:24 (T34)	20:40	5	20:16 (T34)	19:51	18	18:27 (T37)	19:00	57	18:37 (T38)	17:18			17:03	12	08:21 (T39)
11	06:08		20:04 (T34)	06:36			07:07		18:05 (T37)	07:38		17:41 (T37)	07:14			07:47		08:10 (T39)
	21:06	21	20:25 (T34)	20:38			19:49	25	18:30 (T37)	18:58	55	18:36 (T38)	17:17			17:03	12	08:22 (T39)
12	06:09		20:03 (T34)	06:37			07:08		18:02 (T37)	07:39		17:42 (T37)	07:15			07:48		08:11 (T39)
	21:06	22	20:25 (T34)	20:37			19:47	31	18:33 (T37)	18:57	52	18:34 (T38)	17:16			17:03	11	08:22 (T39)
13	06:10		20:03 (T34)	06:38			07:09		17:59 (T37)	07:40		17:44 (T37)	07:17			07:48		08:12 (T39)
	21:05	23	20:26 (T34)	20:36			19:46	36	18:35 (T37)	18:55	49	18:33 (T38)	17:15			17:03	11	08:23 (T39)
14	06:10		20:02 (T34)	06:39			07:10		17:57 (T37)	07:42		17:45 (T37)	07:18			07:49		08:13 (T39)
	21:05	25	20:27 (T34)	20:34			19:44	39	18:36 (T37)	18:54	46	18:31 (T38)	17:14			17:03	11	08:24 (T39)
15	06:11		20:02 (T34)	06:40			07:11		17:54 (T37)	07:43		17:47 (T37)	07:19			07:50		08:13 (T39)
	21:04	26	20:28 (T34)	20:33			19:42	42	18:36 (T37)	18:52	43	18:30 (T38)	17:13			17:03	10	08:23 (T39)
16	06:12		20:01 (T34)	06:41			07:12		17:52 (T37)	07:44		17:49 (T37)	07:20			07:51		08:14 (T39)
	21:04	27	20:28 (T34)	20:32			19:41	45	18:37 (T37)	18:51	31	18:20 (T37)	17:12			17:04	10	08:24 (T39)
17	06:13		20:01 (T34)	06:42			07:13		17:51 (T37)	07:45		17:51 (T37)	07:21			07:51		08:15 (T39)
	21:03	28	20:29 (T34)	20:30			19:39	47	18:38 (T37)	18:49	26	18:17 (T37)	17:12			17:04	10	08:25 (T39)
18	06:14		20:01 (T34)	06:43			07:14		17:49 (T37)	07:46		17:55 (T37)	07:23			07:52		08:15 (T39)
	21:02	29	20:30 (T34)	20:29			19:37	50	18:39 (T37)	18:48	18	18:13 (T37)	17:11			17:04	9	08:24 (T39)
19	06:14		20:01 (T34)	06:44			07:15		17:48 (T37)	07:47			07:24			07:53		08:16 (T39)
	21:02	29	20:30 (T34)	20:27			19:35	51	18:39 (T37)	18:46			17:10			17:05	9	08:25 (T39)
20	06:15		20:01 (T34)	06:45			07:16		17:46 (T37)	07:48			07:25		08:01 (T39)	07:53		08:16 (T39)
	21:01	30	20:31 (T34)	20:26			19:34	54	18:40 (T37)	18:45			17:09	7	08:08 (T39)	17:05	9	08:25 (T39)
21	06:16		20:00 (T34)	06:46			07:17		17:45 (T37)	07:49			07:26		07:59 (T39)	07:54		08:17 (T39)
	21:00	30	20:30 (T34)	20:25			19:32	55	18:40 (T37)	18:43			17:09	11	08:10 (T39)	17:06	9	08:26 (T39)
22	06:17		20:00 (T34)	06:47			07:18		17:44 (T37)	07:51			07:27		07:58 (T39)	07:54		08:17 (T39)
	21:00	31	20:31 (T34)	20:23			19:30	56	18:40 (T37)	18:42			17:08	14	08:12 (T39)	17:06	9	08:26 (T39)
23	06:18		20:00 (T34)	06:48			07:19		17:43 (T37)	07:52			07:28		07:58 (T39)	07:55		08:18 (T39)
	20:59	31	20:31 (T34)	20:22			19:29	58	18:41 (T37)	18:40			17:07	16	08:14 (T39)	17:07	9	08:27 (T39)
24	06:19		20:00 (T34)	06:49			07:21		17:42 (T37)	07:53			07:30		07:57 (T39)	07:55		08:18 (T39)
	20:58	31	20:31 (T34)	20:20			19:27	59	18:41 (T37)	18:39			17:07	18	08:15 (T39)	17:07	9	08:27 (T39)
25	06:20		20:00 (T34)	06:50			07:22		17:41 (T37)	07:54			07:31		07:57 (T39)	07:56		08:19 (T39)
	20:57	32	20:32 (T34)	20:18			19:25	60	18:41 (T37)	18:37			17:06	18	08:15 (T39)	17:08	9	08:28 (T39)
26	06:21		20:00 (T34)	06:51			07:23		17:40 (T37)	07:55			07:32		07:56 (T39)	07:56		08:19 (T39)
	20:56	32	20:32 (T34)	20:17			19:23	60	18:40 (T37)	18:36			17:06	20	08:16 (T39)	17:08	9	08:28 (T39)
27	06:22		20:00 (T34)	06:52			07:24		17:40 (T37)	07:56			07:33		07:56 (T39)	07:56		08:19 (T39)
	20:55	31	20:31 (T34)	20:15			19:22	60	18:40 (T37)	18:35			17:05	20	08:16 (T39)	17:09	10	08:29 (T39)
28	06:23		20:00 (T34)	06:53			07:25		17:39 (T37)	07:58			07:34		07:57 (T39)	07:57		08:19 (T39)
	20:54	30	20:30 (T34)	20:14			19:20	61	18:40 (T37)	18:33			17:05	20	08:17 (T39)	17:10	10	08:29 (T39)
29	06:24		20:00 (T34)	06:54			07:26		17:39 (T37)	07:59			07:35		07:59 (T39)	07:57		08:20 (T39)
	20:53	29	20:29 (T34)	20:12			19:18	61	18:40 (T37)	18:32			17:04	19	08:18 (T39)	17:10	10	08:30 (T39)
30	06:24		19:59 (T34)	06:55			07:27		17:38 (T37)	08:00			07:36		08:00 (T39)	07:57		08:20 (T39)
	20:52	28	20:27 (T34)	20:11			19:17	64	18:42 (T38)	18:31			17:04	19	08:19 (T39)	17:11	11	08:31 (T39)
31	06:25		20:00 (T34)	06:56						08:01						07:57		08:20 (T39)
	20:51	26	20:26 (T34)	20:09						18:29						17:12	11	08:31 (T39)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		713			169			1032			956			182			360	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.56			0.56			0.67			0.67			0.52			0.52	
Total reduction		0.37			0.34			0.40			0.32			0.15			0.11	
Total, real		262			57			410			308			28			41	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 718 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8286)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June		
1	07:57	07:43			07:07		17:25 (T77)	07:16			06:30		19:14 (T42)	06:01		20:08 (T41)
	17:13	17:47			18:22	35	18:00 (T77)	19:56			20:27	44	19:58 (T42)	20:57	24	20:32 (T41)
2	07:57	07:42			07:06		17:23 (T77)	07:14			06:29		19:15 (T42)	06:01		20:09 (T41)
	17:14	17:49			18:23	38	18:01 (T77)	19:57			20:28	43	19:58 (T42)	20:58	24	20:33 (T41)
3	07:57	07:41			07:04		17:22 (T77)	07:13			06:28		19:14 (T42)	06:01		20:08 (T41)
	17:15	17:50			18:24	40	18:02 (T77)	19:58			20:29	43	19:57 (T42)	20:58	25	20:33 (T41)
4	07:57	07:40			07:02		17:21 (T77)	07:11			06:26		19:15 (T42)	06:00		20:09 (T41)
	17:16	17:51			18:25	43	18:04 (T77)	19:59			20:30	42	19:57 (T42)	20:59	25	20:34 (T41)
5	07:57	07:39			07:01		17:20 (T77)	07:09			06:25		19:16 (T42)	06:00		20:09 (T41)
	17:17	17:52			18:26	44	18:04 (T77)	20:00			20:31	40	19:56 (T42)	21:00	26	20:35 (T41)
6	07:57	07:38			06:59		17:20 (T77)	07:08			06:24		19:16 (T42)	05:59		20:09 (T41)
	17:17	17:54			18:27	46	18:06 (T77)	20:00			20:32	40	19:56 (T42)	21:00	26	20:35 (T41)
7	07:57	07:37			06:58		07:17 (T76)	07:06			06:23		19:17 (T42)	05:59		20:09 (T41)
	17:18	17:55			18:29	54	18:07 (T77)	20:01			20:33	38	19:55 (T42)	21:01	27	20:36 (T41)
8	07:57	07:36			07:56		08:15 (T76)	07:05			06:22		19:18 (T42)	05:59		20:10 (T41)
	17:19	17:56			19:30	60	19:07 (T77)	20:02			20:34	36	19:54 (T42)	21:02	27	20:37 (T41)
9	07:57	07:35			07:54		08:14 (T76)	07:03			06:20		19:19 (T42)	05:59		20:10 (T41)
	17:20	17:57			19:31	65	19:08 (T77)	20:03			20:35	34	19:53 (T42)	21:02	28	20:38 (T41)
10	07:57	07:34			07:53		08:12 (T76)	07:01			06:19		19:19 (T42)	05:59		20:11 (T41)
	17:21	17:59			19:32	67	19:07 (T77)	20:05			20:36	32	19:51 (T42)	21:03	27	20:38 (T41)
11	07:57	07:32			07:51		08:10 (T76)	07:00		19:35 (T42)	06:18		19:20 (T42)	05:58		20:11 (T41)
	17:23	18:00			19:33	71	19:07 (T77)	20:06	10	19:45 (T42)	20:37	30	19:50 (T42)	21:03	28	20:39 (T41)
12	07:56	07:31			07:50		08:09 (T76)	06:58		19:30 (T42)	06:17		19:21 (T42)	05:58		20:10 (T41)
	17:24	18:01			19:34	72	19:07 (T77)	20:07	15	19:45 (T42)	20:38	28	19:49 (T42)	21:04	29	20:39 (T41)
13	07:56	07:30			07:48		08:07 (T76)	06:57		19:28 (T42)	06:16		19:23 (T42)	05:58		20:11 (T41)
	17:25	18:02			19:35	74	19:06 (T77)	20:08	19	19:47 (T42)	20:39	24	19:47 (T42)	21:05	28	20:39 (T41)
14	07:56	07:29			07:46		08:05 (T76)	06:55		19:25 (T42)	06:15		19:25 (T42)	05:58		20:11 (T41)
	17:26	18:04			19:36	76	19:06 (T77)	20:09	23	19:48 (T42)	20:40	21	19:46 (T42)	21:05	28	20:39 (T41)
15	07:55	07:27			07:45		08:04 (T76)	06:53		19:23 (T42)	06:14		19:27 (T42)	05:58		20:11 (T41)
	17:27	18:05			19:38	77	19:06 (T77)	20:10	25	19:48 (T42)	20:41	17	19:44 (T42)	21:05	29	20:40 (T41)
16	07:55	07:26			07:43		08:02 (T76)	06:52		19:22 (T42)	06:13		19:30 (T42)	05:58		20:11 (T41)
	17:28	18:06			19:39	78	19:05 (T77)	20:11	28	19:50 (T42)	20:42	15	20:20 (T41)	21:06	29	20:40 (T41)
17	07:54	07:25			07:41		08:00 (T76)	06:50		19:20 (T42)	06:12		20:15 (T41)	05:58		20:13 (T41)
	17:29	18:07			19:40	78	19:03 (T77)	20:12	30	19:50 (T42)	20:43	5	20:20 (T41)	21:06	28	20:41 (T41)
18	07:54	07:23			07:40		07:59 (T76)	06:49		19:19 (T42)	06:11		20:14 (T41)	05:58		20:13 (T41)
	17:30	18:09			19:41	78	19:03 (T77)	20:13	33	19:52 (T42)	20:44	7	20:21 (T41)	21:07	29	20:42 (T41)
19	07:53	07:22			07:38		07:57 (T76)	06:47		19:18 (T42)	06:10		20:12 (T41)	05:58		20:13 (T41)
	17:32	18:10			19:42	78	19:02 (T77)	20:14	34	19:52 (T42)	20:45	10	20:22 (T41)	21:07	29	20:42 (T41)
20	07:53	07:20			07:36		07:56 (T76)	06:46		19:17 (T42)	06:09		20:11 (T41)	05:59		20:13 (T41)
	17:33	18:11			19:43	76	19:00 (T77)	20:15	37	19:54 (T42)	20:46	12	20:23 (T41)	21:07	29	20:42 (T41)
21	07:52	07:19			07:35		07:57 (T76)	06:44		19:17 (T42)	06:09		20:10 (T41)	05:59		20:13 (T41)
	17:34	18:12			19:44	72	18:59 (T77)	20:16	38	19:55 (T42)	20:47	13	20:23 (T41)	21:08	29	20:42 (T41)
22	07:52	07:18			07:33		07:57 (T76)	06:43		19:16 (T42)	06:08		20:10 (T41)	05:59		20:13 (T41)
	17:35	18:13			19:45	68	18:57 (T77)	20:17	40	19:56 (T42)	20:48	15	20:25 (T41)	21:08	29	20:42 (T41)
23	07:51	07:16		17:39 (T77)	07:31		07:57 (T76)	06:41		19:15 (T42)	06:07		20:10 (T41)	05:59		20:14 (T41)
	17:36	18:15	13	17:52 (T77)	19:46	63	18:55 (T77)	20:18	42	19:57 (T42)	20:49	15	20:25 (T41)	21:08	29	20:43 (T41)
24	07:50	07:15		17:34 (T77)	07:30		07:58 (T76)	06:40		19:14 (T42)	06:06		20:09 (T41)	05:59		20:14 (T41)
	17:38	18:16	19	17:53 (T77)	19:47	58	18:53 (T77)	20:19	44	19:58 (T42)	20:50	17	20:26 (T41)	21:08	29	20:43 (T41)
25	07:49	07:13		17:32 (T77)	07:28		07:59 (T76)	06:38		19:15 (T42)	06:06		20:09 (T41)	06:00		20:14 (T41)
	17:39	18:17	23	17:55 (T77)	19:48	50	18:50 (T77)	20:21	44	19:59 (T42)	20:51	18	20:27 (T41)	21:08	29	20:43 (T41)
26	07:49	07:12		17:29 (T77)	07:26		07:59 (T76)	06:37		19:14 (T42)	06:05		20:09 (T41)	06:00		20:14 (T41)
	17:40	18:18	27	17:56 (T77)	19:50	39	18:45 (T77)	20:22	45	19:59 (T42)	20:52	19	20:28 (T41)	21:08	29	20:43 (T41)
27	07:48	07:10		17:28 (T77)	07:24		08:00 (T76)	06:36		19:14 (T42)	06:04		20:09 (T41)	06:00		20:14 (T41)
	17:41	18:19	30	17:58 (T77)	19:51	22	08:22 (T76)	20:23	45	19:59 (T42)	20:53	20	20:29 (T41)	21:08	29	20:43 (T41)
28	07:47	07:09		17:26 (T77)	07:23		08:03 (T76)	06:34		19:14 (T42)	06:04		20:09 (T41)	06:01		20:14 (T41)
	17:42	18:21	33	17:59 (T77)	19:52	17	08:20 (T76)	20:24	46	20:00 (T42)	20:54	20	20:29 (T41)	21:09	29	20:43 (T41)
29	07:46				07:21		08:06 (T76)	06:33		19:13 (T42)	06:03		20:08 (T41)	06:01		20:15 (T41)
	17:44				19:53	10	08:16 (T76)	20:25	46	19:59 (T42)	20:54	22	20:30 (T41)	21:09	28	20:43 (T41)
30	07:45				07:19			06:32		19:14 (T42)	06:02		20:08 (T41)	06:02		20:14 (T41)
	17:45				19:54			20:26	45	19:59 (T42)	20:55	23	20:31 (T41)	21:08	29	20:43 (T41)
31	07:44				07:18						06:02		20:08 (T41)			
	17:46				19:55						20:56	23	20:31 (T41)			
Potential sun hours	297	297			370			399			448			453		
Total, worst case			145			1649			689			766			834	
Sun reduction			0.40			0.44			0.52			0.57			0.64	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.67			0.64			0.57			0.56			0.54	
Total reduction			0.27			0.29			0.30			0.32			0.35	
Total, real			39			471			207			248			292	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 718 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8286)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		20:15 (T41)	06:26		19:31 (T42)	06:57		19:34 (T42)	07:27		07:47 (T76)	07:02	07:37
	21:08	28	20:43 (T41)	20:50	29	20:00 (T42)	20:07	10	19:44 (T42)	19:15	74	18:46 (T77)	17:28	17:04
2	06:03		20:15 (T41)	06:27		19:30 (T42)	06:58			07:29		07:48 (T76)	07:03	07:38
	21:08	28	20:43 (T41)	20:49	31	20:01 (T42)	20:06			19:13	72	18:46 (T77)	17:27	17:03
3	06:03		20:15 (T41)	06:28		19:29 (T42)	06:59			07:30		07:49 (T76)	07:04	07:39
	21:08	28	20:43 (T41)	20:48	33	20:02 (T42)	20:04			19:11	69	18:45 (T77)	17:26	17:03
4	06:04		20:15 (T41)	06:29		19:28 (T42)	07:00			07:31		07:50 (T76)	07:06	07:40
	21:08	27	20:42 (T41)	20:47	35	20:03 (T42)	20:02			19:10	66	18:45 (T77)	17:24	17:03
5	06:04		20:16 (T41)	06:30		19:27 (T42)	07:01			07:32		07:52 (T76)	07:07	07:41
	21:08	27	20:43 (T41)	20:46	37	20:04 (T42)	20:01			19:08	62	18:45 (T77)	17:23	17:03
6	06:05		20:15 (T41)	06:31		19:26 (T42)	07:02			07:33		07:53 (T76)	07:08	07:42
	21:08	27	20:42 (T41)	20:44	39	20:05 (T42)	19:57			19:06	57	18:44 (T77)	17:22	17:03
7	06:05		20:16 (T41)	06:32		19:26 (T42)	07:03			07:34		17:55 (T77)	07:09	07:43
	21:07	26	20:42 (T41)	20:43	39	20:05 (T42)	19:56			19:05	48	18:43 (T77)	17:21	17:03
8	06:06		20:16 (T41)	06:33		19:25 (T42)	07:04			07:35		17:56 (T77)	07:10	07:44
	21:07	26	20:42 (T41)	20:42	41	20:06 (T42)	19:54			19:03	45	18:41 (T77)	17:20	17:03
9	06:07		20:16 (T41)	06:34		19:24 (T42)	07:05			07:36		17:56 (T77)	07:12	07:45
	21:07	25	20:41 (T41)	20:41	42	20:06 (T42)	19:52			19:01	43	18:39 (T77)	17:19	17:03
10	06:07		20:16 (T41)	06:35		19:24 (T42)	07:06			07:37		17:56 (T77)	07:13	07:46
	21:06	25	20:41 (T41)	20:39	43	20:07 (T42)	19:51			19:00	41	18:37 (T77)	17:18	17:03
11	06:08		20:17 (T41)	06:36		19:23 (T42)	07:07			07:38		17:56 (T77)	07:14	07:46
	21:06	24	20:41 (T41)	20:38	44	20:07 (T42)	19:49			18:58	40	18:36 (T77)	17:17	17:03
12	06:09		20:16 (T41)	06:37		19:23 (T42)	07:08			07:39		17:57 (T77)	07:15	07:47
	21:06	24	20:40 (T41)	20:37	44	20:07 (T42)	19:47			18:57	37	18:34 (T77)	17:16	17:03
13	06:10		20:17 (T41)	06:38		19:22 (T42)	07:09			07:40		17:58 (T77)	07:16	07:48
	21:05	23	20:40 (T41)	20:36	45	20:07 (T42)	19:45			18:55	34	18:32 (T77)	17:15	17:03
14	06:10		20:17 (T41)	06:39		19:22 (T42)	07:10		07:57 (T76)	07:41		17:59 (T77)	07:18	07:49
	21:05	22	20:39 (T41)	20:34	45	20:07 (T42)	19:44	8	08:05 (T76)	18:54	31	18:30 (T77)	17:14	17:03
15	06:11		20:18 (T41)	06:40		19:22 (T42)	07:11		07:53 (T76)	07:42		18:01 (T77)	07:19	07:50
	21:04	21	20:39 (T41)	20:33	45	20:07 (T42)	19:42	16	08:09 (T76)	18:52	29	18:30 (T77)	17:13	17:03
16	06:12		20:17 (T41)	06:41		19:21 (T42)	07:12		07:50 (T76)	07:44		18:03 (T77)	07:20	07:50
	21:03	21	20:38 (T41)	20:31	45	20:06 (T42)	19:40	21	08:11 (T76)	18:50	25	18:28 (T77)	17:12	17:04
17	06:13		20:18 (T41)	06:42		19:20 (T42)	07:13		07:48 (T76)	07:45		18:04 (T77)	07:21	07:51
	21:03	19	20:37 (T41)	20:30	46	20:06 (T42)	19:39	36	18:32 (T77)	18:49	22	18:26 (T77)	17:11	17:04
18	06:14		20:18 (T41)	06:43		19:20 (T42)	07:14		07:46 (T76)	07:46		18:07 (T77)	07:22	07:52
	21:02	19	20:37 (T41)	20:29	44	20:04 (T42)	19:37	48	18:36 (T77)	18:47	17	18:24 (T77)	17:11	17:04
19	06:14		20:19 (T41)	06:44		19:20 (T42)	07:15		07:45 (T76)	07:47		18:12 (T77)	07:23	07:52
	21:01	18	20:37 (T41)	20:27	43	20:03 (T42)	19:35	56	18:39 (T77)	18:46	8	18:20 (T77)	17:10	17:05
20	06:15		20:20 (T41)	06:45		19:20 (T42)	07:16		07:43 (T76)	07:48			07:25	07:53
	21:01	16	20:36 (T41)	20:26	42	20:02 (T42)	19:33	63	18:41 (T77)	18:44			17:09	17:05
21	06:16		20:19 (T41)	06:46		19:20 (T42)	07:17		07:42 (T76)	07:49			07:26	07:53
	21:00	16	20:35 (T41)	20:24	40	20:00 (T42)	19:32	68	18:42 (T77)	18:43			17:08	17:06
22	06:17		20:20 (T41)	06:47		19:21 (T42)	07:18		07:42 (T76)	07:50			07:27	07:54
	20:59	14	20:34 (T41)	20:23	38	19:59 (T42)	19:30	71	18:43 (T77)	18:41			17:08	17:06
23	06:18		20:21 (T41)	06:48		19:21 (T42)	07:19		07:41 (T76)	07:51			07:28	07:54
	20:58	12	20:33 (T41)	20:21	36	19:57 (T42)	19:28	74	18:44 (T77)	18:40			17:07	17:07
24	06:19		20:22 (T41)	06:49		19:22 (T42)	07:20		07:40 (T76)	07:53			07:29	07:55
	20:58	11	20:33 (T41)	20:20	34	19:56 (T42)	19:27	78	18:45 (T77)	18:39			17:07	17:07
25	06:20		20:23 (T41)	06:50		19:22 (T42)	07:21		07:41 (T76)	07:54			07:30	07:55
	20:57	9	20:32 (T41)	20:18	32	19:54 (T42)	19:25	78	18:45 (T77)	18:37			17:06	17:08
26	06:21		20:25 (T41)	06:51		19:23 (T42)	07:22		07:42 (T76)	07:55			07:32	07:56
	20:56	6	20:31 (T41)	20:17	30	19:53 (T42)	19:23	78	18:46 (T77)	18:36			17:06	17:08
27	06:22		19:44 (T42)	06:52		19:24 (T42)	07:23		07:43 (T76)	07:56			07:33	07:56
	20:55	10	20:31 (T41)	20:15	27	19:51 (T42)	19:21	79	18:46 (T77)	18:34			17:05	17:09
28	06:22		19:40 (T42)	06:53		19:25 (T42)	07:24		07:44 (T76)	07:57			07:34	07:56
	20:54	15	20:30 (T41)	20:14	25	19:50 (T42)	19:20	78	18:46 (T77)	18:33			17:05	17:10
29	06:23		19:36 (T42)	06:54		19:26 (T42)	07:25		07:45 (T76)	07:58			07:35	07:57
	20:53	19	19:55 (T42)	20:12	22	19:48 (T42)	19:18	76	18:46 (T77)	18:32			17:04	17:10
30	06:24		19:34 (T42)	06:55		19:28 (T42)	07:26		07:46 (T76)	08:00			07:36	07:57
	20:52	23	19:57 (T42)	20:10	19	19:47 (T42)	19:16	75	18:46 (T77)	18:30			17:04	17:11
31	06:25		19:33 (T42)	06:56		19:30 (T42)				08:01				07:57
	20:51	26	19:59 (T42)	20:09	15	19:45 (T42)				18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		635			1130			1013			820			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.55			0.57			0.63			0.66			
Total reduction		0.36			0.35			0.38			0.32			
Total, real		231			399			382			262			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 728 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8295)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May	June
1	07:57	07:43		17:09 (T30)	07:07		07:37 (T31)	07:16		07:35 (T28)	06:30	06:01
	17:13	17:47	11	17:20 (T30)	18:22	57	17:28 (T30)	19:56	67	19:34 (T27)	20:27	20:57
2	07:57	07:43		17:06 (T30)	07:06		07:37 (T31)	07:14		07:33 (T28)	06:29	06:01
	17:14	17:49	18	17:24 (T30)	18:23	52	17:26 (T30)	19:57	71	19:35 (T27)	20:28	20:58
3	07:58	07:41		17:04 (T30)	07:04		07:38 (T31)	07:13		07:32 (T28)	06:28	06:00
	17:15	17:50	22	17:26 (T30)	18:24	42	17:22 (T30)	19:58	76	19:37 (T27)	20:29	20:58
4	07:58	07:40		17:02 (T30)	07:02		07:41 (T31)	07:11		07:30 (T28)	06:26	06:00
	17:15	17:51	25	17:27 (T30)	18:25	21	08:02 (T31)	19:59	79	19:37 (T27)	20:30	20:59
5	07:58	07:39		17:01 (T30)	07:01		07:43 (T31)	07:09		07:28 (T28)	06:25	06:00
	17:16	17:52	28	17:29 (T30)	18:26	16	07:59 (T31)	20:00	81	19:38 (T27)	20:31	21:00
6	07:58	07:38		16:59 (T30)	06:59		07:47 (T31)	07:08		07:27 (T28)	06:24	05:59
	17:17	17:54	30	17:29 (T30)	18:27	8	07:55 (T31)	20:00	85	19:40 (T27)	20:32	21:01
7	07:57	07:37		16:58 (T30)	06:58			07:06		07:25 (T28)	06:23	05:59
	17:18	17:55	33	17:31 (T30)	18:29			20:01	87	19:40 (T27)	20:33	21:01
8	07:57	07:36		16:57 (T30)	07:56			07:05		07:25 (T28)	06:21	05:59
	17:19	17:56	35	17:32 (T30)	19:30			20:02	89	19:42 (T27)	20:34	21:02
9	07:57	07:35		07:55 (T31)	07:54			07:03		07:24 (T28)	06:20	05:59
	17:20	17:57	41	17:34 (T30)	19:31			20:03	88	19:41 (T27)	20:35	21:02
10	07:57	07:34		07:54 (T31)	07:53			07:01		07:24 (T28)	06:19	05:58
	17:21	17:59	49	17:36 (T30)	19:32			20:05	87	19:40 (T27)	20:37	21:03
11	07:57	07:32		07:52 (T31)	07:51			07:00		07:24 (T28)	06:18	05:58
	17:22	18:00	52	17:35 (T30)	19:33			20:06	86	19:40 (T27)	20:38	21:04
12	07:56	07:31		07:51 (T31)	07:50			06:58		07:23 (T28)	06:17	05:58
	17:23	18:01	56	17:36 (T30)	19:34			20:07	84	19:38 (T27)	20:39	21:04
13	07:56	07:30		07:50 (T31)	07:48			06:56		07:24 (T28)	06:16	05:58
	17:25	18:02	61	17:37 (T30)	19:35			20:08	82	19:38 (T27)	20:40	21:05
14	07:56	07:29		07:49 (T31)	07:46			06:55		07:24 (T28)	06:15	05:58
	17:26	18:04	64	17:38 (T30)	19:36			20:09	78	19:36 (T27)	20:41	21:05
15	07:55	07:27		07:47 (T31)	07:45			06:53		07:23 (T28)	06:14	05:58
	17:27	18:05	65	17:37 (T30)	19:38			20:10	74	19:33 (T27)	20:42	21:06
16	07:55	07:26		07:46 (T31)	07:43			06:52		07:24 (T28)	06:13	05:58
	17:28	18:06	69	17:38 (T30)	19:39			20:11	69	19:32 (T27)	20:43	21:06
17	07:55	07:25		07:44 (T31)	07:41			06:50		07:24 (T28)	06:12	05:58
	17:29	18:07	71	17:37 (T30)	19:40			20:12	62	19:28 (T27)	20:44	21:06
18	07:54	07:23		07:43 (T31)	07:40			06:49		07:25 (T28)	06:11	05:58
	17:30	18:09	72	17:38 (T30)	19:41			20:13	48	08:13 (T28)	20:45	21:07
19	07:53	07:22		07:42 (T31)	07:38			06:47		07:25 (T28)	06:10	05:58
	17:31	18:10	74	17:38 (T30)	19:42			20:14	46	08:11 (T28)	20:46	21:07
20	07:53	07:21		07:40 (T31)	07:36			06:46		07:26 (T28)	06:09	05:58
	17:33	18:11	75	17:37 (T30)	19:43			20:15	45	08:11 (T28)	20:46	21:07
21	07:52	07:19		07:39 (T31)	07:35			06:44		07:26 (T28)	06:08	05:59
	17:34	18:12	76	17:37 (T30)	19:44			20:16	43	08:09 (T28)	20:47	21:08
22	07:52	07:18		07:37 (T31)	07:33			06:43		07:28 (T28)	06:08	05:59
	17:35	18:13	77	17:36 (T30)	19:45			20:17	40	08:08 (T28)	20:48	21:08
23	07:51	07:16		07:36 (T31)	07:31		07:50 (T28)	06:41		07:29 (T28)	06:07	05:59
	17:36	18:15	77	17:36 (T30)	19:46	14	08:04 (T28)	20:18	38	08:07 (T28)	20:49	21:08
24	07:50	07:15		07:34 (T31)	07:30		07:49 (T28)	06:40		07:30 (T28)	06:06	05:59
	17:37	18:16	77	17:35 (T30)	19:47	20	08:09 (T28)	20:20	34	08:04 (T28)	20:50	21:08
25	07:50	07:13		07:35 (T31)	07:28		07:47 (T28)	06:38		07:32 (T28)	06:05	06:00
	17:39	18:17	73	17:34 (T30)	19:48	24	08:11 (T28)	20:21	31	08:03 (T28)	20:51	21:08
26	07:49	07:12		07:34 (T31)	07:26		07:45 (T28)	06:37		07:33 (T28)	06:05	06:00
	17:40	18:18	72	17:33 (T30)	19:50	32	19:28 (T27)	20:22	27	08:00 (T28)	20:52	21:09
27	07:48	07:10		07:35 (T31)	07:24		07:43 (T28)	06:36		07:36 (T28)	06:04	06:00
	17:41	18:19	68	17:32 (T30)	19:51	41	19:29 (T27)	20:23	22	07:58 (T28)	20:53	21:09
28	07:47	07:09		07:36 (T31)	07:23		07:42 (T28)	06:34		07:39 (T28)	06:03	06:01
	17:42	18:20	62	17:30 (T30)	19:52	47	19:30 (T27)	20:24	15	07:54 (T28)	20:54	21:09
29	07:46				07:21		07:40 (T28)	06:33			06:03	06:01
	17:44				19:53	53	19:31 (T27)	20:25			20:55	21:09
30	07:45				07:19		07:38 (T28)	06:31			06:02	06:01
	17:45				19:54	58	19:32 (T27)	20:26			20:55	21:09
31	07:44				07:18		07:37 (T28)				06:02	
	17:46				19:55	63	19:34 (T27)				20:56	
Potential sun hours	297	297			370			399			449	453
Total, worst case			1533			548			1734			
Sun reduction			0.40			0.44			0.52			
Oper. time red.			1.00			1.00			1.00			
Wind dir. red.			0.66			0.63			0.63			
Total reduction			0.27			0.28			0.33			
Total, real			407			151			572			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 728 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8295)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November		December
1	06:02	06:26		06:57	07:23 (T28)	07:27		07:02	07:23 (T31)	07:37
	21:09	20:50		20:07	86 19:39 (T27)	19:15		17:28	47 17:04 (T30)	17:04
2	06:02	06:27		06:58	07:23 (T28)	07:29		07:03	07:25 (T31)	07:38
	21:08	20:49		20:06	87 19:39 (T27)	19:13		17:27	41 17:04 (T30)	17:03
3	06:03	06:28		06:59	07:22 (T28)	07:30		07:04	16:27 (T30)	07:39
	21:08	20:48		20:04	88 19:39 (T27)	19:11		17:25	35 17:02 (T30)	17:03
4	06:03	06:29		07:00	07:22 (T28)	07:31		07:06	16:28 (T30)	07:40
	21:08	20:47		20:02	89 19:39 (T27)	19:10		17:24	33 17:01 (T30)	17:03
5	06:04	06:30		07:01	07:22 (T28)	07:32		07:07	16:29 (T30)	07:41
	21:08	20:46		20:01	88 19:38 (T27)	19:08		17:23	30 16:59 (T30)	17:03
6	06:05	06:31		07:02	07:23 (T28)	07:33		07:08	16:31 (T30)	07:42
	21:08	20:45		19:57	85 19:36 (T27)	19:06		17:22	28 16:59 (T30)	17:03
7	06:05	06:32		07:03	07:24 (T28)	07:34		07:09	16:32 (T30)	07:43
	21:07	20:43		19:56	81 19:34 (T27)	19:05		17:21	25 16:57 (T30)	17:02
8	06:06	06:33		07:04	07:25 (T28)	07:35	08:20 (T31)	07:10	16:34 (T30)	07:44
	21:07	20:42		19:54	79 19:33 (T27)	19:03	13 08:33 (T31)	17:20	22 16:56 (T30)	17:02
9	06:07	06:34		07:05	07:25 (T28)	07:36	08:17 (T31)	07:12	16:37 (T30)	07:45
	21:07	20:41		19:52	76 19:30 (T27)	19:01	19 08:36 (T31)	17:19	17 16:54 (T30)	17:02
10	06:07	06:35		07:06	07:26 (T28)	07:37	08:14 (T31)	07:13	16:41 (T30)	07:46
	21:06	20:40		19:51	71 19:28 (T27)	19:00	35 17:54 (T30)	17:18	9 16:50 (T30)	17:02
11	06:08	06:36		07:07	07:27 (T28)	07:38	08:12 (T31)	07:14		07:47
	21:06	20:38		19:49	68 19:27 (T27)	18:58	46 17:58 (T30)	17:17		17:02
12	06:09	06:37		07:08	07:28 (T28)	07:39	08:10 (T31)	07:15		07:47
	21:06	20:37		19:47	64 19:25 (T27)	18:57	54 18:00 (T30)	17:16		17:03
13	06:09	06:38		07:09	07:29 (T28)	07:40	08:09 (T31)	07:16		07:48
	21:05	20:36		19:45	58 19:23 (T27)	18:55	61 18:02 (T30)	17:15		17:03
14	06:10	06:39	07:51 (T28)	07:10	07:30 (T28)	07:41	08:09 (T31)	07:18		07:49
	21:05	20:34	6 07:57 (T28)	19:44	54 19:22 (T27)	18:53	65 18:04 (T30)	17:14		17:03
15	06:11	06:40	07:45 (T28)	07:11	07:31 (T28)	07:42	08:08 (T31)	07:19		07:50
	21:04	20:33	17 08:02 (T28)	19:42	48 19:20 (T27)	18:52	68 18:05 (T30)	17:13		17:03
16	06:12	06:41	07:42 (T28)	07:12	07:32 (T28)	07:44	08:07 (T31)	07:20		07:50
	21:04	20:32	23 08:05 (T28)	19:40	41 19:18 (T27)	18:50	72 18:05 (T30)	17:12		17:03
17	06:13	06:42	07:39 (T28)	07:13	07:33 (T28)	07:45	08:06 (T31)	07:21		07:51
	21:03	20:30	28 08:07 (T28)	19:39	34 19:17 (T27)	18:49	75 18:06 (T30)	17:11		17:04
18	06:13	06:43	07:37 (T28)	07:14	07:34 (T28)	07:46	08:06 (T31)	07:22		07:52
	21:02	20:29	32 08:09 (T28)	19:37	25 07:59 (T28)	18:47	76 18:06 (T30)	17:10		17:04
19	06:14	06:44	07:35 (T28)	07:15	07:35 (T28)	07:47	08:07 (T31)	07:24		07:52
	21:02	20:27	36 08:11 (T28)	19:35	21 07:56 (T28)	18:46	77 18:07 (T30)	17:10		17:04
20	06:15	06:45	07:34 (T28)	07:16	07:36 (T28)	07:48	08:09 (T31)	07:25		07:53
	21:01	20:26	38 08:12 (T28)	19:33	15 07:51 (T28)	18:44	76 18:08 (T30)	17:09		17:05
21	06:16	06:46	07:32 (T28)	07:17		07:49	08:10 (T31)	07:26		07:53
	21:00	20:24	41 08:13 (T28)	19:32		18:43	76 18:08 (T30)	17:08		17:05
22	06:17	06:47	07:31 (T28)	07:18		07:50	08:11 (T31)	07:27		07:54
	20:59	20:23	43 08:14 (T28)	19:30		18:41	75 18:08 (T30)	17:08		17:06
23	06:18	06:48	07:30 (T28)	07:19		07:51	08:12 (T31)	07:28		07:54
	20:59	20:21	45 08:15 (T28)	19:28		18:40	74 18:08 (T30)	17:07		17:06
24	06:19	06:49	07:29 (T28)	07:20		07:53	08:13 (T31)	07:29		07:55
	20:58	20:20	46 08:15 (T28)	19:27		18:39	72 18:07 (T30)	17:07		17:07
25	06:20	06:50	07:28 (T28)	07:21		07:54	08:15 (T31)	07:31		07:55
	20:57	20:18	48 08:16 (T28)	19:25		18:37	70 18:08 (T30)	17:06		17:07
26	06:20	06:51	07:27 (T28)	07:22		07:55	08:16 (T31)	07:32		07:56
	20:56	20:17	62 19:31 (T27)	19:23		18:36	68 18:07 (T30)	17:05		17:08
27	06:21	06:52	07:26 (T28)	07:23		07:56	08:17 (T31)	07:33		07:56
	20:55	20:15	70 19:34 (T27)	19:21		18:34	66 18:07 (T30)	17:05		17:09
28	06:22	06:53	07:25 (T28)	07:24		07:57	08:18 (T31)	07:34		07:56
	20:54	20:14	74 19:35 (T27)	19:20		18:33	63 18:06 (T30)	17:05		17:09
29	06:23	06:54	07:25 (T28)	07:25		07:58	08:20 (T31)	07:35		07:57
	20:53	20:12	78 19:37 (T27)	19:18		18:32	60 18:07 (T30)	17:04		17:10
30	06:24	06:55	07:24 (T28)	07:26		08:00	08:21 (T31)	07:36		07:57
	20:52	20:10	81 19:38 (T27)	19:16		18:30	56 18:06 (T30)	17:04		17:11
31	06:25	06:56	07:23 (T28)			08:01	08:22 (T31)			07:57
	20:51	20:09	85 19:38 (T27)			18:29	51 18:05 (T30)			17:12
Potential sun hours	460	429		375		345		297		287
Total, worst case		853		1258		1468		287		
Sun reduction		0.61		0.59		0.48		0.30		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.64		0.63		0.65		0.71		
Total reduction		0.39		0.37		0.31		0.21		
Total, real		332		470		457		61		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 740 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8305)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		06:50 (T36)	06:01	19:38 (T35)	06:02	19:46 (T35)	06:26	06:55 (T36)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	48	20:05 (T35)	20:57 44	20:22 (T35)	21:09 41	20:27 (T35)	20:50 73	20:25 (T35)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:14		06:29		06:49 (T36)	06:01	19:38 (T35)	06:02	19:46 (T35)	06:27	06:54 (T36)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	52	20:06 (T35)	20:58 45	20:23 (T35)	21:08 41	20:27 (T35)	20:49 75	20:25 (T35)	20:06	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:28		06:47 (T36)	06:00	19:38 (T35)	06:03	19:46 (T35)	06:28	06:54 (T36)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58		20:29	56	20:06 (T35)	20:58 44	20:22 (T35)	21:08 41	20:27 (T35)	20:48 73	20:24 (T35)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11		06:26		06:46 (T36)	06:00	19:39 (T35)	06:04	19:46 (T35)	06:29	06:54 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	60	20:08 (T35)	20:59 43	20:22 (T35)	21:08 41	20:27 (T35)	20:47 70	20:22 (T35)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09		06:25		06:45 (T36)	06:00	19:40 (T35)	06:04	19:46 (T35)	06:30	06:53 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	64	20:09 (T35)	21:00 43	20:23 (T35)	21:08 42	20:28 (T35)	20:46 71	20:21 (T35)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		06:44 (T36)	05:59	19:39 (T35)	06:05	19:46 (T35)	06:31	06:53 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	67	20:10 (T35)	21:01 43	20:22 (T35)	21:08 42	20:28 (T35)	20:44 69	20:20 (T35)	19:57	19:06	17:22	17:03
7	07:57	07:37	06:58	07:06		06:23		06:43 (T36)	05:59	19:40 (T35)	06:05	19:46 (T35)	06:32	06:54 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01		20:33	70	20:11 (T35)	21:01 42	20:22 (T35)	21:07 43	20:29 (T35)	20:43 66	20:19 (T35)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:05		06:21		06:44 (T36)	05:59	19:41 (T35)	06:06	19:45 (T35)	06:33	06:55 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	70	20:12 (T35)	21:02 41	20:22 (T35)	21:07 43	20:28 (T35)	20:42 63	20:18 (T35)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		06:43 (T36)	05:59	19:41 (T35)	06:07	19:46 (T35)	06:34	06:56 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	72	20:12 (T35)	21:02 41	20:22 (T35)	21:07 43	20:29 (T35)	20:41 59	20:17 (T35)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		06:43 (T36)	05:58	19:41 (T35)	06:07	19:46 (T35)	06:35	06:57 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05		20:36	73	20:13 (T35)	21:03 41	20:22 (T35)	21:06 44	20:30 (T35)	20:40 56	20:16 (T35)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		06:44 (T36)	05:58	19:41 (T35)	06:08	19:45 (T35)	06:36	06:58 (T36)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06		20:38	73	20:14 (T35)	21:04 41	20:22 (T35)	21:06 45	20:30 (T35)	20:38 51	20:15 (T35)	19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58		06:17		06:44 (T36)	05:58	19:42 (T35)	06:09	19:45 (T35)	06:37	06:59 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:39	74	20:15 (T35)	21:04 40	20:22 (T35)	21:06 45	20:30 (T35)	20:37 45	20:13 (T35)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16		06:45 (T36)	05:58	19:42 (T35)	06:09	19:45 (T35)	06:38	07:00 (T36)	07:09	07:40	07:16	07:48
	17:25	18:02	19:35	20:08		20:40	74	20:16 (T35)	21:05 40	20:22 (T35)	21:05 46	20:31 (T35)	20:36 39	20:12 (T35)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		06:45 (T36)	05:58	19:42 (T35)	06:10	19:46 (T35)	06:39	07:00 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:41	75	20:17 (T35)	21:05 40	20:22 (T35)	21:05 45	20:31 (T35)	20:34 29	07:29 (T36)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53		06:14		06:46 (T36)	05:58	19:43 (T35)	06:11	19:45 (T35)	06:40	07:01 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:38	20:10		20:42	74	20:18 (T35)	21:06 39	20:22 (T35)	21:04 46	20:31 (T35)	20:33 27	07:28 (T36)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52		06:13		06:47 (T36)	05:58	19:43 (T35)	06:12	19:45 (T35)	06:41	07:02 (T36)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11		20:43	73	20:19 (T35)	21:06 39	20:22 (T35)	21:03 46	20:31 (T35)	20:31 26	07:28 (T36)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50		06:12		06:49 (T36)	05:58	19:43 (T35)	06:13	19:45 (T35)	06:42	07:03 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12		20:44	73	20:21 (T35)	21:06 39	20:22 (T35)	21:03 47	20:32 (T35)	20:30 24	07:27 (T36)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49		06:11		06:49 (T36)	05:58	19:43 (T35)	06:13	19:45 (T35)	06:43	07:04 (T36)	07:14	07:46	07:22	07:52
	17:30	18:09	19:41	20:13		20:45	72	20:21 (T35)	21:07 39	20:22 (T35)	21:02 47	20:32 (T35)	20:29 22	07:26 (T36)	19:37	18:47	17:11	17:04
19	07:53	07:22	07:38	06:47		06:10		06:50 (T36)	05:58	19:45 (T35)	06:14	19:46 (T35)	06:44	07:05 (T36)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14		20:45	71	20:22 (T35)	21:07 38	20:23 (T35)	21:02 47	20:33 (T35)	20:27 19	07:24 (T36)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	07:05 (T36)	06:09		06:51 (T36)	05:58	19:45 (T35)	06:15	07:10 (T36)	06:45	07:06 (T36)	07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15	7 07:12 (T36)	20:46	68	20:22 (T35)	21:07 38	20:23 (T35)	21:01 51	20:32 (T35)	20:26 17	07:23 (T36)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44	07:03 (T36)	06:08		06:53 (T36)	05:59	19:45 (T35)	06:16	07:06 (T36)	06:46	07:07 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	11 07:14 (T36)	20:47	65	20:22 (T35)	21:08 38	20:23 (T35)	21:00 59	20:32 (T35)	20:24 14	07:21 (T36)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	07:02 (T36)	06:08		06:55 (T36)	05:59	19:45 (T35)	06:17	07:04 (T36)	06:47	07:08 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17	14 07:16 (T36)	20:48	63	20:23 (T35)	21:08 38	20:23 (T35)	20:59 63	20:32 (T35)	20:23 10	07:18 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	07:01 (T36)	06:07		06:58 (T36)	05:59	19:45 (T35)	06:18	07:03 (T36)	06:48	07:09 (T36)	07:19	07:51	07:28	07:54
	17:36	18:15	19:46	20:18	17 07:18 (T36)	20:49	57	20:23 (T35)	21:08 38	20:23 (T35)	20:59 67	20:33 (T35)	20:21 6	07:15 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	06:59 (T36)	06:06		19:35 (T35)	05:59	19:46 (T35)	06:19	07:02 (T36)	06:49		07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20	20 07:19 (T36)	20:50	47	20:22 (T35)	21:08 38	20:24 (T35)	20:58 70	20:33 (T35)	20:20		19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38	06:58 (T36)	06:05		19:36 (T35)	06:00	19:45 (T35)	06:20	07:00 (T36)	06:50		07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21	22 07:20 (T36)	20:51	47	20:23 (T35)	21:08 39	20:24 (T35)	20:57 71	20:32 (T35)	20:18		19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37	06:56 (T36)	06:05		19:36 (T35)	06:00	19:45 (T35)	06:20	07:00 (T36)	06:51		07:22	07:55	07:32	07:56
	17:40	18:18	19:49	20:22	24 07:20 (T36)	20:52	47	20:23 (T35)	21:08 39	20:24 (T35)	20:56 72	20:32 (T35)	20:17		19:23	18:36	17:06	17:08
27	07:48	07:10	07:24	06:36	06:55 (T36)	06:04		19:36 (T35)	06:00	19:46 (T35)	06:21	06:58 (T36)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	26 07:21 (T36)	20:53	46	20:22 (T35)	21:09 39	20:25 (T35)	20:55 73	20:30 (T35)	20:15		19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	06:54 (T36)	06:03		19:36 (T35)	06:01	19:46 (T35)	06:22	06:57 (T36)	06:53		07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24	28 07:22 (T36)	20:54	47	20:23 (T35)	21:09 39	20:25 (T35)	20:54 74	20:29 (T35)	20:14		19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:52 (T36)	06:03		19:36 (T35)	06:01	19:46 (T35)	06:23	06:56 (T36)	06:54		07:25	07:58	07:35	07:57
	17:44		19:53	20:25	30 07:22 (T36)	20:55	46	20:22 (T35)	21:09 40	20:26 (T35)	20:53 74	20:28 (T35)	20:12		19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	06:51 (T36)	06:02		19:37 (T35)	06:01	19:46 (T35)	06:24	06:56 (T36)	06:55		07:26	08:00	07:36	07:57
	17:45		19:54	20:26	41 20:04 (T35)	20:55	46	20:23 (T35)	21:09 40	20:26 (T35)	20:52 74	20:27 (T35)	20:10		19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:37 (T35)			06:25	06:55 (T36)	06:56			08:01		07:57
	17:46		19:55			20:56	45	20:22 (T35)			20:51 73	20:26 (T35)	20:09			18:29		17:12
Potential sun hours	297	297	370	399		449		453		460		429		375	345	297	287	
Total, worst case				240		1915		1208		1656		1004						
Sun reduction				0.52		0.57		0.64		0.66		0.61						
Oper. time red.				1.00		1.00		1.00		1.00		1.00						
Wind dir. red.				0.68		0.60		0.56		0.58		0.64						
Total reduction				0.35		0.35		0.36		0.38		0.39						
Total, real				85		662		433		635		394						

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 752 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8315)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February	March	April		May		June		
1	07:57	15:42 (T45)	07:43	07:07	07:16	18:45 (T44)	06:30	18:38 (T44)	06:01		
	17:13	52 16:34 (T45)	17:47	18:22	19:56	49 19:34 (T44)	20:27	53 19:31 (T44)	20:57		
2	07:57	15:43 (T45)	07:42	07:06	07:14	18:43 (T44)	06:29	18:39 (T44)	06:01		
	17:14	51 16:34 (T45)	17:49	18:23	19:57	52 19:35 (T44)	20:28	51 19:30 (T44)	20:58		
3	07:57	15:44 (T45)	07:41	07:04	07:13	18:42 (T44)	06:28	18:39 (T44)	06:01		06:22 (T76)
	17:15	50 16:34 (T45)	17:50	18:24	19:58	55 19:37 (T44)	20:29	49 19:28 (T44)	20:58	3	06:25 (T76)
4	07:57	15:44 (T45)	07:40	07:02	07:11	18:40 (T44)	06:26	18:40 (T44)	06:00		06:22 (T76)
	17:16	51 16:35 (T45)	17:51	18:25	19:59	57 19:37 (T44)	20:30	47 19:27 (T44)	20:59	4	06:26 (T76)
5	07:57	15:45 (T45)	07:39	07:01	07:09	18:39 (T44)	06:25	18:42 (T44)	06:00		06:22 (T76)
	17:17	50 16:35 (T45)	17:52	18:26	20:00	59 19:38 (T44)	20:31	44 19:26 (T44)	21:00	6	06:28 (T76)
6	07:57	15:45 (T45)	07:38	06:59	07:08	18:38 (T44)	06:24	18:43 (T44)	06:00		06:21 (T76)
	17:17	51 16:36 (T45)	17:54	18:27	20:00	62 19:40 (T44)	20:32	41 19:24 (T44)	21:00	7	06:28 (T76)
7	07:57	15:45 (T45)	07:37	06:58	07:06	18:37 (T44)	06:23	18:45 (T44)	05:59		06:21 (T76)
	17:18	50 16:35 (T45)	17:55	18:29	20:01	63 19:40 (T44)	20:33	38 19:23 (T44)	21:01	8	06:29 (T76)
8	07:57	15:46 (T45)	07:36	07:56	07:05	18:37 (T44)	06:22	18:47 (T44)	05:59		06:21 (T76)
	17:19	49 16:35 (T45)	17:56	19:30	20:02	63 19:40 (T44)	20:34	34 19:21 (T44)	21:02	9	06:30 (T76)
9	07:57	15:47 (T45)	07:35	07:54	07:03	18:36 (T44)	06:20	18:49 (T44)	05:59		06:21 (T76)
	17:20	49 16:36 (T45)	17:58	19:31	20:03	64 19:40 (T44)	20:35	31 19:20 (T44)	21:02	10	06:31 (T76)
10	07:57	15:48 (T45)	07:34	07:53	07:01	18:35 (T44)	06:19	18:50 (T44)	05:59		06:21 (T76)
	17:21	48 16:36 (T45)	17:59	19:32	20:05	65 19:40 (T44)	20:36	27 19:17 (T44)	21:03	11	06:32 (T76)
11	07:57	15:48 (T45)	07:32	07:51	07:00	18:35 (T44)	06:18	18:52 (T44)	05:58		06:21 (T76)
	17:23	48 16:36 (T45)	18:00	19:33	20:06	66 19:41 (T44)	20:37	22 19:14 (T44)	21:03	11	06:32 (T76)
12	07:56	15:49 (T45)	07:31	07:50	06:58	18:34 (T44)	06:17	18:56 (T44)	05:58		06:20 (T76)
	17:24	47 16:36 (T45)	18:01	19:34	20:07	66 19:40 (T44)	20:38	14 19:10 (T44)	21:04	12	06:32 (T76)
13	07:56	15:50 (T45)	07:30	07:48	06:57	18:34 (T44)	06:16		05:58		06:20 (T76)
	17:25	47 16:37 (T45)	18:02	19:35	20:08	67 19:41 (T44)	20:39		21:05	12	06:32 (T76)
14	07:56	15:50 (T45)	07:29	07:46	06:55	18:33 (T44)	06:15		05:58		06:20 (T76)
	17:26	46 16:36 (T45)	18:04	19:36	20:09	67 19:40 (T44)	20:40		21:05	13	06:33 (T76)
15	07:55	15:52 (T45)	07:27	07:45	06:53	18:32 (T44)	06:14		05:58		06:20 (T76)
	17:27	44 16:36 (T45)	18:05	19:38	20:10	68 19:40 (T44)	20:41		21:05	13	06:33 (T76)
16	07:55	15:52 (T45)	07:26	07:43	06:52	18:33 (T44)	06:13		05:58		06:20 (T76)
	17:28	44 16:36 (T45)	18:06	19:39	20:11	67 19:40 (T44)	20:42		21:06	14	06:34 (T76)
17	07:54	15:53 (T45)	07:25	07:41	06:50	18:32 (T44)	06:12		05:58		06:21 (T76)
	17:29	43 16:36 (T45)	18:07	19:40	20:12	67 19:39 (T44)	20:43		21:06	14	06:35 (T76)
18	07:54	15:54 (T45)	07:23	07:40	06:49	18:32 (T44)	06:11		05:58		06:21 (T76)
	17:30	41 16:35 (T45)	18:09	19:41	20:13	67 19:39 (T44)	20:44		21:07	14	06:35 (T76)
19	07:53	15:56 (T45)	07:22	07:38	06:47	18:32 (T44)	06:10		05:58		06:21 (T76)
	17:32	40 16:36 (T45)	18:10	19:42	20:14	67 19:39 (T44)	20:45		21:07	14	06:35 (T76)
20	07:53	15:56 (T45)	07:20	07:36	06:46	18:33 (T44)	06:09		05:59		06:21 (T76)
	17:33	39 16:35 (T45)	18:11	19:43	20:15	66 19:39 (T44)	20:46		21:07	14	06:35 (T76)
21	07:52	15:57 (T45)	07:19	07:35	06:44	18:33 (T44)	06:09		05:59		06:21 (T76)
	17:34	37 16:34 (T45)	18:12	19:44	20:16	66 19:39 (T44)	20:47		21:08	14	06:35 (T76)
22	07:52	15:59 (T45)	07:18	07:33	06:43	18:33 (T44)	06:08		05:59		06:21 (T76)
	17:35	35 16:34 (T45)	18:13	19:45	20:17	64 19:37 (T44)	20:48		21:08	14	06:35 (T76)
23	07:51	16:01 (T45)	07:16	07:31	06:41	18:33 (T44)	06:07		05:59		06:22 (T76)
	17:36	32 16:33 (T45)	18:15	19:46	20:18	64 19:37 (T44)	20:49		21:08	14	06:36 (T76)
24	07:50	16:02 (T45)	07:15	07:30	06:40	18:33 (T44)	06:06		05:59		06:22 (T76)
	17:38	29 16:31 (T45)	18:16	19:47	20:19	63 19:36 (T44)	20:50		21:08	14	06:36 (T76)
25	07:49	16:04 (T45)	07:13	07:28	19:06 (T44)	06:38	18:34 (T44)	06:06		06:00	06:22 (T76)
	17:39	26 16:30 (T45)	18:17	19:48	13 19:19 (T44)	20:21	62 19:36 (T44)	20:51		21:08	14 06:36 (T76)
26	07:49	16:06 (T45)	07:12	07:26	19:00 (T44)	06:37	18:34 (T44)	06:05		06:00	06:23 (T76)
	17:40	22 16:28 (T45)	18:18	19:50	24 19:24 (T44)	20:22	60 19:34 (T44)	20:52		21:08	14 06:37 (T76)
27	07:48	16:10 (T45)	07:10	07:24	18:56 (T44)	06:36	18:35 (T44)	06:04		06:00	06:23 (T76)
	17:41	17 16:27 (T45)	18:19	19:51	31 19:27 (T44)	20:23	59 19:34 (T44)	20:53		21:08	13 06:36 (T76)
28	07:47	16:14 (T45)	07:09	07:23	18:53 (T44)	06:34	18:36 (T44)	06:04		06:01	06:23 (T76)
	17:42	9 16:23 (T45)	18:21	19:52	37 19:30 (T44)	20:24	58 19:34 (T44)	20:54		21:08	13 06:36 (T76)
29	07:46			07:21	18:51 (T44)	06:33	18:36 (T44)	06:03		06:01	06:24 (T76)
	17:44			19:53	40 19:31 (T44)	20:25	56 19:32 (T44)	20:54		21:08	13 06:37 (T76)
30	07:45			07:19	18:48 (T44)	06:32	18:37 (T44)	06:02		06:02	06:24 (T76)
	17:45			19:54	44 19:32 (T44)	20:26	54 19:31 (T44)	20:55		21:08	12 06:36 (T76)
31	07:44			07:18	18:47 (T44)			06:02			
	17:46			19:55	47 19:34 (T44)			20:56			
Potential sun hours	297		297	370		399		448		453	
Total, worst case		1147			236		1863		451		324
Sun reduction		0.31			0.44		0.52		0.57		0.64
Oper. time red.		1.00			1.00		1.00		1.00		1.00
Wind dir. red.		0.74			0.61		0.61		0.61		0.73
Total reduction		0.24			0.28		0.33		0.36		0.48
Total, real		272			65		610		162		155

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 752 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8315)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		06:25 (T76)	06:26		19:05 (T44)	06:57		18:34 (T44)	07:27	07:02			07:37		15:30 (T45)
	21:08	12	06:37 (T76)	20:50	18	19:23 (T44)	20:07	66	19:40 (T44)	19:15	17:28			17:04	48	16:18 (T45)
2	06:03		06:25 (T76)	06:27		19:02 (T44)	06:58		18:34 (T44)	07:29	07:03			07:38		15:30 (T45)
	21:08	11	06:36 (T76)	20:49	24	19:26 (T44)	20:06	65	19:39 (T44)	19:13	17:27			17:03	48	16:18 (T45)
3	06:03		06:26 (T76)	06:28		19:00 (T44)	06:59		18:34 (T44)	07:30	07:04			07:39		15:30 (T45)
	21:08	10	06:36 (T76)	20:48	28	19:28 (T44)	20:04	64	19:38 (T44)	19:11	17:26			17:03	49	16:19 (T45)
4	06:04		06:26 (T76)	06:29		18:57 (T44)	07:00		18:34 (T44)	07:31	07:06			07:40		15:30 (T45)
	21:08	9	06:35 (T76)	20:47	33	19:30 (T44)	20:02	64	19:38 (T44)	19:10	17:24			17:03	49	16:19 (T45)
5	06:04		06:27 (T76)	06:30		18:56 (T44)	07:01		18:34 (T44)	07:32	07:07			07:41		15:30 (T45)
	21:08	9	06:36 (T76)	20:46	36	19:32 (T44)	20:01	63	19:37 (T44)	19:08	17:23			17:03	50	16:20 (T45)
6	06:05		06:27 (T76)	06:31		18:54 (T44)	07:02		18:34 (T44)	07:33	07:08			07:42		15:31 (T45)
	21:08	8	06:35 (T76)	20:44	39	19:33 (T44)	19:57	62	19:36 (T44)	19:06	17:22			17:03	50	16:21 (T45)
7	06:05		06:28 (T76)	06:32		18:52 (T44)	07:03		18:35 (T44)	07:34	07:09			07:43		15:31 (T45)
	21:07	6	06:34 (T76)	20:43	42	19:34 (T44)	19:56	59	19:34 (T44)	19:05	17:21			17:03	50	16:21 (T45)
8	06:06		06:29 (T76)	06:33		18:51 (T44)	07:04		18:35 (T44)	07:35	07:10			07:44		15:31 (T45)
	21:07	5	06:34 (T76)	20:42	45	19:36 (T44)	19:54	58	19:33 (T44)	19:03	17:20			17:03	51	16:22 (T45)
9	06:07		06:29 (T76)	06:34		18:50 (T44)	07:05		18:36 (T44)	07:36	07:12			07:45		15:32 (T45)
	21:07	3	06:32 (T76)	20:41	47	19:37 (T44)	19:52	55	19:31 (T44)	19:02	17:19			17:03	50	16:22 (T45)
10	06:07		06:30 (T76)	06:35		18:48 (T44)	07:06		18:36 (T44)	07:37	07:13			07:46		15:32 (T45)
	21:06	1	06:31 (T76)	20:39	50	19:38 (T44)	19:51	52	19:28 (T44)	19:00	17:18			17:03	51	16:23 (T45)
11	06:08			06:36		18:47 (T44)	07:07		18:37 (T44)	07:38	07:14			07:46		15:33 (T45)
	21:06			20:38	52	19:39 (T44)	19:49	50	19:27 (T44)	18:58	17:17			17:03	51	16:24 (T45)
12	06:09			06:37		18:46 (T44)	07:08		18:38 (T44)	07:39	07:15			07:47		15:33 (T45)
	21:05			20:37	53	19:39 (T44)	19:47	47	19:25 (T44)	18:57	17:16			17:03	51	16:24 (T45)
13	06:10			06:38		18:45 (T44)	07:09		18:39 (T44)	07:40	07:16			07:48		15:34 (T45)
	21:05			20:36	55	19:40 (T44)	19:45	44	19:23 (T44)	18:55	17:15			17:03	51	16:25 (T45)
14	06:10			06:39		18:44 (T44)	07:10		18:40 (T44)	07:41	07:18		15:46 (T45)	07:49		15:33 (T45)
	21:05			20:34	57	19:41 (T44)	19:44	42	19:22 (T44)	18:54	17:14	9	15:55 (T45)	17:03	52	16:25 (T45)
15	06:11			06:40		18:43 (T44)	07:11		18:42 (T44)	07:42	07:19		15:42 (T45)	07:50		15:34 (T45)
	21:04			20:33	58	19:41 (T44)	19:42	38	19:20 (T44)	18:52	17:13	17	15:59 (T45)	17:03	52	16:26 (T45)
16	06:12			06:41		18:42 (T44)	07:12		18:45 (T44)	07:44	07:20		15:39 (T45)	07:50		15:35 (T45)
	21:03			20:31	60	19:42 (T44)	19:40	32	19:17 (T44)	18:50	17:12	22	16:01 (T45)	17:04	51	16:26 (T45)
17	06:13			06:42		18:40 (T44)	07:13		18:47 (T44)	07:45	07:21		15:38 (T45)	07:51		15:34 (T45)
	21:03			20:30	61	19:41 (T44)	19:39	26	19:13 (T44)	18:49	17:11	26	16:04 (T45)	17:04	52	16:26 (T45)
18	06:14			06:43		18:40 (T44)	07:14		18:52 (T44)	07:46	07:22		15:36 (T45)	07:52		15:35 (T45)
	21:02			20:29	62	19:42 (T44)	19:37	16	19:08 (T44)	18:47	17:11	29	16:05 (T45)	17:04	52	16:27 (T45)
19	06:14			06:44		18:39 (T44)	07:15			07:47	07:23		15:35 (T45)	07:52		15:36 (T45)
	21:01			20:27	63	19:42 (T44)	19:35			18:46	17:10	32	16:07 (T45)	17:05	52	16:28 (T45)
20	06:15			06:45		18:38 (T44)	07:16			07:48	07:25		15:33 (T45)	07:53		15:36 (T45)
	21:01			20:26	64	19:42 (T44)	19:33			18:44	17:09	35	16:08 (T45)	17:05	52	16:28 (T45)
21	06:16			06:46		18:37 (T44)	07:17			07:49	07:26		15:33 (T45)	07:53		15:37 (T45)
	21:00			20:24	65	19:42 (T44)	19:32			18:43	17:09	37	16:10 (T45)	17:06	52	16:29 (T45)
22	06:17			06:47		18:37 (T44)	07:18			07:50	07:27		15:33 (T45)	07:54		15:37 (T45)
	20:59			20:23	65	19:42 (T44)	19:30			18:41	17:08	38	16:11 (T45)	17:06	52	16:29 (T45)
23	06:18			06:48		18:36 (T44)	07:19			07:51	07:28		15:32 (T45)	07:54		15:38 (T45)
	20:58			20:21	66	19:42 (T44)	19:28			18:40	17:07	40	16:12 (T45)	17:07	52	16:30 (T45)
24	06:19			06:49		18:36 (T44)	07:20			07:53	07:29		15:31 (T45)	07:55		15:38 (T45)
	20:58			20:20	66	19:42 (T44)	19:27			18:39	17:07	41	16:12 (T45)	17:07	52	16:30 (T45)
25	06:20			06:50		18:35 (T44)	07:21			07:54	07:30		15:32 (T45)	07:55		15:38 (T45)
	20:57			20:18	67	19:42 (T44)	19:25			18:37	17:06	42	16:14 (T45)	17:08	52	16:30 (T45)
26	06:21			06:51		18:35 (T44)	07:22			07:55	07:32		15:31 (T45)	07:56		15:39 (T45)
	20:56			20:17	67	19:42 (T44)	19:23			18:36	17:06	44	16:15 (T45)	17:08	52	16:31 (T45)
27	06:22			06:52		18:35 (T44)	07:23			07:56	07:33		15:31 (T45)	07:56		15:40 (T45)
	20:55			20:15	67	19:42 (T44)	19:22			18:34	17:05	44	16:15 (T45)	17:09	51	16:31 (T45)
28	06:22			06:53		18:34 (T44)	07:24			07:57	07:34		15:30 (T45)	07:56		15:40 (T45)
	20:54			20:14	68	19:42 (T44)	19:20			18:33	17:05	46	16:16 (T45)	17:10	52	16:32 (T45)
29	06:23			06:54		18:34 (T44)	07:25			07:58	07:35		15:30 (T45)	07:57		15:40 (T45)
	20:53			20:12	67	19:41 (T44)	19:18			18:32	17:04	47	16:17 (T45)	17:10	52	16:32 (T45)
30	06:24			06:55		18:34 (T44)	07:26			08:00	07:36		15:30 (T45)	07:57		15:41 (T45)
	20:52			20:10	67	19:41 (T44)	19:16			18:31	17:04	47	16:17 (T45)	17:11	51	16:32 (T45)
31	06:25		19:10 (T44)	06:56		18:34 (T44)				08:01				07:57		15:42 (T45)
	20:51	8	19:18 (T44)	20:09	66	19:40 (T44)				18:29				17:12	51	16:33 (T45)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		82			1678			903				596			1581	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.71			0.61			0.61				0.74			0.74	
Total reduction		0.48			0.38			0.37				0.23			0.17	
Total, real		40			644			335				137			266	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 770 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8329)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May		June
1	07:57		16:23 (T69)	07:43		08:08 (T68)	07:07		08:06 (T68)	07:16		07:35 (T66)	06:30		06:02
	17:13	24	16:47 (T69)	17:48	121	17:15 (T69)	18:22	64	09:10 (T68)	19:56	40	08:15 (T67)	20:27		20:57
2	07:57		16:23 (T69)	07:42		08:07 (T68)	07:06		08:06 (T68)	07:15		07:34 (T66)	06:29		06:01
	17:14	25	16:48 (T69)	17:49	124	17:16 (T69)	18:23	63	09:09 (T68)	19:57	39	08:14 (T67)	20:28		20:57
3	07:57		16:22 (T69)	07:41		08:06 (T68)	07:04		08:07 (T68)	07:13		07:32 (T66)	06:28		06:01
	17:15	26	16:48 (T69)	17:50	124	17:15 (T69)	18:24	60	09:07 (T68)	19:58	37	08:11 (T67)	20:29		20:58
4	07:57		16:22 (T69)	07:40		08:05 (T68)	07:02		08:08 (T68)	07:11		07:30 (T66)	06:27		06:01
	17:16	27	16:49 (T69)	17:51	126	17:15 (T69)	18:25	58	09:06 (T68)	19:59	32	08:08 (T67)	20:30		20:59
5	07:57		16:22 (T69)	07:39		08:05 (T68)	07:01		08:09 (T68)	07:10		07:29 (T66)	06:25		06:00
	17:17	28	16:50 (T69)	17:53	127	17:15 (T69)	18:26	55	09:04 (T68)	20:00	19	07:48 (T66)	20:31		20:59
6	07:57		16:21 (T69)	07:38		08:05 (T68)	06:59		08:11 (T68)	07:08		07:27 (T66)	06:24		06:00
	17:18	30	16:51 (T69)	17:54	127	17:15 (T69)	18:28	51	09:02 (T68)	20:00	19	07:46 (T66)	20:32		21:00
7	07:57		16:21 (T69)	07:37		08:04 (T68)	06:58		08:12 (T68)	07:06		07:26 (T66)	06:23		06:00
	17:19	32	16:53 (T69)	17:55	127	17:15 (T69)	18:29	48	09:00 (T68)	20:01	19	07:45 (T66)	20:33		21:01
8	07:57		16:21 (T69)	07:36		08:04 (T68)	07:56		09:13 (T68)	07:05		07:27 (T66)	06:22		05:59
	17:20	33	16:54 (T69)	17:56	128	17:15 (T69)	19:30	45	09:58 (T68)	20:02	17	07:44 (T66)	20:34		21:01
9	07:57		16:21 (T69)	07:35		08:04 (T68)	07:54		09:15 (T68)	07:03		07:29 (T66)	06:21		05:59
	17:21	34	16:55 (T69)	17:58	128	17:15 (T69)	19:31	41	09:56 (T68)	20:03	12	07:41 (T66)	20:35		21:02
10	07:57		16:20 (T69)	07:33		08:03 (T68)	07:53		09:17 (T68)	07:02		07:31 (T66)	06:20		05:59
	17:22	35	16:55 (T69)	17:59	127	17:14 (T69)	19:32	35	09:52 (T68)	20:04	6	07:37 (T66)	20:36		21:03
11	07:56		16:20 (T69)	07:32		08:03 (T68)	07:51		09:19 (T68)	07:00			06:18		05:59
	17:23	37	16:57 (T69)	18:00	127	17:14 (T69)	19:33	30	09:49 (T68)	20:06			20:37		21:03
12	07:56		16:20 (T69)	07:31		08:03 (T68)	07:50		09:23 (T68)	06:58			06:17		05:59
	17:24	38	16:58 (T69)	18:01	125	17:13 (T69)	19:34	22	09:45 (T68)	20:07			20:38		21:04
13	07:56		16:19 (T69)	07:30		08:03 (T68)	07:48		08:07 (T67)	06:57			06:16		05:59
	17:25	40	16:59 (T69)	18:03	125	17:13 (T69)	19:35	12	09:37 (T68)	20:08			20:39		21:04
14	07:55		16:19 (T69)	07:28		08:02 (T68)	07:46		08:05 (T67)	06:55			06:15		05:59
	17:26	41	17:00 (T69)	18:04	123	17:11 (T69)	19:37	11	08:16 (T67)	20:09			20:40		21:05
15	07:55		08:29 (T68)	07:27		08:03 (T68)	07:45		08:04 (T67)	06:54			06:14		05:59
	17:27	53	17:01 (T69)	18:05	122	17:11 (T69)	19:38	15	08:19 (T67)	20:10			20:41		21:05
16	07:55		08:26 (T68)	07:26		08:03 (T68)	07:43		08:02 (T67)	06:52			06:13		05:59
	17:28	63	17:03 (T69)	18:06	119	17:10 (T69)	19:39	18	08:20 (T67)	20:11			20:42		21:06
17	07:54		08:23 (T68)	07:25		08:02 (T68)	07:41		08:00 (T67)	06:51			06:12		05:59
	17:30	70	17:04 (T69)	18:08	116	17:08 (T69)	19:40	21	08:21 (T67)	20:12			20:43		21:06
18	07:54		08:22 (T68)	07:23		08:03 (T68)	07:40		07:59 (T67)	06:49			06:11		05:59
	17:31	75	17:05 (T69)	18:09	113	17:07 (T69)	19:41	23	08:22 (T67)	20:13			20:44		21:06
19	07:53		08:20 (T68)	07:22		08:02 (T68)	07:38		07:57 (T67)	06:47			06:11		05:59
	17:32	81	17:06 (T69)	18:10	110	17:05 (T69)	19:42	25	08:22 (T67)	20:14			20:45		21:07
20	07:53		08:19 (T68)	07:20		08:03 (T68)	07:36		07:55 (T67)	06:46			06:10		05:59
	17:33	86	17:08 (T69)	18:11	105	17:03 (T69)	19:43	28	08:23 (T67)	20:15			20:46		21:07
21	07:52		08:17 (T68)	07:19		08:03 (T68)	07:35		07:54 (T67)	06:44			06:09		05:59
	17:34	91	17:09 (T69)	18:12	100	17:01 (T69)	19:44	29	08:23 (T67)	20:16			20:47		21:07
22	07:51		08:16 (T68)	07:18		08:03 (T68)	07:33		07:52 (T67)	06:43			06:08		05:59
	17:35	95	17:10 (T69)	18:14	94	16:58 (T69)	19:45	31	08:23 (T67)	20:17			20:48		21:07
23	07:51		08:15 (T68)	07:16		08:03 (T68)	07:31		07:50 (T67)	06:42			06:07		06:00
	17:37	99	17:11 (T69)	18:15	82	16:53 (T69)	19:46	33	08:23 (T67)	20:18			20:49		21:08
24	07:50		08:14 (T68)	07:15		08:03 (T68)	07:30		07:49 (T67)	06:40			06:07		06:00
	17:38	103	17:12 (T69)	18:16	71	09:14 (T68)	19:47	34	08:23 (T67)	20:19			20:50		21:08
25	07:49		08:13 (T68)	07:13		08:04 (T68)	07:28		07:47 (T67)	06:39			06:06		06:00
	17:39	105	17:12 (T69)	18:17	70	09:14 (T68)	19:48	36	08:23 (T67)	20:20			20:51		21:08
26	07:48		08:12 (T68)	07:12		08:04 (T68)	07:26		07:46 (T67)	06:37			06:05		06:00
	17:40	108	17:12 (T69)	18:18	69	09:13 (T68)	19:50	36	08:22 (T67)	20:21			20:52		21:08
27	07:48		08:11 (T68)	07:10		08:05 (T68)	07:25		07:44 (T66)	06:36			06:05		06:01
	17:42	111	17:13 (T69)	18:20	67	09:12 (T68)	19:51	37	08:22 (T67)	20:23			20:52		21:08
28	07:47		08:10 (T68)	07:09		08:05 (T68)	07:23		07:42 (T66)	06:34			06:04		06:01
	17:43	113	17:13 (T69)	18:21	66	09:11 (T68)	19:52	39	08:21 (T67)	20:24			20:53		21:08
29	07:46		08:10 (T68)				07:21		07:40 (T66)	06:33			06:03		06:02
	17:44	116	17:15 (T69)				19:53	39	08:19 (T67)	20:25			20:54		21:08
30	07:45		08:09 (T68)				07:20		07:39 (T66)	06:32			06:03		06:02
	17:45	118	17:15 (T69)				19:54	40	08:19 (T67)	20:26			20:55		21:08
31	07:44		08:09 (T68)				07:18		07:37 (T66)				06:02		
	17:46	120	17:15 (T69)				19:55	40	08:17 (T67)				20:56		
Potential sun hours	297			297			370			399			448		452
Total, worst case		2057			3063			1119			240				
Sun reduction		0.31			0.40			0.44			0.52				
Oper. time red.		1.00			1.00			1.00			1.00				
Wind dir. red.		0.66			0.60			0.57			0.63				
Total reduction		0.21			0.24			0.25			0.33				
Total, real		425			743			285			80				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 770 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8329)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September			October			November			December		
1	06:03		06:27		06:57			07:28		09:04 (T68)	07:02		07:33 (T68)	07:37		16:02 (T69)
	21:08		20:50		20:07			19:15	17	09:21 (T68)	17:28	128	16:44 (T69)	17:04	37	16:39 (T69)
2	06:03		06:28		06:58		07:30 (T66)	07:29		08:59 (T68)	07:03		07:33 (T68)	07:38		16:03 (T69)
	21:08		20:49		20:05	6	07:36 (T66)	19:13	27	09:26 (T68)	17:27	127	16:44 (T69)	17:04	36	16:39 (T69)
3	06:04		06:29		06:59		07:27 (T66)	07:30		08:56 (T68)	07:04		07:34 (T68)	07:39		16:04 (T69)
	21:08		20:48		20:04	12	07:39 (T66)	19:11	33	09:29 (T68)	17:26	128	16:45 (T69)	17:04	34	16:38 (T69)
4	06:04		06:30		07:00		07:25 (T66)	07:31		08:53 (T68)	07:05		07:34 (T68)	07:40		16:05 (T69)
	21:08		20:47		20:02	16	07:41 (T66)	19:10	38	09:31 (T68)	17:25	128	16:45 (T69)	17:03	33	16:38 (T69)
5	06:05		06:30		07:01		07:23 (T66)	07:32		08:51 (T68)	07:07		07:35 (T68)	07:41		16:06 (T69)
	21:08		20:45		20:01	19	07:42 (T66)	19:08	43	09:34 (T68)	17:23	126	16:45 (T69)	17:03	32	16:38 (T69)
6	06:05		06:31		07:02		07:23 (T66)	07:33		08:49 (T68)	07:08		07:35 (T68)	07:42		16:07 (T69)
	21:07		20:44		19:57	19	07:42 (T66)	19:07	47	09:36 (T68)	17:22	127	16:45 (T69)	17:03	31	16:38 (T69)
7	06:06		06:32		07:03		07:24 (T66)	07:34		08:47 (T68)	07:09		07:36 (T68)	07:43		16:09 (T69)
	21:07		20:43		19:56	19	07:43 (T66)	19:05	50	09:37 (T68)	17:21	126	16:46 (T69)	17:03	29	16:38 (T69)
8	06:06		06:33		07:04		07:25 (T66)	07:35		08:45 (T68)	07:10		07:37 (T68)	07:44		16:10 (T69)
	21:07		20:42		19:54	32	08:03 (T67)	19:03	54	09:39 (T68)	17:20	124	16:46 (T69)	17:03	27	16:37 (T69)
9	06:07		06:34		07:05		07:26 (T66)	07:36		08:44 (T68)	07:11		07:37 (T68)	07:44		16:11 (T69)
	21:06		20:41		19:52	36	08:05 (T67)	19:02	56	09:40 (T68)	17:19	124	16:46 (T69)	17:03	27	16:38 (T69)
10	06:08		06:35		07:06		07:27 (T66)	07:37		08:42 (T68)	07:13		07:39 (T68)	07:45		16:13 (T69)
	21:06		20:39		19:51	39	08:07 (T67)	19:00	59	09:41 (T68)	17:18	121	16:46 (T69)	17:03	25	16:38 (T69)
11	06:09		06:36		07:07		07:28 (T66)	07:38		08:41 (T68)	07:14		07:40 (T68)	07:46		16:14 (T69)
	21:06		20:38		19:49	40	08:08 (T67)	18:58	61	09:42 (T68)	17:17	119	16:46 (T69)	17:03	24	16:38 (T69)
12	06:09		06:37		07:08		07:28 (T66)	07:39		08:39 (T68)	07:15		07:40 (T68)	07:47		16:14 (T69)
	21:05		20:37		19:47	40	08:08 (T67)	18:57	63	09:42 (T68)	17:16	118	16:46 (T69)	17:03	23	16:37 (T69)
13	06:10		06:38		07:09		07:29 (T66)	07:40		08:38 (T68)	07:16		07:41 (T68)	07:48		16:16 (T69)
	21:05		20:35		19:45	40	08:09 (T67)	18:55	65	09:43 (T68)	17:15	115	16:45 (T69)	17:03	21	16:37 (T69)
14	06:11		06:39		07:10		07:30 (T66)	07:41		08:37 (T68)	07:17		07:43 (T68)	07:49		16:17 (T69)
	21:04		20:34		19:44	39	08:09 (T67)	18:54	67	09:44 (T68)	17:14	113	16:46 (T69)	17:04	20	16:37 (T69)
15	06:12		06:40		07:11		07:31 (T66)	07:42		08:37 (T68)	07:19		07:44 (T68)	07:49		16:19 (T69)
	21:04		20:33		19:42	39	08:10 (T67)	18:52	68	09:45 (T68)	17:13	111	16:46 (T69)	17:04	18	16:37 (T69)
16	06:12		06:41		07:12		07:32 (T66)	07:43		08:36 (T68)	07:20		07:45 (T68)	07:50		16:19 (T69)
	21:03		20:31		19:40	37	08:10 (T67)	18:51	69	09:45 (T68)	17:13	108	16:45 (T69)	17:04	17	16:36 (T69)
17	06:13		06:42		07:13		07:34 (T67)	07:45		08:35 (T68)	07:21		07:46 (T68)	07:51		16:20 (T69)
	21:03		20:30		19:39	36	08:10 (T67)	18:49	71	09:46 (T68)	17:12	105	16:45 (T69)	17:04	17	16:37 (T69)
18	06:14		06:43		07:14		07:34 (T67)	07:46		08:35 (T68)	07:22		07:48 (T68)	07:51		16:22 (T69)
	21:02		20:28		19:37	36	08:10 (T67)	18:48	71	09:46 (T68)	17:11	103	16:46 (T69)	17:05	15	16:37 (T69)
19	06:15		06:44		07:15		07:35 (T67)	07:47		08:34 (T68)	07:23		07:49 (T68)	07:52		16:22 (T69)
	21:01		20:27		19:35	35	08:10 (T67)	18:46	87	17:26 (T69)	17:10	99	16:45 (T69)	17:05	14	16:36 (T69)
20	06:16		06:45		07:16		07:36 (T67)	07:48		08:33 (T68)	07:24		07:51 (T68)	07:53		16:23 (T69)
	21:01		20:26		19:34	33	08:09 (T67)	18:45	95	17:29 (T69)	17:10	95	16:45 (T69)	17:05	14	16:37 (T69)
21	06:16		06:46		07:17		07:37 (T67)	07:49		08:34 (T68)	07:26		07:52 (T68)	07:53		16:23 (T69)
	21:00		20:24		19:32	32	08:09 (T67)	18:43	101	17:33 (T69)	17:09	91	16:44 (T69)	17:06	14	16:37 (T69)
22	06:17		06:47		07:18		07:38 (T67)	07:50		08:33 (T68)	07:27		07:55 (T68)	07:54		16:24 (T69)
	20:59		20:23		19:30	30	08:08 (T67)	18:42	107	17:35 (T69)	17:08	86	16:44 (T69)	17:06	14	16:38 (T69)
23	06:18		06:48		07:19		07:39 (T67)	07:51		08:33 (T68)	07:28		07:56 (T68)	07:54		16:24 (T69)
	20:58		20:21		19:28	28	08:07 (T67)	18:40	110	17:36 (T69)	17:08	82	16:43 (T69)	17:07	14	16:38 (T69)
24	06:19		06:49		07:20		07:40 (T67)	07:52		08:32 (T68)	07:29		07:59 (T68)	07:55		16:25 (T69)
	20:57		20:20		19:27	26	08:06 (T67)	18:39	114	17:37 (T69)	17:07	75	16:42 (T69)	17:07	14	16:39 (T69)
25	06:20		06:50		07:21		07:41 (T67)	07:54		08:32 (T68)	07:30		08:01 (T68)	07:55		16:25 (T69)
	20:57		20:18		19:25	24	08:05 (T67)	18:37	117	17:38 (T69)	17:06	70	16:42 (T69)	17:08	15	16:40 (T69)
26	06:21		06:51		07:22		07:42 (T67)	07:55		08:33 (T68)	07:31		08:04 (T68)	07:55		16:24 (T69)
	20:56		20:17		19:23	21	08:03 (T67)	18:36	120	17:40 (T69)	17:06	63	16:41 (T69)	17:09	16	16:40 (T69)
27	06:22		06:52		07:23		07:43 (T67)	07:56		08:32 (T68)	07:32		08:09 (T68)	07:56		16:25 (T69)
	20:55		20:15		19:22	19	08:02 (T67)	18:35	122	17:41 (T69)	17:06	54	16:41 (T69)	17:09	17	16:42 (T69)
28	06:23		06:53		07:24		07:44 (T67)	07:57		08:32 (T68)	07:34		15:59 (T69)	07:56		16:25 (T69)
	20:54		20:13		19:20	16	08:00 (T67)	18:33	124	17:41 (T69)	17:05	42	16:41 (T69)	17:10	18	16:43 (T69)
29	06:24		06:54		07:25		07:45 (T67)	07:58		08:32 (T68)	07:35		16:00 (T69)	07:56		16:24 (T69)
	20:53		20:12		19:18	12	07:57 (T67)	18:32	126	17:42 (T69)	17:05	40	16:40 (T69)	17:11	20	16:44 (T69)
30	06:25		06:55		07:26		07:46 (T67)	07:59		08:33 (T68)	07:36		16:01 (T69)	07:56		16:24 (T69)
	20:52		20:10		19:17	8	07:54 (T67)	18:31	126	17:43 (T69)	17:04	38	16:39 (T69)	17:12	21	16:45 (T69)
31	06:26		06:56					08:01		08:33 (T68)				07:57		16:23 (T69)
	20:51		20:09					18:29	128	17:44 (T69)				17:12	23	16:46 (T69)
Potential sun hours	459		428		375			345			298			288		
Total, worst case						789			2436			2986			680	
Sun reduction						0.59			0.48			0.30			0.22	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.62			0.57			0.64			0.73	
Total reduction						0.37			0.28			0.19			0.16	
Total, real						292			678			576			110	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 779 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8336)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:45 (T77)	07:43		08:04 (T76)	07:07		17:02 (T42)	07:16		19:19 (T41)	06:30			06:01		20:03 (T40)
	17:13	33	16:18 (T77)	17:47	33	17:22 (T42)	18:22	36	17:38 (T42)	19:56	15	19:34 (T41)	20:27			20:57	29	20:32 (T40)
2	07:57		15:46 (T77)	07:42		08:03 (T76)	07:06		17:03 (T42)	07:14		19:17 (T41)	06:29			06:01		20:04 (T40)
	17:14	32	16:18 (T77)	17:49	42	17:25 (T42)	18:23	33	17:36 (T42)	19:57	18	19:35 (T41)	20:28			20:58	29	20:33 (T40)
3	07:57		15:47 (T77)	07:41		08:02 (T76)	07:04		17:04 (T42)	07:13		19:16 (T41)	06:28			06:01		20:03 (T40)
	17:15	31	16:18 (T77)	17:50	46	17:26 (T42)	18:24	30	17:34 (T42)	19:58	21	19:37 (T41)	20:29			20:58	31	20:34 (T40)
4	07:57		15:48 (T77)	07:40		08:02 (T76)	07:02		17:07 (T42)	07:11		19:15 (T41)	06:26			06:00		20:04 (T40)
	17:16	30	16:18 (T77)	17:51	50	17:28 (T42)	18:25	25	17:32 (T42)	19:59	22	19:37 (T41)	20:30			20:59	31	20:35 (T40)
5	07:57		15:49 (T77)	07:39		08:03 (T76)	07:01		17:09 (T42)	07:09		19:13 (T41)	06:25			06:00		20:04 (T40)
	17:16	29	16:18 (T77)	17:52	52	17:29 (T42)	18:26	20	17:29 (T42)	20:00	25	19:38 (T41)	20:31			21:00	31	20:35 (T40)
6	07:57		15:50 (T77)	07:38		08:03 (T76)	06:59		17:14 (T42)	07:08		19:13 (T41)	06:24			05:59		20:04 (T40)
	17:17	28	16:18 (T77)	17:54	53	17:30 (T42)	18:27	11	17:25 (T42)	20:00	27	19:40 (T41)	20:32			21:00	31	20:35 (T40)
7	07:57		15:51 (T77)	07:37		08:03 (T76)	06:58			07:06		19:12 (T41)	06:23			05:59		20:04 (T40)
	17:18	26	16:17 (T77)	17:55	55	17:31 (T42)	18:29			20:01	28	19:40 (T41)	20:33			21:01	32	20:36 (T40)
8	07:57		15:52 (T77)	07:36		08:05 (T76)	07:56			07:05		19:12 (T41)	06:22			05:59		20:05 (T40)
	17:19	25	16:17 (T77)	17:56	55	17:33 (T42)	19:30			20:02	30	19:42 (T41)	20:34			21:02	32	20:37 (T40)
9	07:57		15:54 (T77)	07:35		08:06 (T76)	07:54			07:03		19:12 (T41)	06:20			05:59		20:05 (T40)
	17:20	22	16:16 (T77)	17:57	55	17:34 (T42)	19:31			20:03	31	19:43 (T41)	20:35			21:02	32	20:37 (T40)
10	07:57		15:56 (T77)	07:34		08:08 (T76)	07:53			07:01		19:11 (T41)	06:19			05:59		20:06 (T40)
	17:21	20	16:16 (T77)	17:59	54	17:36 (T42)	19:32			20:05	32	19:43 (T41)	20:36			21:03	31	20:37 (T40)
11	07:57		15:57 (T77)	07:32		08:09 (T76)	07:51			07:00		19:12 (T41)	06:18			05:58		20:06 (T40)
	17:23	17	16:14 (T77)	18:00	52	17:36 (T42)	19:33			20:06	33	19:45 (T41)	20:37			21:04	32	20:38 (T40)
12	07:56		15:59 (T77)	07:31		08:12 (T76)	07:50			06:58		19:11 (T41)	06:17			05:58		20:06 (T40)
	17:24	14	16:13 (T77)	18:01	49	17:38 (T42)	19:34			20:07	33	19:44 (T41)	20:38			21:04	31	20:37 (T40)
13	07:56		16:03 (T77)	07:30		16:59 (T42)	07:48			06:57		19:12 (T41)	06:16		20:11 (T40)	05:58		20:06 (T40)
	17:25	8	16:11 (T77)	18:02	41	17:40 (T42)	19:35			20:08	32	19:44 (T41)	20:39	5	20:16 (T40)	21:05	31	20:37 (T40)
14	07:56			07:29		16:58 (T42)	07:46			06:55		19:12 (T41)	06:15		20:09 (T40)	05:58		20:06 (T40)
	17:26			18:04	42	17:40 (T42)	19:36			20:09	30	19:42 (T41)	20:41	8	20:17 (T40)	21:05	31	20:37 (T40)
15	07:55			07:27		16:58 (T42)	07:45			06:53		19:12 (T41)	06:14		20:08 (T40)	05:58		20:07 (T40)
	17:27			18:05	44	17:42 (T42)	19:38			20:10	29	19:41 (T41)	20:42	10	20:18 (T40)	21:05	30	20:37 (T40)
16	07:55			07:26		16:58 (T42)	07:43			06:52		19:14 (T41)	06:13		20:07 (T40)	05:58		20:07 (T40)
	17:28			18:06	46	17:44 (T42)	19:39			20:11	26	19:40 (T41)	20:43	13	20:20 (T40)	21:06	30	20:37 (T40)
17	07:54		08:16 (T76)	07:25		16:57 (T42)	07:41			06:50		19:14 (T41)	06:12		20:06 (T40)	05:58		20:08 (T40)
	17:29	2	08:18 (T76)	18:07	47	17:44 (T42)	19:40			20:12	24	19:38 (T41)	20:43	14	20:20 (T40)	21:06	30	20:38 (T40)
18	07:54		08:15 (T76)	07:23		16:57 (T42)	07:40			06:49		19:16 (T41)	06:11		20:05 (T40)	05:58		20:08 (T40)
	17:30	4	08:19 (T76)	18:09	48	17:45 (T42)	19:41			20:13	21	19:37 (T41)	20:44	16	20:21 (T40)	21:07	30	20:38 (T40)
19	07:53		08:15 (T76)	07:22		16:57 (T42)	07:38			06:47		19:17 (T41)	06:10		20:05 (T40)	05:58		20:08 (T40)
	17:32	7	08:22 (T76)	18:10	48	17:45 (T42)	19:42			20:14	17	19:34 (T41)	20:45	17	20:22 (T40)	21:07	30	20:38 (T40)
20	07:53		08:14 (T76)	07:20		16:57 (T42)	07:36			06:46		19:21 (T41)	06:09		20:04 (T40)	05:59		20:08 (T40)
	17:33	9	08:23 (T76)	18:11	47	17:44 (T42)	19:43			20:15	10	19:31 (T41)	20:46	19	20:23 (T40)	21:07	30	20:38 (T40)
21	07:52		08:13 (T76)	07:19		16:58 (T42)	07:35			06:44			06:09		20:03 (T40)	05:59		20:08 (T40)
	17:34	11	08:24 (T76)	18:12	46	17:44 (T42)	19:44			20:16			20:47	20	20:23 (T40)	21:08	30	20:38 (T40)
22	07:52		08:13 (T76)	07:18		16:57 (T42)	07:33			06:43			06:08		20:04 (T40)	05:59		20:08 (T40)
	17:35	13	08:26 (T76)	18:13	47	17:44 (T42)	19:45			20:17			20:48	21	20:25 (T40)	21:08	30	20:38 (T40)
23	07:51		08:12 (T76)	07:16		16:58 (T42)	07:31			06:41			06:07		20:03 (T40)	05:59		20:09 (T40)
	17:36	15	08:27 (T76)	18:15	46	17:44 (T42)	19:46			20:18			20:49	22	20:25 (T40)	21:08	30	20:39 (T40)
24	07:50		08:11 (T76)	07:15		16:58 (T42)	07:30			06:40			06:06		20:03 (T40)	05:59		20:09 (T40)
	17:38	17	08:28 (T76)	18:16	44	17:42 (T42)	19:47			20:19			20:50	23	20:26 (T40)	21:08	30	20:39 (T40)
25	07:49		08:10 (T76)	07:13		16:59 (T42)	07:28			06:38			06:06		20:03 (T40)	06:00		20:09 (T40)
	17:39	18	08:28 (T76)	18:17	43	17:42 (T42)	19:48			20:21			20:51	24	20:27 (T40)	21:08	30	20:39 (T40)
26	07:49		08:09 (T76)	07:12		16:59 (T42)	07:26			06:37			06:05		20:03 (T40)	06:00		20:10 (T40)
	17:40	20	08:29 (T76)	18:18	42	17:41 (T42)	19:50			20:22			20:52	25	20:28 (T40)	21:08	30	20:40 (T40)
27	07:48		08:09 (T76)	07:10		17:00 (T42)	07:24			06:36			06:04		20:03 (T40)	06:00		20:10 (T40)
	17:41	21	08:30 (T76)	18:19	41	17:41 (T42)	19:51			20:23			20:53	26	20:29 (T40)	21:08	30	20:40 (T40)
28	07:47		08:08 (T76)	07:09		17:01 (T42)	07:23			06:34			06:04		20:03 (T40)	06:01		20:09 (T40)
	17:42	23	08:31 (T76)	18:21	38	17:39 (T42)	19:52			20:24			20:54	27	20:30 (T40)	21:09	31	20:40 (T40)
29	07:46		08:07 (T76)				07:21		19:28 (T41)	06:33			06:03		20:02 (T40)	06:01		20:10 (T40)
	17:44	24	08:31 (T76)				19:53	3	19:31 (T41)	20:25			20:54	28	20:30 (T40)	21:09	31	20:41 (T40)
30	07:45		08:06 (T76)				07:19		19:23 (T41)	06:32			06:02		20:03 (T40)	06:02		20:10 (T40)
	17:45	25	08:31 (T76)				19:54	9	19:32 (T41)	20:26			20:55	28	20:31 (T40)	21:09	31	20:41 (T40)
31	07:44		08:05 (T76)				07:18		19:21 (T41)				06:02		20:02 (T40)			
	17:46	27	08:32 (T76)				19:55	13	19:34 (T41)				20:56	29	20:31 (T40)			
Potential sun hours	297			297			370			399			448			453		
Total, worst case		551			1306			180			504			375			917	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.67			0.69			0.60			0.55			0.55	
Total reduction		0.21			0.28			0.31			0.32			0.32			0.36	
Total, real		115			359			56			163			120			329	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 779 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8336)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		20:10 (T40)	06:26		06:57		19:11 (T41)	07:27		07:02		07:36 (T76)	07:37	15:39 (T77)
	21:08	32	20:42 (T40)	20:50		20:07	33	19:44 (T41)	19:15		17:28	54	17:04 (T42)	17:04	17	15:56 (T77)
2	06:03		20:10 (T40)	06:27		06:58		19:10 (T41)	07:29		07:03		07:36 (T76)	07:38		15:38 (T77)
	21:08	31	20:41 (T40)	20:49		20:06	32	19:42 (T41)	19:13		17:27	55	17:04 (T42)	17:03	20	15:58 (T77)
3	06:03		20:11 (T40)	06:28		06:59		19:10 (T41)	07:30		07:04		07:34 (T76)	07:39		15:38 (T77)
	21:08	31	20:42 (T40)	20:48		20:04	31	19:41 (T41)	19:11		17:26	55	17:02 (T42)	17:03	22	16:00 (T77)
4	06:04		20:10 (T40)	06:29		07:00		19:09 (T41)	07:31		07:06		07:33 (T76)	07:40		15:37 (T77)
	21:08	32	20:42 (T40)	20:47		20:02	30	19:39 (T41)	19:10		17:24	55	17:01 (T42)	17:03	25	16:02 (T77)
5	06:04		20:11 (T40)	06:30		07:01		19:09 (T41)	07:32		07:07		07:32 (T76)	07:41		15:37 (T77)
	21:08	32	20:43 (T40)	20:46		20:01	28	19:37 (T41)	19:08		17:23	53	16:59 (T42)	17:03	26	16:03 (T77)
6	06:05		20:10 (T40)	06:31		07:02		19:09 (T41)	07:33		07:08		07:32 (T76)	07:42		15:36 (T77)
	21:08	32	20:42 (T40)	20:44		19:57	27	19:36 (T41)	19:06		17:22	53	16:59 (T42)	17:03	28	16:04 (T77)
7	06:05		20:11 (T40)	06:32		07:03		19:09 (T41)	07:34		07:09		07:32 (T76)	07:43		15:35 (T77)
	21:07	31	20:42 (T40)	20:43		19:56	25	19:34 (T41)	19:05		17:21	49	16:57 (T42)	17:03	29	16:04 (T77)
8	06:06		20:11 (T40)	06:33		07:04		19:10 (T41)	07:35	17:47 (T42)	07:10		07:32 (T76)	07:44		15:35 (T77)
	21:07	31	20:42 (T40)	20:42		19:54	23	19:33 (T41)	19:03	16 18:03 (T42)	17:20	46	16:56 (T42)	17:03	30	16:05 (T77)
9	06:07		20:10 (T40)	06:34		07:05		19:10 (T41)	07:36	17:43 (T42)	07:12		07:34 (T76)	07:45		15:35 (T77)
	21:07	31	20:41 (T40)	20:41		19:52	21	19:31 (T41)	19:01	23 18:06 (T42)	17:19	42	16:56 (T42)	17:03	31	16:06 (T77)
10	06:07		20:11 (T40)	06:35		07:06		19:10 (T41)	07:37	17:40 (T42)	07:13		07:35 (T76)	07:46		15:35 (T77)
	21:06	30	20:41 (T40)	20:39		19:51	18	19:28 (T41)	19:00	28 18:08 (T42)	17:18	30	16:52 (T42)	17:03	32	16:07 (T77)
11	06:08		20:11 (T40)	06:36		07:07		19:11 (T41)	07:38	17:38 (T42)	07:14		07:36 (T76)	07:46		15:35 (T77)
	21:06	30	20:41 (T40)	20:38		19:49	16	19:27 (T41)	18:58	31 18:09 (T42)	17:17	27	08:03 (T76)	17:03	33	16:08 (T77)
12	06:09		20:11 (T40)	06:37		07:08		19:12 (T41)	07:39	17:36 (T42)	07:15		07:37 (T76)	07:47		15:36 (T77)
	21:06	29	20:40 (T40)	20:37		19:47	13	19:25 (T41)	18:57	34 18:10 (T42)	17:16	25	08:02 (T76)	17:03	33	16:09 (T77)
13	06:10		20:11 (T40)	06:38		07:09		19:14 (T41)	07:40	17:34 (T42)	07:16		07:39 (T76)	07:48		15:36 (T77)
	21:05	29	20:40 (T40)	20:36		19:45	9	19:23 (T41)	18:55	37 18:11 (T42)	17:15	24	08:03 (T76)	17:03	34	16:10 (T77)
14	06:10		20:12 (T40)	06:39		07:10		19:17 (T41)	07:41	17:33 (T42)	07:18		07:40 (T76)	07:49		15:35 (T77)
	21:05	27	20:39 (T40)	20:34		19:44	5	19:22 (T41)	18:54	39 18:12 (T42)	17:14	23	08:03 (T76)	17:03	35	16:10 (T77)
15	06:11		20:12 (T40)	06:40		07:11			07:42	17:32 (T42)	07:19		07:41 (T76)	07:50		15:36 (T77)
	21:04	27	20:39 (T40)	20:33		19:42			18:52	41 18:13 (T42)	17:13	21	08:02 (T76)	17:03	35	16:11 (T77)
16	06:12		20:11 (T40)	06:41		07:12			07:44	17:31 (T42)	07:20		07:42 (T76)	07:50		15:37 (T77)
	21:03	27	20:38 (T40)	20:31		19:40			18:50	43 18:14 (T42)	17:12	20	08:02 (T76)	17:04	35	16:12 (T77)
17	06:13		20:12 (T40)	06:42		07:13			07:45	17:30 (T42)	07:21		07:44 (T76)	07:51		15:36 (T77)
	21:03	25	20:37 (T40)	20:30		19:39			18:49	44 18:14 (T42)	17:11	18	08:02 (T76)	17:04	36	16:12 (T77)
18	06:14		20:12 (T40)	06:43		07:14			07:46	17:29 (T42)	07:22		07:45 (T76)	07:52		15:37 (T77)
	21:02	25	20:37 (T40)	20:29		19:37			18:47	45 18:14 (T42)	17:11	17	08:02 (T76)	17:04	36	16:13 (T77)
19	06:14		20:13 (T40)	06:44		07:15			07:47	17:28 (T42)	07:23		07:46 (T76)	07:52		15:38 (T77)
	21:02	24	20:37 (T40)	20:27		19:35			18:46	46 18:14 (T42)	17:10	15	08:01 (T76)	17:05	36	16:14 (T77)
20	06:15		20:13 (T40)	06:45		07:16			07:48	17:28 (T42)	07:25		07:48 (T76)	07:53		15:38 (T77)
	21:01	23	20:36 (T40)	20:26		19:33			18:44	46 18:14 (T42)	17:09	13	08:01 (T76)	17:05	36	16:14 (T77)
21	06:16		20:13 (T40)	06:46		07:17			07:49	17:28 (T42)	07:26		07:49 (T76)	07:53		15:38 (T77)
	21:00	22	20:35 (T40)	20:24		19:32			18:43	47 18:15 (T42)	17:08	11	08:00 (T76)	17:05	36	16:14 (T77)
22	06:17		20:13 (T40)	06:47		07:18			07:50	17:27 (T42)	07:27		07:50 (T76)	07:54		15:38 (T77)
	20:59	21	20:34 (T40)	20:23		19:30			18:41	48 18:15 (T42)	17:08	9	07:59 (T76)	17:06	36	16:14 (T77)
23	06:18		20:14 (T40)	06:48	19:24 (T41)	07:19			07:51	17:27 (T42)	07:28		07:51 (T76)	07:54		15:39 (T77)
	20:59	19	20:33 (T40)	20:21	11 19:35 (T41)	19:28			18:40	48 18:15 (T42)	17:07	7	07:58 (T76)	17:07	36	16:15 (T77)
24	06:19		20:15 (T40)	06:49	19:21 (T41)	07:20			07:53	17:27 (T42)	07:29		07:52 (T76)	07:55		15:40 (T77)
	20:58	18	20:33 (T40)	20:20	17 19:38 (T41)	19:27			18:39	47 18:14 (T42)	17:07	5	07:57 (T76)	17:07	36	16:16 (T77)
25	06:20		20:16 (T40)	06:50	19:19 (T41)	07:21			07:54	17:28 (T42)	07:30		07:54 (T76)	07:55		15:40 (T77)
	20:57	16	20:32 (T40)	20:18	21 19:40 (T41)	19:25			18:37	47 18:15 (T42)	17:06	2	07:56 (T76)	17:08	36	16:16 (T77)
26	06:21		20:16 (T40)	06:51	19:17 (T41)	07:22			07:55	17:27 (T42)	07:32			07:56		15:41 (T77)
	20:56	15	20:31 (T40)	20:17	24 19:41 (T41)	19:23			18:36	46 18:13 (T42)	17:06			17:08	36	16:17 (T77)
27	06:22		20:17 (T40)	06:52	19:15 (T41)	07:23			07:56	17:27 (T42)	07:33			07:56		15:41 (T77)
	20:55	14	20:31 (T40)	20:15	27 19:42 (T41)	19:22			18:34	44 18:11 (T42)	17:05			17:09	36	16:17 (T77)
28	06:22		20:18 (T40)	06:53	19:14 (T41)	07:24			07:57	17:27 (T42)	07:34			07:56		15:42 (T77)
	20:54	11	20:29 (T40)	20:14	29 19:43 (T41)	19:20			18:33	43 18:10 (T42)	17:05			17:10	35	16:17 (T77)
29	06:23		20:19 (T40)	06:54	19:13 (T41)	07:25			07:58	17:28 (T42)	07:35		15:43 (T77)	07:57		15:42 (T77)
	20:53	9	20:28 (T40)	20:12	30 19:43 (T41)	19:18			18:32	40 18:08 (T42)	17:04	8	15:51 (T77)	17:10	35	16:17 (T77)
30	06:24		20:21 (T40)	06:55	19:12 (T41)	07:26			08:00	08:41 (T76)	07:36		15:40 (T77)	07:57		15:44 (T77)
	20:52	6	20:27 (T40)	20:10	32 19:44 (T41)	19:16			18:30	49 18:07 (T42)	17:04	14	15:54 (T77)	17:11	34	16:18 (T77)
31	06:25		20:23 (T40)	06:56	19:11 (T41)				08:01	08:38 (T76)				07:57		15:44 (T77)
	20:51	3	20:26 (T40)	20:09	33 19:44 (T41)				18:29	54 18:06 (T42)				17:12	34	16:18 (T77)
Potential sun hours	460			429		375			345		297			287		
Total, worst case		733			224		311			986		751			999	
Sun reduction		0.66			0.61		0.59			0.48		0.30			0.22	
Oper. time red.		1.00			1.00		1.00			1.00		1.00			1.00	
Wind dir. red.		0.55			0.60		0.60			0.70		0.59			0.75	
Total reduction		0.37			0.38		0.37			0.35		0.18			0.17	
Total, real		271			85		114			342		137			168	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 785 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8342)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		15:32 (T44)	07:43		07:07			07:16		07:35 (T76)	06:30		18:57 (T77)	06:01		19:54 (T42)
	17:13	51	16:23 (T44)	17:47		18:22			19:56	66	19:34 (T77)	20:27	19	19:16 (T77)	20:57	38	20:32 (T42)
2	07:57		15:33 (T44)	07:42		07:06			07:14		07:33 (T76)	06:29		19:02 (T77)	06:01		19:54 (T42)
	17:14	50	16:23 (T44)	17:49		18:23			19:57	72	19:35 (T77)	20:28	9	19:11 (T77)	20:58	39	20:33 (T42)
3	07:57		15:33 (T44)	07:41		07:04			07:13		07:32 (T76)	06:28			06:01		19:53 (T42)
	17:15	50	16:23 (T44)	17:50		18:24			19:58	75	19:37 (T77)	20:29			20:58	40	20:33 (T42)
4	07:57		15:34 (T44)	07:40		07:02			07:11		07:30 (T76)	06:26			06:00		19:54 (T42)
	17:16	49	16:23 (T44)	17:51		18:25			19:59	78	19:37 (T77)	20:30			20:59	40	20:34 (T42)
5	07:57		15:35 (T44)	07:39		07:01			07:09		07:28 (T76)	06:25			06:00		19:54 (T42)
	17:17	49	16:24 (T44)	17:52		18:26			20:00	83	19:38 (T77)	20:31			21:00	41	20:35 (T42)
6	07:57		15:36 (T44)	07:38		06:59			07:08		07:27 (T76)	06:24			05:59		19:53 (T42)
	17:17	48	16:24 (T44)	17:54		18:27			20:00	85	19:39 (T77)	20:32			21:00	42	20:35 (T42)
7	07:57		15:35 (T44)	07:37		06:58			07:06		07:25 (T76)	06:23			05:59		19:53 (T42)
	17:18	48	16:23 (T44)	17:55		18:29			20:01	88	19:39 (T77)	20:33			21:01	43	20:36 (T42)
8	07:57		15:36 (T44)	07:36		07:56			07:05		07:24 (T76)	06:22			05:59		19:54 (T42)
	17:19	48	16:24 (T44)	17:56		19:30			20:02	89	19:39 (T77)	20:34			21:02	43	20:37 (T42)
9	07:57		15:37 (T44)	07:35		07:54			07:03		07:23 (T76)	06:20			05:59		19:54 (T42)
	17:20	47	16:24 (T44)	17:57		19:31			20:03	90	19:39 (T77)	20:35			21:02	44	20:38 (T42)
10	07:57		15:39 (T44)	07:34		07:53			07:01		07:22 (T76)	06:19			05:59		19:54 (T42)
	17:21	45	16:24 (T44)	17:59		19:32			20:05	90	19:39 (T77)	20:36			21:03	44	20:38 (T42)
11	07:57		15:39 (T44)	07:32		07:51			07:00		07:23 (T76)	06:18			05:58		19:54 (T42)
	17:23	44	16:23 (T44)	18:00		19:33			20:06	89	19:39 (T77)	20:37			21:03	45	20:39 (T42)
12	07:56		15:40 (T44)	07:31		07:50			06:58		07:23 (T76)	06:17			05:58		19:54 (T42)
	17:24	44	16:24 (T44)	18:01		19:34			20:07	87	19:38 (T77)	20:38			21:04	45	20:39 (T42)
13	07:56		15:41 (T44)	07:30		07:48			06:57		07:24 (T76)	06:16			05:58		19:54 (T42)
	17:25	43	16:24 (T44)	18:02		19:35			20:08	85	19:38 (T77)	20:39			21:05	45	20:39 (T42)
14	07:56		15:42 (T44)	07:29		07:46			06:55		07:25 (T76)	06:15			05:58		19:54 (T42)
	17:26	41	16:23 (T44)	18:04		19:36			20:09	83	19:38 (T77)	20:40			21:05	45	20:39 (T42)
15	07:55		15:44 (T44)	07:27		07:45			06:53		07:26 (T76)	06:14		20:13 (T42)	05:58		19:54 (T42)
	17:27	39	16:23 (T44)	18:05		19:38			20:10	79	19:37 (T77)	20:41	5	20:18 (T42)	21:05	46	20:40 (T42)
16	07:55		15:44 (T44)	07:26		07:43			06:52		07:28 (T76)	06:13		20:08 (T42)	05:58		19:54 (T42)
	17:28	38	16:22 (T44)	18:06		19:39			20:11	75	19:37 (T77)	20:42	12	20:20 (T42)	21:06	46	20:40 (T42)
17	07:54		15:46 (T44)	07:25		07:41			06:50		07:29 (T76)	06:12		20:05 (T42)	05:58		19:55 (T42)
	17:29	36	16:22 (T44)	18:07		19:40			20:12	69	19:35 (T77)	20:43	15	20:20 (T42)	21:06	46	20:41 (T42)
18	07:54		15:47 (T44)	07:23		07:40			06:49		07:34 (T76)	06:11		20:03 (T42)	05:58		19:56 (T42)
	17:30	34	16:21 (T44)	18:09		19:41			20:13	59	19:35 (T77)	20:44	18	20:21 (T42)	21:07	46	20:42 (T42)
19	07:53		15:49 (T44)	07:22		07:38			06:47		18:42 (T77)	06:10		20:01 (T42)	05:58		19:56 (T42)
	17:32	32	16:21 (T44)	18:10		19:42			20:14	52	19:34 (T77)	20:45	21	20:22 (T42)	21:07	46	20:42 (T42)
20	07:53		15:51 (T44)	07:20		07:36			06:46		18:43 (T77)	06:09		20:00 (T42)	05:59		19:56 (T42)
	17:33	29	16:20 (T44)	18:11		19:43			20:15	51	19:34 (T77)	20:46	23	20:23 (T42)	21:07	46	20:42 (T42)
21	07:52		15:52 (T44)	07:19		07:35			06:44		18:44 (T77)	06:09		19:59 (T42)	05:59		19:56 (T42)
	17:34	26	16:18 (T44)	18:12		19:44			20:16	49	19:33 (T77)	20:47	24	20:23 (T42)	21:08	46	20:42 (T42)
22	07:52		15:55 (T44)	07:18		07:33			06:43		18:44 (T77)	06:08		19:58 (T42)	05:59		19:56 (T42)
	17:35	22	16:17 (T44)	18:13		19:45			20:17	48	19:32 (T77)	20:48	27	20:25 (T42)	21:08	46	20:42 (T42)
23	07:51		15:58 (T44)	07:16		07:31			06:41		18:45 (T77)	06:07		19:57 (T42)	05:59		19:57 (T42)
	17:36	17	16:15 (T44)	18:15		19:46			20:18	46	19:31 (T77)	20:49	28	20:25 (T42)	21:08	46	20:43 (T42)
24	07:50		16:02 (T44)	07:15		07:30		19:12 (T77)	06:40		18:45 (T77)	06:06		19:56 (T42)	05:59		19:57 (T42)
	17:38	9	16:11 (T44)	18:16		19:47	8	19:20 (T77)	20:19	44	19:29 (T77)	20:50	30	20:26 (T42)	21:08	46	20:43 (T42)
25	07:49			07:13		07:28		19:05 (T77)	06:38		18:47 (T77)	06:06		19:56 (T42)	06:00		19:56 (T42)
	17:39			18:17		19:48	21	19:26 (T77)	20:21	41	19:28 (T77)	20:51	31	20:27 (T42)	21:08	47	20:43 (T42)
26	07:49			07:12		07:26		19:01 (T77)	06:37		18:47 (T77)	06:05		19:55 (T42)	06:00		19:57 (T42)
	17:40			18:18		19:50	27	19:28 (T77)	20:22	39	19:26 (T77)	20:52	33	20:28 (T42)	21:08	46	20:43 (T42)
27	07:48			07:10		07:24		07:43 (T76)	06:36		18:49 (T77)	06:04		19:56 (T42)	06:00		19:57 (T42)
	17:41			18:19		19:51	35	19:29 (T77)	20:23	36	19:25 (T77)	20:53	33	20:29 (T42)	21:08	46	20:43 (T42)
28	07:47			07:09		07:23		07:42 (T76)	06:34		18:51 (T77)	06:04		19:55 (T42)	06:01		19:57 (T42)
	17:42			18:21		19:52	43	19:30 (T77)	20:24	32	19:23 (T77)	20:54	34	20:29 (T42)	21:09	46	20:43 (T42)
29	07:46					07:21		07:40 (T76)	06:33		18:52 (T77)	06:03		19:54 (T42)	06:01		19:58 (T42)
	17:44					19:53	50	19:31 (T77)	20:25	29	19:21 (T77)	20:54	36	20:30 (T42)	21:09	45	20:43 (T42)
30	07:45					07:19		07:38 (T76)	06:32		18:54 (T77)	06:02		19:54 (T42)	06:02		19:58 (T42)
	17:45					19:54	56	19:32 (T77)	20:26	25	19:19 (T77)	20:55	37	20:31 (T42)	21:08	45	20:43 (T42)
31	07:44					07:18		07:37 (T76)				06:02		19:54 (T42)			
	17:46					19:55	62	19:34 (T77)				20:56	37	20:31 (T42)			
Potential sun hours	297			297		370			399			448			453		
Total, worst case		939					302			1934			472			1329	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.75					0.62			0.62			0.55			0.54	
Total reduction		0.24					0.28			0.34			0.32			0.36	
Total, real		225					86			650			152			477	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 785 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8342)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		19:59 (T42)	06:26			06:57			07:22 (T76)	07:27			07:37		15:21 (T44)
	21:08	44	20:43 (T42)	20:50			20:07	89		19:38 (T77)	19:15			17:04	44	16:05 (T44)
2	06:03		19:58 (T42)	06:27			06:58			07:21 (T76)	07:29			07:38		15:21 (T44)
	21:08	45	20:43 (T42)	20:49			20:06	90		19:38 (T77)	19:13			17:03	45	16:06 (T44)
3	06:03		19:59 (T42)	06:28			06:59			07:21 (T76)	07:30			07:39		15:21 (T44)
	21:08	44	20:43 (T42)	20:48			20:04	90		19:37 (T77)	19:11			17:03	46	16:07 (T44)
4	06:04		19:59 (T42)	06:29			07:00			07:21 (T76)	07:31			07:40		15:22 (T44)
	21:08	43	20:42 (T42)	20:47			20:02	90		19:37 (T77)	19:10			17:03	47	16:09 (T44)
5	06:04		20:00 (T42)	06:30			07:01			07:22 (T76)	07:32			07:41		15:22 (T44)
	21:08	42	20:42 (T42)	20:46			20:01	88		19:36 (T77)	19:08			17:03	47	16:09 (T44)
6	06:05		19:59 (T42)	06:31			07:02			07:23 (T76)	07:33			07:42		15:21 (T44)
	21:08	43	20:42 (T42)	20:44			19:57	85		19:35 (T77)	19:06			17:03	48	16:09 (T44)
7	06:05		20:00 (T42)	06:32			07:03			07:24 (T76)	07:34			07:43		15:21 (T44)
	21:07	42	20:42 (T42)	20:43			19:56	83		19:34 (T77)	19:05			17:03	49	16:10 (T44)
8	06:06		20:01 (T42)	06:33			07:04			07:25 (T76)	07:35			07:44		15:21 (T44)
	21:07	41	20:42 (T42)	20:42			19:54	79		19:33 (T77)	19:03			17:03	49	16:10 (T44)
9	06:07		20:01 (T42)	06:34			07:05			07:26 (T76)	07:36			07:45		15:21 (T44)
	21:07	40	20:41 (T42)	20:41			19:52	76		19:31 (T77)	19:01			17:03	50	16:11 (T44)
10	06:07		20:01 (T42)	06:35			07:06			07:26 (T76)	07:37			07:46		15:22 (T44)
	21:06	40	20:41 (T42)	20:39			19:51	72		19:28 (T77)	19:00			17:03	50	16:12 (T44)
11	06:08		20:02 (T42)	06:36		19:09 (T77)	07:07			07:27 (T76)	07:38			07:46		15:22 (T44)
	21:06	39	20:41 (T42)	20:38	13	19:22 (T77)	19:49	68		19:27 (T77)	18:58			17:03	51	16:13 (T44)
12	06:09		20:02 (T42)	06:37		19:05 (T77)	07:08			07:28 (T76)	07:39			07:47		15:23 (T44)
	21:05	38	20:40 (T42)	20:37	20	19:25 (T77)	19:47	62		19:25 (T77)	18:57			17:03	50	16:13 (T44)
13	06:10		20:02 (T42)	06:38		19:02 (T77)	07:09			07:29 (T76)	07:40			07:48		15:23 (T44)
	21:05	38	20:40 (T42)	20:36	26	19:28 (T77)	19:45	57		19:23 (T77)	18:55			17:03	51	16:14 (T44)
14	06:10		20:03 (T42)	06:39		19:00 (T77)	07:10			07:30 (T76)	07:41			07:49		15:23 (T44)
	21:05	36	20:39 (T42)	20:34	30	19:30 (T77)	19:44	52		19:22 (T77)	18:54			17:03	51	16:14 (T44)
15	06:11		20:04 (T42)	06:40		18:58 (T77)	07:11			07:31 (T76)	07:42			07:50		15:23 (T44)
	21:04	35	20:39 (T42)	20:33	34	19:32 (T77)	19:42	45		19:20 (T77)	18:52			17:03	52	16:15 (T44)
16	06:12		20:04 (T42)	06:41		18:55 (T77)	07:12			07:32 (T76)	07:44			07:50		15:24 (T44)
	21:03	34	20:38 (T42)	20:31	37	19:32 (T77)	19:40	36		19:18 (T77)	18:50			17:04	52	16:16 (T44)
17	06:13		20:05 (T42)	06:42		18:54 (T77)	07:13			18:49 (T77)	07:45			07:51		15:24 (T44)
	21:03	32	20:37 (T42)	20:30	39	19:33 (T77)	19:39	28		19:17 (T77)	18:49			17:04	52	16:16 (T44)
18	06:14		20:05 (T42)	06:43		18:52 (T77)	07:14			18:51 (T77)	07:46		15:36 (T44)	07:52		15:24 (T44)
	21:02	32	20:37 (T42)	20:29	42	19:34 (T77)	19:37	23		19:14 (T77)	18:47	9	15:45 (T44)	17:04	52	16:16 (T44)
19	06:14		20:06 (T42)	06:44		18:51 (T77)	07:15			18:56 (T77)	07:47		15:32 (T44)	07:52		15:25 (T44)
	21:01	31	20:37 (T42)	20:27	44	19:35 (T77)	19:35	13		19:09 (T77)	18:46	17	15:49 (T44)	17:05	52	16:17 (T44)
20	06:15		20:07 (T42)	06:45		18:50 (T77)	07:16				07:48		15:29 (T44)	07:53		15:25 (T44)
	21:01	29	20:36 (T42)	20:26	46	19:36 (T77)	19:33				18:44	22	15:51 (T44)	17:05	52	16:17 (T44)
21	06:16		20:07 (T42)	06:46		18:49 (T77)	07:17				07:49		15:28 (T44)	07:53		15:26 (T44)
	21:00	28	20:35 (T42)	20:24	48	19:37 (T77)	19:32				18:43	26	15:54 (T44)	17:06	52	16:18 (T44)
22	06:17		20:08 (T42)	06:47		18:47 (T77)	07:18				07:50		15:27 (T44)	07:54		15:26 (T44)
	20:59	26	20:34 (T42)	20:23	50	19:37 (T77)	19:30				18:41	29	15:56 (T44)	17:06	52	16:18 (T44)
23	06:18		20:10 (T42)	06:48		18:47 (T77)	07:19				07:51		15:25 (T44)	07:54		15:27 (T44)
	20:58	23	20:33 (T42)	20:21	51	19:38 (T77)	19:28				18:40	32	15:57 (T44)	17:07	52	16:19 (T44)
24	06:19		20:11 (T42)	06:49		18:46 (T77)	07:20				07:53		15:24 (T44)	07:55		15:27 (T44)
	20:58	22	20:33 (T42)	20:20	52	19:38 (T77)	19:27				18:39	34	15:58 (T44)	17:07	52	16:19 (T44)
25	06:20		20:13 (T42)	06:50		07:36 (T76)	07:21				07:54		15:24 (T44)	07:55		15:27 (T44)
	20:57	19	20:32 (T42)	20:18	61	19:38 (T77)	19:25				18:37	36	16:00 (T44)	17:08	52	16:19 (T44)
26	06:21		20:14 (T42)	06:51		07:32 (T76)	07:22				07:55		15:23 (T44)	07:56		15:29 (T44)
	20:56	17	20:31 (T42)	20:17	69	19:38 (T77)	19:23				18:36	38	16:01 (T44)	17:08	52	16:21 (T44)
27	06:22		20:17 (T42)	06:52		07:29 (T76)	07:23				07:56		15:23 (T44)	07:56		15:29 (T44)
	20:55	14	20:31 (T42)	20:15	75	19:38 (T77)	19:22				18:34	39	16:02 (T44)	17:09	52	16:21 (T44)
28	06:22		20:20 (T42)	06:53		07:27 (T76)	07:24				07:57		15:22 (T44)	07:56		15:29 (T44)
	20:54	10	20:30 (T42)	20:14	80	19:39 (T77)	19:20				18:33	41	16:03 (T44)	17:10	52	16:21 (T44)
29	06:23			06:54		07:26 (T76)	07:25				07:58		15:22 (T44)	07:57		15:29 (T44)
	20:53			20:12	82	19:38 (T77)	19:18				18:32	42	16:04 (T44)	17:10	52	16:21 (T44)
30	06:24			06:55		07:24 (T76)	07:26				08:00		15:21 (T44)	07:57		15:31 (T44)
	20:52			20:10	84	19:38 (T77)	19:16				18:31	44	16:05 (T44)	17:11	51	16:22 (T44)
31	06:25			06:56		07:23 (T76)					08:01			07:57		15:31 (T44)
	20:51			20:09	87	19:38 (T77)					18:29			17:12	51	16:22 (T44)
Potential sun hours	460			429			375				345	297		287		
Total, worst case		927			1070			1226					409		1560	
Sun reduction		0.66			0.61			0.59					0.30		0.22	
Oper. time red.		1.00			1.00			1.00					1.00		1.00	
Wind dir. red.		0.54			0.62			0.63					0.75		0.75	
Total reduction		0.37			0.39			0.38					0.23		0.17	
Total, real		343			420			469					95		265	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 827 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8377)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:58		08:21 (T25)	07:44		08:04 (T26)	07:07	07:16		07:35 (T75)	06:30			06:01		06:33 (T24)
	17:13	56	09:17 (T25)	17:48	92	09:36 (T25)	18:22	19:56	7	07:42 (T75)	20:27			20:57	58	07:31 (T24)
2	07:58		08:21 (T25)	07:43		08:03 (T26)	07:06	07:15		07:34 (T75)	06:29			06:01		06:34 (T24)
	17:14	57	09:18 (T25)	17:49	93	09:36 (T25)	18:23	19:57	11	07:45 (T75)	20:28			20:58	57	07:31 (T24)
3	07:58		08:21 (T25)	07:42		08:02 (T26)	07:04	07:13		07:32 (T75)	06:28			06:01		06:33 (T24)
	17:15	57	09:18 (T25)	17:50	94	09:36 (T25)	18:24	19:58	14	07:46 (T75)	20:29			20:59	58	07:31 (T24)
4	07:58		08:21 (T25)	07:41		08:01 (T26)	07:03	07:11		07:30 (T75)	06:26			06:00		06:34 (T24)
	17:16	58	09:19 (T25)	17:51	95	09:36 (T25)	18:25	19:59	17	07:47 (T75)	20:30			20:59	58	07:32 (T24)
5	07:58		08:21 (T25)	07:40		08:00 (T26)	07:01	07:10		07:29 (T75)	06:25			06:00		06:34 (T24)
	17:17	59	09:20 (T25)	17:53	96	09:36 (T25)	18:26	20:00	20	07:49 (T75)	20:32			21:00	58	07:32 (T24)
6	07:58		08:21 (T25)	07:39		07:59 (T26)	07:00	07:08		07:27 (T75)	06:24		06:55 (T24)	05:59		06:33 (T24)
	17:17	60	09:21 (T25)	17:54	97	09:36 (T25)	18:28	20:00	22	07:49 (T75)	20:33	13	07:08 (T24)	21:01	59	07:32 (T24)
7	07:58		08:21 (T25)	07:37		07:58 (T26)	06:58	07:06		07:25 (T75)	06:23		06:51 (T24)	05:59		06:34 (T24)
	17:18	61	09:22 (T25)	17:55	98	09:36 (T25)	18:29	20:02	24	07:49 (T75)	20:34	21	07:12 (T24)	21:01	58	07:32 (T24)
8	07:58		08:22 (T25)	07:36		07:56 (T26)	07:56	07:05		07:24 (T75)	06:22		06:49 (T24)	05:59		06:34 (T24)
	17:19	61	09:23 (T25)	17:56	99	09:35 (T25)	19:30	20:03	25	07:49 (T75)	20:35	25	07:14 (T24)	21:02	58	07:32 (T24)
9	07:57		08:21 (T25)	07:35		07:55 (T26)	07:55	07:03		07:22 (T75)	06:20		06:47 (T24)	05:59		06:34 (T24)
	17:20	62	09:23 (T25)	17:58	100	09:35 (T25)	19:31	20:04	27	07:49 (T75)	20:36	30	07:17 (T24)	21:03	59	07:33 (T24)
10	07:57		08:21 (T25)	07:34		07:54 (T26)	07:53	07:01		07:20 (T75)	06:19		06:45 (T24)	05:59		06:35 (T24)
	17:21	63	09:24 (T25)	17:59	101	09:35 (T25)	19:32	20:05	28	07:48 (T75)	20:37	33	07:18 (T24)	21:03	58	07:33 (T24)
11	07:57		08:21 (T25)	07:33		07:53 (T26)	07:51	07:00		07:19 (T75)	06:18		06:42 (T24)	05:58		06:35 (T24)
	17:23	64	09:25 (T25)	18:00	101	09:34 (T25)	19:33	20:06	30	07:49 (T75)	20:38	37	07:19 (T24)	21:04	58	07:33 (T24)
12	07:57		08:21 (T25)	07:31		07:52 (T26)	07:50	06:58		07:19 (T75)	06:17		06:41 (T24)	05:58		06:34 (T24)
	17:24	64	09:25 (T25)	18:01	101	09:33 (T25)	19:34	20:07	29	07:48 (T75)	20:39	39	07:20 (T24)	21:04	59	07:33 (T24)
13	07:56		08:21 (T25)	07:30		07:52 (T26)	07:48	06:57		07:20 (T75)	06:16		06:40 (T24)	05:58		06:35 (T24)
	17:25	66	09:27 (T25)	18:03	100	09:32 (T25)	19:36	20:08	28	07:48 (T75)	20:40	41	07:21 (T24)	21:05	58	07:33 (T24)
14	07:56		08:21 (T25)	07:29		07:53 (T26)	07:46	06:55		07:19 (T75)	06:15		06:39 (T24)	05:58		06:35 (T24)
	17:26	67	09:28 (T25)	18:04	98	09:32 (T25)	19:37	20:09	27	07:46 (T75)	20:41	43	07:22 (T24)	21:05	58	07:33 (T24)
15	07:56		08:21 (T25)	07:28		07:53 (T26)	07:45	06:54		07:21 (T75)	06:14		06:39 (T24)	05:58		06:35 (T24)
	17:27	67	09:28 (T25)	18:05	95	09:30 (T25)	19:38	20:10	25	07:46 (T75)	20:42	45	07:24 (T24)	21:06	58	07:33 (T24)
16	07:55		08:21 (T25)	07:26		07:54 (T26)	07:43	06:52		07:21 (T75)	06:13		06:38 (T24)	05:58		06:35 (T24)
	17:28	68	09:29 (T25)	18:06	93	09:30 (T25)	19:39	20:11	23	07:44 (T75)	20:43	47	07:25 (T24)	21:06	58	07:33 (T24)
17	07:55		08:21 (T25)	07:25		07:55 (T26)	07:41	06:50		07:22 (T75)	06:12		06:37 (T24)	05:58		06:36 (T24)
	17:29	69	09:30 (T25)	18:07	88	09:29 (T25)	19:40	20:12	21	07:43 (T75)	20:44	48	07:25 (T24)	21:07	59	07:35 (T24)
18	07:54		08:21 (T25)	07:24		07:55 (T26)	07:40	06:49		07:23 (T75)	06:11		06:37 (T24)	05:58		06:36 (T24)
	17:30	70	09:31 (T25)	18:09	85	09:27 (T25)	19:41	20:13	18	07:41 (T75)	20:45	49	07:26 (T24)	21:07	59	07:35 (T24)
19	07:54		08:21 (T25)	07:22		07:57 (T26)	07:38	06:47		07:25 (T75)	06:10		06:36 (T24)	05:58		06:37 (T24)
	17:32	70	09:31 (T25)	18:10	80	09:26 (T25)	19:42	20:14	14	07:39 (T75)	20:46	50	07:26 (T24)	21:07	58	07:35 (T24)
20	07:53		08:21 (T25)	07:21		07:58 (T26)	07:36	06:46		07:29 (T75)	06:09		06:35 (T24)	05:58		06:37 (T24)
	17:33	70	09:31 (T25)	18:11	73	09:24 (T25)	19:43	20:15	5	07:34 (T75)	20:47	51	07:26 (T24)	21:08	58	07:35 (T24)
21	07:53		08:21 (T25)	07:19		08:00 (T26)	07:35	06:44			06:09		06:35 (T24)	05:59		06:37 (T24)
	17:34	72	09:33 (T25)	18:12	66	09:23 (T25)	19:44	20:17			20:48	53	07:28 (T24)	21:08	58	07:35 (T24)
22	07:52		08:21 (T25)	07:18		08:04 (T26)	07:33	06:43			06:08		06:35 (T24)	05:59		06:37 (T24)
	17:35	72	09:33 (T25)	18:14	55	09:21 (T25)	19:45	20:18			20:49	53	07:28 (T24)	21:08	58	07:35 (T24)
23	07:51		08:21 (T25)	07:16		08:37 (T25)	07:31	06:41			06:07		06:34 (T24)	05:59		06:38 (T24)
	17:36	72	09:33 (T25)	18:15	41	09:18 (T25)	19:46	20:19			20:50	54	07:28 (T24)	21:08	58	07:36 (T24)
24	07:51		08:20 (T25)	07:15		08:40 (T25)	07:30	06:40			06:06		06:34 (T24)	05:59		06:37 (T24)
	17:38	73	09:33 (T25)	18:16	36	09:16 (T25)	19:48	20:20			20:50	54	07:28 (T24)	21:09	59	07:36 (T24)
25	07:50		08:21 (T25)	07:13		08:42 (T25)	07:28	06:39			06:06		06:34 (T24)	06:00		06:37 (T24)
	17:39	74	09:35 (T25)	18:17	31	09:13 (T25)	19:49	20:21			20:51	55	07:29 (T24)	21:09	59	07:36 (T24)
26	07:49		08:21 (T25)	07:12		08:46 (T25)	07:26	06:37			06:05		06:34 (T24)	06:00		06:38 (T24)
	17:40	74	09:35 (T25)	18:18	23	09:09 (T25)	19:50	20:22			20:52	55	07:29 (T24)	21:09	59	07:37 (T24)
27	07:48		08:09 (T26)	07:10		08:50 (T25)	07:25	06:36			06:04		06:34 (T24)	06:00		06:38 (T24)
	17:41	76	09:35 (T25)	18:19	13	09:03 (T25)	19:51	20:23			20:53	56	07:30 (T24)	21:09	58	07:36 (T24)
28	07:47		08:08 (T26)	07:09			07:23	06:34			06:04		06:33 (T24)	06:01		06:38 (T24)
	17:42	81	09:35 (T25)	18:21			19:52	20:24			20:54	57	07:30 (T24)	21:09	58	07:36 (T24)
29	07:47		08:07 (T26)				07:21	06:33			06:03		06:33 (T24)	06:01		06:39 (T24)
	17:44	85	09:36 (T25)				19:53	20:25			20:55	57	07:30 (T24)	21:09	58	07:37 (T24)
30	07:46		08:06 (T26)				07:20	06:32			06:02		06:33 (T24)	06:02		06:38 (T24)
	17:45	88	09:36 (T25)				19:54	20:26			20:56	57	07:30 (T24)	21:09	59	07:37 (T24)
31	07:45		08:05 (T26)				07:18				06:02		06:34 (T24)			
	17:46	90	09:36 (T25)				19:55				20:56	57	07:31 (T24)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		2126			2144				415			1180			1748	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.52			0.53				0.65			0.71			0.71	
Total reduction		0.15			0.20				0.32			0.38			0.43	
Total, real		328			432				134			454			755	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 827 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8377)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		06:39 (T24)	06:26		06:52 (T24)	06:57		07:18 (T75)	07:28			07:02		07:24 (T26)	07:37		08:03 (T25)
	21:09	59	07:38 (T24)	20:50	38	07:30 (T24)	20:07	30	07:48 (T75)	19:15			17:28	100	09:04 (T25)	17:04	64	09:07 (T25)
2	06:03		06:39 (T24)	06:27		06:54 (T24)	06:58		07:19 (T75)	07:29			07:03		07:25 (T26)	07:38		08:04 (T25)
	21:09	58	07:37 (T24)	20:49	35	07:29 (T24)	20:06	28	07:47 (T75)	19:13			17:27	100	09:05 (T25)	17:03	63	09:07 (T25)
3	06:03		06:40 (T24)	06:28		06:55 (T24)	06:59		07:20 (T75)	07:30			07:05		07:26 (T26)	07:39		08:05 (T25)
	21:09	58	07:38 (T24)	20:48	32	07:27 (T24)	20:04	27	07:47 (T75)	19:12			17:26	99	09:05 (T25)	17:03	62	09:07 (T25)
4	06:04		06:39 (T24)	06:29		06:57 (T24)	07:00		07:21 (T75)	07:31			07:06		07:27 (T26)	07:40		08:06 (T25)
	21:08	59	07:38 (T24)	20:47	28	07:25 (T24)	20:03	25	07:46 (T75)	19:10			17:24	98	09:05 (T25)	17:03	61	09:07 (T25)
5	06:04		06:40 (T24)	06:30		06:59 (T24)	07:01		07:22 (T75)	07:32			07:07		07:29 (T26)	07:41		08:06 (T25)
	21:08	58	07:38 (T24)	20:46	24	07:23 (T24)	20:01	24	07:46 (T75)	19:08			17:23	97	09:06 (T25)	17:03	61	09:07 (T25)
6	06:05		06:40 (T24)	06:31		07:02 (T24)	07:02		07:23 (T75)	07:33			07:08		07:30 (T26)	07:42		08:07 (T25)
	21:08	58	07:38 (T24)	20:45	18	07:20 (T24)	19:58	22	07:45 (T75)	19:07			17:22	96	09:06 (T25)	17:03	60	09:07 (T25)
7	06:05		06:40 (T24)	06:32		07:07 (T24)	07:03		07:24 (T75)	07:34			07:09		07:31 (T26)	07:43		08:08 (T25)
	21:08	58	07:38 (T24)	20:44	8	07:15 (T24)	19:56	20	07:44 (T75)	19:05			17:21	95	09:06 (T25)	17:03	59	09:07 (T25)
8	06:06		06:41 (T24)	06:33			07:04		07:25 (T75)	07:35			07:11		07:33 (T26)	07:44		08:09 (T25)
	21:07	58	07:39 (T24)	20:42			19:54	17	07:42 (T75)	19:03			17:20	94	09:07 (T25)	17:03	58	09:07 (T25)
9	06:07		06:40 (T24)	06:34			07:05		07:26 (T75)	07:36			07:12		07:34 (T26)	07:45		08:10 (T25)
	21:07	58	07:38 (T24)	20:41			19:52	15	07:41 (T75)	19:02			17:19	93	09:07 (T25)	17:03	57	09:07 (T25)
10	06:07		06:41 (T24)	06:35			07:06		07:27 (T75)	07:37			07:13		07:35 (T26)	07:46		08:11 (T25)
	21:07	58	07:39 (T24)	20:40			19:51	11	07:38 (T75)	19:00			17:18	92	09:07 (T25)	17:03	57	09:08 (T25)
11	06:08		06:42 (T24)	06:36			07:07		07:28 (T75)	07:38			07:14		07:36 (T26)	07:47		08:11 (T25)
	21:06	57	07:39 (T24)	20:39			19:49	7	07:35 (T75)	18:58			17:17	90	09:07 (T25)	17:03	56	09:07 (T25)
12	06:09		06:41 (T24)	06:37			07:08			07:39			07:15		07:38 (T26)	07:48		08:12 (T25)
	21:06	57	07:38 (T24)	20:37			19:47			18:57			17:16	88	09:08 (T25)	17:03	55	09:07 (T25)
13	06:10		06:42 (T24)	06:38			07:09			07:40			07:17		07:39 (T26)	07:48		08:12 (T25)
	21:05	57	07:39 (T24)	20:36			19:46			18:55			17:15	84	09:07 (T25)	17:03	56	09:08 (T25)
14	06:10		06:42 (T24)	06:39			07:10			07:42			07:18		07:40 (T26)	07:49		08:13 (T25)
	21:05	57	07:39 (T24)	20:35			19:44			18:54			17:14	81	09:07 (T25)	17:03	55	09:08 (T25)
15	06:11		06:43 (T24)	06:40			07:11			07:43		09:20 (T25)	07:19		07:42 (T26)	07:50		08:13 (T25)
	21:04	56	07:39 (T24)	20:33			19:42			18:52	18	09:38 (T25)	17:13	76	09:08 (T25)	17:03	55	09:08 (T25)
16	06:12		06:42 (T24)	06:41			07:12			07:44		09:16 (T25)	07:20		07:54 (T25)	07:51		08:14 (T25)
	21:04	56	07:38 (T24)	20:32			19:41			18:51	26	09:42 (T25)	17:12	74	09:08 (T25)	17:04	54	09:08 (T25)
17	06:13		06:43 (T24)	06:42			07:13			07:45		09:12 (T25)	07:21		07:54 (T25)	07:51		08:15 (T25)
	21:03	56	07:39 (T24)	20:30			19:39			18:49	33	09:45 (T25)	17:11	74	09:08 (T25)	17:04	54	09:09 (T25)
18	06:14		06:43 (T24)	06:43			07:14			07:46		09:09 (T25)	07:23		07:54 (T25)	07:52		08:15 (T25)
	21:03	56	07:39 (T24)	20:29			19:37			18:47	39	09:48 (T25)	17:11	73	09:07 (T25)	17:04	54	09:09 (T25)
19	06:14		06:44 (T24)	06:44			07:15			07:47		09:08 (T25)	07:24		07:56 (T25)	07:53		08:16 (T25)
	21:02	55	07:39 (T24)	20:27			19:35			18:46	43	09:51 (T25)	17:10	72	09:08 (T25)	17:05	53	09:09 (T25)
20	06:15		06:44 (T24)	06:45			07:16			07:48		08:33 (T26)	07:25		07:56 (T25)	07:53		08:17 (T25)
	21:01	55	07:39 (T24)	20:26			19:34			18:44	59	09:52 (T25)	17:09	72	09:08 (T25)	17:05	53	09:10 (T25)
21	06:16		06:44 (T24)	06:46			07:17			07:49		08:30 (T26)	07:26		07:56 (T25)	07:54		08:17 (T25)
	21:00	54	07:38 (T24)	20:25			19:32			18:43	69	09:54 (T25)	17:09	72	09:08 (T25)	17:06	53	09:10 (T25)
22	06:17		06:45 (T24)	06:47			07:18			07:51		08:28 (T26)	07:27		07:57 (T25)	07:54		08:18 (T25)
	21:00	52	07:37 (T24)	20:23			19:30			18:42	75	09:55 (T25)	17:08	70	09:07 (T25)	17:06	53	09:11 (T25)
23	06:18		06:45 (T24)	06:48		07:32 (T75)	07:19			07:52		08:26 (T26)	07:28		07:58 (T25)	07:55		08:18 (T25)
	20:59	52	07:37 (T24)	20:22	7	07:39 (T75)	19:29			18:40	81	09:56 (T25)	17:07	70	09:08 (T25)	17:07	53	09:11 (T25)
24	06:19		06:46 (T24)	06:49		07:28 (T75)	07:20			07:53		08:26 (T26)	07:30		07:58 (T25)	07:55		08:18 (T25)
	20:58	51	07:37 (T24)	20:20	14	07:42 (T75)	19:27			18:39	86	09:58 (T25)	17:07	70	09:08 (T25)	17:07	53	09:11 (T25)
25	06:20		06:47 (T24)	06:50		07:26 (T75)	07:22			07:54		08:24 (T26)	07:31		07:59 (T25)	07:56		08:19 (T25)
	20:57	50	07:37 (T24)	20:18	18	07:44 (T75)	19:25			18:37	90	09:59 (T25)	17:06	69	09:08 (T25)	17:08	53	09:12 (T25)
26	06:21		06:47 (T24)	06:51		07:24 (T75)	07:23			07:55		08:23 (T26)	07:32		07:59 (T25)	07:56		08:19 (T25)
	20:56	49	07:36 (T24)	20:17	21	07:45 (T75)	19:23			18:36	94	10:00 (T25)	17:06	68	09:07 (T25)	17:08	54	09:13 (T25)
27	06:22		06:48 (T24)	06:52		07:23 (T75)	07:24			07:56		08:22 (T26)	07:33		08:00 (T25)	07:56		08:19 (T25)
	20:55	48	07:36 (T24)	20:15	23	07:46 (T75)	19:22			18:35	96	10:00 (T25)	17:05	67	09:07 (T25)	17:09	54	09:13 (T25)
28	06:22		06:49 (T24)	06:53		07:21 (T75)	07:25			07:58		08:22 (T26)	07:34		08:00 (T25)	07:57		08:20 (T25)
	20:54	46	07:35 (T24)	20:14	26	07:47 (T75)	19:20			18:33	99	10:02 (T25)	17:05	67	09:07 (T25)	17:10	54	09:14 (T25)
29	06:23		06:49 (T24)	06:54		07:20 (T75)	07:26			07:59		08:22 (T26)	07:35		08:02 (T25)	07:57		08:20 (T25)
	20:53	44	07:33 (T24)	20:12	27	07:47 (T75)	19:18			18:32	100	10:02 (T25)	17:04	66	09:08 (T25)	17:10	55	09:15 (T25)
30	06:24		06:50 (T24)	06:55		07:20 (T75)	07:27			08:00		08:21 (T26)	07:36		08:03 (T25)	07:57		08:20 (T25)
	20:52	42	07:32 (T24)	20:11	28	07:48 (T75)	19:17			18:31	102	10:03 (T25)	17:04	65	09:08 (T25)	17:11	55	09:15 (T25)
31	06:25		06:51 (T24)	06:56		07:19 (T75)				08:01		08:22 (T26)				07:57		08:21 (T25)
	20:51	40	07:31 (T24)	20:09	29	07:48 (T75)				18:29	101	10:03 (T25)				17:12	55	09:16 (T25)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		1672			376			226			1211			2432			1739	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.71			0.68			0.65			0.53			0.52			0.52	
Total reduction		0.45			0.40			0.37			0.24			0.15			0.11	
Total, real		745			149			83			293			365			190	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 834 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8383)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43	08:04 (T44)	07:07		07:16	07:35 (T77)	06:30		06:02	06:23 (T42)
	17:13		17:48	23 08:27 (T44)	18:22		19:56	34 08:09 (T77)	20:27		20:57	44 07:07 (T42)
2	07:57		07:42	08:03 (T44)	07:06		07:15	07:33 (T77)	06:29		06:01	06:23 (T42)
	17:14		17:49	25 08:28 (T44)	18:23		19:57	36 08:09 (T77)	20:28		20:58	44 07:07 (T42)
3	07:57		07:41	08:02 (T44)	07:04		07:13	07:32 (T77)	06:28		06:01	06:23 (T42)
	17:15		17:50	27 08:29 (T44)	18:24		19:58	38 08:10 (T77)	20:29		20:58	44 07:07 (T42)
4	07:57		07:40	08:01 (T44)	07:03		07:11	07:30 (T77)	06:26		06:00	06:23 (T42)
	17:16		17:51	28 08:29 (T44)	18:25		19:59	39 08:09 (T77)	20:30		20:59	44 07:07 (T42)
5	07:57		07:39	08:00 (T44)	07:01		07:10	07:29 (T77)	06:25		06:00	06:24 (T42)
	17:17		17:53	29 08:29 (T44)	18:26		20:00	40 08:09 (T77)	20:31		21:00	43 07:07 (T42)
6	07:57		07:38	07:58 (T44)	06:59		07:08	07:29 (T77)	06:24		06:00	06:23 (T42)
	17:18		17:54	30 08:28 (T44)	18:28		20:00	39 08:08 (T77)	20:32		21:01	44 07:07 (T42)
7	07:57		07:37	07:57 (T44)	06:58		07:06	07:28 (T77)	06:23		05:59	06:24 (T42)
	17:19		17:55	32 08:29 (T44)	18:29		20:01	40 08:08 (T77)	20:33		21:01	43 07:07 (T42)
8	07:57		07:36	07:56 (T44)	07:56		07:05	07:29 (T77)	06:22	06:42 (T42)	05:59	06:24 (T42)
	17:19		17:56	33 08:29 (T44)	19:30		20:02	38 08:07 (T77)	20:34	7 06:49 (T42)	21:02	44 07:08 (T42)
9	07:57		07:35	07:57 (T44)	07:55		07:03	07:29 (T77)	06:20	06:41 (T42)	05:59	06:24 (T42)
	17:21		17:58	32 08:29 (T44)	19:31		20:04	37 08:06 (T77)	20:35	11 06:52 (T42)	21:02	44 07:08 (T42)
10	07:57		07:34	07:58 (T44)	07:53		07:01	07:29 (T77)	06:19	06:40 (T42)	05:59	06:25 (T42)
	17:22		17:59	30 08:28 (T44)	19:32		20:05	36 08:05 (T77)	20:36	15 06:55 (T42)	21:03	43 07:08 (T42)
11	07:57		07:32	07:58 (T44)	07:51		07:00	07:30 (T77)	06:18	06:38 (T42)	05:58	06:25 (T42)
	17:23		18:00	29 08:27 (T44)	19:33		20:06	34 08:04 (T77)	20:38	17 06:55 (T42)	21:04	43 07:08 (T42)
12	07:56		07:31	07:59 (T44)	07:50		06:58	07:30 (T77)	06:17	06:37 (T42)	05:58	06:26 (T42)
	17:24		18:01	28 08:27 (T44)	19:34		20:07	33 08:03 (T77)	20:39	20 06:57 (T42)	21:04	43 07:09 (T42)
13	07:56		07:30	08:00 (T44)	07:48		06:57	07:31 (T77)	06:16	06:36 (T42)	05:58	06:25 (T42)
	17:25		18:03	26 08:26 (T44)	19:35		20:08	31 08:02 (T77)	20:40	22 06:58 (T42)	21:05	43 07:08 (T42)
14	07:56		07:29	08:02 (T44)	07:46		06:55	07:32 (T77)	06:15	06:36 (T42)	05:58	06:25 (T42)
	17:26		18:04	23 08:25 (T44)	19:37		20:09	28 08:00 (T77)	20:41	24 07:00 (T42)	21:05	43 07:08 (T42)
15	07:55		07:27	08:02 (T44)	07:45		06:53	07:34 (T77)	06:14	06:35 (T42)	05:58	06:25 (T42)
	17:27		18:05	21 08:23 (T44)	19:38		20:10	24 07:58 (T77)	20:42	26 07:01 (T42)	21:06	43 07:08 (T42)
16	07:55		07:26	08:05 (T44)	07:43		06:52	07:35 (T77)	06:13	06:34 (T42)	05:58	06:27 (T42)
	17:28		18:06	16 08:21 (T44)	19:39		20:11	21 07:56 (T77)	20:43	28 07:02 (T42)	21:06	42 07:09 (T42)
17	07:54		07:25	08:07 (T44)	07:41		06:50	07:38 (T77)	06:12	06:33 (T42)	05:58	06:27 (T42)
	17:29		18:07	10 08:17 (T44)	19:40		20:12	15 07:53 (T77)	20:44	29 07:02 (T42)	21:06	42 07:09 (T42)
18	07:54		07:23		07:40		06:49	07:43 (T77)	06:11	06:32 (T42)	05:58	06:27 (T42)
	17:30		18:09		19:41		20:13	4 07:47 (T77)	20:45	31 07:03 (T42)	21:07	42 07:09 (T42)
19	07:53		07:22		07:38		06:47		06:10	06:31 (T42)	05:58	06:27 (T42)
	17:32		18:10		19:42		20:14		20:45	32 07:03 (T42)	21:07	42 07:09 (T42)
20	07:53		07:21		07:36		06:46		06:09	06:30 (T42)	05:59	06:27 (T42)
	17:33		18:11		19:43		20:15		20:46	33 07:03 (T42)	21:07	42 07:09 (T42)
21	07:52		07:19		07:35		06:44		06:09	06:30 (T42)	05:59	06:27 (T42)
	17:34		18:12		19:44		20:16		20:47	34 07:04 (T42)	21:08	42 07:09 (T42)
22	07:52		07:18		07:33		06:43		06:08	06:29 (T42)	05:59	06:27 (T42)
	17:35		18:14		19:45		20:17		20:48	36 07:05 (T42)	21:08	42 07:09 (T42)
23	07:51	08:12 (T44)	07:16		07:31	07:50 (T77)	06:41		06:07	06:28 (T42)	05:59	06:28 (T42)
	17:36	4 08:16 (T44)	18:15		19:46	8 07:58 (T77)	20:18		20:49	37 07:05 (T42)	21:08	42 07:10 (T42)
24	07:50	08:11 (T44)	07:15		07:30	07:49 (T77)	06:40		06:06	06:27 (T42)	05:59	06:28 (T42)
	17:38	7 08:18 (T44)	18:16		19:47	13 08:02 (T77)	20:20		20:50	38 07:05 (T42)	21:08	42 07:10 (T42)
25	07:50	08:10 (T44)	07:13		07:28	07:47 (T77)	06:39		06:06	06:27 (T42)	06:00	06:28 (T42)
	17:39	10 08:20 (T44)	18:17		19:49	17 08:04 (T77)	20:21		20:51	38 07:05 (T42)	21:08	42 07:10 (T42)
26	07:49	08:09 (T44)	07:12		07:26	07:45 (T77)	06:37		06:05	06:26 (T42)	06:00	06:29 (T42)
	17:40	12 08:21 (T44)	18:18		19:50	20 08:05 (T77)	20:22		20:52	39 07:05 (T42)	21:08	42 07:11 (T42)
27	07:48	08:09 (T44)	07:10		07:25	07:44 (T77)	06:36		06:04	06:26 (T42)	06:00	06:28 (T42)
	17:41	14 08:23 (T44)	18:19		19:51	23 08:07 (T77)	20:23		20:53	40 07:06 (T42)	21:09	43 07:11 (T42)
28	07:47	08:08 (T44)	07:09		07:23	07:42 (T77)	06:34		06:04	06:25 (T42)	06:01	06:28 (T42)
	17:43	16 08:24 (T44)	18:21		19:52	26 08:08 (T77)	20:24		20:54	41 07:06 (T42)	21:09	43 07:11 (T42)
29	07:46	08:07 (T44)			07:21	07:40 (T77)	06:33		06:03	06:25 (T42)	06:01	06:29 (T42)
	17:44	18 08:25 (T44)			19:53	28 08:08 (T77)	20:25		20:54	42 07:07 (T42)	21:09	43 07:12 (T42)
30	07:45	08:06 (T44)			07:20	07:38 (T77)	06:32		06:03	06:24 (T42)	06:02	06:29 (T42)
	17:45	20 08:26 (T44)			19:54	30 08:08 (T77)	20:26		20:55	42 07:06 (T42)	21:09	43 07:12 (T42)
31	07:44	08:05 (T44)			07:18	07:37 (T77)			06:02	06:24 (T42)		
	17:46	22 08:27 (T44)			19:55	32 08:09 (T77)			20:56	43 07:07 (T42)		
Potential sun hours	297		297		370		399		448		453	
Total, worst case		123		442		197		567		725		1286
Sun reduction		0.31		0.40		0.44		0.52		0.57		0.64
Oper. time red.		1.00		1.00		1.00		1.00		1.00		1.00
Wind dir. red.		0.54		0.54		0.64		0.64		0.71		0.71
Total reduction		0.16		0.21		0.28		0.33		0.40		0.45
Total, real		20		94		54		185		289		576

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 834 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8383)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:29 (T42)	06:26		06:48 (T42)	06:57		07:29 (T77)	07:28			07:02		07:26 (T44)	07:37	
	21:08	43	07:12 (T42)	20:50	19	07:07 (T42)	20:07	34	08:03 (T77)	19:15			17:28	31	07:57 (T44)	17:04	
2	06:03		06:29 (T42)	06:27		06:49 (T42)	06:58		07:28 (T77)	07:29			07:03		07:27 (T44)	07:38	
	21:08	43	07:12 (T42)	20:49	16	07:05 (T42)	20:06	36	08:04 (T77)	19:13			17:27	31	07:58 (T44)	17:03	
3	06:03		06:30 (T42)	06:28		06:50 (T42)	06:59		07:27 (T77)	07:30			07:04		07:26 (T44)	07:39	
	21:08	43	07:13 (T42)	20:48	14	07:04 (T42)	20:04	37	08:04 (T77)	19:11			17:26	32	07:58 (T44)	17:03	
4	06:04		06:29 (T42)	06:29		06:51 (T42)	07:00		07:26 (T77)	07:31			07:06		07:27 (T44)	07:40	
	21:08	44	07:13 (T42)	20:47	10	07:01 (T42)	20:02	38	08:04 (T77)	19:10			17:24	31	07:58 (T44)	17:03	
5	06:04		06:30 (T42)	06:30		06:52 (T42)	07:01		07:25 (T77)	07:32			07:07		07:28 (T44)	07:41	
	21:08	43	07:13 (T42)	20:46	4	06:56 (T42)	20:01	40	08:05 (T77)	19:08			17:23	30	07:58 (T44)	17:03	
6	06:05		06:29 (T42)	06:31			07:02		07:25 (T77)	07:33			07:08		07:30 (T44)	07:42	
	21:08	44	07:13 (T42)	20:44			19:57	40	08:05 (T77)	19:06			17:22	29	07:59 (T44)	17:03	
7	06:06		06:30 (T42)	06:32			07:03		07:24 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	44	07:14 (T42)	20:43			19:56	40	08:04 (T77)	19:05			17:21	28	07:59 (T44)	17:03	
8	06:06		06:30 (T42)	06:33			07:04		07:25 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	44	07:14 (T42)	20:42			19:54	39	08:04 (T77)	19:03			17:20	26	07:58 (T44)	17:03	
9	06:07		06:30 (T42)	06:34			07:05		07:26 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	44	07:14 (T42)	20:41			19:52	38	08:04 (T77)	19:02			17:19	25	07:59 (T44)	17:03	
10	06:08		06:30 (T42)	06:35			07:06		07:27 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	44	07:14 (T42)	20:40			19:51	36	08:03 (T77)	19:00			17:18	23	07:58 (T44)	17:03	
11	06:08		06:31 (T42)	06:36			07:07		07:28 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	44	07:15 (T42)	20:38			19:49	35	08:03 (T77)	18:58			17:17	22	07:58 (T44)	17:03	
12	06:09		06:31 (T42)	06:37			07:08		07:28 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	43	07:14 (T42)	20:37			19:47	33	08:01 (T77)	18:57			17:16	20	07:57 (T44)	17:03	
13	06:10		06:32 (T42)	06:38			07:09		07:29 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	43	07:15 (T42)	20:36			19:46	31	08:00 (T77)	18:55			17:15	18	07:57 (T44)	17:03	
14	06:10		06:33 (T42)	06:39			07:10		07:30 (T77)	07:41			07:18		07:40 (T44)	07:49	
	21:05	42	07:15 (T42)	20:34			19:44	29	07:59 (T77)	18:54			17:14	16	07:56 (T44)	17:03	
15	06:11		06:34 (T42)	06:40			07:11		07:31 (T77)	07:43			07:19		07:41 (T44)	07:50	
	21:04	41	07:15 (T42)	20:33			19:42	26	07:57 (T77)	18:52			17:13	14	07:55 (T44)	17:03	
16	06:12		06:34 (T42)	06:41			07:12		07:32 (T77)	07:44			07:20		07:43 (T44)	07:50	
	21:03	41	07:15 (T42)	20:32			19:40	24	07:56 (T77)	18:50			17:12	12	07:55 (T44)	17:04	
17	06:13		06:35 (T42)	06:42			07:13		07:33 (T77)	07:45			07:21		07:44 (T44)	07:51	
	21:03	40	07:15 (T42)	20:30			19:39	21	07:54 (T77)	18:49			17:11	10	07:54 (T44)	17:04	
18	06:14		06:36 (T42)	06:43			07:14		07:34 (T77)	07:46			07:22		07:45 (T44)	07:52	
	21:02	39	07:15 (T42)	20:29			19:37	18	07:52 (T77)	18:47			17:11	7	07:52 (T44)	17:04	
19	06:14		06:37 (T42)	06:44			07:15		07:35 (T77)	07:47			07:24		07:46 (T44)	07:52	
	21:02	38	07:15 (T42)	20:27			19:35	14	07:49 (T77)	18:46			17:10	4	07:50 (T44)	17:05	
20	06:15		06:38 (T42)	06:45			07:16		07:36 (T77)	07:48			07:25			07:53	
	21:01	37	07:15 (T42)	20:26			19:34	9	07:45 (T77)	18:44			17:09			17:05	
21	06:16		06:38 (T42)	06:46			07:17			07:49			07:26			07:53	
	21:00	36	07:14 (T42)	20:24			19:32			18:43			17:09			17:06	
22	06:17		06:39 (T42)	06:47			07:18			07:50			07:27			07:54	
	20:59	35	07:14 (T42)	20:23			19:30			18:42			17:08			17:06	
23	06:18		06:40 (T42)	06:48			07:19			07:52			07:28			07:54	
	20:59	34	07:14 (T42)	20:21			19:28			18:40			17:07			17:07	
24	06:19		06:41 (T42)	06:49			07:20			07:53			07:29			07:55	
	20:58	33	07:14 (T42)	20:20			19:27			18:39			17:07			17:07	
25	06:20		06:42 (T42)	06:50		07:44 (T77)	07:21			07:54		08:37 (T44)	07:30			07:55	
	20:57	31	07:13 (T42)	20:18	7	07:51 (T77)	19:25			18:37	12	08:49 (T44)	17:06			17:08	
26	06:21		06:43 (T42)	06:51		07:40 (T77)	07:22			07:55		08:34 (T44)	07:32			07:56	
	20:56	30	07:13 (T42)	20:17	15	07:55 (T77)	19:23			18:36	17	08:51 (T44)	17:06			17:08	
27	06:22		06:44 (T42)	06:52		07:37 (T77)	07:23			07:56		08:32 (T44)	07:33			07:56	
	20:55	28	07:12 (T42)	20:15	21	07:58 (T77)	19:22			18:35	21	08:53 (T44)	17:05			17:09	
28	06:23		06:45 (T42)	06:53		07:34 (T77)	07:24			07:57		08:30 (T44)	07:34			07:56	
	20:54	27	07:12 (T42)	20:14	26	08:00 (T77)	19:20			18:33	24	08:54 (T44)	17:05			17:10	
29	06:23		06:45 (T42)	06:54		07:33 (T77)	07:25			07:58		08:30 (T44)	07:35			07:57	
	20:53	25	07:10 (T42)	20:12	28	08:01 (T77)	19:18			18:32	26	08:56 (T44)	17:04			17:10	
30	06:24		06:46 (T42)	06:55		07:31 (T77)	07:27			08:00		08:28 (T44)	07:36			07:57	
	20:52	23	07:09 (T42)	20:10	31	08:02 (T77)	19:16			18:31	28	08:56 (T44)	17:04			17:11	
31	06:25		06:47 (T42)	06:56		07:30 (T77)				08:01		08:27 (T44)				07:57	
	20:51	21	07:08 (T42)	20:09	33	08:03 (T77)				18:29	30	08:57 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1167			224			618			158			409			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.71			0.66			0.64			0.54			0.54			
Total reduction		0.46			0.39			0.37			0.25			0.16			
Total, real		539			88			228			40			65			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 855 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8401)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April			May			June
1	07:57	07:43			07:07		17:11 (T19)	07:16		18:10 (T19)	06:30		19:19 (T17)	06:01
	17:13	17:47			18:21	49	18:00 (T19)	19:56	38	18:48 (T19)	20:27	42	20:01 (T17)	20:57
2	07:57	07:42			07:06		17:09 (T19)	07:14		18:12 (T19)	06:29		19:18 (T17)	06:01
	17:13	17:48			18:23	52	18:01 (T19)	19:57	33	18:45 (T19)	20:28	42	20:00 (T17)	20:58
3	07:58	07:41			07:04		17:07 (T19)	07:13		18:15 (T19)	06:27		19:19 (T17)	06:00
	17:14	17:50			18:24	55	18:02 (T19)	19:58	27	18:42 (T19)	20:29	41	20:00 (T17)	20:59
4	07:58	07:40			07:02		17:07 (T19)	07:11		18:18 (T19)	06:26		19:19 (T17)	06:00
	17:15	17:51			18:25	56	18:03 (T19)	19:59	20	18:38 (T19)	20:30	40	19:59 (T17)	20:59
5	07:58	07:39			07:01		17:05 (T19)	07:09		18:24 (T19)	06:25		19:20 (T17)	05:59
	17:16	17:52			18:26	59	18:04 (T19)	20:00	7	18:31 (T19)	20:31	39	19:59 (T17)	21:00
6	07:58	07:38			06:59		17:05 (T19)	07:08			06:24		19:20 (T17)	05:59
	17:17	17:53			18:27	60	18:05 (T19)	20:00			20:32	38	19:58 (T17)	21:01
7	07:57	07:37			06:58		17:04 (T19)	07:06			06:22		19:20 (T17)	05:59
	17:18	17:55			18:28	62	18:06 (T19)	20:01			20:33	37	19:57 (T17)	21:01
8	07:57	07:36			07:56		18:03 (T19)	07:04			06:21		19:21 (T17)	05:58
	17:19	17:56			19:30	63	19:06 (T19)	20:02			20:34	35	19:56 (T17)	21:02
9	07:57	07:35			07:54		18:03 (T19)	07:03			06:20		19:22 (T17)	05:58
	17:20	17:57			19:31	63	19:06 (T19)	20:03			20:35	33	19:55 (T17)	21:03
10	07:57	07:34			07:53		18:02 (T19)	07:01			06:19		19:23 (T17)	05:58
	17:21	17:58			19:32	64	19:06 (T19)	20:04			20:36	31	19:54 (T17)	21:03
11	07:57	07:32			07:51		18:01 (T19)	06:59			06:18		19:24 (T17)	05:58
	17:22	18:00			19:33	65	19:06 (T19)	20:06			20:38	29	19:53 (T17)	21:04
12	07:56	07:31			07:49		18:01 (T19)	06:58			06:17		19:25 (T17)	05:58
	17:23	18:01			19:34	66	19:07 (T19)	20:07			20:39	27	19:52 (T17)	21:04
13	07:56	07:30			07:48		18:00 (T19)	06:56		19:36 (T17)	06:16		19:27 (T17)	05:58
	17:24	18:02			19:35	66	19:06 (T19)	20:08	10	19:46 (T17)	20:40	24	19:51 (T17)	21:05
14	07:56	07:29			07:46		18:00 (T19)	06:55		19:33 (T17)	06:15		19:28 (T17)	05:58
	17:25	18:03			19:36	66	19:06 (T19)	20:09	15	19:48 (T17)	20:41	21	19:49 (T17)	21:05
15	07:55	07:27			07:44		18:00 (T19)	06:53		19:30 (T17)	06:14		19:30 (T17)	05:58
	17:26	18:05			19:37	66	19:06 (T19)	20:10	18	19:48 (T17)	20:42	17	19:47 (T17)	21:06
16	07:55	07:26			07:43		18:00 (T19)	06:52		19:28 (T17)	06:13		19:33 (T17)	05:58
	17:28	18:06			19:38	66	19:06 (T19)	20:11	22	19:50 (T17)	20:43	11	19:44 (T17)	21:06
17	07:55	07:25			07:41		17:59 (T19)	06:50		19:26 (T17)	06:12			05:58
	17:29	18:07			19:40	66	19:05 (T19)	20:12	24	19:50 (T17)	20:44			21:06
18	07:54	07:23			07:39		18:00 (T19)	06:48		19:25 (T17)	06:11			05:58
	17:30	18:08			19:41	65	19:05 (T19)	20:13	27	19:52 (T17)	20:45			21:07
19	07:53	07:22			07:38		18:00 (T19)	06:47		19:23 (T17)	06:10			05:58
	17:31	18:10			19:42	64	19:04 (T19)	20:14	29	19:52 (T17)	20:46			21:07
20	07:53	07:20			07:36		18:00 (T19)	06:45		19:23 (T17)	06:09			05:58
	17:32	18:11			19:43	63	19:03 (T19)	20:15	31	19:54 (T17)	20:46			21:07
21	07:52	07:19			07:34		17:59 (T19)	06:44		19:21 (T17)	06:08			05:58
	17:33	18:12			19:44	63	19:02 (T19)	20:16	33	19:54 (T17)	20:47			21:08
22	07:52	07:18		17:28 (T19)	07:33		18:00 (T19)	06:42		19:21 (T17)	06:07			05:58
	17:35	18:13	17	17:45 (T19)	19:45	62	19:02 (T19)	20:17	35	19:56 (T17)	20:48			21:08
23	07:51	07:16		17:24 (T19)	07:31		18:01 (T19)	06:41		19:19 (T17)	06:07			05:59
	17:36	18:14	26	17:50 (T19)	19:46	60	19:01 (T19)	20:18	37	19:56 (T17)	20:49			21:08
24	07:50	07:15		17:20 (T19)	07:29		18:01 (T19)	06:40		19:19 (T17)	06:06			05:59
	17:37	18:16	32	17:52 (T19)	19:47	59	19:00 (T19)	20:19	39	19:58 (T17)	20:50			21:08
25	07:50	07:13		17:18 (T19)	07:28		18:02 (T19)	06:38		19:19 (T17)	06:05			05:59
	17:38	18:17	37	17:55 (T19)	19:48	57	18:59 (T19)	20:21	40	19:59 (T17)	20:51			21:08
26	07:49	07:12		17:15 (T19)	07:26		18:03 (T19)	06:37		19:18 (T17)	06:04			06:00
	17:40	18:18	41	17:56 (T19)	19:49	55	18:58 (T19)	20:22	42	20:00 (T17)	20:52			21:09
27	07:48	07:10		17:14 (T19)	07:24		18:03 (T19)	06:35		19:18 (T17)	06:04			06:00
	17:41	18:19	43	17:57 (T19)	19:50	53	18:56 (T19)	20:23	43	20:01 (T17)	20:53			21:09
28	07:47	07:09		17:12 (T19)	07:23		18:05 (T19)	06:34		19:18 (T17)	06:03			06:00
	17:42	18:20	46	17:58 (T19)	19:52	50	18:55 (T19)	20:24	43	20:01 (T17)	20:54			21:09
29	07:46				07:21		18:06 (T19)	06:33		19:18 (T17)	06:03			06:01
	17:43				19:53	47	18:53 (T19)	20:25	43	20:01 (T17)	20:55			21:09
30	07:45				07:19		18:06 (T19)	06:31		19:18 (T17)	06:02			06:01
	17:45				19:54	45	18:51 (T19)	20:26	43	20:01 (T17)	20:55			21:09
31	07:44				07:18		18:09 (T19)				06:01			
	17:46				19:55	41	18:50 (T19)				20:56			
Potential sun hours	297	297			370			399			449			453
Total, worst case			242			1828			699			507		
Sun reduction			0.40			0.44			0.52			0.57		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.67			0.67			0.59			0.57		
Total reduction			0.27			0.30			0.31			0.33		
Total, real			66			544			216			167		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 855 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8401)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December		
1	06:02			06:26		19:35 (T17)	06:57			07:27		17:39 (T19)	07:02	07:37		
	21:09			20:50	28	20:03 (T17)	20:07			19:15	66	18:45 (T19)	17:28	17:03		
2	06:02			06:27		19:34 (T17)	06:58			07:28		17:39 (T19)	07:03	07:38		
	21:09			20:49	30	20:04 (T17)	20:05			19:13	66	18:45 (T19)	17:26	17:03		
3	06:03			06:28		19:33 (T17)	06:59			07:29		17:39 (T19)	07:04	07:39		
	21:08			20:48	32	20:05 (T17)	20:04			19:11	65	18:44 (T19)	17:25	17:03		
4	06:03			06:29		19:32 (T17)	07:00			07:31		17:39 (T19)	07:06	07:40		
	21:08			20:47	34	20:06 (T17)	20:02			19:10	64	18:43 (T19)	17:24	17:03		
5	06:04			06:30		19:31 (T17)	07:01			07:32		17:39 (T19)	07:07	07:41		
	21:08			20:46	36	20:07 (T17)	20:01			19:08	63	18:42 (T19)	17:23	17:02		
6	06:04			06:31		19:31 (T17)	07:02			07:33		17:40 (T19)	07:08	07:42		
	21:08			20:45	37	20:08 (T17)	19:57			19:06	63	18:43 (T19)	17:22	17:02		
7	06:05			06:32		19:30 (T17)	07:03		18:21 (T19)	07:34		17:40 (T19)	07:09	07:43		
	21:08			20:43	38	20:08 (T17)	19:56	3	18:24 (T19)	19:05	62	18:42 (T19)	17:21	17:02		
8	06:06			06:33		19:28 (T17)	07:04		18:12 (T19)	07:35		17:41 (T19)	07:10	07:44		
	21:07			20:42	40	20:08 (T17)	19:54	20	18:32 (T19)	19:03	59	18:40 (T19)	17:20	17:02		
9	06:06			06:34		19:28 (T17)	07:05		18:08 (T19)	07:36		17:41 (T19)	07:12	07:45		
	21:07			20:41	40	20:08 (T17)	19:52	27	18:35 (T19)	19:01	58	18:39 (T19)	17:18	17:02		
10	06:07			06:35		19:27 (T17)	07:06		18:05 (T19)	07:37		17:41 (T19)	07:13	07:46		
	21:07			20:40	41	20:08 (T17)	19:50	33	18:38 (T19)	19:00	56	18:37 (T19)	17:17	17:02		
11	06:08			06:36		19:27 (T17)	07:07		18:02 (T19)	07:38		17:42 (T19)	07:14	07:47		
	21:06			20:38	42	20:09 (T17)	19:49	37	18:39 (T19)	18:58	53	18:35 (T19)	17:16	17:02		
12	06:08			06:37		19:26 (T17)	07:08		18:00 (T19)	07:39		17:43 (T19)	07:15	07:47		
	21:06			20:37	43	20:09 (T17)	19:47	41	18:41 (T19)	18:56	51	18:34 (T19)	17:15	17:02		
13	06:09			06:38		19:26 (T17)	07:09		17:58 (T19)	07:40		17:44 (T19)	07:16	07:48		
	21:05			20:36	43	20:09 (T17)	19:45	44	18:42 (T19)	18:55	48	18:32 (T19)	17:14	17:02		
14	06:10			06:39		19:26 (T17)	07:10		17:56 (T19)	07:41		17:45 (T19)	07:18	07:49		14:50 (T20)
	21:05			20:34	43	20:09 (T17)	19:44	47	18:43 (T19)	18:53	45	18:30 (T19)	17:14	17:03	7	14:57 (T20)
15	06:11			06:40		19:25 (T17)	07:11		17:54 (T19)	07:42		17:47 (T19)	07:19	07:50		14:48 (T20)
	21:04			20:33	44	20:09 (T17)	19:42	50	18:44 (T19)	18:52	42	18:29 (T19)	17:13	17:03	11	14:59 (T20)
16	06:11			06:41		19:25 (T17)	07:12		17:53 (T19)	07:43		17:49 (T19)	07:20	07:50		14:48 (T20)
	21:04			20:31	42	20:07 (T17)	19:40	52	18:45 (T19)	18:50	39	18:28 (T19)	17:12	17:03	13	15:01 (T20)
17	06:12			06:42		19:25 (T17)	07:13		17:51 (T19)	07:45		17:50 (T19)	07:21	07:51		14:48 (T20)
	21:03			20:30	41	20:06 (T17)	19:38	55	18:46 (T19)	18:49	36	18:26 (T19)	17:11	17:03	14	15:02 (T20)
18	06:13			06:43		19:25 (T17)	07:14		17:50 (T19)	07:46		17:53 (T19)	07:22	07:52		14:47 (T20)
	21:02			20:29	40	20:05 (T17)	19:37	56	18:46 (T19)	18:47	30	18:23 (T19)	17:10	17:04	16	15:03 (T20)
19	06:14			06:44		19:25 (T17)	07:15		17:48 (T19)	07:47		17:56 (T19)	07:24	07:52		14:48 (T20)
	21:02			20:27	38	20:03 (T17)	19:35	59	18:47 (T19)	18:46	23	18:19 (T19)	17:09	17:04	16	15:04 (T20)
20	06:15			06:45		19:25 (T17)	07:16		17:47 (T19)	07:48		18:01 (T19)	07:25	07:53		14:47 (T20)
	21:01			20:26	37	20:02 (T17)	19:33	60	18:47 (T19)	18:44	12	18:13 (T19)	17:09	17:05	17	15:04 (T20)
21	06:16			06:46		19:26 (T17)	07:17		17:46 (T19)	07:49			07:26	07:54		14:48 (T20)
	21:00			20:24	35	20:01 (T17)	19:32	61	18:47 (T19)	18:43			17:08	17:05	17	15:05 (T20)
22	06:17			06:47		19:26 (T17)	07:18		17:45 (T19)	07:50			07:27	07:54		14:48 (T20)
	20:59			20:23	33	19:59 (T17)	19:30	62	18:47 (T19)	18:41			17:07	17:06	17	15:05 (T20)
23	06:17			06:48		19:26 (T17)	07:19		17:44 (T19)	07:51			07:28	07:55		14:49 (T20)
	20:59			20:21	32	19:58 (T17)	19:28	64	18:48 (T19)	18:40			17:07	17:06	17	15:06 (T20)
24	06:18			06:49		19:27 (T17)	07:20		17:43 (T19)	07:53			07:29	07:55		14:49 (T20)
	20:58			20:20	29	19:56 (T17)	19:26	65	18:48 (T19)	18:38			17:06	17:07	17	15:06 (T20)
25	06:19			06:50		19:28 (T17)	07:21		17:42 (T19)	07:54			07:31	07:55		14:51 (T20)
	20:57			20:18	27	19:55 (T17)	19:25	65	18:47 (T19)	18:37			17:06	17:07	16	15:07 (T20)
26	06:20			06:51		19:29 (T17)	07:22		17:42 (T19)	07:55			07:32	07:56		14:52 (T20)
	20:56			20:17	24	19:53 (T17)	19:23	65	18:47 (T19)	18:36			17:05	17:08	15	15:07 (T20)
27	06:21		19:46 (T17)	06:52		19:30 (T17)	07:23		17:41 (T19)	07:56			07:33	07:56		14:53 (T20)
	20:55	6	19:52 (T17)	20:15	22	19:52 (T17)	19:21	66	18:47 (T19)	18:34			17:05	17:08	13	15:06 (T20)
28	06:22		19:42 (T17)	06:53		19:32 (T17)	07:24		17:41 (T19)	07:57			07:34	07:56		14:54 (T20)
	20:54	14	19:56 (T17)	20:14	18	19:50 (T17)	19:20	66	18:47 (T19)	18:33			17:04	17:09	11	15:05 (T20)
29	06:23		19:40 (T17)	06:54		19:34 (T17)	07:25		17:40 (T19)	07:58			07:35	07:57		14:57 (T20)
	20:53	18	19:58 (T17)	20:12	15	19:49 (T17)	19:18	66	18:46 (T19)	18:31			17:04	17:10	8	15:05 (T20)
30	06:24		19:38 (T17)	06:55		19:37 (T17)	07:26		17:40 (T19)	08:00			07:36	07:57		15:00 (T20)
	20:52	22	20:00 (T17)	20:10	10	19:47 (T17)	19:16	66	18:46 (T19)	18:30			17:04	17:11	2	15:02 (T20)
31	06:25		19:37 (T17)	06:56						08:01				07:57		
	20:51	25	20:02 (T17)	20:09						18:29				17:11		
Potential sun hours	460			429			375			345			297	287		
Total, worst case		85			1014			1230			1001				227	
Sun reduction		0.66			0.61			0.59			0.48				0.22	
Oper. time red.		1.00			1.00			1.00			1.00				1.00	
Wind dir. red.		0.57			0.57			0.67			0.67				0.73	
Total reduction		0.38			0.35			0.40			0.32				0.16	
Total, real		32			357			491			325				37	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 857 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8402)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		15:52 (T26)	07:44			07:07		17:30 (T25)	07:16		18:42 (T75)	06:30		18:31 (T75)	06:01		
	17:13	48	16:40 (T26)	17:47			18:22	24	17:54 (T25)	19:56	44	19:26 (T75)	20:27	55	19:26 (T75)	20:57		
2	07:58		15:52 (T26)	07:43			07:06		17:31 (T25)	07:15		18:41 (T75)	06:29		18:32 (T75)	06:01		
	17:14	48	16:40 (T26)	17:49			18:23	21	17:52 (T25)	19:57	47	19:28 (T75)	20:28	53	19:25 (T75)	20:58		
3	07:58		15:53 (T26)	07:42			07:04		17:33 (T25)	07:13		18:39 (T75)	06:28		18:33 (T75)	06:00		
	17:15	48	16:41 (T26)	17:50			18:24	17	17:50 (T25)	19:58	50	19:29 (T75)	20:29	50	19:23 (T75)	20:59		
4	07:58		15:53 (T26)	07:41			07:03		17:35 (T25)	07:11		18:37 (T75)	06:26		18:34 (T75)	06:00		
	17:16	48	16:41 (T26)	17:51			18:25	12	17:47 (T25)	19:59	59	19:37 (T24)	20:30	48	19:22 (T75)	20:59		
5	07:58		15:54 (T26)	07:40			07:01			07:10		18:36 (T75)	06:25		18:35 (T75)	06:00		
	17:16	47	16:41 (T26)	17:52			18:26			20:00	63	19:39 (T24)	20:31	46	19:21 (T75)	21:00		
6	07:58		15:54 (T26)	07:38			06:59			07:08		18:35 (T75)	06:24		18:36 (T75)	05:59		
	17:17	48	16:42 (T26)	17:54			18:28			20:00	65	19:40 (T24)	20:32	44	19:20 (T75)	21:01		
7	07:58		15:55 (T26)	07:37			06:58			07:06		18:33 (T75)	06:23		18:38 (T75)	05:59		
	17:18	47	16:42 (T26)	17:55			18:29			20:01	67	19:40 (T24)	20:34	41	19:19 (T75)	21:01		
8	07:57		15:56 (T26)	07:36			07:56			07:05		18:33 (T75)	06:22		18:39 (T75)	05:59		
	17:19	47	16:43 (T26)	17:56			19:30			20:03	69	19:42 (T24)	20:35	39	19:18 (T75)	21:02		
9	07:57		15:56 (T26)	07:35			07:55			07:03		18:31 (T75)	06:20		18:41 (T75)	05:59		
	17:20	46	16:42 (T26)	17:57			19:31			20:04	72	19:43 (T24)	20:36	35	19:16 (T75)	21:03		
10	07:57		15:57 (T26)	07:34			07:53			07:01		18:30 (T75)	06:19		18:42 (T75)	05:58		
	17:21	46	16:43 (T26)	17:59			19:32			20:05	73	19:43 (T24)	20:37	32	19:14 (T75)	21:03		
11	07:57		15:58 (T26)	07:33			07:51			07:00		18:30 (T75)	06:18		18:44 (T75)	05:58		
	17:22	45	16:43 (T26)	18:00			19:33			20:06	75	19:45 (T24)	20:38	28	19:12 (T75)	21:04		
12	07:57		15:58 (T26)	07:31			07:50			06:58		18:29 (T75)	06:17		18:46 (T75)	05:58		
	17:24	45	16:43 (T26)	18:01			19:34			20:07	77	19:46 (T24)	20:39	23	19:09 (T75)	21:04		
13	07:56		15:59 (T26)	07:30			07:48			06:57		18:29 (T75)	06:16		18:49 (T75)	05:58		
	17:25	44	16:43 (T26)	18:02			19:35			20:08	78	19:47 (T24)	20:40	18	19:07 (T75)	21:05		
14	07:56		16:00 (T26)	07:29		17:36 (T25)	07:46			06:55		18:28 (T75)	06:15		18:53 (T75)	05:58		
	17:26	44	16:44 (T26)	18:04	5	17:41 (T25)	19:37			20:09	80	19:48 (T24)	20:41	9	19:02 (T75)	21:05		
15	07:56		16:00 (T26)	07:28		17:33 (T25)	07:45			06:53		18:28 (T75)	06:14			05:58		
	17:27	43	16:43 (T26)	18:05	9	17:42 (T25)	19:38			20:10	80	19:48 (T24)	20:42			21:06		
16	07:55		16:01 (T26)	07:26		17:32 (T25)	07:43			06:52		18:28 (T75)	06:13			05:58		
	17:28	43	16:44 (T26)	18:06	11	17:43 (T25)	19:39			20:11	79	19:47 (T24)	20:43			21:06		
17	07:55		16:02 (T26)	07:25		17:31 (T25)	07:41			06:50		18:27 (T75)	06:12			05:58		
	17:29	41	16:43 (T26)	18:07	14	17:45 (T25)	19:40			20:12	79	19:46 (T24)	20:44			21:07		
18	07:54		16:02 (T26)	07:23		17:30 (T25)	07:40			06:49		18:27 (T75)	06:11			05:58		
	17:30	41	16:43 (T26)	18:09	16	17:46 (T25)	19:41			20:13	79	19:46 (T24)	20:45			21:07		
19	07:54		16:04 (T26)	07:22		17:29 (T25)	07:38			06:47		18:27 (T75)	06:10			05:58		
	17:31	39	16:43 (T26)	18:10	19	17:48 (T25)	19:42			20:14	78	19:45 (T24)	20:46			21:07		
20	07:53		16:04 (T26)	07:21		17:28 (T25)	07:36			06:46		18:27 (T75)	06:09			05:58		
	17:33	38	16:42 (T26)	18:11	20	17:48 (T25)	19:43			20:15	77	19:44 (T24)	20:47			21:08		
21	07:52		16:06 (T26)	07:19		17:28 (T25)	07:35			06:44		18:28 (T75)	06:08			05:59		
	17:34	37	16:43 (T26)	18:12	22	17:50 (T25)	19:44			20:16	75	19:43 (T24)	20:48			21:08		
22	07:52		16:07 (T26)	07:18		17:27 (T25)	07:33			06:43		18:27 (T75)	06:08			05:59		
	17:35	35	16:42 (T26)	18:13	24	17:51 (T25)	19:45			20:18	74	19:41 (T24)	20:49			21:08		
23	07:51		16:08 (T26)	07:16		17:28 (T25)	07:31			06:41		18:28 (T75)	06:07			05:59		
	17:36	33	16:41 (T26)	18:15	25	17:53 (T25)	19:46			20:19	72	19:40 (T24)	20:49			21:08		
24	07:50		16:09 (T26)	07:15		17:27 (T25)	07:30			06:40		18:27 (T75)	06:06			05:59		
	17:37	31	16:40 (T26)	18:16	26	17:53 (T25)	19:47			20:20	70	19:37 (T24)	20:50			21:08		
25	07:50		16:11 (T26)	07:13		17:28 (T25)	07:28			06:38		18:28 (T75)	06:05			06:00		
	17:39	29	16:40 (T26)	18:17	27	17:55 (T25)	19:49			20:21	65	19:33 (T24)	20:51			21:09		
26	07:49		16:13 (T26)	07:12		17:28 (T25)	07:26			06:37		18:28 (T75)	06:05			06:00		
	17:40	25	16:38 (T26)	18:18	28	17:56 (T25)	19:50			20:22	61	19:29 (T75)	20:52			21:09		
27	07:48		16:15 (T26)	07:10		17:29 (T25)	07:25		19:00 (T75)	06:36		18:29 (T75)	06:04			06:00		
	17:41	21	16:36 (T26)	18:19	27	17:56 (T25)	19:51	13	19:13 (T75)	20:23	59	19:28 (T75)	20:53			21:09		
28	07:47		16:18 (T26)	07:09		17:29 (T25)	07:23		18:54 (T75)	06:34		18:30 (T75)	06:03			06:01		
	17:42	16	16:34 (T26)	18:21	25	17:54 (T25)	19:52	24	19:18 (T75)	20:24	58	19:28 (T75)	20:54			21:09		
29	07:46		16:23 (T26)				07:21		18:50 (T75)	06:33		18:29 (T75)	06:03			06:01		
	17:44	7	16:30 (T26)				19:53	31	19:21 (T75)	20:25	58	19:27 (T75)	20:55			21:09		
30	07:46						07:20		18:47 (T75)	06:32		18:30 (T75)	06:02			06:02		
	17:45						19:54	37	19:24 (T75)	20:26	56	19:26 (T75)	20:56			21:09		
31	07:45						07:18		18:45 (T75)				06:02					
	17:46						19:55	40	19:25 (T75)				20:56					
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1130			298			219			2039			521				
Sun reduction		0.31			0.40			0.44			0.52			0.57				
Oper. time red.		1.00			1.00			1.00			1.00			1.00				
Wind dir. red.		0.74			0.69			0.64			0.61			0.61				
Total reduction		0.24			0.28			0.29			0.33			0.36				
Total, real		267			85			64			665			188				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 857 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8402)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August			September			October			November			December		
1	06:02		06:26		18:55 (T75)	06:57		18:29 (T75)	07:28			07:02			07:37		15:40 (T26)
	21:09		20:50	26	19:21 (T75)	20:07	75	19:44 (T24)	19:15			17:28			17:04	45	16:25 (T26)
2	06:03		06:27		18:53 (T75)	06:58		18:29 (T75)	07:29			07:03			07:38		15:40 (T26)
	21:09		20:49	30	19:23 (T75)	20:06	73	19:42 (T24)	19:13			17:27			17:03	46	16:26 (T26)
3	06:03		06:28		18:51 (T75)	06:59		18:29 (T75)	07:30			07:05			07:39		15:40 (T26)
	21:09		20:48	34	19:25 (T75)	20:04	72	19:41 (T24)	19:11			17:26			17:03	46	16:26 (T26)
4	06:04		06:29		18:50 (T75)	07:00		18:30 (T75)	07:31			07:06			07:40		15:40 (T26)
	21:08		20:47	36	19:26 (T75)	20:02	69	19:39 (T24)	19:10			17:24			17:03	47	16:27 (T26)
5	06:04		06:30		18:48 (T75)	07:01		18:30 (T75)	07:32			07:07			07:41		15:40 (T26)
	21:08		20:46	40	19:28 (T75)	20:01	68	19:38 (T24)	19:08			17:23			17:03	47	16:27 (T26)
6	06:05		06:31		18:47 (T75)	07:02		18:31 (T75)	07:33			07:08			07:42		15:41 (T26)
	21:08		20:45	42	19:29 (T75)	19:57	65	19:36 (T24)	19:06			17:22			17:03	47	16:28 (T26)
7	06:05		06:32		18:45 (T75)	07:03		18:31 (T75)	07:34			07:09			07:43		15:41 (T26)
	21:08		20:43	45	19:30 (T75)	19:56	63	19:34 (T24)	19:05			17:21			17:03	47	16:28 (T26)
8	06:06		06:33		18:44 (T75)	07:04		18:32 (T75)	07:35			07:11			07:44		15:41 (T26)
	21:07		20:42	47	19:31 (T75)	19:54	60	19:33 (T24)	19:03			17:20			17:02	48	16:29 (T26)
9	06:07		06:34		18:43 (T75)	07:05		18:33 (T75)	07:36		18:13 (T25)	07:12			07:45		15:42 (T26)
	21:07		20:41	49	19:32 (T75)	19:52	50	19:23 (T75)	19:02	6	18:19 (T25)	17:19			17:02	48	16:30 (T26)
10	06:07		06:35		18:42 (T75)	07:06		18:34 (T75)	07:37		18:08 (T25)	07:13			07:46		15:41 (T26)
	21:07		20:40	51	19:33 (T75)	19:51	48	19:22 (T75)	19:00	15	18:23 (T25)	17:18			17:03	48	16:29 (T26)
11	06:08		06:36		18:41 (T75)	07:07		18:35 (T75)	07:38		18:06 (T25)	07:14			07:47		15:42 (T26)
	21:06		20:38	53	19:34 (T75)	19:49	45	19:20 (T75)	18:58	19	18:25 (T25)	17:17			17:03	48	16:30 (T26)
12	06:09		06:37		18:40 (T75)	07:08		18:35 (T75)	07:39		18:04 (T25)	07:15			07:48		15:42 (T26)
	21:06		20:37	54	19:34 (T75)	19:47	42	19:17 (T75)	18:57	22	18:26 (T25)	17:16			17:03	48	16:30 (T26)
13	06:10		06:38		18:39 (T75)	07:09		18:37 (T75)	07:40		18:03 (T25)	07:17		15:54 (T26)	07:48		15:43 (T26)
	21:05		20:36	56	19:35 (T75)	19:46	37	19:14 (T75)	18:55	25	18:28 (T25)	17:15	8	16:02 (T26)	17:03	48	16:31 (T26)
14	06:10		06:39		18:38 (T75)	07:10		18:39 (T75)	07:42		18:02 (T25)	07:18		15:50 (T26)	07:49		15:44 (T26)
	21:05		20:34	58	19:36 (T75)	19:44	32	19:11 (T75)	18:54	26	18:28 (T25)	17:14	16	16:06 (T26)	17:03	48	16:32 (T26)
15	06:11		06:40		18:37 (T75)	07:11		18:42 (T75)	07:43		18:01 (T25)	07:19		15:47 (T26)	07:50		15:43 (T26)
	21:04		20:33	59	19:36 (T75)	19:42	26	19:08 (T75)	18:52	27	18:28 (T25)	17:13	21	16:08 (T26)	17:03	49	16:32 (T26)
16	06:12		06:41		18:36 (T75)	07:12		18:47 (T75)	07:44		18:00 (T25)	07:20		15:46 (T26)	07:51		15:44 (T26)
	21:04		20:32	60	19:36 (T75)	19:40	16	19:03 (T75)	18:50	28	18:28 (T25)	17:12	25	16:11 (T26)	17:04	48	16:32 (T26)
17	06:13		06:42		18:35 (T75)	07:13			07:45		17:59 (T25)	07:21		15:44 (T26)	07:51		15:45 (T26)
	21:03		20:30	61	19:36 (T75)	19:39			18:49	27	18:26 (T25)	17:11	29	16:13 (T26)	17:04	48	16:33 (T26)
18	06:13		06:43		18:34 (T75)	07:14			07:46		17:59 (T25)	07:23		15:43 (T26)	07:52		15:45 (T26)
	21:02		20:29	66	19:40 (T24)	19:37			18:47	25	18:24 (T25)	17:11	31	16:14 (T26)	17:04	48	16:33 (T26)
19	06:14		06:44		18:33 (T75)	07:15			07:47		17:58 (T25)	07:24		15:43 (T26)	07:53		15:46 (T26)
	21:02		20:27	70	19:43 (T24)	19:35			18:46	25	18:23 (T25)	17:10	33	16:16 (T26)	17:05	48	16:34 (T26)
20	06:15		06:45		18:33 (T75)	07:16			07:48		17:59 (T25)	07:25		15:42 (T26)	07:53		15:46 (T26)
	21:01		20:26	72	19:45 (T24)	19:34			18:44	23	18:22 (T25)	17:09	35	16:17 (T26)	17:05	48	16:34 (T26)
21	06:16		06:46		18:32 (T75)	07:17			07:49		17:59 (T25)	07:26		15:41 (T26)	07:54		15:46 (T26)
	21:00		20:24	74	19:46 (T24)	19:32			18:43	21	18:20 (T25)	17:08	37	16:18 (T26)	17:05	49	16:35 (T26)
22	06:17		06:47		18:31 (T75)	07:18			07:50		17:59 (T25)	07:27		15:40 (T26)	07:54		15:46 (T26)
	21:00		20:23	76	19:47 (T24)	19:30			18:41	19	18:18 (T25)	17:08	38	16:18 (T26)	17:06	49	16:35 (T26)
23	06:18		06:48		18:31 (T75)	07:19			07:52		17:59 (T25)	07:28		15:40 (T26)	07:55		15:48 (T26)
	20:59		20:21	77	19:48 (T24)	19:28			18:40	18	18:17 (T25)	17:07	39	16:19 (T26)	17:06	48	16:36 (T26)
24	06:19		06:49		18:30 (T75)	07:20			07:53		18:01 (T25)	07:30		15:40 (T26)	07:55		15:48 (T26)
	20:58		20:20	79	19:49 (T24)	19:27			18:39	15	18:16 (T25)	17:07	41	16:21 (T26)	17:07	48	16:36 (T26)
25	06:20		06:50		18:30 (T75)	07:21			07:54		18:01 (T25)	07:31		15:40 (T26)	07:56		15:49 (T26)
	20:57		20:18	79	19:49 (T24)	19:25			18:37	13	18:14 (T25)	17:06	41	16:21 (T26)	17:08	48	16:37 (T26)
26	06:21		06:51		18:30 (T75)	07:22			07:55		18:02 (T25)	07:32		15:39 (T26)	07:56		15:49 (T26)
	20:56		20:17	79	19:49 (T24)	19:23			18:36	11	18:13 (T25)	17:06	43	16:22 (T26)	17:08	48	16:37 (T26)
27	06:21		06:52		18:29 (T75)	07:23			07:56		18:03 (T25)	07:33		15:39 (T26)	07:56		15:49 (T26)
	20:55		20:15	80	19:49 (T24)	19:22			18:34	8	18:11 (T25)	17:05	43	16:22 (T26)	17:09	48	16:37 (T26)
28	06:22		06:53		18:29 (T75)	07:25			07:57		18:05 (T25)	07:34		15:39 (T26)	07:57		15:49 (T26)
	20:54		20:14	80	19:49 (T24)	19:20			18:33	4	18:09 (T25)	17:05	44	16:23 (T26)	17:10	49	16:38 (T26)
29	06:23		06:54		18:29 (T75)	07:26			07:59			07:35		15:39 (T26)	07:57		15:51 (T26)
	20:53		20:12	80	19:49 (T24)	19:18			18:32			17:04	44	16:23 (T26)	17:10	48	16:39 (T26)
30	06:24	19:02 (T75)	06:55		18:29 (T75)	07:27			08:00			07:36		15:40 (T26)	07:57		15:51 (T26)
	20:52	13 19:15 (T75)	20:11	78	19:47 (T24)	19:17			18:31			17:04	45	16:25 (T26)	17:11	48	16:39 (T26)
31	06:25	18:58 (T75)	06:56		18:29 (T75)				08:01						07:57		15:51 (T26)
	20:51	20 19:18 (T75)	20:09	76	19:45 (T24)				18:29						17:12	48	16:39 (T26)
Potential sun hours	460		429			375			345			297			287		
Total, worst case		33		1867			841			377			613			1481	
Sun reduction		0.66		0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00		1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.61		0.61			0.61			0.69			0.74			0.74	
Total reduction		0.42		0.38			0.37			0.34			0.23			0.17	
Total, real		14		716			312			129			140			248	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 860 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8403)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March	April	May	June	July	August	September	October		November		December	
1	07:57	15:21 (T23)	07:43	15:26 (T23)	07:07	07:16	06:30	06:01	06:02	06:26	06:57	07:27		07:02	15:00 (T23)	07:37	15:05 (T23)
	17:13 67	16:28 (T23)	17:47 78	16:44 (T23)	18:22	19:56	20:27	20:57	21:09	20:50	20:07	19:15		17:28 72	16:12 (T23)	17:03 73	16:18 (T23)
2	07:57	15:21 (T23)	07:43	15:27 (T23)	07:06	07:14	06:29	06:01	06:02	06:27	06:58	07:28		07:03	15:00 (T23)	07:38	15:05 (T23)
	17:14 68	16:29 (T23)	17:48 77	16:44 (T23)	18:23	19:57	20:28	20:58	21:09	20:49	20:06	19:13		17:27 73	16:13 (T23)	17:03 73	16:18 (T23)
3	07:58	15:21 (T23)	07:41	15:27 (T23)	07:04	07:13	06:27	06:00	06:03	06:28	06:59	07:30		07:04	15:00 (T23)	07:39	15:06 (T23)
	17:14 69	16:30 (T23)	17:50 78	16:45 (T23)	18:24	19:58	20:29	20:58	21:08	20:48	20:04	19:11		17:25 73	16:13 (T23)	17:03 72	16:18 (T23)
4	07:58	15:21 (T23)	07:40	15:28 (T23)	07:02	07:11	06:26	06:00	06:03	06:29	07:00	07:31		07:06	14:59 (T23)	07:40	15:07 (T23)
	17:15 69	16:30 (T23)	17:51 77	16:45 (T23)	18:25	19:59	20:30	20:59	21:08	20:47	20:02	19:10		17:24 74	16:13 (T23)	17:03 71	16:18 (T23)
5	07:58	15:22 (T23)	07:39	15:28 (T23)	07:01	07:09	06:25	06:00	06:04	06:30	07:01	07:32		07:07	14:58 (T23)	07:41	15:07 (T23)
	17:16 69	16:31 (T23)	17:52 76	16:44 (T23)	18:26	20:00	20:31	21:00	21:08	20:46	20:01	19:08		17:23 75	16:13 (T23)	17:03 71	16:18 (T23)
6	07:58	15:22 (T23)	07:38	15:28 (T23)	06:59	07:08	06:24	05:59	06:05	06:31	07:02	07:33		07:08	14:58 (T23)	07:42	15:08 (T23)
	17:17 70	16:32 (T23)	17:54 75	16:43 (T23)	18:27	20:00	20:32	21:01	21:08	20:45	19:57	19:06		17:22 76	16:14 (T23)	17:02 70	16:18 (T23)
7	07:57	15:22 (T23)	07:37	15:29 (T23)	06:58	07:06	06:22	05:59	06:05	06:32	07:03	07:34		07:09	14:58 (T23)	07:43	15:09 (T23)
	17:18 71	16:33 (T23)	17:55 74	16:43 (T23)	18:29	20:01	20:33	21:01	21:08	20:43	19:56	19:05		17:21 76	16:14 (T23)	17:02 69	16:18 (T23)
8	07:57	15:22 (T23)	07:36	15:30 (T23)	07:56	07:04	06:21	05:59	06:06	06:33	07:04	07:35		07:10	14:57 (T23)	07:44	15:09 (T23)
	17:19 71	16:33 (T23)	17:56 73	16:43 (T23)	19:30	20:02	20:34	21:02	21:07	20:42	19:54	19:03		17:20 77	16:14 (T23)	17:02 69	16:18 (T23)
9	07:57	15:22 (T23)	07:35	15:31 (T23)	07:54	07:03	06:20	05:58	06:06	06:34	07:05	07:36		07:12	14:58 (T23)	07:45	15:09 (T23)
	17:20 72	16:34 (T23)	17:57 72	16:43 (T23)	19:31	20:03	20:35	21:03	21:07	20:41	19:52	19:01		17:19 77	16:15 (T23)	17:02 69	16:18 (T23)
10	07:57	15:22 (T23)	07:34	15:32 (T23)	07:53	07:01	06:19	05:58	06:07	06:35	07:06	07:37		07:13	14:57 (T23)	07:46	15:10 (T23)
	17:21 73	16:35 (T23)	17:59 71	16:43 (T23)	19:32	20:05	20:37	21:03	21:07	20:40	19:51	19:00		17:18 78	16:15 (T23)	17:02 68	16:18 (T23)
11	07:57	15:23 (T23)	07:32	15:32 (T23)	07:51	07:00	06:18	05:58	06:08	06:36	07:07	07:38		07:14	14:57 (T23)	07:47	15:11 (T23)
	17:22 73	16:36 (T23)	18:00 69	16:41 (T23)	19:33	20:06	20:38	21:04	21:06	20:38	19:49	18:58		17:17 78	16:15 (T23)	17:02 67	16:18 (T23)
12	07:56	15:22 (T23)	07:31	15:33 (T23)	07:50	06:58	06:17	05:58	06:09	06:37	07:08	07:39		07:15	14:56 (T23)	07:47	15:12 (T23)
	17:23 74	16:36 (T23)	18:01 68	16:41 (T23)	19:34	20:07	20:39	21:04	21:06	20:37	19:47	18:57		17:16 79	16:15 (T23)	17:03 67	16:19 (T23)
13	07:56	15:23 (T23)	07:30	15:34 (T23)	07:48	06:56	06:16	05:58	06:09	06:38	07:09	07:40		07:16	14:57 (T23)	07:48	15:12 (T23)
	17:24 74	16:37 (T23)	18:02 67	16:41 (T23)	19:35	20:08	20:40	21:05	21:05	20:36	19:45	18:55		17:15 79	16:16 (T23)	17:03 67	16:19 (T23)
14	07:56	15:22 (T23)	07:29	15:36 (T23)	07:46	06:55	06:15	05:58	06:10	06:39	07:10	07:41		07:18	14:57 (T23)	07:49	15:13 (T23)
	17:26 75	16:37 (T23)	18:04 64	16:40 (T23)	19:36	20:09	20:41	21:05	21:05	20:34	19:44	18:53		17:14 79	16:16 (T23)	17:03 67	16:20 (T23)
15	07:55	15:23 (T23)	07:27	15:36 (T23)	07:45	06:53	06:14	05:58	06:11	06:40	07:11	07:42		07:19	14:57 (T23)	07:50	15:13 (T23)
	17:27 75	16:38 (T23)	18:05 63	16:39 (T23)	19:37	20:10	20:42	21:06	21:04	20:33	19:42	18:52		17:13 79	16:16 (T23)	17:03 66	16:19 (T23)
16	07:55	15:22 (T23)	07:26	15:38 (T23)	07:43	06:52	06:13	05:58	06:12	06:41	07:12	07:44	16:35 (T23)	07:20	14:58 (T23)	07:50	15:14 (T23)
	17:28 76	16:38 (T23)	18:06 60	16:38 (T23)	19:39	20:11	20:43	21:06	21:04	20:32	19:40	18:50 12	16:47 (T23)	17:12 79	16:17 (T23)	17:03 66	16:20 (T23)
17	07:55	15:23 (T23)	07:25	15:39 (T23)	07:41	06:50	06:12	05:58	06:12	06:42	07:13	07:45	16:29 (T23)	07:21	14:58 (T23)	07:51	15:15 (T23)
	17:29 76	16:39 (T23)	18:07 57	16:36 (T23)	19:40	20:12	20:44	21:06	21:03	20:30	19:39	18:49 23	16:52 (T23)	17:11 78	16:16 (T23)	17:04 66	16:21 (T23)
18	07:54	15:23 (T23)	07:23	15:41 (T23)	07:40	06:49	06:11	05:58	06:13	06:43	07:14	07:46	16:24 (T23)	07:22	14:58 (T23)	07:52	15:15 (T23)
	17:30 76	16:39 (T23)	18:08 54	16:35 (T23)	19:41	20:13	20:45	21:07	21:02	20:29	19:37	18:47 31	16:55 (T23)	17:10 78	16:16 (T23)	17:04 65	16:20 (T23)
19	07:53	15:23 (T23)	07:22	15:43 (T23)	07:38	06:47	06:10	05:58	06:14	06:44	07:15	07:47	16:21 (T23)	07:24	14:58 (T23)	07:52	15:16 (T23)
	17:31 77	16:40 (T23)	18:10 51	16:34 (T23)	19:42	20:14	20:46	21:07	21:02	20:27	19:35	18:46 37	16:58 (T23)	17:10 78	16:16 (T23)	17:04 65	16:21 (T23)
20	07:53	15:23 (T23)	07:20	15:44 (T23)	07:36	06:46	06:09	05:58	06:15	06:45	07:16	07:48	16:19 (T23)	07:25	14:59 (T23)	07:53	15:16 (T23)
	17:32 78	16:41 (T23)	18:11 48	16:32 (T23)	19:43	20:15	20:46	21:07	21:01	20:26	19:33	18:44 41	17:00 (T23)	17:09 78	16:17 (T23)	17:05 65	16:21 (T23)
21	07:52	15:23 (T23)	07:19	15:46 (T23)	07:35	06:44	06:08	05:58	06:16	06:46	07:17	07:49	16:16 (T23)	07:26	14:59 (T23)	07:54	15:17 (T23)
	17:34 78	16:41 (T23)	18:12 45	16:31 (T23)	19:44	20:16	20:47	21:08	21:00	20:24	19:32	18:43 46	17:02 (T23)	17:08 78	16:17 (T23)	17:05 65	16:22 (T23)
22	07:52	15:24 (T23)	07:18	15:48 (T23)	07:33	06:43	06:07	05:59	06:17	06:47	07:18	07:50	16:14 (T23)	07:27	14:59 (T23)	07:54	15:17 (T23)
	17:35 78	16:42 (T23)	18:13 40	16:28 (T23)	19:45	20:17	20:48	21:08	20:59	20:23	19:30	18:41 49	17:03 (T23)	17:08 78	16:17 (T23)	17:06 65	16:22 (T23)
23	07:51	15:24 (T23)	07:16	15:51 (T23)	07:31	06:41	06:07	05:59	06:18	06:48	07:19	07:51	16:12 (T23)	07:28	14:59 (T23)	07:55	15:18 (T23)
	17:36 78	16:42 (T23)	18:14 35	16:26 (T23)	19:46	20:18	20:49	21:08	20:59	20:21	19:28	18:40 52	17:04 (T23)	17:07 78	16:17 (T23)	17:06 65	16:23 (T23)
24	07:50	15:24 (T23)	07:15	15:54 (T23)	07:29	06:40	06:06	05:59	06:19	06:49	07:20	07:53	16:10 (T23)	07:29	15:01 (T23)	07:55	15:18 (T23)
	17:37 78	16:42 (T23)	18:16 29	16:23 (T23)	19:47	20:20	20:50	21:08	20:58	20:20	19:27	18:38 55	17:05 (T23)	17:06 76	16:17 (T23)	17:07 65	16:23 (T23)
25	07:50	15:24 (T23)	07:13	15:59 (T23)	07:28	06:38	06:05	05:59	06:19	06:50	07:21	07:54	16:09 (T23)	07:31	15:01 (T23)	07:55	15:18 (T23)
	17:39 79	16:43 (T23)	18:17 20	16:19 (T23)	19:48	20:21	20:51	21:08	20:57	20:18	19:25	18:37 58	17:07 (T23)	17:06 76	16:17 (T23)	17:07 65	16:23 (T23)
26	07:49	15:25 (T23)	07:12		07:26	06:37	06:05	06:00	06:20	06:51	07:22	07:55	16:07 (T23)	07:32	15:01 (T23)	07:56	15:19 (T23)
	17:40 79	16:44 (T23)	18:18		19:49	20:22	20:52	21:09	20:56	20:17	19:23	18:36 61	17:08 (T23)	17:05 76	16:17 (T23)	17:08 66	16:25 (T23)
27	07:48	15:25 (T23)	07:10		07:24	06:35	06:04	06:00	06:21	06:52	07:23	07:56	16:06 (T23)	07:33	15:02 (T23)	07:56	15:19 (T23)
	17:41 79	16:44 (T23)	18:19		19:51	20:23	20:53	21:09	20:55	20:15	19:21	18:34 63	17:09 (T23)	17:05 75	16:17 (T23)	17:09 66	16:25 (T23)
28	07:47	15:25 (T23)	07:09		07:23	06:34	06:03	06:00	06:22	06:53	07:24	07:57	16:04 (T23)	07:34	15:02 (T23)	07:56	15:19 (T23)
	17:42 79	16:44 (T23)	18:20		19:52	20:24	20:54	21:09	20:54	20:14	19:20	18:33 65	17:09 (T23)	17:04 75	16:17 (T23)	17:09 66	16:25 (T23)
29	07:46	15:25 (T23)			07:21	06:33	06:03	06:01	06:23	06:54	07:25	07:58	16:04 (T23)	07:35	15:03 (T23)	07:57	15:20 (T23)
	17:43 79	16:44 (T23)			19:53	20:25	20:55	21:09	20:53	20:12	19:18	18:32 67	17:11 (T23)	17:04 74	16:17 (T23)	17:10 67	16:27 (T23)
30	07:45	15:26 (T23)			07:19	06:31	06:02	06:01	06:24	06:55	07:26	08:00	16:03 (T23)	07:36	15:03 (T23)	07:57	15:20 (T23)
	17:45 78	16:44 (T23)			19:54	20:26	20:55	21:09	20:52	20:10	19:16	18:30 68	17:11 (T23)	17:04 74	16:17 (T23)	17:11 67	16:27 (T23)
31	07:44	15:26 (T23)			07:18		06:02		06:25	06:56		08:01	16:01 (T23)			07:57	15:21 (T23)
	17:46 78	16:44 (T23)			19:55		20:56		20:51	20:09		18:29 70	17:11 (T23)			17:12 67	16:28 (T23)
Potential sun hours	297		297		370	399	449	453	460	429	375	345		297		287	
Total, worst case		2316		1521									798		2296		2090
Sun reduction		0.31		0.40									0.48		0.30		0.22
Oper. time red.		1.00		1.00									1.00		1.00		1.00
Wind dir. red.		0.74		0.74									0.74		0.74		0.74
Total reduction		0.23		0.30									0.36		0.22		0.16
Total, real		532		451									284		511		341

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 869 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8411)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June	
1	07:57		08:20 (T76)	07:43		16:25 (T42)	07:07			07:16		18:56 (T41)	06:30		19:46 (T40)	06:01	
	17:13	40	16:47 (T42)	17:47	43	17:08 (T42)	18:22			19:56	24	19:20 (T41)	20:27	19	20:05 (T40)	20:57	
2	07:57		08:20 (T76)	07:42		16:25 (T42)	07:06			07:14		18:57 (T41)	06:29		19:45 (T40)	06:01	
	17:14	41	16:48 (T42)	17:49	42	17:07 (T42)	18:23			19:57	21	19:18 (T41)	20:28	21	20:06 (T40)	20:58	
3	07:57		08:20 (T76)	07:41		16:26 (T42)	07:04			07:13		18:59 (T41)	06:28		19:43 (T40)	06:01	
	17:15	43	16:49 (T42)	17:50	41	17:07 (T42)	18:24			19:58	17	19:16 (T41)	20:29	23	20:06 (T40)	20:58	
4	07:57		08:20 (T76)	07:40		16:27 (T42)	07:02			07:11		19:03 (T41)	06:26		19:43 (T40)	06:00	
	17:16	45	16:50 (T42)	17:51	39	17:06 (T42)	18:25			19:59	9	19:12 (T41)	20:30	25	20:08 (T40)	20:59	
5	07:57		08:20 (T76)	07:39		16:29 (T42)	07:01			07:09			06:25		19:42 (T40)	06:00	
	17:16	47	16:51 (T42)	17:52	37	17:06 (T42)	18:26			20:00			20:31	27	20:09 (T40)	21:00	
6	07:57		08:20 (T76)	07:38		16:29 (T42)	06:59			07:08			06:24		19:42 (T40)	05:59	
	17:17	49	16:52 (T42)	17:54	35	17:04 (T42)	18:27			20:00			20:32	28	20:10 (T40)	21:00	
7	07:57		08:19 (T76)	07:37		16:31 (T42)	06:58			07:06			06:23		19:42 (T40)	05:59	
	17:18	50	16:52 (T42)	17:55	32	17:03 (T42)	18:29			20:01			20:33	29	20:11 (T40)	21:01	
8	07:57		08:19 (T76)	07:36		16:32 (T42)	07:56			07:05			06:22		19:42 (T40)	05:59	
	17:19	51	16:53 (T42)	17:56	30	17:02 (T42)	19:30			20:02			20:34	30	20:12 (T40)	21:02	
9	07:57		08:19 (T76)	07:35		16:35 (T42)	07:54			07:03			06:20		19:42 (T40)	05:59	
	17:20	53	16:54 (T42)	17:57	25	17:00 (T42)	19:31			20:03			20:35	31	20:13 (T40)	21:02	
10	07:57		08:19 (T76)	07:34		16:37 (T42)	07:53			07:01			06:19		19:41 (T40)	05:59	
	17:21	56	16:56 (T42)	17:59	21	16:58 (T42)	19:32			20:05			20:36	32	20:13 (T40)	21:03	
11	07:57		08:18 (T76)	07:32		16:40 (T42)	07:51			07:00			06:18		19:41 (T40)	05:58	
	17:23	57	16:56 (T42)	18:00	14	16:54 (T42)	19:33			20:06			20:37	33	20:14 (T40)	21:04	
12	07:56		08:18 (T76)	07:31			07:50			06:58			06:17		19:41 (T40)	05:58	
	17:24	60	16:58 (T42)	18:01			19:34			20:07			20:38	34	20:15 (T40)	21:04	
13	07:56		08:18 (T76)	07:30			07:48		19:10 (T41)	06:57			06:16		19:41 (T40)	05:58	
	17:25	61	16:59 (T42)	18:02			19:35	4	19:14 (T41)	20:08			20:39	35	20:16 (T40)	21:05	
14	07:56		08:17 (T76)	07:29			07:46		19:05 (T41)	06:55			06:15		19:41 (T40)	05:58	
	17:26	64	17:00 (T42)	18:04			19:36	10	19:15 (T41)	20:09			20:41	34	20:15 (T40)	21:05	
15	07:55		08:17 (T76)	07:27			07:45		19:03 (T41)	06:53			06:14		19:42 (T40)	05:58	
	17:27	65	17:01 (T42)	18:05			19:38	13	19:16 (T41)	20:10			20:42	33	20:15 (T40)	21:05	
16	07:55		08:16 (T76)	07:26			07:43		19:00 (T41)	06:52			06:13		19:43 (T40)	05:58	
	17:28	68	17:02 (T42)	18:06			19:39	17	19:17 (T41)	20:11			20:43	32	20:15 (T40)	21:06	
17	07:54		08:16 (T76)	07:25			07:41		18:58 (T41)	06:50			06:12		19:43 (T40)	05:58	
	17:29	70	17:04 (T42)	18:07			19:40	20	19:18 (T41)	20:12			20:43	32	20:15 (T40)	21:06	
18	07:54		08:15 (T76)	07:23			07:40		18:58 (T41)	06:49			06:11		19:43 (T40)	05:58	
	17:30	71	17:05 (T42)	18:09			19:41	22	19:20 (T41)	20:13			20:44	31	20:14 (T40)	21:07	
19	07:53		08:15 (T76)	07:22			07:38		18:56 (T41)	06:47			06:10		19:44 (T40)	05:58	
	17:32	72	17:06 (T42)	18:10			19:42	25	19:21 (T41)	20:14			20:45	30	20:14 (T40)	21:07	
20	07:53		08:14 (T76)	07:20			07:36		18:55 (T41)	06:46			06:09		19:44 (T40)	05:58	
	17:33	75	17:07 (T42)	18:11			19:43	26	19:21 (T41)	20:15			20:46	29	20:13 (T40)	21:07	
21	07:52		08:13 (T76)	07:19			07:35		18:55 (T41)	06:44			06:09		19:45 (T40)	05:59	
	17:34	76	17:07 (T42)	18:12			19:44	28	19:23 (T41)	20:16			20:47	27	20:12 (T40)	21:08	
22	07:52		08:14 (T76)	07:18			07:33		18:54 (T41)	06:43			06:08		19:46 (T40)	05:59	
	17:35	75	17:08 (T42)	18:13			19:45	30	19:24 (T41)	20:17			20:48	26	20:12 (T40)	21:08	
23	07:51		08:15 (T76)	07:16			07:31		18:53 (T41)	06:41			06:07		19:47 (T40)	05:59	
	17:36	74	17:08 (T42)	18:15			19:46	32	19:25 (T41)	20:18			20:49	24	20:11 (T40)	21:08	
24	07:50		08:15 (T76)	07:15			07:30		18:53 (T41)	06:40			06:06		19:48 (T40)	05:59	
	17:38	74	17:08 (T42)	18:16			19:47	33	19:26 (T41)	20:19			20:50	22	20:10 (T40)	21:08	
25	07:49		08:16 (T76)	07:13			07:28		18:53 (T41)	06:38			06:06		19:49 (T40)	06:00	
	17:39	72	17:08 (T42)	18:17			19:48	34	19:27 (T41)	20:21			20:51	21	20:10 (T40)	21:08	
26	07:49		08:17 (T76)	07:12			07:26		18:52 (T41)	06:37		19:56 (T40)	06:05		19:50 (T40)	06:00	
	17:40	69	17:08 (T42)	18:18			19:50	35	19:27 (T41)	20:22	3	19:59 (T40)	20:52	19	20:09 (T40)	21:08	
27	07:48		08:19 (T76)	07:10			07:24		18:52 (T41)	06:36		19:52 (T40)	06:04		19:52 (T40)	06:00	
	17:41	67	17:09 (T42)	18:19			19:51	34	19:26 (T41)	20:23	9	20:01 (T40)	20:53	16	20:08 (T40)	21:08	
28	07:47		08:20 (T76)	07:09			07:23		18:53 (T41)	06:34		19:50 (T40)	06:04		19:53 (T40)	06:01	
	17:42	65	17:09 (T42)	18:21			19:52	33	19:26 (T41)	20:24	12	20:02 (T40)	20:54	13	20:06 (T40)	21:09	
29	07:46		08:22 (T76)				07:21		18:53 (T41)	06:33		19:48 (T40)	06:03		19:55 (T40)	06:01	
	17:44	60	17:08 (T42)				19:53	32	19:25 (T41)	20:25	14	20:02 (T40)	20:54	9	20:04 (T40)	21:09	
30	07:45		08:24 (T76)				07:19		18:53 (T41)	06:32		19:47 (T40)	06:02			06:02	
	17:45	56	17:08 (T42)				19:54	30	19:23 (T41)	20:26	17	20:04 (T40)	20:55			21:09	
31	07:44		16:24 (T42)				07:18		18:55 (T41)				06:02				
	17:46	44	17:08 (T42)				19:55	28	19:23 (T41)				20:56				
Potential sun hours	297			297			370			399			449			453	
Total, worst case		1870			359			486			126			765			
Sun reduction		0.31			0.40			0.44			0.52			0.57			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.66			0.73			0.64			0.61			0.56			
Total reduction		0.21			0.30			0.29			0.32			0.33			
Total, real		391			107			140			41			251			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 869 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8411)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		19:52 (T40)	06:57			07:27			07:02		16:05 (T42)	07:37		08:00 (T76)
	21:08			20:50	33	20:25 (T40)	20:07			19:15			17:28	23	16:28 (T42)	17:04	57	16:38 (T42)
2	06:03			06:27		19:51 (T40)	06:58			07:29			07:03		16:04 (T42)	07:38		08:01 (T76)
	21:08			20:49	33	20:24 (T40)	20:06			19:13			17:27	26	16:30 (T42)	17:03	56	16:38 (T42)
3	06:03			06:28		19:51 (T40)	06:59			07:30			07:04		16:02 (T42)	07:39		08:03 (T76)
	21:08			20:48	32	20:23 (T40)	20:04			19:11			17:26	30	16:32 (T42)	17:03	53	16:38 (T42)
4	06:04			06:29		19:51 (T40)	07:00			07:31			07:06		16:00 (T42)	07:40		08:04 (T76)
	21:08			20:47	31	20:22 (T40)	20:02			19:10			17:24	33	16:33 (T42)	17:03	52	16:38 (T42)
5	06:04			06:30		19:52 (T40)	07:01			07:32			07:07		15:59 (T42)	07:41		08:05 (T76)
	21:08			20:46	29	20:21 (T40)	20:01			19:08			17:23	35	16:34 (T42)	17:03	50	16:38 (T42)
6	06:05			06:31		19:52 (T40)	07:02			07:33			07:08		15:58 (T42)	07:42		08:06 (T76)
	21:08			20:44	28	20:20 (T40)	19:57			19:06			17:22	38	16:36 (T42)	17:03	49	16:38 (T42)
7	06:05			06:32		19:52 (T40)	07:03			07:34			07:09		15:57 (T42)	07:43		08:06 (T76)
	21:07			20:43	27	20:19 (T40)	19:56			19:05			17:21	39	16:36 (T42)	17:03	47	16:37 (T42)
8	06:06			06:33		19:52 (T40)	07:04		18:58 (T41)	07:35			07:10		15:56 (T42)	07:44		08:07 (T76)
	21:07			20:42	26	20:18 (T40)	19:54	8	19:06 (T41)	19:03			17:20	41	16:37 (T42)	17:03	45	16:37 (T42)
9	06:07			06:34		19:53 (T40)	07:05		18:54 (T41)	07:36			07:12		15:56 (T42)	07:45		08:08 (T76)
	21:07			20:41	24	20:17 (T40)	19:52	16	19:10 (T41)	19:01			17:19	42	16:38 (T42)	17:03	43	16:37 (T42)
10	06:07			06:35		19:53 (T40)	07:06		18:50 (T41)	07:37			07:13		15:55 (T42)	07:46		08:09 (T76)
	21:06			20:40	23	20:16 (T40)	19:51	21	19:11 (T41)	19:00			17:18	44	16:39 (T42)	17:03	42	16:37 (T42)
11	06:08			06:36		19:54 (T40)	07:07		18:48 (T41)	07:38			07:14		15:55 (T42)	07:46		08:10 (T76)
	21:06			20:38	20	20:14 (T40)	19:49	24	19:12 (T41)	18:58			17:17	44	16:39 (T42)	17:03	40	16:37 (T42)
12	06:09			06:37		19:55 (T40)	07:08		18:46 (T41)	07:39			07:15		07:55 (T76)	07:47		08:11 (T76)
	21:06			20:37	18	20:13 (T40)	19:47	28	19:14 (T41)	18:57			17:16	56	16:39 (T42)	17:03	38	16:37 (T42)
13	06:10			06:38		19:56 (T40)	07:09		18:45 (T41)	07:40			07:16		07:54 (T76)	07:48		08:12 (T76)
	21:05			20:36	16	20:12 (T40)	19:45	29	19:14 (T41)	18:55			17:15	60	16:40 (T42)	17:03	38	16:38 (T42)
14	06:10		20:06 (T40)	06:39		19:57 (T40)	07:10		18:43 (T41)	07:41			07:18		07:52 (T76)	07:49		08:12 (T76)
	21:05	6	20:12 (T40)	20:34	14	20:11 (T40)	19:44	32	19:15 (T41)	18:54			17:14	65	16:41 (T42)	17:03	37	16:37 (T42)
15	06:11		20:03 (T40)	06:40		19:58 (T40)	07:11		18:42 (T41)	07:42			07:19		07:51 (T76)	07:50		08:13 (T76)
	21:04	12	20:15 (T40)	20:33	11	20:09 (T40)	19:42	33	19:15 (T41)	18:52			17:13	67	16:41 (T42)	17:03	35	16:37 (T42)
16	06:12		20:01 (T40)	06:41		20:00 (T40)	07:12		18:42 (T41)	07:44			07:20		07:50 (T76)	07:50		08:14 (T76)
	21:03	15	20:16 (T40)	20:31	7	20:07 (T40)	19:40	33	19:15 (T41)	18:50			17:12	69	16:41 (T42)	17:04	35	16:38 (T42)
17	06:13		20:00 (T40)	06:42		20:04 (T40)	07:13		18:41 (T41)	07:45			07:21		07:50 (T76)	07:51		08:14 (T76)
	21:03	17	20:17 (T40)	20:30	2	20:06 (T40)	19:39	34	19:15 (T41)	18:49			17:11	72	16:42 (T42)	17:04	35	16:38 (T42)
18	06:14		19:59 (T40)	06:43			07:14		18:40 (T41)	07:46			07:22		07:49 (T76)	07:52		08:15 (T76)
	21:02	20	20:19 (T40)	20:29			19:37	35	19:15 (T41)	18:47			17:11	74	16:42 (T42)	17:04	33	16:38 (T42)
19	06:14		19:58 (T40)	06:44			07:15		18:40 (T41)	07:47			07:23		07:49 (T76)	07:52		08:16 (T76)
	21:02	22	20:20 (T40)	20:27			19:35	33	19:13 (T41)	18:46			17:10	74	16:42 (T42)	17:05	33	16:39 (T42)
20	06:15		19:58 (T40)	06:45			07:16		18:39 (T41)	07:48			07:25		07:49 (T76)	07:53		08:16 (T76)
	21:01	23	20:21 (T40)	20:26			19:33	32	19:11 (T41)	18:44			17:09	75	16:43 (T42)	17:05	33	16:39 (T42)
21	06:16		19:56 (T40)	06:46			07:17		18:39 (T41)	07:49			07:26		07:49 (T76)	07:53		08:17 (T76)
	21:00	25	20:21 (T40)	20:24			19:32	31	19:10 (T41)	18:43			17:08	76	16:43 (T42)	17:05	33	16:40 (T42)
22	06:17		19:56 (T40)	06:47			07:18		18:39 (T41)	07:50			07:27		07:50 (T76)	07:54		08:17 (T76)
	20:59	26	20:22 (T40)	20:23			19:30	29	19:08 (T41)	18:41			17:08	75	16:43 (T42)	17:06	33	16:40 (T42)
23	06:18		19:55 (T40)	06:48			07:19		18:39 (T41)	07:51			07:28		07:51 (T76)	07:54		08:18 (T76)
	20:59	28	20:23 (T40)	20:21			19:28	27	19:06 (T41)	18:40			17:07	73	16:43 (T42)	17:07	33	16:41 (T42)
24	06:19		19:55 (T40)	06:49			07:20		18:39 (T41)	07:53			07:29		07:52 (T76)	07:55		08:18 (T76)
	20:58	29	20:24 (T40)	20:20			19:27	25	19:04 (T41)	18:39			17:07	71	16:42 (T42)	17:07	33	16:41 (T42)
25	06:20		19:54 (T40)	06:50			07:21		18:40 (T41)	07:54			07:30		07:54 (T76)	07:55		08:18 (T76)
	20:57	31	20:25 (T40)	20:18			19:25	23	19:03 (T41)	18:37			17:06	70	16:42 (T42)	17:08	33	16:41 (T42)
26	06:21		19:54 (T40)	06:51			07:22		18:40 (T41)	07:55			07:32		07:55 (T76)	07:56		08:19 (T76)
	20:56	31	20:25 (T40)	20:17			19:23	21	19:01 (T41)	18:36			17:06	68	16:41 (T42)	17:08	33	16:42 (T42)
27	06:22		19:54 (T40)	06:52			07:23		18:41 (T41)	07:56			07:33		07:56 (T76)	07:56		08:19 (T76)
	20:55	32	20:26 (T40)	20:15			19:22	18	18:59 (T41)	18:34			17:05	65	16:40 (T42)	17:09	35	16:43 (T42)
28	06:22		19:52 (T40)	06:53			07:24		18:43 (T41)	07:57			07:34		07:57 (T76)	07:56		08:19 (T76)
	20:54	33	20:25 (T40)	20:14			19:20	14	18:57 (T41)	18:33			17:05	64	16:40 (T42)	17:10	35	16:43 (T42)
29	06:23		19:52 (T40)	06:54			07:25		18:44 (T41)	07:58			07:35		07:58 (T76)	07:57		08:19 (T76)
	20:53	34	20:26 (T40)	20:12			19:18	12	18:56 (T41)	18:32			17:04	61	16:39 (T42)	17:10	37	16:44 (T42)
30	06:24		19:52 (T40)	06:55			07:26		18:47 (T41)	08:00		17:15 (T42)	07:36		07:59 (T76)	07:57		08:20 (T76)
	20:52	34	20:26 (T40)	20:10			19:16	7	18:54 (T41)	18:30	5	17:20 (T42)	17:04	60	16:39 (T42)	17:11	37	16:45 (T42)
31	06:25		19:52 (T40)	06:56						08:01		17:09 (T42)				07:57		08:20 (T76)
	20:51	34	20:26 (T40)	20:09						18:29	16	17:25 (T42)				17:12	39	16:46 (T42)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		452			374			565			21			1690			1232	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.56			0.56			0.64			0.73			0.67			0.67	
Total reduction		0.38			0.35			0.39			0.36			0.21			0.15	
Total, real		171			131			219			7			349			186	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 870 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8412)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:44	16:57 (T32)	07:07	16:51 (T32)	07:16		06:30	06:50 (T27)	06:01	19:05 (T29)
	17:13		17:47 26	17:23 (T32)	18:22 43	17:34 (T32)	19:56		20:27 82	19:57 (T29)	20:57 52	19:57 (T29)
2	07:58		07:43	16:55 (T32)	07:06	16:52 (T32)	07:15		06:29	06:50 (T27)	06:01	19:06 (T29)
	17:14		17:49 30	17:25 (T32)	18:23 40	17:32 (T32)	19:57		20:28 83	19:58 (T29)	20:58 51	19:57 (T29)
3	07:58		07:42	16:54 (T32)	07:04	16:53 (T32)	07:13		06:28	06:50 (T27)	06:00	19:06 (T29)
	17:15		17:50 32	17:26 (T32)	18:24 38	17:31 (T32)	19:58		20:29 83	19:58 (T29)	20:59 50	19:56 (T29)
4	07:58		07:41	16:53 (T32)	07:03	16:55 (T32)	07:11		06:26	06:51 (T27)	06:00	19:07 (T29)
	17:16		17:51 34	17:27 (T32)	18:25 33	17:28 (T32)	19:59		20:30 81	19:58 (T29)	20:59 49	19:56 (T29)
5	07:58		07:39	16:52 (T32)	07:01	16:56 (T32)	07:10		06:25	06:52 (T27)	06:00	19:08 (T29)
	17:16		17:52 37	17:29 (T32)	18:26 30	17:26 (T32)	20:00		20:31 80	19:59 (T29)	21:00 48	19:56 (T29)
6	07:58		07:38	16:51 (T32)	06:59	16:59 (T32)	07:08		06:24	06:53 (T27)	05:59	19:07 (T29)
	17:17		17:54 39	17:30 (T32)	18:28 25	17:24 (T32)	20:00		20:32 79	19:59 (T29)	21:01 48	19:55 (T29)
7	07:58		07:37	16:49 (T32)	06:58	17:02 (T32)	07:06		06:23	06:55 (T27)	05:59	19:08 (T29)
	17:18		17:55 42	17:31 (T32)	18:29 18	17:20 (T32)	20:01		20:33 75	19:59 (T29)	21:01 47	19:55 (T29)
8	07:57		07:36	16:49 (T32)	07:56		07:05		06:22	06:57 (T27)	05:59	19:09 (T29)
	17:19		17:56 43	17:32 (T32)	19:30		20:03		20:35 72	20:00 (T29)	21:02 47	19:56 (T29)
9	07:57		07:35	16:48 (T32)	07:55		07:03		06:20	07:01 (T27)	05:59	19:10 (T29)
	17:20		17:57 46	17:34 (T32)	19:31		20:04		20:36 64	20:00 (T29)	21:03 46	19:56 (T29)
10	07:57		07:34	16:48 (T32)	07:53		07:01		06:19	18:58 (T29)	05:58	19:10 (T29)
	17:21		17:59 48	17:36 (T32)	19:32		20:05		20:37 61	19:59 (T29)	21:03 46	19:56 (T29)
11	07:57		07:33	16:48 (T32)	07:51		07:00		06:18	18:58 (T29)	05:58	19:10 (T29)
	17:22		18:00 49	17:37 (T32)	19:33		20:06		20:38 61	19:59 (T29)	21:04 45	19:55 (T29)
12	07:57		07:31	16:47 (T32)	07:50		06:58		06:17	18:58 (T29)	05:58	19:10 (T29)
	17:24		18:01 51	17:38 (T32)	19:34		20:07		20:39 61	19:59 (T29)	21:04 45	19:55 (T29)
13	07:56		07:30	16:47 (T32)	07:48		06:57		06:16	18:58 (T29)	05:58	19:11 (T29)
	17:25		18:02 52	17:39 (T32)	19:35		20:08		20:40 61	19:59 (T29)	21:05 44	19:55 (T29)
14	07:56		07:29	16:47 (T32)	07:46		06:55		06:15	18:58 (T29)	05:58	19:11 (T29)
	17:26		18:04 53	17:40 (T32)	19:37		20:09		20:41 61	19:59 (T29)	21:05 44	19:55 (T29)
15	07:56		07:27	16:46 (T32)	07:45		06:53		06:14	18:58 (T29)	05:58	19:12 (T29)
	17:27		18:05 53	17:39 (T32)	19:38		20:10		20:42 61	19:59 (T29)	21:06 43	19:55 (T29)
16	07:55		07:26	16:46 (T32)	07:43		06:52		06:13	18:59 (T29)	05:58	19:12 (T29)
	17:28		18:06 54	17:40 (T32)	19:39		20:11		20:43 61	20:00 (T29)	21:06 43	19:55 (T29)
17	07:55		07:25	16:46 (T32)	07:41		06:50		06:12	18:59 (T29)	05:58	19:12 (T29)
	17:29		18:07 54	17:40 (T32)	19:40		20:12		20:44 61	20:00 (T29)	21:07 43	19:55 (T29)
18	07:54		07:23	16:45 (T32)	07:40		06:49	07:08 (T27)	06:11	18:59 (T29)	05:58	19:14 (T29)
	17:30		18:09 55	17:40 (T32)	19:41		20:13 5	07:13 (T27)	20:45 60	19:59 (T29)	21:07 42	19:56 (T29)
19	07:54		07:22	16:46 (T32)	07:38		06:47	07:06 (T27)	06:10	18:59 (T29)	05:58	19:14 (T29)
	17:31		18:10 54	17:40 (T32)	19:42		20:14 26	19:40 (T29)	20:46 60	19:59 (T29)	21:07 42	19:56 (T29)
20	07:53		07:21	16:45 (T32)	07:36		06:46	07:05 (T27)	06:09	18:59 (T29)	05:58	19:14 (T29)
	17:33		18:11 54	17:39 (T32)	19:43		20:15 36	19:44 (T29)	20:47 60	19:59 (T29)	21:08 42	19:56 (T29)
21	07:52		07:19	16:46 (T32)	07:35		06:44	07:04 (T27)	06:09	19:00 (T29)	05:59	19:14 (T29)
	17:34		18:12 53	17:39 (T32)	19:44		20:16 44	19:47 (T29)	20:48 58	19:58 (T29)	21:08 42	19:56 (T29)
22	07:52		07:18	16:46 (T32)	07:33		06:43	07:02 (T27)	06:08	19:01 (T29)	05:59	19:14 (T29)
	17:35		18:13 53	17:39 (T32)	19:45		20:18 51	19:49 (T29)	20:48 58	19:59 (T29)	21:08 42	19:56 (T29)
23	07:51		07:16	16:47 (T32)	07:31		06:41	07:01 (T27)	06:07	19:01 (T29)	05:59	19:15 (T29)
	17:36		18:15 52	17:39 (T32)	19:46		20:19 56	19:51 (T29)	20:49 57	19:58 (T29)	21:08 42	19:57 (T29)
24	07:50		07:15	16:46 (T32)	07:30		06:40	06:59 (T27)	06:06	19:01 (T29)	05:59	19:15 (T29)
	17:37		18:16 51	17:37 (T32)	19:47		20:20 61	19:51 (T29)	20:50 57	19:58 (T29)	21:08 42	19:57 (T29)
25	07:50		07:13	16:47 (T32)	07:28		06:38	06:58 (T27)	06:05	19:02 (T29)	06:00	19:14 (T29)
	17:39		18:17 50	17:37 (T32)	19:49		20:21 65	19:53 (T29)	20:51 56	19:58 (T29)	21:09 43	19:57 (T29)
26	07:49		07:12	16:48 (T32)	07:26		06:37	06:56 (T27)	06:05	19:02 (T29)	06:00	19:15 (T29)
	17:40		18:18 48	17:36 (T32)	19:50		20:22 69	19:53 (T29)	20:52 56	19:58 (T29)	21:09 43	19:58 (T29)
27	07:48		07:10	16:49 (T32)	07:25		06:36	06:55 (T27)	06:04	19:02 (T29)	06:00	19:15 (T29)
	17:41		18:19 47	17:36 (T32)	19:51		20:23 72	19:54 (T29)	20:53 55	19:57 (T29)	21:09 43	19:58 (T29)
28	07:47		07:09	16:49 (T32)	07:23		06:34	06:54 (T27)	06:04	19:03 (T29)	06:01	19:15 (T29)
	17:42		18:21 45	17:34 (T32)	19:52		20:24 75	19:56 (T29)	20:54 54	19:57 (T29)	21:09 43	19:58 (T29)
29	07:46	17:04 (T32)			07:21		06:33	06:52 (T27)	06:03	19:03 (T29)	06:01	19:15 (T29)
	17:44 14	17:18 (T32)			19:53		20:25 78	19:56 (T29)	20:55 54	19:57 (T29)	21:09 44	19:59 (T29)
30	07:45	17:01 (T32)			07:20		06:32	06:51 (T27)	06:02	19:04 (T29)	06:02	19:15 (T29)
	17:45 19	17:20 (T32)			19:54		20:26 81	19:57 (T29)	20:55 53	19:57 (T29)	21:09 44	19:59 (T29)
31	07:45	16:58 (T32)			07:18				06:02	19:04 (T29)		
	17:46 24	17:22 (T32)			19:55				20:56 52	19:56 (T29)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case	57		1305		227		719		1977		1345	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.71		0.71		0.71		0.60		0.58		0.57	
Total reduction	0.22		0.29		0.32		0.32		0.34		0.37	
Total, real	13		378		72		230		664		499	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 870 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8412)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December
1	06:02		19:15 (T29)	06:26		19:09 (T29)	06:57	07:28			07:02		16:17 (T32)	07:37
	21:09	45	20:00 (T29)	20:50	61	20:10 (T29)	20:07	19:15			17:28	47	17:04 (T32)	17:04
2	06:03		19:15 (T29)	06:27		19:09 (T29)	06:58	07:29			07:03		16:18 (T32)	07:38
	21:09	45	20:00 (T29)	20:49	61	20:10 (T29)	20:06	19:13			17:27	46	17:04 (T32)	17:03
3	06:03		19:15 (T29)	06:28		19:09 (T29)	06:59	07:30			07:05		16:19 (T32)	07:39
	21:08	46	20:01 (T29)	20:48	61	20:10 (T29)	20:04	19:11			17:26	43	17:02 (T32)	17:03
4	06:04		19:14 (T29)	06:29		07:09 (T27)	07:00	07:31			07:06		16:19 (T32)	07:40
	21:08	47	20:01 (T29)	20:47	67	20:09 (T29)	20:02	19:10			17:24	42	17:01 (T32)	17:03
5	06:04		19:15 (T29)	06:30		07:06 (T27)	07:01	07:32			07:07		16:21 (T32)	07:41
	21:08	46	20:01 (T29)	20:46	73	20:09 (T29)	20:01	19:08			17:23	39	17:00 (T32)	17:03
6	06:05		19:14 (T29)	06:31		07:04 (T27)	07:02	07:33		17:41 (T32)	07:08		16:22 (T32)	07:42
	21:08	47	20:01 (T29)	20:45	77	20:09 (T29)	19:57	19:06	13	17:54 (T32)	17:22	37	16:59 (T32)	17:03
7	06:05		19:14 (T29)	06:32		07:02 (T27)	07:03	07:34		17:37 (T32)	07:09		16:23 (T32)	07:43
	21:08	48	20:02 (T29)	20:43	80	20:09 (T29)	19:56	19:05	21	17:58 (T32)	17:21	34	16:57 (T32)	17:03
8	06:06		19:14 (T29)	06:33		07:01 (T27)	07:04	07:35		17:33 (T32)	07:11		16:24 (T32)	07:44
	21:07	49	20:03 (T29)	20:42	81	20:08 (T29)	19:54	19:03	27	18:00 (T32)	17:20	32	16:56 (T32)	17:03
9	06:07		19:13 (T29)	06:34		07:00 (T27)	07:05	07:36		17:30 (T32)	07:12		16:26 (T32)	07:45
	21:07	50	20:03 (T29)	20:41	82	20:08 (T29)	19:52	19:02	32	18:02 (T32)	17:19	29	16:55 (T32)	17:03
10	06:07		19:13 (T29)	06:35		06:59 (T27)	07:06	07:37		17:28 (T32)	07:13		16:28 (T32)	07:46
	21:07	51	20:04 (T29)	20:40	83	20:07 (T29)	19:51	19:00	36	18:04 (T32)	17:18	26	16:54 (T32)	17:03
11	06:08		19:14 (T29)	06:36		06:59 (T27)	07:07	07:38		17:26 (T32)	07:14		16:29 (T32)	07:47
	21:06	51	20:05 (T29)	20:38	83	20:07 (T29)	19:49	18:58	39	18:05 (T32)	17:17	24	16:53 (T32)	17:03
12	06:09		19:13 (T29)	06:37		06:59 (T27)	07:08	07:39		17:24 (T32)	07:15		16:33 (T32)	07:47
	21:06	51	20:04 (T29)	20:37	81	20:06 (T29)	19:47	18:57	42	18:06 (T32)	17:16	19	16:52 (T32)	17:03
13	06:10		19:13 (T29)	06:38		07:00 (T27)	07:09	07:40		17:23 (T32)	07:17		16:36 (T32)	07:48
	21:05	52	20:05 (T29)	20:36	80	20:05 (T29)	19:46	18:55	43	18:06 (T32)	17:15	14	16:50 (T32)	17:03
14	06:10		19:13 (T29)	06:39		07:01 (T27)	07:10	07:41		17:22 (T32)	07:18			07:49
	21:05	53	20:06 (T29)	20:34	77	20:04 (T29)	19:44	18:54	46	18:08 (T32)	17:14			17:03
15	06:11		19:13 (T29)	06:40		07:02 (T27)	07:11	07:43		17:21 (T32)	07:19			07:50
	21:04	54	20:07 (T29)	20:33	75	20:03 (T29)	19:42	18:52	47	18:08 (T32)	17:13			17:03
16	06:12		19:12 (T29)	06:41		07:03 (T27)	07:12	07:44		17:20 (T32)	07:20			07:50
	21:04	54	20:06 (T29)	20:32	72	20:02 (T29)	19:40	18:50	49	18:09 (T32)	17:12			17:04
17	06:13		19:12 (T29)	06:42		07:03 (T27)	07:13	07:45		17:19 (T32)	07:21			07:51
	21:03	55	20:07 (T29)	20:30	68	20:00 (T29)	19:39	18:49	50	18:09 (T32)	17:11			17:04
18	06:14		19:11 (T29)	06:43		07:04 (T27)	07:14	07:46		17:18 (T32)	07:23			07:52
	21:02	57	20:08 (T29)	20:29	64	19:58 (T29)	19:37	18:47	51	18:09 (T32)	17:11			17:04
19	06:14		19:11 (T29)	06:44		07:05 (T27)	07:15	07:47		17:17 (T32)	07:24			07:52
	21:02	57	20:08 (T29)	20:27	60	19:57 (T29)	19:35	18:46	52	18:09 (T32)	17:10			17:05
20	06:15		19:11 (T29)	06:45		07:06 (T27)	07:16	07:48		17:17 (T32)	07:25			07:53
	21:01	58	20:09 (T29)	20:26	55	19:55 (T29)	19:34	18:44	53	18:10 (T32)	17:09			17:05
21	06:16		19:10 (T29)	06:46		07:07 (T27)	07:17	07:49		17:17 (T32)	07:26			07:54
	21:00	58	20:08 (T29)	20:24	50	19:53 (T29)	19:32	18:43	53	18:10 (T32)	17:08			17:05
22	06:17		19:10 (T29)	06:47		07:08 (T27)	07:18	07:50		17:16 (T32)	07:27			07:54
	21:00	59	20:09 (T29)	20:23	44	19:51 (T29)	19:30	18:41	54	18:10 (T32)	17:08			17:06
23	06:18		19:10 (T29)	06:48		07:09 (T27)	07:19	07:52		17:15 (T32)	07:28			07:55
	20:59	59	20:09 (T29)	20:21	35	19:48 (T29)	19:28	18:40	55	18:10 (T32)	17:07			17:06
24	06:19		19:10 (T29)	06:49		07:10 (T27)	07:20	07:53		17:15 (T32)	07:29			07:55
	20:58	59	20:09 (T29)	20:20	24	19:43 (T29)	19:27	18:39	54	18:09 (T32)	17:07			17:07
25	06:20		19:10 (T29)	06:50		07:11 (T27)	07:21	07:54		17:16 (T32)	07:31			07:55
	20:57	60	20:10 (T29)	20:18	4	07:15 (T27)	19:25	18:37	54	18:10 (T32)	17:06			17:08
26	06:21		19:10 (T29)	06:51			07:22	07:55		17:16 (T32)	07:32			07:56
	20:56	60	20:10 (T29)	20:17			19:23	18:36	53	18:09 (T32)	17:06			17:08
27	06:21		19:10 (T29)	06:52			07:23	07:56		17:15 (T32)	07:33			07:56
	20:55	60	20:10 (T29)	20:15			19:22	18:34	54	18:09 (T32)	17:05			17:09
28	06:22		19:09 (T29)	06:53			07:24	07:57		17:15 (T32)	07:34			07:56
	20:54	60	20:09 (T29)	20:14			19:20	18:33	53	18:08 (T32)	17:05			17:10
29	06:23		19:09 (T29)	06:54			07:26	07:59		17:16 (T32)	07:35			07:57
	20:53	61	20:10 (T29)	20:12			19:18	18:32	53	18:09 (T32)	17:04			17:10
30	06:24		19:09 (T29)	06:55			07:27	08:00		17:16 (T32)	07:36			07:57
	20:52	61	20:10 (T29)	20:11			19:16	18:31	51	18:07 (T32)	17:04			17:11
31	06:25		19:09 (T29)	06:56				08:01		17:17 (T32)				07:57
	20:51	61	20:10 (T29)	20:09				18:29	49	18:06 (T32)				17:12
Potential sun hours	460			429			375	345			297			287
Total, worst case		1674			1598				1184			432		
Sun reduction		0.66			0.61				0.48			0.30		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.57			0.60				0.71			0.71		
Total reduction		0.38			0.37				0.35			0.22		
Total, real		641			592				412			94		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 879 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8421)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June	
1	07:57		08:20 (T41)	07:44		08:12 (T41)	07:07			07:16		07:36 (T40)	06:30		07:11 (T40)	06:01	
	17:13	37	08:57 (T42)	17:48	58	09:10 (T41)	18:22			19:56	30	08:06 (T40)	20:27	63	08:14 (T40)	20:57	
2	07:57		08:20 (T41)	07:43		08:12 (T41)	07:06			07:15		07:33 (T40)	06:29		07:12 (T40)	06:01	
	17:14	38	08:58 (T42)	17:49	59	09:11 (T41)	18:23			19:57	35	08:08 (T40)	20:28	62	08:14 (T40)	20:58	
3	07:57		08:20 (T41)	07:42		08:12 (T41)	07:04			07:13		07:32 (T40)	06:28		07:12 (T40)	06:01	
	17:15	38	08:58 (T42)	17:50	59	09:11 (T41)	18:24			19:58	39	08:11 (T40)	20:29	60	08:12 (T40)	20:58	
4	07:58		08:20 (T41)	07:40		08:13 (T41)	07:03			07:11		07:30 (T40)	06:26		07:12 (T40)	06:00	
	17:16	38	08:58 (T42)	17:51	58	09:11 (T41)	18:25			19:59	42	08:12 (T40)	20:30	60	08:12 (T40)	20:59	
5	07:58		08:20 (T41)	07:39		08:13 (T41)	07:01			07:10		07:29 (T40)	06:25		07:13 (T40)	06:00	
	17:17	38	08:58 (T42)	17:53	58	09:11 (T41)	18:26			20:00	45	08:14 (T40)	20:31	58	08:11 (T40)	21:00	
6	07:57		08:20 (T41)	07:38		08:12 (T41)	06:59			07:08		07:27 (T40)	06:24		07:14 (T40)	06:00	
	17:18	38	08:58 (T42)	17:54	58	09:10 (T41)	18:28			20:00	48	08:15 (T40)	20:32	56	08:10 (T40)	21:01	
7	07:57		08:19 (T41)	07:37		08:13 (T41)	06:58			07:06		07:25 (T40)	06:23		07:15 (T40)	05:59	
	17:18	39	08:58 (T42)	17:55	56	09:09 (T41)	18:29			20:01	51	08:16 (T40)	20:33	55	08:10 (T40)	21:01	
8	07:57		08:19 (T41)	07:36		08:14 (T41)	07:56			07:05		07:24 (T40)	06:22		07:16 (T40)	05:59	
	17:19	39	08:58 (T42)	17:56	55	09:09 (T41)	19:30			20:02	53	08:17 (T40)	20:34	53	08:09 (T40)	21:02	
9	07:57		08:19 (T41)	07:35		08:14 (T41)	07:55			07:03		07:22 (T40)	06:20		07:16 (T40)	05:59	
	17:20	39	08:58 (T42)	17:58	55	09:09 (T41)	19:31			20:04	55	08:17 (T40)	20:35	52	08:08 (T40)	21:02	
10	07:57		08:19 (T41)	07:34		08:15 (T41)	07:53			07:01		07:20 (T40)	06:19		07:17 (T40)	05:59	
	17:22	39	08:58 (T42)	17:59	54	09:09 (T41)	19:32			20:05	58	08:18 (T40)	20:37	50	08:07 (T40)	21:03	
11	07:57		08:18 (T41)	07:32		08:15 (T41)	07:51			07:00		07:19 (T40)	06:18		07:17 (T40)	05:58	
	17:23	39	08:57 (T42)	18:00	52	09:07 (T41)	19:33			20:06	60	08:19 (T40)	20:38	48	08:05 (T40)	21:04	
12	07:56		08:18 (T41)	07:31		08:16 (T41)	07:50			06:58		07:17 (T40)	06:17		07:18 (T40)	05:58	
	17:24	40	08:58 (T41)	18:01	51	09:07 (T41)	19:34			20:07	62	08:19 (T40)	20:39	46	08:04 (T40)	21:04	
13	07:56		08:18 (T41)	07:30		08:17 (T41)	07:48			06:57		07:16 (T40)	06:16		07:19 (T40)	05:58	
	17:25	41	08:59 (T41)	18:03	49	09:06 (T41)	19:35			20:08	64	08:20 (T40)	20:40	44	08:03 (T40)	21:05	
14	07:56		08:17 (T41)	07:29		08:19 (T41)	07:46			06:55		07:15 (T40)	06:15		07:21 (T40)	05:58	
	17:26	43	09:00 (T41)	18:04	46	09:05 (T41)	19:37			20:09	64	08:19 (T40)	20:41	40	08:01 (T40)	21:05	
15	07:55		08:17 (T41)	07:27		08:19 (T41)	07:45			06:53		07:15 (T40)	06:14		07:23 (T40)	05:58	
	17:27	44	09:01 (T41)	18:05	44	09:03 (T41)	19:38			20:10	65	08:20 (T40)	20:42	38	08:01 (T40)	21:06	
16	07:55		08:16 (T41)	07:26		08:21 (T41)	07:43			06:52		07:13 (T40)	06:13		07:24 (T40)	05:58	
	17:28	46	09:02 (T41)	18:06	41	09:02 (T41)	19:39			20:11	67	08:20 (T40)	20:43	35	07:59 (T40)	21:06	
17	07:55		08:16 (T41)	07:25		08:21 (T41)	07:41			06:50		07:13 (T40)	06:12		07:26 (T40)	05:58	
	17:29	47	09:03 (T41)	18:07	39	09:00 (T41)	19:40			20:12	67	08:20 (T40)	20:44	32	07:58 (T40)	21:06	
18	07:54		08:15 (T41)	07:23		08:23 (T41)	07:40			06:49		07:12 (T40)	06:11		07:27 (T40)	05:58	
	17:30	48	09:03 (T41)	18:09	36	08:59 (T41)	19:41			20:13	68	08:20 (T40)	20:45	29	07:56 (T40)	21:07	
19	07:53		08:15 (T41)	07:22		08:26 (T41)	07:38			06:47		07:12 (T40)	06:10		07:29 (T40)	05:58	
	17:32	50	09:05 (T41)	18:10	31	08:57 (T41)	19:42			20:14	68	08:20 (T40)	20:46	24	07:53 (T40)	21:07	
20	07:53		08:14 (T41)	07:21		08:27 (T41)	07:36			06:46		07:11 (T40)	06:09		07:31 (T40)	05:59	
	17:33	51	09:05 (T41)	18:11	27	08:54 (T41)	19:43			20:15	68	08:19 (T40)	20:46	20	07:51 (T40)	21:07	
21	07:52		08:13 (T41)	07:19		08:31 (T41)	07:35			06:44		07:12 (T40)	06:09		07:35 (T40)	05:59	
	17:34	52	09:05 (T41)	18:12	20	08:51 (T41)	19:44			20:16	67	08:19 (T40)	20:47	13	07:48 (T40)	21:08	
22	07:52		08:13 (T41)	07:18		08:36 (T41)	07:33			06:43		07:11 (T40)	06:08			05:59	
	17:35	54	09:07 (T41)	18:13	9	08:45 (T41)	19:45			20:17	68	08:19 (T40)	20:48			21:08	
23	07:51		08:12 (T41)	07:16			07:31			06:41		07:11 (T40)	06:07			05:59	
	17:36	55	09:07 (T41)	18:15			19:46			20:18	68	08:19 (T40)	20:49			21:08	
24	07:50		08:11 (T41)	07:15			07:30			06:40		07:10 (T40)	06:06			05:59	
	17:38	56	09:07 (T41)	18:16			19:47			20:20	68	08:18 (T40)	20:50			21:08	
25	07:50		08:11 (T41)	07:13			07:28			06:39		07:11 (T40)	06:06			06:00	
	17:39	57	09:08 (T41)	18:17			19:49			20:21	67	08:18 (T40)	20:51			21:08	
26	07:49		08:11 (T41)	07:12			07:26			06:37		07:11 (T40)	06:05			06:00	
	17:40	58	09:09 (T41)	18:18			19:50			20:22	67	08:18 (T40)	20:52			21:08	
27	07:48		08:11 (T41)	07:10			07:25			06:36		07:10 (T40)	06:04			06:00	
	17:41	58	09:09 (T41)	18:19			19:51			20:23	66	08:16 (T40)	20:53			21:09	
28	07:47		08:11 (T41)	07:09			07:23			06:34		07:11 (T40)	06:04			06:01	
	17:43	59	09:10 (T41)	18:21			19:52			20:24	65	08:16 (T40)	20:54			21:09	
29	07:46		08:11 (T41)				07:21			06:33		07:11 (T40)	06:03			06:01	
	17:44	59	09:10 (T41)				19:53			20:25	65	08:16 (T40)	20:55			21:09	
30	07:45		08:11 (T41)				07:20		07:46 (T40)	06:32		07:11 (T40)	06:02			06:02	
	17:45	59	09:10 (T41)				19:54	10	07:56 (T40)	20:26	64	08:15 (T40)	20:55			21:09	
31	07:44		08:11 (T41)				07:18		07:40 (T40)				06:02				
	17:46	59	09:10 (T41)				19:55	23	08:03 (T40)				20:56				
Potential sun hours	297			297			370			399			449			453	
Total, worst case		1458			1015			33			1774			938			
Sun reduction		0.31			0.40			0.44			0.52			0.57			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.52			0.52			0.65			0.65			0.65			
Total reduction		0.16			0.20			0.28			0.33			0.36			
Total, real		226			203			9			583			338			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 879 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8421)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		07:29 (T40)	06:57		07:18 (T40)	07:28			07:02		07:44 (T41)	07:37		08:00 (T41)
	21:09			20:50	46	08:15 (T40)	20:07	60	08:18 (T40)	19:15			17:28	53	08:37 (T41)	17:04	39	08:39 (T42)
2	06:03			06:27		07:28 (T40)	06:58		07:19 (T40)	07:29			07:03		07:44 (T41)	07:38		08:02 (T41)
	21:08			20:49	48	08:16 (T40)	20:06	58	08:17 (T40)	19:13			17:27	55	08:39 (T41)	17:03	39	08:41 (T42)
3	06:03			06:28		07:27 (T40)	06:59		07:20 (T40)	07:30			07:04		07:43 (T41)	07:39		08:03 (T41)
	21:08			20:48	50	08:17 (T40)	20:04	55	08:15 (T40)	19:11			17:26	56	08:39 (T41)	17:03	39	08:42 (T42)
4	06:04			06:29		07:26 (T40)	07:00		07:21 (T40)	07:31			07:06		07:43 (T41)	07:40		08:04 (T41)
	21:08			20:47	52	08:18 (T40)	20:02	53	08:14 (T40)	19:10			17:24	56	08:39 (T41)	17:03	39	08:43 (T42)
5	06:04			06:30		07:25 (T40)	07:01		07:22 (T40)	07:32			07:07		07:42 (T41)	07:41		08:05 (T41)
	21:08			20:46	54	08:19 (T40)	20:01	51	08:13 (T40)	19:08			17:23	57	08:39 (T41)	17:03	39	08:44 (T42)
6	06:05			06:31		07:24 (T40)	07:02		07:23 (T40)	07:33			07:08		07:43 (T41)	07:42		08:06 (T41)
	21:08			20:45	56	08:20 (T40)	19:57	48	08:11 (T40)	19:06			17:22	57	08:40 (T41)	17:03	38	08:44 (T42)
7	06:06			06:32		07:23 (T40)	07:03		07:24 (T40)	07:34			07:09		07:42 (T41)	07:43		08:07 (T41)
	21:07			20:43	57	08:20 (T40)	19:56	45	08:09 (T40)	19:05			17:21	58	08:40 (T41)	17:03	38	08:45 (T42)
8	06:06			06:33		07:23 (T40)	07:04		07:25 (T40)	07:35			07:10		07:42 (T41)	07:44		08:07 (T41)
	21:07			20:42	58	08:21 (T40)	19:54	42	08:07 (T40)	19:03			17:20	58	08:40 (T41)	17:03	38	08:45 (T42)
9	06:07			06:34		07:22 (T40)	07:05		07:26 (T40)	07:36			07:12		07:43 (T41)	07:45		08:08 (T41)
	21:07			20:41	60	08:22 (T40)	19:52	39	08:05 (T40)	19:02			17:19	58	08:41 (T41)	17:03	38	08:46 (T42)
10	06:08			06:35		07:21 (T40)	07:06		07:27 (T40)	07:37			07:13		07:43 (T41)	07:46		08:09 (T41)
	21:06			20:40	61	08:22 (T40)	19:51	36	08:03 (T40)	19:00			17:18	58	08:41 (T41)	17:03	38	08:47 (T42)
11	06:08			06:36		07:21 (T40)	07:07		07:29 (T40)	07:38			07:14		07:42 (T41)	07:47		08:10 (T41)
	21:06			20:38	62	08:23 (T40)	19:49	31	08:00 (T40)	18:58			17:17	59	08:41 (T41)	17:03	37	08:47 (T42)
12	06:09			06:37		07:20 (T40)	07:08		07:31 (T40)	07:39			07:15		07:42 (T41)	07:47		08:11 (T41)
	21:06			20:37	63	08:23 (T40)	19:47	24	07:55 (T40)	18:57			17:16	59	08:41 (T41)	17:03	37	08:48 (T42)
13	06:10			06:38		07:20 (T40)	07:09		07:36 (T40)	07:40			07:16		07:43 (T41)	07:48		08:12 (T41)
	21:05			20:36	64	08:24 (T40)	19:46	13	07:49 (T40)	18:55			17:15	59	08:42 (T41)	17:03	37	08:49 (T42)
14	06:10			06:39		07:19 (T40)	07:10			07:41			07:18		07:43 (T41)	07:49		08:12 (T41)
	21:05			20:34	65	08:24 (T40)	19:44			18:54			17:14	59	08:42 (T41)	17:03	37	08:49 (T42)
15	06:11			06:40		07:19 (T40)	07:11			07:43			07:19		07:43 (T41)	07:50		08:13 (T41)
	21:04			20:33	65	08:24 (T40)	19:42			18:52			17:13	58	08:41 (T41)	17:03	37	08:50 (T42)
16	06:12			06:41		07:18 (T40)	07:12			07:44			07:20		07:44 (T41)	07:50		08:14 (T41)
	21:04			20:32	66	08:24 (T40)	19:40			18:50			17:12	58	08:42 (T41)	17:04	36	08:50 (T42)
17	06:13			06:42		07:18 (T40)	07:13			07:45			07:21		07:45 (T41)	07:51		08:14 (T41)
	21:03			20:30	66	08:24 (T40)	19:39			18:49			17:11	57	08:42 (T41)	17:04	36	08:50 (T42)
18	06:14			06:43		07:16 (T40)	07:14			07:46			07:22		07:45 (T41)	07:52		08:15 (T41)
	21:02			20:29	68	08:24 (T40)	19:37			18:47			17:11	56	08:41 (T41)	17:04	36	08:51 (T42)
19	06:14			06:44		07:16 (T40)	07:15			07:47			07:24		07:46 (T41)	07:52		08:16 (T41)
	21:02			20:27	68	08:24 (T40)	19:35			18:46			17:10	55	08:41 (T41)	17:05	36	08:52 (T42)
20	06:15			06:45		07:16 (T40)	07:16			07:48		09:05 (T41)	07:25		07:48 (T41)	07:53		08:16 (T41)
	21:01			20:26	68	08:24 (T40)	19:34			18:44	14	09:19 (T41)	17:09	54	08:42 (T41)	17:05	36	08:52 (T42)
21	06:16			06:46		07:16 (T40)	07:17			07:49		09:00 (T41)	07:26		07:49 (T41)	07:53		08:17 (T41)
	21:00			20:24	67	08:23 (T40)	19:32			18:43	23	09:23 (T41)	17:09	52	08:41 (T41)	17:06	36	08:53 (T42)
22	06:17		07:47 (T40)	06:47		07:15 (T40)	07:18			07:50		08:57 (T41)	07:27		07:50 (T41)	07:54		08:17 (T41)
	20:59	8	07:55 (T40)	20:23	68	08:23 (T40)	19:30			18:42	28	09:25 (T41)	17:08	51	08:41 (T41)	17:06	36	08:53 (T42)
23	06:18		07:43 (T40)	06:48		07:15 (T40)	07:19			07:52		08:55 (T41)	07:28		07:51 (T41)	07:54		08:18 (T41)
	20:59	17	08:00 (T40)	20:21	68	08:23 (T40)	19:28			18:40	32	09:27 (T41)	17:07	50	08:41 (T41)	17:07	36	08:54 (T42)
24	06:19		07:41 (T40)	06:49		07:15 (T40)	07:20			07:53		08:53 (T41)	07:29		07:52 (T41)	07:55		08:18 (T41)
	20:58	22	08:03 (T40)	20:20	68	08:23 (T40)	19:27			18:39	36	09:29 (T41)	17:07	48	08:40 (T41)	17:07	36	08:54 (T42)
25	06:20		07:39 (T40)	06:50		07:15 (T40)	07:21			07:54		08:52 (T41)	07:31		07:54 (T41)	07:55		08:18 (T41)
	20:57	26	08:05 (T40)	20:18	67	08:22 (T40)	19:25			18:37	39	09:31 (T41)	17:06	47	08:41 (T41)	17:08	36	08:54 (T42)
26	06:21		07:37 (T40)	06:51		07:15 (T40)	07:22			07:55		08:50 (T41)	07:32		07:55 (T41)	07:56		08:19 (T41)
	20:56	30	08:07 (T40)	20:17	67	08:22 (T40)	19:23			18:36	42	09:32 (T41)	17:06	46	08:41 (T41)	17:08	36	08:55 (T42)
27	06:22		07:35 (T40)	06:52		07:15 (T40)	07:23			07:56		08:48 (T41)	07:33		07:56 (T41)	07:56		08:19 (T41)
	20:55	34	08:09 (T40)	20:15	66	08:21 (T40)	19:22			18:35	45	09:33 (T41)	17:05	44	08:40 (T41)	17:09	36	08:55 (T42)
28	06:23		07:34 (T40)	06:53		07:15 (T40)	07:24			07:57		08:47 (T41)	07:34		07:57 (T41)	07:56		08:19 (T41)
	20:54	37	08:11 (T40)	20:14	66	08:21 (T40)	19:20			18:33	47	09:34 (T41)	17:05	43	08:40 (T41)	17:10	37	08:56 (T42)
29	06:23		07:32 (T40)	06:54		07:16 (T40)	07:25			07:59		08:47 (T41)	07:35		07:58 (T41)	07:57		08:19 (T41)
	20:53	39	08:11 (T40)	20:12	64	08:20 (T40)	19:18			18:32	49	09:36 (T41)	17:04	41	08:39 (T41)	17:10	37	08:56 (T42)
30	06:24		07:31 (T40)	06:55		07:16 (T40)	07:27			08:00		08:46 (T41)	07:36		07:59 (T41)	07:57		08:20 (T41)
	20:52	41	08:12 (T40)	20:10	63	08:19 (T40)	19:16			18:31	51	09:37 (T41)	17:04	40	08:39 (T41)	17:11	37	08:57 (T42)
31	06:25		07:30 (T40)	06:56		07:17 (T40)				08:01		08:45 (T41)				07:57		08:20 (T41)
	20:51	44	08:14 (T40)	20:09	62	08:19 (T40)				18:29	52	09:37 (T41)				17:12	37	08:57 (T42)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		298			1923			555			458			1602			1150	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.65			0.65			0.52			0.52			0.52	
Total reduction		0.42			0.39			0.37			0.24			0.15			0.11	
Total, real		124			742			207			110			240			128	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 880 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8422)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June	
1	07:57	07:43		07:07		17:26 (T77)	07:16			06:30		19:14 (T42)	06:01		20:08 (T41)
	17:13	17:47		18:22	34	18:00 (T77)	19:56			20:27	44	19:58 (T42)	20:57	24	20:32 (T41)
2	07:57	07:42		07:06		17:24 (T77)	07:14			06:29		19:15 (T42)	06:01		20:09 (T41)
	17:14	17:49		18:23	37	18:01 (T77)	19:57			20:28	42	19:57 (T42)	20:58	24	20:33 (T41)
3	07:57	07:41		07:04		17:23 (T77)	07:13			06:28		19:15 (T42)	06:01		20:08 (T41)
	17:15	17:50		18:24	39	18:02 (T77)	19:58			20:29	41	19:56 (T42)	20:58	25	20:33 (T41)
4	07:57	07:40		07:02		17:22 (T77)	07:11			06:26		19:15 (T42)	06:00		20:09 (T41)
	17:16	17:51		18:25	42	18:04 (T77)	19:59			20:30	41	19:56 (T42)	20:59	25	20:34 (T41)
5	07:57	07:39		07:01		17:21 (T77)	07:09			06:25		19:16 (T42)	06:00		20:09 (T41)
	17:17	17:52		18:26	43	18:04 (T77)	20:00			20:31	39	19:55 (T42)	21:00	26	20:35 (T41)
6	07:57	07:38		06:59		17:21 (T77)	07:08			06:24		19:17 (T42)	05:59		20:09 (T41)
	17:17	17:54		18:27	45	18:06 (T77)	20:00			20:32	38	19:55 (T42)	21:00	26	20:35 (T41)
7	07:57	07:37		06:58		07:17 (T76)	07:06			06:23		19:18 (T42)	05:59		20:09 (T41)
	17:18	17:55		18:29	54	18:07 (T77)	20:01			20:33	36	19:54 (T42)	21:01	27	20:36 (T41)
8	07:57	07:36		07:56		08:15 (T76)	07:05			06:22		19:19 (T42)	05:59		20:10 (T41)
	17:19	17:56		19:30	61	19:08 (T77)	20:02			20:34	34	19:53 (T42)	21:02	27	20:37 (T41)
9	07:57	07:35		07:54		08:14 (T76)	07:03			06:20		19:20 (T42)	05:59		20:10 (T41)
	17:20	17:57		19:31	65	19:08 (T77)	20:03			20:35	32	19:52 (T42)	21:02	28	20:38 (T41)
10	07:57	07:34		07:53		08:12 (T76)	07:01			06:19		19:20 (T42)	05:59		20:10 (T41)
	17:21	17:59		19:32	68	19:08 (T77)	20:05			20:36	30	19:50 (T42)	21:03	28	20:38 (T41)
11	07:57	07:32		07:51		08:10 (T76)	07:00	19:33 (T42)		06:18		19:21 (T42)	05:58		20:11 (T41)
	17:23	18:00		19:33	70	19:07 (T77)	20:06	12	19:45 (T42)	20:37	28	19:49 (T42)	21:03	28	20:39 (T41)
12	07:56	07:31		07:50		08:09 (T76)	06:58		19:29 (T42)	06:17		19:23 (T42)	05:58		20:10 (T41)
	17:24	18:01		19:34	73	19:08 (T77)	20:07	16	19:45 (T42)	20:38	24	19:47 (T42)	21:04	29	20:39 (T41)
13	07:56	07:30		07:48		08:07 (T76)	06:57		19:27 (T42)	06:16		19:25 (T42)	05:58		20:10 (T41)
	17:25	18:02		19:35	75	19:07 (T77)	20:08	20	19:47 (T42)	20:39	20	19:45 (T42)	21:05	29	20:39 (T41)
14	07:56	07:29		07:46		08:05 (T76)	06:55		19:24 (T42)	06:15		19:27 (T42)	05:58		20:11 (T41)
	17:26	18:04		19:36	76	19:06 (T77)	20:09	24	19:48 (T42)	20:40	16	19:43 (T42)	21:05	28	20:39 (T41)
15	07:55	07:27		07:45		08:04 (T76)	06:53		19:22 (T42)	06:14		19:30 (T42)	05:58		20:11 (T41)
	17:27	18:05		19:38	77	19:06 (T77)	20:10	26	19:48 (T42)	20:41	11	20:18 (T41)	21:05	29	20:40 (T41)
16	07:55	07:26		07:43		08:02 (T76)	06:52		19:21 (T42)	06:13		20:15 (T41)	05:58		20:11 (T41)
	17:28	18:06		19:39	78	19:05 (T77)	20:11	29	19:50 (T42)	20:42	5	20:20 (T41)	21:06	29	20:40 (T41)
17	07:54	07:25		07:41		08:00 (T76)	06:50		19:19 (T42)	06:12		20:14 (T41)	05:58		20:12 (T41)
	17:29	18:07		19:40	78	19:04 (T77)	20:12	31	19:50 (T42)	20:43	6	20:20 (T41)	21:06	29	20:41 (T41)
18	07:54	07:23		07:40		07:59 (T76)	06:49		19:19 (T42)	06:11		20:12 (T41)	05:58		20:13 (T41)
	17:30	18:09		19:41	78	19:03 (T77)	20:13	33	19:52 (T42)	20:44	9	20:21 (T41)	21:07	28	20:41 (T41)
19	07:53	07:22		07:38		07:57 (T76)	06:47		19:17 (T42)	06:10		20:11 (T41)	05:58		20:13 (T41)
	17:32	18:10		19:42	78	19:02 (T77)	20:14	35	19:52 (T42)	20:45	11	20:22 (T41)	21:07	28	20:41 (T41)
20	07:53	07:20		07:36		07:57 (T76)	06:46		19:17 (T42)	06:09		20:10 (T41)	05:59		20:13 (T41)
	17:33	18:11		19:43	74	19:00 (T77)	20:15	37	19:54 (T42)	20:46	13	20:23 (T41)	21:07	28	20:41 (T41)
21	07:52	07:19		07:35		07:57 (T76)	06:44		19:17 (T42)	06:09		20:09 (T41)	05:59		20:13 (T41)
	17:34	18:12		19:44	71	18:59 (T77)	20:16	38	19:55 (T42)	20:47	14	20:23 (T41)	21:08	28	20:41 (T41)
22	07:52	07:18		07:33		07:57 (T76)	06:43		19:15 (T42)	06:08		20:09 (T41)	05:59		20:13 (T41)
	17:35	18:13		19:45	68	18:57 (T77)	20:17	41	19:56 (T42)	20:48	16	20:25 (T41)	21:08	28	20:41 (T41)
23	07:51	07:16	17:42 (T77)	07:31		07:57 (T76)	06:41		19:15 (T42)	06:07		20:09 (T41)	05:59		20:14 (T41)
	17:36	18:15	9 17:51 (T77)	19:46	63	18:55 (T77)	20:18	42	19:57 (T42)	20:49	16	20:25 (T41)	21:08	28	20:42 (T41)
24	07:50	07:15	17:36 (T77)	07:30		07:58 (T76)	06:40		19:14 (T42)	06:06		20:08 (T41)	05:59		20:14 (T41)
	17:38	18:16	17 17:53 (T77)	19:47	57	18:53 (T77)	20:19	44	19:58 (T42)	20:50	18	20:26 (T41)	21:08	28	20:42 (T41)
25	07:49	07:13	17:33 (T77)	07:28		07:59 (T76)	06:38		19:15 (T42)	06:06		20:08 (T41)	06:00		20:13 (T41)
	17:39	18:17	22 17:55 (T77)	19:48	48	18:50 (T77)	20:21	44	19:59 (T42)	20:51	19	20:27 (T41)	21:08	29	20:42 (T41)
26	07:49	07:12	17:31 (T77)	07:26		08:00 (T76)	06:37		19:14 (T42)	06:05		20:08 (T41)	06:00		20:14 (T41)
	17:40	18:18	25 17:56 (T77)	19:50	37	18:45 (T77)	20:22	45	19:59 (T42)	20:52	20	20:28 (T41)	21:08	29	20:43 (T41)
27	07:48	07:10	17:29 (T77)	07:24		08:01 (T76)	06:36		19:14 (T42)	06:04		20:08 (T41)	06:00		20:14 (T41)
	17:41	18:19	29 17:58 (T77)	19:51	22	08:23 (T76)	20:23	45	19:59 (T42)	20:53	21	20:29 (T41)	21:08	29	20:43 (T41)
28	07:47	07:09	17:27 (T77)	07:23		08:03 (T76)	06:34		19:14 (T42)	06:04		20:08 (T41)	06:01		20:14 (T41)
	17:42	18:21	32 17:59 (T77)	19:52	18	08:21 (T76)	20:24	45	19:59 (T42)	20:54	21	20:29 (T41)	21:09	29	20:43 (T41)
29	07:46			07:21		08:06 (T76)	06:33		19:14 (T42)	06:03		20:07 (T41)	06:01		20:15 (T41)
	17:44			19:53	11	08:17 (T76)	20:25	44	19:58 (T42)	20:54	23	20:30 (T41)	21:09	28	20:43 (T41)
30	07:45			07:19			06:32		19:14 (T42)	06:02		20:08 (T41)	06:02		20:14 (T41)
	17:45			19:54			20:26	44	19:58 (T42)	20:55	23	20:31 (T41)	21:08	29	20:43 (T41)
31	07:44			07:18						06:02		20:07 (T41)			
	17:46			19:55						20:56	24	20:31 (T41)			
Potential sun hours	297	297		370			399			448			453		
Total, worst case			134		1640			695			735			830	
Sun reduction			0.40		0.44			0.52			0.57			0.64	
Oper. time red.			1.00		1.00			1.00			1.00			1.00	
Wind dir. red.			0.67		0.64			0.57			0.56			0.54	
Total reduction			0.27		0.29			0.30			0.32			0.35	
Total, real			36		468			209			238			291	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 880 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8422)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November	December
1	06:02		20:15 (T41)	06:26		19:33 (T42)	06:57		19:32 (T42)	07:27		07:47 (T76)	07:02	07:37
	21:08	28	20:43 (T41)	20:50	25	19:58 (T42)	20:07	12	19:44 (T42)	19:15	74	18:46 (T77)	17:28	17:04
2	06:03		20:15 (T41)	06:27		19:31 (T42)	06:58			07:29		07:48 (T76)	07:03	07:38
	21:08	28	20:43 (T41)	20:49	29	20:00 (T42)	20:06			19:13	71	18:46 (T77)	17:27	17:03
3	06:03		20:15 (T41)	06:28		19:30 (T42)	06:59			07:30		07:49 (T76)	07:04	07:39
	21:08	28	20:43 (T41)	20:48	31	20:01 (T42)	20:04			19:11	69	18:45 (T77)	17:26	17:03
4	06:04		20:15 (T41)	06:29		19:29 (T42)	07:00			07:31		07:50 (T76)	07:06	07:40
	21:08	27	20:42 (T41)	20:47	33	20:02 (T42)	20:02			19:10	66	18:45 (T77)	17:24	17:03
5	06:04		20:15 (T41)	06:30		19:28 (T42)	07:01			07:32		07:52 (T76)	07:07	07:41
	21:08	28	20:43 (T41)	20:46	35	20:03 (T42)	20:01			19:08	62	18:45 (T77)	17:23	17:03
6	06:05		20:15 (T41)	06:31		19:27 (T42)	07:02			07:33		07:53 (T76)	07:08	07:42
	21:08	27	20:42 (T41)	20:44	37	20:04 (T42)	19:57			19:06	58	18:44 (T77)	17:22	17:03
7	06:05		20:15 (T41)	06:32		19:26 (T42)	07:03			07:34		07:54 (T76)	07:09	07:43
	21:07	27	20:42 (T41)	20:43	38	20:04 (T42)	19:56			19:05	50	18:43 (T77)	17:21	17:03
8	06:06		20:16 (T41)	06:33		19:26 (T42)	07:04			07:35		17:57 (T77)	07:10	07:44
	21:07	26	20:42 (T41)	20:42	39	20:05 (T42)	19:54			19:03	44	18:41 (T77)	17:20	17:03
9	06:07		20:15 (T41)	06:34		19:25 (T42)	07:05			07:36		17:57 (T77)	07:12	07:45
	21:07	26	20:41 (T41)	20:41	41	20:06 (T42)	19:52			19:01	42	18:39 (T77)	17:19	17:03
10	06:07		20:16 (T41)	06:35		19:24 (T42)	07:06			07:37		17:57 (T77)	07:13	07:46
	21:06	25	20:41 (T41)	20:39	42	20:06 (T42)	19:51			19:00	40	18:37 (T77)	17:18	17:03
11	06:08		20:16 (T41)	06:36		19:24 (T42)	07:07			07:38		17:58 (T77)	07:14	07:46
	21:06	25	20:41 (T41)	20:38	42	20:06 (T42)	19:49			18:58	38	18:36 (T77)	17:17	17:03
12	06:09		20:16 (T41)	06:37		19:23 (T42)	07:08			07:39		17:58 (T77)	07:15	07:47
	21:06	24	20:40 (T41)	20:37	44	20:07 (T42)	19:47			18:57	36	18:34 (T77)	17:16	17:03
13	06:10		20:16 (T41)	06:38		19:23 (T42)	07:09			07:40		17:59 (T77)	07:16	07:48
	21:05	24	20:40 (T41)	20:36	44	20:07 (T42)	19:45			18:55	33	18:32 (T77)	17:15	17:03
14	06:10		20:17 (T41)	06:39		19:22 (T42)	07:10		07:58 (T76)	07:41		18:00 (T77)	07:18	07:49
	21:05	22	20:39 (T41)	20:34	45	20:07 (T42)	19:44	8	08:06 (T76)	18:54	30	18:30 (T77)	17:14	17:03
15	06:11		20:17 (T41)	06:40		19:22 (T42)	07:11		07:53 (T76)	07:42		18:02 (T77)	07:19	07:50
	21:04	22	20:39 (T41)	20:33	45	20:07 (T42)	19:42	17	08:10 (T76)	18:52	28	18:30 (T77)	17:13	17:03
16	06:12		20:17 (T41)	06:41		19:21 (T42)	07:12		07:50 (T76)	07:44		18:04 (T77)	07:20	07:50
	21:03	21	20:38 (T41)	20:31	45	20:06 (T42)	19:40	22	08:12 (T76)	18:50	24	18:28 (T77)	17:12	17:04
17	06:13		20:17 (T41)	06:42		19:20 (T42)	07:13		07:48 (T76)	07:45		18:06 (T77)	07:21	07:51
	21:03	20	20:37 (T41)	20:30	46	20:06 (T42)	19:39	33	18:31 (T77)	18:49	20	18:26 (T77)	17:11	17:04
18	06:14		20:18 (T41)	06:43		19:20 (T42)	07:14		07:47 (T76)	07:46		18:09 (T77)	07:22	07:52
	21:02	19	20:37 (T41)	20:29	44	20:04 (T42)	19:37	45	18:36 (T77)	18:47	15	18:24 (T77)	17:11	17:04
19	06:14		20:18 (T41)	06:44		19:20 (T42)	07:15		07:45 (T76)	07:47			07:23	07:52
	21:01	19	20:37 (T41)	20:27	43	20:03 (T42)	19:35	55	18:39 (T77)	18:46			17:10	17:05
20	06:15		20:19 (T41)	06:45		19:20 (T42)	07:16		07:44 (T76)	07:48			07:25	07:53
	21:01	17	20:36 (T41)	20:26	42	20:02 (T42)	19:33	61	18:41 (T77)	18:44			17:09	17:05
21	06:16		20:19 (T41)	06:46		19:20 (T42)	07:17		07:43 (T76)	07:49			07:26	07:53
	21:00	16	20:35 (T41)	20:24	40	20:00 (T42)	19:32	66	18:42 (T77)	18:43			17:08	17:06
22	06:17		20:19 (T41)	06:47		19:21 (T42)	07:18		07:42 (T76)	07:50			07:27	07:54
	20:59	15	20:34 (T41)	20:23	38	19:59 (T42)	19:30	70	18:43 (T77)	18:41			17:08	17:06
23	06:18		20:20 (T41)	06:48		19:21 (T42)	07:19		07:41 (T76)	07:51			07:28	07:54
	20:58	13	20:33 (T41)	20:21	36	19:57 (T42)	19:28	73	18:44 (T77)	18:40			17:07	17:07
24	06:19		20:21 (T41)	06:49		19:21 (T42)	07:20		07:40 (T76)	07:53			07:29	07:55
	20:58	12	20:33 (T41)	20:20	35	19:56 (T42)	19:27	77	18:45 (T77)	18:39			17:07	17:07
25	06:20		20:22 (T41)	06:50		19:22 (T42)	07:21		07:41 (T76)	07:54			07:30	07:55
	20:57	10	20:32 (T41)	20:18	32	19:54 (T42)	19:25	77	18:45 (T77)	18:37			17:06	17:08
26	06:21		20:23 (T41)	06:51		19:22 (T42)	07:22		07:42 (T76)	07:55			07:32	07:56
	20:56	8	20:31 (T41)	20:17	31	19:53 (T42)	19:23	78	18:46 (T77)	18:36			17:06	17:08
27	06:22		20:25 (T41)	06:52		19:23 (T42)	07:23		07:43 (T76)	07:56			07:33	07:56
	20:55	6	20:31 (T41)	20:15	28	19:51 (T42)	19:21	78	18:46 (T77)	18:34			17:05	17:09
28	06:22		19:45 (T42)	06:53		19:24 (T42)	07:24		07:44 (T76)	07:57			07:34	07:56
	20:54	6	20:30 (T41)	20:14	26	19:50 (T42)	19:20	78	18:46 (T77)	18:33			17:05	17:10
29	06:23		19:39 (T42)	06:54		19:25 (T42)	07:25		07:45 (T76)	07:58			07:35	07:57
	20:53	13	19:52 (T42)	20:12	23	19:48 (T42)	19:18	76	18:46 (T77)	18:32			17:04	17:10
30	06:24		19:36 (T42)	06:55		19:27 (T42)	07:26		07:46 (T76)	08:00			07:36	07:57
	20:52	19	19:55 (T42)	20:10	20	19:47 (T42)	19:16	75	18:46 (T77)	18:30			17:04	17:11
31	06:25		19:34 (T42)	06:56		19:29 (T42)				08:01				07:57
	20:51	23	19:57 (T42)	20:09	16	19:45 (T42)				18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		624			1115			1001			800			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.55			0.57			0.63			0.66			
Total reduction		0.36			0.35			0.38			0.32			
Total, real		227			394			376			255			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 923 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8456)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:34 (T38)	07:44		08:45 (T38)	07:07		07:27 (T37)	07:16			06:30			06:02		06:23 (T87)
	17:13	56	09:30 (T38)	17:48	53	09:38 (T38)	18:22	21	07:48 (T37)	19:56			20:27			20:57	56	07:19 (T34)
2	07:58		08:34 (T38)	07:43		08:46 (T38)	07:06		07:25 (T37)	07:15			06:29			06:01		06:24 (T87)
	17:14	57	09:31 (T38)	17:49	52	09:38 (T38)	18:23	23	07:48 (T37)	19:57			20:28			20:58	56	07:20 (T34)
3	07:58		08:34 (T38)	07:42		08:46 (T38)	07:04		07:24 (T37)	07:13			06:28			06:01		06:23 (T87)
	17:15	57	09:31 (T38)	17:50	51	09:37 (T38)	18:24	25	07:49 (T37)	19:58			20:29			20:59	56	07:19 (T34)
4	07:58		08:34 (T38)	07:41		08:47 (T38)	07:03		07:22 (T37)	07:11			06:27			06:00		06:24 (T87)
	17:16	58	09:32 (T38)	17:51	49	09:36 (T38)	18:25	27	07:49 (T37)	19:59			20:30			20:59	56	07:20 (T34)
5	07:58		08:35 (T38)	07:40		08:49 (T38)	07:01		07:21 (T37)	07:10			06:25			06:00		06:25 (T87)
	17:17	57	09:32 (T38)	17:53	46	09:35 (T38)	18:27	28	07:49 (T37)	20:01			20:32			21:00	56	07:21 (T34)
6	07:58		08:35 (T38)	07:39		08:50 (T38)	07:00		07:19 (T37)	07:08			06:24			06:00		06:25 (T87)
	17:18	58	09:33 (T38)	17:54	44	09:34 (T38)	18:28	30	07:49 (T37)	20:01			20:33			21:01	56	07:21 (T34)
7	07:58		08:36 (T38)	07:37		08:51 (T38)	06:58		07:19 (T37)	07:06			06:23			05:59		06:25 (T87)
	17:19	58	09:34 (T38)	17:55	42	09:33 (T38)	18:29	29	07:48 (T37)	20:02			20:34			21:02	56	07:21 (T34)
8	07:58		08:36 (T38)	07:36		08:52 (T38)	07:56		08:19 (T37)	07:05			06:22			05:59		06:25 (T87)
	17:20	59	09:35 (T38)	17:56	39	09:31 (T38)	19:30	29	08:48 (T37)	20:03			20:35			21:02	56	07:21 (T34)
9	07:57		08:35 (T38)	07:35		08:54 (T38)	07:55		08:19 (T37)	07:03			06:21		06:41 (T87)	05:59		06:26 (T87)
	17:21	59	09:34 (T38)	17:58	36	09:30 (T38)	19:31	28	08:47 (T37)	20:04			20:36	6	06:47 (T87)	21:03	56	07:22 (T34)
10	07:57		08:36 (T38)	07:34		08:56 (T38)	07:53		08:19 (T37)	07:02			06:19		06:40 (T87)	05:59		06:26 (T87)
	17:22	59	09:35 (T38)	17:59	32	09:28 (T38)	19:32	27	08:46 (T37)	20:05			20:37	9	06:49 (T87)	21:03	56	07:22 (T34)
11	07:57		08:37 (T38)	07:33		08:58 (T38)	07:52		08:20 (T37)	07:00			06:18		06:39 (T87)	05:59		06:27 (T87)
	17:23	59	09:36 (T38)	18:00	28	09:26 (T38)	19:33	25	08:45 (T37)	20:06			20:38	12	06:51 (T87)	21:04	56	07:23 (T34)
12	07:57		08:36 (T38)	07:31		09:00 (T38)	07:50		08:21 (T37)	06:58			06:17		06:38 (T87)	05:58		06:27 (T87)
	17:24	60	09:36 (T38)	18:01	22	09:22 (T38)	19:35	23	08:44 (T37)	20:07			20:39	19	06:57 (T34)	21:04	56	07:23 (T34)
13	07:56		08:37 (T38)	07:30		09:05 (T38)	07:48		08:22 (T37)	06:57			06:16		06:37 (T87)	05:58		06:28 (T87)
	17:25	60	09:37 (T38)	18:03	13	09:18 (T38)	19:36	20	08:42 (T37)	20:08			20:40	25	07:02 (T34)	21:05	55	07:23 (T34)
14	07:56		08:38 (T38)	07:29			07:47		08:24 (T37)	06:55			06:15		06:36 (T87)	05:58		06:28 (T87)
	17:26	60	09:38 (T38)	18:04			19:37	16	08:40 (T37)	20:09			20:41	28	07:04 (T34)	21:05	55	07:23 (T34)
15	07:56		08:37 (T38)	07:28			07:45		08:27 (T37)	06:54			06:14		06:35 (T87)	05:58		06:28 (T87)
	17:27	61	09:38 (T38)	18:05			19:38	9	08:36 (T37)	20:10			20:42	31	07:06 (T34)	21:06	56	07:24 (T34)
16	07:55		08:38 (T38)	07:26			07:43			06:52			06:13		06:34 (T87)	05:58		06:28 (T87)
	17:28	61	09:39 (T38)	18:06			19:39			20:11			20:43	34	07:08 (T34)	21:06	56	07:24 (T34)
17	07:55		08:38 (T38)	07:25			07:42			06:51			06:12		06:33 (T87)	05:58		06:29 (T34)
	17:29	60	09:38 (T38)	18:08			19:40			20:12			20:44	36	07:09 (T34)	21:07	55	07:24 (T34)
18	07:54		08:39 (T38)	07:24			07:40			06:49			06:11		06:32 (T87)	05:58		06:29 (T34)
	17:31	60	09:39 (T38)	18:09			19:41			20:13			20:45	38	07:10 (T34)	21:07	55	07:24 (T34)
19	07:54		08:39 (T38)	07:22			07:38			06:47			06:10		06:31 (T87)	05:59		06:29 (T87)
	17:32	60	09:39 (T38)	18:10			19:42			20:14			20:46	40	07:11 (T34)	21:07	55	07:24 (T34)
20	07:53		08:39 (T38)	07:21			07:37			06:46			06:10		06:30 (T87)	05:59		06:29 (T87)
	17:33	60	09:39 (T38)	18:11			19:43			20:16			20:47	42	07:12 (T34)	21:08	55	07:24 (T34)
21	07:53		08:40 (T38)	07:19			07:35			06:44			06:09		06:30 (T87)	05:59		06:29 (T87)
	17:34	60	09:40 (T38)	18:12			19:44			20:17			20:48	43	07:13 (T34)	21:08	55	07:24 (T34)
22	07:52		08:40 (T38)	07:18			07:33			06:43			06:08		06:29 (T87)	05:59		06:30 (T87)
	17:35	60	09:40 (T38)	18:14			19:45			20:18			20:49	45	07:14 (T34)	21:08	55	07:25 (T34)
23	07:51		08:40 (T38)	07:16			07:31			06:42			06:07		06:28 (T87)	05:59		06:30 (T87)
	17:36	60	09:40 (T38)	18:15			19:47			20:19			20:50	46	07:14 (T34)	21:08	55	07:25 (T34)
24	07:51		08:40 (T38)	07:15			07:30			06:40			06:06		06:28 (T87)	06:00		06:30 (T34)
	17:38	60	09:40 (T38)	18:16			19:48			20:20			20:50	48	07:16 (T34)	21:09	55	07:25 (T34)
25	07:50		08:41 (T38)	07:14		07:33 (T37)	07:28			06:39			06:06		06:27 (T87)	06:00		06:30 (T34)
	17:39	59	09:40 (T38)	18:17	8	07:41 (T37)	19:49			20:21			20:51	49	07:16 (T34)	21:09	55	07:25 (T34)
26	07:49		08:41 (T38)	07:12		07:32 (T37)	07:26			06:37			06:05		06:26 (T87)	06:00		06:31 (T34)
	17:40	59	09:40 (T38)	18:18	12	07:44 (T37)	19:50			20:22			20:52	50	07:16 (T34)	21:09	55	07:26 (T34)
27	07:48		08:42 (T38)	07:11		07:30 (T37)	07:25			06:36			06:04		06:26 (T87)	06:01		06:30 (T87)
	17:41	58	09:40 (T38)	18:20	16	07:46 (T37)	19:51			20:23			20:53	51	07:17 (T34)	21:09	56	07:26 (T34)
28	07:47		08:42 (T38)	07:09		07:28 (T37)	07:23			06:34			06:04		06:25 (T87)	06:01		06:30 (T87)
	17:43	58	09:40 (T38)	18:21	18	07:46 (T37)	19:52			20:24			20:54	52	07:17 (T34)	21:09	56	07:26 (T34)
29	07:47		08:43 (T38)				07:21			06:33			06:03		06:25 (T87)	06:01		06:31 (T87)
	17:44	56	09:39 (T38)				19:53			20:25			20:55	53	07:18 (T34)	21:09	55	07:26 (T34)
30	07:46		08:43 (T38)				07:20			06:32			06:03		06:24 (T87)	06:02		06:30 (T87)
	17:45	56	09:39 (T38)				19:54			20:26			20:56	54	07:18 (T34)	21:09	56	07:26 (T34)
31	07:45		08:44 (T38)				07:18						06:02		06:24 (T87)			
	17:46	55	09:39 (T38)				19:55						20:56	55	07:19 (T34)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1820			561			360						866			1667	
Sun reduction		0.31			0.40			0.44						0.57			0.64	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.53			0.53			0.57						0.71			0.71	
Total reduction		0.15			0.20			0.24						0.39			0.43	
Total, real		282			113			86						334			721	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 923 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8456)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:31 (T87)	06:26		06:48 (T87)	06:58		07:28		08:01 (T37)	07:02		08:25 (T38)	07:37		08:19 (T38)
	21:09	56	07:27 (T34)	20:50	14	07:03 (T34)	20:07		19:15	22	08:23 (T37)	17:28	33	08:58 (T38)	17:04	59	09:18 (T38)
2	06:03		06:30 (T87)	06:27		06:49 (T87)	06:59		07:29		07:59 (T37)	07:04		08:23 (T38)	07:38		08:19 (T38)
	21:09	56	07:26 (T34)	20:49	11	07:00 (T87)	20:06		19:13	25	08:24 (T37)	17:27	37	09:00 (T38)	17:04	59	09:18 (T38)
3	06:03		06:31 (T87)	06:28		06:50 (T87)	07:00		07:30		07:58 (T37)	07:05		08:21 (T38)	07:39		08:20 (T38)
	21:09	56	07:27 (T34)	20:48	8	06:58 (T87)	20:04		19:12	26	08:24 (T37)	17:26	40	09:01 (T38)	17:03	59	09:19 (T38)
4	06:04		06:31 (T87)	06:29		06:51 (T87)	07:01		07:31		07:57 (T37)	07:06		08:20 (T38)	07:40		08:20 (T38)
	21:08	55	07:26 (T34)	20:47	4	06:55 (T87)	20:03		19:10	28	08:25 (T37)	17:25	42	09:02 (T38)	17:03	59	09:19 (T38)
5	06:04		06:31 (T87)	06:30			07:02		07:32		07:56 (T37)	07:07		08:20 (T38)	07:41		08:21 (T38)
	21:08	56	07:27 (T34)	20:46			20:01		19:08	29	08:25 (T37)	17:23	44	09:04 (T38)	17:03	58	09:19 (T38)
6	06:05		06:31 (T87)	06:31			07:03		07:33		07:55 (T37)	07:08		08:18 (T38)	07:42		08:21 (T38)
	21:08	56	07:27 (T34)	20:45			19:58		19:07	30	08:25 (T37)	17:22	47	09:05 (T38)	17:03	58	09:19 (T38)
7	06:06		06:31 (T87)	06:32			07:04		07:34		07:55 (T37)	07:10		08:17 (T38)	07:43		08:22 (T38)
	21:08	56	07:27 (T34)	20:44			19:56		19:05	30	08:25 (T37)	17:21	49	09:06 (T38)	17:03	58	09:20 (T38)
8	06:06		06:31 (T87)	06:33			07:05		07:35		07:55 (T37)	07:11		08:17 (T38)	07:44		08:22 (T38)
	21:07	56	07:27 (T34)	20:42			19:54		19:03	29	08:24 (T37)	17:20	51	09:08 (T38)	17:03	58	09:20 (T38)
9	06:07		06:31 (T87)	06:34			07:06		07:36		07:56 (T37)	07:12		08:16 (T38)	07:45		08:23 (T38)
	21:07	56	07:27 (T34)	20:41			19:53		19:02	28	08:24 (T37)	17:19	53	09:09 (T38)	17:03	57	09:20 (T38)
10	06:08		06:31 (T87)	06:35			07:07		07:37		07:57 (T37)	07:13		08:16 (T38)	07:46		08:24 (T38)
	21:07	56	07:27 (T34)	20:40			19:51		19:00	26	08:23 (T37)	17:18	53	09:09 (T38)	17:03	57	09:21 (T38)
11	06:08		06:31 (T87)	06:36			07:08		07:38		07:58 (T37)	07:14		08:15 (T38)	07:47		08:24 (T38)
	21:06	56	07:27 (T34)	20:39			19:49		18:59	24	08:22 (T37)	17:17	55	09:10 (T38)	17:03	56	09:20 (T38)
12	06:09		06:31 (T87)	06:37			07:09		07:39		08:00 (T37)	07:16		08:15 (T38)	07:48		08:24 (T38)
	21:06	55	07:26 (T34)	20:37			19:47		18:57	22	08:22 (T37)	17:16	56	09:11 (T38)	17:03	57	09:21 (T38)
13	06:10		06:32 (T87)	06:38			07:10		07:41		08:01 (T37)	07:17		08:15 (T38)	07:48		08:25 (T38)
	21:05	55	07:27 (T34)	20:36			19:46		18:55	20	08:21 (T37)	17:15	56	09:11 (T38)	17:03	56	09:21 (T38)
14	06:11		06:33 (T87)	06:39			07:11		07:42		08:02 (T37)	07:18		08:14 (T38)	07:49		08:26 (T38)
	21:05	54	07:27 (T34)	20:35			19:44		18:54	17	08:19 (T37)	17:14	58	09:12 (T38)	17:03	56	09:22 (T38)
15	06:11		06:34 (T87)	06:40			07:12		07:43		08:03 (T37)	07:19		08:15 (T38)	07:50		08:26 (T38)
	21:04	53	07:27 (T34)	20:33			19:42		18:52	14	08:17 (T37)	17:13	58	09:13 (T38)	17:04	55	09:21 (T38)
16	06:12		06:34 (T87)	06:41			07:13		07:44		08:04 (T37)	07:20		08:14 (T38)	07:51		08:27 (T38)
	21:04	52	07:26 (T34)	20:32			19:41		18:51	11	08:15 (T37)	17:12	59	09:13 (T38)	17:04	55	09:22 (T38)
17	06:13		06:35 (T87)	06:42			07:14		07:45		08:05 (T37)	07:21		08:14 (T38)	07:51		08:28 (T38)
	21:03	51	07:26 (T34)	20:30			19:39		18:49	6	08:11 (T37)	17:12	59	09:13 (T38)	17:04	55	09:23 (T38)
18	06:14		06:36 (T87)	06:43			07:15		07:46			07:23		08:14 (T38)	07:52		08:27 (T38)
	21:03	50	07:26 (T34)	20:29			19:37		18:48			17:11	60	09:14 (T38)	17:04	55	09:22 (T38)
19	06:15		06:37 (T87)	06:44			07:16		07:47			07:24		08:15 (T38)	07:53		08:28 (T38)
	21:02	48	07:25 (T34)	20:28			19:35		18:46			17:10	60	09:15 (T38)	17:05	55	09:23 (T38)
20	06:15		06:38 (T87)	06:45			07:17		07:48			07:25		08:15 (T38)	07:53		08:29 (T38)
	21:01	47	07:25 (T34)	20:26			19:34		18:45			17:09	60	09:15 (T38)	17:05	55	09:24 (T38)
21	06:16		06:39 (T87)	06:46			07:18		07:49			07:26		08:15 (T38)	07:54		08:29 (T38)
	21:00	46	07:25 (T34)	20:25			19:32		18:43			17:09	60	09:15 (T38)	17:06	55	09:24 (T38)
22	06:17		06:39 (T87)	06:47			07:19		07:51			07:27		08:15 (T38)	07:54		08:30 (T38)
	21:00	44	07:23 (T34)	20:23			19:30		18:42			17:08	60	09:15 (T38)	17:06	55	09:25 (T38)
23	06:18		06:40 (T87)	06:48			07:20		07:52			07:29		08:16 (T38)	07:55		08:30 (T38)
	20:59	43	07:23 (T34)	20:22			19:29		18:40			17:07	60	09:16 (T38)	17:07	55	09:25 (T38)
24	06:19		06:41 (T87)	06:49			07:21		07:53			07:30		08:16 (T38)	07:55		08:30 (T38)
	20:58	41	07:22 (T34)	20:20			19:27		18:39			17:07	60	09:16 (T38)	17:07	55	09:25 (T38)
25	06:20		06:42 (T87)	06:50			07:22		07:54			07:31		08:16 (T38)	07:56		08:31 (T38)
	20:57	39	07:21 (T34)	20:19			19:25		18:37			17:06	60	09:16 (T38)	17:08	55	09:26 (T38)
26	06:21		06:43 (T87)	06:51			07:23		07:55			07:32		08:16 (T38)	07:56		08:32 (T38)
	20:56	37	07:20 (T34)	20:17			19:23		18:36			17:06	61	09:17 (T38)	17:08	55	09:27 (T38)
27	06:22		06:44 (T87)	06:52			07:24		07:56			07:33		08:16 (T38)	07:56		08:32 (T38)
	20:55	35	07:19 (T34)	20:15			19:22		18:35			17:05	61	09:17 (T38)	17:09	55	09:27 (T38)
28	06:23		06:45 (T87)	06:53			07:25		07:58			07:34		08:17 (T38)	07:57		08:33 (T38)
	20:54	32	07:17 (T34)	20:14			19:20	2	08:14 (T37)	18:33		17:05	60	09:17 (T38)	17:10	55	09:28 (T38)
29	06:24		06:46 (T87)	06:55			07:26		08:06 (T37)	07:59		09:34 (T38)	07:35		08:18 (T38)	07:57		08:33 (T38)
	20:54	30	07:16 (T34)	20:12			19:18	13	08:19 (T37)	18:32	15	09:49 (T38)	17:05	60	09:18 (T38)	17:11	55	09:28 (T38)
30	06:25		06:47 (T87)	06:56			07:27		08:03 (T37)	08:00		09:29 (T38)	07:36		08:18 (T38)	07:57		08:33 (T38)
	20:53	27	07:14 (T34)	20:11			19:17	18	08:21 (T37)	18:31	24	09:53 (T38)	17:04	60	09:18 (T38)	17:11	56	09:29 (T38)
31	06:25		06:47 (T87)	06:57						08:01		09:27 (T38)				07:57		08:33 (T38)
	20:51	23	07:10 (T34)	20:09						18:29	28	09:55 (T38)				17:12	56	09:29 (T38)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		1477			37			33			454			1632			1744	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.71			0.71			0.57			0.57			0.53			0.53	
Total reduction		0.45			0.41			0.32			0.26			0.15			0.11	
Total, real		659			15			11			117			244			191	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 932 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8465)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	16:25 (T77)	07:43	16:24 (T77)	07:07	07:35 (T76)	07:16	18:34 (T42)	06:30	19:39 (T41)	06:01	
	17:13	22 16:47 (T77)	17:47	50 17:14 (T77)	18:22	27 08:02 (T76)	19:56	42 19:16 (T42)	20:27	26 20:05 (T41)	20:57	
2	07:57	16:25 (T77)	07:42	16:24 (T77)	07:06	07:36 (T76)	07:14	18:34 (T42)	06:29	19:39 (T41)	06:01	
	17:14	23 16:48 (T77)	17:49	50 17:14 (T77)	18:23	24 08:00 (T76)	19:57	40 19:14 (T42)	20:28	27 20:06 (T41)	20:58	
3	07:57	16:25 (T77)	07:41	16:24 (T77)	07:04	07:36 (T76)	07:13	18:36 (T42)	06:28	19:38 (T41)	06:01	
	17:15	24 16:49 (T77)	17:50	50 17:14 (T77)	18:24	22 07:58 (T76)	19:58	38 19:14 (T42)	20:29	28 20:06 (T41)	20:58	
4	07:57	16:25 (T77)	07:40	16:25 (T77)	07:02	07:39 (T76)	07:11	18:37 (T42)	06:26	19:38 (T41)	06:00	
	17:16	25 16:50 (T77)	17:51	49 17:14 (T77)	18:25	17 07:56 (T76)	19:59	35 19:12 (T42)	20:30	30 20:08 (T41)	20:59	
5	07:57	16:25 (T77)	07:39	16:26 (T77)	07:01	07:42 (T76)	07:09	18:38 (T42)	06:25	19:38 (T41)	06:00	
	17:17	26 16:51 (T77)	17:52	48 17:14 (T77)	18:26	10 07:52 (T76)	20:00	31 19:09 (T42)	20:31	31 20:09 (T41)	21:00	
6	07:57	16:25 (T77)	07:38	16:25 (T77)	06:59		07:08	18:40 (T42)	06:24	19:38 (T41)	05:59	
	17:17	27 16:52 (T77)	17:54	48 17:13 (T77)	18:27		20:00	28 19:08 (T42)	20:32	32 20:10 (T41)	21:00	
7	07:57	16:24 (T77)	07:37	16:26 (T77)	06:58		07:06	18:42 (T42)	06:23	19:38 (T41)	05:59	
	17:18	28 16:52 (T77)	17:55	47 17:13 (T77)	18:29		20:01	22 19:04 (T42)	20:33	33 20:11 (T41)	21:01	
8	07:57	16:24 (T77)	07:36	16:27 (T77)	07:56	18:56 (T42)	07:05	18:46 (T42)	06:22	19:39 (T41)	05:59	
	17:19	29 16:53 (T77)	17:56	45 17:12 (T77)	19:30	11 19:07 (T42)	20:02	15 19:01 (T42)	20:34	32 20:11 (T41)	21:02	
9	07:57	16:24 (T77)	07:35	16:28 (T77)	07:54	18:52 (T42)	07:03		06:20	19:39 (T41)	05:59	
	17:20	30 16:54 (T77)	17:57	44 17:12 (T77)	19:31	18 19:10 (T42)	20:03		20:35	32 20:11 (T41)	21:02	
10	07:57	16:24 (T77)	07:34	16:29 (T77)	07:53	18:48 (T42)	07:01		06:19	19:38 (T41)	05:59	
	17:21	32 16:56 (T77)	17:59	42 17:11 (T77)	19:32	22 19:10 (T42)	20:05		20:36	32 20:10 (T41)	21:03	
11	07:57	16:23 (T77)	07:32	16:30 (T77)	07:51	18:45 (T42)	07:00		06:18	19:39 (T41)	05:58	
	17:23	33 16:56 (T77)	18:00	40 17:10 (T77)	19:33	26 19:11 (T42)	20:06		20:37	30 20:09 (T41)	21:04	
12	07:56	16:23 (T77)	07:31	07:51 (T76)	07:50	18:44 (T42)	06:58		06:17	19:39 (T41)	05:58	
	17:24	35 16:58 (T77)	18:01	40 17:09 (T77)	19:34	29 19:13 (T42)	20:07		20:38	30 20:09 (T41)	21:04	
13	07:56	16:23 (T77)	07:30	07:50 (T76)	07:48	18:42 (T42)	06:57		06:16	19:40 (T41)	05:58	
	17:25	36 16:59 (T77)	18:02	42 17:08 (T77)	19:35	32 19:14 (T42)	20:08		20:39	28 20:08 (T41)	21:05	
14	07:56	16:22 (T77)	07:29	07:48 (T76)	07:46	18:40 (T42)	06:55		06:15	19:41 (T41)	05:58	
	17:26	38 17:00 (T77)	18:04	43 17:06 (T77)	19:36	35 19:15 (T42)	20:09		20:40	26 20:07 (T41)	21:05	
15	07:55	16:23 (T77)	07:27	07:47 (T76)	07:45	18:39 (T42)	06:53		06:14	19:42 (T41)	05:58	
	17:27	38 17:01 (T77)	18:05	41 17:04 (T77)	19:38	37 19:16 (T42)	20:10		20:42	24 20:06 (T41)	21:05	
16	07:55	16:22 (T77)	07:26	07:46 (T76)	07:43	18:37 (T42)	06:52		06:13	19:44 (T41)	05:58	
	17:28	40 17:02 (T77)	18:06	39 17:02 (T77)	19:39	40 19:17 (T42)	20:11		20:42	22 20:06 (T41)	21:06	
17	07:54	16:23 (T77)	07:25	07:44 (T76)	07:41	18:36 (T42)	06:50		06:12	19:45 (T41)	05:58	
	17:29	41 17:04 (T77)	18:07	34 16:58 (T77)	19:40	42 19:18 (T42)	20:12		20:43	20 20:05 (T41)	21:06	
18	07:54	16:22 (T77)	07:23	07:43 (T76)	07:40	18:36 (T42)	06:49		06:11	19:46 (T41)	05:58	
	17:30	43 17:05 (T77)	18:09	22 16:51 (T77)	19:41	44 19:20 (T42)	20:13		20:44	17 20:03 (T41)	21:07	
19	07:53	16:22 (T77)	07:22	07:42 (T76)	07:38	18:35 (T42)	06:47		06:10	19:48 (T41)	05:58	
	17:32	45 17:07 (T77)	18:10	23 08:05 (T76)	19:42	46 19:21 (T42)	20:14		20:45	13 20:01 (T41)	21:07	
20	07:53	16:22 (T77)	07:20	07:40 (T76)	07:36	18:34 (T42)	06:46		06:09	19:50 (T41)	05:59	
	17:33	45 17:07 (T77)	18:11	25 08:05 (T76)	19:43	47 19:21 (T42)	20:15		20:46	9 19:59 (T41)	21:07	
21	07:52	16:22 (T77)	07:19	07:39 (T76)	07:35	18:34 (T42)	06:44		06:09		05:59	
	17:34	46 17:08 (T77)	18:12	26 08:05 (T76)	19:44	49 19:23 (T42)	20:16		20:47		21:08	
22	07:52	16:22 (T77)	07:18	07:37 (T76)	07:33	18:33 (T42)	06:43	19:51 (T41)	06:08		05:59	
	17:35	48 17:10 (T77)	18:13	28 08:05 (T76)	19:45	50 19:23 (T42)	20:17	5 19:56 (T41)	20:48		21:08	
23	07:51	16:22 (T77)	07:16	07:36 (T76)	07:31	18:32 (T42)	06:41	19:49 (T41)	06:07		05:59	
	17:36	49 17:11 (T77)	18:15	29 08:05 (T76)	19:46	50 19:22 (T42)	20:18	8 19:57 (T41)	20:49		21:08	
24	07:50	16:22 (T77)	07:15	07:34 (T76)	07:30	18:33 (T42)	06:40	19:46 (T41)	06:06		05:59	
	17:38	50 17:12 (T77)	18:16	30 08:04 (T76)	19:47	50 19:23 (T42)	20:19	12 19:58 (T41)	20:50		21:08	
25	07:49	16:22 (T77)	07:13	07:33 (T76)	07:28	18:32 (T42)	06:38	19:44 (T41)	06:06		06:00	
	17:39	50 17:12 (T77)	18:17	32 08:05 (T76)	19:48	50 19:22 (T42)	20:21	15 19:59 (T41)	20:51		21:08	
26	07:49	16:22 (T77)	07:12	07:33 (T76)	07:26	18:32 (T42)	06:37	19:42 (T41)	06:05		06:00	
	17:40	50 17:12 (T77)	18:18	31 08:04 (T76)	19:50	49 19:21 (T42)	20:22	17 19:59 (T41)	20:52		21:08	
27	07:48	16:23 (T77)	07:10	07:34 (T76)	07:24	18:32 (T42)	06:36	19:42 (T41)	06:04		06:00	
	17:41	51 17:14 (T77)	18:19	29 08:03 (T76)	19:51	48 19:20 (T42)	20:23	19 20:01 (T41)	20:53		21:08	
28	07:47	16:23 (T77)	07:09	07:34 (T76)	07:23	18:32 (T42)	06:34	19:41 (T41)	06:04		06:01	
	17:42	51 17:14 (T77)	18:21	28 08:02 (T76)	19:52	48 19:20 (T42)	20:24	21 20:02 (T41)	20:54		21:09	
29	07:46	16:23 (T77)			07:21	18:32 (T42)	06:33	19:39 (T41)	06:03		06:01	
	17:44	51 17:14 (T77)			19:53	47 19:19 (T42)	20:25	23 20:02 (T41)	20:54		21:09	
30	07:45	16:23 (T77)			07:19	18:32 (T42)	06:32	19:39 (T41)	06:02		06:02	
	17:45	51 17:14 (T77)			19:54	46 19:18 (T42)	20:26	25 20:04 (T41)	20:55		21:08	
31	07:44	16:23 (T77)			07:18	18:34 (T42)			06:02			
	17:46	51 17:14 (T77)			19:55	44 19:18 (T42)			20:56			
Potential sun hours	297		297		370		399		448		453	
Total, worst case		1208		1055		1060		396		522		
Sun reduction		0.31		0.40		0.44		0.52		0.57		
Oper. time red.		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.		0.73		0.67		0.64		0.62		0.57		
Total reduction		0.23		0.27		0.29		0.33		0.33		
Total, real		279		289		306		131		172		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 932 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8465)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		06:26		19:50 (T41)	06:57			07:27		18:22 (T42)	07:02	15:58 (T77)	07:37	16:05 (T77)
	21:08		20:50	29	20:19 (T41)	20:07			19:15	30	18:52 (T42)	17:28	42	16:40 (T77)	17:04	33	16:38 (T77)
2	06:03		06:27		19:49 (T41)	06:58			07:29		18:23 (T42)	07:03	15:58 (T77)	07:38	16:06 (T77)
	21:08		20:49	31	20:20 (T41)	20:06			19:13	27	18:50 (T42)	17:27	44	16:42 (T77)	17:03	32	16:38 (T77)
3	06:03		06:28		19:49 (T41)	06:59			07:30		18:25 (T42)	07:04	15:57 (T77)	07:39	16:08 (T77)
	21:08		20:48	31	20:20 (T41)	20:04			19:11	24	18:49 (T42)	17:26	45	16:42 (T77)	17:03	31	16:39 (T77)
4	06:04		06:29		19:48 (T41)	07:00	18:43 (T42)		07:31		18:27 (T42)	07:06	15:56 (T77)	07:40	16:09 (T77)
	21:08		20:47	33	20:21 (T41)	20:02	15	18:58 (T42)	19:10	20	18:47 (T42)	17:24	47	16:43 (T77)	17:03	29	16:38 (T77)
5	06:04		06:30		19:48 (T41)	07:01	18:39 (T42)		07:32		18:31 (T42)	07:07	15:55 (T77)	07:41	16:10 (T77)
	21:08		20:46	33	20:21 (T41)	20:01	22	19:01 (T42)	19:08	15	18:46 (T42)	17:23	48	16:43 (T77)	17:03	28	16:38 (T77)
6	06:05		06:31		19:48 (T41)	07:02	18:36 (T42)		07:33			07:08	15:55 (T77)	07:42	16:11 (T77)
	21:08		20:44	32	20:20 (T41)	19:57	28	19:04 (T42)	19:06			17:22	49	16:44 (T77)	17:03	27	16:38 (T77)
7	06:05		06:32		19:48 (T41)	07:03	18:34 (T42)		07:34			07:09	15:55 (T77)	07:43	16:11 (T77)
	21:07		20:43	31	20:19 (T41)	19:56	31	19:05 (T42)	19:05			17:21	49	16:44 (T77)	17:03	26	16:37 (T77)
8	06:06		06:33		19:47 (T41)	07:04	18:32 (T42)		07:35		08:21 (T76)	07:10	15:54 (T77)	07:44	16:12 (T77)
	21:07		20:42	31	20:18 (T41)	19:54	35	19:07 (T42)	19:03	3	08:24 (T76)	17:20	50	16:44 (T77)	17:03	25	16:37 (T77)
9	06:07		06:34		19:47 (T41)	07:05	18:30 (T42)		07:36		08:15 (T76)	07:12	15:55 (T77)	07:45	16:13 (T77)
	21:07		20:41	30	20:17 (T41)	19:52	38	19:08 (T42)	19:01	14	08:29 (T76)	17:19	50	16:45 (T77)	17:03	24	16:37 (T77)
10	06:07		06:35		19:47 (T41)	07:06	18:28 (T42)		07:37		08:12 (T76)	07:13	15:54 (T77)	07:46	16:14 (T77)
	21:06		20:39	29	20:16 (T41)	19:51	39	19:07 (T42)	19:00	19	08:31 (T76)	17:18	51	16:45 (T77)	17:03	23	16:37 (T77)
11	06:08		06:36		19:48 (T41)	07:07	18:26 (T42)		07:38		08:10 (T76)	07:14	15:54 (T77)	07:46	16:15 (T77)
	21:06		20:38	26	20:14 (T41)	19:49	42	19:08 (T42)	18:58	23	08:33 (T76)	17:17	51	16:45 (T77)	17:03	22	16:37 (T77)
12	06:09		06:37		19:48 (T41)	07:08	18:25 (T42)		07:39		08:08 (T76)	07:15	15:54 (T77)	07:47	16:17 (T77)
	21:06		20:37	25	20:13 (T41)	19:47	44	19:09 (T42)	18:57	26	08:34 (T76)	17:16	51	16:45 (T77)	17:03	20	16:37 (T77)
13	06:10		06:38		19:48 (T41)	07:09	18:24 (T42)		07:40		08:07 (T76)	07:16	15:55 (T77)	07:48	16:18 (T77)
	21:05		20:36	24	20:12 (T41)	19:45	45	19:09 (T42)	18:55	27	08:34 (T76)	17:15	51	16:46 (T77)	17:03	20	16:38 (T77)
14	06:10		06:39		19:48 (T41)	07:10	18:23 (T42)		07:41		08:06 (T76)	07:18	15:55 (T77)	07:49	16:18 (T77)
	21:05		20:34	23	20:11 (T41)	19:44	46	19:09 (T42)	18:54	29	08:35 (T76)	17:14	51	16:46 (T77)	17:03	19	16:37 (T77)
15	06:11		06:40		19:49 (T41)	07:11	18:22 (T42)		07:42		08:06 (T76)	07:19	15:55 (T77)	07:50	16:19 (T77)
	21:04		20:33	20	20:09 (T41)	19:42	48	19:10 (T42)	18:52	30	08:36 (T76)	17:13	51	16:46 (T77)	17:03	18	16:37 (T77)
16	06:12		06:41		19:49 (T41)	07:12	18:21 (T42)		07:44		08:05 (T76)	07:20	15:55 (T77)	07:50	16:21 (T77)
	21:03		20:31	18	20:07 (T41)	19:40	49	19:10 (T42)	18:50	31	08:36 (T76)	17:12	50	16:45 (T77)	17:04	17	16:38 (T77)
17	06:13		06:42		19:49 (T41)	07:13	18:20 (T42)		07:45		08:05 (T76)	07:21	15:56 (T77)	07:51	16:21 (T77)
	21:03		20:30	17	20:06 (T41)	19:39	50	19:10 (T42)	18:49	31	08:36 (T76)	17:11	50	16:46 (T77)	17:04	17	16:38 (T77)
18	06:14		06:43		19:50 (T41)	07:14	18:20 (T42)		07:46		08:06 (T76)	07:22	15:56 (T77)	07:52	16:22 (T77)
	21:02		20:29	14	20:04 (T41)	19:37	49	19:09 (T42)	18:47	30	08:36 (T76)	17:11	50	16:46 (T77)	17:04	16	16:38 (T77)
19	06:14		06:44		19:52 (T41)	07:15	18:19 (T42)		07:47		08:07 (T76)	07:23	15:56 (T77)	07:52	16:23 (T77)
	21:02		20:27	11	20:03 (T41)	19:35	50	19:09 (T42)	18:46	29	08:36 (T76)	17:10	49	16:45 (T77)	17:05	16	16:39 (T77)
20	06:15		06:45		19:54 (T41)	07:16	18:19 (T42)		07:48		08:08 (T76)	07:25	15:57 (T77)	07:53	16:23 (T77)
	21:01		20:26	8	20:02 (T41)	19:33	50	19:09 (T42)	18:44	27	08:35 (T76)	17:09	48	16:45 (T77)	17:05	16	16:39 (T77)
21	06:16		06:46		19:57 (T41)	07:17	18:18 (T42)		07:49		08:10 (T76)	07:26	15:58 (T77)	07:53	16:24 (T77)
	21:00		20:24	3	20:00 (T41)	19:32	50	19:08 (T42)	18:43	26	08:36 (T76)	17:08	46	16:44 (T77)	17:05	16	16:40 (T77)
22	06:17		06:47			07:18	18:18 (T42)		07:50		08:11 (T76)	07:27	15:58 (T77)	07:54	16:24 (T77)
	20:59		20:23			19:30	50	19:08 (T42)	18:41	24	08:35 (T76)	17:08	45	16:43 (T77)	17:06	16	16:40 (T77)
23	06:18	20:02 (T41)	06:48			07:19	18:18 (T42)		07:51		08:12 (T76)	07:28	15:58 (T77)	07:54	16:25 (T77)
	20:59	5 20:07 (T41)	20:21			19:28	48	19:06 (T42)	18:40	22	08:34 (T76)	17:07	45	16:43 (T77)	17:07	16	16:41 (T77)
24	06:19	19:59 (T41)	06:49			07:20	18:18 (T42)		07:53		08:13 (T76)	07:29	15:59 (T77)	07:55	16:25 (T77)
	20:58	12 20:11 (T41)	20:20			19:27	46	19:04 (T42)	18:39	28	17:24 (T77)	17:07	43	16:42 (T77)	17:07	16	16:41 (T77)
25	06:20	19:57 (T41)	06:50			07:21	18:18 (T42)		07:54		08:15 (T76)	07:30	16:01 (T77)	07:55	16:25 (T77)
	20:57	16 20:13 (T41)	20:18			19:25	45	19:03 (T42)	18:37	37	17:30 (T77)	17:06	41	16:42 (T77)	17:08	16	16:41 (T77)
26	06:21	19:56 (T41)	06:51			07:22	18:18 (T42)		07:55		08:16 (T76)	07:32	16:01 (T77)	07:56	16:26 (T77)
	20:56	19 20:15 (T41)	20:17			19:23	43	19:01 (T42)	18:36	40	17:33 (T77)	17:06	40	16:41 (T77)	17:08	16	16:42 (T77)
27	06:22	19:55 (T41)	06:52			07:23	18:19 (T42)		07:56		08:17 (T76)	07:33	16:02 (T77)	07:56	16:26 (T77)
	20:55	21 20:16 (T41)	20:15			19:22	40	18:59 (T42)	18:34	41	17:34 (T77)	17:05	39	16:41 (T77)	17:09	17	16:43 (T77)
28	06:22	19:54 (T41)	06:53			07:24	18:19 (T42)		07:57		08:18 (T76)	07:34	16:03 (T77)	07:56	16:25 (T77)
	20:54	23 20:17 (T41)	20:14			19:20	38	18:57 (T42)	18:33	43	17:36 (T77)	17:05	37	16:40 (T77)	17:10	18	16:43 (T77)
29	06:23	19:52 (T41)	06:54			07:25	18:20 (T42)		07:58		08:19 (T76)	07:35	16:03 (T77)	07:57	16:25 (T77)
	20:53	25 20:17 (T41)	20:12			19:18	36	18:56 (T42)	18:32	42	17:37 (T77)	17:04	36	16:39 (T77)	17:10	19	16:44 (T77)
30	06:24	19:51 (T41)	06:55			07:26	18:21 (T42)		08:00		17:01 (T77)	07:36	16:04 (T77)	07:57	16:26 (T77)
	20:52	27 20:18 (T41)	20:10			19:16	33	18:54 (T42)	18:30	38	17:39 (T77)	17:04	35	16:39 (T77)	17:11	19	16:45 (T77)
31	06:25	19:50 (T41)	06:56						08:01		16:59 (T77)				07:57		16:26 (T77)
	20:51	29 20:19 (T41)	20:09						18:29	41	17:40 (T77)				17:12	20	16:46 (T77)
Potential sun hours	460		429			375			345			297			287		
Total, worst case		177		499			1110			817			1384			648	
Sun reduction		0.66		0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00		1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.57		0.57			0.65			0.62			0.73			0.73	
Total reduction		0.38		0.35			0.39			0.31			0.22			0.16	
Total, real		68		176			436			249			309			106	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 938 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8471)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June		
1	07:57		07:43	08:04 (T76)	07:07	16:52 (T42)	07:16	19:18 (T41)	06:30		06:01		20:08 (T40)
	17:13		17:47 57	17:23 (T42)	18:22 29	17:21 (T42)	19:56 16	19:34 (T41)	20:27		20:57 24		20:32 (T40)
2	07:57		07:42	08:03 (T76)	07:06	16:54 (T42)	07:14	19:16 (T41)	06:29		06:01		20:09 (T40)
	17:14		17:49 62	17:25 (T42)	18:23 24	17:18 (T42)	19:57 19	19:35 (T41)	20:28		20:58 24		20:33 (T40)
3	07:57		07:41	08:02 (T76)	07:04	16:57 (T42)	07:13	19:15 (T41)	06:28		06:01		20:08 (T40)
	17:15		17:50 64	17:26 (T42)	18:24 17	17:14 (T42)	19:58 22	19:37 (T41)	20:29		20:58 26		20:34 (T40)
4	07:57		07:40	08:01 (T76)	07:02		07:11	19:13 (T41)	06:26		06:00		20:08 (T40)
	17:16		17:51 69	17:28 (T42)	18:25		19:59 24	19:37 (T41)	20:30		20:59 27		20:35 (T40)
5	07:57		07:39	08:00 (T76)	07:01		07:09	19:12 (T41)	06:25		06:00		20:09 (T40)
	17:17		17:52 71	17:29 (T42)	18:26		20:00 26	19:38 (T41)	20:31		21:00 26		20:35 (T40)
6	07:57		07:38	07:58 (T76)	06:59		07:08	19:11 (T41)	06:24		05:59		20:08 (T40)
	17:17		17:54 74	17:30 (T42)	18:27		20:00 29	19:40 (T41)	20:32		21:00 27		20:35 (T40)
7	07:57		07:37	07:57 (T76)	06:58		07:06	19:10 (T41)	06:23		05:59		20:08 (T40)
	17:18		17:55 77	17:31 (T42)	18:29		20:01 30	19:40 (T41)	20:33		21:01 28		20:36 (T40)
8	07:57		07:36	07:56 (T76)	07:56		07:05	19:10 (T41)	06:22		05:59		20:08 (T40)
	17:19		17:56 80	17:33 (T42)	19:30		20:02 32	19:42 (T41)	20:34		21:02 29		20:37 (T40)
9	07:57		07:35	07:57 (T76)	07:54		07:03	19:09 (T41)	06:20		05:59		20:09 (T40)
	17:20		17:57 80	17:34 (T42)	19:31		20:03 34	19:43 (T41)	20:35		21:02 29		20:38 (T40)
10	07:57		07:34	07:58 (T76)	07:53		07:01	19:08 (T41)	06:19		05:59		20:09 (T40)
	17:21		17:59 79	17:34 (T42)	19:32		20:05 35	19:43 (T41)	20:36		21:03 29		20:38 (T40)
11	07:57		07:32	07:58 (T76)	07:51		07:00	19:09 (T41)	06:18		05:58		20:09 (T40)
	17:23		18:00 78	17:34 (T42)	19:33		20:06 36	19:45 (T41)	20:37		21:04 30		20:39 (T40)
12	07:56		07:31	07:59 (T76)	07:50		06:58	19:08 (T41)	06:17		05:58		20:08 (T40)
	17:24		18:01 75	17:34 (T42)	19:34		20:07 37	19:45 (T41)	20:38		21:04 31		20:39 (T40)
13	07:56		07:30	08:01 (T76)	07:48		06:57	19:08 (T41)	06:16		05:58		20:09 (T40)
	17:25		18:02 72	17:34 (T42)	19:35		20:08 38	19:46 (T41)	20:39		21:05 30		20:39 (T40)
14	07:56		07:29	08:02 (T76)	07:46		06:55	19:08 (T41)	06:15		05:58		20:09 (T40)
	17:26		18:04 69	17:34 (T42)	19:36		20:09 37	19:45 (T41)	20:41		21:05 30		20:39 (T40)
15	07:55		07:27	08:06 (T76)	07:45		06:53	19:08 (T41)	06:14		05:58		20:09 (T40)
	17:27		18:05 61	17:34 (T42)	19:38		20:10 36	19:44 (T41)	20:42		21:05 31		20:40 (T40)
16	07:55		07:26	16:40 (T42)	07:43		06:52	19:09 (T41)	06:13		05:58		20:09 (T40)
	17:28		18:06 54	17:34 (T42)	19:39		20:11 34	19:43 (T41)	20:43		21:06 31		20:40 (T40)
17	07:54		07:25	16:40 (T42)	07:41		06:50	19:09 (T41)	06:12		05:58		20:10 (T40)
	17:29		18:07 53	17:33 (T42)	19:40		20:12 33	19:42 (T41)	20:43		21:06 31		20:41 (T40)
18	07:54		07:23	16:41 (T42)	07:40		06:49	19:10 (T41)	06:11		05:58		20:10 (T40)
	17:30		18:09 52	17:33 (T42)	19:41		20:13 31	19:41 (T41)	20:44		21:07 32		20:42 (T40)
19	07:53		07:22	16:41 (T42)	07:38		06:47	19:10 (T41)	06:10	20:21 (T40)	05:58		20:10 (T40)
	17:32		18:10 52	17:33 (T42)	19:42		20:14 29	19:39 (T41)	20:45 1	20:22 (T40)	21:07 32		20:42 (T40)
20	07:53		07:20	16:41 (T42)	07:36		06:46	19:12 (T41)	06:09	20:17 (T40)	05:59		20:10 (T40)
	17:33		18:11 51	17:32 (T42)	19:43		20:15 26	19:38 (T41)	20:46 6	20:23 (T40)	21:07 32		20:42 (T40)
21	07:52		07:19	16:42 (T42)	07:35		06:44	19:13 (T41)	06:09	20:15 (T40)	05:59		20:10 (T40)
	17:34		18:12 50	17:32 (T42)	19:44		20:16 24	19:37 (T41)	20:47 8	20:23 (T40)	21:08 32		20:42 (T40)
22	07:52	17:00 (T42)	07:18	16:43 (T42)	07:33		06:43	19:15 (T41)	06:08	20:14 (T40)	05:59		20:10 (T40)
	17:35 8	17:08 (T42)	18:13 48	17:31 (T42)	19:45		20:17 19	19:34 (T41)	20:48 11	20:25 (T40)	21:08 32		20:42 (T40)
23	07:51	16:56 (T42)	07:16	16:44 (T42)	07:31		06:41	19:17 (T41)	06:07	20:13 (T40)	05:59		20:11 (T40)
	17:36 15	17:11 (T42)	18:15 46	17:30 (T42)	19:46		20:18 15	19:32 (T41)	20:49 12	20:25 (T40)	21:08 32		20:43 (T40)
24	07:50	08:11 (T76)	07:15	16:44 (T42)	07:30		06:40	19:21 (T41)	06:06	20:12 (T40)	05:59		20:11 (T40)
	17:38 20	17:12 (T42)	18:16 45	17:29 (T42)	19:47		20:19 6	19:27 (T41)	20:50 14	20:26 (T40)	21:08 32		20:43 (T40)
25	07:49	08:10 (T76)	07:13	16:46 (T42)	07:28		06:38		06:06	20:11 (T40)	06:00		20:11 (T40)
	17:39 27	17:14 (T42)	18:17 42	17:28 (T42)	19:48		20:21		20:51 16	20:27 (T40)	21:08 32		20:43 (T40)
26	07:49	08:09 (T76)	07:12	16:46 (T42)	07:26		06:37		06:05	20:10 (T40)	06:00		20:12 (T40)
	17:40 33	17:15 (T42)	18:18 40	17:26 (T42)	19:50		20:22		20:52 18	20:28 (T40)	21:08 31		20:43 (T40)
27	07:48	08:09 (T76)	07:10	16:48 (T42)	07:24		06:36		06:04	20:10 (T40)	06:00		20:12 (T40)
	17:41 37	17:17 (T42)	18:19 37	17:25 (T42)	19:51		20:23		20:53 19	20:29 (T40)	21:08 31		20:43 (T40)
28	07:47	08:08 (T76)	07:09	16:50 (T42)	07:23		06:34		06:04	20:10 (T40)	06:01		20:12 (T40)
	17:42 41	17:18 (T42)	18:21 33	17:23 (T42)	19:52		20:24		20:54 20	20:30 (T40)	21:09 31		20:43 (T40)
29	07:46	08:07 (T76)			07:21		06:33		06:03	20:09 (T40)	06:01		20:13 (T40)
	17:44 46	17:19 (T42)			19:53		20:25		20:54 21	20:30 (T40)	21:09 30		20:43 (T40)
30	07:45	08:06 (T76)			07:19	19:24 (T41)	06:32		06:02	20:09 (T40)	06:02		20:13 (T40)
	17:45 51	17:21 (T42)			19:54 8	19:32 (T41)	20:26		20:55 22	20:31 (T40)	21:09 30		20:43 (T40)
31	07:44	08:05 (T76)			07:18	19:21 (T41)			06:02	20:08 (T40)			
	17:46 54	17:22 (T42)			19:55 13	19:34 (T41)			20:56 23	20:31 (T40)			
Potential sun hours	297		297		370		399		448		453		
Total, worst case	332		1671		91		668		191		892		
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64		
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.	0.68		0.68		0.69		0.60		0.54		0.54		
Total reduction	0.21		0.28		0.31		0.32		0.31		0.35		
Total, real	71		467		28		214		60		313		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 938 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8471)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August			September		October			November		December	
1	06:02		20:13 (T40)	06:26		06:57		19:07 (T41)	07:27		07:02		07:26 (T76)	07:37
	21:08	30	20:43 (T40)	20:50		20:07	37	19:44 (T41)	19:15		17:28	79	17:03 (T42)	17:04
2	06:03		20:13 (T40)	06:27		06:58		19:07 (T41)	07:29		07:03		07:26 (T76)	07:38
	21:08	30	20:43 (T40)	20:49		20:06	35	19:42 (T41)	19:13		17:27	80	17:03 (T42)	17:03
3	06:03		20:14 (T40)	06:28		06:59		19:07 (T41)	07:30		07:04		07:26 (T76)	07:39
	21:08	29	20:43 (T40)	20:48		20:04	34	19:41 (T41)	19:11		17:26	79	17:02 (T42)	17:03
4	06:04		20:14 (T40)	06:29		07:00		19:07 (T41)	07:31		07:06		07:27 (T76)	07:40
	21:08	28	20:42 (T40)	20:47		20:02	32	19:39 (T41)	19:10		17:24	77	17:01 (T42)	17:03
5	06:04		20:14 (T40)	06:30		07:01		19:07 (T41)	07:32		07:07		07:28 (T76)	07:41
	21:08	29	20:43 (T40)	20:46		20:01	30	19:37 (T41)	19:08		17:23	73	16:59 (T42)	17:03
6	06:05		20:14 (T40)	06:31		07:02		19:07 (T41)	07:33		07:08		07:30 (T76)	07:42
	21:08	28	20:42 (T40)	20:44		19:57	29	19:36 (T41)	19:06		17:22	71	16:59 (T42)	17:03
7	06:05		20:15 (T40)	06:32		07:03		19:08 (T41)	07:34		07:09		07:31 (T76)	07:43
	21:07	27	20:42 (T40)	20:43		19:56	26	19:34 (T41)	19:05		17:21	68	16:57 (T42)	17:03
8	06:06		20:15 (T40)	06:33		07:04		19:08 (T41)	07:35		07:10		07:32 (T76)	07:44
	21:07	27	20:42 (T40)	20:42		19:54	25	19:33 (T41)	19:03		17:20	64	16:56 (T42)	17:03
9	06:07		20:15 (T40)	06:34		07:05		19:09 (T41)	07:36		07:12		07:34 (T76)	07:45
	21:07	26	20:41 (T40)	20:41		19:52	22	19:31 (T41)	19:02		17:19	62	16:56 (T42)	17:03
10	06:07		20:16 (T40)	06:35		07:06		19:09 (T41)	07:37		07:13		07:35 (T76)	07:46
	21:06	25	20:41 (T40)	20:40		19:51	19	19:28 (T41)	19:00	11	17:46 (T42)	17:18	57	16:54 (T42)	17:03
11	06:08		20:17 (T40)	06:36		07:07		19:10 (T41)	07:38		17:30 (T42)	07:14		07:36 (T76)	07:46
	21:06	24	20:41 (T40)	20:38		19:49	17	19:27 (T41)	18:58	20	17:50 (T42)	17:17	54	16:53 (T42)	17:03
12	06:09		20:16 (T40)	06:37		07:08		19:12 (T41)	07:39		17:26 (T42)	07:15		07:37 (T76)	07:47
	21:06	24	20:40 (T40)	20:37		19:47	13	19:25 (T41)	18:57	27	17:53 (T42)	17:16	51	16:52 (T42)	17:03
13	06:10		20:17 (T40)	06:38		07:09		19:15 (T41)	07:40		17:24 (T42)	07:16		07:39 (T76)	07:48
	21:05	23	20:40 (T40)	20:36		19:45	8	19:23 (T41)	18:55	31	17:55 (T42)	17:15	46	16:51 (T42)	17:03
14	06:10		20:18 (T40)	06:39		07:10			07:41		17:21 (T42)	07:18		07:40 (T76)	07:49
	21:05	21	20:39 (T40)	20:34		19:44			18:54	35	17:56 (T42)	17:14	41	16:50 (T42)	17:03
15	06:11		20:19 (T40)	06:40		07:11			07:42		17:20 (T42)	07:19		07:41 (T76)	07:50
	21:04	20	20:39 (T40)	20:33		19:42			18:52	38	17:58 (T42)	17:13	37	16:49 (T42)	17:03
16	06:12		20:19 (T40)	06:41		07:12			07:44		17:18 (T42)	07:20		07:42 (T76)	07:50
	21:03	19	20:38 (T40)	20:31		19:40			18:50	41	17:59 (T42)	17:12	33	16:48 (T42)	17:04
17	06:13		20:19 (T40)	06:42		07:13			07:45		17:17 (T42)	07:21		07:44 (T76)	07:51
	21:03	18	20:37 (T40)	20:30		19:39			18:49	43	18:00 (T42)	17:11	27	16:48 (T42)	17:04
18	06:14		20:20 (T40)	06:43		07:14			07:46		17:15 (T42)	07:22		07:45 (T76)	07:52
	21:02	17	20:37 (T40)	20:29		19:37			18:47	46	18:01 (T42)	17:11	20	16:46 (T42)	17:04
19	06:14		20:21 (T40)	06:44	19:26 (T41)	07:15			07:47		17:14 (T42)	07:23		16:30 (T42)	07:52
	21:02	16	20:37 (T40)	20:27	8 19:34 (T41)	19:35			18:46	47	18:01 (T42)	17:10	15	16:45 (T42)	17:05
20	06:15		20:23 (T40)	06:45	19:22 (T41)	07:16			07:48		17:13 (T42)	07:25		16:35 (T42)	07:53
	21:01	13	20:36 (T40)	20:26	15 19:37 (T41)	19:33			18:44	49	18:02 (T42)	17:09	8	16:43 (T42)	17:05
21	06:16		20:23 (T40)	06:46	19:19 (T41)	07:17			07:49		17:13 (T42)	07:26			07:53
	21:00	12	20:35 (T40)	20:24	21 19:40 (T41)	19:32			18:43	50	18:03 (T42)	17:08			17:05
22	06:17		20:24 (T40)	06:47	19:17 (T41)	07:18			07:50		17:12 (T42)	07:27			07:54
	20:59	10	20:34 (T40)	20:23	24 19:41 (T41)	19:30			18:41	51	18:03 (T42)	17:08			17:06
23	06:18		20:26 (T40)	06:48	19:15 (T41)	07:19			07:51		17:11 (T42)	07:28			07:54
	20:59	7	20:33 (T40)	20:21	27 19:42 (T41)	19:28			18:40	52	18:03 (T42)	17:07			17:07
24	06:19		20:29 (T40)	06:49	19:14 (T41)	07:20			07:53		17:10 (T42)	07:29			07:55
	20:58	4	20:33 (T40)	20:20	29 19:43 (T41)	19:27			18:39	53	18:03 (T42)	17:07			17:07
25	06:20			06:50	19:13 (T41)	07:21			07:54		17:10 (T42)	07:30			07:55
	20:57			20:18	31 19:44 (T41)	19:25			18:37	54	18:04 (T42)	17:06			17:08
26	06:21			06:51	19:11 (T41)	07:22			07:55		17:10 (T42)	07:32			07:56
	20:56			20:17	34 19:45 (T41)	19:23			18:36	54	18:04 (T42)	17:06			17:08
27	06:22			06:52	19:11 (T41)	07:23			07:56		08:34 (T76)	07:33			07:56
	20:55			20:15	34 19:45 (T41)	19:22			18:34	65	18:04 (T42)	17:05			17:09
28	06:22			06:53	19:10 (T41)	07:24			07:57		08:31 (T76)	07:34			07:56
	20:54			20:14	35 19:45 (T41)	19:20			18:33	71	18:04 (T42)	17:05			17:10
29	06:23			06:54	19:09 (T41)	07:25			07:58		08:29 (T76)	07:35			07:57
	20:53			20:12	37 19:46 (T41)	19:18			18:32	73	18:03 (T42)	17:04			17:10
30	06:24			06:55	19:08 (T41)	07:26			08:00		08:29 (T76)	07:36			07:57
	20:52			20:10	38 19:46 (T41)	19:16			18:30	76	18:04 (T42)	17:04			17:11
31	06:25			06:56	19:08 (T41)				08:01		08:27 (T76)				07:57
	20:51			20:09	37 19:45 (T41)				18:29	78	18:03 (T42)				17:12
Potential sun hours	460			429		375			345			297			287
Total, worst case		507			370		327			1065			1042		
Sun reduction		0.66			0.61		0.59			0.48			0.30		
Oper. time red.		1.00			1.00		1.00			1.00			1.00		
Wind dir. red.		0.54			0.60		0.60			0.70			0.67		
Total reduction		0.36			0.37		0.36			0.34			0.20		
Total, real		183			139		119			367			212		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 940 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8472)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:57		15:21 (T53)	07:44			07:07		16:46 (T52)	07:16	06:31			06:02		06:24 (T51)
	17:13	47	16:08 (T53)	17:48			18:22	70	17:56 (T52)	19:56	20:27			20:57	24	06:48 (T51)
2	07:57		15:22 (T53)	07:43			07:06		16:45 (T52)	07:15	06:29			06:01		06:25 (T51)
	17:14	46	16:08 (T53)	17:49			18:23	71	17:56 (T52)	19:57	20:28			20:58	23	06:48 (T51)
3	07:57		15:23 (T53)	07:42			07:04		16:45 (T52)	07:13	06:28			06:01		06:26 (T51)
	17:15	45	16:08 (T53)	17:50			18:24	72	17:57 (T52)	19:58	20:29			20:58	22	06:48 (T51)
4	07:57		15:24 (T53)	07:40			07:03		16:44 (T52)	07:11	06:27			06:01		06:26 (T51)
	17:16	44	16:08 (T53)	17:52			18:25	72	17:56 (T52)	19:59	20:30			20:59	21	06:47 (T51)
5	07:57		15:25 (T53)	07:39			07:01		16:43 (T52)	07:10	06:25			06:00		06:27 (T51)
	17:17	43	16:08 (T53)	17:53			18:27	73	17:56 (T52)	20:00	20:31			21:00	20	06:47 (T51)
6	07:57		15:26 (T53)	07:38			06:59		16:44 (T52)	07:08	06:24			06:00		06:28 (T51)
	17:18	42	16:08 (T53)	17:54			18:28	73	17:57 (T52)	20:00	20:32			21:01	19	06:47 (T51)
7	07:57		15:26 (T53)	07:37			06:58		16:43 (T52)	07:06	06:23			06:00		06:29 (T51)
	17:19	41	16:07 (T53)	17:55			18:29	73	17:56 (T52)	20:01	20:33			21:01	18	06:47 (T51)
8	07:57		15:27 (T53)	07:36			07:56		17:43 (T52)	07:05	06:22			05:59		06:29 (T51)
	17:20	40	16:07 (T53)	17:57			19:30	74	18:57 (T52)	20:03	20:34			21:02	17	06:46 (T51)
9	07:57		15:29 (T53)	07:35			07:55		17:43 (T52)	07:03	06:21			05:59		06:29 (T51)
	17:21	38	16:07 (T53)	17:58			19:31	73	18:56 (T52)	20:04	20:35			21:02	17	06:46 (T51)
10	07:57		15:30 (T53)	07:34			07:53		17:42 (T52)	07:02	06:20		06:40 (T51)	05:59		06:30 (T51)
	17:22	37	16:07 (T53)	17:59			19:32	73	18:55 (T52)	20:05	20:37	3	06:43 (T51)	21:03	16	06:46 (T51)
11	07:57		15:31 (T53)	07:33			07:51		17:43 (T52)	07:00	06:19		06:39 (T51)	05:59		06:31 (T51)
	17:23	35	16:06 (T53)	18:00			19:33	73	18:56 (T52)	20:06	20:38	5	06:44 (T51)	21:04	14	06:45 (T51)
12	07:56		15:32 (T53)	07:31		17:17 (T52)	07:50		17:43 (T52)	06:58	06:17		06:38 (T51)	05:59		06:32 (T51)
	17:24	34	16:06 (T53)	18:02	10	17:27 (T52)	19:34	72	18:55 (T52)	20:07	20:39	7	06:45 (T51)	21:04	13	06:45 (T51)
13	07:56		15:34 (T53)	07:30		17:11 (T52)	07:48		17:43 (T52)	06:57	06:16		06:37 (T51)	05:59		06:32 (T51)
	17:25	32	16:06 (T53)	18:03	22	17:33 (T52)	19:36	71	18:54 (T52)	20:08	20:40	9	06:46 (T51)	21:05	13	06:45 (T51)
14	07:56		15:35 (T53)	07:29		17:08 (T52)	07:46		17:44 (T52)	06:55	06:15		06:36 (T51)	05:59		06:33 (T51)
	17:26	29	16:04 (T53)	18:04	29	17:37 (T52)	19:37	70	18:54 (T52)	20:09	20:41	11	06:47 (T51)	21:05	12	06:45 (T51)
15	07:55		15:38 (T53)	07:27		17:04 (T52)	07:45		17:43 (T52)	06:54	06:14		06:35 (T51)	05:59		06:34 (T51)
	17:27	26	16:04 (T53)	18:05	35	17:39 (T52)	19:38	70	18:53 (T52)	20:10	20:42	12	06:47 (T51)	21:06	11	06:45 (T51)
16	07:55		15:39 (T53)	07:26		17:02 (T52)	07:43		17:43 (T52)	06:52	06:13		06:34 (T51)	05:59		06:34 (T51)
	17:28	23	16:02 (T53)	18:06	40	17:42 (T52)	19:39	69	18:52 (T52)	20:11	20:43	14	06:48 (T51)	21:06	10	06:44 (T51)
17	07:54		15:42 (T53)	07:25		17:00 (T52)	07:42		17:45 (T52)	06:51	06:12		06:33 (T51)	05:59		06:35 (T51)
	17:30	19	16:01 (T53)	18:08	45	17:45 (T52)	19:40	67	18:52 (T52)	20:12	20:44	15	06:48 (T51)	21:06	9	06:44 (T51)
18	07:54		15:45 (T53)	07:23		16:58 (T52)	07:40		17:45 (T52)	06:49	06:12		06:32 (T51)	05:59		06:35 (T51)
	17:31	13	15:58 (T53)	18:09	48	17:46 (T52)	19:41	66	18:51 (T52)	20:13	20:45	16	06:48 (T51)	21:07	9	06:44 (T51)
19	07:53			07:22		16:57 (T52)	07:38		17:45 (T52)	06:48	06:11		06:31 (T51)	05:59		06:36 (T51)
	17:32			18:10	51	17:48 (T52)	19:42	64	18:49 (T52)	20:14	20:46	17	06:48 (T51)	21:07	8	06:44 (T51)
20	07:53			07:21		16:55 (T52)	07:36		17:46 (T52)	06:46	06:10		06:31 (T51)	05:59		06:36 (T51)
	17:33			18:11	53	17:48 (T52)	19:43	63	18:49 (T52)	20:15	20:46	18	06:49 (T51)	21:07	8	06:44 (T51)
21	07:52			07:19		16:54 (T52)	07:35		17:47 (T52)	06:45	06:09		06:30 (T51)	05:59		06:37 (T51)
	17:34			18:13	56	17:50 (T52)	19:44	60	18:47 (T52)	20:16	20:47	19	06:49 (T51)	21:08	8	06:45 (T51)
22	07:52			07:18		16:52 (T52)	07:33		17:47 (T52)	06:43	06:08		06:29 (T51)	05:59		06:37 (T51)
	17:35			18:14	59	17:51 (T52)	19:45	59	18:46 (T52)	20:17	20:48	20	06:49 (T51)	21:08	8	06:45 (T51)
23	07:51			07:16		16:51 (T52)	07:31		17:48 (T52)	06:42	06:07		06:28 (T51)	06:00		06:37 (T51)
	17:37			18:15	61	17:52 (T52)	19:47	56	18:44 (T52)	20:19	20:49	21	06:49 (T51)	21:08	8	06:45 (T51)
24	07:50			07:15		16:49 (T52)	07:30		17:50 (T52)	06:40	06:07		06:28 (T51)	06:00		06:36 (T51)
	17:38			18:16	63	17:52 (T52)	19:48	53	18:43 (T52)	20:20	20:50	21	06:49 (T51)	21:08	9	06:45 (T51)
25	07:50			07:13		16:49 (T52)	07:28		17:51 (T52)	06:39	06:06		06:27 (T51)	06:00		06:37 (T51)
	17:39			18:17	65	17:54 (T52)	19:49	50	18:41 (T52)	20:21	20:51	22	06:49 (T51)	21:08	9	06:46 (T51)
26	07:49			07:12		16:48 (T52)	07:26		17:52 (T52)	06:37	06:05		06:26 (T51)	06:00		06:37 (T51)
	17:40			18:18	66	17:54 (T52)	19:50	47	18:39 (T52)	20:22	20:52	23	06:49 (T51)	21:08	9	06:46 (T51)
27	07:48			07:10		16:47 (T52)	07:25		17:54 (T52)	06:36	06:05		06:26 (T51)	06:01		06:36 (T51)
	17:42			18:20	68	17:55 (T52)	19:51	43	18:37 (T52)	20:23	20:53	23	06:49 (T51)	21:09	10	06:46 (T51)
28	07:47			07:09		16:46 (T52)	07:23		17:56 (T52)	06:35	06:04		06:25 (T51)	06:01		06:36 (T51)
	17:43			18:21	69	17:55 (T52)	19:52	39	18:35 (T52)	20:24	20:54	23	06:48 (T51)	21:09	12	06:48 (T51)
29	07:46						07:21		17:58 (T52)	06:33	06:03		06:25 (T51)	06:02		06:36 (T51)
	17:44						19:53	34	18:32 (T52)	20:25	20:54	24	06:49 (T51)	21:09	12	06:48 (T51)
30	07:45						07:20		18:02 (T52)	06:32	06:03		06:24 (T51)	06:02		06:36 (T51)
	17:45						19:54	27	18:29 (T52)	20:26	20:55	24	06:48 (T51)	21:09	13	06:49 (T51)
31	07:44						07:18		18:05 (T52)		06:02		06:24 (T51)			
	17:47						19:55	19	18:24 (T52)		20:56	24	06:48 (T51)			
Potential sun hours	297			297			370			399	448			452		
Total, worst case		634			840			1896				371			402	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.75			0.69			0.69				0.71			0.71	
Total reduction		0.23			0.28			0.31				0.41			0.46	
Total, real		147			234			580				152			184	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 940 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8472)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:03		06:35 (T51)	06:27		06:49 (T51)	06:58			07:28		17:23 (T52)	07:02			07:37		15:13 (T53)
	21:08	14	06:49 (T51)	20:50	7	06:56 (T51)	20:07			19:15	71	18:34 (T52)	17:28			17:04	35	15:48 (T53)
2	06:03		06:36 (T51)	06:28		06:49 (T51)	06:59			07:29		17:22 (T52)	07:03			07:38		15:12 (T53)
	21:08	15	06:51 (T51)	20:49	4	06:53 (T51)	20:06			19:13	72	18:34 (T52)	17:27			17:04	37	15:49 (T53)
3	06:04		06:35 (T51)	06:29		06:50 (T51)	07:00			07:30		17:21 (T52)	07:04			07:39		15:13 (T53)
	21:08	16	06:51 (T51)	20:48	2	06:52 (T51)	20:04			19:12	73	18:34 (T52)	17:26			17:04	38	15:51 (T53)
4	06:04		06:35 (T51)	06:30			07:01			07:31		17:21 (T52)	07:06			07:40		15:12 (T53)
	21:08	17	06:52 (T51)	20:47			20:02			19:10	73	18:34 (T52)	17:25			17:03	40	15:52 (T53)
5	06:05		06:34 (T51)	06:31			07:02			07:32		17:20 (T52)	07:07			07:41		15:12 (T53)
	21:08	18	06:52 (T51)	20:46			20:01			19:08	73	18:33 (T52)	17:24			17:03	41	15:53 (T53)
6	06:05		06:34 (T51)	06:32			07:03			07:33		17:20 (T52)	07:08			07:42		15:12 (T53)
	21:08	19	06:53 (T51)	20:45			19:57			19:07	73	18:33 (T52)	17:22			17:03	42	15:54 (T53)
7	06:06		06:33 (T51)	06:33			07:04			07:34		17:19 (T52)	07:09			07:43		15:11 (T53)
	21:07	20	06:53 (T51)	20:43			19:56			19:05	73	18:32 (T52)	17:21			17:03	43	15:54 (T53)
8	06:07		06:33 (T51)	06:34			07:05			07:35		17:19 (T52)	07:10			07:44		15:11 (T53)
	21:07	21	06:54 (T51)	20:42			19:54			19:03	73	18:32 (T52)	17:20			17:03	44	15:55 (T53)
9	06:07		06:34 (T51)	06:35			07:06			07:36		17:19 (T52)	07:12			07:45		15:11 (T53)
	21:07	21	06:55 (T51)	20:41			19:52			19:02	72	18:31 (T52)	17:19			17:03	45	15:56 (T53)
10	06:08		06:33 (T51)	06:36			07:07			07:37		17:19 (T52)	07:13			07:46		15:11 (T53)
	21:06	22	06:55 (T51)	20:40			19:51			19:00	72	18:31 (T52)	17:18			17:03	46	15:57 (T53)
11	06:09		06:33 (T51)	06:37			07:08			07:38		17:19 (T52)	07:14			07:46		15:11 (T53)
	21:06	23	06:56 (T51)	20:38			19:49			18:59	71	18:30 (T52)	17:17			17:03	47	15:58 (T53)
12	06:09		06:33 (T51)	06:38			07:09		17:58 (T52)	07:39		17:19 (T52)	07:15			07:47		15:12 (T53)
	21:06	24	06:57 (T51)	20:37			19:47	18	18:16 (T52)	18:57	70	18:29 (T52)	17:16			17:03	47	15:59 (T53)
13	06:10		06:32 (T51)	06:39			07:10		17:53 (T52)	07:40		17:20 (T52)	07:16			07:48		15:12 (T53)
	21:05	24	06:56 (T51)	20:36			19:46	27	18:20 (T52)	18:55	69	18:29 (T52)	17:15			17:03	47	15:59 (T53)
14	06:11		06:33 (T51)	06:40			07:11		17:50 (T52)	07:42		17:20 (T52)	07:18			07:49		15:12 (T53)
	21:05	24	06:57 (T51)	20:34			19:44	32	18:22 (T52)	18:54	68	18:28 (T52)	17:14			17:04	47	15:59 (T53)
15	06:12		06:34 (T51)	06:41			07:12		17:47 (T52)	07:43		17:20 (T52)	07:19			07:50		15:12 (T53)
	21:04	24	06:58 (T51)	20:33			19:42	38	18:25 (T52)	18:52	67	18:27 (T52)	17:13			17:04	48	16:00 (T53)
16	06:12		06:35 (T51)	06:42			07:13		17:44 (T52)	07:44		17:20 (T52)	07:20			07:50		15:13 (T53)
	21:03	23	06:58 (T51)	20:32			19:41	42	18:26 (T52)	18:51	66	18:26 (T52)	17:13			17:04	48	16:01 (T53)
17	06:13		06:35 (T51)	06:43			07:14		17:41 (T52)	07:45		17:21 (T52)	07:21			07:51		15:12 (T53)
	21:03	23	06:58 (T51)	20:30			19:39	46	18:27 (T52)	18:49	64	18:25 (T52)	17:12			17:04	49	16:01 (T53)
18	06:14		06:36 (T51)	06:44			07:15		17:39 (T52)	07:46		17:21 (T52)	07:22			07:52		15:13 (T53)
	21:02	22	06:58 (T51)	20:29			19:37	49	18:28 (T52)	18:48	63	18:24 (T52)	17:11			17:05	49	16:02 (T53)
19	06:15		06:37 (T51)	06:45			07:16		17:37 (T52)	07:47		17:22 (T52)	07:24			07:52		15:14 (T53)
	21:02	22	06:59 (T51)	20:27			19:35	52	18:29 (T52)	18:46	60	18:22 (T52)	17:10			17:05	49	16:03 (T53)
20	06:16		06:38 (T51)	06:46			07:17		17:35 (T52)	07:48		17:24 (T52)	07:25			07:53		15:14 (T53)
	21:01	21	06:59 (T51)	20:26			19:34	55	18:30 (T52)	18:45	58	18:22 (T52)	17:10			17:05	49	16:03 (T53)
21	06:17		06:39 (T51)	06:47			07:18		17:33 (T52)	07:49		17:25 (T52)	07:26			07:53		15:15 (T53)
	21:00	20	06:59 (T51)	20:24			19:32	58	18:31 (T52)	18:43	55	18:20 (T52)	17:09			17:06	49	16:04 (T53)
22	06:17		06:40 (T51)	06:48			07:19		17:32 (T52)	07:50		17:26 (T52)	07:27			07:54		15:15 (T53)
	20:59	20	07:00 (T51)	20:23			19:30	60	18:32 (T52)	18:42	53	18:19 (T52)	17:08			17:06	49	16:04 (T53)
23	06:18		06:40 (T51)	06:49			07:20		17:30 (T52)	07:52		17:27 (T52)	07:28			07:54		15:16 (T53)
	20:59	19	06:59 (T51)	20:21			19:29	62	18:32 (T52)	18:40	50	18:17 (T52)	17:08			17:07	49	16:05 (T53)
24	06:19		06:41 (T51)	06:50			07:21		17:29 (T52)	07:53		17:28 (T52)	07:29		15:23 (T53)	07:55		15:16 (T53)
	20:58	18	06:59 (T51)	20:20			19:27	64	18:33 (T52)	18:39	47	18:15 (T52)	17:07	12	15:35 (T53)	17:07	49	16:05 (T53)
25	06:20		06:42 (T51)	06:51			07:22		17:27 (T52)	07:54		17:30 (T52)	07:30		15:20 (T53)	07:55		15:16 (T53)
	20:57	17	06:59 (T51)	20:18			19:25	66	18:33 (T52)	18:38	44	18:14 (T52)	17:07	19	15:39 (T53)	17:08	49	16:05 (T53)
26	06:21		06:43 (T51)	06:52			07:23		17:26 (T52)	07:55		17:32 (T52)	07:32		15:18 (T53)	07:56		15:17 (T53)
	20:56	16	06:59 (T51)	20:17			19:23	67	18:33 (T52)	18:36	39	18:11 (T52)	17:06	23	15:41 (T53)	17:09	49	16:06 (T53)
27	06:22		06:44 (T51)	06:53			07:24		17:25 (T52)	07:56		17:34 (T52)	07:33		15:17 (T53)	07:56		15:18 (T53)
	20:55	15	06:59 (T51)	20:15			19:22	68	18:33 (T52)	18:35	35	18:09 (T52)	17:06	26	15:43 (T53)	17:09	48	16:06 (T53)
28	06:23		06:45 (T51)	06:54			07:25		17:24 (T52)	07:57		17:37 (T52)	07:34		15:15 (T53)	07:56		15:18 (T53)
	20:54	13	06:58 (T51)	20:14			19:20	69	18:33 (T52)	18:33	28	18:05 (T52)	17:05	29	15:44 (T53)	17:10	48	16:06 (T53)
29	06:24		06:46 (T51)	06:55			07:26		17:23 (T52)	07:59		17:42 (T52)	07:35		15:14 (T53)	07:57		15:18 (T53)
	20:53	12	06:58 (T51)	20:12			19:18	71	18:34 (T52)	18:32	20	18:02 (T52)	17:05	32	15:46 (T53)	17:11	48	16:06 (T53)
30	06:25		06:47 (T51)	06:56			07:27		17:22 (T52)	08:00		17:49 (T52)	07:36		15:13 (T53)	07:57		15:20 (T53)
	20:52	10	06:57 (T51)	20:11			19:17	72	18:34 (T52)	18:31	5	17:54 (T52)	17:04	34	15:47 (T53)	17:12	47	16:07 (T53)
31	06:26		06:48 (T51)	06:57						08:01						07:57		15:21 (T53)
	20:51	8	06:56 (T51)	20:09						18:30						17:12	47	16:08 (T53)
Potential sun hours	459			428			375			345			297			287		
Total, worst case		581			13			1016			1757			175			1423	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.71			0.71			0.69			0.69			0.75			0.75	
Total reduction		0.47			0.44			0.41			0.33			0.23			0.17	
Total, real		275			6			417			586			39			235	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 941 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8473)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:57		15:28 (T53)	07:44			07:07		16:50 (T52)	07:16	06:31			06:02		06:23 (T51)
	17:13	46	16:14 (T53)	17:48			18:22	67	17:57 (T52)	19:56	20:27			20:57	25	06:48 (T51)
2	07:57		15:29 (T53)	07:43			07:06		16:49 (T52)	07:15	06:29			06:01		06:24 (T51)
	17:14	45	16:14 (T53)	17:49			18:23	67	17:56 (T52)	19:57	20:28			20:58	25	06:49 (T51)
3	07:57		15:29 (T53)	07:42			07:04		16:50 (T52)	07:13	06:28			06:01		06:25 (T51)
	17:15	46	16:15 (T53)	17:50			18:24	67	17:57 (T52)	19:58	20:29			20:58	24	06:49 (T51)
4	07:57		15:30 (T53)	07:40			07:03		16:49 (T52)	07:11	06:27			06:01		06:25 (T51)
	17:16	45	16:15 (T53)	17:52			18:25	68	17:57 (T52)	19:59	20:30			20:59	23	06:48 (T51)
5	07:57		15:31 (T53)	07:39			07:01		16:48 (T52)	07:10	06:25			06:00		06:26 (T51)
	17:17	44	16:15 (T53)	17:53			18:27	68	17:56 (T52)	20:00	20:31			21:00	22	06:48 (T51)
6	07:57		15:32 (T53)	07:38			06:59		16:48 (T52)	07:08	06:24			06:00		06:26 (T51)
	17:18	43	16:15 (T53)	17:54			18:28	69	17:57 (T52)	20:00	20:32			21:01	22	06:48 (T51)
7	07:57		15:32 (T53)	07:37			06:58		16:48 (T52)	07:06	06:23			06:00		06:27 (T51)
	17:19	42	16:14 (T53)	17:55			18:29	68	17:56 (T52)	20:01	20:33			21:01	21	06:48 (T51)
8	07:57		15:33 (T53)	07:36			07:56		17:48 (T52)	07:05	06:22			05:59		06:27 (T51)
	17:20	41	16:14 (T53)	17:57			19:30	69	18:57 (T52)	20:03	20:34			21:02	20	06:47 (T51)
9	07:57		15:35 (T53)	07:35			07:55		17:48 (T52)	07:03	06:21			05:59		06:28 (T51)
	17:21	39	16:14 (T53)	17:58			19:31	68	18:56 (T52)	20:04	20:35			21:02	19	06:47 (T51)
10	07:57		15:36 (T53)	07:34			07:53		17:48 (T52)	07:02	06:20		06:40 (T51)	05:59		06:28 (T51)
	17:22	39	16:15 (T53)	17:59			19:32	67	18:55 (T52)	20:05	20:37	2	06:42 (T51)	21:03	19	06:47 (T51)
11	07:57		15:36 (T53)	07:33			07:51		17:49 (T52)	07:00	06:19		06:39 (T51)	05:59		06:29 (T51)
	17:23	38	16:14 (T53)	18:00			19:33	66	18:55 (T52)	20:06	20:38	5	06:44 (T51)	21:04	18	06:47 (T51)
12	07:56		15:38 (T53)	07:31		17:20 (T52)	07:50		17:48 (T52)	06:58	06:17		06:38 (T51)	05:59		06:30 (T51)
	17:24	36	16:14 (T53)	18:02	9	17:29 (T52)	19:34	66	18:54 (T52)	20:07	20:39	7	06:45 (T51)	21:04	17	06:47 (T51)
13	07:56		15:40 (T53)	07:30		17:14 (T52)	07:48		17:48 (T52)	06:57	06:16		06:37 (T51)	05:59		06:30 (T51)
	17:25	33	16:13 (T53)	18:03	21	17:35 (T52)	19:36	65	18:53 (T52)	20:08	20:40	9	06:46 (T51)	21:05	17	06:47 (T51)
14	07:56		15:41 (T53)	07:29		17:11 (T52)	07:46		17:49 (T52)	06:55	06:15		06:36 (T51)	05:59		06:31 (T51)
	17:26	31	16:12 (T53)	18:04	28	17:39 (T52)	19:37	64	18:53 (T52)	20:09	20:41	11	06:47 (T51)	21:05	16	06:47 (T51)
15	07:55		15:43 (T53)	07:27		17:07 (T52)	07:45		17:49 (T52)	06:54	06:14		06:35 (T51)	05:59		06:31 (T51)
	17:27	29	16:12 (T53)	18:05	34	17:41 (T52)	19:38	63	18:52 (T52)	20:10	20:42	12	06:47 (T51)	21:06	16	06:47 (T51)
16	07:55		15:44 (T53)	07:26		17:05 (T52)	07:43		17:50 (T52)	06:52	06:13		06:34 (T51)	05:59		06:32 (T51)
	17:28	26	16:10 (T53)	18:06	39	17:44 (T52)	19:39	61	18:51 (T52)	20:11	20:43	14	06:48 (T51)	21:06	15	06:47 (T51)
17	07:54		15:46 (T53)	07:25		17:03 (T52)	07:42		17:51 (T52)	06:51	06:12		06:33 (T51)	05:59		06:32 (T51)
	17:30	24	16:10 (T53)	18:08	42	17:45 (T52)	19:40	59	18:50 (T52)	20:12	20:44	15	06:48 (T51)	21:06	15	06:47 (T51)
18	07:54		15:48 (T53)	07:23		17:01 (T52)	07:40		17:51 (T52)	06:49	06:12		06:32 (T51)	05:59		06:32 (T51)
	17:31	20	16:08 (T53)	18:09	45	17:46 (T52)	19:41	58	18:49 (T52)	20:13	20:45	16	06:48 (T51)	21:07	15	06:47 (T51)
19	07:53		15:52 (T53)	07:22		17:00 (T52)	07:38		17:52 (T52)	06:48	06:11		06:31 (T51)	05:59		06:33 (T51)
	17:32	14	16:06 (T53)	18:10	48	17:48 (T52)	19:42	55	18:47 (T52)	20:14	20:45	17	06:48 (T51)	21:07	13	06:46 (T51)
20	07:53			07:21		16:58 (T52)	07:36		17:53 (T52)	06:46	06:10		06:31 (T51)	05:59		06:33 (T51)
	17:33			18:11	51	17:49 (T52)	19:43	54	18:47 (T52)	20:15	20:46	18	06:49 (T51)	21:07	13	06:46 (T51)
21	07:52			07:19		16:57 (T52)	07:35		17:54 (T52)	06:45	06:09		06:30 (T51)	05:59		06:34 (T51)
	17:34			18:13	53	17:50 (T52)	19:44	51	18:45 (T52)	20:16	20:47	19	06:49 (T51)	21:08	13	06:47 (T51)
22	07:52			07:18		16:56 (T52)	07:33		17:55 (T52)	06:43	06:08		06:29 (T51)	05:59		06:34 (T51)
	17:35			18:14	55	17:51 (T52)	19:45	48	18:43 (T52)	20:17	20:48	20	06:49 (T51)	21:08	13	06:47 (T51)
23	07:51			07:16		16:55 (T52)	07:31		17:56 (T52)	06:42	06:07		06:28 (T51)	06:00		06:34 (T51)
	17:37			18:15	58	17:53 (T52)	19:47	45	18:41 (T52)	20:19	20:49	21	06:49 (T51)	21:08	13	06:47 (T51)
24	07:50			07:15		16:53 (T52)	07:30		17:58 (T52)	06:40	06:07		06:28 (T51)	06:00		06:33 (T51)
	17:38			18:16	60	17:53 (T52)	19:48	41	18:39 (T52)	20:20	20:50	22	06:50 (T51)	21:08	15	06:48 (T51)
25	07:50			07:13		16:53 (T52)	07:28		18:00 (T52)	06:39	06:06		06:27 (T51)	06:00		06:34 (T51)
	17:39			18:17	62	17:55 (T52)	19:49	37	18:37 (T52)	20:21	20:51	22	06:49 (T51)	21:08	15	06:49 (T51)
26	07:49			07:12		16:52 (T52)	07:26		18:02 (T52)	06:37	06:05		06:26 (T51)	06:00		06:34 (T51)
	17:40			18:18	63	17:55 (T52)	19:50	32	18:34 (T52)	20:22	20:52	23	06:49 (T51)	21:08	15	06:49 (T51)
27	07:48			07:10		16:52 (T52)	07:25		18:06 (T52)	06:36	06:05		06:26 (T51)	06:01		06:33 (T51)
	17:42			18:20	64	17:56 (T52)	19:51	25	18:31 (T52)	20:23	20:53	24	06:50 (T51)	21:09	16	06:49 (T51)
28	07:47			07:09		16:50 (T52)	07:23		18:10 (T52)	06:35	06:04		06:25 (T51)	06:01		06:34 (T51)
	17:43			18:21	66	17:56 (T52)	19:52	16	18:26 (T52)	20:24	20:54	24	06:49 (T51)	21:09	16	06:50 (T51)
29	07:46						07:21			06:33	06:03		06:25 (T51)	06:02		06:34 (T51)
	17:44						19:53			20:25	20:54	24	06:49 (T51)	21:09	16	06:50 (T51)
30	07:45						07:20			06:32	06:03		06:24 (T51)	06:02		06:34 (T51)
	17:45						19:54			20:26	20:55	25	06:49 (T51)	21:09	17	06:51 (T51)
31	07:44						07:18				06:02		06:24 (T51)			
	17:47						19:55				20:56	25	06:49 (T51)			
Potential sun hours	297			297			370			399	448			452		
Total, worst case		681			798			1584				375			524	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.75			0.69			0.69				0.71			0.71	
Total reduction		0.23			0.28			0.31				0.41			0.46	
Total, real		158			222			485				153			241	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 941 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8473)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:03		06:33 (T51)	06:27		06:49 (T51)	06:58			07:28		17:28 (T52)	07:02			07:37		15:18 (T53)
	21:08	18	06:51 (T51)	20:50	6	06:55 (T51)	20:07			19:15	66	18:34 (T52)	17:28			17:04	38	15:56 (T53)
2	06:03		06:34 (T51)	06:28		06:49 (T51)	06:59			07:29		17:27 (T52)	07:03			07:38		15:18 (T53)
	21:08	18	06:52 (T51)	20:49	4	06:53 (T51)	20:06			19:13	67	18:34 (T52)	17:27			17:04	39	15:57 (T53)
3	06:04		06:33 (T51)	06:29		06:50 (T51)	07:00			07:30		17:27 (T52)	07:04			07:39		15:19 (T53)
	21:08	19	06:52 (T51)	20:48	1	06:51 (T51)	20:04			19:12	67	18:34 (T52)	17:26			17:04	39	15:58 (T53)
4	06:04		06:33 (T51)	06:30			07:01			07:31		17:26 (T52)	07:06			07:40		15:18 (T53)
	21:08	20	06:53 (T51)	20:47			20:02			19:10	67	18:33 (T52)	17:25			17:03	41	15:59 (T53)
5	06:05		06:33 (T51)	06:31			07:02			07:32		17:25 (T52)	07:07			07:41		15:18 (T53)
	21:08	20	06:53 (T51)	20:46			20:01			19:08	68	18:33 (T52)	17:24			17:03	42	16:00 (T53)
6	06:05		06:33 (T51)	06:32			07:03			07:33		17:25 (T52)	07:08			07:42		15:18 (T53)
	21:08	21	06:54 (T51)	20:45			19:57			19:07	68	18:33 (T52)	17:22			17:03	43	16:01 (T53)
7	06:06		06:32 (T51)	06:33			07:04			07:34		17:24 (T52)	07:09			07:43		15:17 (T53)
	21:07	22	06:54 (T51)	20:43			19:56			19:05	68	18:32 (T52)	17:21			17:03	44	16:01 (T53)
8	06:07		06:32 (T51)	06:34			07:05			07:35		17:24 (T52)	07:10			07:44		15:17 (T53)
	21:07	23	06:55 (T51)	20:42			19:54			19:03	68	18:32 (T52)	17:20			17:03	45	16:02 (T53)
9	06:07		06:32 (T51)	06:35			07:06			07:36		17:23 (T52)	07:12			07:45		15:17 (T53)
	21:07	24	06:56 (T51)	20:41			19:52			19:02	68	18:31 (T52)	17:19			17:03	46	16:03 (T53)
10	06:08		06:31 (T51)	06:36			07:07			07:37		17:23 (T52)	07:13			07:46		15:18 (T53)
	21:06	25	06:56 (T51)	20:40			19:51			19:00	68	18:31 (T52)	17:18			17:03	45	16:03 (T53)
11	06:09		06:32 (T51)	06:37			07:08			07:38		17:23 (T52)	07:14			07:46		15:18 (T53)
	21:06	25	06:57 (T51)	20:38			19:49			18:59	67	18:30 (T52)	17:17			17:03	46	16:04 (T53)
12	06:09		06:32 (T51)	06:38			07:09			07:39		17:23 (T52)	07:15			07:47		15:18 (T53)
	21:06	25	06:57 (T51)	20:37			19:47			18:57	67	18:30 (T52)	17:16			17:03	47	16:05 (T53)
13	06:10		06:32 (T51)	06:39			07:10			07:40		17:24 (T52)	07:16			07:48		15:19 (T53)
	21:05	25	06:57 (T51)	20:36			19:46			18:55	66	18:30 (T52)	17:15			17:03	47	16:06 (T53)
14	06:11		06:33 (T51)	06:40			07:11			07:42		17:24 (T52)	07:18			07:49		15:18 (T53)
	21:05	25	06:58 (T51)	20:34			19:44			18:54	65	18:29 (T52)	17:14			17:04	48	16:06 (T53)
15	06:12		06:34 (T51)	06:41			07:12		18:01 (T52)	07:43		17:24 (T52)	07:19			07:50		15:19 (T53)
	21:04	24	06:58 (T51)	20:33			19:42	14	18:15 (T52)	18:52	64	18:28 (T52)	17:13			17:04	48	16:07 (T53)
16	06:12		06:35 (T51)	06:42			07:13		17:56 (T52)	07:44		17:24 (T52)	07:20			07:50		15:19 (T53)
	21:03	24	06:59 (T51)	20:32			19:41	23	18:19 (T52)	18:51	63	18:27 (T52)	17:13			17:04	49	16:08 (T53)
17	06:13		06:35 (T51)	06:43			07:13		17:51 (T52)	07:45		17:25 (T52)	07:21			07:51		15:19 (T53)
	21:03	23	06:58 (T51)	20:30			19:39	30	18:21 (T52)	18:49	61	18:26 (T52)	17:12			17:04	49	16:08 (T53)
18	06:14		06:36 (T51)	06:44			07:14		17:48 (T52)	07:46		17:25 (T52)	07:22			07:52		15:20 (T53)
	21:02	23	06:59 (T51)	20:29			19:37	35	18:23 (T52)	18:48	60	18:25 (T52)	17:11			17:05	49	16:09 (T53)
19	06:15		06:37 (T51)	06:45			07:15		17:45 (T52)	07:47		17:26 (T52)	07:24			07:52		15:21 (T53)
	21:02	22	06:59 (T51)	20:27			19:35	40	18:25 (T52)	18:46	57	18:23 (T52)	17:10			17:05	48	16:09 (T53)
20	06:16		06:38 (T51)	06:46			07:17		17:43 (T52)	07:48		17:27 (T52)	07:25			07:53		15:21 (T53)
	21:01	21	06:59 (T51)	20:26			19:34	44	18:27 (T52)	18:45	55	18:22 (T52)	17:10			17:05	48	16:09 (T53)
21	06:16		06:39 (T51)	06:47			07:18		17:41 (T52)	07:49		17:28 (T52)	07:26			07:53		15:22 (T53)
	21:00	21	07:00 (T51)	20:24			19:32	47	18:28 (T52)	18:43	53	18:21 (T52)	17:09			17:06	48	16:10 (T53)
22	06:17		06:40 (T51)	06:48			07:19		17:39 (T52)	07:50		17:29 (T52)	07:27			07:54		15:22 (T53)
	20:59	20	07:00 (T51)	20:23			19:30	50	18:29 (T52)	18:42	50	18:19 (T52)	17:08			17:06	48	16:10 (T53)
23	06:18		06:40 (T51)	06:49			07:20		17:37 (T52)	07:52		17:30 (T52)	07:28		15:28 (T53)	07:54		15:23 (T53)
	20:59	19	06:59 (T51)	20:21			19:29	53	18:30 (T52)	18:40	47	18:17 (T52)	17:08	14	15:42 (T53)	17:07	48	16:11 (T53)
24	06:19		06:41 (T51)	06:50			07:21		17:36 (T52)	07:53		17:31 (T52)	07:29		15:26 (T53)	07:55		15:23 (T53)
	20:58	18	06:59 (T51)	20:20			19:27	55	18:31 (T52)	18:39	44	18:15 (T52)	17:07	19	15:45 (T53)	17:07	48	16:11 (T53)
25	06:20		06:42 (T51)	06:51			07:22		17:34 (T52)	07:54		17:34 (T52)	07:30		15:25 (T53)	07:55		15:23 (T53)
	20:57	17	06:59 (T51)	20:18			19:25	57	18:31 (T52)	18:38	41	18:15 (T52)	17:07	23	15:48 (T53)	17:08	48	16:11 (T53)
26	06:21		06:43 (T51)	06:52			07:23		17:33 (T52)	07:55		17:36 (T52)	07:32		15:23 (T53)	07:56		15:24 (T53)
	20:56	16	06:59 (T51)	20:17			19:23	59	18:32 (T52)	18:36	37	18:13 (T52)	17:06	26	15:49 (T53)	17:09	49	16:13 (T53)
27	06:22		06:44 (T51)	06:53			07:24		17:31 (T52)	07:56		17:38 (T52)	07:33		15:22 (T53)	07:56		15:24 (T53)
	20:55	15	06:59 (T51)	20:15			19:22	61	18:32 (T52)	18:35	32	18:10 (T52)	17:06	29	15:51 (T53)	17:09	49	16:13 (T53)
28	06:23		06:45 (T51)	06:54			07:25		17:30 (T52)	07:57		17:40 (T52)	07:34		15:21 (T53)	07:56		15:25 (T53)
	20:54	13	06:58 (T51)	20:14			19:20	62	18:32 (T52)	18:33	27	18:07 (T52)	17:05	31	15:52 (T53)	17:10	48	16:13 (T53)
29	06:24		06:46 (T51)	06:55			07:26		17:29 (T52)	07:59		17:45 (T52)	07:35		15:20 (T53)	07:57		15:25 (T53)
	20:53	12	06:58 (T51)	20:12			19:18	64	18:33 (T52)	18:32	19	18:04 (T52)	17:05	33	15:53 (T53)	17:11	48	16:13 (T53)
30	06:25		06:47 (T51)	06:56			07:27		17:28 (T52)	08:00		17:53 (T52)	07:36		15:19 (T53)	07:57		15:27 (T53)
	20:52	10	06:57 (T51)	20:11			19:17	65	18:33 (T52)	18:31	2	17:55 (T52)	17:04	36	15:55 (T53)	17:12	47	16:14 (T53)
31	06:26		06:48 (T51)	06:57						08:01						07:57		15:27 (T53)
	20:51	8	06:56 (T51)	20:09						18:30						17:12	47	16:14 (T53)
Potential sun hours	459			428			375			345			297			287		
Total, worst case		616			11			759			1652			211			1429	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.71			0.71			0.69			0.69			0.75			0.75	
Total reduction		0.47			0.44			0.41			0.33			0.23			0.17	
Total, real		292			5			312			552			48			236	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 948 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8479)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February	March	April			May			June		
1	07:57		08:52 (T63)	07:43	07:07	07:16			06:31		07:04 (T61)	06:02		07:16 (T61)
	17:13	25	09:17 (T63)	17:48	18:22	19:56			20:27	80	08:24 (T61)	20:57	53	08:09 (T61)
2	07:57		08:53 (T63)	07:42	07:06	07:15			06:29		07:04 (T61)	06:01		07:17 (T61)
	17:14	24	09:17 (T63)	17:49	18:23	19:57			20:28	80	08:24 (T61)	20:58	52	08:09 (T61)
3	07:57		08:54 (T63)	07:41	07:04	07:13		07:44 (T61)	06:28		07:04 (T61)	06:01		07:18 (T61)
	17:15	23	09:17 (T63)	17:50	18:24	19:58	15	07:59 (T61)	20:29	80	08:24 (T61)	20:58	51	08:09 (T61)
4	07:57		08:55 (T63)	07:40	07:03	07:11		07:38 (T61)	06:27		07:04 (T61)	06:01		07:18 (T61)
	17:16	21	09:16 (T63)	17:52	18:25	19:59	26	08:04 (T61)	20:30	80	08:24 (T61)	20:59	50	08:08 (T61)
5	07:57		08:56 (T63)	07:39	07:01	07:10		07:34 (T61)	06:25		07:03 (T61)	06:00		07:19 (T61)
	17:17	20	09:16 (T63)	17:53	18:27	20:00	34	08:08 (T61)	20:31	79	08:22 (T61)	21:00	49	08:08 (T61)
6	07:57		08:57 (T63)	07:38	06:59	07:08		07:30 (T61)	06:24		07:04 (T61)	06:00		07:20 (T61)
	17:18	18	09:15 (T63)	17:54	18:28	20:00	41	08:11 (T61)	20:32	78	08:22 (T61)	21:00	48	08:08 (T61)
7	07:57		08:58 (T63)	07:37	06:58	07:06		07:27 (T61)	06:23		07:04 (T61)	06:00		07:21 (T61)
	17:19	16	09:14 (T63)	17:55	18:29	20:01	45	08:12 (T61)	20:33	78	08:22 (T61)	21:01	46	08:07 (T61)
8	07:57		09:00 (T63)	07:36	07:56	07:05		07:26 (T61)	06:22		07:04 (T61)	05:59		07:21 (T61)
	17:20	14	09:14 (T63)	17:57	19:30	20:02	49	08:15 (T61)	20:34	78	08:22 (T61)	21:02	45	08:06 (T61)
9	07:57		09:03 (T63)	07:35	07:55	07:03		07:23 (T61)	06:21		07:04 (T61)	05:59		07:22 (T61)
	17:21	9	09:12 (T63)	17:58	19:31	20:04	53	08:16 (T61)	20:35	77	08:21 (T61)	21:02	44	08:06 (T61)
10	07:57			07:34	07:53	07:02		07:22 (T61)	06:20		07:05 (T61)	05:59		07:23 (T61)
	17:22			17:59	19:32	20:05	56	08:18 (T61)	20:36	76	08:21 (T61)	21:03	43	08:06 (T61)
11	07:57			07:32	07:51	07:00		07:20 (T61)	06:19		07:05 (T61)	05:59		07:23 (T61)
	17:23			18:00	19:33	20:06	59	08:19 (T61)	20:37	76	08:21 (T61)	21:03	43	08:06 (T61)
12	07:56			07:31	07:50	06:58		07:17 (T61)	06:17		07:05 (T61)	05:59		07:24 (T61)
	17:24			18:02	19:34	20:07	62	08:19 (T61)	20:38	75	08:20 (T61)	21:04	42	08:06 (T61)
13	07:56			07:30	07:48	06:57		07:17 (T61)	06:16		07:06 (T61)	05:59		07:25 (T61)
	17:25			18:03	19:36	20:08	64	08:21 (T61)	20:39	74	08:20 (T61)	21:04	40	08:05 (T61)
14	07:56			07:29	07:46	06:55		07:15 (T61)	06:15		07:06 (T61)	05:59		07:25 (T61)
	17:26			18:04	19:37	20:09	66	08:21 (T61)	20:40	73	08:19 (T61)	21:05	40	08:05 (T61)
15	07:55			07:27	07:45	06:54		07:14 (T61)	06:14		07:06 (T61)	05:59		07:26 (T61)
	17:27			18:05	19:38	20:10	68	08:22 (T61)	20:41	73	08:19 (T61)	21:05	39	08:05 (T61)
16	07:55			07:26	07:43	06:52		07:12 (T61)	06:13		07:06 (T61)	05:59		07:26 (T61)
	17:28			18:06	19:39	20:11	70	08:22 (T61)	20:42	72	08:18 (T61)	21:06	39	08:05 (T61)
17	07:54			07:25	07:41	06:51		07:12 (T61)	06:12		07:07 (T61)	05:59		07:27 (T61)
	17:30			18:08	19:40	20:12	71	08:23 (T61)	20:43	70	08:17 (T61)	21:06	38	08:05 (T61)
18	07:54			07:23	07:40	06:49		07:10 (T61)	06:12		07:07 (T61)	05:59		07:27 (T61)
	17:31			18:09	19:41	20:13	73	08:23 (T61)	20:44	70	08:17 (T61)	21:07	38	08:05 (T61)
19	07:53			07:22	07:38	06:48		07:10 (T61)	06:11		07:07 (T61)	05:59		07:27 (T61)
	17:32			18:10	19:42	20:14	74	08:24 (T61)	20:45	69	08:16 (T61)	21:07	38	08:05 (T61)
20	07:53			07:21	07:36	06:46		07:09 (T61)	06:10		07:09 (T61)	05:59		07:27 (T61)
	17:33			18:11	19:43	20:15	75	08:24 (T61)	20:46	67	08:16 (T61)	21:07	38	08:05 (T61)
21	07:52			07:19	07:35	06:45		07:08 (T61)	06:09		07:09 (T61)	05:59		07:28 (T61)
	17:34			18:13	19:44	20:16	77	08:25 (T61)	20:47	66	08:15 (T61)	21:07	38	08:06 (T61)
22	07:52			07:18	07:33	06:43		07:07 (T61)	06:08		07:09 (T61)	05:59		07:28 (T61)
	17:35			18:14	19:45	20:17	77	08:24 (T61)	20:48	66	08:15 (T61)	21:08	38	08:06 (T61)
23	07:51			07:16	07:31	06:42		07:07 (T61)	06:07		07:10 (T61)	06:00		07:28 (T61)
	17:37			18:15	19:46	20:18	78	08:25 (T61)	20:49	64	08:14 (T61)	21:08	38	08:06 (T61)
24	07:50			07:15	07:30	06:40		07:07 (T61)	06:07		07:11 (T61)	06:00		07:28 (T61)
	17:38			18:16	19:48	20:20	78	08:25 (T61)	20:50	63	08:14 (T61)	21:08	38	08:06 (T61)
25	07:49			07:13	07:28	06:39		07:06 (T61)	06:06		07:11 (T61)	06:00		07:29 (T61)
	17:39			18:17	19:49	20:21	79	08:25 (T61)	20:51	62	08:13 (T61)	21:08	38	08:07 (T61)
26	07:49			07:12	07:26	06:37		07:06 (T61)	06:05		07:13 (T61)	06:01		07:28 (T61)
	17:40			18:18	19:50	20:22	79	08:25 (T61)	20:52	60	08:13 (T61)	21:08	39	08:07 (T61)
27	07:48			07:10	07:25	06:36		07:05 (T61)	06:05		07:13 (T61)	06:01		07:28 (T61)
	17:42			18:20	19:51	20:23	79	08:24 (T61)	20:53	59	08:12 (T61)	21:08	39	08:07 (T61)
28	07:47			07:09	07:23	06:35		07:05 (T61)	06:04		07:13 (T61)	06:01		07:29 (T61)
	17:43			18:21	19:52	20:24	79	08:24 (T61)	20:54	58	08:11 (T61)	21:08	39	08:08 (T61)
29	07:46				07:21	06:33		07:05 (T61)	06:03		07:14 (T61)	06:02		07:28 (T61)
	17:44				19:53	20:25	80	08:25 (T61)	20:54	57	08:11 (T61)	21:08	40	08:08 (T61)
30	07:45				07:20	06:32		07:04 (T61)	06:03		07:15 (T61)	06:02		07:28 (T61)
	17:45				19:54	20:26	80	08:24 (T61)	20:55	55	08:10 (T61)	21:08	42	08:10 (T61)
31	07:44				07:18				06:02		07:16 (T61)			
	17:47				19:55				20:56	54	08:10 (T61)			
Potential sun hours	297			297	370	399			448			452		
Total, worst case		170					1787			2169			1265	
Sun reduction		0.31					0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00	
Wind dir. red.		0.53					0.66			0.66			0.66	
Total reduction		0.16					0.34			0.37			0.42	
Total, real		28					607			808			529	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 948 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8479)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December		
1	06:03		07:28 (T61)	06:27		07:16 (T61)	06:58		07:19 (T61)	07:28	07:02	07:37		
	21:08	42	08:10 (T61)	20:50	75	08:31 (T61)	20:07	59	08:18 (T61)	19:15	17:28	17:04		
2	06:03		07:28 (T61)	06:28		07:14 (T61)	06:59		07:20 (T61)	07:29	07:03	07:38		
	21:08	43	08:11 (T61)	20:49	76	08:30 (T61)	20:06	56	08:16 (T61)	19:13	17:27	17:04		
3	06:04		07:27 (T61)	06:29		07:14 (T61)	07:00		07:21 (T61)	07:30	07:04	07:39		08:46 (T63)
	21:08	44	08:11 (T61)	20:48	77	08:31 (T61)	20:04	53	08:14 (T61)	19:12	17:26	17:04	9	08:55 (T63)
4	06:04		07:27 (T61)	06:30		07:14 (T61)	07:01		07:23 (T61)	07:31	07:06	07:40		08:44 (T63)
	21:08	45	08:12 (T61)	20:47	77	08:31 (T61)	20:02	49	08:12 (T61)	19:10	17:25	17:03	13	08:57 (T63)
5	06:05		07:27 (T61)	06:31		07:14 (T61)	07:02		07:24 (T61)	07:32	07:07	07:41		08:43 (T63)
	21:08	45	08:12 (T61)	20:46	77	08:31 (T61)	20:01	45	08:09 (T61)	19:08	17:24	17:03	16	08:59 (T63)
6	06:05		07:27 (T61)	06:32		07:13 (T61)	07:03		07:26 (T61)	07:33	07:08	07:42		08:43 (T63)
	21:08	46	08:13 (T61)	20:44	79	08:32 (T61)	19:57	41	08:07 (T61)	19:07	17:22	17:03	18	09:01 (T63)
7	06:06		07:26 (T61)	06:33		07:13 (T61)	07:04		07:29 (T61)	07:34	07:09	07:43		08:42 (T63)
	21:07	48	08:14 (T61)	20:43	79	08:32 (T61)	19:56	35	08:04 (T61)	19:05	17:21	17:03	20	09:02 (T63)
8	06:07		07:26 (T61)	06:34		07:13 (T61)	07:05		07:32 (T61)	07:35	07:10	07:44		08:42 (T63)
	21:07	49	08:15 (T61)	20:42	79	08:32 (T61)	19:54	28	08:00 (T61)	19:03	17:20	17:03	21	09:03 (T63)
9	06:07		07:26 (T61)	06:35		07:13 (T61)	07:06		07:37 (T61)	07:36	07:12	07:45		08:42 (T63)
	21:07	50	08:16 (T61)	20:41	79	08:32 (T61)	19:52	17	07:54 (T61)	19:02	17:19	17:03	23	09:05 (T63)
10	06:08		07:25 (T61)	06:36		07:13 (T61)	07:07			07:37	07:13	07:46		08:42 (T63)
	21:06	51	08:16 (T61)	20:39	79	08:32 (T61)	19:51			19:00	17:18	17:03	24	09:06 (T63)
11	06:09		07:24 (T61)	06:37		07:13 (T61)	07:08			07:38	07:14	07:46		08:42 (T63)
	21:06	53	08:17 (T61)	20:38	79	08:32 (T61)	19:49			18:59	17:17	17:03	25	09:07 (T63)
12	06:09		07:24 (T61)	06:38		07:12 (T61)	07:08			07:39	07:15	07:47		08:42 (T63)
	21:05	54	08:18 (T61)	20:37	80	08:32 (T61)	19:47			18:57	17:16	17:03	26	09:08 (T63)
13	06:10		07:23 (T61)	06:39		07:12 (T61)	07:09			07:40	07:16	07:48		08:42 (T63)
	21:05	55	08:18 (T61)	20:36	80	08:32 (T61)	19:46			18:55	17:15	17:03	26	09:08 (T63)
14	06:11		07:23 (T61)	06:40		07:12 (T61)	07:10			07:41	07:18	07:49		08:42 (T63)
	21:04	56	08:19 (T61)	20:34	80	08:32 (T61)	19:44			18:54	17:14	17:04	27	09:09 (T63)
15	06:12		07:23 (T61)	06:41		07:12 (T61)	07:11			07:43	07:19	07:49		08:42 (T63)
	21:04	57	08:20 (T61)	20:33	80	08:32 (T61)	19:42			18:52	17:13	17:04	28	09:10 (T63)
16	06:12		07:22 (T61)	06:42		07:12 (T61)	07:12			07:44	07:20	07:50		08:43 (T63)
	21:03	59	08:21 (T61)	20:31	80	08:32 (T61)	19:40			18:51	17:13	17:04	28	09:11 (T63)
17	06:13		07:21 (T61)	06:43		07:12 (T61)	07:13			07:45	07:21	07:51		08:43 (T63)
	21:03	60	08:21 (T61)	20:30	80	08:32 (T61)	19:39			18:49	17:12	17:04	28	09:11 (T63)
18	06:14		07:21 (T61)	06:44		07:12 (T61)	07:14			07:46	07:22	07:52		08:43 (T63)
	21:02	61	08:22 (T61)	20:29	79	08:31 (T61)	19:37			18:48	17:11	17:05	29	09:12 (T63)
19	06:15		07:21 (T61)	06:45		07:13 (T61)	07:15			07:47	07:23	07:52		08:43 (T63)
	21:01	62	08:23 (T61)	20:27	78	08:31 (T61)	19:35			18:46	17:10	17:05	29	09:12 (T63)
20	06:16		07:20 (T61)	06:46		07:13 (T61)	07:16			07:48	07:25	07:53		08:44 (T63)
	21:01	64	08:24 (T61)	20:26	77	08:30 (T61)	19:34			18:45	17:10	17:06	29	09:13 (T63)
21	06:17		07:20 (T61)	06:47		07:13 (T61)	07:17			07:49	07:26	07:53		08:45 (T63)
	21:00	65	08:25 (T61)	20:24	77	08:30 (T61)	19:32			18:43	17:09	17:06	29	09:14 (T63)
22	06:17		07:20 (T61)	06:48		07:13 (T61)	07:18			07:50	07:27	07:54		08:45 (T63)
	20:59	66	08:26 (T61)	20:23	76	08:29 (T61)	19:30			18:42	17:08	17:06	29	09:14 (T63)
23	06:18		07:18 (T61)	06:49		07:14 (T61)	07:19			07:52	07:28	07:54		08:45 (T63)
	20:58	67	08:25 (T61)	20:21	75	08:29 (T61)	19:29			18:40	17:08	17:07	29	09:14 (T63)
24	06:19		07:18 (T61)	06:50		07:13 (T61)	07:20			07:53	07:29	07:55		08:46 (T63)
	20:58	68	08:26 (T61)	20:20	74	08:27 (T61)	19:27			18:39	17:07	17:08	29	09:15 (T63)
25	06:20		07:18 (T61)	06:51		07:13 (T61)	07:22			07:54	07:30	07:55		08:46 (T63)
	20:57	69	08:27 (T61)	20:18	73	08:26 (T61)	19:25			18:38	17:07	17:08	29	09:15 (T63)
26	06:21		07:18 (T61)	06:52		07:14 (T61)	07:23			07:55	07:31	07:56		08:47 (T63)
	20:56	70	08:28 (T61)	20:17	71	08:25 (T61)	19:23			18:36	17:06	17:09	28	09:15 (T63)
27	06:22		07:17 (T61)	06:53		07:14 (T61)	07:24			07:56	07:33	07:56		08:48 (T63)
	20:55	71	08:28 (T61)	20:15	70	08:24 (T61)	19:22			18:35	17:06	17:09	28	09:16 (T63)
28	06:23		07:17 (T61)	06:54		07:15 (T61)	07:25			07:57	07:34	07:56		08:48 (T63)
	20:54	72	08:29 (T61)	20:14	68	08:23 (T61)	19:20			18:33	17:05	17:10	28	09:16 (T63)
29	06:24		07:17 (T61)	06:55		07:16 (T61)	07:26			07:58	07:35	07:56		08:49 (T63)
	20:53	72	08:29 (T61)	20:12	66	08:22 (T61)	19:18			18:32	17:05	17:11	27	09:16 (T63)
30	06:25		07:16 (T61)	06:56		07:17 (T61)	07:27			08:00	07:36	07:57		08:49 (T63)
	20:52	74	08:30 (T61)	20:10	64	08:21 (T61)	19:17			18:31	17:04	17:12	27	09:16 (T63)
31	06:26		07:16 (T61)	06:57		07:17 (T61)				08:01		07:57		08:51 (T63)
	20:51	74	08:30 (T61)	20:09	62	08:19 (T61)				18:30		17:12	26	09:17 (T63)
Potential sun hours	459			428			375			345	298	288		
Total, worst case		1812			2346			383					728	
Sun reduction		0.66			0.61			0.59					0.22	
Oper. time red.		1.00			1.00			1.00					1.00	
Wind dir. red.		0.66			0.66			0.66					0.53	
Total reduction		0.43			0.40			0.39					0.12	
Total, real		781			935			148					84	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 951 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8482)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April	May		June	
1	07:57	07:43		07:07	17:32 (T46)	07:16	06:30		06:01	19:31 (T45)
	17:13	17:47		18:22	6 17:38 (T46)	19:56	20:27		20:57	61 20:32 (T45)
2	07:57	07:42		07:06		07:14	06:29		06:01	19:32 (T45)
	17:14	17:49		18:23		19:57	20:28		20:58	61 20:33 (T45)
3	07:57	07:41		07:04		07:13	06:28		06:01	19:31 (T45)
	17:15	17:50		18:24		19:58	20:29		20:58	62 20:33 (T45)
4	07:57	07:40		07:02		07:11	06:26		06:00	19:31 (T45)
	17:16	17:51		18:25		19:59	20:30		20:59	63 20:34 (T45)
5	07:57	07:39		07:01		07:10	06:25		06:00	19:32 (T45)
	17:17	17:53		18:26		20:00	20:31		21:00	62 20:34 (T45)
6	07:57	07:38		06:59		07:08	06:24		06:00	19:31 (T45)
	17:17	17:54		18:27		20:00	20:32		21:00	63 20:34 (T45)
7	07:57	07:37		06:58		07:06	06:23		05:59	19:31 (T45)
	17:18	17:55		18:29		20:01	20:33		21:01	64 20:35 (T45)
8	07:57	07:36	17:32 (T46)	07:56		07:05	06:22	19:58 (T45)	05:59	19:32 (T45)
	17:19	17:56	1 17:33 (T46)	19:30		20:02	20:34	6 20:04 (T45)	21:02	63 20:35 (T45)
9	07:57	07:35	17:29 (T46)	07:54		07:03	06:20	19:52 (T45)	05:59	19:32 (T45)
	17:20	17:58	5 17:34 (T46)	19:31		20:03	20:35	18 20:10 (T45)	21:02	64 20:36 (T45)
10	07:57	07:34	17:27 (T46)	07:53		07:01	06:19	19:48 (T45)	05:59	19:32 (T45)
	17:22	17:59	9 17:36 (T46)	19:32		20:04	20:36	25 20:13 (T45)	21:03	64 20:36 (T45)
11	07:57	07:32	17:25 (T46)	07:51		07:00	06:18	19:46 (T45)	05:58	19:32 (T45)
	17:23	18:00	11 17:36 (T46)	19:33		20:06	20:37	28 20:14 (T45)	21:03	64 20:36 (T45)
12	07:56	07:31	17:24 (T46)	07:50		06:58	06:17	19:44 (T45)	05:58	19:32 (T45)
	17:24	18:01	14 17:38 (T46)	19:34		20:07	20:38	31 20:15 (T45)	21:04	64 20:36 (T45)
13	07:56	07:30	17:23 (T46)	07:48		06:57	06:16	19:42 (T45)	05:58	19:32 (T45)
	17:25	18:02	17 17:40 (T46)	19:35		20:08	20:39	34 20:16 (T45)	21:04	64 20:36 (T45)
14	07:56	07:29	17:22 (T46)	07:46		06:55	06:15	19:40 (T45)	05:58	19:32 (T45)
	17:26	18:04	18 17:40 (T46)	19:36		20:09	20:40	37 20:17 (T45)	21:05	64 20:36 (T45)
15	07:55	07:27	17:22 (T46)	07:45		06:53	06:14	19:40 (T45)	05:58	19:32 (T45)
	17:27	18:05	20 17:42 (T46)	19:38		20:10	20:41	39 20:19 (T45)	21:05	64 20:36 (T45)
16	07:55	07:26	17:21 (T46)	07:43		06:52	06:13	19:39 (T45)	05:58	19:32 (T45)
	17:28	18:06	23 17:44 (T46)	19:39		20:11	20:42	41 20:20 (T45)	21:06	65 20:37 (T45)
17	07:54	07:25	17:21 (T46)	07:41		06:50	06:12	19:38 (T45)	05:58	19:33 (T45)
	17:29	18:07	23 17:44 (T46)	19:40		20:12	20:43	42 20:20 (T45)	21:06	65 20:38 (T45)
18	07:54	07:23	17:21 (T46)	07:40		06:49	06:11	19:37 (T45)	05:58	19:34 (T45)
	17:30	18:09	25 17:46 (T46)	19:41		20:13	20:44	44 20:21 (T45)	21:07	64 20:38 (T45)
19	07:53	07:22	17:21 (T46)	07:38		06:47	06:10	19:36 (T45)	05:58	19:34 (T45)
	17:32	18:10	27 17:48 (T46)	19:42		20:14	20:45	46 20:22 (T45)	21:07	64 20:38 (T45)
20	07:53	07:20	17:20 (T46)	07:36		06:46	06:09	19:35 (T45)	05:59	19:34 (T45)
	17:33	18:11	29 17:49 (T46)	19:43		20:15	20:46	47 20:22 (T45)	21:07	64 20:38 (T45)
21	07:52	07:19	17:21 (T46)	07:35		06:44	06:09	19:35 (T45)	05:59	19:34 (T45)
	17:34	18:12	29 17:50 (T46)	19:44		20:16	20:47	49 20:24 (T45)	21:07	64 20:38 (T45)
22	07:52	07:18	17:21 (T46)	07:33		06:43	06:08	19:34 (T45)	05:59	19:34 (T45)
	17:35	18:13	29 17:50 (T46)	19:45		20:17	20:48	51 20:25 (T45)	21:08	64 20:38 (T45)
23	07:51	07:16	17:22 (T46)	07:31		06:41	06:07	19:33 (T45)	05:59	19:35 (T45)
	17:36	18:15	28 17:50 (T46)	19:46		20:18	20:49	52 20:25 (T45)	21:08	64 20:39 (T45)
24	07:50	07:15	17:22 (T46)	07:30		06:40	06:06	19:33 (T45)	05:59	19:35 (T45)
	17:38	18:16	27 17:49 (T46)	19:47		20:19	20:50	53 20:26 (T45)	21:08	64 20:39 (T45)
25	07:49	07:13	17:23 (T46)	07:28		06:38	06:06	19:33 (T45)	06:00	19:35 (T45)
	17:39	18:17	25 17:48 (T46)	19:48		20:21	20:51	54 20:27 (T45)	21:08	64 20:39 (T45)
26	07:49	07:12	17:24 (T46)	07:26		06:37	06:05	19:32 (T45)	06:00	19:35 (T45)
	17:40	18:18	22 17:46 (T46)	19:50		20:22	20:52	56 20:28 (T45)	21:08	65 20:40 (T45)
27	07:48	07:10	17:26 (T46)	07:24		06:36	06:04	19:33 (T45)	06:00	19:35 (T45)
	17:41	18:19	19 17:45 (T46)	19:51		20:23	20:53	56 20:29 (T45)	21:08	65 20:40 (T45)
28	07:47	07:09	17:28 (T46)	07:23		06:34	06:04	19:32 (T45)	06:01	19:35 (T45)
	17:42	18:21	14 17:42 (T46)	19:52		20:24	20:54	57 20:29 (T45)	21:08	64 20:39 (T45)
29	07:46			07:21		06:33	06:03	19:31 (T45)	06:01	19:36 (T45)
	17:44			19:53		20:25	20:54	59 20:30 (T45)	21:08	64 20:40 (T45)
30	07:45			07:19		06:32	06:02	19:32 (T45)	06:02	19:36 (T45)
	17:45			19:54		20:26	20:55	59 20:31 (T45)	21:08	64 20:40 (T45)
31	07:44			07:18			06:02	19:32 (T45)		
	17:46			19:55			20:56	60 20:32 (T45)		
Potential sun hours	297	297		370		399	448		453	
Total, worst case			415		6			1044		1911
Sun reduction			0.40		0.44			0.57		0.64
Oper. time red.			1.00		1.00			1.00		1.00
Wind dir. red.			0.70		0.70			0.55		0.55
Total reduction			0.28		0.31			0.32		0.35
Total, real			118		2			330		677

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 951 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8482)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December
1	06:02		19:37 (T45)	06:26		19:55 (T45)	06:57	07:27			07:02		16:56 (T46)	07:37
	21:08	63	20:40 (T45)	20:50	30	20:25 (T45)	20:07	19:15			17:28	8	17:04 (T46)	17:04
2	06:03		19:36 (T45)	06:27		19:57 (T45)	06:58	07:29			07:03		16:59 (T46)	07:38
	21:08	64	20:40 (T45)	20:49	27	20:24 (T45)	20:06	19:13			17:27	5	17:04 (T46)	17:03
3	06:03		19:37 (T45)	06:28		20:00 (T45)	06:59	07:30			07:04			07:39
	21:08	64	20:41 (T45)	20:48	22	20:22 (T45)	20:04	19:11			17:26			17:03
4	06:04		19:37 (T45)	06:29		20:03 (T45)	07:00	07:31			07:06			07:40
	21:08	63	20:40 (T45)	20:47	15	20:18 (T45)	20:02	19:10			17:24			17:03
5	06:04		19:37 (T45)	06:30			07:01	07:32			07:07			07:41
	21:08	64	20:41 (T45)	20:46			20:01	19:08			17:23			17:03
6	06:05		19:37 (T45)	06:31			07:02	07:33			07:08			07:42
	21:08	63	20:40 (T45)	20:44			19:57	19:06			17:22			17:03
7	06:06		19:38 (T45)	06:32			07:03	07:34			07:09			07:43
	21:07	63	20:41 (T45)	20:43			19:56	19:05			17:21			17:03
8	06:06		19:39 (T45)	06:33			07:04	07:35			07:10			07:44
	21:07	62	20:41 (T45)	20:42			19:54	19:03			17:20			17:03
9	06:07		19:38 (T45)	06:34			07:05	07:36			07:12			07:45
	21:07	62	20:40 (T45)	20:41			19:52	19:02			17:19			17:03
10	06:07		19:39 (T45)	06:35			07:06	07:37			07:13			07:46
	21:06	62	20:41 (T45)	20:39			19:51	19:00			17:18			17:03
11	06:08		19:40 (T45)	06:36			07:07	07:38			07:14			07:46
	21:06	61	20:41 (T45)	20:38			19:49	18:58			17:17			17:03
12	06:09		19:39 (T45)	06:37			07:08	07:39			07:15			07:47
	21:05	61	20:40 (T45)	20:37			19:47	18:57			17:16			17:03
13	06:10		19:40 (T45)	06:38			07:09	07:40		18:03 (T46)	07:16			07:48
	21:05	60	20:40 (T45)	20:36			19:45	18:55	10	18:13 (T46)	17:15			17:03
14	06:10		19:40 (T45)	06:39			07:10	07:41		17:59 (T46)	07:18			07:49
	21:04	59	20:39 (T45)	20:34			19:44	18:54	17	18:16 (T46)	17:14			17:03
15	06:11		19:41 (T45)	06:40			07:11	07:42		17:58 (T46)	07:19			07:50
	21:04	58	20:39 (T45)	20:33			19:42	18:52	20	18:18 (T46)	17:13			17:03
16	06:12		19:41 (T45)	06:41			07:12	07:44		17:56 (T46)	07:20			07:50
	21:03	57	20:38 (T45)	20:31			19:40	18:50	23	18:19 (T46)	17:12			17:04
17	06:13		19:41 (T45)	06:42			07:13	07:45		17:54 (T46)	07:21			07:51
	21:03	56	20:37 (T45)	20:30			19:39	18:49	26	18:20 (T46)	17:11			17:04
18	06:14		19:42 (T45)	06:43			07:14	07:46		17:53 (T46)	07:22			07:52
	21:02	55	20:37 (T45)	20:29			19:37	18:47	28	18:21 (T46)	17:11			17:04
19	06:14		19:43 (T45)	06:44			07:15	07:47		17:52 (T46)	07:23			07:52
	21:01	54	20:37 (T45)	20:27			19:35	18:46	29	18:21 (T46)	17:10			17:05
20	06:15		19:44 (T45)	06:45			07:16	07:48		17:51 (T46)	07:25			07:53
	21:01	52	20:36 (T45)	20:26			19:33	18:44	30	18:21 (T46)	17:09			17:05
21	06:16		19:43 (T45)	06:46			07:17	07:49		17:52 (T46)	07:26			07:53
	21:00	52	20:35 (T45)	20:24			19:32	18:43	28	18:20 (T46)	17:09			17:06
22	06:17		19:44 (T45)	06:47			07:18	07:50		17:51 (T46)	07:27			07:54
	20:59	50	20:34 (T45)	20:23			19:30	18:41	28	18:19 (T46)	17:08			17:06
23	06:18		19:45 (T45)	06:48			07:19	07:51		17:51 (T46)	07:28			07:54
	20:58	48	20:33 (T45)	20:21			19:28	18:40	26	18:17 (T46)	17:07			17:07
24	06:19		19:46 (T45)	06:49			07:20	07:53		17:50 (T46)	07:29			07:55
	20:58	47	20:33 (T45)	20:20			19:27	18:39	25	18:15 (T46)	17:07			17:07
25	06:20		19:47 (T45)	06:50			07:21	07:54		17:50 (T46)	07:30			07:55
	20:57	45	20:32 (T45)	20:18			19:25	18:37	24	18:14 (T46)	17:06			17:08
26	06:21		19:48 (T45)	06:51			07:22	07:55		17:51 (T46)	07:32			07:56
	20:56	43	20:31 (T45)	20:17			19:23	18:36	22	18:13 (T46)	17:06			17:08
27	06:22		19:49 (T45)	06:52			07:23	07:56		17:51 (T46)	07:33			07:56
	20:55	42	20:31 (T45)	20:15			19:22	18:34	20	18:11 (T46)	17:05			17:09
28	06:22		19:50 (T45)	06:53			07:24	07:57		17:52 (T46)	07:34			07:56
	20:54	40	20:30 (T45)	20:14			19:20	18:33	18	18:10 (T46)	17:05			17:10
29	06:23		19:50 (T45)	06:54			07:25	07:58		17:52 (T46)	07:35			07:56
	20:53	38	20:28 (T45)	20:12			19:18	18:32	16	18:08 (T46)	17:04			17:10
30	06:24		19:52 (T45)	06:55			07:26	08:00		17:54 (T46)	07:36			07:57
	20:52	35	20:27 (T45)	20:10			19:16	18:31	14	18:08 (T46)	17:04			17:11
31	06:25		19:53 (T45)	06:56				08:01		17:55 (T46)				07:57
	20:51	33	20:26 (T45)	20:09				18:29	11	18:06 (T46)				17:12
Potential sun hours	460			429			375	345			297			287
Total, worst case		1676			94				415			13		
Sun reduction		0.66			0.61				0.48			0.30		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.55			0.55				0.70			0.70		
Total reduction		0.37			0.34				0.34			0.21		
Total, real		613			32				141			3		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 956 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8486)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May	June
1	07:57		16:06 (T30)	07:44		08:04 (T31)	07:07			07:16		08:11 (T28)	06:30	06:01
	17:13	40	16:46 (T30)	17:47	52	16:55 (T30)	18:22			19:56	39	19:16 (T27)	20:27	20:57
2	07:57		16:06 (T30)	07:43		08:03 (T31)	07:06			07:14		18:55 (T27)	06:29	06:01
	17:14	40	16:46 (T30)	17:49	52	16:54 (T30)	18:23			19:57	18	19:13 (T27)	20:28	20:58
3	07:58		16:06 (T30)	07:42		08:02 (T31)	07:04		07:23 (T28)	07:13		18:59 (T27)	06:28	06:00
	17:15	41	16:47 (T30)	17:50	53	16:54 (T30)	18:24	12	07:35 (T28)	19:58	10	19:09 (T27)	20:29	20:58
4	07:58		16:07 (T30)	07:40		08:01 (T31)	07:02		07:22 (T28)	07:11			06:26	06:00
	17:15	41	16:48 (T30)	17:51	52	16:53 (T30)	18:25	17	07:39 (T28)	19:59			20:30	20:59
5	07:58		16:07 (T30)	07:39		08:00 (T31)	07:01		07:20 (T28)	07:09			06:25	06:00
	17:16	42	16:49 (T30)	17:52	50	16:51 (T30)	18:26	21	07:41 (T28)	20:00			20:31	21:00
6	07:58		16:07 (T30)	07:38		07:58 (T31)	06:59		07:19 (T28)	07:08			06:24	05:59
	17:17	42	16:49 (T30)	17:54	49	16:49 (T30)	18:27	25	07:44 (T28)	20:00			20:32	21:01
7	07:57		16:08 (T30)	07:37		07:57 (T31)	06:58		07:17 (T28)	07:06			06:23	05:59
	17:18	42	16:50 (T30)	17:55	45	16:47 (T30)	18:29	28	07:45 (T28)	20:01			20:33	21:01
8	07:57		16:07 (T30)	07:36		07:56 (T31)	07:56		08:15 (T28)	07:05			06:21	05:59
	17:19	43	16:50 (T30)	17:56	41	16:44 (T30)	19:30	30	08:45 (T28)	20:02			20:34	21:02
9	07:57		16:07 (T30)	07:35		07:55 (T31)	07:54		08:14 (T28)	07:03			06:20	05:59
	17:20	44	16:51 (T30)	17:57	29	08:24 (T31)	19:31	33	08:47 (T28)	20:03			20:35	21:03
10	07:57		16:08 (T30)	07:34		07:54 (T31)	07:53		08:12 (T28)	07:01			06:19	05:58
	17:21	44	16:52 (T30)	17:59	30	08:24 (T31)	19:32	35	08:47 (T28)	20:05			20:37	21:03
11	07:57		16:08 (T30)	07:32		07:52 (T31)	07:51		08:10 (T28)	07:00			06:18	05:58
	17:22	45	16:53 (T30)	18:00	31	08:23 (T31)	19:33	45	19:11 (T27)	20:06			20:38	21:04
12	07:56		16:08 (T30)	07:31		07:51 (T31)	07:50		08:09 (T28)	06:58			06:17	05:58
	17:23	45	16:53 (T30)	18:01	32	08:23 (T31)	19:34	52	19:13 (T27)	20:07			20:39	21:04
13	07:56		16:08 (T30)	07:30		07:51 (T31)	07:48		08:07 (T28)	06:56			06:16	05:58
	17:25	46	16:54 (T30)	18:02	32	08:23 (T31)	19:35	58	19:14 (T27)	20:08			20:40	21:05
14	07:56		16:08 (T30)	07:29		07:52 (T31)	07:46		08:05 (T28)	06:55			06:15	05:58
	17:26	46	16:54 (T30)	18:04	31	08:23 (T31)	19:36	62	19:15 (T27)	20:09			20:41	21:05
15	07:55		16:09 (T30)	07:27		07:52 (T31)	07:45		08:04 (T28)	06:53			06:14	05:58
	17:27	46	16:55 (T30)	18:05	30	08:22 (T31)	19:38	66	19:16 (T27)	20:10			20:42	21:06
16	07:55		16:09 (T30)	07:26		07:53 (T31)	07:43		08:02 (T28)	06:52			06:13	05:58
	17:28	45	16:54 (T30)	18:06	28	08:21 (T31)	19:39	71	19:17 (T27)	20:11			20:43	21:06
17	07:55		16:09 (T30)	07:25		07:53 (T31)	07:41		08:00 (T28)	06:50			06:12	05:58
	17:29	46	16:55 (T30)	18:07	27	08:20 (T31)	19:40	74	19:18 (T27)	20:12			20:44	21:06
18	07:54		16:09 (T30)	07:23		07:55 (T31)	07:40		08:00 (T28)	06:49			06:11	05:58
	17:30	46	16:55 (T30)	18:09	24	08:19 (T31)	19:41	77	19:20 (T27)	20:13			20:45	21:07
19	07:53		16:10 (T30)	07:22		07:57 (T31)	07:38		08:00 (T28)	06:47			06:10	05:58
	17:31	46	16:56 (T30)	18:10	20	08:17 (T31)	19:42	79	19:21 (T27)	20:14			20:46	21:07
20	07:53		16:10 (T30)	07:21		07:58 (T31)	07:36		08:00 (T28)	06:46			06:09	05:58
	17:33	46	16:56 (T30)	18:11	17	08:15 (T31)	19:43	79	19:21 (T27)	20:15			20:46	21:07
21	07:52		16:10 (T30)	07:19		08:02 (T31)	07:35		08:00 (T28)	06:44			06:08	05:59
	17:34	46	16:56 (T30)	18:12	10	08:12 (T31)	19:44	81	19:23 (T27)	20:16			20:47	21:08
22	07:52		16:11 (T30)	07:18			07:33		08:00 (T28)	06:43			06:08	05:59
	17:35	46	16:57 (T30)	18:13			19:45	81	19:24 (T27)	20:17			20:48	21:08
23	07:51		16:11 (T30)	07:16			07:31		08:00 (T28)	06:41			06:07	05:59
	17:36	46	16:57 (T30)	18:15			19:46	82	19:25 (T27)	20:18			20:49	21:08
24	07:50		16:12 (T30)	07:15			07:30		08:01 (T28)	06:40			06:06	05:59
	17:37	45	16:57 (T30)	18:16			19:47	80	19:26 (T27)	20:20			20:50	21:08
25	07:50		16:12 (T30)	07:13			07:28		08:01 (T28)	06:38			06:05	06:00
	17:39	45	16:57 (T30)	18:17			19:48	79	19:25 (T27)	20:21			20:51	21:08
26	07:49		16:13 (T30)	07:12			07:26		08:02 (T28)	06:37			06:05	06:00
	17:40	45	16:58 (T30)	18:18			19:50	75	19:24 (T27)	20:22			20:52	21:09
27	07:48		08:09 (T31)	07:10			07:24		08:02 (T28)	06:36			06:04	06:00
	17:41	44	16:57 (T30)	18:19			19:51	72	19:23 (T27)	20:23			20:53	21:09
28	07:47		08:08 (T31)	07:09			07:23		08:04 (T28)	06:34			06:03	06:01
	17:42	48	16:57 (T30)	18:20			19:52	67	19:22 (T27)	20:24			20:54	21:09
29	07:46		08:07 (T31)				07:21		08:05 (T28)	06:33			06:03	06:01
	17:44	50	16:57 (T30)				19:53	62	19:21 (T27)	20:25			20:55	21:09
30	07:45		08:06 (T31)				07:19		08:06 (T28)	06:31			06:02	06:01
	17:45	51	16:56 (T30)				19:54	56	19:19 (T27)	20:26			20:55	21:09
31	07:44		08:05 (T31)				07:18		08:09 (T28)				06:02	
	17:46	52	16:56 (T30)				19:55	48	19:18 (T27)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		1394			735			1647			67			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.73			0.60			0.61			0.63			
Total reduction		0.23			0.25			0.27			0.34			
Total, real		322			181			451			23			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 956 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8486)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September			October			November			December		
1	06:02		06:26		06:57			07:27		07:47 (T28)	07:02		07:23 (T31)	07:37		15:50 (T30)
	21:09		20:50		20:07			19:15	53	18:52 (T27)	17:28	30	07:53 (T31)	17:04	45	16:35 (T30)
2	06:02		06:27		06:58			07:29		07:48 (T28)	07:03		07:25 (T31)	07:38		15:51 (T30)
	21:08		20:49		20:06			19:13	47	18:50 (T27)	17:27	29	07:54 (T31)	17:03	44	16:35 (T30)
3	06:03		06:28		06:59			07:30		07:49 (T28)	07:04		07:26 (T31)	07:39		15:51 (T30)
	21:08		20:48		20:04			19:11	38	18:49 (T27)	17:25	41	16:14 (T30)	17:03	44	16:35 (T30)
4	06:03		06:29		07:00			07:31		07:50 (T28)	07:06		07:27 (T31)	07:40		15:52 (T30)
	21:08		20:47		20:02			19:10	34	08:24 (T28)	17:24	46	16:17 (T30)	17:03	43	16:35 (T30)
5	06:04		06:30		07:01			07:32		07:52 (T28)	07:07		07:28 (T31)	07:41		15:53 (T30)
	21:08		20:46		20:01			19:08	32	08:24 (T28)	17:23	49	16:19 (T30)	17:03	42	16:35 (T30)
6	06:05		06:31		07:02			07:33		07:53 (T28)	07:08		07:30 (T31)	07:42		15:53 (T30)
	21:08		20:45		19:57			19:06	29	08:22 (T28)	17:22	51	16:21 (T30)	17:03	42	16:35 (T30)
7	06:05		06:32		07:03			07:34		07:54 (T28)	07:09		07:31 (T31)	07:43		15:54 (T30)
	21:07		20:43		19:56			19:05	26	08:20 (T28)	17:21	52	16:23 (T30)	17:02	42	16:36 (T30)
8	06:06		06:33		07:04			07:35		07:55 (T28)	07:10		07:32 (T31)	07:44		15:55 (T30)
	21:07		20:42		19:54			19:03	23	08:18 (T28)	17:20	53	16:24 (T30)	17:02	41	16:36 (T30)
9	06:07		06:34		07:05		18:53 (T27)	07:36		07:56 (T28)	07:12		07:34 (T31)	07:45		15:54 (T30)
	21:07		20:41		19:52	9	19:02 (T27)	19:01	19	08:15 (T28)	17:19	52	16:25 (T30)	17:02	41	16:35 (T30)
10	06:07		06:35		07:06		18:48 (T27)	07:37		07:57 (T28)	07:13		07:35 (T31)	07:46		15:55 (T30)
	21:06		20:40		19:51	17	19:05 (T27)	19:00	15	08:12 (T28)	17:18	52	16:26 (T30)	17:02	41	16:36 (T30)
11	06:08		06:36		07:07		08:04 (T28)	07:38		07:58 (T28)	07:14		07:36 (T31)	07:47		15:56 (T30)
	21:06		20:38		19:49	36	19:07 (T27)	18:58	9	08:07 (T28)	17:17	52	16:27 (T30)	17:02	40	16:36 (T30)
12	06:09		06:37		07:08		08:00 (T28)	07:39			07:15		07:37 (T31)	07:47		15:57 (T30)
	21:06		20:37		19:47	48	19:09 (T27)	18:57			17:16	51	16:27 (T30)	17:03	39	16:36 (T30)
13	06:09		06:38		07:09		07:57 (T28)	07:40			07:16		07:39 (T31)	07:48		15:58 (T30)
	21:05		20:36		19:45	55	19:10 (T27)	18:55			17:15	50	16:29 (T30)	17:03	39	16:37 (T30)
14	06:10		06:39		07:10		07:55 (T28)	07:41			07:18		07:40 (T31)	07:49		15:57 (T30)
	21:05		20:34		19:44	62	19:11 (T27)	18:53			17:14	48	16:29 (T30)	17:03	39	16:36 (T30)
15	06:11		06:40		07:11		07:53 (T28)	07:42			07:19		07:41 (T31)	07:50		15:58 (T30)
	21:04		20:33		19:42	66	19:11 (T27)	18:52			17:13	44	16:29 (T30)	17:03	39	16:37 (T30)
16	06:12		06:41		07:12		07:52 (T28)	07:44			07:20		15:46 (T30)	07:50		15:59 (T30)
	21:04		20:32		19:40	71	19:12 (T27)	18:50			17:12	45	16:31 (T30)	17:03	38	16:37 (T30)
17	06:13		06:42		07:13		07:50 (T28)	07:45			07:21		15:46 (T30)	07:51		16:00 (T30)
	21:03		20:30		19:39	74	19:12 (T27)	18:49			17:11	45	16:31 (T30)	17:04	38	16:38 (T30)
18	06:13		06:43		07:14		07:49 (T28)	07:46			07:22		15:46 (T30)	07:52		16:00 (T30)
	21:02		20:29		19:37	77	19:12 (T27)	18:47			17:10	45	16:31 (T30)	17:04	38	16:38 (T30)
19	06:14		06:44		07:15		07:48 (T28)	07:47			07:24		15:45 (T30)	07:52		16:01 (T30)
	21:02		20:27		19:35	79	19:12 (T27)	18:46			17:10	46	16:31 (T30)	17:04	38	16:39 (T30)
20	06:15		06:45		07:16		07:46 (T28)	07:48			07:25		15:46 (T30)	07:53		16:01 (T30)
	21:01		20:26		19:33	82	19:11 (T27)	18:44			17:09	46	16:32 (T30)	17:05	38	16:39 (T30)
21	06:16		06:46		07:17		07:46 (T28)	07:49		08:31 (T31)	07:26		15:46 (T30)	07:53		16:02 (T30)
	21:00		20:24		19:32	81	19:10 (T27)	18:43	12	08:43 (T31)	17:08	46	16:32 (T30)	17:05	37	16:39 (T30)
22	06:17		06:47		07:18		07:45 (T28)	07:50		08:28 (T31)	07:27		15:46 (T30)	07:54		16:02 (T30)
	20:59		20:23		19:30	80	19:08 (T27)	18:41	18	08:46 (T31)	17:08	46	16:32 (T30)	17:06	37	16:39 (T30)
23	06:18		06:48		07:19		07:44 (T28)	07:51		08:26 (T31)	07:28		15:46 (T30)	07:54		16:03 (T30)
	20:59		20:21		19:28	80	19:06 (T27)	18:40	22	08:48 (T31)	17:07	46	16:32 (T30)	17:06	37	16:40 (T30)
24	06:19		06:49		07:20		07:43 (T28)	07:53		08:24 (T31)	07:29		15:47 (T30)	07:55		16:03 (T30)
	20:58		20:20		19:27	79	19:04 (T27)	18:39	25	08:49 (T31)	17:07	46	16:33 (T30)	17:07	38	16:41 (T30)
25	06:20		06:50		07:21		07:43 (T28)	07:54		08:23 (T31)	07:31		15:47 (T30)	07:55		16:03 (T30)
	20:57		20:18		19:25	77	19:03 (T27)	18:37	28	08:51 (T31)	17:06	47	16:34 (T30)	17:07	38	16:41 (T30)
26	06:20		06:51		07:22		07:43 (T28)	07:55		08:22 (T31)	07:32		15:48 (T30)	07:56		16:04 (T30)
	20:56		20:17		19:23	75	19:01 (T27)	18:36	29	08:51 (T31)	17:05	46	16:34 (T30)	17:08	38	16:42 (T30)
27	06:21		06:52		07:23		07:43 (T28)	07:56		08:21 (T31)	07:33		15:48 (T30)	07:56		16:04 (T30)
	20:55		20:15		19:21	72	18:59 (T27)	18:34	31	08:52 (T31)	17:05	46	16:34 (T30)	17:09	38	16:42 (T30)
28	06:22		06:53		07:24		07:44 (T28)	07:57		08:20 (T31)	07:34		15:48 (T30)	07:56		16:04 (T30)
	20:54		20:14		19:20	68	18:57 (T27)	18:33	32	08:52 (T31)	17:05	46	16:34 (T30)	17:09	39	16:43 (T30)
29	06:23		06:54		07:25		07:45 (T28)	07:58		08:20 (T31)	07:35		15:48 (T30)	07:57		16:05 (T30)
	20:53		20:12		19:18	64	18:56 (T27)	18:32	33	08:53 (T31)	17:04	46	16:34 (T30)	17:10	39	16:44 (T30)
30	06:24		06:55		07:26		07:46 (T28)	08:00		08:21 (T31)	07:36		15:49 (T30)	07:57		16:06 (T30)
	20:52		20:10		19:16	59	18:54 (T27)	18:30	32	08:53 (T31)	17:04	45	16:34 (T30)	17:11	39	16:45 (T30)
31	06:25		06:56					08:01		08:22 (T31)				07:57		16:06 (T30)
	20:51		20:09					18:29	31	08:53 (T31)				17:12	39	16:45 (T30)
Potential sun hours	460		429		375			345			297			287		
Total, worst case						1411			618			1387			1230	
Sun reduction						0.59			0.48			0.30			0.22	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.61			0.57			0.70			0.73	
Total reduction						0.37			0.28			0.21			0.17	
Total, real						522			173			297			203	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 986 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8514)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:57	07:43	07:07	07:16	06:30	06:49 (T5)	06:01	06:23 (T4)	06:01	06:29 (T4)	06:26	06:54 (T5)	06:57	07:27	07:02	07:37
	17:12	17:47	18:21	19:56	20:27	07:15 (T5)	20:57	07:05 (T4)	21:09	07:12 (T4)	20:50	07:23 (T5)	20:07	19:14	17:27	17:03
2	07:57	07:42	07:05	07:14	06:28	06:48 (T5)	06:00	06:24 (T4)	06:02	06:29 (T4)	06:27	06:54 (T5)	06:58	07:28	07:03	07:38
	17:13	17:48	18:22	19:57	20:28	07:15 (T5)	20:58	07:06 (T4)	21:08	07:12 (T4)	20:49	07:23 (T5)	20:05	19:13	17:26	17:03
3	07:57	07:41	07:04	07:12	06:27	06:47 (T5)	06:00	06:24 (T4)	06:02	06:29 (T4)	06:28	06:53 (T5)	06:59	07:29	07:04	07:39
	17:14	17:49	18:24	19:58	20:29	07:15 (T5)	20:58	07:07 (T4)	21:08	07:13 (T4)	20:48	07:24 (T5)	20:04	19:11	17:25	17:02
4	07:58	07:40	07:02	07:11	06:26	06:46 (T5)	05:59	06:23 (T4)	06:03	06:30 (T4)	06:29	06:52 (T5)	07:00	07:30	07:05	07:40
	17:15	17:51	18:25	19:59	20:30	07:15 (T5)	20:59	07:06 (T4)	21:08	07:13 (T4)	20:47	07:23 (T5)	20:02	19:09	17:24	17:02
5	07:58	07:39	07:01	07:09	06:25	06:44 (T5)	05:59	06:24 (T4)	06:04	06:30 (T4)	06:30	06:51 (T5)	07:01	07:31	07:07	07:41
	17:16	17:52	18:26	20:00	20:31	07:14 (T5)	21:00	07:07 (T4)	21:08	07:13 (T4)	20:46	07:24 (T5)	20:00	19:08	17:23	17:02
6	07:57	07:38	06:59	07:07	06:23	06:43 (T5)	05:59	06:24 (T4)	06:04	06:30 (T4)	06:31	06:52 (T5)	07:02	07:32	07:08	07:42
	17:17	17:53	18:27	20:00	20:32	07:14 (T5)	21:01	07:07 (T4)	21:08	07:14 (T4)	20:44	07:24 (T5)	19:57	19:06	17:21	17:02
7	07:57	07:37	06:57	07:06	06:22	06:42 (T5)	05:58	06:24 (T4)	06:05	06:30 (T4)	06:32	06:53 (T5)	07:03	07:34	07:09	07:43
	17:18	17:54	18:28	20:01	20:33	07:14 (T5)	21:01	07:07 (T4)	21:07	07:13 (T4)	20:43	07:24 (T5)	19:55	19:04	17:20	17:02
8	07:57	07:36	07:56	07:04	06:21	06:42 (T5)	05:58	06:24 (T4)	06:05	06:31 (T4)	06:33	06:54 (T5)	07:04	07:35	07:10	07:44
	17:19	17:56	19:29	20:02	20:34	07:14 (T5)	21:02	07:07 (T4)	21:07	07:14 (T4)	20:42	07:24 (T5)	19:54	19:03	17:19	17:02
9	07:57	07:35	07:54	07:03	06:20	06:42 (T5)	05:58	06:24 (T4)	06:06	06:31 (T4)	06:34	06:55 (T5)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03	20:35	07:14 (T5)	21:02	07:08 (T4)	21:07	07:14 (T4)	20:41	07:24 (T5)	19:52	19:01	17:18	17:02
10	07:57	07:34	07:53	07:01	06:19	06:43 (T5)	05:58	06:25 (T4)	06:07	06:31 (T4)	06:35	06:56 (T5)	07:06	07:37	07:13	07:46
	17:21	17:58	19:32	20:04	20:36	07:13 (T5)	21:03	07:08 (T4)	21:06	07:13 (T4)	20:39	07:24 (T5)	19:50	18:59	17:17	17:02
11	07:57	07:32	07:51	06:59	06:18	06:43 (T5)	05:58	06:25 (T4)	06:07	06:31 (T4)	06:36	06:57 (T5)	07:07	07:38	07:14	07:47
	17:22	17:59	19:33	20:05	20:37	07:13 (T5)	21:04	07:08 (T4)	21:06	07:14 (T4)	20:38	07:24 (T5)	19:49	18:58	17:16	17:02
12	07:56	07:31	07:49	06:58	06:16	06:44 (T5)	05:58	06:25 (T4)	06:08	06:32 (T4)	06:37	06:58 (T5)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:06	20:38	07:12 (T5)	21:04	07:09 (T4)	21:06	07:14 (T4)	20:37	07:23 (T5)	19:47	18:56	17:15	17:02
13	07:56	07:30	07:48	06:56	06:15	06:38 (T4)	05:57	06:25 (T4)	06:09	06:32 (T4)	06:38	06:59 (T5)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08	20:39	07:11 (T5)	21:05	07:09 (T4)	21:05	07:13 (T4)	20:36	07:23 (T5)	19:45	18:55	17:14	17:02
14	07:56	07:28	07:46	06:55	06:14	06:35 (T4)	05:57	06:26 (T4)	06:10	06:32 (T4)	06:39	07:00 (T5)	07:10	07:41	07:18	07:49
	17:25	18:03	19:36	20:09	20:41	07:10 (T5)	21:05	07:09 (T4)	21:05	07:13 (T4)	20:34	07:22 (T5)	19:44	18:53	17:13	17:02
15	07:55	07:27	07:44	06:53	06:13	06:34 (T4)	05:57	06:26 (T4)	06:10	06:33 (T4)	06:40	07:01 (T5)	07:11	07:42	07:19	07:50
	17:26	18:04	19:37	20:10	20:42	07:09 (T5)	21:06	07:09 (T4)	21:04	07:14 (T4)	20:33	07:22 (T5)	19:42	18:52	17:12	17:03
16	07:55	07:26	07:43	06:51	06:12	06:33 (T4)	05:57	06:26 (T4)	06:11	06:34 (T4)	06:41	07:02 (T5)	07:12	07:43	07:20	07:50
	17:27	18:06	19:38	20:11	20:43	07:08 (T5)	21:06	07:09 (T4)	21:03	07:14 (T4)	20:31	07:21 (T5)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	06:11	06:32 (T4)	05:57	06:26 (T4)	06:12	06:34 (T4)	06:42	07:03 (T5)	07:13	07:44	07:21	07:51
	17:29	18:07	19:39	20:12	20:44	07:06 (T5)	21:06	07:09 (T4)	21:03	07:13 (T4)	20:30	07:20 (T5)	19:38	18:48	17:11	17:03
18	07:54	07:23	07:39	06:48	06:10	06:31 (T4)	05:58	06:26 (T4)	06:13	06:35 (T4)	06:43	07:04 (T5)	07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13	20:44	07:05 (T5)	21:07	07:10 (T4)	21:02	07:13 (T4)	20:29	07:18 (T5)	19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47	06:10	06:30 (T4)	05:58	06:26 (T4)	06:14	06:36 (T4)	06:44	07:05 (T5)	07:15	07:47	07:23	07:52
	17:31	18:09	19:42	20:14	20:45	07:02 (T5)	21:07	07:10 (T4)	21:02	07:13 (T4)	20:27	07:17 (T5)	19:35	18:45	17:09	17:04
20	07:53	07:20	07:36	06:45	06:09	06:30 (T4)	05:58	06:26 (T4)	06:15	06:37 (T4)	06:45	07:06 (T5)	07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15	20:46	07:00 (T4)	21:07	07:10 (T4)	21:01	07:12 (T4)	20:26	07:15 (T5)	19:33	18:44	17:09	17:04
21	07:52	07:19	07:34	06:44	06:08	06:29 (T4)	05:58	06:26 (T4)	06:15	06:38 (T4)	06:46	07:07 (T5)	07:17	07:49	07:26	07:53
	17:33	18:12	19:44	20:16	20:47	07:01 (T4)	21:08	07:10 (T4)	21:00	07:12 (T4)	20:24	07:12 (T5)	19:31	18:42	17:08	17:05
22	07:52	07:17	07:33	06:42	06:07	06:28 (T4)	05:58	06:27 (T4)	06:16	06:39 (T4)	06:47		07:18	07:50	07:27	07:54
	17:34	18:13	19:45	20:17	20:48	07:01 (T4)	21:08	07:11 (T4)	20:59	07:12 (T4)	20:23		19:30	18:41	17:07	17:05
23	07:51	07:16	07:31	06:41	06:06	06:27 (T4)	05:58	06:27 (T4)	06:17	06:39 (T4)	06:48		07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18	20:49	07:02 (T4)	21:08	07:11 (T4)	20:59	07:10 (T4)	20:21		19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:39	06:06	06:27 (T4)	05:59	06:27 (T4)	06:18	06:40 (T4)	06:49		07:20	07:52	07:29	07:55
	17:37	18:15	19:47	20:19	20:50	07:03 (T4)	21:08	07:11 (T4)	20:58	07:11 (T5)	20:20		19:26	18:38	17:06	17:06
25	07:49	07:13	07:28	06:38	06:05	06:26 (T4)	05:59	06:28 (T4)	06:19	06:41 (T4)	06:50		07:21	07:54	07:30	07:55
	17:38	18:17	19:48	20:20	20:51	07:03 (T4)	21:08	07:12 (T4)	20:57	07:14 (T5)	20:18		19:25	18:37	17:05	17:07
26	07:49	07:12	07:26	06:36	06:04	06:25 (T4)	05:59	06:28 (T4)	06:20	06:42 (T4)	06:51		07:22	07:55	07:32	07:56
	17:39	18:18	19:49	20:22	20:52	07:03 (T4)	21:09	07:11 (T4)	20:56	07:16 (T5)	20:17		19:23	18:35	17:05	17:08
27	07:48	07:10	07:24	06:35	06:04	06:25 (T4)	06:00	06:28 (T4)	06:21	06:43 (T4)	06:52		07:23	07:56	07:33	07:56
	17:41	18:19	19:50	20:23	20:53	07:04 (T4)	21:09	07:11 (T4)	20:55	07:18 (T5)	20:15		19:21	18:34	17:05	17:08
28	07:47	07:08	07:22	06:34	06:03	06:24 (T4)	06:00	06:29 (T4)	06:22	06:44 (T4)	06:53		07:24	07:57	07:34	07:56
	17:42	18:20	19:51	20:24	20:54	07:04 (T4)	21:09	07:12 (T4)	20:54	07:19 (T5)	20:13		19:19	18:33	17:04	17:09
29	07:46		07:21	06:32	06:02	06:24 (T4)	06:00	06:28 (T4)	06:23	06:45 (T4)	06:54		07:25	07:58	07:35	07:57
	17:43		19:52	20:25	20:55	07:05 (T4)	21:09	07:12 (T4)	20:53	07:20 (T5)	20:12		19:18	18:31	17:04	17:10
30	07:45		07:19	06:31	06:02	06:23 (T4)	06:01	06:29 (T4)	06:24	06:46 (T4)	06:55		07:26	08:00	07:36	07:57
	17:44		19:54	20:26	20:55	07:05 (T4)	21:09	07:13 (T4)	20:52	07:21 (T5)	20:10		19:16	18:30	17:03	17:10
31	07:44		07:17		06:01	06:24 (T4)			06:25	06:50 (T4)	06:56			08:01		07:57
	17:46		19:55		20:56	07:06 (T4)			20:51	07:22 (T5)	20:09			18:29		17:11
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case				145	1038	1301	1196	498				
Sun reduction				0.52	0.57	0.64	0.66	0.61				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.69	0.70	0.71	0.71	0.69				
Total reduction				0.36	0.40	0.46	0.47	0.42				
Total, real				52	415	594	561	209				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 998 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8522)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May	June	July	August	September	October	November	December
1	07:58	07:44	07:07	07:16	06:30	18:35 (T26) 06:01	18:35 (T26) 06:02	18:43 (T26) 06:26	18:42 (T26) 06:57	07:28	07:02	07:37
	17:13	17:47	18:22	19:56	20:27 90	20:05 (T25) 20:57 88	20:03 (T26) 21:09 85	20:08 (T26) 20:50 90	20:12 (T26) 20:07	19:15	17:28	17:04
2	07:58	07:43	07:06	07:15	06:29	18:35 (T26) 06:01	18:36 (T26) 06:03	18:43 (T26) 06:27	18:42 (T26) 06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28 91	20:06 (T25) 20:58 87	20:03 (T26) 21:09 85	20:08 (T26) 20:49 90	20:12 (T26) 20:06	19:13	17:27	17:03
3	07:58	07:42	07:04	07:13	06:28	18:34 (T26) 06:00	18:35 (T26) 06:03	18:43 (T26) 06:28	18:42 (T26) 06:59	07:30	07:05	07:39
	17:15	17:50	18:24	19:58	20:29 92	20:06 (T25) 20:59 88	20:03 (T26) 21:09 86	20:09 (T26) 20:48 91	20:13 (T25) 20:04	19:11	17:26	17:03
4	07:58	07:41	07:03	07:11	06:26	18:33 (T26) 06:00	18:36 (T26) 06:04	18:43 (T26) 06:29	18:42 (T26) 07:00	07:31	07:06	07:40
	17:16	17:51	18:25	19:59	20:30 92	20:05 (T25) 20:59 87	20:03 (T26) 21:08 86	20:09 (T26) 20:47 91	20:13 (T25) 20:02	19:10	17:24	17:03
5	07:58	07:40	07:01	07:10	06:25	18:33 (T26) 06:00	18:37 (T26) 06:04	18:43 (T26) 06:30	18:42 (T26) 07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00	20:31 92	20:05 (T25) 21:00 87	20:04 (T26) 21:08 86	20:09 (T26) 20:46 92	20:14 (T25) 20:01	19:08	17:23	17:03
6	07:58	07:38	06:59	07:08	06:24	18:33 (T26) 05:59	18:36 (T26) 06:05	18:42 (T26) 06:31	18:42 (T26) 07:02	07:33	07:08	07:42
	17:17	17:54	18:28	20:00	20:32 92	20:05 (T25) 21:01 87	20:03 (T26) 21:08 87	20:09 (T26) 20:45 92	20:14 (T25) 19:57	19:06	17:22	17:03
7	07:58	07:37	06:58	07:06	06:23	18:33 (T26) 05:59	18:37 (T26) 06:05	18:43 (T26) 06:32	18:43 (T26) 07:03	07:34	07:09	07:43
	17:18	17:55	18:29	20:01	20:34 92	20:05 (T25) 21:01 86	20:03 (T26) 21:08 87	20:10 (T26) 20:43 92	20:15 (T25) 19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22	18:32 (T26) 05:59	18:37 (T26) 06:06	18:43 (T26) 06:33	18:43 (T26) 07:04	07:35	07:11	07:44
	17:19	17:56	19:30	20:03	20:35 92	20:04 (T25) 21:02 87	20:04 (T26) 21:07 87	20:10 (T26) 20:42 92	20:15 (T25) 19:54	19:03	17:20	17:03
9	07:57	07:35	07:55	07:03	06:20	18:32 (T26) 05:59	18:38 (T26) 06:07	18:43 (T26) 06:34	18:43 (T26) 07:05	07:36	07:12	07:45
	17:20	17:58	19:31	20:04	20:36 91	20:03 (T25) 21:03 86	20:04 (T26) 21:07 87	20:10 (T26) 20:41 92	20:15 (T25) 19:52	19:02	17:19	17:03
10	07:57	07:34	07:53	07:01	06:19	18:31 (T26) 05:58	18:38 (T26) 06:07	18:43 (T26) 06:35	18:43 (T26) 07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05	20:37 91	20:02 (T25) 21:03 86	20:04 (T26) 21:07 88	20:11 (T26) 20:40 92	20:15 (T25) 19:51	19:00	17:18	17:03
11	07:57	07:33	07:51	07:00	06:18	18:31 (T26) 05:58	18:38 (T26) 06:08	18:43 (T26) 06:36	18:44 (T26) 07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06	20:38 90	20:01 (T26) 21:04 85	20:03 (T26) 21:06 88	20:11 (T26) 20:38 91	20:15 (T25) 19:49	18:58	17:17	17:03
12	07:57	07:31	07:50	06:58 19:14 (T26)	06:17	18:31 (T26) 05:58	18:38 (T26) 06:09	18:42 (T26) 06:37	18:44 (T26) 07:08	07:39	07:15	07:48
	17:24	18:01	19:34	20:07 13 19:27 (T26)	20:39 91	20:02 (T26) 21:04 85	20:03 (T26) 21:06 89	20:11 (T26) 20:37 89	20:13 (T25) 19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57 19:08 (T26)	06:16	18:31 (T26) 05:58	18:39 (T26) 06:10	18:43 (T26) 06:38	18:44 (T26) 07:09	07:40	07:17	07:48
	17:25	18:03	19:35	20:08 26 19:34 (T26)	20:40 91	20:02 (T26) 21:05 85	20:04 (T26) 21:05 88	20:11 (T26) 20:36 88	20:12 (T25) 19:46	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55 19:03 (T26)	06:15	18:31 (T26) 05:58	18:39 (T26) 06:10	18:43 (T26) 06:39	18:45 (T26) 07:10	07:42	07:18	07:49
	17:26	18:04	19:37	20:09 35 19:38 (T26)	20:41 91	20:02 (T26) 21:05 85	20:04 (T26) 21:05 89	20:12 (T26) 20:34 86	20:11 (T25) 19:44	18:54	17:14	17:03
15	07:56	07:28	07:45	06:53 19:00 (T26)	06:14	18:32 (T26) 05:58	18:39 (T26) 06:11	18:43 (T26) 06:40	18:46 (T26) 07:11	07:43	07:19	07:50
	17:27	18:05	19:38	20:10 41 19:41 (T26)	20:42 91	20:03 (T26) 21:06 85	20:04 (T26) 21:04 89	20:12 (T26) 20:33 84	20:10 (T25) 19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52 18:56 (T26)	06:13	18:32 (T26) 05:58	18:39 (T26) 06:12	18:42 (T26) 06:41	18:46 (T26) 07:12	07:44	07:20	07:51
	17:28	18:06	19:39	20:11 47 19:43 (T26)	20:43 91	20:03 (T26) 21:06 85	20:04 (T26) 21:04 90	20:12 (T26) 20:32 82	20:08 (T25) 19:40	18:50	17:12	17:04
17	07:55	07:25	07:41	06:50 18:54 (T26)	06:12	18:32 (T26) 05:58	18:40 (T26) 06:13	18:42 (T26) 06:42	18:47 (T26) 07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12 57 19:51 (T25)	20:44 91	20:03 (T26) 21:07 84	20:04 (T26) 21:03 90	20:12 (T26) 20:30 80	20:07 (T25) 19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49 18:52 (T26)	06:11	18:32 (T26) 05:58	18:41 (T26) 06:14	18:42 (T26) 06:43	18:47 (T26) 07:14	07:46	07:23	07:52
	17:30	18:09	19:41	20:13 60 19:52 (T25)	20:45 91	20:03 (T26) 21:07 84	20:05 (T26) 21:02 91	20:13 (T26) 20:29 78	20:05 (T25) 19:37	18:47	17:11	17:04
19	07:54	07:22	07:38	06:47 18:50 (T26)	06:10	18:32 (T26) 05:58	18:41 (T26) 06:14	18:43 (T26) 06:44	18:47 (T26) 07:15	07:47	07:24	07:53
	17:31	18:10	19:42	20:14 63 19:53 (T25)	20:46 91	20:03 (T26) 21:07 84	20:05 (T26) 21:02 90	20:13 (T26) 20:27 76	20:03 (T25) 19:35	18:46	17:10	17:05
20	07:53	07:21	07:36	06:46 18:48 (T26)	06:09	18:31 (T26) 05:58	18:41 (T26) 06:15	18:43 (T26) 06:45	18:48 (T26) 07:16	07:48	07:25	07:53
	17:33	18:11	19:43	20:15 66 19:54 (T25)	20:47 92	20:03 (T26) 21:08 84	20:05 (T26) 21:01 90	20:13 (T26) 20:26 74	20:02 (T25) 19:34	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44 18:46 (T26)	06:09	18:31 (T26) 05:59	18:41 (T26) 06:16	18:42 (T26) 06:46	18:49 (T26) 07:17	07:49	07:26	07:54
	17:34	18:12	19:44	20:16 69 19:55 (T25)	20:48 91	20:02 (T26) 21:08 84	20:05 (T26) 21:00 90	20:12 (T26) 20:24 71	20:00 (T25) 19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43 18:44 (T26)	06:08	18:32 (T26) 05:59	18:41 (T26) 06:17	18:42 (T26) 06:47	18:50 (T26) 07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:18 72 19:56 (T25)	20:49 91	20:03 (T26) 21:08 84	20:05 (T26) 21:00 91	20:13 (T26) 20:23 69	19:59 (T25) 19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:41 18:43 (T26)	06:07	18:32 (T26) 05:59	18:42 (T26) 06:18	18:42 (T26) 06:48	18:52 (T26) 07:19	07:52	07:28	07:55
	17:36	18:15	19:46	20:19 74 19:57 (T25)	20:49 91	20:03 (T26) 21:08 84	20:06 (T26) 20:59 91	20:13 (T26) 20:21 66	19:58 (T25) 19:28	18:40	17:07	17:06
24	07:50	07:15	07:30	06:40 18:41 (T26)	06:06	18:32 (T26) 05:59	18:42 (T26) 06:19	18:42 (T26) 06:49	18:53 (T26) 07:20	07:53	07:30	07:55
	17:37	18:16	19:47	20:20 77 19:58 (T25)	20:50 91	20:03 (T26) 21:08 84	20:06 (T26) 20:58 91	20:13 (T26) 20:20 63	19:56 (T25) 19:27	18:39	17:07	17:07
25	07:50	07:13	07:28	06:38 18:41 (T26)	06:05	18:33 (T26) 06:00	18:42 (T26) 06:20	18:42 (T26) 06:50	18:55 (T26) 07:21	07:54	07:31	07:56
	17:39	18:17	19:49	20:21 78 19:59 (T25)	20:51 90	20:03 (T26) 21:09 84	20:06 (T26) 20:57 91	20:13 (T26) 20:18 60	19:55 (T25) 19:25	18:37	17:06	17:08
26	07:49	07:12	07:26	06:37 18:40 (T26)	06:05	18:33 (T26) 06:00	18:42 (T26) 06:21	18:42 (T26) 06:51	18:56 (T26) 07:22	07:55	07:32	07:56
	17:40	18:18	19:50	20:22 80 20:00 (T25)	20:52 90	20:03 (T26) 21:09 85	20:07 (T26) 20:56 91	20:13 (T26) 20:17 56	19:53 (T25) 19:23	18:36	17:06	17:08
27	07:48	07:10	07:25	06:36 18:38 (T26)	06:04	18:33 (T26) 06:00	18:42 (T26) 06:21	18:42 (T26) 06:52	18:58 (T26) 07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23 83 20:01 (T25)	20:53 89	20:02 (T26) 21:09 85	20:07 (T26) 20:55 91	20:13 (T26) 20:15 47	19:45 (T26) 19:22	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34 18:38 (T26)	06:04	18:34 (T26) 06:01	18:42 (T26) 06:22	18:42 (T26) 06:53	19:01 (T26) 07:25	07:57	07:34	07:57
	17:42	18:21	19:52	20:24 84 20:02 (T25)	20:54 89	20:03 (T26) 21:09 85	20:07 (T26) 20:54 91	20:13 (T26) 20:14 41	19:42 (T26) 19:20	18:33	17:05	17:10
29	07:46		07:21	06:33 18:37 (T26)	06:03	18:33 (T26) 06:01	18:43 (T26) 06:23	18:41 (T26) 06:54	19:04 (T26) 07:26	07:59	07:35	07:57
	17:44		19:53	20:25 86 20:03 (T25)	20:55 90	20:03 (T26) 21:09 85	20:08 (T26) 20:53 91	20:12 (T26) 20:12 34	19:38 (T26) 19:18	18:32	17:04	17:10
30	07:46		07:20	06:32 18:36 (T26)	06:02	18:34 (T26) 06:02	18:42 (T26) 06:24	18:41 (T26) 06:55	19:08 (T26) 07:27	08:00	07:36	07:57
	17:45		19:54	20:26 88 20:04 (T25)	20:56 89	20:03 (T26) 21:09 86	20:08 (T26) 20:52 91	20:12 (T26) 20:11 26	19:34 (T26) 19:17	18:31	17:04	17:11
31	07:45		07:18		06:02	18:34 (T26)	06:25	18:42 (T26) 06:56	19:15 (T26)	08:01		07:57
	17:46		19:55		20:56 89	20:03 (T26)	20:51 90	20:12 (T26) 20:09 11	19:26 (T26)	18:29		17:12
Potential sun hours	297	297	370	399	449	453	460	429	375	345	297	287
Total, worst case				1199	2815	2561	2757	2286				
Sun reduction				0.52	0.57	0.64	0.66	0.61				
Oper. time red.				1.00	1.00	1.00	1.00	1.00				
Wind dir. red.				0.57	0.57	0.57	0.57	0.57				
Total reduction				0.30	0.33	0.37	0.38	0.35				
Total, real				356	917	938	1041	797				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1022 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8544)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43	08:04 (T44)	07:07		07:16	07:35 (T77)	06:30	06:50 (T42)	06:02	06:33 (T42)
	17:13		17:48 18	08:22 (T44)	18:22		19:56 34	08:09 (T77)	20:27 4	06:54 (T42)	20:57 35	07:08 (T42)
2	07:57		07:43	08:03 (T44)	07:06		07:15	07:33 (T77)	06:29	06:49 (T42)	06:01	06:33 (T42)
	17:14		17:49 19	08:22 (T44)	18:23		19:57 36	08:09 (T77)	20:28 9	06:58 (T42)	20:58 35	07:08 (T42)
3	07:57		07:41	08:02 (T44)	07:04		07:13	07:32 (T77)	06:28	06:47 (T42)	06:01	06:33 (T42)
	17:15		17:50 21	08:23 (T44)	18:24		19:58 37	08:09 (T77)	20:29 13	07:00 (T42)	20:58 34	07:07 (T42)
4	07:58		07:40	08:01 (T44)	07:03		07:11	07:32 (T77)	06:26	06:46 (T42)	06:00	06:34 (T42)
	17:16		17:51 23	08:24 (T44)	18:25		19:59 36	08:08 (T77)	20:30 16	07:02 (T42)	20:59 34	07:08 (T42)
5	07:57		07:39	08:00 (T44)	07:01		07:10	07:32 (T77)	06:25	06:45 (T42)	06:00	06:35 (T42)
	17:17		17:53 24	08:24 (T44)	18:26		20:00 36	08:08 (T77)	20:31 18	07:03 (T42)	21:00 33	07:08 (T42)
6	07:57		07:38	07:58 (T44)	06:59		07:08	07:32 (T77)	06:24	06:44 (T42)	06:00	06:35 (T42)
	17:18		17:54 25	08:23 (T44)	18:28		20:00 35	08:07 (T77)	20:32 20	07:04 (T42)	21:01 32	07:07 (T42)
7	07:57		07:37	07:57 (T44)	06:58		07:06	07:32 (T77)	06:23	06:43 (T42)	05:59	06:35 (T42)
	17:19		17:55 27	08:24 (T44)	18:29		20:01 33	08:05 (T77)	20:33 22	07:05 (T42)	21:01 32	07:07 (T42)
8	07:57		07:36	07:56 (T44)	07:56		07:05	07:33 (T77)	06:22	06:42 (T42)	05:59	06:36 (T42)
	17:20		17:56 28	08:24 (T44)	19:30		20:02 32	08:05 (T77)	20:34 24	07:06 (T42)	21:02 31	07:07 (T42)
9	07:57		07:35	07:55 (T44)	07:55		07:03	07:34 (T77)	06:20	06:41 (T42)	05:59	06:37 (T42)
	17:21		17:58 29	08:24 (T44)	19:31		20:04 29	08:03 (T77)	20:35 26	07:07 (T42)	21:02 30	07:07 (T42)
10	07:57		07:34	07:54 (T44)	07:53		07:01	07:34 (T77)	06:19	06:40 (T42)	05:59	06:37 (T42)
	17:22		17:59 30	08:24 (T44)	19:32		20:05 27	08:01 (T77)	20:36 28	07:08 (T42)	21:03 30	07:07 (T42)
11	07:57		07:32	07:54 (T44)	07:51		07:00	07:36 (T77)	06:18	06:38 (T42)	05:58	06:38 (T42)
	17:23		18:00 29	08:23 (T44)	19:33		20:06 23	07:59 (T77)	20:38 29	07:07 (T42)	21:04 29	07:07 (T42)
12	07:56		07:31	07:55 (T44)	07:50		06:58	07:38 (T77)	06:17	06:37 (T42)	05:58	06:39 (T42)
	17:24		18:01 27	08:22 (T44)	19:34		20:07 19	07:57 (T77)	20:39 31	07:08 (T42)	21:04 28	07:07 (T42)
13	07:56		07:30	07:56 (T44)	07:48		06:57	07:41 (T77)	06:16	06:36 (T42)	05:58	06:38 (T42)
	17:25		18:03 26	08:22 (T44)	19:35		20:08 13	07:54 (T77)	20:40 32	07:08 (T42)	21:05 28	07:06 (T42)
14	07:56		07:29	07:57 (T44)	07:46		06:55		06:15	06:36 (T42)	05:58	06:39 (T42)
	17:26		18:04 24	08:21 (T44)	19:37		20:09		20:41 33	07:09 (T42)	21:05 27	07:06 (T42)
15	07:55		07:27	07:58 (T44)	07:45		06:53		06:14	06:35 (T42)	05:58	06:39 (T42)
	17:27		18:05 21	08:19 (T44)	19:38		20:10		20:42 34	07:09 (T42)	21:06 27	07:06 (T42)
16	07:55		07:26	08:00 (T44)	07:43		06:52		06:13	06:34 (T42)	05:58	06:40 (T42)
	17:28		18:06 18	08:18 (T44)	19:39		20:11		20:43 36	07:10 (T42)	21:06 27	07:07 (T42)
17	07:54		07:25	08:02 (T44)	07:41		06:50		06:12	06:33 (T42)	05:58	06:41 (T42)
	17:29		18:07 13	08:15 (T44)	19:40		20:12		20:44 37	07:10 (T42)	21:06 26	07:07 (T42)
18	07:54		07:23	08:07 (T44)	07:40		06:49		06:11	06:32 (T42)	05:58	06:41 (T42)
	17:30		18:09 3	08:10 (T44)	19:41		20:13		20:45 37	07:09 (T42)	21:07 26	07:07 (T42)
19	07:53		07:22		07:38		06:47		06:10	06:31 (T42)	05:58	06:41 (T42)
	17:32		18:10		19:42		20:14		20:45 38	07:09 (T42)	21:07 26	07:07 (T42)
20	07:53		07:21		07:36		06:46		06:09	06:30 (T42)	05:59	06:41 (T42)
	17:33		18:11		19:43		20:15		20:46 39	07:09 (T42)	21:07 26	07:07 (T42)
21	07:52		07:19		07:35	07:54 (T77)	06:44		06:09	06:30 (T42)	05:59	06:41 (T42)
	17:34		18:12		19:44 5	07:59 (T77)	20:16		20:47 40	07:10 (T42)	21:08 26	07:07 (T42)
22	07:52		07:18		07:33	07:52 (T77)	06:43		06:08	06:30 (T42)	05:59	06:41 (T42)
	17:35		18:14		19:45 11	08:03 (T77)	20:17		20:48 40	07:10 (T42)	21:08 26	07:07 (T42)
23	07:51		07:16		07:31	07:50 (T77)	06:41		06:07	06:29 (T42)	05:59	06:42 (T42)
	17:36		18:15		19:46 14	08:04 (T77)	20:18		20:49 40	07:09 (T42)	21:08 26	07:08 (T42)
24	07:50		07:15		07:30	07:49 (T77)	06:40		06:06	06:29 (T42)	05:59	06:42 (T42)
	17:38		18:16		19:47 18	08:07 (T77)	20:20		20:50 40	07:09 (T42)	21:08 26	07:08 (T42)
25	07:50		07:13		07:28	07:47 (T77)	06:39		06:06	06:30 (T42)	06:00	06:42 (T42)
	17:39		18:17		19:49 21	08:08 (T77)	20:21		20:51 39	07:09 (T42)	21:08 26	07:08 (T42)
26	07:49	08:09 (T44)	07:12		07:26	07:45 (T77)	06:37		06:05	06:30 (T42)	06:00	06:42 (T42)
	17:40 4	08:13 (T44)	18:18		19:50 23	08:08 (T77)	20:22		20:52 39	07:09 (T42)	21:08 27	07:09 (T42)
27	07:48	08:09 (T44)	07:10		07:25	07:44 (T77)	06:36		06:04	06:31 (T42)	06:00	06:42 (T42)
	17:41 7	08:16 (T44)	18:19		19:51 25	08:09 (T77)	20:23		20:53 38	07:09 (T42)	21:09 27	07:09 (T42)
28	07:47	08:08 (T44)	07:09		07:23	07:42 (T77)	06:34		06:04	06:31 (T42)	06:01	06:42 (T42)
	17:43 9	08:17 (T44)	18:21		19:52 27	08:09 (T77)	20:24		20:54 38	07:09 (T42)	21:09 27	07:09 (T42)
29	07:46	08:07 (T44)			07:21	07:40 (T77)	06:33		06:03	06:32 (T42)	06:01	06:42 (T42)
	17:44 12	08:19 (T44)			19:53 29	08:09 (T77)	20:25		20:54 37	07:09 (T42)	21:09 28	07:10 (T42)
30	07:45	08:06 (T44)			07:20	07:39 (T77)	06:32		06:03	06:32 (T42)	06:02	06:42 (T42)
	17:45 14	08:20 (T44)			19:54 31	08:10 (T77)	20:26		20:55 36	07:08 (T42)	21:09 28	07:10 (T42)
31	07:44	08:05 (T44)			07:18	07:37 (T77)			06:02	06:33 (T42)		
	17:46 16	08:21 (T44)			19:55 33	08:10 (T77)			20:56 36	07:09 (T42)		
Potential sun hours	297		297		370		399		448		453	
Total, worst case	62		405		237		390		949		863	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.54		0.54		0.63		0.63		0.70		0.70	
Total reduction	0.17		0.21		0.27		0.32		0.40		0.44	
Total, real	10		87		65		127		375		383	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1022 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8544)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:42 (T42)	06:26		06:48 (T42)	06:57		07:35 (T77)	07:28			07:02		07:23 (T44)	07:37	
	21:09	29	07:11 (T42)	20:50	30	07:18 (T42)	20:07	24	07:59 (T77)	19:15			17:28	30	07:53 (T44)	17:04	
2	06:03		06:42 (T42)	06:27		06:49 (T42)	06:58		07:33 (T77)	07:29			07:03		07:25 (T44)	07:38	
	21:08	29	07:11 (T42)	20:49	29	07:18 (T42)	20:06	27	08:00 (T77)	19:13			17:27	29	07:54 (T44)	17:03	
3	06:03		06:42 (T42)	06:28		06:50 (T42)	06:59		07:32 (T77)	07:30			07:04		07:26 (T44)	07:39	
	21:08	30	07:12 (T42)	20:48	27	07:17 (T42)	20:04	29	08:01 (T77)	19:11			17:26	28	07:54 (T44)	17:03	
4	06:04		06:41 (T42)	06:29		06:51 (T42)	07:00		07:30 (T77)	07:31			07:06		07:27 (T44)	07:40	
	21:08	31	07:12 (T42)	20:47	26	07:17 (T42)	20:02	32	08:02 (T77)	19:10			17:24	27	07:54 (T44)	17:03	
5	06:04		06:42 (T42)	06:30		06:52 (T42)	07:01		07:29 (T77)	07:32			07:07		07:28 (T44)	07:41	
	21:08	31	07:13 (T42)	20:46	24	07:16 (T42)	20:01	33	08:02 (T77)	19:08			17:23	25	07:53 (T44)	17:03	
6	06:05		06:41 (T42)	06:31		06:53 (T42)	07:02		07:28 (T77)	07:33			07:08		07:30 (T44)	07:42	
	21:08	32	07:13 (T42)	20:44	22	07:15 (T42)	19:57	35	08:03 (T77)	19:06			17:22	24	07:54 (T44)	17:03	
7	06:06		06:41 (T42)	06:32		06:54 (T42)	07:03		07:27 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	33	07:14 (T42)	20:43	20	07:14 (T42)	19:56	36	08:03 (T77)	19:05			17:21	22	07:53 (T44)	17:03	
8	06:06		06:41 (T42)	06:33		06:55 (T42)	07:04		07:27 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	34	07:15 (T42)	20:42	17	07:12 (T42)	19:54	36	08:03 (T77)	19:03			17:20	21	07:53 (T44)	17:03	
9	06:07		06:41 (T42)	06:34		06:56 (T42)	07:05		07:26 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	33	07:14 (T42)	20:41	15	07:11 (T42)	19:52	37	08:03 (T77)	19:02			17:19	19	07:53 (T44)	17:03	
10	06:08		06:41 (T42)	06:35		06:57 (T42)	07:06		07:27 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	34	07:15 (T42)	20:40	12	07:09 (T42)	19:51	36	08:03 (T77)	19:00			17:18	17	07:52 (T44)	17:03	
11	06:08		06:41 (T42)	06:36		06:58 (T42)	07:07		07:28 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	35	07:16 (T42)	20:38	8	07:06 (T42)	19:49	34	08:02 (T77)	18:58			17:17	16	07:52 (T44)	17:03	
12	06:09		06:40 (T42)	06:37			07:08		07:28 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	36	07:16 (T42)	20:37			19:47	33	08:01 (T77)	18:57			17:16	14	07:51 (T44)	17:03	
13	06:10		06:40 (T42)	06:38			07:09		07:29 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	37	07:17 (T42)	20:36			19:46	31	08:00 (T77)	18:55			17:15	11	07:50 (T44)	17:03	
14	06:10		06:40 (T42)	06:39			07:10		07:30 (T77)	07:41			07:18		07:40 (T44)	07:49	
	21:05	37	07:17 (T42)	20:34			19:44	30	08:00 (T77)	18:54			17:14	9	07:49 (T44)	17:03	
15	06:11		06:40 (T42)	06:40			07:11		07:31 (T77)	07:43			07:19		07:41 (T44)	07:50	
	21:04	38	07:18 (T42)	20:33			19:42	28	07:59 (T77)	18:52			17:13	7	07:48 (T44)	17:03	
16	06:12		06:39 (T42)	06:41			07:12		07:32 (T77)	07:44			07:20		07:43 (T44)	07:50	
	21:03	39	07:18 (T42)	20:32			19:40	26	07:58 (T77)	18:50			17:12	4	07:47 (T44)	17:04	
17	06:13		06:40 (T42)	06:42			07:13		07:33 (T77)	07:45			07:21			07:51	
	21:03	38	07:18 (T42)	20:30			19:39	24	07:57 (T77)	18:49			17:12			17:04	
18	06:14		06:40 (T42)	06:43			07:14		07:34 (T77)	07:46			07:22			07:52	
	21:02	39	07:19 (T42)	20:29			19:37	21	07:55 (T77)	18:47			17:11			17:04	
19	06:14		06:40 (T42)	06:44			07:15		07:35 (T77)	07:47			07:24			07:52	
	21:02	39	07:19 (T42)	20:27			19:35	18	07:53 (T77)	18:46			17:10			17:05	
20	06:15		06:40 (T42)	06:45			07:16		07:36 (T77)	07:48			07:25			07:53	
	21:01	40	07:20 (T42)	20:26			19:34	15	07:51 (T77)	18:44			17:09			17:05	
21	06:16		06:39 (T42)	06:46			07:17		07:37 (T77)	07:49			07:26			07:53	
	21:00	40	07:19 (T42)	20:24			19:32	12	07:49 (T77)	18:43			17:09			17:06	
22	06:17		06:39 (T42)	06:47			07:18		07:38 (T77)	07:50			07:27			07:54	
	20:59	40	07:19 (T42)	20:23			19:30	7	07:45 (T77)	18:42			17:08			17:06	
23	06:18		06:40 (T42)	06:48			07:19			07:52			07:28			07:54	
	20:59	40	07:20 (T42)	20:21			19:28			18:40			17:07			17:07	
24	06:19		06:41 (T42)	06:49			07:20			07:53		08:34 (T44)	07:29			07:55	
	20:58	39	07:20 (T42)	20:20			19:27			18:39	8	08:42 (T44)	17:07			17:07	
25	06:20		06:42 (T42)	06:50			07:21			07:54		08:32 (T44)	07:30			07:55	
	20:57	38	07:20 (T42)	20:18			19:25			18:37	14	08:46 (T44)	17:06			17:08	
26	06:21		06:43 (T42)	06:51			07:22			07:55		08:29 (T44)	07:32			07:56	
	20:56	37	07:20 (T42)	20:17			19:23			18:36	19	08:48 (T44)	17:06			17:08	
27	06:22		06:44 (T42)	06:52			07:23			07:56		08:27 (T44)	07:33			07:56	
	20:55	36	07:20 (T42)	20:15			19:22			18:35	22	08:49 (T44)	17:05			17:09	
28	06:23		06:45 (T42)	06:53			07:24			07:57		08:26 (T44)	07:34			07:56	
	20:54	35	07:20 (T42)	20:14			19:20			18:33	24	08:50 (T44)	17:05			17:10	
29	06:23		06:45 (T42)	06:54			07:25			07:58		08:26 (T44)	07:35			07:57	
	20:53	34	07:19 (T42)	20:12			19:18			18:32	26	08:52 (T44)	17:04			17:10	
30	06:24		06:46 (T42)	06:55		07:40 (T77)	07:27			08:00		08:24 (T44)	07:36			07:57	
	20:52	33	07:19 (T42)	20:10	14	07:54 (T77)	19:16			18:31	28	08:52 (T44)	17:04			17:11	
31	06:25		06:47 (T42)	06:56		07:37 (T77)				08:01		08:24 (T44)				07:57	
	20:51	32	07:19 (T42)	20:09	20	07:57 (T77)				18:29	29	08:53 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1098			264			604			170			303			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.69			0.63			0.54			0.54			
Total reduction		0.46			0.42			0.37			0.26			0.16			
Total, real		503			110			222			44			49			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1030 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8550)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June	
1	07:57		08:20 (T4)	07:43		08:04 (T5)	07:07			07:16		07:45 (T3)	06:30		07:37 (T3)	06:01
	17:12	17	08:37 (T4)	17:47	50	08:58 (T4)	18:21			19:56	62	08:47 (T3)	20:27	58	08:35 (T3)	20:57
2	07:57		08:20 (T4)	07:42		08:03 (T5)	07:05			07:14		07:44 (T3)	06:28		07:38 (T3)	06:00
	17:13	19	08:39 (T4)	17:48	51	08:58 (T4)	18:22			19:57	63	08:47 (T3)	20:28	56	08:34 (T3)	20:58
3	07:58		08:20 (T4)	07:41		08:02 (T5)	07:04			07:12		07:42 (T3)	06:27		07:39 (T3)	06:00
	17:14	20	08:40 (T4)	17:49	54	08:58 (T4)	18:24			19:58	65	08:47 (T3)	20:29	54	08:33 (T3)	20:58
4	07:58		08:20 (T4)	07:40		08:01 (T5)	07:02			07:11		07:42 (T3)	06:26		07:41 (T3)	05:59
	17:15	21	08:41 (T4)	17:51	54	08:57 (T4)	18:25			19:59	66	08:48 (T3)	20:30	51	08:32 (T3)	20:59
5	07:58		08:20 (T4)	07:39		08:00 (T5)	07:01			07:09		07:40 (T3)	06:25		07:41 (T3)	05:59
	17:16	22	08:42 (T4)	17:52	55	08:57 (T4)	18:26			20:00	68	08:48 (T3)	20:31	49	08:30 (T3)	21:00
6	07:57		08:20 (T4)	07:38		07:58 (T5)	06:59			07:07		07:39 (T3)	06:23		07:42 (T3)	05:59
	17:17	23	08:43 (T4)	17:53	55	08:55 (T4)	18:27			20:00	69	08:48 (T3)	20:32	47	08:29 (T3)	21:01
7	07:57		08:20 (T4)	07:37		07:57 (T5)	06:57			07:06		07:39 (T3)	06:22		07:44 (T3)	05:58
	17:18	25	08:45 (T4)	17:54	55	08:54 (T4)	18:28			20:01	70	08:49 (T3)	20:33	43	08:27 (T3)	21:01
8	07:57		08:19 (T4)	07:36		07:56 (T5)	07:56			07:04		07:38 (T3)	06:21		07:45 (T3)	05:58
	17:19	26	08:45 (T4)	17:56	53	08:53 (T4)	19:29			20:02	71	08:49 (T3)	20:34	41	08:26 (T3)	21:02
9	07:57		08:19 (T4)	07:35		07:55 (T5)	07:54			07:03		07:38 (T3)	06:20		07:47 (T3)	05:58
	17:20	27	08:46 (T4)	17:57	52	08:52 (T4)	19:30			20:03	71	08:49 (T3)	20:35	37	08:24 (T3)	21:02
10	07:57		08:19 (T4)	07:34		07:54 (T5)	07:53			07:01		07:37 (T3)	06:19		07:48 (T3)	05:58
	17:21	28	08:47 (T4)	17:58	51	08:51 (T4)	19:32			20:04	72	08:49 (T3)	20:36	34	08:22 (T3)	21:03
11	07:57		08:19 (T4)	07:32		07:52 (T5)	07:51			06:59		07:36 (T3)	06:18		07:50 (T3)	05:58
	17:22	30	08:49 (T4)	17:59	47	08:47 (T4)	19:33			20:05	72	08:48 (T3)	20:37	30	08:20 (T3)	21:04
12	07:56		08:18 (T4)	07:31		07:51 (T5)	07:49			06:58		07:36 (T3)	06:16		07:53 (T3)	05:58
	17:23	31	08:49 (T4)	18:01	41	08:44 (T4)	19:34			20:06	73	08:49 (T3)	20:38	25	08:18 (T3)	21:04
13	07:56		08:18 (T4)	07:30		07:50 (T5)	07:48			06:56		07:35 (T3)	06:15		07:55 (T3)	05:57
	17:24	32	08:50 (T4)	18:02	32	08:22 (T5)	19:35			20:08	73	08:48 (T3)	20:40	20	08:15 (T3)	21:05
14	07:56		08:17 (T4)	07:29		07:48 (T5)	07:46			06:55		07:35 (T3)	06:14		08:00 (T3)	05:57
	17:25	34	08:51 (T4)	18:03	33	08:21 (T5)	19:36			20:09	73	08:48 (T3)	20:41	10	08:10 (T3)	21:05
15	07:55		08:17 (T4)	07:27		07:48 (T5)	07:44			06:53		07:34 (T3)	06:13			05:57
	17:26	35	08:52 (T4)	18:04	33	08:21 (T5)	19:37			20:10	74	08:48 (T3)	20:42			21:06
16	07:55		08:16 (T4)	07:26		07:49 (T5)	07:43			06:51		07:35 (T3)	06:12			05:57
	17:27	36	08:52 (T4)	18:06	31	08:20 (T5)	19:38			20:11	73	08:48 (T3)	20:43			21:06
17	07:54		08:16 (T4)	07:25		07:49 (T5)	07:41			06:50		07:34 (T3)	06:11			05:57
	17:29	38	08:54 (T4)	18:07	30	08:19 (T5)	19:39			20:12	73	08:47 (T3)	20:44			21:06
18	07:54		08:15 (T4)	07:23		07:50 (T5)	07:39			06:48		07:33 (T3)	06:10			05:58
	17:30	39	08:54 (T4)	18:08	29	08:19 (T5)	19:41			20:13	73	08:46 (T3)	20:45			21:07
19	07:53		08:15 (T4)	07:22		07:51 (T5)	07:38			06:47		07:34 (T3)	06:10			05:58
	17:31	40	08:55 (T4)	18:09	26	08:17 (T5)	19:42			20:14	72	08:46 (T3)	20:45			21:07
20	07:53		08:15 (T4)	07:20		07:52 (T5)	07:36			06:45		07:34 (T3)	06:09			05:58
	17:32	40	08:55 (T4)	18:11	24	08:16 (T5)	19:43			20:15	71	08:45 (T3)	20:46			21:07
21	07:52		08:15 (T4)	07:19		07:54 (T5)	07:34			06:44		07:34 (T3)	06:08			05:58
	17:33	41	08:56 (T4)	18:12	21	08:15 (T5)	19:44			20:16	70	08:44 (T3)	20:47			21:08
22	07:52		08:15 (T4)	07:17		07:56 (T5)	07:33		08:13 (T3)	06:42		07:34 (T3)	06:07			05:58
	17:34	42	08:57 (T4)	18:13	16	08:12 (T5)	19:45	12	08:25 (T3)	20:17	70	08:44 (T3)	20:48			21:08
23	07:51		08:15 (T4)	07:16		08:00 (T5)	07:31		08:06 (T3)	06:41		07:34 (T3)	06:06			05:58
	17:36	42	08:57 (T4)	18:14	9	08:09 (T5)	19:46	25	08:31 (T3)	20:18	69	08:43 (T3)	20:49			21:08
24	07:50		08:15 (T4)	07:15			07:29		08:02 (T3)	06:39		07:35 (T3)	06:06			05:59
	17:37	42	08:57 (T4)	18:15			19:47	32	08:34 (T3)	20:19	67	08:42 (T3)	20:50			21:08
25	07:49		08:15 (T4)	07:13			07:28		07:59 (T3)	06:38		07:34 (T3)	06:05			05:59
	17:38	42	08:57 (T4)	18:17			19:48	39	08:38 (T3)	20:20	67	08:41 (T3)	20:51			21:08
26	07:49		08:15 (T4)	07:12			07:26		07:56 (T3)	06:36		07:35 (T3)	06:04			05:59
	17:39	42	08:57 (T4)	18:18			19:49	43	08:39 (T3)	20:22	65	08:40 (T3)	20:52			21:09
27	07:48		08:16 (T4)	07:10			07:24		07:54 (T3)	06:35		07:36 (T3)	06:03			06:00
	17:41	43	08:59 (T4)	18:19			19:50	47	08:41 (T3)	20:23	64	08:40 (T3)	20:53			21:09
28	07:47		08:16 (T4)	07:09			07:22		07:51 (T3)	06:34		07:36 (T3)	06:03			06:00
	17:42	43	08:59 (T4)	18:20			19:51	51	08:42 (T3)	20:24	62	08:38 (T3)	20:54			21:09
29	07:46		08:17 (T4)				07:21		07:50 (T3)	06:32		07:36 (T3)	06:02			06:00
	17:43	42	08:59 (T4)				19:52	54	08:44 (T3)	20:25	62	08:38 (T3)	20:55			21:09
30	07:45		08:06 (T5)				07:19		07:48 (T3)	06:31		07:37 (T3)	06:02			06:01
	17:44	45	08:59 (T4)				19:54	57	08:45 (T3)	20:26	60	08:37 (T3)	20:55			21:09
31	07:44		08:05 (T5)				07:17		07:46 (T3)				06:01			
	17:46	48	08:58 (T4)				19:55	59	08:45 (T3)				20:56			
Potential sun hours	297			297			370			399			449			453
Total, worst case		1055			902			419			2060			555		
Sun reduction		0.31			0.40			0.44			0.52			0.57		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.52			0.54			0.63			0.63			0.63		
Total reduction		0.16			0.21			0.27			0.32			0.35		
Total, real		165			189			114			662			195		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1030 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8550)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:01		06:26		08:02 (T3)	06:57	07:35 (T3)	07:27		07:02	07:23 (T5)	07:37	08:01 (T4)
	21:09		20:50	27	08:29 (T3)	20:07	72	08:47 (T3)	19:14		17:27	51	08:20 (T4)	17:03	30	08:31 (T4)
2	06:02		06:27		08:00 (T3)	06:58		07:35 (T3)	07:28		07:03		07:25 (T5)	07:38		08:02 (T4)
	21:08		20:49	32	08:32 (T3)	20:05	72	08:47 (T3)	19:13		17:26	53	08:22 (T4)	17:03	28	08:30 (T4)
3	06:02		06:28		07:57 (T3)	06:59		07:35 (T3)	07:29		07:04		07:26 (T5)	07:39		08:03 (T4)
	21:08		20:48	36	08:33 (T3)	20:04	71	08:46 (T3)	19:11		17:25	54	08:23 (T4)	17:02	27	08:30 (T4)
4	06:03		06:29		07:56 (T3)	07:00		07:35 (T3)	07:30		07:05		07:27 (T5)	07:40		08:04 (T4)
	21:08		20:47	38	08:34 (T3)	20:02	71	08:46 (T3)	19:09		17:24	54	08:24 (T4)	17:02	26	08:30 (T4)
5	06:04		06:30		07:54 (T3)	07:01		07:35 (T3)	07:31		07:07		07:28 (T5)	07:41		08:05 (T4)
	21:08		20:46	42	08:36 (T3)	20:00	70	08:45 (T3)	19:08		17:23	55	08:25 (T4)	17:02	25	08:30 (T4)
6	06:04		06:31		07:53 (T3)	07:02		07:35 (T3)	07:32		07:08		07:30 (T5)	07:42		08:06 (T4)
	21:08		20:44	44	08:37 (T3)	19:57	69	08:44 (T3)	19:06		17:21	55	08:27 (T4)	17:02	23	08:29 (T4)
7	06:05		06:32		07:51 (T3)	07:03		07:35 (T3)	07:34		07:09		07:31 (T5)	07:43		08:07 (T4)
	21:07		20:43	48	08:39 (T3)	19:55	68	08:43 (T3)	19:04		17:20	54	08:27 (T4)	17:02	22	08:29 (T4)
8	06:05		06:33		07:50 (T3)	07:04		07:36 (T3)	07:35		07:10		07:32 (T5)	07:44		08:08 (T4)
	21:07		20:42	50	08:40 (T3)	19:54	66	08:42 (T3)	19:03		17:19	53	08:28 (T4)	17:02	21	08:29 (T4)
9	06:06		06:34		07:49 (T3)	07:05		07:36 (T3)	07:36		07:12		07:34 (T5)	07:45		08:08 (T4)
	21:07		20:41	52	08:41 (T3)	19:52	65	08:41 (T3)	19:01		17:18	52	08:29 (T4)	17:02	20	08:28 (T4)
10	06:07		06:35		07:48 (T3)	07:06		07:37 (T3)	07:37		07:13		07:35 (T5)	07:46		08:09 (T4)
	21:06		20:39	54	08:42 (T3)	19:50	63	08:40 (T3)	18:59		17:17	49	08:29 (T4)	17:02	19	08:28 (T4)
11	06:07		06:36		07:47 (T3)	07:07		07:37 (T3)	07:38		07:14		07:36 (T5)	07:47		08:10 (T4)
	21:06		20:38	56	08:43 (T3)	19:49	62	08:39 (T3)	18:58		17:16	47	08:29 (T4)	17:02	18	08:28 (T4)
12	06:08		06:37		07:46 (T3)	07:08		07:38 (T3)	07:39		07:15		07:37 (T5)	07:47		08:11 (T4)
	21:06		20:37	58	08:44 (T3)	19:47	60	08:38 (T3)	18:56		17:15	45	08:30 (T4)	17:02	17	08:28 (T4)
13	06:09		06:38		07:45 (T3)	07:09		07:39 (T3)	07:40		07:16		07:49 (T4)	07:48		08:12 (T4)
	21:05		20:36	60	08:45 (T3)	19:45	57	08:36 (T3)	18:55		17:14	42	08:31 (T4)	17:02	15	08:27 (T4)
14	06:10		06:39		07:44 (T3)	07:10		07:40 (T3)	07:41		07:18		07:48 (T4)	07:49		08:13 (T4)
	21:05		20:34	61	08:45 (T3)	19:44	54	08:34 (T3)	18:53		17:13	43	08:31 (T4)	17:02	14	08:27 (T4)
15	06:10		06:40		07:43 (T3)	07:11		07:41 (T3)	07:42		07:19		07:48 (T4)	07:50		08:13 (T4)
	21:04		20:33	63	08:46 (T3)	19:42	51	08:32 (T3)	18:52		17:12	43	08:31 (T4)	17:03	14	08:27 (T4)
16	06:11		06:41		07:42 (T3)	07:12		07:43 (T3)	07:43		07:20		07:49 (T4)	07:50		08:14 (T4)
	21:04		20:31	65	08:47 (T3)	19:40	47	08:30 (T3)	18:50		17:12	42	08:31 (T4)	17:03	13	08:27 (T4)
17	06:12		06:42		07:42 (T3)	07:13		07:44 (T3)	07:44		07:21		07:49 (T4)	07:51		08:16 (T4)
	21:03		20:30	65	08:47 (T3)	19:38	44	08:28 (T3)	18:48		17:11	42	08:31 (T4)	17:03	11	08:27 (T4)
18	06:13		06:43		07:41 (T3)	07:14		07:46 (T3)	07:46		07:22		07:49 (T4)	07:52		08:16 (T4)
	21:02		20:29	67	08:48 (T3)	19:37	39	08:25 (T3)	18:47		17:10	42	08:31 (T4)	17:04	10	08:26 (T4)
19	06:14		06:44		07:40 (T3)	07:15		07:49 (T3)	07:47	08:29 (T5)	07:24		07:49 (T4)	07:52		08:17 (T4)
	21:02		20:27	68	08:48 (T3)	19:35	33	08:22 (T3)	18:45	12	08:41 (T5)	17:09	42	08:31 (T4)	17:04	10	08:27 (T4)
20	06:15		06:45		07:40 (T3)	07:16		07:52 (T3)	07:48		08:26 (T5)	07:25		07:50 (T4)	07:53		08:18 (T4)
	21:01		20:26	69	08:49 (T3)	19:33	26	08:18 (T3)	18:44	17	08:43 (T5)	17:09	42	08:32 (T4)	17:04	8	08:26 (T4)
21	06:15		06:46		07:39 (T3)	07:17		07:56 (T3)	07:49		08:24 (T5)	07:26		07:51 (T4)	07:53		08:19 (T4)
	21:00		20:24	70	08:49 (T3)	19:31	17	08:13 (T3)	18:42	22	08:46 (T5)	17:08	41	08:32 (T4)	17:05	8	08:27 (T4)
22	06:16		06:47		07:38 (T3)	07:18			07:50		08:22 (T5)	07:27		07:51 (T4)	07:54		08:19 (T4)
	20:59		20:23	71	08:49 (T3)	19:30			18:41	25	08:47 (T5)	17:07	40	08:31 (T4)	17:05	8	08:27 (T4)
23	06:17		06:48		07:38 (T3)	07:19			07:51		08:21 (T5)	07:28		07:51 (T4)	07:54		08:20 (T4)
	20:59		20:21	71	08:49 (T3)	19:28			18:40	27	08:48 (T5)	17:07	40	08:31 (T4)	17:06	8	08:28 (T4)
24	06:18		06:49		07:38 (T3)	07:20			07:52		08:20 (T5)	07:29		07:52 (T4)	07:55		08:19 (T4)
	20:58		20:20	72	08:50 (T3)	19:26			18:38	29	08:49 (T5)	17:06	39	08:31 (T4)	17:06	9	08:28 (T4)
25	06:19		06:50		07:37 (T3)	07:21			07:54		08:19 (T5)	07:30		07:54 (T4)	07:55		08:19 (T4)
	20:57		20:18	73	08:50 (T3)	19:25			18:37	30	08:49 (T5)	17:05	38	08:32 (T4)	17:07	10	08:29 (T4)
26	06:20		06:51		07:37 (T3)	07:22			07:55		08:19 (T5)	07:32		07:55 (T4)	07:56		08:20 (T4)
	20:56		20:17	73	08:50 (T3)	19:23			18:35	31	08:50 (T5)	17:05	36	08:31 (T4)	17:08	11	08:31 (T4)
27	06:21		06:52		07:36 (T3)	07:23			07:56		08:18 (T5)	07:33		07:56 (T4)	07:56		08:19 (T4)
	20:55		20:15	74	08:50 (T3)	19:21			18:34	32	08:50 (T5)	17:04	35	08:31 (T4)	17:08	12	08:31 (T4)
28	06:22		06:53		07:36 (T3)	07:24			07:57		08:18 (T5)	07:34		07:57 (T4)	07:56		08:19 (T4)
	20:54		20:13	73	08:49 (T3)	19:19			18:33	32	08:50 (T5)	17:04	34	08:31 (T4)	17:09	13	08:32 (T4)
29	06:23		06:54		07:36 (T3)	07:25			07:58		08:19 (T5)	07:35		07:58 (T4)	07:57		08:20 (T4)
	20:53		20:12	73	08:49 (T3)	19:18			18:31	31	08:50 (T5)	17:04	32	08:30 (T4)	17:10	14	08:34 (T4)
30	06:24	08:08 (T3)	06:55		07:36 (T3)	07:26			08:00		08:21 (T5)	07:36		07:59 (T4)	07:57		08:20 (T4)
	20:52	15 08:23 (T3)	20:10	73	08:49 (T3)	19:16			18:30	43	09:15 (T4)	17:03	31	08:30 (T4)	17:10	15	08:35 (T4)
31	06:25	08:05 (T3)	06:56		07:35 (T3)				08:01		08:22 (T5)				07:57		08:20 (T4)
	20:51	22 08:27 (T3)	20:09	73	08:48 (T3)				18:29	49	09:18 (T4)				17:11	16	08:36 (T4)
Potential sun hours	460		429			375			345			297			287		
Total, worst case		37		1851			1177			380			1326			495	
Sun reduction		0.66		0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00		1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.63		0.63			0.63			0.55			0.52			0.52	
Total reduction		0.41		0.38			0.36			0.26			0.15			0.11	
Total, real		15		698			429			97			202			55	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1040 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8559)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May		June
1	07:57	07:43		07:07		16:46 (T5)	07:16		06:30	19:33 (T3)	06:01
	17:12	17:47		18:21	73	17:59 (T4)	19:56		20:27	29	20:02 (T3)	20:57
2	07:57	07:42		07:05		16:46 (T5)	07:14		06:28		19:34 (T3)	06:00
	17:13	17:48		18:22	75	18:01 (T4)	19:57		20:28	28	20:02 (T3)	20:58
3	07:57	07:41		07:04		16:46 (T5)	07:12		06:27		19:34 (T3)	06:00
	17:14	17:49		18:24	76	18:02 (T4)	19:58		20:29	28	20:02 (T3)	20:58
4	07:57	07:40		07:02		16:46 (T5)	07:11		06:26		19:35 (T3)	05:59
	17:15	17:51		18:25	77	18:03 (T4)	19:59		20:30	26	20:01 (T3)	20:59
5	07:57	07:39		07:01		16:46 (T5)	07:09		06:24		19:35 (T3)	05:59
	17:16	17:52		18:26	78	18:04 (T4)	20:00		20:31	25	20:00 (T3)	21:00
6	07:57	07:38		06:59		16:45 (T5)	07:07		06:23		19:36 (T3)	05:59
	17:17	17:53		18:27	80	18:05 (T4)	20:00		20:32	23	19:59 (T3)	21:00
7	07:57	07:37		06:57		16:46 (T5)	07:06		06:22		19:37 (T3)	05:58
	17:18	17:54		18:28	81	18:07 (T4)	20:01		20:33	21	19:58 (T3)	21:01
8	07:57	07:36		07:56		17:46 (T5)	07:04		06:21		19:38 (T3)	05:58
	17:19	17:56		19:29	82	19:08 (T4)	20:02		20:34	19	19:57 (T3)	21:02
9	07:57	07:35		07:54		17:45 (T5)	07:02		06:20		19:40 (T3)	05:58
	17:20	17:57		19:30	83	19:08 (T4)	20:03		20:35	16	19:56 (T3)	21:02
10	07:57	07:33	17:12 (T5)	07:53		17:46 (T5)	07:01		06:19		19:42 (T3)	05:58
	17:21	17:58	17 17:29 (T5)	19:32	84	19:10 (T4)	20:04		20:36	12	19:54 (T3)	21:03
11	07:57	07:32	17:08 (T5)	07:51		17:46 (T5)	06:59		06:17		19:45 (T3)	05:58
	17:22	17:59	25 17:33 (T5)	19:33	83	19:09 (T4)	20:05		20:37	5	19:50 (T3)	21:04
12	07:56	07:31	17:05 (T5)	07:49		17:46 (T5)	06:58		06:16			05:57
	17:23	18:01	31 17:36 (T5)	19:34	83	19:09 (T4)	20:06		20:38			21:04
13	07:56	07:30	17:03 (T5)	07:48		17:48 (T5)	06:56		06:15			05:57
	17:24	18:02	36 17:39 (T5)	19:35	81	19:09 (T4)	20:07		20:39			21:05
14	07:56	07:28	17:01 (T5)	07:46		17:48 (T5)	06:54		06:14			05:57
	17:25	18:03	39 17:40 (T5)	19:36	80	19:08 (T4)	20:09		20:40			21:05
15	07:55	07:27	16:59 (T5)	07:44		17:48 (T5)	06:53		06:13			05:57
	17:26	18:04	42 17:41 (T5)	19:37	79	19:07 (T4)	20:10		20:41			21:06
16	07:55	07:26	16:58 (T5)	07:43		17:50 (T5)	06:51		06:12			05:57
	17:27	18:06	45 17:43 (T5)	19:38	77	19:07 (T4)	20:11		20:42			21:06
17	07:54	07:24	16:56 (T5)	07:41		17:50 (T5)	06:50		06:11			05:57
	17:28	18:07	48 17:44 (T5)	19:39	76	19:06 (T4)	20:12		20:43			21:06
18	07:54	07:23	16:55 (T5)	07:39		17:51 (T5)	06:48	19:48 (T3)	06:10			05:57
	17:30	18:08	51 17:46 (T5)	19:40	74	19:05 (T4)	20:13	3 19:51 (T3)	20:44			21:07
19	07:53	07:22	16:53 (T5)	07:38		17:53 (T5)	06:47	19:44 (T3)	06:10			05:58
	17:31	18:09	53 17:46 (T5)	19:42	71	19:04 (T4)	20:14	9 19:53 (T3)	20:45			21:07
20	07:53	07:20	16:53 (T5)	07:36		17:54 (T5)	06:45	19:41 (T3)	06:09			05:58
	17:32	18:10	55 17:48 (T5)	19:43	68	19:02 (T4)	20:15	12 19:53 (T3)	20:46			21:07
21	07:52	07:19	16:52 (T5)	07:34		17:55 (T5)	06:44	19:39 (T3)	06:08			05:58
	17:33	18:12	58 17:50 (T5)	19:44	65	19:00 (T4)	20:16	16 19:55 (T3)	20:47			21:08
22	07:52	07:17	16:51 (T5)	07:33		17:58 (T5)	06:42	19:38 (T3)	06:07			05:58
	17:34	18:13	59 17:50 (T5)	19:45	57	18:59 (T4)	20:17	18 19:56 (T3)	20:48			21:08
23	07:51	07:16	16:50 (T5)	07:31		18:00 (T5)	06:41	19:37 (T3)	06:06			05:58
	17:36	18:14	62 17:52 (T5)	19:46	46	18:55 (T4)	20:18	19 19:56 (T3)	20:49			21:08
24	07:50	07:14	16:49 (T5)	07:29		18:03 (T5)	06:39	19:36 (T3)	06:05			05:59
	17:37	18:15	63 17:52 (T5)	19:47	25	18:28 (T5)	20:19	22 19:58 (T3)	20:50			21:08
25	07:49	07:13	16:49 (T5)	07:27		18:06 (T5)	06:38	19:35 (T3)	06:05			05:59
	17:38	18:16	64 17:53 (T5)	19:48	17	18:23 (T5)	20:20	23 19:58 (T3)	20:51			21:08
26	07:49	07:11	16:48 (T5)	07:26			06:36	19:35 (T3)	06:04			05:59
	17:39	18:18	64 17:52 (T5)	19:49			20:21	25 20:00 (T3)	20:52			21:08
27	07:48	07:10	16:47 (T5)	07:24			06:35	19:35 (T3)	06:03			06:00
	17:41	18:19	65 17:52 (T5)	19:50			20:23	26 20:01 (T3)	20:53			21:09
28	07:47	07:08	16:47 (T5)	07:22			06:34	19:34 (T3)	06:03			06:00
	17:42	18:20	66 17:53 (T5)	19:51			20:24	27 20:01 (T3)	20:54			21:09
29	07:46			07:21			06:32	19:34 (T3)	06:02			06:00
	17:43			19:52			20:25	29 20:03 (T3)	20:54			21:09
30	07:45			07:19			06:31	19:34 (T3)	06:02			06:01
	17:44			19:53			20:26	29 20:03 (T3)	20:55			21:09
31	07:44			07:17					06:01			
	17:46			19:55					20:56			
Potential sun hours	297	297		370			399		449			453
Total, worst case			943		1771			258		232		
Sun reduction			0.40		0.44			0.52		0.57		
Oper. time red.			1.00		1.00			1.00		1.00		
Wind dir. red.			0.70		0.69			0.57		0.57		
Total reduction			0.28		0.30			0.30		0.33		
Total, real			264		538			77		76		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1040 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8559)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December
1	06:01	06:26			06:57			07:27		17:26 (T5)	07:02		16:43 (T5)	07:37
	21:08	20:50			20:07			19:14	82	18:48 (T4)	17:27	15	16:58 (T5)	17:03
2	06:02	06:27		19:53 (T3)	06:58			07:28		17:25 (T5)	07:03			07:38
	21:08	20:49	8	20:01 (T3)	20:05			19:13	83	18:48 (T4)	17:26			17:03
3	06:02	06:28		19:50 (T3)	06:59			07:29		17:24 (T5)	07:04			07:39
	21:08	20:48	14	20:04 (T3)	20:04			19:11	83	18:47 (T4)	17:25			17:02
4	06:03	06:29		19:49 (T3)	07:00			07:30		17:23 (T5)	07:05			07:40
	21:08	20:47	17	20:06 (T3)	20:02			19:09	84	18:47 (T4)	17:24			17:02
5	06:03	06:30		19:47 (T3)	07:01			07:31		17:22 (T5)	07:07			07:41
	21:08	20:46	20	20:07 (T3)	20:00			19:08	83	18:45 (T4)	17:23			17:02
6	06:04	06:31		19:46 (T3)	07:02			07:32		17:22 (T5)	07:08			07:42
	21:08	20:44	22	20:08 (T3)	19:57			19:06	81	18:43 (T4)	17:21			17:02
7	06:05	06:32		19:45 (T3)	07:03			07:33		17:21 (T5)	07:09			07:43
	21:07	20:43	24	20:09 (T3)	19:55			19:04	80	18:41 (T4)	17:20			17:02
8	06:05	06:33		19:44 (T3)	07:04			07:35		17:21 (T5)	07:10			07:44
	21:07	20:42	26	20:10 (T3)	19:54			19:03	80	18:41 (T4)	17:19			17:02
9	06:06	06:34		19:44 (T3)	07:05			07:36		17:21 (T5)	07:11			07:45
	21:07	20:41	26	20:10 (T3)	19:52			19:01	78	18:39 (T4)	17:18			17:02
10	06:07	06:35		19:43 (T3)	07:06			07:37		17:21 (T5)	07:13			07:46
	21:06	20:39	28	20:11 (T3)	19:50			18:59	76	18:37 (T4)	17:17			17:02
11	06:07	06:36		19:42 (T3)	07:07			07:38		17:20 (T5)	07:14			07:46
	21:06	20:38	29	20:11 (T3)	19:49			18:58	75	18:35 (T4)	17:16			17:02
12	06:08	06:37		19:42 (T3)	07:08			07:39		17:20 (T5)	07:15			07:47
	21:06	20:37	29	20:11 (T3)	19:47			18:56	74	18:34 (T4)	17:15			17:02
13	06:09	06:38		19:42 (T3)	07:09			07:40		17:20 (T5)	07:16			07:48
	21:05	20:35	29	20:11 (T3)	19:45			18:55	70	18:30 (T4)	17:14			17:02
14	06:10	06:39		19:42 (T3)	07:10			07:41		17:20 (T5)	07:17			07:49
	21:05	20:34	28	20:10 (T3)	19:43			18:53	65	18:25 (T5)	17:13			17:02
15	06:10	06:40		19:41 (T3)	07:11			07:42		17:19 (T5)	07:19			07:50
	21:04	20:33	28	20:09 (T3)	19:42			18:51	66	18:25 (T5)	17:12			17:03
16	06:11	06:41		19:41 (T3)	07:12			07:43		17:20 (T5)	07:20			07:50
	21:03	20:31	26	20:07 (T3)	19:40			18:50	65	18:25 (T5)	17:12			17:03
17	06:12	06:42		19:42 (T3)	07:13			07:44		17:21 (T5)	07:21			07:51
	21:03	20:30	24	20:06 (T3)	19:38			18:48	63	18:24 (T5)	17:11			17:03
18	06:13	06:43		19:42 (T3)	07:14		17:56 (T5)	07:46		17:21 (T5)	07:22			07:52
	21:02	20:28	23	20:05 (T3)	19:37	14	18:10 (T5)	18:47	62	18:23 (T5)	17:10			17:03
19	06:14	06:44		19:42 (T3)	07:15		17:51 (T5)	07:47		17:21 (T5)	07:23			07:52
	21:02	20:27	21	20:03 (T3)	19:35	23	18:14 (T5)	18:45	61	18:22 (T5)	17:09			17:04
20	06:14	06:45		19:43 (T3)	07:16		17:47 (T5)	07:48		17:21 (T5)	07:25			07:53
	21:01	20:26	19	20:02 (T3)	19:33	43	18:41 (T4)	18:44	60	18:21 (T5)	17:08			17:04
21	06:15	06:46		19:43 (T3)	07:17		17:44 (T5)	07:49		17:22 (T5)	07:26			07:53
	21:00	20:24	18	20:01 (T3)	19:31	54	18:43 (T4)	18:42	57	18:19 (T5)	17:08			17:05
22	06:16	06:47		19:44 (T3)	07:18		17:41 (T5)	07:50		17:23 (T5)	07:27			07:54
	20:59	20:23	15	19:59 (T3)	19:30	63	18:45 (T4)	18:41	55	18:18 (T5)	17:07			17:05
23	06:17	06:48		19:46 (T3)	07:19		17:39 (T5)	07:51		17:24 (T5)	07:28			07:54
	20:58	20:21	12	19:58 (T3)	19:28	67	18:46 (T4)	18:39	53	18:17 (T5)	17:07			17:06
24	06:18	06:49		19:48 (T3)	07:20		17:37 (T5)	07:52		17:25 (T5)	07:29			07:55
	20:58	20:20	8	19:56 (T3)	19:26	70	18:47 (T4)	18:38	50	18:15 (T5)	17:06			17:06
25	06:19	06:50			07:21		17:35 (T5)	07:54		17:26 (T5)	07:30			07:55
	20:57	20:18			19:25	73	18:48 (T4)	18:37	47	18:13 (T5)	17:05			17:07
26	06:20	06:51			07:22		17:33 (T5)	07:55		17:28 (T5)	07:32			07:56
	20:56	20:16			19:23	75	18:48 (T4)	18:35	44	18:12 (T5)	17:05			17:08
27	06:21	06:52			07:23		17:32 (T5)	07:56		17:29 (T5)	07:33			07:56
	20:55	20:15			19:21	77	18:49 (T4)	18:34	42	18:11 (T5)	17:04			17:08
28	06:22	06:53			07:24		17:30 (T5)	07:57		17:31 (T5)	07:34			07:56
	20:54	20:13			19:19	79	18:49 (T4)	18:33	38	18:09 (T5)	17:04			17:09
29	06:23	06:54			07:25		17:29 (T5)	07:58		17:33 (T5)	07:35			07:57
	20:53	20:12			19:18	80	18:49 (T4)	18:31	34	18:07 (T5)	17:04			17:10
30	06:24	06:55			07:26		17:27 (T5)	07:59		17:36 (T5)	07:36			07:57
	20:52	20:10			19:16	82	18:49 (T4)	18:30	30	18:06 (T5)	17:03			17:10
31	06:25	06:56						08:01		17:39 (T5)				07:57
	20:51	20:09						18:29	23	18:02 (T5)				17:11
Potential sun hours	460	429			375			345			297			287
Total, worst case			494			800			1944			15		
Sun reduction			0.61			0.59			0.48			0.30		
Oper. time red.			1.00			1.00			1.00			1.00		
Wind dir. red.			0.57			0.69			0.69			0.70		
Total reduction			0.35			0.41			0.33			0.21		
Total, real			173			325			649			3		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1043 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8562)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June	
1	07:57		08:32 (T71)	07:43		07:07			07:16		17:53 (T69)	06:30		06:58 (T67)	06:02	
	17:13	46	09:18 (T71)	17:48		18:22			19:56	89	19:22 (T69)	20:27	119	18:58 (T69)	20:57	
2	07:57		08:32 (T71)	07:42		07:06			07:15		07:40 (T68)	06:29		06:59 (T67)	06:01	
	17:14	46	09:18 (T71)	17:49		18:23			19:57	100	19:22 (T69)	20:28	115	18:57 (T69)	20:57	
3	07:57		08:33 (T71)	07:41		07:04			07:13		07:34 (T68)	06:28		07:00 (T67)	06:01	
	17:15	45	09:18 (T71)	17:50		18:24			19:58	112	19:22 (T69)	20:29	110	18:55 (T69)	20:58	
4	07:57		08:34 (T71)	07:40		07:02			07:11		07:30 (T68)	06:27		07:01 (T67)	06:01	
	17:16	45	09:19 (T71)	17:51		18:25			19:59	118	19:21 (T69)	20:30	103	18:52 (T69)	20:59	
5	07:57		08:34 (T71)	07:39		07:01			07:10		07:29 (T68)	06:25		07:04 (T67)	06:00	
	17:17	45	09:19 (T71)	17:53		18:26			20:00	122	19:21 (T69)	20:31	95	18:50 (T69)	20:59	
6	07:57		08:35 (T71)	07:38		06:59			07:08		07:27 (T68)	06:24		07:10 (T68)	06:00	
	17:18	44	09:19 (T71)	17:54		18:28			20:00	125	19:21 (T69)	20:32	84	18:48 (T69)	21:00	
7	07:57		08:36 (T71)	07:37		06:58			07:06		07:25 (T68)	06:23		07:11 (T68)	06:00	
	17:19	44	09:20 (T71)	17:55		18:29			20:01	128	19:20 (T69)	20:33	76	18:45 (T69)	21:01	
8	07:57		08:37 (T71)	07:36		07:56		18:34 (T69)	07:05		07:24 (T68)	06:22		07:12 (T68)	05:59	
	17:20	43	09:20 (T71)	17:57		19:30	18	18:52 (T69)	20:02	130	19:20 (T69)	20:34	66	18:41 (T69)	21:01	
9	07:57		08:38 (T71)	07:35		07:54		18:29 (T69)	07:03		07:22 (T68)	06:21		07:13 (T68)	05:59	
	17:21	42	09:20 (T71)	17:58		19:31	30	18:59 (T69)	20:03	133	19:19 (T69)	20:35	47	08:00 (T68)	21:02	
10	07:57		08:38 (T71)	07:33		07:53		18:24 (T69)	07:02		07:20 (T68)	06:20		07:14 (T68)	05:59	
	17:22	42	09:20 (T71)	17:59		19:32	38	19:02 (T69)	20:04	135	19:19 (T69)	20:36	45	07:59 (T68)	21:03	
11	07:56		08:39 (T71)	07:32		07:51		18:21 (T69)	07:00		07:19 (T68)	06:18		07:15 (T68)	05:59	
	17:23	41	09:20 (T71)	18:00		19:33	43	19:04 (T69)	20:06	137	19:19 (T69)	20:37	43	07:58 (T68)	21:03	
12	07:56		08:40 (T71)	07:31		07:50		18:18 (T69)	06:58		07:17 (T68)	06:17		07:16 (T68)	05:59	
	17:24	40	09:20 (T71)	18:01		19:34	49	19:07 (T69)	20:07	138	19:18 (T69)	20:38	41	07:57 (T68)	21:04	
13	07:56		08:40 (T71)	07:30		07:48		18:15 (T69)	06:57		07:16 (T68)	06:16		07:17 (T68)	05:59	
	17:25	39	09:19 (T71)	18:03		19:35	54	19:09 (T69)	20:08	140	19:18 (T69)	20:39	39	07:56 (T68)	21:04	
14	07:55		08:41 (T71)	07:28		07:46		18:13 (T69)	06:55		07:14 (T68)	06:15		07:18 (T68)	05:59	
	17:26	39	09:20 (T71)	18:04		19:37	58	19:11 (T69)	20:09	141	19:17 (T69)	20:40	36	07:54 (T68)	21:05	
15	07:55		08:42 (T71)	07:27		07:45		18:11 (T69)	06:54		07:13 (T68)	06:14		07:19 (T68)	05:59	
	17:27	37	09:19 (T71)	18:05		19:38	62	19:13 (T69)	20:10	141	19:16 (T69)	20:41	34	07:53 (T68)	21:05	
16	07:55		08:43 (T71)	07:26		07:43		18:09 (T69)	06:52		07:11 (T68)	06:13		07:21 (T68)	05:59	
	17:28	36	09:19 (T71)	18:06		19:39	65	19:14 (T69)	20:11	141	19:15 (T69)	20:42	30	07:51 (T68)	21:06	
17	07:54		08:44 (T71)	07:25		07:41		18:07 (T69)	06:51		07:10 (T67)	06:12		07:22 (T68)	05:59	
	17:30	34	09:18 (T71)	18:08		19:40	68	19:15 (T69)	20:12	142	19:15 (T69)	20:43	27	07:49 (T68)	21:06	
18	07:54		08:46 (T71)	07:23		07:40		18:06 (T69)	06:49		07:08 (T67)	06:11		07:24 (T68)	05:59	
	17:31	32	09:18 (T71)	18:09		19:41	70	19:16 (T69)	20:13	143	19:14 (T69)	20:44	23	07:47 (T68)	21:06	
19	07:53		08:47 (T71)	07:22		07:38		18:04 (T69)	06:47		07:07 (T67)	06:11		07:26 (T68)	05:59	
	17:32	30	09:17 (T71)	18:10		19:42	73	19:17 (T69)	20:14	142	19:13 (T69)	20:45	19	07:45 (T68)	21:07	
20	07:53		08:49 (T71)	07:20		07:36		18:03 (T69)	06:46		07:05 (T67)	06:10		07:31 (T68)	05:59	
	17:33	27	09:16 (T71)	18:11		19:43	75	19:18 (T69)	20:15	143	19:12 (T69)	20:46	11	07:42 (T68)	21:07	
21	07:52		08:50 (T71)	07:19		07:35		18:02 (T69)	06:44		07:04 (T67)	06:09			05:59	
	17:34	25	09:15 (T71)	18:12		19:44	77	19:19 (T69)	20:16	142	19:11 (T69)	20:47			21:07	
22	07:51		08:52 (T71)	07:18		07:33		18:00 (T69)	06:43		07:02 (T67)	06:08			05:59	
	17:35	21	09:13 (T71)	18:14		19:45	79	19:19 (T69)	20:17	141	19:10 (T69)	20:48			21:07	
23	07:51		08:55 (T71)	07:16		07:31		17:59 (T69)	06:42		07:01 (T67)	06:07			06:00	
	17:37	17	09:12 (T71)	18:15		19:46	81	19:20 (T69)	20:18	140	19:09 (T69)	20:49			21:08	
24	07:50		08:59 (T71)	07:15		07:30		17:59 (T69)	06:40		06:59 (T67)	06:07			06:00	
	17:38	9	09:08 (T71)	18:16		19:47	82	19:21 (T69)	20:19	139	19:07 (T69)	20:50			21:08	
25	07:49			07:13		07:28		17:57 (T69)	06:39		06:58 (T67)	06:06			06:00	
	17:39			18:17		19:48	84	19:21 (T69)	20:20	139	19:07 (T69)	20:51			21:08	
26	07:48			07:12		07:26		17:56 (T69)	06:37		06:57 (T67)	06:05			06:00	
	17:40			18:18		19:50	85	19:21 (T69)	20:21	137	19:06 (T69)	20:52			21:08	
27	07:48			07:10		07:25		17:56 (T69)	06:36		06:55 (T67)	06:05			06:01	
	17:42			18:20		19:51	86	19:22 (T69)	20:23	136	19:04 (T69)	20:52			21:08	
28	07:47			07:09		07:23		17:55 (T69)	06:35		06:56 (T67)	06:04			06:01	
	17:43			18:21		19:52	87	19:22 (T69)	20:24	132	19:03 (T69)	20:53			21:08	
29	07:46					07:21		17:54 (T69)	06:33		06:57 (T67)	06:03			06:02	
	17:44					19:53	87	19:21 (T69)	20:25	129	19:02 (T69)	20:54			21:08	
30	07:45					07:20		17:54 (T69)	06:32		06:57 (T67)	06:03			06:02	
	17:45					19:54	88	19:22 (T69)	20:26	124	18:59 (T69)	20:55			21:08	
31	07:44					07:18		17:53 (T69)				06:02				
	17:46					19:55	89	19:22 (T69)				20:56				
Potential sun hours	297			297		370			399			448			452	
Total, worst case		869					1628			3959			1163			
Sun reduction		0.31					0.44			0.52			0.57			
Oper. time red.		1.00					1.00			1.00			1.00			
Wind dir. red.		0.53					0.65			0.65			0.66			
Total reduction		0.16					0.28			0.33			0.37			
Total, real		140					457			1323			428			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1043 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8562)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:03			06:27		07:25 (T68)	06:57		07:18 (T68)	07:28		17:56 (T69)	07:02			07:37		08:21 (T71)
	21:08			20:50	42	08:07 (T68)	20:07	137	19:18 (T69)	19:15	51	18:47 (T69)	17:28			17:04	41	09:02 (T71)
2	06:03			06:28		07:24 (T68)	06:58		07:19 (T68)	07:29		17:58 (T69)	07:03			07:38		08:21 (T71)
	21:08			20:49	44	08:08 (T68)	20:05	135	19:18 (T69)	19:13	46	18:44 (T69)	17:27			17:04	42	09:03 (T71)
3	06:04			06:29		07:23 (T68)	06:59		07:20 (T68)	07:30		18:01 (T69)	07:04			07:39		08:21 (T71)
	21:08			20:48	46	08:09 (T68)	20:04	133	19:17 (T69)	19:11	40	18:41 (T69)	17:26			17:04	42	09:03 (T71)
4	06:04			06:30		07:22 (T68)	07:00		07:21 (T68)	07:31		18:04 (T69)	07:05			07:40		08:21 (T71)
	21:08			20:47	56	18:46 (T69)	20:02	130	19:17 (T69)	19:10	33	18:37 (T69)	17:25			17:03	43	09:04 (T71)
5	06:05			06:31		07:21 (T68)	07:01		07:22 (T68)	07:32		18:09 (T69)	07:07			07:41		08:21 (T71)
	21:08			20:45	70	18:52 (T69)	20:01	128	19:17 (T69)	19:08	24	18:33 (T69)	17:23			17:03	44	09:05 (T71)
6	06:05			06:31		07:20 (T68)	07:02		07:23 (T68)	07:33		18:18 (T69)	07:08			07:42		08:21 (T71)
	21:07			20:44	80	18:56 (T69)	19:57	125	19:17 (T69)	19:07	5	18:23 (T69)	17:22			17:03	44	09:05 (T71)
7	06:06			06:32		07:20 (T68)	07:03		07:24 (T68)	07:34			07:09			07:43		08:21 (T71)
	21:07			20:43	86	18:58 (T69)	19:56	123	19:17 (T69)	19:05			17:21			17:03	45	09:06 (T71)
8	06:07			06:33		07:13 (T67)	07:04		07:25 (T68)	07:35			07:10			07:44		08:22 (T71)
	21:07			20:42	98	19:01 (T69)	19:54	118	19:16 (T69)	19:03			17:20			17:03	45	09:07 (T71)
9	06:07			06:34		07:10 (T67)	07:05		07:28 (T68)	07:36			07:11			07:44		08:22 (T71)
	21:06			20:41	106	19:03 (T69)	19:52	112	19:16 (T69)	19:02			17:19			17:03	45	09:07 (T71)
10	06:08			06:35		07:09 (T67)	07:06		07:32 (T68)	07:37			07:13			07:45		08:22 (T71)
	21:06			20:39	110	19:04 (T69)	19:51	102	19:15 (T69)	19:00			17:18			17:03	46	09:08 (T71)
11	06:09			06:36		07:07 (T67)	07:07		17:46 (T69)	07:38			07:14			07:46		08:23 (T71)
	21:06			20:38	117	19:06 (T69)	19:49	89	19:15 (T69)	18:58			17:17			17:03	46	09:09 (T71)
12	06:09			06:37		07:06 (T67)	07:08		17:45 (T69)	07:39			07:15			07:47		08:22 (T71)
	21:05			20:37	121	19:07 (T69)	19:47	88	19:13 (T69)	18:57			17:16			17:03	47	09:09 (T71)
13	06:10			06:38		07:05 (T67)	07:09		17:44 (T69)	07:40			07:16			07:48		08:23 (T71)
	21:05			20:35	127	19:09 (T69)	19:45	88	19:12 (T69)	18:55			17:15			17:03	46	09:09 (T71)
14	06:11			06:39		07:04 (T67)	07:10		17:44 (T69)	07:41			07:17			07:49		08:24 (T71)
	21:04			20:34	130	19:10 (T69)	19:44	88	19:12 (T69)	18:54			17:14			17:04	46	09:10 (T71)
15	06:12			06:40		07:03 (T67)	07:11		17:44 (T69)	07:42			07:19			07:49		08:24 (T71)
	21:04			20:33	134	19:11 (T69)	19:42	87	19:11 (T69)	18:52			17:13			17:04	47	09:11 (T71)
16	06:12			06:41		07:03 (T67)	07:12		17:44 (T69)	07:44			07:20			07:50		08:24 (T71)
	21:03			20:31	136	19:12 (T69)	19:40	86	19:10 (T69)	18:51			17:13			17:04	47	09:11 (T71)
17	06:13			06:42		07:04 (T67)	07:13		17:44 (T69)	07:45			07:21			07:51		08:25 (T71)
	21:03			20:30	138	19:13 (T69)	19:39	85	19:09 (T69)	18:49			17:12			17:04	47	09:12 (T71)
18	06:14			06:43		07:05 (T67)	07:14		17:45 (T69)	07:46			07:22		08:33 (T71)	07:51		08:25 (T71)
	21:02			20:28	139	19:14 (T69)	19:37	83	19:08 (T69)	18:48			17:11	9	08:42 (T71)	17:05	47	09:12 (T71)
19	06:15			06:44		07:06 (T67)	07:15		17:45 (T69)	07:47			07:23		08:29 (T71)	07:52		08:25 (T71)
	21:01			20:27	139	19:14 (T69)	19:35	82	19:07 (T69)	18:46			17:10	17	08:46 (T71)	17:05	47	09:12 (T71)
20	06:16			06:45		07:07 (T67)	07:16		17:45 (T69)	07:48			07:24		08:27 (T71)	07:53		08:26 (T71)
	21:01			20:26	140	19:15 (T69)	19:34	81	19:06 (T69)	18:45			17:10	21	08:48 (T71)	17:05	47	09:13 (T71)
21	06:16			06:46		07:08 (T67)	07:17		17:46 (T69)	07:49			07:26		08:25 (T71)	07:53		08:26 (T71)
	21:00			20:24	142	19:16 (T69)	19:32	79	19:05 (T69)	18:43			17:09	25	08:50 (T71)	17:06	47	09:13 (T71)
22	06:17			06:47		07:08 (T67)	07:18		17:46 (T69)	07:50			07:27		08:25 (T71)	07:54		08:27 (T71)
	20:59			20:23	142	19:15 (T69)	19:30	78	19:04 (T69)	18:42			17:08	27	08:52 (T71)	17:06	47	09:14 (T71)
23	06:18		07:43 (T68)	06:48		07:09 (T67)	07:19		17:47 (T69)	07:51			07:28		08:24 (T71)	07:54		08:27 (T71)
	20:58	5	07:48 (T68)	20:21	142	19:16 (T69)	19:28	75	19:02 (T69)	18:40			17:08	30	08:54 (T71)	17:07	47	09:14 (T71)
24	06:19		07:38 (T68)	06:49		07:10 (T67)	07:20		17:47 (T69)	07:53			07:29		08:23 (T71)	07:55		08:28 (T71)
	20:57	15	07:53 (T68)	20:20	142	19:16 (T69)	19:27	74	19:01 (T69)	18:39			17:07	32	08:55 (T71)	17:07	47	09:15 (T71)
25	06:20		07:36 (T68)	06:50		07:11 (T67)	07:21		17:48 (T69)	07:54			07:30		08:22 (T71)	07:55		08:28 (T71)
	20:57	20	07:56 (T68)	20:18	142	19:16 (T69)	19:25	71	18:59 (T69)	18:37			17:06	34	08:56 (T71)	17:08	47	09:15 (T71)
26	06:21		07:34 (T68)	06:51		07:12 (T67)	07:22		17:49 (T69)	07:55			07:31		08:21 (T71)	07:55		08:29 (T71)
	20:56	25	07:59 (T68)	20:17	142	19:17 (T69)	19:23	69	18:58 (T69)	18:36			17:06	36	08:57 (T71)	17:09	47	09:16 (T71)
27	06:22		07:32 (T68)	06:52		07:13 (T68)	07:23		17:50 (T69)	07:56			07:32		08:22 (T71)	07:56		08:30 (T71)
	20:55	29	08:01 (T68)	20:15	141	19:17 (T69)	19:22	66	18:56 (T69)	18:35			17:06	37	08:59 (T71)	17:09	47	09:17 (T71)
28	06:23		07:31 (T68)	06:53		07:14 (T68)	07:24		17:51 (T69)	07:57			07:34		08:22 (T71)	07:56		08:30 (T71)
	20:54	32	08:03 (T68)	20:13	141	19:17 (T69)	19:20	63	18:54 (T69)	18:33			17:05	38	09:00 (T71)	17:10	47	09:17 (T71)
29	06:24		07:29 (T68)	06:54		07:15 (T68)	07:25		17:53 (T69)	07:58			07:35		08:21 (T71)	07:56		08:30 (T71)
	20:53	35	08:04 (T68)	20:12	140	19:17 (T69)	19:18	59	18:52 (T69)	18:32			17:05	39	09:00 (T71)	17:11	47	09:17 (T71)
30	06:25		07:28 (T68)	06:55		07:16 (T68)	07:26		17:54 (T69)	07:59			07:36		08:21 (T71)	07:56		08:31 (T71)
	20:52	38	08:06 (T68)	20:10	140	19:18 (T69)	19:17	56	18:50 (T69)	18:31			17:04	40	09:01 (T71)	17:12	46	09:17 (T71)
31	06:26		07:27 (T68)	06:56		07:17 (T68)				08:01						07:57		08:31 (T71)
	20:51	40	08:07 (T68)	20:09	139	19:18 (T69)				18:29						17:12	46	09:17 (T71)
Potential sun hours	459			428			375			345			298			288		
Total, worst case		239			3612			2790			199			385			1419	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.66			0.65			0.65			0.65			0.53			0.53	
Total reduction		0.43			0.39			0.38			0.31			0.16			0.11	
Total, real		102			1420			1052			61			60			162	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1056 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8573)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:57 (T12)	07:44		08:04 (T13)	07:07			07:16		18:53 (T11)	06:30		06:50 (T10)	06:01		06:37 (T10)
	17:13	65	10:02 (T12)	17:47	35	08:39 (T13)	18:22			19:56	41	19:34 (T11)	20:27	55	19:19 (T11)	20:57	58	07:35 (T10)
2	07:58		08:57 (T12)	07:43		08:03 (T13)	07:06			07:14		18:51 (T11)	06:29		06:49 (T10)	06:01		06:36 (T10)
	17:14	66	10:03 (T12)	17:49	37	08:40 (T13)	18:23			19:57	44	19:35 (T11)	20:28	48	19:15 (T11)	20:58	58	07:34 (T10)
3	07:58		08:58 (T12)	07:42		08:02 (T13)	07:04			07:13		18:50 (T11)	06:27		06:47 (T10)	06:00		06:37 (T10)
	17:14	65	10:03 (T12)	17:50	38	08:40 (T13)	18:24			19:58	47	19:37 (T11)	20:29	40	07:27 (T10)	20:59	58	07:35 (T10)
4	07:58		08:59 (T12)	07:41		08:02 (T13)	07:03			07:11		18:49 (T11)	06:26		06:46 (T10)	06:00		06:37 (T10)
	17:15	64	10:03 (T12)	17:51	38	08:40 (T13)	18:25			19:59	48	19:37 (T11)	20:30	42	07:28 (T10)	21:00	58	07:35 (T10)
5	07:58		08:59 (T12)	07:40		08:03 (T13)	07:01			07:09		18:48 (T11)	06:25		06:45 (T10)	06:00		06:37 (T10)
	17:16	64	10:03 (T12)	17:52	37	08:40 (T13)	18:26			20:00	50	19:38 (T11)	20:32	44	07:29 (T10)	21:00	57	07:34 (T10)
6	07:58		09:00 (T12)	07:39		08:03 (T13)	06:59			07:08		18:47 (T11)	06:24		06:44 (T10)	05:59		06:38 (T10)
	17:17	64	10:04 (T12)	17:54	37	08:40 (T13)	18:27			20:00	53	19:40 (T11)	20:33	46	07:30 (T10)	21:01	57	07:35 (T10)
7	07:58		09:01 (T12)	07:37		08:04 (T13)	06:58			07:06		18:46 (T11)	06:23		06:43 (T10)	05:59		06:38 (T10)
	17:18	63	10:04 (T12)	17:55	36	08:40 (T13)	18:29			20:01	54	19:40 (T11)	20:34	48	07:31 (T10)	21:02	57	07:35 (T10)
8	07:58		09:02 (T12)	07:36		08:04 (T13)	07:56			07:05		18:46 (T11)	06:21		06:41 (T10)	05:59		06:21 (T8)
	17:19	62	10:04 (T12)	17:56	35	08:39 (T13)	19:30			20:03	55	19:41 (T11)	20:35	49	07:30 (T10)	21:02	57	07:35 (T10)
9	07:57		09:02 (T12)	07:35		08:05 (T13)	07:55			07:03		18:45 (T11)	06:20		06:40 (T10)	05:58		06:21 (T8)
	17:20	62	10:04 (T12)	17:57	33	08:38 (T13)	19:31			20:04	56	19:41 (T11)	20:36	51	07:31 (T10)	21:03	58	07:35 (T10)
10	07:57		09:03 (T12)	07:34		08:06 (T13)	07:53			07:01		18:45 (T11)	06:19		06:39 (T10)	05:58		06:20 (T8)
	17:21	61	10:04 (T12)	17:59	32	08:38 (T13)	19:32			20:05	55	19:40 (T11)	20:37	53	07:32 (T10)	21:03	59	07:35 (T10)
11	07:57		09:04 (T12)	07:33		08:07 (T13)	07:51			07:00		18:45 (T11)	06:18		06:38 (T10)	05:58		06:20 (T8)
	17:22	60	10:04 (T12)	18:00	30	08:37 (T13)	19:33			20:06	56	19:41 (T11)	20:38	54	07:32 (T10)	21:04	59	07:35 (T10)
12	07:57		09:04 (T12)	07:31		08:07 (T13)	07:50			06:58		18:44 (T11)	06:17		06:37 (T10)	05:58		06:20 (T8)
	17:23	59	10:03 (T12)	18:01	28	08:35 (T13)	19:34			20:07	56	19:40 (T11)	20:39	56	07:33 (T10)	21:04	60	07:35 (T10)
13	07:56		09:05 (T12)	07:30		08:09 (T13)	07:48			06:57		18:45 (T11)	06:16		06:36 (T10)	05:58		06:20 (T8)
	17:24	59	10:04 (T12)	18:02	25	08:34 (T13)	19:35			20:08	55	19:40 (T11)	20:40	57	07:33 (T10)	21:05	60	07:35 (T10)
14	07:56		09:07 (T12)	07:29		08:11 (T13)	07:46			06:55		18:44 (T11)	06:15		06:36 (T10)	05:58		06:20 (T8)
	17:26	57	10:04 (T12)	18:04	22	08:33 (T13)	19:37			20:09	56	19:40 (T11)	20:41	57	07:33 (T10)	21:05	60	07:35 (T10)
15	07:56		08:17 (T13)	07:28		08:12 (T13)	07:45			06:53		18:44 (T11)	06:14		06:35 (T10)	05:58		06:20 (T8)
	17:27	58	10:03 (T12)	18:05	18	08:30 (T13)	19:38			20:10	55	19:39 (T11)	20:42	58	07:33 (T10)	21:06	60	07:35 (T10)
16	07:55		08:17 (T13)	07:26		08:16 (T13)	07:43			06:52		18:44 (T11)	06:13		06:35 (T10)	05:58		06:20 (T8)
	17:28	60	10:03 (T12)	18:06	11	08:27 (T13)	19:39			20:11	55	19:39 (T11)	20:43	58	07:33 (T10)	21:06	60	07:35 (T10)
17	07:55		08:16 (T13)	07:25			07:41			06:50		18:44 (T11)	06:12		06:36 (T10)	05:58		06:20 (T8)
	17:29	62	10:02 (T12)	18:07			19:40			20:12	54	19:38 (T11)	20:44	58	07:34 (T10)	21:07	61	07:36 (T10)
18	07:54		08:16 (T13)	07:24			07:40			06:49		18:45 (T11)	06:11		06:35 (T10)	05:58		06:20 (T8)
	17:30	62	10:02 (T12)	18:09			19:41			20:13	53	19:38 (T11)	20:45	60	07:35 (T10)	21:07	61	07:36 (T10)
19	07:54		08:15 (T13)	07:22			07:38			06:47		18:45 (T11)	06:10		06:35 (T10)	05:58		06:21 (T8)
	17:31	64	10:01 (T12)	18:10			19:42			20:14	51	19:36 (T11)	20:46	59	07:34 (T10)	21:07	61	07:37 (T10)
20	07:53		08:14 (T13)	07:21			07:36			06:46		18:45 (T11)	06:09		06:35 (T10)	05:58		06:21 (T8)
	17:32	64	10:00 (T12)	18:11			19:43			20:15	51	19:36 (T11)	20:47	59	07:34 (T10)	21:08	62	07:37 (T10)
21	07:53		08:14 (T13)	07:19			07:35			06:44		18:45 (T11)	06:08		06:34 (T10)	05:58		06:21 (T8)
	17:34	64	10:00 (T12)	18:12			19:44			20:17	50	19:35 (T11)	20:48	60	07:34 (T10)	21:08	62	07:37 (T10)
22	07:52		08:13 (T13)	07:18			07:33			06:43		18:47 (T11)	06:08		06:35 (T10)	05:59		06:21 (T8)
	17:35	64	09:59 (T12)	18:13			19:45			20:18	47	19:34 (T11)	20:49	60	07:35 (T10)	21:08	62	07:37 (T10)
23	07:51		08:12 (T13)	07:16			07:31			06:41		18:48 (T11)	06:07		06:35 (T10)	05:59		06:21 (T8)
	17:36	64	09:58 (T12)	18:15			19:46			20:19	45	19:33 (T11)	20:50	60	07:35 (T10)	21:08	62	07:37 (T10)
24	07:51		08:11 (T13)	07:15			07:30			06:40		18:48 (T11)	06:06		06:35 (T10)	05:59		06:22 (T8)
	17:37	61	09:56 (T12)	18:16			19:47			20:20	44	19:32 (T11)	20:51	60	07:35 (T10)	21:09	61	07:38 (T10)
25	07:50		08:11 (T13)	07:13			07:28		19:12 (T11)	06:38		18:49 (T11)	06:05		06:35 (T10)	05:59		06:22 (T8)
	17:39	60	09:55 (T12)	18:17			19:49	12	19:24 (T11)	20:21	42	19:31 (T11)	20:51	60	07:35 (T10)	21:09	61	07:38 (T10)
26	07:49		08:10 (T13)	07:12			07:26		19:06 (T11)	06:37		07:04 (T10)	06:05		06:35 (T10)	06:00		06:22 (T8)
	17:40	58	09:53 (T12)	18:18			19:50	22	19:28 (T11)	20:22	43	19:29 (T11)	20:52	60	07:35 (T10)	21:09	61	07:38 (T10)
27	07:48		08:09 (T13)	07:10			07:25		19:03 (T11)	06:36		06:57 (T10)	06:04		06:35 (T10)	06:00		06:23 (T8)
	17:41	54	09:51 (T12)	18:19			19:51	27	19:30 (T11)	20:23	55	19:28 (T11)	20:53	60	07:35 (T10)	21:09	61	07:38 (T10)
28	07:47		08:08 (T13)	07:09			07:23		19:00 (T11)	06:34		06:54 (T10)	06:03		06:36 (T10)	06:00		06:23 (T8)
	17:42	50	09:48 (T12)	18:21			19:52	30	19:30 (T11)	20:24	58	19:26 (T11)	20:54	59	07:35 (T10)	21:09	60	07:38 (T10)
29	07:47		08:07 (T13)				07:21		18:58 (T11)	06:33		06:52 (T10)	06:03		06:35 (T10)	06:01		06:24 (T8)
	17:44	41	09:43 (T12)				19:53	33	19:31 (T11)	20:25	59	19:24 (T11)	20:55	60	07:35 (T10)	21:09	60	07:39 (T10)
30	07:46		08:06 (T13)				07:19		18:55 (T11)	06:31		06:51 (T10)	06:02		06:36 (T10)	06:01		06:24 (T8)
	17:45	33	08:39 (T13)				19:54	37	19:32 (T11)	20:26	57	19:22 (T11)	20:56	59	07:35 (T10)	21:09	59	07:39 (T10)
31	07:45		08:05 (T13)				07:18		18:54 (T11)				06:02		06:36 (T10)			
	17:46	34	08:39 (T13)				19:55	40	19:34 (T11)				20:56	59	07:35 (T10)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1824			492			201			1545			1709			1790	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.53			0.53			0.61			0.62			0.70			0.70	
Total reduction		0.16			0.21			0.26			0.31			0.38			0.43	
Total, real		288			101			52			480			654			772	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1056 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8573)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:24 (T8)	06:26		06:48 (T10)	06:57		18:44 (T11)	07:28		
	21:09	60	07:39 (T10)	20:50	55	07:43 (T10)	20:07	56	19:40 (T11)	19:15		
2	06:02		06:25 (T8)	06:27		06:49 (T10)	06:58		18:44 (T11)	07:29		
	21:09	59	07:40 (T10)	20:49	54	07:43 (T10)	20:06	55	19:39 (T11)	19:13		
3	06:03		06:25 (T8)	06:28		06:50 (T10)	06:59		18:43 (T11)	07:30		
	21:09	59	07:40 (T10)	20:48	52	07:42 (T10)	20:04	56	19:39 (T11)	19:11		
4	06:03		06:26 (T8)	06:29		06:51 (T10)	07:00		18:43 (T11)	07:31		
	21:09	57	07:40 (T10)	20:47	50	07:41 (T10)	20:02	55	19:38 (T11)	19:10		
5	06:04		06:44 (T10)	06:30		06:52 (T10)	07:01		18:43 (T11)	07:32		
	21:08	57	07:41 (T10)	20:46	49	07:41 (T10)	20:01	55	19:38 (T11)	19:08		
6	06:05		06:44 (T10)	06:31		06:53 (T10)	07:02		18:44 (T11)	07:33		
	21:08	57	07:41 (T10)	20:45	47	07:40 (T10)	19:57	52	19:36 (T11)	19:06		
7	06:05		06:44 (T10)	06:32		06:54 (T10)	07:03		18:44 (T11)	07:34		
	21:08	58	07:42 (T10)	20:44	45	07:39 (T10)	19:56	50	19:34 (T11)	19:05		
8	06:06		06:44 (T10)	06:33		06:55 (T10)	07:04		18:44 (T11)	07:35		
	21:08	57	07:41 (T10)	20:42	43	07:38 (T10)	19:54	49	19:33 (T11)	19:03		
9	06:07		06:44 (T10)	06:34		06:56 (T10)	07:05		18:44 (T11)	07:36		
	21:07	58	07:42 (T10)	20:41	41	07:37 (T10)	19:52	47	19:31 (T11)	19:02		
10	06:07		06:44 (T10)	06:35		06:57 (T10)	07:06		18:45 (T11)	07:37		
	21:07	59	07:43 (T10)	20:40	39	07:36 (T10)	19:51	44	19:29 (T11)	19:00		
11	06:08		06:44 (T10)	06:36		06:58 (T10)	07:07		18:45 (T11)	07:38		
	21:06	58	07:42 (T10)	20:39	50	19:25 (T11)	19:49	42	19:27 (T11)	18:58		
12	06:09		06:44 (T10)	06:37		06:59 (T10)	07:08		18:45 (T11)	07:39		
	21:06	59	07:43 (T10)	20:37	55	19:28 (T11)	19:47	40	19:25 (T11)	18:57		
13	06:09		06:44 (T10)	06:38		07:00 (T10)	07:09		18:46 (T11)	07:40		
	21:05	59	07:43 (T10)	20:36	57	19:31 (T11)	19:46	37	19:23 (T11)	18:55		
14	06:10		06:45 (T10)	06:39		07:00 (T10)	07:10		18:48 (T11)	07:42		
	21:05	59	07:44 (T10)	20:35	59	19:32 (T11)	19:44	34	19:22 (T11)	18:54		
15	06:11		06:44 (T10)	06:40		07:01 (T10)	07:11		18:49 (T11)	07:43		
	21:04	59	07:43 (T10)	20:33	58	19:33 (T11)	19:42	31	19:20 (T11)	18:52		
16	06:12		06:44 (T10)	06:41		07:05 (T10)	07:12		18:51 (T11)	07:44		
	21:04	60	07:44 (T10)	20:32	53	19:35 (T11)	19:40	27	19:18 (T11)	18:50		
17	06:12		06:45 (T10)	06:42		18:56 (T11)	07:13		18:54 (T11)	07:45		
	21:03	59	07:44 (T10)	20:30	40	19:36 (T11)	19:39	23	19:17 (T11)	18:49		
18	06:13		06:45 (T10)	06:43		18:55 (T11)	07:14		18:57 (T11)	07:46		
	21:03	60	07:45 (T10)	20:29	42	19:37 (T11)	19:37	16	19:13 (T11)	18:47		
19	06:14		06:45 (T10)	06:44		18:54 (T11)	07:15			07:47		
	21:02	60	07:45 (T10)	20:27	44	19:38 (T11)	19:35			18:46		
20	06:15		06:44 (T10)	06:45		18:52 (T11)	07:16			07:48		
	21:01	60	07:44 (T10)	20:26	46	19:38 (T11)	19:34			18:44		
21	06:16		06:45 (T10)	06:46		18:51 (T11)	07:17			07:49		
	21:00	59	07:44 (T10)	20:25	48	19:39 (T11)	19:32			18:43		
22	06:17		06:45 (T10)	06:47		18:50 (T11)	07:18			07:51		
	21:00	60	07:45 (T10)	20:23	49	19:39 (T11)	19:30			18:41		
23	06:18		06:45 (T10)	06:48		18:49 (T11)	07:19			07:52		
	20:59	60	07:45 (T10)	20:22	51	19:40 (T11)	19:28			18:40		
24	06:19		06:45 (T10)	06:49		18:48 (T11)	07:20			07:53		
	20:58	60	07:45 (T10)	20:20	52	19:40 (T11)	19:27			18:39		
25	06:19		06:46 (T10)	06:50		18:48 (T11)	07:21			07:54		
	20:57	59	07:45 (T10)	20:18	52	19:40 (T11)	19:25			18:37		
26	06:20		06:46 (T10)	06:51		18:47 (T11)	07:22			07:55	08:45 (T13)	
	20:56	59	07:45 (T10)	20:17	54	19:41 (T11)	19:23			18:36	13	08:58 (T13)
27	06:21		06:45 (T10)	06:52		18:46 (T11)	07:23			07:56		08:41 (T13)
	20:55	59	07:44 (T10)	20:15	55	19:41 (T11)	19:22			18:34	19	09:00 (T13)
28	06:22		06:46 (T10)	06:53		18:46 (T11)	07:24			07:58		08:40 (T13)
	20:54	58	07:44 (T10)	20:14	55	19:41 (T11)	19:20			18:33	23	09:03 (T13)
29	06:23		06:46 (T10)	06:54		18:45 (T11)	07:26			07:59		08:38 (T13)
	20:54	58	07:44 (T10)	20:12	56	19:41 (T11)	19:18			18:32	26	09:04 (T13)
30	06:24		06:46 (T10)	06:55		18:45 (T11)	07:27			08:00		08:37 (T13)
	20:53	58	07:44 (T10)	20:11	55	19:40 (T11)	19:16			18:30	28	09:05 (T13)
31	06:25		06:47 (T10)	06:56		18:44 (T11)				08:01		08:35 (T13)
	20:51	56	07:43 (T10)	20:09	56	19:40 (T11)				18:29	31	09:06 (T13)
Potential sun hours	460			429			375			345		
Total, worst case		1820			1562			769			140	
Sun reduction		0.66			0.61			0.59			0.48	
Oper. time red.		1.00			1.00			1.00			1.00	
Wind dir. red.		0.70			0.65			0.61			0.53	
Total reduction		0.44			0.38			0.35			0.25	
Total, real		808			595			268			34	

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1067 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8582)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	16:21 (T35)	07:43	16:18 (T35)	07:07	07:37 (T36)	07:16		06:30	06:50 (T31)	06:01	
	17:13	26 16:47 (T35)	17:47	57 17:15 (T35)	18:22	21 07:58 (T36)	19:56		20:27	23 07:13 (T31)	20:57	
2	07:57	16:21 (T35)	07:43	16:18 (T35)	07:06	07:38 (T36)	07:14		06:29	06:49 (T31)	06:01	
	17:14	26 16:47 (T35)	17:49	57 17:15 (T35)	18:23	18 07:56 (T36)	19:57		20:28	24 07:13 (T31)	20:58	
3	07:58	16:20 (T35)	07:41	16:18 (T35)	07:04	07:40 (T36)	07:13		06:28	06:47 (T31)	06:00	
	17:15	28 16:48 (T35)	17:50	57 17:15 (T35)	18:24	12 07:52 (T36)	19:58		20:29	26 07:13 (T31)	20:58	
4	07:58	16:20 (T35)	07:40	16:19 (T35)	07:02		07:11		06:26	06:46 (T31)	06:00	
	17:15	29 16:49 (T35)	17:51	56 17:15 (T35)	18:25		19:59		20:30	27 07:13 (T31)	20:59	
5	07:58	16:20 (T35)	07:39	16:19 (T35)	07:01		07:09		06:25	06:45 (T31)	06:00	
	17:16	30 16:50 (T35)	17:52	56 17:15 (T35)	18:26		20:00		20:31	28 07:13 (T31)	21:00	
6	07:57	16:20 (T35)	07:38	16:19 (T35)	06:59		07:08		06:24	06:44 (T31)	05:59	
	17:17	31 16:51 (T35)	17:54	55 17:14 (T35)	18:27		20:00		20:32	30 07:14 (T31)	21:01	
7	07:57	16:20 (T35)	07:37	16:20 (T35)	06:58		07:06		06:23	06:43 (T31)	05:59	
	17:18	33 16:53 (T35)	17:55	54 17:14 (T35)	18:29		20:01		20:33	31 07:14 (T31)	21:01	
8	07:57	16:19 (T35)	07:36	16:20 (T35)	07:56		07:05		06:21	06:42 (T31)	05:59	
	17:19	34 16:53 (T35)	17:56	54 17:14 (T35)	19:30		20:02		20:34	32 07:14 (T31)	21:02	
9	07:57	16:19 (T35)	07:35	16:21 (T35)	07:54		07:03		06:20	06:40 (T31)	05:59	
	17:20	35 16:54 (T35)	17:57	53 17:14 (T35)	19:31		20:03		20:35	33 07:13 (T31)	21:02	
10	07:57	16:19 (T35)	07:34	16:22 (T35)	07:53		07:01		06:19	06:39 (T31)	05:58	
	17:21	36 16:55 (T35)	17:59	51 17:13 (T35)	19:32		20:05		20:36	33 07:12 (T31)	21:03	
11	07:57	16:18 (T35)	07:32	16:22 (T35)	07:51		07:00		06:18	06:38 (T31)	05:58	
	17:22	38 16:56 (T35)	18:00	50 17:12 (T35)	19:33		20:06		20:38	34 07:12 (T31)	21:04	
12	07:56	16:18 (T35)	07:31	07:51 (T36)	07:50		06:58		06:17	06:38 (T31)	05:58	
	17:23	39 16:57 (T35)	18:01	54 17:12 (T35)	19:34		20:07		20:39	34 07:12 (T31)	21:04	
13	07:56	16:19 (T35)	07:30	07:50 (T36)	07:48		06:56		06:16	06:39 (T31)	05:58	
	17:25	40 16:59 (T35)	18:02	54 17:11 (T35)	19:35		20:08		20:40	32 07:11 (T31)	21:05	
14	07:56	16:18 (T35)	07:29	07:49 (T36)	07:46		06:55		06:15	06:39 (T31)	05:58	
	17:26	42 17:00 (T35)	18:04	55 17:10 (T35)	19:36		20:09		20:41	32 07:11 (T31)	21:05	
15	07:55	16:18 (T35)	07:27	07:47 (T36)	07:45		06:53		06:14	06:40 (T31)	05:58	
	17:27	43 17:01 (T35)	18:05	55 17:08 (T35)	19:38		20:10		20:42	30 07:10 (T31)	21:06	
16	07:55	16:17 (T35)	07:26	07:46 (T36)	07:43		06:52		06:13	06:40 (T31)	05:58	
	17:28	45 17:02 (T35)	18:06	54 17:07 (T35)	19:39		20:11		20:43	29 07:09 (T31)	21:06	
17	07:55	16:18 (T35)	07:25	07:44 (T36)	07:41		06:50		06:12	06:42 (T31)	05:58	
	17:29	46 17:04 (T35)	18:07	53 17:05 (T35)	19:40		20:12		20:44	28 07:10 (T31)	21:06	
18	07:54	16:17 (T35)	07:23	07:43 (T36)	07:40		06:49		06:11	06:42 (T31)	05:58	
	17:30	47 17:04 (T35)	18:09	52 17:04 (T35)	19:41		20:13		20:45	27 07:09 (T31)	21:07	
19	07:53	16:18 (T35)	07:22	07:42 (T36)	07:38		06:47		06:10	06:43 (T31)	05:58	
	17:31	48 17:06 (T35)	18:10	49 17:02 (T35)	19:42		20:14		20:46	25 07:08 (T31)	21:07	
20	07:53	16:17 (T35)	07:21	07:40 (T36)	07:36		06:46		06:09	06:44 (T31)	05:58	
	17:33	50 17:07 (T35)	18:11	44 16:58 (T35)	19:43		20:15		20:46	23 07:07 (T31)	21:07	
21	07:52	16:17 (T35)	07:19	07:39 (T36)	07:35		06:44		06:08	06:45 (T31)	05:59	
	17:34	51 17:08 (T35)	18:12	37 16:54 (T35)	19:44		20:16		20:47	20 07:05 (T31)	21:08	
22	07:52	16:17 (T35)	07:18	07:37 (T36)	07:33		06:43		06:08	06:47 (T31)	05:59	
	17:35	53 17:10 (T35)	18:13	26 08:03 (T36)	19:45		20:17		20:48	18 07:05 (T31)	21:08	
23	07:51	16:17 (T35)	07:16	07:36 (T36)	07:31		06:41		06:07	06:48 (T31)	05:59	
	17:36	54 17:11 (T35)	18:15	27 08:03 (T36)	19:46		20:18		20:49	15 07:03 (T31)	21:08	
24	07:50	16:17 (T35)	07:15	07:34 (T36)	07:30		06:40	06:59 (T31)	06:06	06:50 (T31)	05:59	
	17:37	55 17:12 (T35)	18:16	29 08:03 (T36)	19:47		20:20	5 07:04 (T31)	20:50	11 07:01 (T31)	21:08	
25	07:50	16:17 (T35)	07:13	07:33 (T36)	07:28		06:38	06:58 (T31)	06:05	06:54 (T31)	06:00	
	17:39	55 17:12 (T35)	18:17	29 08:02 (T36)	19:48		20:21	9 07:07 (T31)	20:51	4 06:58 (T31)	21:08	
26	07:49	16:17 (T35)	07:12	07:33 (T36)	07:26		06:37	06:56 (T31)	06:05		06:00	
	17:40	56 17:13 (T35)	18:18	28 08:01 (T36)	19:50		20:22	12 07:08 (T31)	20:52		21:09	
27	07:48	16:17 (T35)	07:10	07:34 (T36)	07:24		06:36	06:55 (T31)	06:04		06:00	
	17:41	57 17:14 (T35)	18:19	27 08:01 (T36)	19:51		20:23	15 07:10 (T31)	20:53		21:09	
28	07:47	16:17 (T35)	07:09	07:35 (T36)	07:23		06:34	06:54 (T31)	06:03		06:01	
	17:42	57 17:14 (T35)	18:20	24 07:59 (T36)	19:52		20:24	17 07:11 (T31)	20:54		21:09	
29	07:46	16:17 (T35)			07:21		06:33	06:52 (T31)	06:03		06:01	
	17:44	57 17:14 (T35)			19:53		20:25	19 07:11 (T31)	20:55		21:09	
30	07:45	16:17 (T35)			07:19		06:31	06:51 (T31)	06:02		06:01	
	17:45	57 17:14 (T35)			19:54		20:26	21 07:12 (T31)	20:55		21:09	
31	07:44	16:18 (T35)			07:18				06:02			
	17:46	57 17:15 (T35)			19:55				20:56			
Potential sun hours	297		297		370		399		449		453	
Total, worst case		1355		1297		51		98		649		
Sun reduction		0.31		0.40		0.44		0.52		0.57		
Oper. time red.		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.		0.73		0.68		0.56		0.69		0.69		
Total reduction		0.23		0.28		0.25		0.36		0.40		
Total, real		308		358		13		36		258		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1067 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8582)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02			06:26		06:49 (T31)	06:57	07:27			07:02		15:51 (T35)	07:37		16:01 (T35)
	21:09			20:50	34	07:23 (T31)	20:07	19:15			17:28	51	16:42 (T35)	17:04	38	16:39 (T35)
2	06:02			06:27		06:49 (T31)	06:58	07:29			07:03		15:51 (T35)	07:38		16:02 (T35)
	21:08			20:49	34	07:23 (T31)	20:06	19:13			17:27	52	16:43 (T35)	17:03	37	16:39 (T35)
3	06:03			06:28		06:50 (T31)	06:59	07:30			07:04		15:50 (T35)	07:39		16:03 (T35)
	21:08			20:48	33	07:23 (T31)	20:04	19:11			17:25	54	16:44 (T35)	17:03	35	16:38 (T35)
4	06:04			06:29		06:51 (T31)	07:00	07:31			07:06		15:49 (T35)	07:40		16:04 (T35)
	21:08			20:47	32	07:23 (T31)	20:02	19:10			17:24	55	16:44 (T35)	17:03	34	16:38 (T35)
5	06:04			06:30		06:52 (T31)	07:01	07:32			07:07		15:49 (T35)	07:41		16:05 (T35)
	21:08			20:46	31	07:23 (T31)	20:01	19:08			17:23	55	16:44 (T35)	17:03	33	16:38 (T35)
6	06:05			06:31		06:53 (T31)	07:02	07:33			07:08		15:49 (T35)	07:42		16:06 (T35)
	21:08			20:45	30	07:23 (T31)	19:57	19:06			17:22	56	16:45 (T35)	17:03	32	16:38 (T35)
7	06:05			06:32		06:54 (T31)	07:03	07:34			07:09		15:49 (T35)	07:43		16:07 (T35)
	21:07			20:43	29	07:23 (T31)	19:56	19:05			17:21	56	16:45 (T35)	17:02	30	16:37 (T35)
8	06:06			06:33		06:55 (T31)	07:04	07:35			07:10		15:48 (T35)	07:44		16:08 (T35)
	21:07			20:42	28	07:23 (T31)	19:54	19:03			17:20	57	16:45 (T35)	17:02	29	16:37 (T35)
9	06:07			06:34		06:56 (T31)	07:05	07:36			07:12		15:49 (T35)	07:45		16:08 (T35)
	21:07			20:41	27	07:23 (T31)	19:52	19:01			17:19	57	16:46 (T35)	17:02	28	16:36 (T35)
10	06:07			06:35		06:57 (T31)	07:06	07:37		08:17 (T36)	07:13		15:49 (T35)	07:46		16:10 (T35)
	21:06			20:40	25	07:22 (T31)	19:51	19:00	8	08:25 (T36)	17:18	57	16:46 (T35)	17:02	27	16:37 (T35)
11	06:08			06:36		06:58 (T31)	07:07	07:38		08:13 (T36)	07:14		15:48 (T35)	07:47		16:11 (T35)
	21:06			20:38	24	07:22 (T31)	19:49	18:58	15	08:28 (T36)	17:17	57	16:45 (T35)	17:03	26	16:37 (T35)
12	06:09			06:37		06:59 (T31)	07:08	07:39		08:10 (T36)	07:15		15:48 (T35)	07:47		16:12 (T35)
	21:06			20:37	22	07:21 (T31)	19:47	18:57	20	08:30 (T36)	17:16	57	16:45 (T35)	17:03	25	16:37 (T35)
13	06:09			06:38		07:00 (T31)	07:09	07:40		08:08 (T36)	07:16		15:49 (T35)	07:48		16:13 (T35)
	21:05			20:36	20	07:20 (T31)	19:45	18:55	23	08:31 (T36)	17:15	57	16:46 (T35)	17:03	24	16:37 (T35)
14	06:10			06:39		07:00 (T31)	07:10	07:41		08:08 (T36)	07:18		15:49 (T35)	07:49		16:13 (T35)
	21:05			20:34	18	07:18 (T31)	19:44	18:53	25	08:33 (T36)	17:14	57	16:46 (T35)	17:03	24	16:37 (T35)
15	06:11			06:40		07:01 (T31)	07:11	07:42		08:06 (T36)	07:19		15:49 (T35)	07:50		16:15 (T35)
	21:04			20:33	16	07:17 (T31)	19:42	18:52	28	08:34 (T36)	17:13	57	16:46 (T35)	17:03	22	16:37 (T35)
16	06:12			06:41		07:02 (T31)	07:12	07:44		08:05 (T36)	07:20		15:50 (T35)	07:50		16:16 (T35)
	21:04			20:32	14	07:16 (T31)	19:40	18:50	29	08:34 (T36)	17:12	56	16:46 (T35)	17:03	22	16:38 (T35)
17	06:13			06:42		07:03 (T31)	07:13	07:45		08:05 (T36)	07:21		15:50 (T35)	07:51		16:17 (T35)
	21:03			20:30	11	07:14 (T31)	19:39	18:49	29	08:34 (T36)	17:11	56	16:46 (T35)	17:04	21	16:38 (T35)
18	06:13			06:43		07:04 (T31)	07:14	07:46		08:06 (T36)	07:22		15:51 (T35)	07:52		16:17 (T35)
	21:02			20:29	8	07:12 (T31)	19:37	18:47	28	08:34 (T36)	17:11	55	16:46 (T35)	17:04	21	16:38 (T35)
19	06:14		07:02 (T31)	06:44		07:05 (T31)	07:15	07:47		08:07 (T36)	07:24		15:51 (T35)	07:52		16:18 (T35)
	21:02	8	07:10 (T31)	20:27	4	07:09 (T31)	19:35	18:46	27	08:34 (T36)	17:10	54	16:45 (T35)	17:04	21	16:39 (T35)
20	06:15		06:59 (T31)	06:45			07:16	07:48		08:09 (T36)	07:25		15:52 (T35)	07:53		16:18 (T35)
	21:01	13	07:12 (T31)	20:26			19:33	18:44	26	08:35 (T36)	17:09	53	16:45 (T35)	17:05	21	16:39 (T35)
21	06:16		06:57 (T31)	06:46			07:17	07:49		08:10 (T36)	07:26		15:53 (T35)	07:53		16:19 (T35)
	21:00	17	07:14 (T31)	20:24			19:32	18:43	40	17:27 (T35)	17:08	51	16:44 (T35)	17:05	20	16:39 (T35)
22	06:17		06:56 (T31)	06:47			07:18	07:50		08:11 (T36)	07:27		15:53 (T35)	07:54		16:19 (T35)
	20:59	19	07:15 (T31)	20:23			19:30	18:41	46	17:30 (T35)	17:08	50	16:43 (T35)	17:06	20	16:39 (T35)
23	06:18		06:55 (T31)	06:48			07:19	07:51		08:12 (T36)	07:28		15:54 (T35)	07:54		16:20 (T35)
	20:59	22	07:17 (T31)	20:21			19:28	18:40	50	17:32 (T35)	17:07	48	16:42 (T35)	17:06	21	16:41 (T35)
24	06:19		06:54 (T31)	06:49			07:20	07:53		08:13 (T36)	07:29		15:54 (T35)	07:55		16:20 (T35)
	20:58	24	07:18 (T31)	20:20			19:27	18:39	52	17:34 (T35)	17:07	47	16:41 (T35)	17:07	21	16:41 (T35)
25	06:20		06:53 (T31)	06:50			07:21	07:54		08:15 (T36)	07:31		15:56 (T35)	07:55		16:20 (T35)
	20:57	26	07:19 (T31)	20:18			19:25	18:37	53	17:36 (T35)	17:06	46	16:42 (T35)	17:08	21	16:41 (T35)
26	06:20		06:53 (T31)	06:51			07:22	07:55		08:16 (T36)	07:32		15:56 (T35)	07:56		16:21 (T35)
	20:56	27	07:20 (T31)	20:17			19:23	18:36	54	17:37 (T35)	17:06	45	16:41 (T35)	17:08	21	16:42 (T35)
27	06:21		06:51 (T31)	06:52			07:23	07:56		08:17 (T36)	07:33		15:57 (T35)	07:56		16:21 (T35)
	20:55	29	07:20 (T31)	20:15			19:21	18:34	55	17:38 (T35)	17:05	43	16:40 (T35)	17:09	22	16:43 (T35)
28	06:22		06:51 (T31)	06:53			07:24	07:57		08:18 (T36)	07:34		15:58 (T35)	07:56		16:21 (T35)
	20:54	29	07:20 (T31)	20:14			19:20	18:33	54	17:39 (T35)	17:05	42	16:40 (T35)	17:09	22	16:43 (T35)
29	06:23		06:50 (T31)	06:54			07:25	07:58		08:20 (T36)	07:35		15:59 (T35)	07:57		16:20 (T35)
	20:53	31	07:21 (T31)	20:12			19:18	18:32	54	17:41 (T35)	17:04	40	16:39 (T35)	17:10	23	16:43 (T35)
30	06:24		06:50 (T31)	06:55			07:26	08:00		08:21 (T36)	07:36		15:59 (T35)	07:57		16:21 (T35)
	20:52	32	07:22 (T31)	20:10			19:16	18:30	52	17:41 (T35)	17:04	39	16:38 (T35)	17:11	24	16:45 (T35)
31	06:25		06:49 (T31)	06:56				08:01		16:52 (T35)				07:57		16:21 (T35)
	20:51	33	07:22 (T31)	20:09				18:29	50	17:42 (T35)				17:12	25	16:46 (T35)
Potential sun hours	460			429			375	345			297			287		
Total, worst case		310			440				818			1560			790	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.69			0.69				0.65			0.73			0.73	
Total reduction		0.46			0.43				0.31			0.22			0.16	
Total, real		143			187				256			344			128	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1085 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8598)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May	June
1	07:57		15:02 (T79)	07:43		16:28 (T62)	07:07			07:16		18:54 (T60)	06:30	06:02
	17:13	67	16:47 (T62)	17:47	33	17:01 (T62)	18:22			19:56	40	19:34 (T60)	20:27	20:56
2	07:57		15:03 (T79)	07:42		16:29 (T62)	07:05			07:14		18:53 (T60)	06:29	06:01
	17:14	66	16:47 (T62)	17:49	31	17:00 (T62)	18:23			19:57	42	19:35 (T60)	20:28	20:57
3	07:57		15:04 (T79)	07:41		16:30 (T62)	07:04			07:13		18:52 (T60)	06:28	06:01
	17:15	65	16:48 (T62)	17:50	29	16:59 (T62)	18:24			19:58	45	19:37 (T60)	20:29	20:58
4	07:57		15:05 (T79)	07:40		16:32 (T62)	07:02			07:11		18:51 (T60)	06:26	06:00
	17:16	65	16:49 (T62)	17:51	26	16:58 (T62)	18:25			19:59	46	19:37 (T60)	20:30	20:59
5	07:57		15:07 (T79)	07:39		16:34 (T62)	07:01			07:09		18:50 (T60)	06:25	06:00
	17:17	64	16:50 (T62)	17:53	23	16:57 (T62)	18:26			20:00	48	19:38 (T60)	20:31	20:59
6	07:57		15:08 (T79)	07:38		16:36 (T62)	06:59			07:08		18:50 (T60)	06:24	06:00
	17:18	64	16:51 (T62)	17:54	19	16:55 (T62)	18:27			20:00	50	19:40 (T60)	20:32	21:00
7	07:57		15:10 (T79)	07:37		16:39 (T62)	06:58			07:06		18:49 (T60)	06:23	05:59
	17:19	63	16:53 (T62)	17:55	14	16:53 (T62)	18:29			20:01	51	19:40 (T60)	20:33	21:01
8	07:57		15:11 (T79)	07:36		16:46 (T62)	07:56			07:05		18:48 (T60)	06:22	05:59
	17:20	62	16:54 (T62)	17:56	1	16:47 (T62)	19:30			20:02	51	19:39 (T60)	20:34	21:01
9	07:57		15:13 (T79)	07:35			07:54			07:03		18:49 (T60)	06:20	05:59
	17:21	60	16:55 (T62)	17:58			19:31			20:03	50	19:39 (T60)	20:35	21:02
10	07:56		15:15 (T79)	07:33			07:53			07:01		18:48 (T60)	06:19	05:59
	17:22	57	16:55 (T62)	17:59			19:32			20:04	51	19:39 (T60)	20:36	21:03
11	07:56		15:18 (T79)	07:32			07:51			07:00		18:48 (T60)	06:18	05:59
	17:23	54	16:57 (T62)	18:00			19:33			20:05	51	19:39 (T60)	20:37	21:03
12	07:56		15:21 (T79)	07:31			07:49			06:58		18:48 (T60)	06:17	05:58
	17:24	50	16:58 (T62)	18:01			19:34			20:06	50	19:38 (T60)	20:38	21:04
13	07:56		16:20 (T62)	07:30			07:48			06:57		18:48 (T60)	06:16	05:58
	17:25	38	16:58 (T62)	18:02			19:35			20:07	50	19:38 (T60)	20:39	21:04
14	07:55		16:21 (T62)	07:28			07:46			06:55		18:48 (T60)	06:15	05:58
	17:26	38	16:59 (T62)	18:04			19:36			20:09	49	19:37 (T60)	20:40	21:05
15	07:55		16:21 (T62)	07:27			07:44			06:53		18:48 (T60)	06:14	05:58
	17:27	38	16:59 (T62)	18:05			19:37			20:10	48	19:36 (T60)	20:41	21:05
16	07:55		16:21 (T62)	07:26			07:43			06:52		18:49 (T60)	06:13	05:58
	17:28	39	17:00 (T62)	18:06			19:39			20:11	47	19:36 (T60)	20:42	21:05
17	07:54		16:21 (T62)	07:24			07:41			06:50		18:49 (T60)	06:12	05:58
	17:29	39	17:00 (T62)	18:07			19:40			20:12	45	19:34 (T60)	20:43	21:06
18	07:54		16:22 (T62)	07:23			07:39			06:49		18:50 (T60)	06:11	05:58
	17:30	39	17:01 (T62)	18:09			19:41			20:13	44	19:34 (T60)	20:44	21:06
19	07:53		16:21 (T62)	07:22			07:38			06:47		18:50 (T60)	06:10	05:59
	17:32	40	17:01 (T62)	18:10			19:42			20:14	42	19:32 (T60)	20:45	21:07
20	07:52		16:22 (T62)	07:20			07:36			06:46		18:51 (T60)	06:09	05:59
	17:33	40	17:02 (T62)	18:11			19:43			20:15	40	19:31 (T60)	20:46	21:07
21	07:52		16:22 (T62)	07:19			07:34			06:44		18:52 (T60)	06:09	05:59
	17:34	40	17:02 (T62)	18:12			19:44			20:16	38	19:30 (T60)	20:47	21:07
22	07:51		16:22 (T62)	07:17			07:33			06:43		18:53 (T60)	06:08	05:59
	17:35	40	17:02 (T62)	18:13			19:45			20:17	36	19:29 (T60)	20:48	21:07
23	07:51		16:22 (T62)	07:16			07:31			06:41		18:55 (T60)	06:07	05:59
	17:36	40	17:02 (T62)	18:15			19:46			20:18	32	19:27 (T60)	20:49	21:08
24	07:50		16:23 (T62)	07:14			07:29		19:15 (T60)	06:40		18:56 (T60)	06:06	06:00
	17:38	40	17:03 (T62)	18:16			19:47	7	19:22 (T60)	20:19	29	19:25 (T60)	20:50	21:08
25	07:49		16:24 (T62)	07:13			07:28		19:09 (T60)	06:38		18:58 (T60)	06:06	06:00
	17:39	39	17:03 (T62)	18:17			19:48	18	19:27 (T60)	20:20	25	19:23 (T60)	20:51	21:08
26	07:48		16:24 (T62)	07:11			07:26		19:05 (T60)	06:37		19:00 (T60)	06:05	06:00
	17:40	39	17:03 (T62)	18:18			19:49	23	19:28 (T60)	20:21	20	19:20 (T60)	20:51	21:08
27	07:48		16:24 (T62)	07:10			07:24		19:02 (T60)	06:36		19:04 (T60)	06:04	06:01
	17:41	39	17:03 (T62)	18:19			19:50	27	19:29 (T60)	20:22	12	19:16 (T60)	20:52	21:08
28	07:47		16:25 (T62)	07:08			07:23		19:01 (T60)	06:34			06:04	06:01
	17:43	38	17:03 (T62)	18:20			19:51	29	19:30 (T60)	20:23			20:53	21:08
29	07:46		16:25 (T62)				07:21		18:58 (T60)	06:33			06:03	06:01
	17:44	37	17:02 (T62)				19:53	33	19:31 (T60)	20:25			20:54	21:08
30	07:45		16:26 (T62)				07:19		18:56 (T60)	06:32			06:03	06:02
	17:45	36	17:02 (T62)				19:54	36	19:32 (T60)	20:26			20:55	21:08
31	07:44		16:27 (T62)				07:18		18:56 (T60)				06:02	
	17:46	34	17:01 (T62)				19:55	38	19:34 (T60)				20:56	
Potential sun hours	297			297			370			399			448	452
Total, worst case		1470			176			211			1132			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.73			0.73			0.62			0.62			
Total reduction		0.23			0.30			0.28			0.33			
Total, real		344			53			59			374			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1085 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8598)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October	November			December		
1	06:02	06:26			06:57		18:47 (T60)	07:27	07:02			07:37		15:00 (T79)
	21:08	20:50			20:07	51	19:38 (T60)	19:15	17:28			17:04	54	16:39 (T62)
2	06:03	06:27			06:58		18:47 (T60)	07:28	07:03			07:38		14:58 (T79)
	21:08	20:49			20:05	51	19:38 (T60)	19:13	17:27			17:04	57	16:38 (T62)
3	06:03	06:28			06:59		18:47 (T60)	07:29	07:04		16:12 (T62)	07:39		14:57 (T79)
	21:08	20:48			20:04	50	19:37 (T60)	19:11	17:26	6	16:18 (T62)	17:03	59	16:38 (T62)
4	06:04	06:29			07:00		18:46 (T60)	07:30	07:05		16:08 (T62)	07:40		14:56 (T79)
	21:08	20:46			20:02	51	19:37 (T60)	19:10	17:24	15	16:23 (T62)	17:03	61	16:38 (T62)
5	06:04	06:30			07:01		18:46 (T60)	07:32	07:06		16:05 (T62)	07:41		14:55 (T79)
	21:07	20:45			20:00	51	19:37 (T60)	19:08	17:23	21	16:26 (T62)	17:03	63	16:38 (T62)
6	06:05	06:31			07:02		18:46 (T60)	07:33	07:08		16:03 (T62)	07:42		14:54 (T79)
	21:07	20:44			19:57	50	19:36 (T60)	19:06	17:22	24	16:27 (T62)	17:03	64	16:37 (T62)
7	06:06	06:32			07:03		18:46 (T60)	07:34	07:09		16:03 (T62)	07:43		14:54 (T79)
	21:07	20:43			19:55	48	19:34 (T60)	19:05	17:21	26	16:29 (T62)	17:03	64	16:37 (T62)
8	06:06	06:33			07:04		18:45 (T60)	07:35	07:10		16:01 (T62)	07:43		14:53 (T79)
	21:07	20:42			19:54	46	19:31 (T60)	19:03	17:20	29	16:30 (T62)	17:03	65	16:37 (T62)
9	06:07	06:34			07:05		18:45 (T60)	07:36	07:11		16:00 (T62)	07:44		14:53 (T79)
	21:06	20:40			19:52	45	19:30 (T60)	19:01	17:19	31	16:31 (T62)	17:03	65	16:37 (T62)
10	06:08	06:35			07:06		18:46 (T60)	07:37	07:12		15:59 (T62)	07:45		14:53 (T79)
	21:06	20:39			19:50	42	19:28 (T60)	19:00	17:18	33	16:32 (T62)	17:03	66	16:37 (T62)
11	06:08	06:36			07:07		18:46 (T60)	07:38	07:14		15:59 (T62)	07:46		14:53 (T79)
	21:06	20:38			19:49	41	19:27 (T60)	18:58	17:17	34	16:33 (T62)	17:03	67	16:38 (T62)
12	06:09	06:37			07:08		18:47 (T60)	07:39	07:15		15:58 (T62)	07:47		14:52 (T79)
	21:05	20:37			19:47	38	19:25 (T60)	18:57	17:16	36	16:34 (T62)	17:03	67	16:37 (T62)
13	06:10	06:38			07:09		18:47 (T60)	07:40	07:16		15:57 (T62)	07:48		14:52 (T79)
	21:05	20:35			19:45	36	19:23 (T60)	18:55	17:15	37	16:34 (T62)	17:03	67	16:37 (T62)
14	06:10	06:39			07:10		18:48 (T60)	07:41	07:17		15:58 (T62)	07:48		14:53 (T79)
	21:04	20:34			19:44	34	19:22 (T60)	18:53	17:14	38	16:36 (T62)	17:03	67	16:38 (T62)
15	06:11	06:40			07:11		18:50 (T60)	07:42	07:18		15:57 (T62)	07:49		14:53 (T79)
	21:04	20:33			19:42	30	19:20 (T60)	18:52	17:13	39	16:36 (T62)	17:03	67	16:38 (T62)
16	06:12	06:41		19:10 (T60)	07:12		18:51 (T60)	07:43	07:20		15:57 (T62)	07:50		14:53 (T79)
	21:03	20:31	14	19:24 (T60)	19:40	27	19:18 (T60)	18:50	17:12	39	16:36 (T62)	17:04	67	16:38 (T62)
17	06:13	06:42		19:06 (T60)	07:13		18:53 (T60)	07:44	07:21		15:57 (T62)	07:51		14:53 (T79)
	21:02	20:30	21	19:27 (T60)	19:38	24	19:17 (T60)	18:49	17:11	39	16:36 (T62)	17:04	67	16:38 (T62)
18	06:14	06:43		19:03 (T60)	07:14		18:56 (T60)	07:46	07:22		15:57 (T62)	07:51		14:54 (T79)
	21:02	20:28	26	19:29 (T60)	19:37	19	19:15 (T60)	18:47	17:11	40	16:37 (T62)	17:04	67	16:39 (T62)
19	06:15	06:44		19:01 (T60)	07:15		19:00 (T60)	07:47	07:23		15:57 (T62)	07:52		14:54 (T79)
	21:01	20:27	30	19:31 (T60)	19:35	11	19:11 (T60)	18:46	17:10	40	16:37 (T62)	17:05	67	16:39 (T62)
20	06:15	06:45		18:59 (T60)	07:16			07:48	07:24		15:57 (T62)	07:52		14:54 (T79)
	21:00	20:25	33	19:32 (T60)	19:33			18:44	17:09	40	16:37 (T62)	17:05	68	16:40 (T62)
21	06:16	06:46		18:58 (T60)	07:17			07:49	07:25		15:57 (T62)	07:53		14:54 (T79)
	21:00	20:24	36	19:34 (T60)	19:32			18:43	17:09	40	16:37 (T62)	17:06	67	16:39 (T62)
22	06:17	06:47		18:56 (T60)	07:18			07:50	07:27		15:58 (T62)	07:53		14:55 (T79)
	20:59	20:22	39	19:35 (T60)	19:30			18:41	17:08	40	16:38 (T62)	17:06	67	16:40 (T62)
23	06:18	06:48		18:55 (T60)	07:19			07:51	07:28		15:58 (T62)	07:54		14:55 (T79)
	20:58	20:21	40	19:35 (T60)	19:28			18:40	17:07	40	16:38 (T62)	17:07	67	16:40 (T62)
24	06:19	06:49		18:54 (T60)	07:20			07:52	07:29		15:59 (T62)	07:54		14:57 (T79)
	20:57	20:19	42	19:36 (T60)	19:26			18:39	17:07	39	16:38 (T62)	17:07	67	16:42 (T62)
25	06:20	06:50		18:53 (T60)	07:21			07:53	07:30		15:59 (T62)	07:55		14:57 (T79)
	20:56	20:18	44	19:37 (T60)	19:25			18:37	17:06	39	16:38 (T62)	17:08	67	16:42 (T62)
26	06:21	06:51		18:52 (T60)	07:22			07:55	07:31		15:59 (T62)	07:55		14:57 (T79)
	20:56	20:16	45	19:37 (T60)	19:23			18:36	17:06	39	16:38 (T62)	17:08	67	16:42 (T62)
27	06:22	06:52		18:51 (T60)	07:23			07:56	07:32		16:01 (T62)	07:56		14:57 (T79)
	20:55	20:15	47	19:38 (T60)	19:21			18:34	17:05	38	16:39 (T62)	17:09	67	16:42 (T62)
28	06:23	06:53		18:50 (T60)	07:24			07:57	07:33		16:01 (T62)	07:56		14:59 (T79)
	20:54	20:13	48	19:38 (T60)	19:20			18:33	17:05	38	16:39 (T62)	17:10	67	16:44 (T62)
29	06:23	06:54		18:49 (T60)	07:25			07:58	07:34		16:01 (T62)	07:56		15:00 (T79)
	20:53	20:12	49	19:38 (T60)	19:18			18:32	17:04	38	16:39 (T62)	17:11	66	16:44 (T62)
30	06:24	06:55		18:48 (T60)	07:26			07:59	07:36		15:02 (T79)	07:56		15:00 (T79)
	20:52	20:10	50	19:38 (T60)	19:16			18:31	17:04	50	16:39 (T62)	17:11	67	16:45 (T62)
31	06:25	06:56		18:48 (T60)				08:01				07:57		15:01 (T79)
	20:51	20:09	50	19:38 (T60)				18:29				17:12	67	16:46 (T62)
Potential sun hours	459	428			375			345	298			288		
Total, worst case			614			745				968			2025	
Sun reduction			0.61			0.59				0.30			0.22	
Oper. time red.			1.00			1.00				1.00			1.00	
Wind dir. red.			0.62			0.62				0.73			0.74	
Total reduction			0.39			0.37				0.23			0.17	
Total, real			238			279				218			338	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1106 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8618)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:20 (T39)	07:44			07:07		17:13 (T37)	07:16		18:08 (T37)	06:30			06:02		19:55 (T34)
	17:13	10	08:30 (T39)	17:48			18:22	47	18:00 (T38)	19:56	36	18:44 (T37)	20:27			20:57	26	20:21 (T34)
2	07:58		08:20 (T39)	07:43			07:06		17:11 (T37)	07:15		18:11 (T37)	06:29			06:01		19:56 (T34)
	17:14	11	08:31 (T39)	17:49			18:23	50	18:01 (T38)	19:57	31	18:42 (T37)	20:28			20:58	25	20:21 (T34)
3	07:58		08:20 (T39)	07:42			07:04		17:10 (T37)	07:13		18:13 (T37)	06:28			06:01		19:56 (T34)
	17:15	11	08:31 (T39)	17:50			18:24	53	18:03 (T38)	19:58	26	18:39 (T37)	20:29			20:59	24	20:20 (T34)
4	07:58		08:20 (T39)	07:41			07:03		17:08 (T37)	07:11		18:16 (T37)	06:26		20:03 (T34)	06:00		19:57 (T34)
	17:16	12	08:32 (T39)	17:51			18:25	56	18:04 (T38)	19:59	18	18:34 (T37)	20:30	5	20:08 (T34)	20:59	23	20:20 (T34)
5	07:58		08:20 (T39)	07:40			07:01		17:06 (T37)	07:10			06:25		20:00 (T34)	06:00		19:58 (T34)
	17:17	13	08:33 (T39)	17:53			18:27	58	18:04 (T38)	20:00			20:31	9	20:09 (T34)	21:00	22	20:20 (T34)
6	07:58		08:20 (T39)	07:39			07:00		17:06 (T37)	07:08			06:24		19:58 (T34)	06:00		19:58 (T34)
	17:18	13	08:33 (T39)	17:54			18:28	60	18:06 (T38)	20:00			20:33	12	20:10 (T34)	21:01	21	20:19 (T34)
7	07:58		08:20 (T39)	07:37			06:58		17:04 (T37)	07:06			06:23		19:56 (T34)	05:59		19:59 (T34)
	17:19	14	08:34 (T39)	17:55			18:29	63	18:07 (T38)	20:02			20:34	15	20:11 (T34)	21:01	19	20:18 (T34)
8	07:58		08:20 (T39)	07:36			07:56		18:04 (T37)	07:05			06:22		19:55 (T34)	05:59		20:00 (T34)
	17:20	15	08:35 (T39)	17:56			19:30	65	19:09 (T38)	20:03			20:35	17	20:12 (T34)	21:02	18	20:18 (T34)
9	07:57		08:19 (T39)	07:35			07:55		18:03 (T37)	07:03			06:20		19:54 (T34)	05:59		20:01 (T34)
	17:21	16	08:35 (T39)	17:58			19:31	66	19:09 (T38)	20:04			20:36	19	20:13 (T34)	21:03	17	20:18 (T34)
10	07:57		08:19 (T39)	07:34			07:53		18:02 (T37)	07:02			06:19		19:54 (T34)	05:59		20:02 (T34)
	17:22	16	08:35 (T39)	17:59			19:32	66	19:08 (T38)	20:05			20:37	20	20:14 (T34)	21:03	16	20:18 (T34)
11	07:57		08:19 (T39)	07:33			07:51		18:02 (T37)	07:00			06:18		19:53 (T34)	05:58		20:03 (T34)
	17:23	17	08:36 (T39)	18:00			19:33	66	19:08 (T38)	20:06			20:38	22	20:15 (T34)	21:04	14	20:17 (T34)
12	07:57		08:18 (T39)	07:31			07:50		18:01 (T37)	06:58			06:17		19:52 (T34)	05:58		20:04 (T34)
	17:24	18	08:36 (T39)	18:01			19:34	65	19:06 (T38)	20:07			20:39	24	20:16 (T34)	21:04	13	20:17 (T34)
13	07:56		08:18 (T39)	07:30			07:48		18:00 (T37)	06:57			06:16		19:52 (T34)	05:58		20:04 (T34)
	17:25	18	08:36 (T39)	18:03			19:36	65	19:05 (T38)	20:08			20:40	25	20:17 (T34)	21:05	12	20:16 (T34)
14	07:56		08:18 (T39)	07:29			07:46		18:00 (T37)	06:55			06:15		19:51 (T34)	05:58		20:04 (T34)
	17:26	19	08:37 (T39)	18:04			19:37	64	19:04 (T38)	20:09			20:41	27	20:18 (T34)	21:05	12	20:16 (T34)
15	07:56		08:17 (T39)	07:28			07:45		18:00 (T37)	06:54			06:14		19:51 (T34)	05:58		20:05 (T34)
	17:27	20	08:37 (T39)	18:05			19:38	61	19:01 (T37)	20:10			20:42	28	20:19 (T34)	21:06	10	20:15 (T34)
16	07:55		08:17 (T39)	07:26			07:43		17:59 (T37)	06:52			06:13		19:51 (T34)	05:58		20:07 (T34)
	17:28	20	08:37 (T39)	18:06			19:39	62	19:01 (T37)	20:11			20:43	29	20:20 (T34)	21:06	9	20:16 (T34)
17	07:55		08:17 (T39)	07:25			07:41		17:59 (T37)	06:50			06:12		19:51 (T34)	05:58		20:08 (T34)
	17:29	20	08:37 (T39)	18:08			19:40	62	19:01 (T37)	20:12			20:44	30	20:21 (T34)	21:07	7	20:15 (T34)
18	07:54		08:17 (T39)	07:24			07:40		17:59 (T37)	06:49			06:11		19:50 (T34)	05:58		20:08 (T34)
	17:30	19	08:36 (T39)	18:09			19:41	61	19:00 (T37)	20:13			20:45	31	20:21 (T34)	21:07	7	20:15 (T34)
19	07:54		08:19 (T39)	07:22			07:38		17:59 (T37)	06:47			06:10		19:50 (T34)	05:58		20:09 (T34)
	17:32	17	08:36 (T39)	18:10			19:42	61	19:00 (T37)	20:14			20:46	32	20:22 (T34)	21:07	6	20:15 (T34)
20	07:53		08:19 (T39)	07:21			07:36		18:00 (T37)	06:46			06:09		19:50 (T34)	05:59		20:09 (T34)
	17:33	17	08:36 (T39)	18:11			19:43	60	19:00 (T37)	20:15			20:47	33	20:23 (T34)	21:08	5	20:14 (T34)
21	07:53		08:21 (T39)	07:19			07:35		17:59 (T37)	06:44			06:09		19:51 (T34)	05:59		20:09 (T34)
	17:34	15	08:36 (T39)	18:12			19:44	60	18:59 (T37)	20:17			20:48	32	20:23 (T34)	21:08	5	20:14 (T34)
22	07:52		08:23 (T39)	07:18			07:33		17:59 (T37)	06:43			06:08		19:51 (T34)	05:59		20:09 (T34)
	17:35	11	08:34 (T39)	18:14			19:45	59	18:58 (T37)	20:18			20:49	32	20:23 (T34)	21:08	5	20:14 (T34)
23	07:51		08:25 (T39)	07:16			07:31		17:59 (T37)	06:41			06:07		19:51 (T34)	05:59		20:10 (T34)
	17:36	7	08:32 (T39)	18:15			19:46	58	18:57 (T37)	20:19			20:49	32	20:23 (T34)	21:08	6	20:16 (T34)
24	07:50			07:15			07:30		18:01 (T37)	06:40			06:06		19:51 (T34)	05:59		20:09 (T34)
	17:38			18:16			19:48	55	18:56 (T37)	20:20			20:50	31	20:22 (T34)	21:08	7	20:16 (T34)
25	07:50			07:13		17:25 (T37)	07:28		18:01 (T37)	06:39			06:06		19:52 (T34)	06:00		20:09 (T34)
	17:39			18:17	18	17:43 (T37)	19:49	54	18:55 (T37)	20:21			20:51	31	20:23 (T34)	21:09	7	20:16 (T34)
26	07:49			07:12		17:20 (T37)	07:26		18:01 (T37)	06:37			06:05		19:52 (T34)	06:00		20:09 (T34)
	17:40			18:18	26	17:46 (T37)	19:50	53	18:54 (T37)	20:22			20:52	30	20:22 (T34)	21:09	9	20:18 (T34)
27	07:48			07:10		17:18 (T37)	07:25		18:03 (T37)	06:36			06:04		19:53 (T34)	06:00		20:09 (T34)
	17:41			18:20	36	17:58 (T38)	19:51	50	18:53 (T37)	20:23			20:53	29	20:22 (T34)	21:09	9	20:18 (T34)
28	07:47			07:09		17:15 (T37)	07:23		18:03 (T37)	06:34			06:04		19:53 (T34)	06:01		20:08 (T34)
	17:43			18:21	43	17:58 (T38)	19:52	48	18:51 (T37)	20:24			20:54	29	20:22 (T34)	21:09	10	20:18 (T34)
29	07:46						07:21		18:04 (T37)	06:33			06:03		19:54 (T34)	06:01		20:08 (T34)
	17:44						19:53	45	18:49 (T37)	20:25			20:55	28	20:22 (T34)	21:09	12	20:20 (T34)
30	07:46						07:20		18:06 (T37)	06:32			06:03		19:54 (T34)	06:02		20:07 (T34)
	17:45						19:54	42	18:48 (T37)	20:26			20:56	27	20:21 (T34)	21:09	13	20:20 (T34)
31	07:45						07:18		18:07 (T37)				06:02		19:55 (T34)			
	17:46						19:55	39	18:46 (T37)				20:56	26	20:21 (T34)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		349			123			1774			111			705			389	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.52			0.67			0.67			0.67			0.56			0.56	
Total reduction		0.16			0.27			0.29			0.35			0.32			0.36	
Total, real		56			33			523			39			223			138	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1106 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8618)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:07 (T34)	06:26		20:02 (T34)	06:57			07:28		17:40 (T37)	07:02			07:37		08:01 (T39)
	21:09	14	20:21 (T34)	20:50	23	20:25 (T34)	20:07			19:15	66	18:46 (T38)	17:28			17:04	17	08:18 (T39)
2	06:03		20:06 (T34)	06:27		20:03 (T34)	06:58			07:29		17:40 (T37)	07:03			07:38		08:02 (T39)
	21:09	16	20:22 (T34)	20:49	22	20:25 (T34)	20:06			19:13	66	18:46 (T38)	17:27			17:04	16	08:18 (T39)
3	06:03		20:06 (T34)	06:28		20:03 (T34)	06:59			07:30		17:40 (T37)	07:05			07:39		08:03 (T39)
	21:09	17	20:23 (T34)	20:48	21	20:24 (T34)	20:04			19:12	66	18:46 (T38)	17:26			17:03	16	08:19 (T39)
4	06:04		20:06 (T34)	06:29		20:04 (T34)	07:00			07:31		17:40 (T37)	07:06			07:40		08:04 (T39)
	21:08	17	20:23 (T34)	20:47	18	20:22 (T34)	20:02			19:10	66	18:46 (T38)	17:24			17:03	15	08:19 (T39)
5	06:04		20:06 (T34)	06:30		20:05 (T34)	07:01			07:32		17:40 (T37)	07:07			07:41		08:05 (T39)
	21:08	18	20:24 (T34)	20:46	16	20:21 (T34)	20:01			19:08	66	18:46 (T38)	17:23			17:03	14	08:19 (T39)
6	06:05		20:05 (T34)	06:31		20:07 (T34)	07:02			07:33		17:41 (T37)	07:08			07:42		08:06 (T39)
	21:08	19	20:24 (T34)	20:45	13	20:20 (T34)	19:58			19:07	63	18:44 (T38)	17:22			17:03	13	08:19 (T39)
7	06:06		20:05 (T34)	06:32		20:08 (T34)	07:03			07:34		17:41 (T37)	07:09			07:43		08:07 (T39)
	21:08	21	20:26 (T34)	20:44	11	20:19 (T34)	19:56			19:05	62	18:43 (T38)	17:21			17:03	13	08:20 (T39)
8	06:06		20:05 (T34)	06:33		20:10 (T34)	07:04		18:12 (T37)	07:35		17:42 (T37)	07:11			07:44		08:08 (T39)
	21:07	22	20:27 (T34)	20:42	8	20:18 (T34)	19:54	17	18:29 (T37)	19:03	59	18:41 (T38)	17:20			17:03	12	08:20 (T39)
9	06:07		20:04 (T34)	06:34		20:15 (T34)	07:05		18:07 (T37)	07:36		17:42 (T37)	07:12			07:45		08:09 (T39)
	21:07	23	20:27 (T34)	20:41	2	20:17 (T34)	19:52	25	18:32 (T37)	19:02	57	18:39 (T38)	17:19			17:03	11	08:20 (T39)
10	06:08		20:04 (T34)	06:35			07:06		18:04 (T37)	07:37		17:43 (T37)	07:13			07:46		08:09 (T39)
	21:07	24	20:28 (T34)	20:40			19:51	31	18:35 (T37)	19:00	54	18:37 (T38)	17:18			17:03	11	08:20 (T39)
11	06:08		20:04 (T34)	06:36			07:07		18:02 (T37)	07:38		17:44 (T37)	07:14			07:47		08:10 (T39)
	21:06	25	20:29 (T34)	20:38			19:49	35	18:37 (T37)	18:58	52	18:36 (T38)	17:17			17:03	10	08:20 (T39)
12	06:09		20:03 (T34)	06:37			07:08		17:59 (T37)	07:39		17:45 (T37)	07:15			07:48		08:11 (T39)
	21:06	25	20:28 (T34)	20:37			19:47	39	18:38 (T37)	18:57	49	18:34 (T38)	17:16			17:03	10	08:21 (T39)
13	06:10		20:03 (T34)	06:38			07:09		17:57 (T37)	07:40		17:48 (T37)	07:17			07:48		08:12 (T39)
	21:05	26	20:29 (T34)	20:36			19:46	42	18:39 (T37)	18:55	45	18:33 (T38)	17:15			17:03	9	08:21 (T39)
14	06:10		20:03 (T34)	06:39			07:10		17:55 (T37)	07:42		17:49 (T37)	07:18			07:49		08:13 (T39)
	21:05	27	20:30 (T34)	20:34			19:44	45	18:40 (T37)	18:54	42	18:31 (T38)	17:14			17:03	9	08:22 (T39)
15	06:11		20:03 (T34)	06:40			07:11		17:53 (T37)	07:43		17:51 (T37)	07:19			07:50		08:13 (T39)
	21:04	28	20:31 (T34)	20:33			19:42	47	18:40 (T37)	18:52	32	18:30 (T38)	17:13			17:03	8	08:21 (T39)
16	06:12		20:02 (T34)	06:41			07:12		17:51 (T37)	07:44		17:54 (T37)	07:20			07:51		08:14 (T39)
	21:04	29	20:31 (T34)	20:32			19:41	50	18:41 (T37)	18:51	23	18:17 (T37)	07:12			17:04	8	08:22 (T39)
17	06:13		20:02 (T34)	06:42			07:13		17:50 (T37)	07:45		17:59 (T37)	07:21			07:51		08:15 (T39)
	21:03	29	20:31 (T34)	20:30			19:39	52	18:42 (T37)	18:49	13	18:12 (T37)	07:12			17:04	8	08:23 (T39)
18	06:14		20:01 (T34)	06:43			07:14		17:48 (T37)	07:46			07:23			07:52		08:15 (T39)
	21:02	31	20:32 (T34)	20:29			19:37	54	18:42 (T37)	18:48			17:11			17:04	7	08:22 (T39)
19	06:14		20:02 (T34)	06:44			07:15		17:47 (T37)	07:47			07:24		08:00 (T39)	07:53		08:16 (T39)
	21:02	30	20:32 (T34)	20:27			19:35	56	18:43 (T37)	18:46			17:10	7	08:07 (T39)	17:05	7	08:23 (T39)
20	06:15		20:02 (T34)	06:45			07:16		17:46 (T37)	07:48			07:25		07:58 (T39)	07:53		08:16 (T39)
	21:01	31	20:33 (T34)	20:26			19:34	57	18:43 (T37)	18:45			17:09	11	08:09 (T39)	17:05	7	08:23 (T39)
21	06:16		20:01 (T34)	06:46			07:17		17:45 (T37)	07:49			07:26		07:56 (T39)	07:54		08:17 (T39)
	21:00	31	20:32 (T34)	20:25			19:32	58	18:43 (T37)	18:43			17:09	15	08:11 (T39)	17:06	7	08:24 (T39)
22	06:17		20:01 (T34)	06:47			07:18		17:44 (T37)	07:51			07:27		07:55 (T39)	07:54		08:17 (T39)
	21:00	32	20:33 (T34)	20:23			19:30	59	18:43 (T37)	18:42			17:08	17	08:12 (T39)	17:06	7	08:24 (T39)
23	06:18		20:01 (T34)	06:48			07:19		17:43 (T37)	07:52			07:28		07:56 (T39)	07:55		08:18 (T39)
	20:59	32	20:33 (T34)	20:22			19:29	60	18:43 (T37)	18:40			17:07	17	08:13 (T39)	17:07	7	08:25 (T39)
24	06:19		20:01 (T34)	06:49			07:21		17:42 (T37)	07:53			07:30		07:55 (T39)	07:55		08:18 (T39)
	20:58	32	20:33 (T34)	20:20			19:27	61	18:43 (T37)	18:39			17:07	19	08:14 (T39)	17:07	7	08:25 (T39)
25	06:20		20:01 (T34)	06:50			07:22		17:42 (T37)	07:54			07:31		07:55 (T39)	07:56		08:19 (T39)
	20:57	31	20:32 (T34)	20:18			19:25	61	18:43 (T37)	18:37			17:06	20	08:15 (T39)	17:08	7	08:26 (T39)
26	06:21		20:01 (T34)	06:51			07:23		17:41 (T37)	07:55			07:32		07:55 (T39)	07:56		08:19 (T39)
	20:56	31	20:32 (T34)	20:17			19:23	62	18:43 (T37)	18:36			17:06	20	08:15 (T39)	17:08	8	08:27 (T39)
27	06:22		20:01 (T34)	06:52			07:24		17:41 (T37)	07:56			07:33		07:56 (T39)	07:56		08:19 (T39)
	20:55	30	20:31 (T34)	20:15			19:22	61	18:42 (T37)	18:35			17:05	20	08:16 (T39)	17:09	8	08:27 (T39)
28	06:23		20:02 (T34)	06:53			07:25		17:40 (T37)	07:58			07:34		07:57 (T39)	07:57		08:19 (T39)
	20:54	28	20:30 (T34)	20:14			19:20	62	18:42 (T37)	18:33			17:05	19	08:16 (T39)	17:10	8	08:27 (T39)
29	06:24		20:02 (T34)	06:54			07:26		17:40 (T37)	07:59			07:35		07:59 (T39)	07:57		08:20 (T39)
	20:53	27	20:29 (T34)	20:12			19:18	63	18:43 (T38)	18:32			17:04	18	08:17 (T39)	17:10	9	08:29 (T39)
30	06:24		20:01 (T34)	06:55			07:27		17:39 (T37)	08:00			07:36		08:00 (T39)	07:57		08:20 (T39)
	20:52	26	20:27 (T34)	20:11			19:17	65	18:44 (T38)	18:31			17:04	18	08:18 (T39)	17:11	9	08:29 (T39)
31	06:25		20:02 (T34)	06:56						08:01						07:57		08:20 (T39)
	20:51	24	20:26 (T34)	20:09						18:29						17:12	10	08:30 (T39)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		796			134			1162			881			201			308	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.56			0.56			0.67			0.67			0.52			0.52	
Total reduction		0.37			0.34			0.40			0.32			0.15			0.11	
Total, real		292			45			459			283			31			35	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1136 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8645)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June	
1	07:57		08:31 (T36)	07:43			07:07		07:27 (T31)	07:16			06:30		06:59 (T28)	06:01	
	17:13	16	08:47 (T36)	17:47			18:22	70	17:54 (T30)	19:56			20:27	72	19:50 (T27)	20:57	
2	07:57		08:32 (T36)	07:43			07:06		07:25 (T31)	07:14			06:29		07:00 (T28)	06:01	
	17:14	15	08:47 (T36)	17:49			18:23	73	17:53 (T30)	19:57			20:28	67	19:48 (T27)	20:58	
3	07:58		08:33 (T36)	07:41			07:04		07:23 (T31)	07:13			06:28		06:59 (T28)	06:00	
	17:15	14	08:47 (T36)	17:50			18:24	75	17:53 (T30)	19:58			20:29	64	19:46 (T27)	20:58	
4	07:58		08:34 (T36)	07:40			07:02		07:22 (T31)	07:11			06:26		07:00 (T28)	06:00	
	17:15	13	08:47 (T36)	17:51			18:25	77	17:53 (T30)	19:59			20:30	57	19:43 (T27)	20:59	
5	07:58		08:36 (T36)	07:39			07:01		07:20 (T31)	07:09			06:25		07:01 (T28)	06:00	
	17:16	10	08:46 (T36)	17:52			18:26	78	17:53 (T30)	20:00			20:31	49	19:40 (T27)	21:00	
6	07:58		08:38 (T36)	07:38			06:59		07:19 (T31)	07:08			06:24		07:02 (T28)	05:59	
	17:17	7	08:45 (T36)	17:54			18:27	80	17:53 (T30)	20:00			20:32	39	07:41 (T28)	21:01	
7	07:57			07:37			06:58		07:17 (T31)	07:06			06:23		07:03 (T28)	05:59	
	17:18			17:55			18:29	81	17:52 (T30)	20:01			20:33	37	07:40 (T28)	21:01	
8	07:57			07:36			07:56		08:15 (T31)	07:05		07:24 (T28)	06:21		07:03 (T28)	05:59	
	17:19			17:56			19:30	81	18:51 (T30)	20:02	15	19:42 (T27)	20:34	35	07:38 (T28)	21:02	
9	07:57			07:35			07:54		08:14 (T31)	07:03		07:22 (T28)	06:20		07:04 (T28)	05:59	
	17:20			17:57			19:31	81	18:51 (T30)	20:03	27	19:43 (T27)	20:35	33	07:37 (T28)	21:02	
10	07:57			07:34			07:53		08:12 (T31)	07:01		07:20 (T28)	06:19		07:05 (T28)	05:58	
	17:21			17:59			19:32	81	18:50 (T30)	20:05	34	19:43 (T27)	20:37	31	07:36 (T28)	21:03	
11	07:57			07:32			07:51		08:11 (T31)	07:00		07:19 (T28)	06:18		07:06 (T28)	05:58	
	17:22			18:00			19:33	80	18:49 (T30)	20:06	40	19:45 (T27)	20:38	28	07:34 (T28)	21:04	
12	07:56			07:31			07:50		08:12 (T31)	06:58		07:17 (T28)	06:17		07:08 (T28)	05:58	
	17:23			18:01			19:34	77	18:48 (T30)	20:07	46	19:46 (T27)	20:39	25	07:33 (T28)	21:04	
13	07:56			07:30			07:48		08:13 (T31)	06:56		07:16 (T28)	06:16		07:10 (T28)	05:58	
	17:25			18:02			19:35	72	18:47 (T30)	20:08	51	19:47 (T27)	20:40	21	07:31 (T28)	21:05	
14	07:56			07:29			07:46		08:13 (T31)	06:55		07:14 (T28)	06:15		07:12 (T28)	05:58	
	17:26			18:04			19:36	69	18:45 (T30)	20:09	56	19:48 (T27)	20:41	16	07:28 (T28)	21:05	
15	07:55			07:27		17:23 (T30)	07:45		08:15 (T31)	06:53		07:12 (T28)	06:14		07:16 (T28)	05:58	
	17:27			18:05	12	17:35 (T30)	19:38	63	18:44 (T30)	20:10	60	19:48 (T27)	20:42	9	07:25 (T28)	21:06	
16	07:55			07:26		17:19 (T30)	07:43		08:16 (T31)	06:52		07:11 (T28)	06:13			05:58	
	17:28			18:06	20	17:39 (T30)	19:39	57	18:42 (T30)	20:11	65	19:50 (T27)	20:43			21:06	
17	07:55			07:25		17:16 (T30)	07:41		08:17 (T31)	06:50		07:09 (T28)	06:12			05:58	
	17:29			18:07	26	17:42 (T30)	19:40	48	18:39 (T30)	20:12	68	19:50 (T27)	20:44			21:06	
18	07:54			07:23		17:14 (T30)	07:40		08:21 (T31)	06:49		07:08 (T28)	06:11			05:58	
	17:30			18:09	30	17:44 (T30)	19:41	37	18:37 (T30)	20:13	72	19:52 (T27)	20:45			21:07	
19	07:53			07:22		17:13 (T30)	07:38		18:15 (T30)	06:47		07:06 (T28)	06:10			05:58	
	17:31			18:10	33	17:46 (T30)	19:42	19	18:34 (T30)	20:14	74	19:52 (T27)	20:46			21:07	
20	07:53			07:21		17:10 (T30)	07:36		18:20 (T30)	06:46		07:05 (T28)	06:09			05:58	
	17:33			18:11	37	17:47 (T30)	19:43	7	18:27 (T30)	20:15	78	19:54 (T27)	20:46			21:07	
21	07:52			07:19		17:09 (T30)	07:35			06:44		07:03 (T28)	06:08			05:59	
	17:34			18:12	40	17:49 (T30)	19:44			20:16	79	19:54 (T27)	20:47			21:08	
22	07:52			07:18		17:08 (T30)	07:33			06:43		07:02 (T28)	06:08			05:59	
	17:35			18:13	41	17:49 (T30)	19:45			20:17	83	19:56 (T27)	20:48			21:08	
23	07:51			07:16		17:07 (T30)	07:31			06:41		07:01 (T28)	06:07			05:59	
	17:36			18:15	44	17:51 (T30)	19:46			20:18	85	19:57 (T27)	20:49			21:08	
24	07:50			07:15		07:34 (T31)	07:30			06:40		06:59 (T28)	06:06			05:59	
	17:37			18:16	46	17:51 (T30)	19:47			20:20	85	19:56 (T27)	20:50			21:08	
25	07:50			07:13		07:33 (T31)	07:28			06:38		06:59 (T28)	06:05			06:00	
	17:39			18:17	54	17:52 (T30)	19:48			20:21	84	19:55 (T27)	20:51			21:08	
26	07:49			07:12		07:31 (T31)	07:26			06:37		06:58 (T28)	06:05			06:00	
	17:40			18:18	59	17:52 (T30)	19:50			20:22	84	19:54 (T27)	20:52			21:09	
27	07:48			07:10		07:30 (T31)	07:24			06:36		06:58 (T28)	06:04			06:00	
	17:41			18:19	63	17:53 (T30)	19:51			20:23	83	19:54 (T27)	20:53			21:09	
28	07:47			07:09		07:28 (T31)	07:23			06:34		06:59 (T28)	06:03			06:01	
	17:42			18:20	67	17:53 (T30)	19:52			20:24	80	19:53 (T27)	20:54			21:09	
29	07:46						07:21			06:33		06:58 (T28)	06:03			06:01	
	17:44						19:53			20:25	77	19:51 (T27)	20:55			21:09	
30	07:45						07:19			06:31		06:58 (T28)	06:02			06:01	
	17:45						19:54			20:26	76	19:51 (T27)	20:55			21:09	
31	07:44						07:18						06:02				
	17:46						19:55						20:56				
Potential sun hours	297			297			370			399			449			453	
Total, worst case		75			572			1306			1502			583			
Sun reduction		0.31			0.40			0.44			0.52			0.57			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.53			0.68			0.65			0.63			0.65			
Total reduction		0.16			0.27			0.28			0.32			0.37			
Total, real		12			155			371			487			215			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1136 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8645)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		07:18 (T28)	06:57		07:18 (T28)	07:27		07:51 (T31)	07:02		07:37			
	21:09			20:50	26	07:44 (T28)	20:07	40	19:44 (T27)	19:15	75	18:26 (T30)	17:28		17:04			
2	06:02			06:27		07:16 (T28)	06:58		07:19 (T28)	07:29		07:50 (T31)	07:03		07:38			
	21:08			20:49	30	07:46 (T28)	20:06	34	19:42 (T27)	19:13	78	18:27 (T30)	17:27		17:03			
3	06:03			06:28		07:15 (T28)	06:59		07:20 (T28)	07:30		07:49 (T31)	07:04		07:39			
	21:08			20:48	32	07:47 (T28)	20:04	27	19:41 (T27)	19:11	81	18:27 (T30)	17:25		17:03			
4	06:04			06:29		07:14 (T28)	07:00		07:21 (T28)	07:31		07:50 (T31)	07:06		07:40			
	21:08			20:47	34	07:48 (T28)	20:02	15	19:39 (T27)	19:10	81	18:27 (T30)	17:24		17:03			
5	06:04			06:30		07:13 (T28)	07:01			07:32		07:52 (T31)	07:07		07:41			
	21:08			20:46	36	07:49 (T28)	20:01			19:08	81	18:28 (T30)	17:23		17:03			
6	06:05			06:31		07:12 (T28)	07:02			07:33		07:53 (T31)	07:08		07:42		08:24 (T36)	
	21:08			20:45	38	07:50 (T28)	19:57			19:06	80	18:28 (T30)	17:22		17:03	7	08:31 (T36)	
7	06:05			06:32		07:11 (T28)	07:03			07:34		07:54 (T31)	07:09		07:43		08:23 (T36)	
	21:07			20:43	40	07:51 (T28)	19:56			19:05	80	18:28 (T30)	17:21		17:02	10	08:33 (T36)	
8	06:06			06:33		07:10 (T28)	07:04			07:35		07:55 (T31)	07:10		07:44		08:22 (T36)	
	21:07			20:42	53	19:51 (T27)	19:54			19:03	79	18:28 (T30)	17:20		17:02	13	08:35 (T36)	
9	06:07			06:34		07:09 (T28)	07:05			07:36		07:56 (T31)	07:12		07:45		08:21 (T36)	
	21:07			20:41	60	19:54 (T27)	19:52			19:01	78	18:28 (T30)	17:19		17:02	14	08:35 (T36)	
10	06:07			06:35		07:09 (T28)	07:06			07:37		07:57 (T31)	07:13		07:46		08:21 (T36)	
	21:06			20:40	65	19:56 (T27)	19:51			19:00	77	18:28 (T30)	17:18		17:02	15	08:36 (T36)	
11	06:08			06:36		07:08 (T28)	07:07			07:38		07:58 (T31)	07:14		07:47		08:21 (T36)	
	21:06			20:38	69	19:57 (T27)	19:49			18:58	74	18:27 (T30)	17:17		17:02	16	08:37 (T36)	
12	06:09			06:37		07:08 (T28)	07:08			07:39		07:59 (T31)	07:15		07:47		08:21 (T36)	
	21:06			20:37	73	19:59 (T27)	19:47			18:57	72	18:27 (T30)	17:16		17:03	17	08:38 (T36)	
13	06:09			06:38		07:07 (T28)	07:09			07:40		08:00 (T31)	07:16		07:48		08:21 (T36)	
	21:05			20:36	76	20:00 (T27)	19:45			18:55	68	18:26 (T30)	17:15		17:03	18	08:39 (T36)	
14	06:10			06:39		07:06 (T28)	07:10			07:41		08:02 (T31)	07:18		07:49		08:21 (T36)	
	21:05			20:34	77	19:59 (T27)	19:44			18:53	66	18:26 (T30)	17:14		17:03	18	08:39 (T36)	
15	06:11			06:40		07:05 (T28)	07:11			07:42		08:03 (T31)	07:19		07:50		08:21 (T36)	
	21:04			20:33	80	20:00 (T27)	19:42			18:52	61	18:25 (T30)	17:13		17:03	19	08:40 (T36)	
16	06:12			06:41		07:05 (T28)	07:12			07:44		08:04 (T31)	07:20		07:50		08:22 (T36)	
	21:04			20:32	82	20:01 (T27)	19:40			18:50	56	18:24 (T30)	17:12		17:03	19	08:41 (T36)	
17	06:13			06:42		07:05 (T28)	07:13			07:45		08:05 (T31)	07:21		07:51		08:22 (T36)	
	21:03			20:30	83	20:01 (T27)	19:39			18:49	51	18:23 (T30)	17:11		17:04	20	08:42 (T36)	
18	06:13			06:43		07:04 (T28)	07:14			07:46		17:37 (T30)	07:22		07:52		08:22 (T36)	
	21:02			20:29	85	20:01 (T27)	19:37			18:47	45	18:22 (T30)	17:11		17:04	20	08:42 (T36)	
19	06:14			06:44		07:05 (T28)	07:15			07:47		17:38 (T30)	07:24		07:52		08:23 (T36)	
	21:02			20:27	84	20:01 (T27)	19:35			18:46	43	18:21 (T30)	17:10		17:04	20	08:43 (T36)	
20	06:15			06:45		07:06 (T28)	07:16			07:48		17:40 (T30)	07:25		07:53		08:23 (T36)	
	21:01			20:26	85	20:02 (T27)	19:33			18:44	41	18:21 (T30)	17:09		17:05	20	08:43 (T36)	
21	06:16			06:46		07:07 (T28)	07:17			07:49		17:40 (T30)	07:26		07:53		08:24 (T36)	
	21:00			20:24	82	20:00 (T27)	19:32			18:43	39	18:19 (T30)	17:08		17:05	20	08:44 (T36)	
22	06:17			06:47		07:08 (T28)	07:18			07:50		17:41 (T30)	07:27		07:54		08:24 (T36)	
	20:59			20:23	80	19:59 (T27)	19:30			18:41	36	18:17 (T30)	17:08		17:06	20	08:44 (T36)	
23	06:18			06:48		07:09 (T28)	07:19			07:51		17:43 (T30)	07:28		07:54		08:25 (T36)	
	20:59			20:21	78	19:58 (T27)	19:28			18:40	32	18:15 (T30)	17:07		17:06	20	08:45 (T36)	
24	06:19			06:49		07:10 (T28)	07:20		18:00 (T30)	07:53		17:44 (T30)	07:29		07:55		08:25 (T36)	
	20:58			20:20	74	19:56 (T27)	19:27	16	18:16 (T30)	18:39	29	18:13 (T30)	17:07		17:07	20	08:45 (T36)	
25	06:20			06:50		07:11 (T28)	07:21		08:05 (T31)	07:54		17:47 (T30)	07:31		07:55		08:25 (T36)	
	20:57			20:18	71	19:55 (T27)	19:25	32	18:19 (T30)	18:37	25	18:12 (T30)	17:06		17:08	20	08:45 (T36)	
26	06:20			06:51		07:12 (T28)	07:22		08:01 (T31)	07:55		17:50 (T30)	07:32		07:56		08:26 (T36)	
	20:56			20:17	67	19:53 (T27)	19:23	44	18:21 (T30)	18:36	18	18:08 (T30)	17:05		17:08	20	08:46 (T36)	
27	06:21			06:52		07:13 (T28)	07:23		07:58 (T31)	07:56		17:55 (T30)	07:33		07:56		08:26 (T36)	
	20:55			20:15	64	19:52 (T27)	19:21	54	18:23 (T30)	18:34	7	18:02 (T30)	17:05		17:09	20	08:46 (T36)	
28	06:22			06:53		07:14 (T28)	07:24		07:56 (T31)	07:57			07:34		07:56		08:27 (T36)	
	20:54			20:14	59	19:50 (T27)	19:20	61	18:24 (T30)	18:33			17:05		17:09	19	08:46 (T36)	
29	06:23		07:25 (T28)	06:54		07:15 (T28)	07:25		07:54 (T31)	07:58			07:35		07:57		08:28 (T36)	
	20:53	12	07:37 (T28)	20:12	56	19:49 (T27)	19:18	67	18:25 (T30)	18:32			17:04		17:10	19	08:47 (T36)	
30	06:24		07:22 (T28)	06:55		07:16 (T28)	07:26		07:53 (T31)	08:00			07:36		07:57		08:29 (T36)	
	20:52	18	07:40 (T28)	20:10	51	19:47 (T27)	19:16	71	18:26 (T30)	18:30			17:04		17:11	18	08:47 (T36)	
31	06:25		07:20 (T28)	06:56		07:17 (T28)				08:01					07:57		08:30 (T36)	
	20:51	22	07:42 (T28)	20:09	45	19:45 (T27)				18:29					17:12	17	08:47 (T36)	
Potential sun hours	460			429			375			345			297		287			
Total, worst case		52			1935			461			1553					459		
Sun reduction		0.66			0.61			0.59			0.48					0.22		
Oper. time red.		1.00			1.00			1.00			1.00					1.00		
Wind dir. red.		0.66			0.63			0.64			0.66					0.53		
Total reduction		0.44			0.38			0.38			0.32					0.12		
Total, real		23			744			174			490					53		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1146 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8653)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April			May			June			July			August			September	October	November	December
1	07:57	07:43	07:07	07:16			06:30		19:18 (T23)	06:01		19:14 (T23)	06:02		19:22 (T23)	06:26		19:21 (T23)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56			20:27	43	20:01 (T23)	20:57	53	20:07 (T23)	21:09	48	20:10 (T23)	20:50	56	20:17 (T23)	20:07	19:15	17:28	17:03
2	07:57	07:42	07:06	07:14			06:29		19:16 (T23)	06:01		19:14 (T23)	06:02		19:22 (T23)	06:27		19:21 (T23)	06:58	07:28	07:03	07:38
	17:14	17:48	18:23	19:57			20:28	45	20:01 (T23)	20:58	52	20:06 (T23)	21:08	49	20:11 (T23)	20:49	56	20:17 (T23)	20:06	19:13	17:27	17:03
3	07:58	07:41	07:04	07:13			06:27		19:15 (T23)	06:00		19:15 (T23)	06:03		19:22 (T23)	06:28		19:22 (T23)	06:59	07:30	07:04	07:39
	17:14	17:50	18:24	19:58			20:29	47	20:02 (T23)	20:58	52	20:07 (T23)	21:08	49	20:11 (T23)	20:48	54	20:16 (T23)	20:04	19:11	17:25	17:03
4	07:58	07:40	07:02	07:11			06:26		19:15 (T23)	06:00		19:15 (T23)	06:03		19:22 (T23)	06:29		19:22 (T23)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59			20:30	48	20:03 (T23)	20:59	52	20:07 (T23)	21:08	50	20:12 (T23)	20:47	54	20:16 (T23)	20:02	19:10	17:24	17:03
5	07:58	07:39	07:01	07:09			06:25		19:14 (T23)	06:00		19:15 (T23)	06:04		19:23 (T23)	06:30		19:22 (T23)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00			20:31	50	20:04 (T23)	21:00	51	20:06 (T23)	21:08	50	20:13 (T23)	20:46	53	20:15 (T23)	20:01	19:08	17:23	17:03
6	07:58	07:38	06:59	07:08			06:24		19:13 (T23)	05:59		19:16 (T23)	06:05		19:22 (T23)	06:31		19:23 (T23)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00			20:32	52	20:05 (T23)	21:01	50	20:06 (T23)	21:08	50	20:12 (T23)	20:44	52	20:15 (T23)	19:57	19:06	17:22	17:02
7	07:57	07:37	06:58	07:06			06:22		19:13 (T23)	05:59		19:16 (T23)	06:05		19:22 (T23)	06:32		19:23 (T23)	07:03	07:34	07:09	07:43
	17:18	17:55	18:28	20:01			20:33	52	20:05 (T23)	21:01	51	20:07 (T23)	21:07	51	20:13 (T23)	20:43	51	20:14 (T23)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:04			06:21		19:11 (T23)	05:59		19:17 (T23)	06:06		19:22 (T23)	06:33		19:24 (T23)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02			20:34	54	20:05 (T23)	21:02	50	20:07 (T23)	21:07	51	20:13 (T23)	20:42	49	20:13 (T23)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03			06:20		19:11 (T23)	05:58		19:18 (T23)	06:06		19:22 (T23)	06:34		19:24 (T23)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03			20:35	54	20:05 (T23)	21:02	49	20:07 (T23)	21:07	52	20:14 (T23)	20:41	49	20:13 (T23)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01			06:19		19:11 (T23)	05:58		19:17 (T23)	06:07		19:22 (T23)	06:35		19:25 (T23)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:05			20:36	55	20:06 (T23)	21:03	49	20:06 (T23)	21:06	52	20:14 (T23)	20:40	47	20:12 (T23)	19:51	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00			06:18		19:11 (T23)	05:58		19:18 (T23)	06:08		19:21 (T23)	06:36		19:25 (T23)	07:07	07:38	07:14	07:47
	17:22	18:00	19:33	20:06			20:38	55	20:06 (T23)	21:04	48	20:06 (T23)	21:06	53	20:14 (T23)	20:38	45	20:10 (T23)	19:49	18:58	17:17	17:02
12	07:56	07:31	07:50	06:58			06:17		19:10 (T23)	05:58		19:18 (T23)	06:09		19:22 (T23)	06:37		19:26 (T23)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07			20:39	56	20:06 (T23)	21:04	48	20:06 (T23)	21:06	53	20:15 (T23)	20:37	42	20:08 (T23)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56			06:16		19:10 (T23)	05:58		19:19 (T23)	06:09		19:22 (T23)	06:38		19:27 (T23)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08			20:40	57	20:07 (T23)	21:05	47	20:06 (T23)	21:05	53	20:15 (T23)	20:36	40	20:07 (T23)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55			06:15		19:10 (T23)	05:58		19:19 (T23)	06:10		19:22 (T23)	06:39		19:28 (T23)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09			20:41	57	20:07 (T23)	21:05	47	20:06 (T23)	21:05	54	20:16 (T23)	20:34	38	20:06 (T23)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53			06:14		19:10 (T23)	05:58		19:19 (T23)	06:11		19:21 (T23)	06:40		19:30 (T23)	07:11	07:42	07:19	07:50
	17:27	18:05	19:37	20:10			20:42	57	20:07 (T23)	21:06	47	20:06 (T23)	21:04	55	20:16 (T23)	20:33	34	20:04 (T23)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52			06:13		19:10 (T23)	05:58		19:20 (T23)	06:12		19:21 (T23)	06:41		19:31 (T23)	07:12	07:44	07:20	07:50
	17:28	18:06	19:39	20:11			20:43	57	20:07 (T23)	21:06	47	20:07 (T23)	21:04	55	20:16 (T23)	20:31	31	20:02 (T23)	19:40	18:50	17:12	17:03
17	07:55	07:25	07:41	06:50			06:12		19:10 (T23)	05:58		19:20 (T23)	06:12		19:21 (T23)	06:42		19:34 (T23)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12			20:44	57	20:07 (T23)	21:06	47	20:07 (T23)	21:03	56	20:17 (T23)	20:30	25	19:59 (T23)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49			06:11		19:10 (T23)	05:58		19:20 (T23)	06:13		19:21 (T23)	06:43		19:37 (T23)	07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13			20:45	58	20:08 (T23)	21:07	47	20:07 (T23)	21:02	56	20:17 (T23)	20:29	19	19:56 (T23)	19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47			06:10		19:10 (T23)	05:58		19:21 (T23)	06:14		19:20 (T23)	06:44		19:42 (T23)	07:15	07:47	07:24	07:52
	17:31	18:10	19:42	20:14			20:46	58	20:08 (T23)	21:07	47	20:08 (T23)	21:02	56	20:16 (T23)	20:27	9	19:51 (T23)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46			06:09		19:10 (T23)	05:58		19:21 (T23)	06:15		19:20 (T23)	06:45			07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15			20:46	57	20:07 (T23)	21:07	47	20:08 (T23)	21:01	57	20:17 (T23)	20:26			19:33	18:44	17:09	17:05
21	07:52	07:19	07:35	06:44			06:08		19:10 (T23)	05:58		19:21 (T23)	06:16		19:21 (T23)	06:46			07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16			20:47	57	20:07 (T23)	21:08	47	20:08 (T23)	21:00	56	20:17 (T23)	20:24			19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43			06:07		19:11 (T23)	05:59		19:21 (T23)	06:17		19:21 (T23)	06:47			07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17			20:48	57	20:08 (T23)	21:08	47	20:08 (T23)	20:59	56	20:17 (T23)	20:23			19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41			06:07		19:11 (T23)	05:59		19:21 (T23)	06:18		19:21 (T23)	06:48			07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18			20:49	57	20:08 (T23)	21:08	47	20:08 (T23)	20:59	57	20:18 (T23)	20:21			19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40		19:34 (T23)	06:06		19:11 (T23)	05:59		19:22 (T23)	06:19		19:21 (T23)	06:49			07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:20	12	19:46 (T23)	20:50	56	20:07 (T23)	21:08	47	20:09 (T23)	20:58	57	20:18 (T23)	20:20			19:27	18:38	17:06	17:07
25	07:50	07:13	07:28	06:38		19:30 (T23)	06:05		19:11 (T23)	05:59		19:22 (T23)	06:19		19:21 (T23)	06:50			07:21	07:54	07:31	07:55
	17:39	18:17	19:48	20:21	21	19:51 (T23)	20:51	56	20:07 (T23)	21:08	47	20:09 (T23)	20:57	57	20:18 (T23)	20:18			19:25	18:37	17:06	17:07
26	07:49	07:12	07:26	06:37		19:26 (T23)	06:05		19:12 (T23)	06:00		19:22 (T23)	06:20		19:20 (T23)	06:51			07:22	07:55	07:32	07:56
	17:40	18:18	19:49	20:22	27	19:53 (T23)	20:52	55	20:07 (T23)	21:09	47	20:09 (T23)	20:56	57	20:17 (T23)	20:17			19:23	18:36	17:05	17:08
27	07:48	07:10	07:24	06:35		19:24 (T23)	06:04		19:12 (T23)	06:00		19:22 (T23)	06:21		19:20 (T23)	06:52			07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	32	19:56 (T23)	20:53	55	20:07 (T23)	21:09	47	20:09 (T23)	20:55	57	20:17 (T23)	20:15			19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34		19:23 (T23)	06:03		19:13 (T23)	06:00		19:22 (T23)	06:22		19:20 (T23)	06:53			07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24	35	19:58 (T23)	20:54	54	20:07 (T23)	21:09	47	20:09 (T23)	20:54	57	20:17 (T23)	20:14			19:20	18:33	17:04	17:09
29	07:46		07:21	06:33		19:20 (T23)	06:03		19:12 (T23)	06:01		19:22 (T23)	06:23		19:20 (T23)	06:54			07:25	07:58	07:35	07:57
	17:43		19:53	20:25	38	19:58 (T23)	20:55	55	20:07 (T23)	21:09	47	20:09 (T23)	20:53	57	20:17 (T23)	20:12			19:18	18:32	17:04	17:10
30	07:45		07:19	06:31		19:19 (T23)	06:02		19:13 (T23)	06:01		19:22 (T23)	06:24		19:21 (T23)	06:55			07:26	08:00	07:36	07:57
	17:45		19:54	20:26	41	20:00 (T23)	20:55	54	20:07 (T23)	21:09	48	20:10 (T23)	20:52	56	20:17 (T23)	20:10			19:16	18:30	17:04	17:11
31	07:44		07:18				06:02		19:13 (T23)				06:25		19:21 (T23)	06:56				08:01		07:57
	17:46		19:55				20:56	54	20:07 (T23)				20:51	56	20:17 (T23)	20:09				18:29		17:12
Potential sun hours	297	297	370	399			449			453			460			429			375	345	297	287
Total, worst case					206			1679			1452			1673			804					
Sun reduction					0.52			0.57			0.64			0.66			0.61					
Oper. time red.					1.00			1.00			1.00			1.00			1.00					
Wind dir. red.					0.57			0.57			0.57			0.57			0.57					
Total reduction					0.29			0.32			0.36			0.37			0.35					
Total, real					61			542			526			625			278					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1151 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8657)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March		April		May		June
1	07:57	07:43	07:07		07:16		07:41 (T49)	06:30	07:32 (T49)	06:02
	17:13	17:48	18:22		19:56	82	09:03 (T49)	20:27	80	08:52 (T49)	20:57
2	07:57	07:42	07:06		07:15		07:40 (T49)	06:29		07:33 (T49)	06:01
	17:14	17:49	18:23		19:57	83	09:03 (T49)	20:28	78	08:51 (T49)	20:58
3	07:57	07:41	07:04		07:13		07:39 (T49)	06:28		07:34 (T49)	06:01
	17:15	17:50	18:24		19:58	85	09:04 (T49)	20:29	77	08:51 (T49)	20:58
4	07:57	07:40	07:03		07:11		07:38 (T49)	06:27		07:33 (T49)	06:00
	17:16	17:51	18:25		19:59	86	09:04 (T49)	20:30	76	08:49 (T49)	20:59
5	07:57	07:39	07:01		07:10		07:38 (T49)	06:25		07:34 (T49)	06:00
	17:17	17:53	18:26		20:00	86	09:04 (T49)	20:31	74	08:48 (T49)	21:00
6	07:57	07:38	06:59		07:08		07:36 (T49)	06:24		07:35 (T49)	06:00
	17:18	17:54	18:28		20:00	88	09:04 (T49)	20:32	72	08:47 (T49)	21:00
7	07:57	07:37	06:58		07:06		07:35 (T49)	06:23		07:36 (T49)	05:59
	17:19	17:55	18:29		20:01	89	09:04 (T49)	20:33	70	08:46 (T49)	21:01
8	07:57	07:36	07:56		07:05		07:35 (T49)	06:22		07:37 (T49)	05:59
	17:20	17:56	19:30		20:02	90	09:05 (T49)	20:34	69	08:46 (T49)	21:02
9	07:57	07:35	07:55		07:03		07:34 (T49)	06:21		07:38 (T49)	05:59
	17:21	17:58	19:31		20:03	90	09:04 (T49)	20:35	67	08:45 (T49)	21:02
10	07:57	07:34	07:53		07:01		07:33 (T49)	06:19		07:39 (T49)	05:59
	17:22	17:59	19:32		20:05	91	09:04 (T49)	20:36	65	08:44 (T49)	21:03
11	07:57	07:32	07:51		07:00		07:33 (T49)	06:18		07:39 (T49)	05:59
	17:23	18:00	19:33		20:06	91	09:04 (T49)	20:37	63	08:42 (T49)	21:03
12	07:56	07:31	07:50		06:58		07:32 (T49)	06:17		07:40 (T49)	05:59
	17:24	18:01	19:34		20:07	91	09:03 (T49)	20:38	61	08:41 (T49)	21:04
13	07:56	07:30	07:48		06:57		07:32 (T49)	06:16		07:41 (T49)	05:58
	17:25	18:03	19:35		20:08	92	09:04 (T49)	20:39	59	08:40 (T49)	21:04
14	07:56	07:29	07:46		06:55		07:31 (T49)	06:15		07:42 (T49)	05:58
	17:26	18:04	19:37		20:09	92	09:03 (T49)	20:40	57	08:39 (T49)	21:05
15	07:55	07:27	07:45		06:54		07:32 (T49)	06:14		07:44 (T49)	05:58
	17:27	18:05	19:38		20:10	91	09:03 (T49)	20:41	54	08:38 (T49)	21:05
16	07:55	07:26	07:43		06:52		07:31 (T49)	06:13		07:45 (T49)	05:58
	17:28	18:06	19:39		20:11	91	09:02 (T49)	20:42	51	08:36 (T49)	21:06
17	07:54	07:25	07:41	08:19 (T49)	06:50		07:31 (T49)	06:12		07:46 (T49)	05:58
	17:29	18:08	19:40	15	08:34 (T49)	20:12	91	09:02 (T49)	20:43	49	08:35 (T49)	21:06
18	07:54	07:23	07:40		08:13 (T49)	06:49		07:30 (T49)	06:11		07:47 (T49)	05:58
	17:31	18:09	19:41	28	08:41 (T49)	20:13	91	09:01 (T49)	20:44	46	08:33 (T49)	21:07
19	07:53	07:22	07:38		08:08 (T49)	06:47		07:31 (T49)	06:10		07:48 (T49)	05:59
	17:32	18:10	19:42	37	08:45 (T49)	20:14	90	09:01 (T49)	20:45	44	08:32 (T49)	21:07
20	07:53	07:20	07:36		08:04 (T49)	06:46		07:30 (T49)	06:10		07:49 (T49)	05:59
	17:33	18:11	19:43	43	08:47 (T49)	20:15	90	09:00 (T49)	20:46	41	08:30 (T49)	21:07
21	07:52	07:19	07:35		08:01 (T49)	06:44		07:31 (T49)	06:09		07:52 (T49)	05:59
	17:34	18:12	19:44	50	08:51 (T49)	20:16	89	09:00 (T49)	20:47	37	08:29 (T49)	21:07
22	07:52	07:18	07:33		07:58 (T49)	06:43		07:30 (T49)	06:08		07:53 (T49)	05:59
	17:35	18:14	19:45	54	08:52 (T49)	20:17	89	08:59 (T49)	20:48	34	08:27 (T49)	21:08
23	07:51	07:16	07:31		07:56 (T49)	06:41		07:30 (T49)	06:07		07:55 (T49)	05:59
	17:36	18:15	19:46	58	08:54 (T49)	20:18	89	08:59 (T49)	20:49	30	08:25 (T49)	21:08
24	07:50	07:15	07:30		07:54 (T49)	06:40		07:30 (T49)	06:06		07:58 (T49)	06:00
	17:38	18:16	19:47	62	08:56 (T49)	20:19	87	08:57 (T49)	20:50	26	08:24 (T49)	21:08
25	07:49	07:13	07:28		07:52 (T49)	06:39		07:30 (T49)	06:06		08:00 (T49)	06:00
	17:39	18:17	19:48	65	08:57 (T49)	20:21	87	08:57 (T49)	20:51	21	08:21 (T49)	21:08
26	07:49	07:12	07:26		07:50 (T49)	06:37		07:31 (T49)	06:05		08:03 (T49)	06:00
	17:40	18:18	19:50	68	08:58 (T49)	20:22	86	08:57 (T49)	20:52	14	08:17 (T49)	21:08
27	07:48	07:10	07:25		07:49 (T49)	06:36		07:31 (T49)	06:04			06:01
	17:41	18:19	19:51	71	09:00 (T49)	20:23	84	08:55 (T49)	20:53			21:08
28	07:47	07:09	07:23		07:47 (T49)	06:34		07:31 (T49)	06:04			06:01
	17:43	18:21	19:52	73	09:00 (T49)	20:24	84	08:55 (T49)	20:54			21:08
29	07:46		07:21		07:45 (T49)	06:33		07:32 (T49)	06:03			06:01
	17:44		19:53	76	09:01 (T49)	20:25	82	08:54 (T49)	20:54			21:08
30	07:45		07:20		07:44 (T49)	06:32		07:32 (T49)	06:03			06:02
	17:45		19:54	78	09:02 (T49)	20:26	81	08:53 (T49)	20:55			21:08
31	07:44		07:18		07:43 (T49)				06:02			
	17:46		19:55	79	09:02 (T49)				20:56			
Potential sun hours	297	297	370			399			448			452
Total, worst case				857			2638			1415		
Sun reduction				0.44			0.52			0.57		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.63			0.63			0.63		
Total reduction				0.28			0.33			0.36		
Total, real				237			862			507		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1151 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8657)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02		06:26	07:50 (T49)	06:57	07:32 (T49)	07:28	07:02	07:37
	21:08		20:50 61	08:51 (T49)	20:07 91	09:03 (T49)	19:15	17:28	17:04
2	06:03		06:27	07:49 (T49)	06:58	07:32 (T49)	07:29	07:03	07:38
	21:08		20:49 64	08:53 (T49)	20:06 91	09:03 (T49)	19:13	17:27	17:04
3	06:03		06:28	07:48 (T49)	06:59	07:32 (T49)	07:30	07:04	07:39
	21:08		20:48 66	08:54 (T49)	20:04 90	09:02 (T49)	19:11	17:26	17:03
4	06:04		06:29	07:47 (T49)	07:00	07:32 (T49)	07:31	07:06	07:40
	21:08		20:47 68	08:55 (T49)	20:02 90	09:02 (T49)	19:10	17:24	17:03
5	06:04		06:30	07:46 (T49)	07:01	07:32 (T49)	07:32	07:07	07:41
	21:08		20:46 70	08:56 (T49)	20:01 89	09:01 (T49)	19:08	17:23	17:03
6	06:05		06:31	07:45 (T49)	07:02	07:32 (T49)	07:33	07:08	07:42
	21:08		20:44 71	08:56 (T49)	19:57 88	09:00 (T49)	19:06	17:22	17:03
7	06:06		06:32	07:44 (T49)	07:03	07:33 (T49)	07:34	07:09	07:43
	21:07		20:43 73	08:57 (T49)	19:56 87	09:00 (T49)	19:05	17:21	17:03
8	06:06		06:33	07:44 (T49)	07:04	07:33 (T49)	07:35	07:10	07:44
	21:07		20:42 74	08:58 (T49)	19:54 86	08:59 (T49)	19:03	17:20	17:03
9	06:07		06:34	07:43 (T49)	07:05	07:33 (T49)	07:36	07:12	07:45
	21:07		20:41 76	08:59 (T49)	19:52 85	08:58 (T49)	19:02	17:19	17:03
10	06:08		06:35	07:42 (T49)	07:06	07:34 (T49)	07:37	07:13	07:46
	21:06		20:39 78	09:00 (T49)	19:51 83	08:57 (T49)	19:00	17:18	17:03
11	06:08		06:36	07:41 (T49)	07:07	07:34 (T49)	07:38	07:14	07:46
	21:06		20:38 79	09:00 (T49)	19:49 82	08:56 (T49)	18:58	17:17	17:03
12	06:09		06:37	07:41 (T49)	07:08	07:34 (T49)	07:39	07:15	07:47
	21:05		20:37 80	09:01 (T49)	19:47 80	08:54 (T49)	18:57	17:16	17:03
13	06:10		06:38	07:40 (T49)	07:09	07:34 (T49)	07:40	07:16	07:48
	21:05		20:36 82	09:02 (T49)	19:45 79	08:53 (T49)	18:55	17:15	17:03
14	06:11		06:39	07:39 (T49)	07:10	07:35 (T49)	07:41	07:18	07:49
	21:04		20:34 83	09:02 (T49)	19:44 76	08:51 (T49)	18:54	17:14	17:03
15	06:11		06:40	07:39 (T49)	07:11	07:36 (T49)	07:42	07:19	07:49
	21:04		20:33 84	09:03 (T49)	19:42 74	08:50 (T49)	18:52	17:13	17:04
16	06:12		06:41	07:38 (T49)	07:12	07:37 (T49)	07:44	07:20	07:50
	21:03		20:31 85	09:03 (T49)	19:40 71	08:48 (T49)	18:51	17:12	17:04
17	06:13	08:15 (T49)	06:42	07:38 (T49)	07:13	07:38 (T49)	07:45	07:21	07:51
	21:03 9	08:24 (T49)	20:30 85	09:03 (T49)	19:39 69	08:47 (T49)	18:49	17:12	17:04
18	06:14	08:11 (T49)	06:43	07:37 (T49)	07:14	07:39 (T49)	07:46	07:22	07:52
	21:02 18	08:29 (T49)	20:29 87	09:04 (T49)	19:37 66	08:45 (T49)	18:47	17:11	17:04
19	06:15	08:08 (T49)	06:44	07:37 (T49)	07:15	07:40 (T49)	07:47	07:23	07:52
	21:01 24	08:32 (T49)	20:27 87	09:04 (T49)	19:35 63	08:43 (T49)	18:46	17:10	17:05
20	06:15	08:06 (T49)	06:45	07:35 (T49)	07:16	07:42 (T49)	07:48	07:25	07:53
	21:01 28	08:34 (T49)	20:26 88	09:03 (T49)	19:34 59	08:41 (T49)	18:45	17:09	17:05
21	06:16	08:05 (T49)	06:46	07:35 (T49)	07:17	07:43 (T49)	07:49	07:26	07:53
	21:00 32	08:37 (T49)	20:24 89	09:04 (T49)	19:32 55	08:38 (T49)	18:43	17:09	17:06
22	06:17	08:02 (T49)	06:47	07:34 (T49)	07:18	07:45 (T49)	07:50	07:27	07:54
	20:59 36	08:38 (T49)	20:23 90	09:04 (T49)	19:30 51	08:36 (T49)	18:42	17:08	17:06
23	06:18	08:01 (T49)	06:48	07:34 (T49)	07:19	07:47 (T49)	07:51	07:28	07:54
	20:58 39	08:40 (T49)	20:21 90	09:04 (T49)	19:28 46	08:33 (T49)	18:40	17:07	17:07
24	06:19	07:59 (T49)	06:49	07:34 (T49)	07:20	07:50 (T49)	07:53	07:29	07:55
	20:58 42	08:41 (T49)	20:20 90	09:04 (T49)	19:27 39	08:29 (T49)	18:39	17:07	17:07
25	06:20	07:58 (T49)	06:50	07:33 (T49)	07:21	07:53 (T49)	07:54	07:30	07:55
	20:57 45	08:43 (T49)	20:18 91	09:04 (T49)	19:25 32	08:25 (T49)	18:37	17:06	17:08
26	06:21	07:57 (T49)	06:51	07:33 (T49)	07:22	07:58 (T49)	07:55	07:31	07:56
	20:56 48	08:45 (T49)	20:17 91	09:04 (T49)	19:23 21	08:19 (T49)	18:36	17:06	17:09
27	06:22	07:56 (T49)	06:52	07:33 (T49)	07:23		07:56	07:33	07:56
	20:55 50	08:46 (T49)	20:15 91	09:04 (T49)	19:22		18:35	17:05	17:09
28	06:23	07:55 (T49)	06:53	07:33 (T49)	07:24		07:57	07:34	07:56
	20:54 52	08:47 (T49)	20:14 91	09:04 (T49)	19:20		18:33	17:05	17:10
29	06:24	07:54 (T49)	06:54	07:32 (T49)	07:25		07:58	07:35	07:56
	20:53 55	08:49 (T49)	20:12 92	09:04 (T49)	19:18		18:32	17:05	17:11
30	06:25	07:53 (T49)	06:55	07:32 (T49)	07:27		08:00	07:36	07:57
	20:52 57	08:50 (T49)	20:10 92	09:04 (T49)	19:17		18:31	17:04	17:11
31	06:26	07:51 (T49)	06:56	07:32 (T49)			08:01		07:57
	20:51 59	08:50 (T49)	20:09 91	09:03 (T49)			18:29		17:12
Potential sun hours	459		428		375		345	297	287
Total, worst case	594		2539		1843				
Sun reduction	0.66		0.61		0.59				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	0.63		0.63		0.63				
Total reduction	0.41		0.38		0.37				
Total, real	246		974		684				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1158 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8662)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16		06:30		19:02 (T36)	06:01	19:09 (T36)	06:02	19:19 (T36)	06:26	19:11 (T36)	06:57	07:27	07:02	07:37
	17:13	17:47	18:22	19:56		20:27	62	20:04 (T36)	20:57	51	20:00 (T36)	21:08	42	20:01 (T36)	20:50	64	20:15 (T36)	20:07	19:15	17:28	17:03
2	07:57	07:42	07:06	07:14		06:29		19:01 (T36)	06:01	19:09 (T36)	06:02	19:19 (T36)	06:27	19:11 (T36)	06:58	07:28	07:03	07:38
	17:14	17:49	18:23	19:57		20:28	62	20:03 (T36)	20:58	50	19:59 (T36)	21:08	43	20:02 (T36)	20:49	64	20:15 (T36)	20:05	19:13	17:27	17:03
3	07:57	07:41	07:04	07:13		06:27		19:01 (T36)	06:00	19:10 (T36)	06:03	19:18 (T36)	06:28	19:10 (T36)	06:59	07:29	07:04	07:39
	17:14	17:50	18:24	19:58		20:29	63	20:04 (T36)	20:58	49	19:59 (T36)	21:08	44	20:02 (T36)	20:48	65	20:15 (T36)	20:04	19:11	17:25	17:03
4	07:57	07:40	07:02	07:11		06:26		19:01 (T36)	06:00	19:11 (T36)	06:03	19:19 (T36)	06:29	19:10 (T36)	07:00	07:31	07:06	07:40
	17:15	17:51	18:25	19:59		20:30	63	20:04 (T36)	20:59	48	19:59 (T36)	21:08	44	20:03 (T36)	20:47	65	20:15 (T36)	20:02	19:10	17:24	17:03
5	07:57	07:39	07:01	07:09		06:25		19:01 (T36)	06:00	19:11 (T36)	06:04	19:19 (T36)	06:30	19:10 (T36)	07:01	07:32	07:07	07:41
	17:16	17:52	18:26	20:00		20:31	64	20:05 (T36)	21:00	47	19:58 (T36)	21:08	45	20:04 (T36)	20:46	65	20:15 (T36)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08		06:24		19:01 (T36)	05:59	19:12 (T36)	06:05	19:18 (T36)	06:31	19:10 (T36)	07:02	07:33	07:08	07:42
	17:17	17:54	18:27	20:00		20:32	64	20:05 (T36)	21:00	46	19:58 (T36)	21:08	46	20:04 (T36)	20:44	65	20:15 (T36)	19:57	19:06	17:22	17:02
7	07:57	07:37	06:58	07:06		06:23		19:01 (T36)	05:59	19:12 (T36)	06:05	19:18 (T36)	06:32	19:10 (T36)	07:03	07:34	07:09	07:43
	17:18	17:55	18:28	20:01		20:33	64	20:05 (T36)	21:01	46	19:58 (T36)	21:07	47	20:05 (T36)	20:43	64	20:14 (T36)	19:56	19:05	17:21	17:02
8	07:57	07:36	07:56	07:04		06:21		19:00 (T36)	05:59	19:13 (T36)	06:06	19:17 (T36)	06:33	19:11 (T36)	07:04	07:35	07:10	07:44
	17:19	17:56	19:30	20:02		20:34	64	20:04 (T36)	21:02	45	19:58 (T36)	21:07	48	20:05 (T36)	20:42	63	20:14 (T36)	19:54	19:03	17:20	17:02
9	07:57	07:35	07:54	07:03		06:20		19:00 (T36)	05:59	19:14 (T36)	06:07	19:17 (T36)	06:34	19:11 (T36)	07:05	07:36	07:12	07:45
	17:20	17:57	19:31	20:03		20:35	64	20:04 (T36)	21:02	44	19:58 (T36)	21:07	49	20:06 (T36)	20:41	63	20:14 (T36)	19:52	19:01	17:19	17:02
10	07:57	07:34	07:53	07:01		06:19		19:00 (T36)	05:58	19:14 (T36)	06:07	19:17 (T36)	06:35	19:11 (T36)	07:06	07:37	07:13	07:46
	17:21	17:59	19:32	20:04		20:36	64	20:04 (T36)	21:03	43	19:57 (T36)	21:06	50	20:07 (T36)	20:39	62	20:13 (T36)	19:50	19:00	17:18	17:02
11	07:57	07:32	07:51	07:00		06:18		19:00 (T36)	05:58	19:14 (T36)	06:08	19:16 (T36)	06:36	19:11 (T36)	07:07	07:38	07:14	07:46
	17:22	18:00	19:33	20:06		20:37	64	20:04 (T36)	21:04	43	19:57 (T36)	21:06	51	20:07 (T36)	20:38	62	20:13 (T36)	19:49	18:58	17:17	17:02
12	07:56	07:31	07:49	06:58		06:17		19:00 (T36)	05:58	19:15 (T36)	06:09	19:16 (T36)	06:37	19:10 (T36)	07:08	07:39	07:15	07:47
	17:23	18:01	19:34	20:07		20:38	64	20:04 (T36)	21:04	42	19:57 (T36)	21:06	52	20:08 (T36)	20:37	61	20:11 (T36)	19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:56		06:16		19:00 (T36)	05:58	19:15 (T36)	06:09	19:16 (T36)	06:38	19:11 (T36)	07:09	07:40	07:16	07:48
	17:24	18:02	19:35	20:08		20:39	64	20:04 (T36)	21:05	42	19:57 (T36)	21:05	53	20:09 (T36)	20:36	60	20:11 (T36)	19:45	18:55	17:15	17:03
14	07:56	07:29	07:46	06:55		06:15		19:00 (T36)	05:58	19:16 (T36)	06:10	19:16 (T36)	06:39	19:11 (T36)	07:10	07:41	07:18	07:49
	17:26	18:04	19:36	20:09		20:40	64	20:04 (T36)	21:05	41	19:57 (T36)	21:05	53	20:09 (T36)	20:34	59	20:10 (T36)	19:44	18:53	17:14	17:03
15	07:55	07:27	07:45	06:53	19:30 (T36)	06:14		19:01 (T36)	05:58	19:16 (T36)	06:11	19:15 (T36)	06:40	19:11 (T36)	07:11	07:42	07:19	07:50
	17:27	18:05	19:37	20:10	11 19:41 (T36)	20:41	63	20:04 (T36)	21:05	41	19:57 (T36)	21:04	54	20:09 (T36)	20:33	58	20:09 (T36)	19:42	18:52	17:13	17:03
16	07:55	07:26	07:43	06:52	19:25 (T36)	06:13		19:01 (T36)	05:58	19:17 (T36)	06:12	19:15 (T36)	06:41	19:12 (T36)	07:12	07:43	07:20	07:50
	17:28	18:06	19:39	20:11	22 19:47 (T36)	20:42	62	20:03 (T36)	21:06	40	19:57 (T36)	21:03	55	20:10 (T36)	20:31	55	20:07 (T36)	19:40	18:50	17:12	17:03
17	07:54	07:25	07:41	06:50	19:21 (T36)	06:12		19:02 (T36)	05:58	19:17 (T36)	06:13	19:15 (T36)	06:42	19:12 (T36)	07:13	07:45	07:21	07:51
	17:29	18:07	19:40	20:12	29 19:50 (T36)	20:43	62	20:04 (T36)	21:06	40	19:57 (T36)	21:03	56	20:11 (T36)	20:30	54	20:06 (T36)	19:39	18:49	17:11	17:04
18	07:54	07:23	07:40	06:49	19:19 (T36)	06:11		19:02 (T36)	05:58	19:17 (T36)	06:13	19:15 (T36)	06:43	19:13 (T36)	07:14	07:46	07:22	07:52
	17:30	18:08	19:41	20:13	33 19:52 (T36)	20:44	62	20:04 (T36)	21:07	40	19:57 (T36)	21:02	56	20:11 (T36)	20:29	52	20:05 (T36)	19:37	18:47	17:10	17:04
19	07:53	07:22	07:38	06:47	19:16 (T36)	06:10		19:02 (T36)	05:58	19:18 (T36)	06:14	19:15 (T36)	06:44	19:14 (T36)	07:15	07:47	07:23	07:52
	17:31	18:10	19:42	20:14	36 19:52 (T36)	20:45	61	20:03 (T36)	21:07	40	19:58 (T36)	21:02	57	20:12 (T36)	20:27	49	20:03 (T36)	19:35	18:46	17:10	17:04
20	07:53	07:20	07:36	06:46	19:14 (T36)	06:09		19:02 (T36)	05:58	19:19 (T36)	06:15	19:14 (T36)	06:45	19:15 (T36)	07:16	07:48	07:25	07:53
	17:32	18:11	19:43	20:15	40 19:54 (T36)	20:46	61	20:03 (T36)	21:07	39	19:58 (T36)	21:01	58	20:12 (T36)	20:26	47	20:02 (T36)	19:33	18:44	17:09	17:05
21	07:52	07:19	07:34	06:44	19:12 (T36)	06:08		19:03 (T36)	05:58	19:19 (T36)	06:16	19:13 (T36)	06:46	19:16 (T36)	07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	42 19:54 (T36)	20:47	59	20:02 (T36)	21:08	39	19:58 (T36)	21:00	59	20:12 (T36)	20:24	44	20:00 (T36)	19:32	18:43	17:08	17:05
22	07:52	07:18	07:33	06:43	19:11 (T36)	06:08		19:04 (T36)	05:59	19:19 (T36)	06:17	19:13 (T36)	06:47	19:17 (T36)	07:18	07:50	07:27	07:54
	17:35	18:13	19:45	20:17	45 19:56 (T36)	20:48	59	20:03 (T36)	21:08	39	19:58 (T36)	20:59	60	20:13 (T36)	20:23	42	19:59 (T36)	19:30	18:41	17:08	17:06
23	07:51	07:16	07:31	06:41	19:09 (T36)	06:07		19:04 (T36)	05:59	19:19 (T36)	06:18	19:13 (T36)	06:48	19:18 (T36)	07:19	07:51	07:28	07:54
	17:36	18:14	19:46	20:18	47 19:56 (T36)	20:49	58	20:02 (T36)	21:08	39	19:58 (T36)	20:59	60	20:13 (T36)	20:21	39	19:57 (T36)	19:28	18:40	17:07	17:06
24	07:50	07:15	07:29	06:40	19:08 (T36)	06:06		19:04 (T36)	05:59	19:19 (T36)	06:19	19:13 (T36)	06:49	19:20 (T36)	07:20	07:53	07:29	07:55
	17:37	18:16	19:47	20:19	50 19:58 (T36)	20:50	58	20:02 (T36)	21:08	40	19:59 (T36)	20:58	61	20:14 (T36)	20:20	36	19:56 (T36)	19:27	18:38	17:06	17:07
25	07:49	07:13	07:28	06:38	19:07 (T36)	06:05		19:05 (T36)	05:59	19:19 (T36)	06:19	19:13 (T36)	06:50	19:22 (T36)	07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:21	52 19:59 (T36)	20:51	57	20:02 (T36)	21:08	40	19:59 (T36)	20:57	61	20:14 (T36)	20:18	33	19:55 (T36)	19:25	18:37	17:06	17:07
26	07:49	07:12	07:26	06:37	19:05 (T36)	06:05		19:05 (T36)	06:00	19:19 (T36)	06:20	19:12 (T36)	06:51	19:24 (T36)	07:22	07:55	07:32	07:56
	17:40	18:18	19:49	20:22	54 19:59 (T36)	20:52	56	20:01 (T36)	21:08	40	19:59 (T36)	20:56	62	20:14 (T36)	20:17	28	19:52 (T36)	19:23	18:36	17:05	17:08
27	07:48	07:10	07:24	06:35	19:05 (T36)	06:04		19:06 (T36)	06:00	19:20 (T36)	06:21	19:11 (T36)	06:52	19:27 (T36)	07:23	07:56	07:33	07:56
	17:41	18:19	19:51	20:23	56 20:01 (T36)	20:53	55	20:01 (T36)	21:08	40	20:00 (T36)	20:55	63	20:14 (T36)	20:15	21	19:48 (T36)	19:21	18:34	17:05	17:09
28	07:47	07:09	07:23	06:34	19:04 (T36)	06:03		19:07 (T36)	06:01	19:19 (T36)	06:22	19:11 (T36)	06:53	19:33 (T36)	07:24	07:57	07:34	07:56
	17:42	18:20	19:52	20:24	58 20:02 (T36)	20:54	54	20:01 (T36)	21:09	41	20:00 (T36)	20:54	63	20:14 (T36)	20:13	9	19:42 (T36)	19:20	18:33	17:05	17:09
29	07:46		07:21	06:33	19:03 (T36)	06:03		19:07 (T36)	06:01	19:20 (T36)	06:23	19:11 (T36)	06:54		07:25	07:58	07:35	07:57
	17:44		19:53	20:25	59 20:02 (T36)	20:54	53	20:00 (T36)	21:09	41	20:01 (T36)	20:53	63	20:14 (T36)	20:12			19:18	18:32	17:04	17:10
30	07:45		07:19	06:31	19:03 (T36)	06:02		19:08 (T36)	06:01	19:19 (T36)	06:24	19:11 (T36)	06:55		07:26	08:00	07:36	07:57
	17:45		19:54	20:26	60 20:03 (T36)	20:55	52	20:00 (T36)	21:09	42	20:01 (T36)	20:52	63	20:14 (T36)	20:10			19:16	18:30	17:04	17:11
31	07:44		07:18			06:02		19:08 (T36)				06:25		19:11 (T36)	06:56				08:01		07:57
	17:46		19:55			20:56	52	20:00 (T36)				20:51	64	20:15 (T36)	20:09				18:29		17:12
Potential sun hours	297	297	370	399		449			453		460		429		375	345	297	287
Total, worst case					694		1874			1278		1682		1449				
Sun reduction					0.52		0.57			0.64		0.66		0.61				
Oper. time red.					1.00		1.00			1.00		1.00		1.00				
Wind dir. red.					0.57		0.57			0.57		0.57		0.57				
Total reduction					0.30		0.33			0.37		0.38		0.35				
Total, real					206		610			467		634		505				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1174 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8675)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March			April			May			June		
1	07:57		07:43		07:07			07:16		18:39 (T59)	06:31		18:47 (T59)	06:02		19:56 (T78)
	17:13		17:48		18:22			19:56	50	19:29 (T59)	20:27	22	19:09 (T59)	20:57	36	20:32 (T78)
2	07:57		07:42		07:06			07:15		18:38 (T59)	06:29		18:50 (T59)	06:01		19:56 (T78)
	17:14		17:49		18:23			19:57	52	19:30 (T59)	20:28	16	19:06 (T59)	20:58	37	20:33 (T78)
3	07:57		07:41		07:04			07:13		18:37 (T59)	06:28			06:01		19:56 (T78)
	17:15		17:50		18:24			19:58	53	19:30 (T59)	20:29			20:58	38	20:34 (T78)
4	07:57		07:40		07:03			07:11		18:36 (T59)	06:27			06:01		19:55 (T78)
	17:16		17:52		18:25			19:59	54	19:30 (T59)	20:30			20:59	39	20:34 (T78)
5	07:57		07:39		07:01			07:10		18:36 (T59)	06:25			06:00		19:56 (T78)
	17:17		17:53		18:27			20:00	55	19:31 (T59)	20:31			21:00	39	20:35 (T78)
6	07:57		07:38		06:59			07:08		18:34 (T59)	06:24			06:00		19:56 (T78)
	17:18		17:54		18:28			20:00	57	19:31 (T59)	20:32			21:00	40	20:36 (T78)
7	07:57		07:37		06:58			07:06		18:33 (T59)	06:23			06:00		19:56 (T78)
	17:19		17:55		18:29			20:01	58	19:31 (T59)	20:33			21:01	41	20:37 (T78)
8	07:57		07:36		07:56			07:05		18:34 (T59)	06:22			05:59		19:55 (T78)
	17:20		17:57		19:30			20:02	57	19:31 (T59)	20:34			21:02	42	20:37 (T78)
9	07:57		07:35		07:55			07:03		18:33 (T59)	06:21			05:59		19:55 (T78)
	17:21		17:58		19:31			20:04	58	19:31 (T59)	20:35			21:02	42	20:37 (T78)
10	07:57		07:34		07:53			07:02		18:33 (T59)	06:20			05:59		19:55 (T78)
	17:22		17:59		19:32			20:05	58	19:31 (T59)	20:36			21:03	43	20:38 (T78)
11	07:57		07:32		07:51			07:00		18:32 (T59)	06:18			05:59		19:55 (T78)
	17:23		18:00		19:33			20:06	59	19:31 (T59)	20:37			21:03	44	20:39 (T78)
12	07:56		07:31		07:50			06:58		18:32 (T59)	06:17			05:59		19:55 (T78)
	17:24		18:02		19:34			20:07	58	19:30 (T59)	20:38			21:04	44	20:39 (T78)
13	07:56		07:30		07:48			06:57		18:32 (T59)	06:16			05:59		19:55 (T78)
	17:25		18:03		19:36			20:08	58	19:30 (T59)	20:39			21:04	45	20:40 (T78)
14	07:56		07:29		07:46			06:55		18:32 (T59)	06:15			05:59		19:56 (T78)
	17:26		18:04		19:37			20:09	57	19:29 (T59)	20:41			21:05	44	20:40 (T78)
15	07:55		07:27		07:45			06:54		18:32 (T59)	06:14			05:59		19:56 (T78)
	17:27		18:05		19:38			20:10	58	19:30 (T59)	20:42			21:05	44	20:40 (T78)
16	07:55		07:26		07:43			06:52		18:32 (T59)	06:13			05:59		19:56 (T78)
	17:28		18:06		19:39			20:11	57	19:29 (T59)	20:42			21:06	45	20:41 (T78)
17	07:54		07:25		07:41			06:51		18:33 (T59)	06:12			05:59		19:56 (T78)
	17:30		18:08		19:40			20:12	55	19:28 (T59)	20:43			21:06	45	20:41 (T78)
18	07:54		07:23		07:40			06:49		18:32 (T59)	06:12			05:59		19:56 (T78)
	17:31		18:09		19:41			20:13	55	19:27 (T59)	20:44			21:07	45	20:41 (T78)
19	07:53		07:22		07:38			06:48		18:33 (T59)	06:11			05:59		19:56 (T78)
	17:32		18:10		19:42			20:14	54	19:27 (T59)	20:45			21:07	45	20:41 (T78)
20	07:53		07:21		07:36			06:46		18:33 (T59)	06:10		20:12 (T78)	05:59		19:56 (T78)
	17:33		18:11		19:43			20:15	53	19:26 (T59)	20:46	9	20:21 (T78)	21:07	46	20:42 (T78)
21	07:52		07:19		07:35			06:45		18:34 (T59)	06:09		20:08 (T78)	05:59		19:57 (T78)
	17:34		18:13		19:44			20:16	51	19:25 (T59)	20:47	16	20:24 (T78)	21:07	46	20:43 (T78)
22	07:52		07:18		07:33			06:43		18:34 (T59)	06:08		20:06 (T78)	05:59		19:57 (T78)
	17:35		18:14		19:45			20:17	50	19:24 (T59)	20:48	18	20:24 (T78)	21:08	46	20:43 (T78)
23	07:51		07:16		07:31			06:42		18:35 (T59)	06:07		20:04 (T78)	06:00		19:57 (T78)
	17:37		18:15		19:46			20:18	48	19:23 (T59)	20:49	21	20:25 (T78)	21:08	45	20:42 (T78)
24	07:50		07:15		07:30		18:59 (T59)	06:40		18:37 (T59)	06:07		20:03 (T78)	06:00		19:57 (T78)
	17:38		18:16		19:48	17	19:16 (T59)	20:20	45	19:22 (T59)	20:50	24	20:27 (T78)	21:08	45	20:42 (T78)
25	07:49		07:13		07:28		18:54 (T59)	06:39		18:37 (T59)	06:06		20:01 (T78)	06:00		19:58 (T78)
	17:39		18:17		19:49	25	19:19 (T59)	20:21	43	19:20 (T59)	20:51	26	20:27 (T78)	21:08	45	20:43 (T78)
26	07:49		07:12		07:26		18:50 (T59)	06:37		18:39 (T59)	06:05		20:00 (T78)	06:00		19:58 (T78)
	17:40		18:18		19:50	31	19:21 (T59)	20:22	40	19:19 (T59)	20:52	27	20:27 (T78)	21:08	45	20:43 (T78)
27	07:48		07:10		07:25		18:48 (T59)	06:36		18:39 (T59)	06:05		20:00 (T78)	06:01		19:58 (T78)
	17:42		18:20		19:51	36	19:24 (T59)	20:23	38	19:17 (T59)	20:53	29	20:29 (T78)	21:08	45	20:43 (T78)
28	07:47		07:09		07:23		18:46 (T59)	06:35		18:41 (T59)	06:04		19:58 (T78)	06:01		19:59 (T78)
	17:43		18:21		19:52	39	19:25 (T59)	20:24	35	19:16 (T59)	20:54	31	20:29 (T78)	21:08	44	20:43 (T78)
29	07:46				07:21		18:44 (T59)	06:33		18:43 (T59)	06:03		19:58 (T78)	06:02		19:59 (T78)
	17:44				19:53	42	19:26 (T59)	20:25	31	19:14 (T59)	20:54	32	20:30 (T78)	21:08	44	20:43 (T78)
30	07:45				07:20		18:43 (T59)	06:32		18:44 (T59)	06:03		19:57 (T78)	06:02		19:59 (T78)
	17:45				19:54	45	19:28 (T59)	20:26	27	19:11 (T59)	20:55	34	20:31 (T78)	21:08	44	20:43 (T78)
31	07:44				07:18		18:41 (T59)				06:02		19:57 (T78)			
	17:47				19:55	47	19:28 (T59)				20:56	35	20:32 (T78)			
Potential sun hours	297		297		370			399			448			452		
Total, worst case						282			1524			340			1293	
Sun reduction						0.44			0.52			0.57			0.64	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.62			0.62			0.55			0.54	
Total reduction						0.28			0.33			0.31			0.34	
Total, real						78			496			106			445	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1174 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8675)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:03		06:27		06:58		07:28	07:02	07:37
	21:08	44	20:50		20:07	59	19:15	17:28	17:04
2	06:03		06:28		06:59		07:29	07:03	07:38
	21:08	43	20:49		20:06	58	19:13	17:27	17:04
3	06:04		06:29		07:00		07:30	07:04	07:39
	21:08	43	20:48		20:04	58	19:12	17:26	17:04
4	06:04		06:30		07:01		07:31	07:06	07:40
	21:08	42	20:47		20:02	57	19:10	17:25	17:03
5	06:05		06:31		07:02		07:32	07:07	07:41
	21:08	41	20:46		20:01	57	19:08	17:24	17:03
6	06:05		06:32		07:03		07:33	07:08	07:42
	21:08	40	20:44		19:57	56	19:07	17:22	17:03
7	06:06		06:33		07:04		07:34	07:09	07:43
	21:07	39	20:43		19:56	55	19:05	17:21	17:03
8	06:07		06:34		07:05		07:35	07:10	07:44
	21:07	40	20:42		19:54	55	19:03	17:20	17:03
9	06:07		06:35		07:06		07:36	07:12	07:45
	21:07	39	20:41		19:52	54	19:02	17:19	17:03
10	06:08		06:36	19:03 (T59)	07:07		07:37	07:13	07:46
	21:06	38	20:40	8	19:51	51	19:00	17:18	17:03
11	06:09		06:37	18:58 (T59)	07:07		07:38	07:14	07:46
	21:06	37	20:38	18	19:49	50	18:59	17:17	17:03
12	06:09		06:37	18:55 (T59)	07:08		07:39	07:15	07:47
	21:05	35	20:37	24	19:47	48	18:57	17:16	17:03
13	06:10		06:39	18:52 (T59)	07:09		07:40	07:16	07:48
	21:05	34	20:36	29	19:46	45	18:55	17:15	17:03
14	06:11		06:40	18:50 (T59)	07:10		07:41	07:18	07:49
	21:05	33	20:34	32	19:44	43	18:54	17:14	17:04
15	06:12		06:41	18:48 (T59)	07:11		07:43	07:19	07:50
	21:04	32	20:33	36	19:42	40	18:52	17:13	17:04
16	06:12		06:42	18:47 (T59)	07:12		07:44	07:20	07:50
	21:03	29	20:32	38	19:40	37	18:51	17:13	17:04
17	06:13		06:43	18:45 (T59)	07:13		07:45	07:21	07:51
	21:03	28	20:30	41	19:39	32	18:49	17:12	17:04
18	06:14		06:44	18:44 (T59)	07:14		07:46	07:22	07:52
	21:02	27	20:29	43	19:37	27	18:48	17:11	17:05
19	06:15		06:45	18:42 (T59)	07:15		07:47	07:24	07:52
	21:01	24	20:27	46	19:35	19	18:46	17:10	17:05
20	06:16		06:46	18:41 (T59)	07:16		07:48	07:25	07:53
	21:01	23	20:26	48	19:34	4	18:45	17:10	17:05
21	06:16		06:47	18:40 (T59)	07:17		07:49	07:26	07:53
	21:00	20	20:24	50	19:32		18:43	17:09	17:06
22	06:17		06:48	18:39 (T59)	07:18		07:50	07:27	07:54
	20:59	18	20:23	51	19:30		18:42	17:08	17:06
23	06:18		06:49	18:38 (T59)	07:19		07:52	07:28	07:54
	20:58	14	20:21	53	19:29		18:40	17:08	17:07
24	06:19		06:50	18:36 (T59)	07:20		07:53	07:29	07:55
	20:58		20:20	54	19:27		18:39	17:07	17:07
25	06:20		06:51	18:35 (T59)	07:22		07:54	07:30	07:55
	20:57		20:18	55	19:25		18:37	17:07	17:08
26	06:21		06:52	18:34 (T59)	07:23		07:55	07:32	07:56
	20:56		20:17	56	19:23		18:36	17:06	17:09
27	06:22		06:53	18:34 (T59)	07:24		07:56	07:33	07:56
	20:55		20:15	56	19:22		18:35	17:06	17:09
28	06:23		06:54	18:33 (T59)	07:25		07:57	07:34	07:56
	20:54		20:14	57	19:20		18:33	17:05	17:10
29	06:24		06:55	18:33 (T59)	07:26		07:58	07:35	07:57
	20:53		20:12	57	19:18		18:32	17:05	17:11
30	06:25		06:56	18:32 (T59)	07:27		08:00	07:36	07:57
	20:52		20:10	58	19:17		18:31	17:04	17:12
31	06:26		06:57	18:32 (T59)			08:01		07:57
	20:51		20:09	58	19:30 (T59)		18:30		17:12
Potential sun hours	459		428		375		345	297	287
Total, worst case		763		968		905			
Sun reduction		0.66		0.61		0.59			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.54		0.62		0.62			
Total reduction		0.36		0.38		0.37			
Total, real		271		370		334			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1179 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8679)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February	March		April		May		June		
1	07:57		08:37 (T71) | 07:43	07:07		07:16		18:21 (T69) | 06:30		06:50 (T67) | 06:02		07:00 (T68)
	17:13	49	09:26 (T71) | 17:48	18:22		19:56	71	19:32 (T69) | 20:27	129	19:19 (T69) | 20:57	55	07:55 (T68)
2	07:57		08:37 (T71) | 07:42	07:06		07:15		18:20 (T69) | 06:29		06:49 (T67) | 06:01		07:01 (T68)
	17:14	50	09:27 (T71) | 17:49	18:23		19:57	73	19:33 (T69) | 20:28	127	19:18 (T69) | 20:57	54	07:55 (T68)
3	07:57		08:38 (T71) | 07:41	07:04		07:13		18:19 (T69) | 06:28		06:48 (T67) | 06:01		07:02 (T68)
	17:15	49	09:27 (T71) | 17:50	18:24		19:58	74	19:33 (T69) | 20:29	126	19:17 (T69) | 20:58	53	07:55 (T68)
4	07:57		08:38 (T71) | 07:40	07:02		07:11		18:18 (T69) | 06:27		06:47 (T67) | 06:01		07:02 (T68)
	17:16	49	09:27 (T71) | 17:51	18:25		19:59	75	19:33 (T69) | 20:30	124	19:14 (T69) | 20:59	52	07:54 (T68)
5	07:57		08:39 (T71) | 07:39	07:01		07:10		18:18 (T69) | 06:25		06:48 (T67) | 06:00		07:03 (T68)
	17:17	48	09:27 (T71) | 17:53	18:26		20:00	76	19:34 (T69) | 20:31	120	19:13 (T69) | 20:59	51	07:54 (T68)
6	07:57		08:40 (T71) | 07:38	06:59		07:08		18:17 (T69) | 06:24		06:48 (T67) | 06:00		07:04 (T68)
	17:18	48	09:28 (T71) | 17:54	18:28		20:00	77	19:34 (T69) | 20:32	117	19:12 (T69) | 21:00	50	07:54 (T68)
7	07:57		08:41 (T71) | 07:37	06:58		07:06		18:16 (T69) | 06:23		06:49 (T67) | 06:00		07:04 (T68)
	17:19	47	09:28 (T71) | 17:55	18:29		20:01	77	19:33 (T69) | 20:33	112	19:10 (T69) | 21:01	50	07:54 (T68)
8	07:57		08:42 (T71) | 07:36	07:56		07:05		18:16 (T69) | 06:22		06:50 (T67) | 05:59		07:04 (T68)
	17:20	46	09:28 (T71) | 17:57	19:30		20:02	78	19:34 (T69) | 20:34	107	19:08 (T69) | 21:01	49	07:53 (T68)
9	07:57		08:43 (T71) | 07:35	07:54		07:03		18:16 (T69) | 06:21		06:51 (T67) | 05:59		07:05 (T68)
	17:21	46	09:29 (T71) | 17:58	19:31		20:03	77	19:33 (T69) | 20:35	102	19:06 (T69) | 21:02	48	07:53 (T68)
10	07:57		08:43 (T71) | 07:33	07:53		07:02		18:15 (T69) | 06:20		06:52 (T68) | 05:59		07:06 (T68)
	17:22	45	09:28 (T71) | 17:59	19:32		20:04	78	19:33 (T69) | 20:36	95	19:03 (T69) | 21:03	47	07:53 (T68)
11	07:56		08:44 (T71) | 07:32	07:51		07:00		07:28 (T68) | 06:18		06:52 (T68) | 05:59		07:06 (T68)
	17:23	44	09:28 (T71) | 18:00	19:33		20:06	88	19:33 (T69) | 20:37	88	19:00 (T69) | 21:03	47	07:53 (T68)
12	07:56		08:45 (T71) | 07:31	07:50		06:58		07:21 (T68) | 06:17		06:53 (T68) | 05:59		07:07 (T68)
	17:24	43	09:28 (T71) | 18:01	19:34		20:07	100	19:32 (T69) | 20:38	75	18:54 (T69) | 21:04	46	07:53 (T68)
13	07:56		08:45 (T71) | 07:30	07:48		06:57		07:18 (T68) | 06:16		06:53 (T68) | 05:59		07:07 (T68)
	17:25	43	09:28 (T71) | 18:03	19:35		20:08	108	19:33 (T69) | 20:39	69	08:02 (T68) | 21:04	46	07:53 (T68)
14	07:55		08:46 (T71) | 07:28	07:46		06:55		07:14 (T68) | 06:15		06:53 (T68) | 05:59		07:08 (T68)
	17:26	42	09:28 (T71) | 18:04	19:37		20:09	113	19:32 (T69) | 20:40	69	08:02 (T68) | 21:05	45	07:53 (T68)
15	07:55		08:47 (T71) | 07:27	07:45		06:54		07:13 (T68) | 06:14		06:53 (T68) | 05:59		07:08 (T68)
	17:27	40	09:27 (T71) | 18:05	19:38		20:10	116	19:32 (T69) | 20:41	68	08:01 (T68) | 21:05	45	07:53 (T68)
16	07:55		08:48 (T71) | 07:26	07:43		06:52		07:11 (T68) | 06:13		06:53 (T68) | 05:59		07:09 (T68)
	17:28	39	09:27 (T71) | 18:06	19:39		20:11	119	19:31 (T69) | 20:42	68	08:01 (T68) | 21:06	44	07:53 (T68)
17	07:54		08:49 (T71) | 07:25	07:41		06:51		07:10 (T68) | 06:12		06:53 (T68) | 05:59		07:09 (T68)
	17:30	37	09:26 (T71) | 18:08	19:40		20:12	122	19:31 (T69) | 20:43	67	08:00 (T68) | 21:06	44	07:53 (T68)
18	07:54		08:51 (T71) | 07:23	07:40	18:52 (T69)	06:49		07:08 (T68) | 06:11		06:53 (T68) | 05:59		07:09 (T68)
	17:31	35	09:26 (T71) | 18:09	19:41	18 19:10 (T69)	20:13	123	19:30 (T69) | 20:44	67	08:00 (T68) | 21:06	44	07:53 (T68)
19	07:53		08:52 (T71) | 07:22	07:38	18:46 (T69)	06:47		07:07 (T68) | 06:11		06:54 (T68) | 05:59		07:09 (T68)
	17:32	33	09:25 (T71) | 18:10	19:42	29 19:15 (T69)	20:14	125	19:30 (T69) | 20:45	65	07:59 (T68) | 21:07	43	07:52 (T68)
20	07:53		08:54 (T71) | 07:20	07:36	18:42 (T69)	06:46		07:05 (T68) | 06:10		06:55 (T68) | 05:59		07:09 (T68)
	17:33	30	09:24 (T71) | 18:11	19:43	36 19:18 (T69)	20:15	126	19:29 (T69) | 20:46	65	08:00 (T68) | 21:07	43	07:52 (T68)
21	07:52		08:55 (T71) | 07:19	07:35	18:40 (T69)	06:44		07:04 (T68) | 06:09		06:55 (T68) | 05:59		07:10 (T68)
	17:34	28	09:23 (T71) | 18:12	19:44	41 19:21 (T69)	20:16	129	19:29 (T69) | 20:47	64	07:59 (T68) | 21:07	43	07:53 (T68)
22	07:51		08:57 (T71) | 07:18	07:33	18:37 (T69)	06:43		07:02 (T68) | 06:08		06:55 (T68) | 05:59		07:10 (T68)
	17:35	24	09:21 (T71) | 18:14	19:45	46 19:23 (T69)	20:17	129	19:27 (T69) | 20:48	64	07:59 (T68) | 21:07	43	07:53 (T68)
23	07:51		09:00 (T71) | 07:16	07:31	18:34 (T69)	06:42		07:01 (T68) | 06:07		06:55 (T68) | 06:00		07:10 (T68)
	17:37	20	09:20 (T71) | 18:15	19:46	50 19:24 (T69)	20:18	130	19:27 (T69) | 20:49	63	07:58 (T68) | 21:08	43	07:53 (T68)
24	07:50		09:03 (T71) | 07:15	07:30	18:33 (T69)	06:40		06:59 (T68) | 06:07		06:56 (T68) | 06:00		07:10 (T68)
	17:38	14	09:17 (T71) | 18:16	19:47	53 19:26 (T69)	20:19	131	19:26 (T69) | 20:50	62	07:58 (T68) | 21:08	44	07:54 (T68)
25	07:49		09:09 (T71) | 07:13	07:28	18:30 (T69)	06:39		06:58 (T68) | 06:06		06:56 (T68) | 06:00		07:11 (T68)
	17:39	2	09:11 (T71) | 18:17	19:48	57 19:27 (T69)	20:20	131	19:25 (T69) | 20:51	62	07:58 (T68) | 21:08	44	07:55 (T68)
26	07:48		| 07:12	07:26	18:28 (T69)	06:37		06:57 (T68) | 06:05		06:57 (T68) | 06:00		07:11 (T68)
	17:40		| 18:18	19:50	60 19:28 (T69)	20:21	131	19:25 (T69) | 20:52	60	07:57 (T68) | 21:08	44	07:55 (T68)
27	07:48		| 07:10	07:25	18:27 (T69)	06:36		06:55 (T67) | 06:05		06:58 (T68) | 06:01		07:10 (T68)
	17:42		| 18:20	19:51	63 19:30 (T69)	20:23	131	19:23 (T69) | 20:52	59	07:57 (T68) | 21:08	45	07:55 (T68)
28	07:47		| 07:09	07:23	18:26 (T69)	06:35		06:54 (T67) | 06:04		06:58 (T68) | 06:01		07:11 (T68)
	17:43		| 18:21	19:52	64 19:30 (T69)	20:24	131	19:22 (T69) | 20:53	58	07:56 (T68) | 21:08	45	07:56 (T68)
29	07:46		|	07:21	18:24 (T69)	06:33		06:53 (T67) | 06:03		06:59 (T68) | 06:02		07:10 (T68)
	17:44		|	19:53	67 19:31 (T69)	20:25	130	19:22 (T69) | 20:54	57	07:56 (T68) | 21:08	46	07:56 (T68)
30	07:45		|	07:20	18:24 (T69)	06:32		06:51 (T67) | 06:03		06:59 (T68) | 06:02		07:11 (T68)
	17:45		|	19:54	68 19:32 (T69)	20:26	130	19:20 (T69) | 20:55	57	07:56 (T68) | 21:08	46	07:57 (T68)
31	07:44		|	07:18	18:22 (T69) |			| 06:02		07:00 (T68) |		
	17:46		|	19:55	70 19:32 (T69) |			| 20:56	56	07:56 (T68) |		
Potential sun hours	297		| 297	370		399		| 448		| 452		
Total, worst case		951	|		722		3199		2522		1399	
Sun reduction		0.31	|		0.44		0.52		0.57		0.64	
Oper. time red.		1.00	|		1.00		1.00		1.00		1.00	
Wind dir. red.		0.53	|		0.63		0.64		0.66		0.67	
Total reduction		0.16	|		0.27		0.33		0.37		0.42	
Total, real		153	|		196		1052		939		589	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1179 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8679)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:03		07:10 (T68)	06:27		07:02 (T68)	06:57		07:28 (T68)	07:28		07:02			07:37		08:26 (T71)
	21:08	47	07:57 (T68)	20:50	82	19:07 (T69)	20:07	86	19:32 (T69)	19:15		17:28			17:04	44	09:10 (T71)
2	06:03		07:11 (T68)	06:28		07:02 (T68)	06:58		18:14 (T69)	07:29		07:03			07:38		08:26 (T71)
	21:08	47	07:58 (T68)	20:49	91	19:11 (T69)	20:05	78	19:32 (T69)	19:13		17:27			17:04	45	09:11 (T71)
3	06:04		07:10 (T68)	06:29		07:01 (T67)	06:59		18:14 (T69)	07:30		07:04			07:39		08:26 (T71)
	21:08	48	07:58 (T68)	20:48	98	19:14 (T69)	20:04	77	19:31 (T69)	19:11		17:26			17:04	46	09:12 (T71)
4	06:04		07:10 (T68)	06:30		07:00 (T67)	07:00		18:14 (T69)	07:31		07:05			07:40		08:26 (T71)
	21:08	49	07:59 (T68)	20:47	104	19:17 (T69)	20:02	77	19:31 (T69)	19:10		17:25			17:03	46	09:12 (T71)
5	06:05		07:10 (T68)	06:31		06:59 (T67)	07:01		18:13 (T69)	07:32		07:07			07:41		08:26 (T71)
	21:08	49	07:59 (T68)	20:45	109	19:19 (T69)	20:01	77	19:30 (T69)	19:08		17:23			17:03	47	09:13 (T71)
6	06:05		07:10 (T68)	06:31		06:58 (T67)	07:02		18:13 (T69)	07:33		07:08			07:42		08:26 (T71)
	21:07	50	08:00 (T68)	20:44	114	19:20 (T69)	19:57	77	19:30 (T69)	19:07		17:22			17:03	48	09:14 (T71)
7	06:06		07:09 (T68)	06:32		06:58 (T67)	07:03		18:13 (T69)	07:34		07:09			07:43		08:26 (T71)
	21:07	51	08:00 (T68)	20:43	117	19:22 (T69)	19:56	76	19:29 (T69)	19:05		17:21			17:03	48	09:14 (T71)
8	06:07		07:09 (T68)	06:33		06:57 (T67)	07:04		18:13 (T69)	07:35		07:10			07:44		08:26 (T71)
	21:07	52	08:01 (T68)	20:42	121	19:23 (T69)	19:54	75	19:28 (T69)	19:03		17:20			17:03	49	09:15 (T71)
9	06:07		07:09 (T68)	06:34		06:57 (T67)	07:05		18:13 (T69)	07:36		07:11			07:44		08:27 (T71)
	21:06	53	08:02 (T68)	20:41	124	19:25 (T69)	19:52	74	19:27 (T69)	19:02		17:19			17:03	49	09:16 (T71)
10	06:08		07:08 (T68)	06:35		06:57 (T67)	07:06		18:14 (T69)	07:37		07:13			07:45		08:27 (T71)
	21:06	54	08:02 (T68)	20:39	127	19:26 (T69)	19:51	73	19:27 (T69)	19:00		17:18			17:03	50	09:17 (T71)
11	06:09		07:08 (T68)	06:36		06:58 (T67)	07:07		18:14 (T69)	07:38		07:14			07:46		08:28 (T71)
	21:06	55	08:03 (T68)	20:38	128	19:27 (T69)	19:49	72	19:26 (T69)	18:58		17:17			17:03	49	09:17 (T71)
12	06:09		07:08 (T68)	06:37		06:59 (T67)	07:08		18:13 (T69)	07:39		07:15			07:47		08:27 (T71)
	21:05	56	08:04 (T68)	20:37	129	19:28 (T69)	19:47	70	19:23 (T69)	18:57		17:16			17:03	50	09:17 (T71)
13	06:10		07:07 (T68)	06:38		07:00 (T67)	07:09		18:14 (T69)	07:40		07:16			07:48		08:28 (T71)
	21:05	57	08:04 (T68)	20:35	130	19:29 (T69)	19:45	68	19:22 (T69)	18:55		17:15			17:03	50	09:18 (T71)
14	06:11		07:07 (T68)	06:39		07:01 (T67)	07:10		18:14 (T69)	07:41		07:17			07:49		08:28 (T71)
	21:04	57	08:04 (T68)	20:34	131	19:30 (T69)	19:44	67	19:21 (T69)	18:54		17:14			17:04	51	09:19 (T71)
15	06:12		07:07 (T68)	06:40		07:02 (T67)	07:11		18:15 (T69)	07:42		07:19			07:49		08:29 (T71)
	21:04	58	08:05 (T68)	20:33	130	19:30 (T69)	19:42	65	19:20 (T69)	18:52		17:13			17:04	51	09:20 (T71)
16	06:12		07:07 (T68)	06:41		07:03 (T68)	07:12		18:16 (T69)	07:43		07:20			07:50		08:29 (T71)
	21:03	59	08:06 (T68)	20:31	131	19:31 (T69)	19:40	62	19:18 (T69)	18:51		17:13			17:04	50	09:19 (T71)
17	06:13		07:06 (T68)	06:42		07:04 (T68)	07:13		18:16 (T69)	07:45		07:21		08:42 (T71)	07:51		08:29 (T71)
	21:03	60	08:06 (T68)	20:30	131	19:32 (T69)	19:39	61	19:17 (T69)	18:49		17:12	2	08:44 (T71)	17:04	51	09:20 (T71)
18	06:14		07:06 (T68)	06:43		07:05 (T68)	07:14		18:17 (T69)	07:46		07:22		08:37 (T71)	07:51		08:30 (T71)
	21:02	61	08:07 (T68)	20:28	130	19:32 (T69)	19:37	58	19:15 (T69)	18:48		17:11	14	08:51 (T71)	17:05	51	09:21 (T71)
19	06:15		07:06 (T68)	06:44		07:06 (T68)	07:15		18:19 (T69)	07:47		07:23		08:34 (T71)	07:52		08:30 (T71)
	21:01	61	08:07 (T68)	20:27	130	19:33 (T69)	19:35	54	19:13 (T69)	18:46		17:10	20	08:54 (T71)	17:05	51	09:21 (T71)
20	06:16		07:06 (T68)	06:45		07:07 (T68)	07:16		18:20 (T69)	07:48		07:24		08:32 (T71)	07:53		08:31 (T71)
	21:01	62	08:08 (T68)	20:26	129	19:33 (T69)	19:34	51	19:11 (T69)	18:45		17:10	24	08:56 (T71)	17:05	51	09:22 (T71)
21	06:16		07:06 (T68)	06:46		07:08 (T68)	07:17		18:22 (T69)	07:49		07:26		08:30 (T71)	07:53		08:31 (T71)
	21:00	63	08:09 (T68)	20:24	128	19:33 (T69)	19:32	47	19:09 (T69)	18:43		17:09	28	08:58 (T71)	17:06	51	09:22 (T71)
22	06:17		07:06 (T68)	06:47		07:08 (T68)	07:18		18:23 (T69)	07:50		07:27		08:30 (T71)	07:54		08:32 (T71)
	20:59	63	08:09 (T68)	20:23	128	19:33 (T69)	19:30	43	19:06 (T69)	18:42		17:08	30	09:00 (T71)	17:06	51	09:23 (T71)
23	06:18		07:04 (T68)	06:48		07:09 (T68)	07:19		18:26 (T69)	07:51		07:28		08:29 (T71)	07:54		08:32 (T71)
	20:58	65	08:09 (T68)	20:21	127	19:33 (T69)	19:28	37	19:03 (T69)	18:40		17:08	33	09:02 (T71)	17:07	51	09:23 (T71)
24	06:19		07:04 (T68)	06:49		07:10 (T68)	07:20		18:29 (T69)	07:52		07:29		08:28 (T71)	07:55		08:33 (T71)
	20:57	66	08:10 (T68)	20:20	125	19:33 (T69)	19:27	30	18:59 (T69)	18:39		17:07	35	09:03 (T71)	17:07	51	09:24 (T71)
25	06:20		07:04 (T68)	06:50		07:11 (T68)	07:21		18:33 (T69)	07:54		07:30		08:27 (T71)	07:55		08:33 (T71)
	20:57	66	08:10 (T68)	20:18	123	19:33 (T69)	19:25	22	18:55 (T69)	18:37		17:06	37	09:04 (T71)	17:08	51	09:24 (T71)
26	06:21		07:04 (T68)	06:51		07:12 (T68)	07:22		18:42 (T69)	07:55		07:31		08:27 (T71)	07:55		08:33 (T71)
	20:56	67	08:11 (T68)	20:17	121	19:33 (T69)	19:23	3	18:45 (T69)	18:36		17:06	38	09:05 (T71)	17:09	51	09:24 (T71)
27	06:22		07:04 (T68)	06:52		07:13 (T68)	07:23			07:56		07:32		08:27 (T71)	07:56		08:34 (T71)
	20:55	67	08:11 (T68)	20:15	118	19:33 (T69)	19:22			18:35		17:06	40	09:07 (T71)	17:09	51	09:25 (T71)
28	06:23		07:04 (T68)	06:53		07:14 (T68)	07:24			07:57		07:34		08:27 (T71)	07:56		08:35 (T71)
	20:54	68	08:12 (T68)	20:13	116	19:33 (T69)	19:20			18:33		17:05	41	09:08 (T71)	17:10	50	09:25 (T71)
29	06:24		07:03 (T68)	06:54		07:15 (T68)	07:25			07:58		07:35		08:26 (T71)	07:56		08:35 (T71)
	20:53	69	08:12 (T68)	20:12	112	19:33 (T69)	19:18			18:32		17:05	43	09:09 (T71)	17:11	51	09:26 (T71)
30	06:25		07:03 (T68)	06:55		07:18 (T68)	07:26			07:59		07:36		08:26 (T71)	07:56		08:35 (T71)
	20:52	69	08:12 (T68)	20:10	107	19:33 (T69)	19:17			18:31		17:04	43	09:09 (T71)	17:12	51	09:26 (T71)
31	06:26		07:03 (T68)	06:56		07:21 (T68)				08:01					07:57		08:36 (T71)
	20:51	70	08:13 (T68)	20:09	99	19:32 (T69)				18:29					17:12	50	09:26 (T71)
Potential sun hours	459			428			375			345		298			288		
Total, worst case		1819			3690			1580					428			1536	
Sun reduction		0.66			0.61			0.59					0.30			0.22	
Oper. time red.		1.00			1.00			1.00					1.00			1.00	
Wind dir. red.		0.67			0.65			0.63					0.53			0.53	
Total reduction		0.43			0.39			0.36					0.16			0.11	
Total, real		790			1444			576					67			175	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1204 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8702)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:57		16:14 (T21)	07:44		08:05 (T22)	07:07	07:16			06:30		07:06 (T20)	06:01		
	17:13	31	16:45 (T21)	17:47	94	17:13 (T21)	18:22	19:56			20:27	9	07:15 (T20)	20:57		
2	07:58		16:13 (T21)	07:43		08:06 (T22)	07:06	07:14			06:29			06:01		
	17:13	33	16:46 (T21)	17:48	94	17:14 (T21)	18:23	19:57			20:28			20:58		
3	07:58		16:13 (T21)	07:42		08:07 (T22)	07:04	07:13			06:27			06:00		
	17:14	34	16:47 (T21)	17:50	92	17:14 (T21)	18:24	19:58			20:29			20:59		
4	07:58		16:13 (T21)	07:40		08:07 (T22)	07:02	07:11			06:26			06:00		
	17:15	35	16:48 (T21)	17:51	91	17:14 (T21)	18:25	19:59			20:30			20:59		
5	07:58		16:13 (T21)	07:39		08:08 (T22)	07:01	07:09			06:25			05:59		
	17:16	37	16:50 (T21)	17:52	90	17:14 (T21)	18:26	20:00			20:31			21:00		
6	07:58		16:13 (T21)	07:38		08:10 (T22)	06:59	07:08			06:24			05:59		
	17:17	38	16:51 (T21)	17:53	88	17:15 (T21)	18:27	20:00			20:32			21:01		
7	07:58		16:12 (T21)	07:37		08:10 (T22)	06:58	07:06			06:22			05:59		
	17:18	40	16:52 (T21)	17:55	85	17:14 (T21)	18:28	20:01			20:33			21:01		
8	07:57		16:11 (T21)	07:36		08:13 (T22)	07:56	07:04			06:21			05:59		
	17:19	42	16:53 (T21)	17:56	80	17:14 (T21)	19:30	20:02			20:34			21:02		
9	07:57		16:11 (T21)	07:35		08:16 (T22)	07:54	07:03			06:20			05:58		
	17:20	43	16:54 (T21)	17:57	73	17:14 (T21)	19:31	20:03			20:36			21:03		
10	07:57		16:11 (T21)	07:34		16:08 (T21)	07:53	07:01			06:19			05:58		06:20 (T19)
	17:21	44	16:55 (T21)	17:59	66	17:14 (T21)	19:32	20:05			20:37			21:03	1	06:21 (T19)
11	07:57		16:11 (T21)	07:32		16:08 (T21)	07:51	07:00			06:18			05:58		06:20 (T19)
	17:22	46	16:57 (T21)	18:00	65	17:13 (T21)	19:33	20:06			20:38			21:04	2	06:22 (T19)
12	07:57		16:10 (T21)	07:31		16:09 (T21)	07:50	06:58			06:17			05:58		06:20 (T19)
	17:23	47	16:57 (T21)	18:01	64	17:13 (T21)	19:34	20:07			20:39			21:04	3	06:23 (T19)
13	07:56		16:10 (T21)	07:30		16:10 (T21)	07:48	06:56		07:15 (T20)	06:16			05:58		06:20 (T19)
	17:24	49	16:59 (T21)	18:02	63	17:13 (T21)	19:35	20:08	3	07:18 (T20)	20:40			21:05	4	06:24 (T19)
14	07:56		16:09 (T21)	07:29		16:11 (T21)	07:46	06:55		07:14 (T20)	06:15			05:58		06:20 (T19)
	17:25	50	16:59 (T21)	18:03	62	17:13 (T21)	19:36	20:09	7	07:21 (T20)	20:41			21:05	5	06:25 (T19)
15	07:55		16:09 (T21)	07:27		16:11 (T21)	07:45	06:53		07:12 (T20)	06:14			05:58		06:20 (T19)
	17:27	52	17:01 (T21)	18:05	61	17:12 (T21)	19:37	20:10	10	07:22 (T20)	20:42			21:06	6	06:26 (T19)
16	07:55		08:16 (T22)	07:26		16:12 (T21)	07:43	06:52		07:11 (T20)	06:13			05:58		06:20 (T19)
	17:28	54	17:01 (T21)	18:06	59	17:11 (T21)	19:39	20:11	13	07:24 (T20)	20:43			21:06	6	06:26 (T19)
17	07:55		08:16 (T22)	07:25		16:12 (T21)	07:41	06:50		07:09 (T20)	06:12			05:58		06:20 (T19)
	17:29	59	17:03 (T21)	18:07	58	17:10 (T21)	19:40	20:12	15	07:24 (T20)	20:44			21:07	6	06:26 (T19)
18	07:54		08:15 (T22)	07:23		16:13 (T21)	07:40	06:49		07:08 (T20)	06:11			05:58		06:20 (T19)
	17:30	62	17:03 (T21)	18:08	57	17:10 (T21)	19:41	20:13	17	07:25 (T20)	20:45			21:07	7	06:27 (T19)
19	07:54		08:15 (T22)	07:22		16:15 (T21)	07:38	06:47		07:06 (T20)	06:10			05:58		06:20 (T19)
	17:31	66	17:05 (T21)	18:10	54	17:09 (T21)	19:42	20:14	19	07:25 (T20)	20:46			21:07	7	06:27 (T19)
20	07:53		08:14 (T22)	07:21		16:15 (T21)	07:36	06:46		07:05 (T20)	06:09			05:58		06:21 (T19)
	17:32	68	17:05 (T21)	18:11	52	17:07 (T21)	19:43	20:15	21	07:26 (T20)	20:47			21:07	7	06:28 (T19)
21	07:52		08:13 (T22)	07:19		16:17 (T21)	07:34	06:44		07:03 (T20)	06:08			05:58		06:21 (T19)
	17:34	72	17:06 (T21)	18:12	50	17:07 (T21)	19:44	20:16	22	07:25 (T20)	20:47			21:08	7	06:28 (T19)
22	07:52		08:13 (T22)	07:18		16:18 (T21)	07:33	06:43		07:02 (T20)	06:07			05:59		06:21 (T19)
	17:35	74	17:07 (T21)	18:13	47	17:05 (T21)	19:45	20:17	23	07:25 (T20)	20:48			21:08	7	06:28 (T19)
23	07:51		08:12 (T22)	07:16		16:20 (T21)	07:31	06:41		07:00 (T20)	06:07			05:59		06:21 (T19)
	17:36	78	17:08 (T21)	18:14	44	17:04 (T21)	19:46	20:18	24	07:24 (T20)	20:49			21:08	7	06:28 (T19)
24	07:50		08:11 (T22)	07:15		16:21 (T21)	07:29	06:40		06:59 (T20)	06:06			05:59		06:22 (T19)
	17:37	80	17:09 (T21)	18:16	40	17:01 (T21)	19:47	20:20	25	07:24 (T20)	20:50			21:08	7	06:29 (T19)
25	07:50		08:10 (T22)	07:13		16:24 (T21)	07:28	06:38		06:59 (T20)	06:05			05:59		06:22 (T19)
	17:38	83	17:09 (T21)	18:17	36	17:00 (T21)	19:48	20:21	25	07:24 (T20)	20:51			21:09	6	06:28 (T19)
26	07:49		08:10 (T22)	07:12		16:26 (T21)	07:26	06:37		06:59 (T20)	06:04			06:00		06:22 (T19)
	17:40	85	17:11 (T21)	18:18	31	16:57 (T21)	19:49	20:22	24	07:23 (T20)	20:52			21:09	6	06:28 (T19)
27	07:48		08:09 (T22)	07:10		16:29 (T21)	07:24	06:35		07:00 (T20)	06:04			06:00		06:23 (T19)
	17:41	86	17:11 (T21)	18:19	25	16:54 (T21)	19:51	20:23	22	07:22 (T20)	20:53			21:09	6	06:29 (T19)
28	07:47		08:08 (T22)	07:09		16:33 (T21)	07:23	06:34		07:01 (T20)	06:03			06:00		06:23 (T19)
	17:42	88	17:11 (T21)	18:20	16	16:49 (T21)	19:52	20:24	20	07:21 (T20)	20:54			21:09	5	06:28 (T19)
29	07:46		08:07 (T22)				07:21	06:33		07:02 (T20)	06:03			06:01		06:23 (T19)
	17:43	91	17:12 (T21)				19:53	20:25	17	07:19 (T20)	20:55			21:09	5	06:28 (T19)
30	07:45		08:06 (T22)				07:19	06:31		07:03 (T20)	06:02			06:01		06:24 (T19)
	17:45	92	17:12 (T21)				19:54	20:26	15	07:18 (T20)	20:55			21:09	4	06:28 (T19)
31	07:44		08:05 (T22)				07:18				06:02					
	17:46	94	17:13 (T21)				19:55				20:56					
Potential sun hours	297			297			370	399			449			453		
Total, worst case		1853			1737				322			9			114	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.70			0.71				0.67			0.67			0.73	
Total reduction		0.22			0.28				0.35			0.38			0.47	
Total, real		402			492				112			3			53	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1204 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8702)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02		06:24 (T19)	06:26			06:57	07:27			07:02		15:37 (T21)	07:37		15:53 (T21)
	21:09	3	06:27 (T19)	20:50			20:07	19:15			17:28	66	16:43 (T21)	17:03	46	16:39 (T21)
2	06:02		06:25 (T19)	06:27			06:58	07:28			07:03		07:45 (T22)	07:38		15:54 (T21)
	21:09	2	06:27 (T19)	20:49			20:06	19:13			17:26	76	16:44 (T21)	17:03	44	16:38 (T21)
3	06:03			06:28			06:59	07:30			07:04		07:42 (T22)	07:39		15:55 (T21)
	21:08			20:48			20:04	19:11			17:25	81	16:44 (T21)	17:03	43	16:38 (T21)
4	06:03			06:29			07:00	07:31			07:06		07:40 (T22)	07:40		15:56 (T21)
	21:08			20:47			20:02	19:10			17:24	85	16:44 (T21)	17:03	42	16:38 (T21)
5	06:04			06:30			07:01	07:32			07:07		07:39 (T22)	07:41		15:57 (T21)
	21:08			20:46			20:01	19:08			17:23	88	16:44 (T21)	17:02	40	16:37 (T21)
6	06:04			06:31			07:02	07:33			07:08		07:38 (T22)	07:42		15:59 (T21)
	21:08			20:45			19:57	19:06			17:22	89	16:44 (T21)	17:02	38	16:37 (T21)
7	06:05			06:32			07:03	07:34			07:09		07:37 (T22)	07:43		16:00 (T21)
	21:08			20:43			19:56	19:05			17:21	91	16:44 (T21)	17:02	37	16:37 (T21)
8	06:06			06:33			07:04	07:35			07:10		07:36 (T22)	07:44		16:01 (T21)
	21:07			20:42			19:54	19:03			17:20	93	16:44 (T21)	17:02	35	16:36 (T21)
9	06:06			06:34			07:05	07:36			07:12		07:37 (T22)	07:45		16:02 (T21)
	21:07			20:41			19:52	19:01			17:19	93	16:44 (T21)	17:02	34	16:36 (T21)
10	06:07			06:35			07:06	07:37			07:13		07:36 (T22)	07:46		16:02 (T21)
	21:07			20:40			19:51	19:00			17:18	94	16:44 (T21)	17:02	33	16:35 (T21)
11	06:08			06:36		07:18 (T20)	07:07	07:38			07:14		07:36 (T22)	07:47		16:04 (T21)
	21:06			20:38	1	07:19 (T20)	19:49	18:58			17:17	94	16:44 (T21)	17:02	31	16:35 (T21)
12	06:09			06:37		07:13 (T20)	07:08	07:39			07:15		07:38 (T22)	07:47		16:05 (T21)
	21:06			20:37	11	07:24 (T20)	19:47	18:57			17:16	92	16:44 (T21)	17:02	30	16:35 (T21)
13	06:09			06:38		07:11 (T20)	07:09	07:40		17:11 (T21)	07:16		07:39 (T22)	07:48		16:06 (T21)
	21:05			20:36	15	07:26 (T20)	19:45	18:55	6	17:17 (T21)	17:15	91	16:44 (T21)	17:03	29	16:35 (T21)
14	06:10			06:39		07:09 (T20)	07:10	07:41		17:05 (T21)	07:18		07:40 (T22)	07:49		16:08 (T21)
	21:05			20:34	18	07:27 (T20)	19:44	18:53	20	17:25 (T21)	17:14	88	16:43 (T21)	17:03	27	16:35 (T21)
15	06:11			06:40		07:08 (T20)	07:11	07:42		17:00 (T21)	07:19		07:41 (T22)	07:50		16:08 (T21)
	21:04			20:33	20	07:28 (T20)	19:42	18:52	28	17:28 (T21)	17:13	86	16:43 (T21)	17:03	26	16:34 (T21)
16	06:12			06:41		07:07 (T20)	07:12	07:44		16:57 (T21)	07:20		07:43 (T22)	07:50		16:09 (T21)
	21:04			20:32	22	07:29 (T20)	19:40	18:50	33	17:30 (T21)	17:12	85	16:44 (T21)	17:03	25	16:34 (T21)
17	06:12			06:42		07:06 (T20)	07:13	07:45		16:54 (T21)	07:21		07:44 (T22)	07:51		16:10 (T21)
	21:03			20:30	24	07:30 (T20)	19:39	18:49	38	17:32 (T21)	17:11	83	16:43 (T21)	17:04	25	16:35 (T21)
18	06:13			06:43		07:05 (T20)	07:14	07:46		16:52 (T21)	07:22		07:45 (T22)	07:52		16:11 (T21)
	21:02			20:29	25	07:30 (T20)	19:37	18:47	41	17:33 (T21)	17:10	80	16:43 (T21)	17:04	23	16:34 (T21)
19	06:14			06:44		07:05 (T20)	07:15	07:47		16:50 (T21)	07:24		07:46 (T22)	07:52		16:12 (T21)
	21:02			20:27	25	07:30 (T20)	19:35	18:46	45	17:35 (T21)	17:10	78	16:42 (T21)	17:04	23	16:35 (T21)
20	06:15			06:45		07:06 (T20)	07:16	07:48		16:49 (T21)	07:25		07:48 (T22)	07:53		16:12 (T21)
	21:01			20:26	24	07:30 (T20)	19:33	18:44	48	17:37 (T21)	17:09	75	16:43 (T21)	17:05	23	16:35 (T21)
21	06:16			06:46		07:07 (T20)	07:17	07:49		16:47 (T21)	07:26		07:49 (T22)	07:54		16:13 (T21)
	21:00			20:24	23	07:30 (T20)	19:32	18:43	51	17:38 (T21)	17:08	72	16:42 (T21)	17:05	22	16:35 (T21)
22	06:17			06:47		07:08 (T20)	07:18	07:50		16:45 (T21)	07:27		07:50 (T22)	07:54		16:13 (T21)
	20:59			20:23	22	07:30 (T20)	19:30	18:41	53	17:38 (T21)	17:08	68	16:41 (T21)	17:06	22	16:35 (T21)
23	06:18			06:48		07:09 (T20)	07:19	07:51		16:44 (T21)	07:28		07:51 (T22)	07:55		16:14 (T21)
	20:59			20:21	20	07:29 (T20)	19:28	18:40	55	17:39 (T21)	17:07	66	16:41 (T21)	17:06	22	16:36 (T21)
24	06:18			06:49		07:10 (T20)	07:20	07:53		16:43 (T21)	07:29		07:53 (T22)	07:55		16:14 (T21)
	20:58			20:20	19	07:29 (T20)	19:27	18:38	57	17:40 (T21)	17:06	62	16:41 (T21)	17:07	23	16:37 (T21)
25	06:19			06:50		07:11 (T20)	07:21	07:54		16:42 (T21)	07:31		07:54 (T22)	07:55		16:15 (T21)
	20:57			20:18	17	07:28 (T20)	19:25	18:37	59	17:41 (T21)	17:06	59	16:41 (T21)	17:07	23	16:38 (T21)
26	06:20			06:51		07:12 (T20)	07:22	07:55		16:41 (T21)	07:32		07:55 (T22)	07:56		16:15 (T21)
	20:56			20:17	15	07:27 (T20)	19:23	18:36	60	17:41 (T21)	17:05	54	16:40 (T21)	17:08	24	16:39 (T21)
27	06:21			06:52		07:13 (T20)	07:23	07:56		16:40 (T21)	07:33		15:48 (T21)	07:56		16:14 (T21)
	20:55			20:15	13	07:26 (T20)	19:21	18:34	62	17:42 (T21)	17:05	52	16:40 (T21)	17:09	25	16:39 (T21)
28	06:22			06:53		07:14 (T20)	07:24	07:57		16:39 (T21)	07:34		15:49 (T21)	07:56		16:14 (T21)
	20:54			20:14	10	07:24 (T20)	19:20	18:33	63	17:42 (T21)	17:04	50	16:39 (T21)	17:09	26	16:40 (T21)
29	06:23			06:54		07:15 (T20)	07:25	07:58		16:39 (T21)	07:35		15:50 (T21)	07:57		16:15 (T21)
	20:53			20:12	7	07:22 (T20)	19:18	18:32	64	17:43 (T21)	17:04	49	16:39 (T21)	17:10	27	16:42 (T21)
30	06:24			06:55		07:16 (T20)	07:26	08:00		16:38 (T21)	07:36		15:52 (T21)	07:57		16:14 (T21)
	20:52			20:10	3	07:19 (T20)	19:16	18:30	65	17:43 (T21)	17:04	47	16:39 (T21)	17:11	29	16:43 (T21)
31	06:25			06:56				08:01		16:38 (T21)				07:57		16:14 (T21)
	20:51			20:09				18:29	65	17:43 (T21)				17:12	29	16:43 (T21)
Potential sun hours	460			429			375	345			297			287		
Total, worst case		5			334				913			2287			926	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.73			0.67				0.73			0.69			0.73	
Total reduction		0.48			0.41				0.35			0.21			0.16	
Total, real		2			136				319			473			148	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1236 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8726)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		08:20 (T4)	07:43		08:04 (T5)	07:07		07:16		07:55 (T3)	06:30	06:01
	17:12	33	08:53 (T4)	17:47	50	09:00 (T4)	18:21		19:56	71	09:06 (T3)	20:27	20:57
2	07:57		08:20 (T4)	07:42		08:03 (T5)	07:05		07:14		07:54 (T3)	06:28	06:00
	17:13	33	08:53 (T4)	17:48	49	08:59 (T4)	18:22		19:57	72	09:06 (T3)	20:28	20:58
3	07:58		08:20 (T4)	07:41		08:02 (T5)	07:04		07:12		07:53 (T3)	06:27	06:00
	17:14	34	08:54 (T4)	17:49	49	08:58 (T4)	18:24		19:58	72	09:05 (T3)	20:29	20:58
4	07:58		08:20 (T4)	07:40		08:01 (T5)	07:02		07:11		07:53 (T3)	06:26	05:59
	17:15	35	08:55 (T4)	17:51	46	08:56 (T4)	18:25		19:59	72	09:05 (T3)	20:30	20:59
5	07:58		08:20 (T4)	07:39		08:00 (T5)	07:01		07:09		07:53 (T3)	06:25	05:59
	17:16	35	08:55 (T4)	17:52	43	08:54 (T4)	18:26		20:00	71	09:04 (T3)	20:31	21:00
6	07:57		08:20 (T4)	07:38		07:58 (T5)	06:59		07:07		07:52 (T3)	06:23	05:59
	17:17	36	08:56 (T4)	17:53	36	08:49 (T4)	18:27		20:00	71	09:03 (T3)	20:32	21:01
7	07:57		08:20 (T4)	07:37		07:57 (T5)	06:57		07:06		07:53 (T3)	06:22	05:58
	17:18	37	08:57 (T4)	17:54	29	08:26 (T5)	18:28		20:01	70	09:03 (T3)	20:33	21:01
8	07:57		08:19 (T4)	07:36		07:56 (T5)	07:56		07:04		07:53 (T3)	06:21	05:58
	17:19	38	08:57 (T4)	17:56	31	08:27 (T5)	19:29		20:02	69	09:02 (T3)	20:34	21:02
9	07:57		08:19 (T4)	07:35		07:55 (T5)	07:54		07:03		07:53 (T3)	06:20	05:58
	17:20	39	08:58 (T4)	17:57	32	08:27 (T5)	19:30		20:03	69	09:02 (T3)	20:35	21:02
10	07:57		08:19 (T4)	07:34		07:54 (T5)	07:53		07:01		07:53 (T3)	06:19	05:58
	17:21	40	08:59 (T4)	17:58	33	08:27 (T5)	19:32		20:04	68	09:01 (T3)	20:36	21:03
11	07:57		08:20 (T4)	07:32		07:54 (T5)	07:51		08:29 (T3)	06:59	07:53 (T3)	06:18	05:58
	17:22	40	09:00 (T4)	17:59	32	08:26 (T5)	19:33	15	08:44 (T3)	20:05	66	08:59 (T3)	20:37	21:04
12	07:56		08:19 (T4)	07:31		07:55 (T5)	07:49		08:24 (T3)	06:58		07:54 (T3)	06:16	05:58
	17:23	41	09:00 (T4)	18:01	30	08:25 (T5)	19:34	26	08:50 (T3)	20:06	65	08:59 (T3)	20:38	21:04
13	07:56		08:20 (T4)	07:30		07:56 (T5)	07:48		08:20 (T3)	06:56		07:54 (T3)	06:15	05:57
	17:24	40	09:00 (T4)	18:02	29	08:25 (T5)	19:35	33	08:53 (T3)	20:08	63	08:57 (T3)	20:40	21:05
14	07:56		08:20 (T4)	07:29		07:56 (T5)	07:46		08:17 (T3)	06:55		07:55 (T3)	06:14	05:57
	17:25	40	09:00 (T4)	18:03	27	08:23 (T5)	19:36	38	08:55 (T3)	20:09	62	08:57 (T3)	20:41	21:05
15	07:55		08:20 (T4)	07:27		07:58 (T5)	07:44		08:15 (T3)	06:53		07:55 (T3)	06:13	05:57
	17:26	41	09:01 (T4)	18:04	25	08:23 (T5)	19:37	43	08:58 (T3)	20:10	60	08:55 (T3)	20:42	21:06
16	07:55		08:20 (T4)	07:26		07:59 (T5)	07:43		08:12 (T3)	06:51		07:56 (T3)	06:12	05:57
	17:27	41	09:01 (T4)	18:06	22	08:21 (T5)	19:38	47	08:59 (T3)	20:11	58	08:54 (T3)	20:43	21:06
17	07:54		08:21 (T4)	07:25		08:00 (T5)	07:41		08:10 (T3)	06:50		07:56 (T3)	06:11	05:57
	17:29	41	09:02 (T4)	18:07	19	08:19 (T5)	19:39	51	09:01 (T3)	20:12	56	08:52 (T3)	20:44	21:06
18	07:54		08:21 (T4)	07:23		08:03 (T5)	07:39		08:08 (T3)	06:48		07:56 (T3)	06:10	05:57
	17:30	41	09:02 (T4)	18:08	14	08:17 (T5)	19:41	53	09:01 (T3)	20:13	54	08:50 (T3)	20:45	21:07
19	07:53		08:22 (T4)	07:22		08:08 (T5)	07:38		08:07 (T3)	06:47		07:58 (T3)	06:10	05:58
	17:31	41	09:03 (T4)	18:09	2	08:10 (T5)	19:42	56	09:03 (T3)	20:14	51	08:49 (T3)	20:45	21:07
20	07:53		08:22 (T4)	07:20			07:36		08:05 (T3)	06:45		07:59 (T3)	06:09	05:58
	17:32	41	09:03 (T4)	18:11			19:43	59	09:04 (T3)	20:15	49	08:48 (T3)	20:46	21:07
21	07:52		08:22 (T4)	07:19			07:34		08:03 (T3)	06:44		08:00 (T3)	06:08	05:58
	17:33	41	09:03 (T4)	18:12			19:44	61	09:04 (T3)	20:16	46	08:46 (T3)	20:47	21:08
22	07:52		08:23 (T4)	07:17			07:33		08:03 (T3)	06:42		08:02 (T3)	06:07	05:58
	17:34	41	09:04 (T4)	18:13			19:45	63	09:06 (T3)	20:17	42	08:44 (T3)	20:48	21:08
23	07:51		08:23 (T4)	07:16			07:31		08:01 (T3)	06:41		08:03 (T3)	06:06	05:58
	17:36	41	09:04 (T4)	18:14			19:46	65	09:06 (T3)	20:18	39	08:42 (T3)	20:49	21:08
24	07:50		08:23 (T4)	07:15			07:29		08:00 (T3)	06:39		08:05 (T3)	06:06	05:59
	17:37	40	09:03 (T4)	18:15			19:47	66	09:06 (T3)	20:19	35	08:40 (T3)	20:50	21:08
25	07:49		08:10 (T5)	07:13			07:28		07:59 (T3)	06:38		08:06 (T3)	06:05	05:59
	17:38	43	09:03 (T4)	18:17			19:48	68	09:07 (T3)	20:20	31	08:37 (T3)	20:51	21:08
26	07:49		08:09 (T5)	07:12			07:26		07:58 (T3)	06:36		08:09 (T3)	06:04	05:59
	17:39	46	09:03 (T4)	18:18			19:49	69	09:07 (T3)	20:22	25	08:34 (T3)	20:52	21:09
27	07:48		08:09 (T5)	07:10			07:24		07:57 (T3)	06:35		08:13 (T3)	06:03	06:00
	17:41	47	09:03 (T4)	18:19			19:50	70	09:07 (T3)	20:23	17	08:30 (T3)	20:53	21:09
28	07:47		08:08 (T5)	07:09			07:22		07:56 (T3)	06:34			06:03	06:00
	17:42	49	09:03 (T4)	18:20			19:51	70	09:06 (T3)	20:24			20:54	21:09
29	07:46		08:07 (T5)				07:21		07:56 (T3)	06:32			06:02	06:00
	17:43	49	09:02 (T4)				19:52	71	09:07 (T3)	20:25			20:55	21:09
30	07:45		08:06 (T5)				07:19		07:55 (T3)	06:31			06:02	06:01
	17:44	50	09:02 (T4)				19:54	71	09:06 (T3)	20:26			20:55	21:09
31	07:44		08:05 (T5)				07:17		07:54 (T3)				06:01	
	17:46	50	09:01 (T4)				19:55	72	09:06 (T3)				20:56	
Potential sun hours	297			297			370			399			449	453
Total, worst case		1264			598			1167			1524			
Sun reduction		0.31			0.40			0.44			0.52			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.52			0.54			0.60			0.60			
Total reduction		0.16			0.21			0.26			0.31			
Total, real		201			126			304			469			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1236 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8726)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December		
1	06:01	06:26			06:57		07:52 (T3)	07:27		08:01 (T3)	07:02		07:23 (T5)	07:37		08:02 (T4)
	21:09	20:50			20:07	66	08:58 (T3)	19:14	29	08:30 (T3)	17:27	32	07:55 (T5)	17:03	40	08:42 (T4)
2	06:02	06:27			06:58		07:51 (T3)	07:28		08:05 (T3)	07:03		07:25 (T5)	07:38		08:02 (T4)
	21:08	20:49			20:05	67	08:58 (T3)	19:13	21	08:26 (T3)	17:26	31	07:56 (T5)	17:03	40	08:42 (T4)
3	06:02	06:28			06:59		07:50 (T3)	07:29			07:04		07:26 (T5)	07:39		08:03 (T4)
	21:08	20:48			20:04	69	08:59 (T3)	19:11			17:25	30	07:56 (T5)	17:02	39	08:42 (T4)
4	06:03	06:29			07:00		07:50 (T3)	07:30			07:05		07:27 (T5)	07:40		08:04 (T4)
	21:08	20:47			20:02	69	08:59 (T3)	19:09			17:24	29	07:56 (T5)	17:02	38	08:42 (T4)
5	06:04	06:30			07:01		07:49 (T3)	07:31			07:07		07:28 (T5)	07:41		08:05 (T4)
	21:08	20:46			20:00	70	08:59 (T3)	19:08			17:23	38	08:20 (T4)	17:02	37	08:42 (T4)
6	06:04	06:31			07:02		07:49 (T3)	07:32			07:08		07:30 (T5)	07:42		08:06 (T4)
	21:08	20:44			19:57	70	08:59 (T3)	19:06			17:21	43	08:24 (T4)	17:02	36	08:42 (T4)
7	06:05	06:32			07:03		07:48 (T3)	07:34			07:09		07:31 (T5)	07:43		08:07 (T4)
	21:07	20:43			19:55	71	08:59 (T3)	19:04			17:20	46	08:26 (T4)	17:02	35	08:42 (T4)
8	06:05	06:33			07:04		07:48 (T3)	07:35			07:10		07:32 (T5)	07:44		08:08 (T4)
	21:07	20:42			19:54	71	08:59 (T3)	19:03			17:19	48	08:28 (T4)	17:02	35	08:43 (T4)
9	06:06	06:34			07:05		07:47 (T3)	07:36			07:12		07:34 (T5)	07:45		08:08 (T4)
	21:07	20:41			19:52	72	08:59 (T3)	19:01			17:18	50	08:30 (T4)	17:02	34	08:42 (T4)
10	06:07	06:35			07:06		07:47 (T3)	07:37			07:13		07:35 (T5)	07:46		08:09 (T4)
	21:06	20:39			19:50	72	08:59 (T3)	18:59			17:17	50	08:31 (T4)	17:02	33	08:42 (T4)
11	06:07	06:36			07:07		07:47 (T3)	07:38			07:14		07:36 (T5)	07:47		08:10 (T4)
	21:06	20:38			19:49	71	08:58 (T3)	18:58			17:16	50	08:32 (T4)	17:02	33	08:43 (T4)
12	06:08	06:37			07:08		07:46 (T3)	07:39			07:15		07:37 (T5)	07:47		08:11 (T4)
	21:06	20:37			19:47	72	08:58 (T3)	18:56			17:15	50	08:33 (T4)	17:02	32	08:43 (T4)
13	06:09	06:38			07:09		07:46 (T3)	07:40			07:16		07:39 (T5)	07:48		08:12 (T4)
	21:05	20:36			19:45	72	08:58 (T3)	18:55			17:14	49	08:34 (T4)	17:02	31	08:43 (T4)
14	06:10	06:39			07:10		07:46 (T3)	07:41			07:18		07:40 (T5)	07:49		08:13 (T4)
	21:05	20:34			19:44	71	08:57 (T3)	18:53			17:13	49	08:35 (T4)	17:02	31	08:44 (T4)
15	06:10	06:40		08:26 (T3)	07:11		07:46 (T3)	07:42			07:19		07:41 (T5)	07:50		08:13 (T4)
	21:04	20:33	5	08:31 (T3)	19:42	71	08:57 (T3)	18:52			17:12	47	08:35 (T4)	17:03	31	08:44 (T4)
16	06:11	06:41		08:19 (T3)	07:12		07:46 (T3)	07:43			07:20		07:43 (T5)	07:50		08:14 (T4)
	21:04	20:31	19	08:38 (T3)	19:40	70	08:56 (T3)	18:50			17:12	46	08:37 (T4)	17:03	30	08:44 (T4)
17	06:12	06:42		08:15 (T3)	07:13		07:46 (T3)	07:44			07:21		07:44 (T5)	07:51		08:15 (T4)
	21:03	20:30	26	08:41 (T3)	19:38	69	08:55 (T3)	18:48			17:11	43	08:37 (T4)	17:03	30	08:45 (T4)
18	06:13	06:43		08:13 (T3)	07:14		07:47 (T3)	07:46			07:22		07:57 (T4)	07:52		08:15 (T4)
	21:02	20:29	31	08:44 (T3)	19:37	67	08:54 (T3)	18:47			17:10	40	08:37 (T4)	17:04	30	08:45 (T4)
19	06:14	06:44		08:10 (T3)	07:15		07:47 (T3)	07:47			07:24		07:57 (T4)	07:52		08:16 (T4)
	21:02	20:27	36	08:46 (T3)	19:35	66	08:53 (T3)	18:45			17:09	41	08:38 (T4)	17:04	29	08:45 (T4)
20	06:15	06:45		08:08 (T3)	07:16		07:47 (T3)	07:48			07:25		07:58 (T4)	07:53		08:16 (T4)
	21:01	20:26	40	08:48 (T3)	19:33	65	08:52 (T3)	18:44			17:09	41	08:39 (T4)	17:04	29	08:45 (T4)
21	06:15	06:46		08:06 (T3)	07:17		07:48 (T3)	07:49			07:26		07:58 (T4)	07:53		08:17 (T4)
	21:00	20:24	44	08:50 (T3)	19:31	63	08:51 (T3)	18:42			17:08	41	08:39 (T4)	17:05	29	08:46 (T4)
22	06:16	06:47		08:05 (T3)	07:18		07:48 (T3)	07:50			07:27		07:58 (T4)	07:54		08:17 (T4)
	20:59	20:23	46	08:51 (T3)	19:30	62	08:50 (T3)	18:41			17:07	41	08:39 (T4)	17:05	29	08:46 (T4)
23	06:17	06:48		08:03 (T3)	07:19		07:49 (T3)	07:51		08:36 (T5)	07:28		07:58 (T4)	07:54		08:18 (T4)
	20:59	20:21	49	08:52 (T3)	19:28	60	08:49 (T3)	18:40	8	08:44 (T5)	17:07	41	08:39 (T4)	17:06	29	08:47 (T4)
24	06:18	06:49		08:01 (T3)	07:20		07:50 (T3)	07:52		08:32 (T5)	07:29		07:58 (T4)	07:55		08:18 (T4)
	20:58	20:20	52	08:53 (T3)	19:26	57	08:47 (T3)	18:38	15	08:47 (T5)	17:06	41	08:39 (T4)	17:06	29	08:47 (T4)
25	06:19	06:50		08:00 (T3)	07:21		07:51 (T3)	07:54		08:29 (T5)	07:30		07:59 (T4)	07:55		08:18 (T4)
	20:57	20:18	54	08:54 (T3)	19:25	54	08:45 (T3)	18:37	20	08:49 (T5)	17:05	41	08:40 (T4)	17:07	29	08:47 (T4)
26	06:20	06:51		07:59 (T3)	07:22		07:52 (T3)	07:55		08:29 (T5)	07:32		07:59 (T4)	07:56		08:19 (T4)
	20:56	20:17	56	08:55 (T3)	19:23	52	08:44 (T3)	18:35	22	08:51 (T5)	17:05	41	08:40 (T4)	17:08	30	08:49 (T4)
27	06:21	06:52		07:58 (T3)	07:23		07:53 (T3)	07:56		08:27 (T5)	07:33		07:59 (T4)	07:56		08:19 (T4)
	20:55	20:15	58	08:56 (T3)	19:21	49	08:42 (T3)	18:34	25	08:52 (T5)	17:04	41	08:40 (T4)	17:08	30	08:49 (T4)
28	06:22	06:53		07:57 (T3)	07:24		07:55 (T3)	07:57		08:26 (T5)	07:34		08:00 (T4)	07:56		08:19 (T4)
	20:54	20:13	60	08:57 (T3)	19:19	44	08:39 (T3)	18:33	27	08:53 (T5)	17:04	40	08:40 (T4)	17:09	30	08:49 (T4)
29	06:23	06:54		07:56 (T3)	07:25		07:56 (T3)	07:58		08:24 (T5)	07:35		08:00 (T4)	07:57		08:20 (T4)
	20:53	20:12	62	08:58 (T3)	19:18	41	08:37 (T3)	18:31	30	08:54 (T5)	17:04	41	08:41 (T4)	17:10	31	08:51 (T4)
30	06:24	06:55		07:55 (T3)	07:26		07:59 (T3)	08:00		08:24 (T5)	07:36		08:00 (T4)	07:57		08:20 (T4)
	20:52	20:10	63	08:58 (T3)	19:16	35	08:34 (T3)	18:30	31	08:55 (T5)	17:03	41	08:41 (T4)	17:10	31	08:51 (T4)
31	06:25	06:56		07:53 (T3)				08:01		08:24 (T5)				07:57		08:20 (T4)
	20:51	20:09	65	08:58 (T3)				18:29	31	08:55 (T5)				17:11	32	08:52 (T4)
Potential sun hours	460	429			375			345			297			287		
Total, worst case			766			1908			259			1262			1002	
Sun reduction			0.61			0.59			0.48			0.30			0.22	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.60			0.60			0.55			0.53			0.52	
Total reduction			0.36			0.35			0.26			0.15			0.11	
Total, real			277			666			68			196			113	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1237 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8727)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April	May			June		
1	07:58			07:44		16:27 (T13)	07:07		16:38 (T13)	07:16	06:30			06:01		20:03 (T10)
	17:13			17:47	56	17:23 (T13)	18:22	58	18:00 (T12)	19:56	20:27			20:57	30	20:33 (T10)
2	07:58			07:43		16:27 (T13)	07:06		16:39 (T13)	07:14	06:29			06:01		20:02 (T10)
	17:14			17:48	57	17:24 (T13)	18:23	58	18:01 (T12)	19:57	20:28			20:58	31	20:33 (T10)
3	07:58			07:42		16:27 (T13)	07:04		16:43 (T13)	07:13	06:27			06:00		20:03 (T10)
	17:14			17:50	58	17:25 (T13)	18:24	54	18:03 (T12)	19:58	20:29			20:59	31	20:34 (T10)
4	07:58			07:41		16:26 (T13)	07:03		16:45 (T13)	07:11	06:26			06:00		20:03 (T10)
	17:15			17:51	60	17:26 (T13)	18:25	49	18:03 (T12)	19:59	20:30			20:59	32	20:35 (T10)
5	07:58			07:40		16:26 (T13)	07:01		16:50 (T13)	07:09	06:25			05:59		20:02 (T10)
	17:16			17:52	60	17:26 (T13)	18:26	40	18:04 (T12)	20:00	20:31			21:00	33	20:35 (T10)
6	07:58			07:38		16:26 (T13)	06:59		17:35 (T12)	07:08	06:24			05:59		20:02 (T10)
	17:17			17:54	61	17:27 (T13)	18:27	31	18:06 (T12)	20:00	20:33			21:01	34	20:36 (T10)
7	07:58			07:37		16:25 (T13)	06:58		17:35 (T12)	07:06	06:22			05:59		20:02 (T10)
	17:18			17:55	62	17:27 (T13)	18:29	32	18:07 (T12)	20:01	20:34			21:01	35	20:37 (T10)
8	07:58			07:36		16:25 (T13)	07:56		18:34 (T12)	07:05	06:21			05:59		20:03 (T10)
	17:19			17:56	62	17:27 (T13)	19:30	34	19:08 (T12)	20:03	20:35			21:02	35	20:38 (T10)
9	07:57			07:35		16:25 (T13)	07:55		18:35 (T12)	07:03	06:20			05:58		20:02 (T10)
	17:20			17:57	63	17:28 (T13)	19:31	34	19:09 (T12)	20:04	20:36			21:03	35	20:37 (T10)
10	07:57			07:34		16:26 (T13)	07:53		18:35 (T12)	07:01	06:19			05:58		20:02 (T10)
	17:21			17:59	62	17:28 (T13)	19:32	33	19:08 (T12)	20:05	20:37			21:03	36	20:38 (T10)
11	07:57			07:33		16:26 (T13)	07:51		18:36 (T12)	07:00	06:18			05:58		20:02 (T10)
	17:22			18:00	62	17:28 (T13)	19:33	32	19:08 (T12)	20:06	20:38			21:04	37	20:39 (T10)
12	07:57			07:31		16:25 (T13)	07:50		18:36 (T12)	06:58	06:17			05:58		20:02 (T10)
	17:23			18:01	63	17:28 (T13)	19:34	30	19:06 (T12)	20:07	20:39			21:04	37	20:39 (T10)
13	07:56			07:30		16:25 (T13)	07:48		18:36 (T12)	06:56	06:16			05:58		20:03 (T10)
	17:24			18:02	63	17:28 (T13)	19:35	29	19:05 (T12)	20:08	20:40			21:05	37	20:40 (T10)
14	07:56			07:29		16:26 (T13)	07:46		18:38 (T12)	06:55	06:15			05:58		20:03 (T10)
	17:26			18:04	62	17:28 (T13)	19:36	26	19:04 (T12)	20:09	20:41			21:05	37	20:40 (T10)
15	07:56		16:48 (T13)	07:27		16:26 (T13)	07:45		18:39 (T12)	06:53	06:14			05:58		20:03 (T10)
	17:27	6	16:54 (T13)	18:05	62	17:28 (T13)	19:38	23	19:02 (T12)	20:10	20:42			21:06	37	20:40 (T10)
16	07:55		16:44 (T13)	07:26		16:26 (T13)	07:43		18:40 (T12)	06:52	06:13			05:58		20:03 (T10)
	17:28	15	16:59 (T13)	18:06	62	17:28 (T13)	19:39	19	18:59 (T12)	20:11	20:43			21:06	38	20:41 (T10)
17	07:55		16:41 (T13)	07:25		16:27 (T13)	07:41		18:43 (T12)	06:50	06:12			05:58		20:03 (T10)
	17:29	21	17:02 (T13)	18:07	61	17:28 (T13)	19:40	13	18:56 (T12)	20:12	20:44			21:07	38	20:41 (T10)
18	07:54		16:40 (T13)	07:23		16:27 (T13)	07:40			06:49	06:11			05:58		20:03 (T10)
	17:30	25	17:05 (T13)	18:08	60	17:27 (T13)	19:41			20:13	20:45			21:07	38	20:41 (T10)
19	07:54		16:38 (T13)	07:22		16:28 (T13)	07:38			06:47	06:10		20:17 (T10)	05:58		20:03 (T10)
	17:31	28	17:06 (T13)	18:10	59	17:27 (T13)	19:42			20:14	20:46	5	20:22 (T10)	21:07	38	20:41 (T10)
20	07:53		16:36 (T13)	07:21		16:27 (T13)	07:36			06:46	06:09		20:13 (T10)	05:58		20:04 (T10)
	17:32	31	17:07 (T13)	18:11	59	17:26 (T13)	19:43			20:15	20:47	10	20:23 (T10)	21:08	39	20:43 (T10)
21	07:53		16:36 (T13)	07:19		16:29 (T13)	07:35			06:44	06:08		20:11 (T10)	05:58		20:04 (T10)
	17:34	33	17:09 (T13)	18:12	56	17:25 (T13)	19:44			20:16	20:48	13	20:24 (T10)	21:08	39	20:43 (T10)
22	07:52		16:34 (T13)	07:18		16:29 (T13)	07:33			06:43	06:07		20:10 (T10)	05:59		20:04 (T10)
	17:35	36	17:10 (T13)	18:13	55	17:24 (T13)	19:45			20:18	20:49	15	20:25 (T10)	21:08	39	20:43 (T10)
23	07:51		16:33 (T13)	07:16		16:30 (T13)	07:31			06:41	06:07		20:08 (T10)	05:59		20:04 (T10)
	17:36	38	17:11 (T13)	18:15	54	17:24 (T13)	19:46			20:19	20:50	18	20:26 (T10)	21:08	39	20:43 (T10)
24	07:50		16:32 (T13)	07:15		16:30 (T13)	07:30			06:40	06:06		20:07 (T10)	05:59		20:05 (T10)
	17:37	40	17:12 (T13)	18:16	57	17:53 (T12)	19:47			20:20	20:50	19	20:26 (T10)	21:09	38	20:43 (T10)
25	07:50		16:32 (T13)	07:13		16:32 (T13)	07:28			06:38	06:05		20:06 (T10)	05:59		20:05 (T10)
	17:38	42	17:14 (T13)	18:17	60	17:55 (T12)	19:48			20:21	20:51	21	20:27 (T10)	21:09	38	20:43 (T10)
26	07:49		16:31 (T13)	07:12		16:33 (T13)	07:26			06:37	06:05		20:06 (T10)	06:00		20:05 (T10)
	17:40	44	17:15 (T13)	18:18	60	17:56 (T12)	19:50			20:22	20:52	22	20:28 (T10)	21:09	38	20:43 (T10)
27	07:48		16:30 (T13)	07:10		16:34 (T13)	07:24			06:35	06:04		20:05 (T10)	06:00		20:06 (T10)
	17:41	46	17:16 (T13)	18:19	61	17:57 (T12)	19:51			20:23	20:53	24	20:29 (T10)	21:09	38	20:44 (T10)
28	07:47		16:30 (T13)	07:09		16:36 (T13)	07:23			06:34	06:03		20:05 (T10)	06:00		20:06 (T10)
	17:42	48	17:18 (T13)	18:20	60	17:58 (T12)	19:52			20:24	20:54	25	20:30 (T10)	21:09	37	20:43 (T10)
29	07:46		16:29 (T13)				07:21			06:33	06:03		20:04 (T10)	06:01		20:06 (T10)
	17:43	50	17:19 (T13)				19:53			20:25	20:55	26	20:30 (T10)	21:09	37	20:43 (T10)
30	07:46		16:28 (T13)				07:19			06:31	06:02		20:04 (T10)	06:01		20:07 (T10)
	17:45	52	17:20 (T13)				19:54			20:26	20:56	28	20:32 (T10)	21:09	36	20:43 (T10)
31	07:45		16:28 (T13)				07:18				06:02		20:03 (T10)			
	17:46	53	17:21 (T13)				19:55				20:56	29	20:32 (T10)			
Potential sun hours	297			297			370			399	449			453		
Total, worst case		608			1677			595				255			1087	
Sun reduction		0.31			0.40			0.44				0.57			0.64	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.72			0.72			0.68				0.54			0.54	
Total reduction		0.23			0.30			0.31				0.31			0.35	
Total, real		140			497			183				80			384	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1237 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8727)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August	September		October		November		December
1	06:02		20:06 (T10)	06:26	06:57		07:28		18:15 (T12)	07:02		15:55 (T13)	07:37
	21:09	37	20:43 (T10)	20:50	20:07		19:15	30	18:45 (T12)	17:28	63	16:58 (T13)	17:03
2	06:02		20:07 (T10)	06:27	06:58		07:29		18:14 (T12)	07:03		15:55 (T13)	07:38
	21:09	36	20:43 (T10)	20:49	20:06		19:13	31	18:45 (T12)	17:27	62	16:57 (T13)	17:03
3	06:03		20:07 (T10)	06:28	06:59		07:30		18:14 (T12)	07:05		15:55 (T13)	07:39
	21:09	36	20:43 (T10)	20:48	20:04		19:11	32	18:46 (T12)	17:25	62	16:57 (T13)	17:03
4	06:03		20:08 (T10)	06:29	07:00		07:31		18:13 (T12)	07:06		15:55 (T13)	07:40
	21:08	35	20:43 (T10)	20:47	20:02		19:10	33	18:46 (T12)	17:24	61	16:56 (T13)	17:03
5	06:04		20:09 (T10)	06:30	07:01		07:32		18:12 (T12)	07:07		15:56 (T13)	07:41
	21:08	34	20:43 (T10)	20:46	20:01		19:08	34	18:46 (T12)	17:23	61	16:57 (T13)	17:03
6	06:05		20:08 (T10)	06:31	07:02		07:33		18:11 (T12)	07:08		15:56 (T13)	07:42
	21:08	34	20:42 (T10)	20:45	19:57		19:06	33	18:44 (T12)	17:22	60	16:56 (T13)	17:02
7	06:05		20:09 (T10)	06:32	07:03		07:34		18:11 (T12)	07:09		15:56 (T13)	07:43
	21:08	33	20:42 (T10)	20:43	19:56		19:05	31	18:42 (T12)	17:21	59	16:55 (T13)	17:02
8	06:06		20:09 (T10)	06:33	07:04		07:35		18:11 (T12)	07:11		15:58 (T13)	07:44
	21:07	33	20:42 (T10)	20:42	19:54		19:03	30	18:41 (T12)	17:20	58	16:56 (T13)	17:02
9	06:06		20:10 (T10)	06:34	07:05		07:36		17:23 (T13)	07:12		15:58 (T13)	07:45
	21:07	32	20:42 (T10)	20:41	19:52		19:01	44	18:39 (T12)	17:19	57	16:55 (T13)	17:02
10	06:07		20:10 (T10)	06:35	07:06		07:37		17:18 (T13)	07:13		15:58 (T13)	07:46
	21:07	32	20:42 (T10)	20:40	19:51		19:00	51	18:37 (T12)	17:18	56	16:54 (T13)	17:02
11	06:08		20:10 (T10)	06:36	07:07		07:38		17:15 (T13)	07:14		15:59 (T13)	07:47
	21:06	30	20:40 (T10)	20:38	19:49		18:58	54	18:35 (T12)	17:17	53	16:52 (T13)	17:02
12	06:09		20:11 (T10)	06:37	07:08		07:39		17:12 (T13)	07:15		16:00 (T13)	07:48
	21:06	29	20:40 (T10)	20:37	19:47		18:57	58	18:34 (T12)	17:16	52	16:52 (T13)	17:02
13	06:09		20:12 (T10)	06:38	07:09		07:40		17:10 (T13)	07:17		16:01 (T13)	07:48
	21:05	28	20:40 (T10)	20:36	19:46		18:55	60	18:33 (T12)	17:15	50	16:51 (T13)	17:03
14	06:10		20:13 (T10)	06:39	07:10		07:41		17:08 (T13)	07:18		16:02 (T13)	07:49
	21:05	27	20:40 (T10)	20:34	19:44		18:53	61	18:31 (T12)	17:14	47	16:49 (T13)	17:03
15	06:11		20:13 (T10)	06:40	07:11		07:43		17:06 (T13)	07:19		16:03 (T13)	07:50
	21:04	26	20:39 (T10)	20:33	19:42		18:52	61	18:29 (T12)	17:13	46	16:49 (T13)	17:03
16	06:12		20:14 (T10)	06:41	07:12		07:44		17:05 (T13)	07:20		16:04 (T13)	07:51
	21:04	24	20:38 (T10)	20:32	19:40		18:50	60	18:28 (T12)	17:12	44	16:48 (T13)	17:03
17	06:12		20:15 (T10)	06:42	07:13		07:45		17:03 (T13)	07:21		16:05 (T13)	07:51
	21:03	23	20:38 (T10)	20:30	19:39		18:49	58	18:26 (T12)	17:11	42	16:47 (T13)	17:04
18	06:13		20:16 (T10)	06:43	07:14		07:46		17:02 (T13)	07:23		16:06 (T13)	07:52
	21:03	22	20:38 (T10)	20:29	19:37		18:47	54	18:24 (T12)	17:10	40	16:46 (T13)	17:04
19	06:14		20:16 (T10)	06:44	07:15		07:47		17:00 (T13)	07:24		16:08 (T13)	07:53
	21:02	20	20:36 (T10)	20:27	19:35		18:46	54	17:54 (T13)	17:10	38	16:46 (T13)	17:04
20	06:15		20:17 (T10)	06:45	07:16		07:48		17:00 (T13)	07:25		16:09 (T13)	07:53
	21:01	19	20:36 (T10)	20:26	19:34		18:44	56	17:56 (T13)	17:09	36	16:45 (T13)	17:05
21	06:16		20:19 (T10)	06:46	07:17		07:49		16:59 (T13)	07:26		16:11 (T13)	07:54
	21:00	16	20:35 (T10)	20:24	19:32		18:43	57	17:56 (T13)	17:08	33	16:44 (T13)	17:05
22	06:17		20:20 (T10)	06:47	07:18		07:50		16:58 (T13)	07:27		16:12 (T13)	07:54
	21:00	15	20:35 (T10)	20:23	19:30		18:41	58	17:56 (T13)	17:08	31	16:43 (T13)	17:06
23	06:18		20:22 (T10)	06:48	07:19		07:52		16:57 (T13)	07:28		16:15 (T13)	07:55
	20:59	12	20:34 (T10)	20:21	19:28		18:40	59	17:56 (T13)	17:07	28	16:43 (T13)	17:06
24	06:18		20:25 (T10)	06:49	07:20		07:53		16:57 (T13)	07:30		16:17 (T13)	07:55
	20:58	8	20:33 (T10)	20:20	19:27		18:38	60	17:57 (T13)	17:06	25	16:42 (T13)	17:07
25	06:19			06:50	07:21		07:54		16:56 (T13)	07:31		16:19 (T13)	07:56
	20:57			20:18	19:25		18:37	61	17:57 (T13)	17:06	21	16:40 (T13)	17:07
26	06:20			06:51	07:22	18:27 (T12)	07:55		16:56 (T13)	07:32		16:22 (T13)	07:56
	20:56			20:17	19:23	10 18:37 (T12)	18:36	61	17:57 (T13)	17:05	15	16:37 (T13)	17:08
27	06:21			06:52	07:23	18:23 (T12)	07:56		16:55 (T13)	07:33		16:27 (T13)	07:56
	20:55			20:15	19:22	17 18:40 (T12)	18:34	62	17:57 (T13)	17:05	6	16:33 (T13)	17:09
28	06:22			06:53	07:24	18:20 (T12)	07:57		16:55 (T13)	07:34			07:57
	20:54			20:14	19:20	22 18:42 (T12)	18:33	62	17:57 (T13)	17:04			17:09
29	06:23			06:54	07:25	18:18 (T12)	07:59		16:55 (T13)	07:35			07:57
	20:53			20:12	19:18	25 18:43 (T12)	18:32	63	17:58 (T13)	17:04			17:10
30	06:24			06:55	07:27	18:16 (T12)	08:00		16:55 (T13)	07:36			07:57
	20:52			20:11	19:16	28 18:44 (T12)	18:30	62	17:57 (T13)	17:04			17:11
31	06:25			06:56			08:01		16:55 (T13)				07:57
	20:51			20:09			18:29	62	17:57 (T13)				17:12
Potential sun hours	460			429	375		345			297			287
Total, worst case		641				102		1592			1206		
Sun reduction		0.66				0.59		0.48			0.30		
Oper. time red.		1.00				1.00		1.00			1.00		
Wind dir. red.		0.54				0.67		0.71			0.72		
Total reduction		0.36				0.41		0.35			0.22		
Total, real		234				41		556			269		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1269 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8753)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		15:59 (T35)	07:43		08:05 (T36)	07:07			07:16			06:30		19:11 (T30)	06:01		20:06 (T27)
	17:13	45	16:44 (T35)	17:47	31	08:36 (T36)	18:22			19:56			20:27	46	19:57 (T30)	20:57	27	20:33 (T27)
2	07:57		15:59 (T35)	07:42		08:06 (T36)	07:06			07:14			06:29		19:11 (T30)	06:01		20:07 (T27)
	17:14	45	16:44 (T35)	17:49	30	08:36 (T36)	18:23			19:57			20:28	46	19:57 (T30)	20:58	27	20:34 (T27)
3	07:58		16:00 (T35)	07:41		08:06 (T36)	07:04			07:13		07:32 (T31)	06:28		19:10 (T30)	06:00		20:06 (T27)
	17:15	44	16:44 (T35)	17:50	30	08:36 (T36)	18:24			19:58	6	07:38 (T31)	20:29	46	19:56 (T30)	20:58	28	20:34 (T27)
4	07:58		16:00 (T35)	07:40		08:07 (T36)	07:02			07:11		07:30 (T31)	06:26		19:11 (T30)	06:00		20:07 (T27)
	17:15	45	16:45 (T35)	17:51	28	08:35 (T36)	18:25			19:59	11	07:41 (T31)	20:30	44	19:55 (T30)	20:59	28	20:35 (T27)
5	07:58		16:01 (T35)	07:39		08:09 (T36)	07:01			07:09		07:28 (T31)	06:25		19:11 (T30)	06:00		20:07 (T27)
	17:16	44	16:45 (T35)	17:52	25	08:34 (T36)	18:26			20:00	15	07:43 (T31)	20:31	44	19:55 (T30)	21:00	29	20:36 (T27)
6	07:57		16:01 (T35)	07:38		08:09 (T36)	06:59			07:08		07:27 (T31)	06:24		19:12 (T30)	05:59		20:06 (T27)
	17:17	45	16:46 (T35)	17:54	23	08:32 (T36)	18:27			20:00	18	07:45 (T31)	20:32	43	19:55 (T30)	21:01	30	20:36 (T27)
7	07:57		16:02 (T35)	07:37		08:11 (T36)	06:58			07:06		07:25 (T31)	06:23		19:12 (T30)	05:59		20:07 (T27)
	17:18	44	16:46 (T35)	17:55	20	08:31 (T36)	18:29			20:01	21	07:46 (T31)	20:33	43	19:55 (T30)	21:01	29	20:36 (T27)
8	07:57		16:02 (T35)	07:36		08:13 (T36)	07:56			07:05		07:24 (T31)	06:21		19:12 (T30)	05:59		20:07 (T27)
	17:19	44	16:46 (T35)	17:56	17	08:30 (T36)	19:30			20:02	23	07:47 (T31)	20:34	41	19:53 (T30)	21:02	30	20:37 (T27)
9	07:57		16:03 (T35)	07:35		08:16 (T36)	07:54			07:03		07:22 (T31)	06:20		19:12 (T30)	05:59		20:08 (T27)
	17:20	43	16:46 (T35)	17:57	11	08:27 (T36)	19:31			20:03	25	07:47 (T31)	20:35	41	19:53 (T30)	21:02	30	20:38 (T27)
10	07:57		08:19 (T36)	07:34			07:53			07:01		07:20 (T31)	06:19		19:13 (T30)	05:58		20:07 (T27)
	17:21	46	16:47 (T35)	17:59			19:32			20:05	28	07:48 (T31)	20:36	39	19:52 (T30)	21:03	31	20:38 (T27)
11	07:57		08:18 (T36)	07:32			07:51		08:10 (T33)	07:00		07:19 (T31)	06:18		19:14 (T30)	05:58		20:07 (T27)
	17:22	47	16:46 (T35)	18:00			19:33	1	08:11 (T33)	20:06	29	07:48 (T31)	20:38	37	19:51 (T30)	21:04	31	20:38 (T27)
12	07:56		08:18 (T36)	07:31			07:50		08:09 (T33)	06:58		07:17 (T31)	06:17		19:15 (T30)	05:58		20:08 (T27)
	17:23	49	16:47 (T35)	18:01			19:34	4	08:13 (T33)	20:07	31	07:48 (T31)	20:39	35	19:50 (T30)	21:04	31	20:39 (T27)
13	07:56		08:18 (T36)	07:30			07:48		08:07 (T33)	06:56		07:16 (T31)	06:16		19:15 (T30)	05:58		20:08 (T27)
	17:25	50	16:47 (T35)	18:02			19:35	7	08:14 (T33)	20:08	40	19:41 (T30)	20:40	35	19:50 (T30)	21:05	31	20:39 (T27)
14	07:56		08:17 (T36)	07:29			07:46		08:05 (T33)	06:55		07:14 (T31)	06:15		19:16 (T30)	05:58		20:08 (T27)
	17:26	51	16:47 (T35)	18:04			19:36	9	08:14 (T33)	20:09	52	19:46 (T30)	20:41	33	19:49 (T30)	21:05	32	20:40 (T27)
15	07:55		08:17 (T36)	07:27			07:45		08:04 (T33)	06:53		07:12 (T31)	06:14		19:17 (T30)	05:58		20:09 (T27)
	17:27	51	16:47 (T35)	18:05			19:38	11	08:15 (T33)	20:10	60	19:48 (T30)	20:42	33	20:18 (T27)	21:06	31	20:40 (T27)
16	07:55		08:16 (T36)	07:26			07:43		08:02 (T33)	06:52		07:11 (T31)	06:13		19:19 (T30)	05:58		20:09 (T27)
	17:28	53	16:47 (T35)	18:06			19:39	13	08:15 (T33)	20:11	65	19:50 (T30)	20:43	33	20:19 (T27)	21:06	31	20:40 (T27)
17	07:55		08:16 (T36)	07:25			07:41		08:00 (T33)	06:50		07:09 (T31)	06:12		19:21 (T30)	05:58		20:09 (T27)
	17:29	53	16:47 (T35)	18:07			19:40	14	08:14 (T33)	20:12	68	19:50 (T30)	20:44	34	20:21 (T27)	21:06	32	20:41 (T27)
18	07:54		08:15 (T36)	07:23			07:40		07:59 (T33)	06:49		07:08 (T31)	06:11		19:22 (T30)	05:58		20:09 (T27)
	17:30	54	16:47 (T35)	18:09			19:41	16	08:15 (T33)	20:13	72	19:52 (T30)	20:45	32	20:21 (T27)	21:07	32	20:41 (T27)
19	07:53		08:15 (T36)	07:22			07:38		07:57 (T33)	06:47		07:07 (T31)	06:10		19:24 (T30)	05:58		20:10 (T27)
	17:31	54	16:47 (T35)	18:10			19:42	17	08:14 (T33)	20:14	74	19:52 (T30)	20:46	30	20:22 (T27)	21:07	32	20:42 (T27)
20	07:53		08:14 (T36)	07:21			07:36		07:55 (T33)	06:46		07:08 (T31)	06:09		19:26 (T30)	05:58		20:10 (T27)
	17:33	54	16:46 (T35)	18:11			19:43	18	08:13 (T33)	20:15	76	19:54 (T30)	20:46	28	20:23 (T27)	21:07	32	20:42 (T27)
21	07:52		08:13 (T36)	07:19			07:35		07:54 (T33)	06:44		07:07 (T31)	06:08		19:30 (T30)	05:59		20:10 (T27)
	17:34	53	16:45 (T35)	18:12			19:44	18	08:12 (T33)	20:16	78	19:54 (T30)	20:47	20	20:23 (T27)	21:08	32	20:42 (T27)
22	07:52		08:13 (T36)	07:18			07:33		07:53 (T33)	06:43		07:08 (T31)	06:08		20:08 (T27)	05:59		20:10 (T27)
	17:35	52	16:45 (T35)	18:13			19:45	17	08:10 (T33)	20:17	79	19:56 (T30)	20:48	17	20:25 (T27)	21:08	32	20:42 (T27)
23	07:51		08:12 (T36)	07:16			07:31		07:54 (T33)	06:41		07:09 (T31)	06:07		20:07 (T27)	05:59		20:10 (T27)
	17:36	52	16:44 (T35)	18:15			19:46	14	08:08 (T33)	20:18	78	19:57 (T30)	20:49	19	20:26 (T27)	21:08	32	20:42 (T27)
24	07:50		08:11 (T36)	07:15			07:30		07:57 (T33)	06:40		07:09 (T31)	06:06		20:06 (T27)	05:59		20:11 (T27)
	17:37	51	16:43 (T35)	18:16			19:47	9	08:06 (T33)	20:20	77	19:56 (T30)	20:50	20	20:26 (T27)	21:08	32	20:43 (T27)
25	07:50		08:10 (T36)	07:13			07:28			06:38		07:10 (T31)	06:05		20:07 (T27)	06:00		20:11 (T27)
	17:39	49	16:42 (T35)	18:17			19:48			20:21	77	19:57 (T30)	20:51	21	20:28 (T27)	21:08	32	20:43 (T27)
26	07:49		08:10 (T36)	07:12			07:26			06:37		07:11 (T31)	06:05		20:06 (T27)	06:00		20:11 (T27)
	17:40	47	16:41 (T35)	18:18			19:50			20:22	74	19:56 (T30)	20:52	22	20:28 (T27)	21:09	32	20:43 (T27)
27	07:48		08:09 (T36)	07:10			07:24			06:36		07:12 (T31)	06:04		20:06 (T27)	06:00		20:12 (T27)
	17:41	44	16:39 (T35)	18:19			19:51			20:23	72	19:57 (T30)	20:53	22	20:28 (T27)	21:09	31	20:43 (T27)
28	07:47		08:08 (T36)	07:09			07:23			06:34		07:14 (T31)	06:03		20:06 (T27)	06:01		20:11 (T27)
	17:42	38	16:36 (T35)	18:20			19:52			20:24	69	19:57 (T30)	20:54	24	20:30 (T27)	21:09	32	20:43 (T27)
29	07:46		08:07 (T36)				07:21			06:33		07:15 (T31)	06:03		20:06 (T27)	06:01		20:12 (T27)
	17:44	30	08:37 (T36)				19:53			20:25	65	19:56 (T30)	20:55	24	20:30 (T27)	21:09	31	20:43 (T27)
30	07:45		08:06 (T36)				07:19			06:31		07:18 (T31)	06:02		20:06 (T27)	06:01		20:12 (T27)
	17:45	31	08:37 (T36)				19:54			20:26	60	19:57 (T30)	20:55	25	20:31 (T27)	21:09	31	20:43 (T27)
31	07:44		08:05 (T36)				07:18						06:02		20:06 (T27)			
	17:46	31	08:36 (T36)				19:55						20:56	25	20:31 (T27)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1439			215			168			1443			1002			921	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.68			0.53			0.61			0.62			0.56			0.54	
Total reduction		0.22			0.22			0.27			0.33			0.33			0.36	
Total, real		311			47			46			478			332			329	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1269 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8753)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		20:13 (T27)	06:26		19:25 (T30)	06:57		07:18 (T31)	07:27		07:47 (T33)	07:02				07:37		08:01 (T36)
	21:09	30	20:43 (T27)	20:50	36	20:01 (T30)	20:07	29	07:47 (T31)	19:15	5	07:52 (T33)	17:28				17:04	47	16:29 (T35)
2	06:02		20:12 (T27)	06:27		19:24 (T30)	06:58		07:19 (T31)	07:29		07:48 (T33)	07:03		07:45 (T36)		07:38		08:02 (T36)
	21:08	31	20:43 (T27)	20:49	38	20:02 (T30)	20:06	27	07:46 (T31)	19:13	2	07:50 (T33)	17:27	12	07:57 (T36)		17:03	45	16:30 (T35)
3	06:03		20:13 (T27)	06:28		19:23 (T30)	06:59		07:20 (T31)	07:30			07:04		07:42 (T36)		07:39		15:47 (T35)
	21:08	30	20:43 (T27)	20:48	40	20:03 (T30)	20:04	25	07:45 (T31)	19:11			17:25	18	08:00 (T36)		17:03	43	16:30 (T35)
4	06:04		20:12 (T27)	06:29		19:23 (T30)	07:00		07:21 (T31)	07:31			07:06		07:40 (T36)		07:40		15:47 (T35)
	21:08	31	20:43 (T27)	20:47	40	20:03 (T30)	20:02	23	07:44 (T31)	19:10			17:24	21	08:01 (T36)		17:03	44	16:31 (T35)
5	06:04		20:13 (T27)	06:30		19:22 (T30)	07:01		07:22 (T31)	07:32			07:07		07:39 (T36)		07:41		15:47 (T35)
	21:08	30	20:43 (T27)	20:46	42	20:04 (T30)	20:01	21	07:43 (T31)	19:08			17:23	23	08:02 (T36)		17:03	44	16:31 (T35)
6	06:05		20:13 (T27)	06:31		19:22 (T30)	07:02		07:23 (T31)	07:33			07:08		07:38 (T36)		07:42		15:47 (T35)
	21:08	29	20:42 (T27)	20:45	42	20:04 (T30)	19:57	18	07:41 (T31)	19:06			17:22	26	08:04 (T36)		17:03	45	16:32 (T35)
7	06:05		20:13 (T27)	06:32		19:21 (T30)	07:03		07:24 (T31)	07:34			07:09		07:37 (T36)		07:43		15:48 (T35)
	21:07	29	20:42 (T27)	20:43	44	20:05 (T30)	19:56	15	07:39 (T31)	19:05			17:21	28	08:05 (T36)		17:02	44	16:32 (T35)
8	06:06		20:13 (T27)	06:33		19:21 (T30)	07:04		07:25 (T31)	07:35			07:10		07:36 (T36)		07:44		15:48 (T35)
	21:07	28	20:41 (T27)	20:42	44	20:05 (T30)	19:54	11	07:36 (T31)	19:03			17:20	29	08:05 (T36)		17:02	45	16:33 (T35)
9	06:07		20:13 (T27)	06:34		19:20 (T30)	07:05		07:25 (T31)	07:36			07:12		07:37 (T36)		07:45		15:48 (T35)
	21:07	28	20:41 (T27)	20:41	45	20:05 (T30)	19:52	6	07:31 (T31)	19:01			17:19	30	08:07 (T36)		17:02	44	16:32 (T35)
10	06:07		20:14 (T27)	06:35		19:20 (T30)	07:06			07:37			07:13		07:36 (T36)		07:46		15:48 (T35)
	21:06	27	20:41 (T27)	20:40	45	20:05 (T30)	19:51			19:00			17:18	31	08:07 (T36)		17:02	45	16:33 (T35)
11	06:08		20:13 (T27)	06:36		19:19 (T30)	07:07			07:38			07:14		07:36 (T36)		07:47		15:49 (T35)
	21:06	27	20:40 (T27)	20:38	46	20:05 (T30)	19:49			18:58			17:17	31	08:07 (T36)		17:03	45	16:34 (T35)
12	06:09		20:14 (T27)	06:37		07:30 (T31)	07:08			07:39			07:15		07:37 (T36)		07:47		15:49 (T35)
	21:06	26	20:40 (T27)	20:37	53	20:05 (T30)	19:47			18:57			17:16	31	08:08 (T36)		17:03	45	16:34 (T35)
13	06:09		20:14 (T27)	06:38		07:26 (T31)	07:09			07:40			07:16		07:39 (T36)		07:48		15:50 (T35)
	21:05	26	20:40 (T27)	20:36	61	20:05 (T30)	19:45			18:55			17:15	30	08:09 (T36)		17:03	45	16:35 (T35)
14	06:10		20:15 (T27)	06:39		07:22 (T31)	07:10			07:41			07:18		07:40 (T36)		07:49		15:50 (T35)
	21:05	25	20:40 (T27)	20:34	66	20:04 (T30)	19:44			18:53			17:14	39	16:08 (T35)		17:03	45	16:35 (T35)
15	06:11		20:14 (T27)	06:40		07:20 (T31)	07:11			07:42			07:19		07:41 (T36)		07:50		15:50 (T35)
	21:04	24	20:38 (T27)	20:33	70	20:04 (T30)	19:42			18:52			17:13	43	16:11 (T35)		17:03	45	16:35 (T35)
16	06:12		20:15 (T27)	06:41		07:19 (T31)	07:12			07:44			07:20		07:43 (T36)		07:50		15:51 (T35)
	21:04	23	20:38 (T27)	20:32	72	20:04 (T30)	19:40			18:50			17:12	47	16:14 (T35)		17:03	45	16:36 (T35)
17	06:13		20:15 (T27)	06:42		07:17 (T31)	07:13			07:45			07:21		07:44 (T36)		07:51		15:52 (T35)
	21:03	23	20:38 (T27)	20:30	75	20:03 (T30)	19:39			18:49			17:11	49	16:16 (T35)		17:04	45	16:37 (T35)
18	06:13		20:16 (T27)	06:43		07:16 (T31)	07:14			07:46			07:22		07:45 (T36)		07:52		15:52 (T35)
	21:02	21	20:37 (T27)	20:29	77	20:03 (T30)	19:37			18:47			17:11	51	16:17 (T35)		17:04	45	16:37 (T35)
19	06:14		20:17 (T27)	06:44		07:15 (T31)	07:15		07:44 (T33)	07:47			07:24		07:46 (T36)		07:52		15:53 (T35)
	21:02	20	20:37 (T27)	20:27	77	20:02 (T30)	19:35	7	07:51 (T33)	18:46			17:10	52	16:18 (T35)		17:04	45	16:38 (T35)
20	06:15		20:16 (T27)	06:45		07:14 (T31)	07:16		07:41 (T33)	07:48			07:25		07:48 (T36)		07:53		15:53 (T35)
	21:01	19	20:35 (T27)	20:26	78	20:01 (T30)	19:33	13	07:54 (T33)	18:44			17:09	52	16:20 (T35)		17:05	45	16:38 (T35)
21	06:16		20:17 (T27)	06:46		07:13 (T31)	07:17		07:38 (T33)	07:49			07:26		07:49 (T36)		07:53		15:54 (T35)
	21:00	18	20:35 (T27)	20:24	77	20:00 (T30)	19:32	17	07:55 (T33)	18:43			17:08	53	16:21 (T35)		17:05	44	16:38 (T35)
22	06:17		20:18 (T27)	06:47		07:12 (T31)	07:18		07:38 (T33)	07:50			07:27		07:50 (T36)		07:54		15:54 (T35)
	20:59	16	20:34 (T27)	20:23	78	19:59 (T30)	19:30	18	07:56 (T33)	18:41			17:08	54	16:22 (T35)		17:06	44	16:38 (T35)
23	06:18		19:38 (T30)	06:48		07:11 (T31)	07:19		07:39 (T33)	07:51			07:28		07:51 (T36)		07:54		15:55 (T35)
	20:59	25	20:34 (T27)	20:21	77	19:58 (T30)	19:28	18	07:57 (T33)	18:40			17:07	54	16:23 (T35)		17:06	45	16:40 (T35)
24	06:19		19:36 (T30)	06:49		07:11 (T31)	07:20		07:40 (T33)	07:53			07:29		07:52 (T36)		07:55		15:55 (T35)
	20:58	28	20:33 (T27)	20:20	74	19:56 (T30)	19:27	17	07:57 (T33)	18:39			17:07	54	16:24 (T35)		17:07	45	16:40 (T35)
25	06:20		19:34 (T30)	06:50		07:11 (T31)	07:21		07:41 (T33)	07:54			07:31		07:54 (T36)		07:55		15:55 (T35)
	20:57	31	20:32 (T27)	20:18	72	19:55 (T30)	19:25	16	07:57 (T33)	18:37			17:06	53	16:25 (T35)		17:08	45	16:40 (T35)
26	06:20		19:32 (T30)	06:51		07:12 (T31)	07:22		07:42 (T33)	07:55			07:32		07:55 (T36)		07:56		15:56 (T35)
	20:56	33	20:32 (T27)	20:17	68	19:53 (T30)	19:23	15	07:57 (T33)	18:36			17:05	53	16:26 (T35)		17:08	45	16:41 (T35)
27	06:21		19:30 (T30)	06:52		07:13 (T31)	07:23		07:43 (T33)	07:56			07:33		07:56 (T36)		07:56		15:56 (T35)
	20:55	34	20:30 (T27)	20:15	64	19:52 (T30)	19:21	13	07:56 (T33)	18:34			17:05	51	16:26 (T35)		17:09	45	16:41 (T35)
28	06:22		19:29 (T30)	06:53		07:14 (T31)	07:24		07:44 (T33)	07:57			07:34		07:57 (T36)		07:56		15:56 (T35)
	20:54	33	20:29 (T27)	20:14	59	19:49 (T30)	19:20	12	07:56 (T33)	18:33			17:05	51	16:27 (T35)		17:09	45	16:41 (T35)
29	06:23		19:28 (T30)	06:54		07:15 (T31)	07:25		07:45 (T33)	07:58			07:35		07:58 (T36)		07:57		15:57 (T35)
	20:53	31	20:28 (T27)	20:12	51	19:46 (T30)	19:18	10	07:55 (T33)	18:32			17:04	50	16:27 (T35)		17:10	44	16:41 (T35)
30	06:24		19:27 (T30)	06:55		07:16 (T31)	07:26		07:46 (T33)	08:00			07:36		07:59 (T36)		07:57		15:58 (T35)
	20:52	33	20:00 (T30)	20:10	38	19:40 (T30)	19:16	8	07:54 (T33)	18:30			17:04	49	16:28 (T35)		17:11	45	16:43 (T35)
31	06:25		19:26 (T30)	06:56		07:17 (T31)				08:01							07:57		15:58 (T35)
	20:51	35	20:01 (T30)	20:09	31	07:48 (T31)				18:29							17:12	45	16:43 (T35)
Potential sun hours	460			429			375			345			297				287		
Total, worst case		844			1780			339			7			1165				1388	
Sun reduction		0.66			0.61			0.59			0.48			0.30				0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00				1.00	
Wind dir. red.		0.55			0.60			0.63			0.61			0.63				0.74	
Total reduction		0.37			0.38			0.38			0.30			0.19				0.17	
Total, real		315			674			130			2			225				232	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1314 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8792)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April	May		June	
1	07:58		07:44	16:49 (T13)	07:07	16:47 (T13)	07:16	06:30		06:01	19:59 (T10)
	17:13		17:47 34	17:23 (T13)	18:22 58	18:00 (T12)	19:56	20:27		20:57 34	20:33 (T10)
2	07:58		07:43	16:48 (T13)	07:06	16:48 (T13)	07:14	06:29		06:01	19:58 (T10)
	17:14		17:48 36	17:24 (T13)	18:23 58	18:01 (T12)	19:57	20:28		20:58 35	20:33 (T10)
3	07:58		07:42	16:47 (T13)	07:04	16:50 (T13)	07:13	06:27		06:00	19:59 (T10)
	17:14		17:50 39	17:26 (T13)	18:24 58	18:03 (T12)	19:58	20:29		20:59 35	20:34 (T10)
4	07:58		07:41	16:46 (T13)	07:03	16:51 (T13)	07:11	06:26		06:00	19:59 (T10)
	17:15		17:51 41	17:27 (T13)	18:25 55	18:03 (T12)	19:59	20:30		20:59 36	20:35 (T10)
5	07:58		07:40	16:45 (T13)	07:01	16:53 (T13)	07:09	06:25		05:59	19:59 (T10)
	17:16		17:52 44	17:29 (T13)	18:26 53	18:04 (T12)	20:00	20:31		21:00 36	20:35 (T10)
6	07:58		07:38	16:45 (T13)	06:59	16:56 (T13)	07:08	06:24		05:59	19:59 (T10)
	17:17		17:54 45	17:30 (T13)	18:27 49	18:06 (T12)	20:00	20:33		21:01 37	20:36 (T10)
7	07:58		07:37	16:43 (T13)	06:58	16:59 (T13)	07:06	06:22		05:59	19:59 (T10)
	17:18		17:55 48	17:31 (T13)	18:29 44	18:07 (T12)	20:01	20:34		21:01 38	20:37 (T10)
8	07:58		07:36	16:43 (T13)	07:56	18:39 (T12)	07:05	06:21		05:59	20:00 (T10)
	17:19		17:56 49	17:32 (T13)	19:30 29	19:08 (T12)	20:02	20:35		21:02 38	20:38 (T10)
9	07:57		07:35	16:43 (T13)	07:55	18:40 (T12)	07:03	06:20		05:58	19:59 (T10)
	17:20		17:57 51	17:34 (T13)	19:31 29	19:09 (T12)	20:04	20:36		21:03 38	20:37 (T10)
10	07:57		07:34	16:42 (T13)	07:53	18:39 (T12)	07:01	06:19		05:58	19:59 (T10)
	17:21		17:59 53	17:35 (T13)	19:32 31	19:10 (T12)	20:05	20:37		21:03 39	20:38 (T10)
11	07:57		07:33	16:42 (T13)	07:51	18:40 (T12)	07:00	06:18		05:58	20:00 (T10)
	17:22		18:00 55	17:37 (T13)	19:33 31	19:11 (T12)	20:06	20:38		21:04 39	20:39 (T10)
12	07:57		07:31	16:41 (T13)	07:50	18:40 (T12)	06:58	06:17		05:58	20:00 (T10)
	17:23		18:01 55	17:36 (T13)	19:34 30	19:10 (T12)	20:07	20:39		21:04 39	20:39 (T10)
13	07:56		07:30	16:41 (T13)	07:48	18:40 (T12)	06:56	06:16		05:58	20:00 (T10)
	17:24		18:02 56	17:37 (T13)	19:35 29	19:09 (T12)	20:08	20:40		21:05 40	20:40 (T10)
14	07:56		07:29	16:41 (T13)	07:46	18:41 (T12)	06:55	06:15	20:15 (T10)	05:58	20:00 (T10)
	17:25		18:04 57	17:38 (T13)	19:36 27	19:08 (T12)	20:09	20:41 2	20:17 (T10)	21:05 40	20:40 (T10)
15	07:56		07:27	16:41 (T13)	07:45	18:42 (T12)	06:53	06:14	20:10 (T10)	05:58	20:01 (T10)
	17:27		18:05 56	17:37 (T13)	19:38 25	19:07 (T12)	20:10	20:42 8	20:18 (T10)	21:06 39	20:40 (T10)
16	07:55		07:26	16:41 (T13)	07:43	18:43 (T12)	06:52	06:13	20:08 (T10)	05:58	20:01 (T10)
	17:28		18:06 57	17:38 (T13)	19:39 21	19:04 (T12)	20:11	20:43 11	20:19 (T10)	21:06 40	20:41 (T10)
17	07:55		07:25	16:41 (T13)	07:41	18:44 (T12)	06:50	06:12	20:06 (T10)	05:58	20:01 (T10)
	17:29		18:07 57	17:38 (T13)	19:40 18	19:02 (T12)	20:12	20:44 14	20:20 (T10)	21:07 40	20:41 (T10)
18	07:54		07:23	16:41 (T13)	07:40	18:48 (T12)	06:49	06:11	20:05 (T10)	05:58	20:01 (T10)
	17:30		18:08 56	17:37 (T13)	19:41 11	18:59 (T12)	20:13	20:45 17	20:22 (T10)	21:07 40	20:41 (T10)
19	07:54		07:22	16:41 (T13)	07:38		06:47	06:10	20:04 (T10)	05:58	20:01 (T10)
	17:31		18:10 57	17:38 (T13)	19:42		20:14	20:46 18	20:22 (T10)	21:07 40	20:41 (T10)
20	07:53		07:21	16:41 (T13)	07:36		06:46	06:09	20:03 (T10)	05:58	20:02 (T10)
	17:32		18:11 56	17:37 (T13)	19:43		20:15	20:47 20	20:23 (T10)	21:08 41	20:43 (T10)
21	07:53		07:19	16:42 (T13)	07:35		06:44	06:08	20:02 (T10)	05:58	20:02 (T10)
	17:34		18:12 55	17:37 (T13)	19:44		20:16	20:48 22	20:24 (T10)	21:08 41	20:43 (T10)
22	07:52		07:18	16:41 (T13)	07:33		06:43	06:07	20:02 (T10)	05:59	20:02 (T10)
	17:35		18:13 55	17:36 (T13)	19:45		20:18	20:49 23	20:25 (T10)	21:08 41	20:43 (T10)
23	07:51		07:16	16:42 (T13)	07:31		06:41	06:07	20:01 (T10)	05:59	20:02 (T10)
	17:36		18:15 54	17:36 (T13)	19:46		20:19	20:50 25	20:26 (T10)	21:08 41	20:43 (T10)
24	07:50		07:15	16:42 (T13)	07:30		06:40	06:06	20:00 (T10)	05:59	20:03 (T10)
	17:37		18:16 53	17:35 (T13)	19:47		20:20	20:50 26	20:26 (T10)	21:09 40	20:43 (T10)
25	07:50		07:13	16:43 (T13)	07:28		06:38	06:05	20:00 (T10)	05:59	20:03 (T10)
	17:38		18:17 52	17:35 (T13)	19:48		20:21	20:51 27	20:27 (T10)	21:09 40	20:43 (T10)
26	07:49	17:02 (T13)	07:12	16:43 (T13)	07:26		06:37	06:05	20:00 (T10)	06:00	20:03 (T10)
	17:40 10	17:12 (T13)	18:18 53	17:56 (T12)	19:50		20:22	20:52 28	20:28 (T10)	21:09 40	20:43 (T10)
27	07:48	16:58 (T13)	07:10	16:45 (T13)	07:24		06:35	06:04	19:59 (T10)	06:00	20:04 (T10)
	17:41 18	17:16 (T13)	18:19 55	17:57 (T12)	19:51		20:23	20:53 30	20:29 (T10)	21:09 40	20:44 (T10)
28	07:47	16:55 (T13)	07:09	16:45 (T13)	07:23		06:34	06:03	20:00 (T10)	06:00	20:03 (T10)
	17:42 23	17:18 (T13)	18:20 57	17:58 (T12)	19:52		20:24	20:54 30	20:30 (T10)	21:09 40	20:43 (T10)
29	07:46	16:53 (T13)			07:21		06:33	06:03	19:59 (T10)	06:01	20:03 (T10)
	17:43 26	17:19 (T13)			19:53		20:25	20:55 31	20:30 (T10)	21:09 40	20:43 (T10)
30	07:46	16:52 (T13)			07:19		06:31	06:02	19:59 (T10)	06:01	20:04 (T10)
	17:45 28	17:20 (T13)			19:54		20:26	20:56 33	20:32 (T10)	21:09 39	20:43 (T10)
31	07:45	16:50 (T13)			07:18			06:02	19:59 (T10)		
	17:46 31	17:21 (T13)			19:55			20:56 33	20:32 (T10)		
Potential sun hours	297		297		370		399	449		453	
Total, worst case	136		1436		656			398		1166	
Sun reduction	0.31		0.40		0.44			0.57		0.64	
Oper. time red.	1.00		1.00		1.00			1.00		1.00	
Wind dir. red.	0.72		0.71		0.68			0.54		0.54	
Total reduction	0.23		0.29		0.31			0.32		0.36	
Total, real	31		421		202			126		415	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1314 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8792)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August		September			October			November			December	
1	06:02		20:04 (T10)	06:26		06:57			07:28		18:19 (T12)	07:02		16:12 (T13)	07:37	
	21:09	39	20:43 (T10)	20:50		20:07			19:15	30	18:49 (T12)	17:28	53	17:05 (T13)	17:03	
2	06:02		20:04 (T10)	06:27		06:58			07:29		18:18 (T12)	07:03		16:13 (T13)	07:38	
	21:09	39	20:43 (T10)	20:49		20:06			19:13	31	18:49 (T12)	17:27	50	17:03 (T13)	17:03	
3	06:03		20:04 (T10)	06:28		06:59			07:30		18:18 (T12)	07:05		16:13 (T13)	07:39	
	21:09	39	20:43 (T10)	20:48		20:04			19:11	32	18:50 (T12)	17:25	49	17:02 (T13)	17:03	
4	06:03		20:05 (T10)	06:29		07:00			07:31		18:17 (T12)	07:06		16:13 (T13)	07:40	
	21:08	38	20:43 (T10)	20:47		20:02			19:10	31	18:48 (T12)	17:24	47	17:00 (T13)	17:03	
5	06:04		20:06 (T10)	06:30		07:01			07:32		18:17 (T12)	07:07		16:15 (T13)	07:41	
	21:08	37	20:43 (T10)	20:46		20:01			19:08	29	18:46 (T12)	17:23	45	17:00 (T13)	17:03	
6	06:05		20:05 (T10)	06:31		07:02			07:33		17:39 (T13)	07:08		16:15 (T13)	07:42	
	21:08	37	20:42 (T10)	20:45		19:57			19:06	39	18:44 (T12)	17:22	43	16:58 (T13)	17:02	
7	06:05		20:06 (T10)	06:32		07:03			07:34		17:33 (T13)	07:09		16:16 (T13)	07:43	
	21:08	36	20:42 (T10)	20:43		19:56			19:05	47	18:42 (T12)	17:21	41	16:57 (T13)	17:02	
8	06:06		20:05 (T10)	06:33		07:04			07:35		17:30 (T13)	07:11		16:18 (T13)	07:44	
	21:07	37	20:42 (T10)	20:42		19:54			19:03	52	18:41 (T12)	17:20	38	16:56 (T13)	17:02	
9	06:06		20:06 (T10)	06:34		07:05			07:36		17:27 (T13)	07:12		16:19 (T13)	07:45	
	21:07	36	20:42 (T10)	20:41		19:52			19:01	55	18:39 (T12)	17:19	36	16:55 (T13)	17:02	
10	06:07		20:07 (T10)	06:35		07:06			07:37		17:24 (T13)	07:13		16:20 (T13)	07:46	
	21:07	35	20:42 (T10)	20:40		19:51			19:00	57	18:37 (T12)	17:18	34	16:54 (T13)	17:02	
11	06:08		20:06 (T10)	06:36		07:07			07:38		17:22 (T13)	07:14		16:21 (T13)	07:47	
	21:06	34	20:40 (T10)	20:38		19:49			18:58	58	18:35 (T12)	17:17	31	16:52 (T13)	17:02	
12	06:09		20:07 (T10)	06:37		07:08			07:39		17:20 (T13)	07:15		16:24 (T13)	07:48	
	21:06	33	20:40 (T10)	20:37		19:47			18:57	59	18:34 (T12)	17:16	28	16:52 (T13)	17:02	
13	06:09		20:07 (T10)	06:38		07:09			07:40		17:20 (T13)	07:17		16:25 (T13)	07:48	
	21:05	33	20:40 (T10)	20:36		19:46			18:55	57	18:33 (T12)	17:15	26	16:51 (T13)	17:03	
14	06:10		20:08 (T10)	06:39		07:10			07:41		17:18 (T13)	07:18		16:27 (T13)	07:49	
	21:05	32	20:40 (T10)	20:34		19:44			18:53	57	18:31 (T12)	17:14	22	16:49 (T13)	17:03	
15	06:11		20:08 (T10)	06:40		07:11			07:43		17:17 (T13)	07:19		16:31 (T13)	07:50	
	21:04	31	20:39 (T10)	20:33		19:42			18:52	55	18:29 (T12)	17:13	18	16:49 (T13)	17:03	
16	06:12		20:08 (T10)	06:41		07:12			07:44		17:16 (T13)	07:20		16:35 (T13)	07:51	
	21:04	30	20:38 (T10)	20:32		19:40			18:50	50	18:06 (T13)	17:12	10	16:45 (T13)	17:03	
17	06:12		20:09 (T10)	06:42		07:13			07:45		17:15 (T13)	07:21			07:51	
	21:03	29	20:38 (T10)	20:30		19:39			18:49	51	18:06 (T13)	17:11			17:04	
18	06:13		20:10 (T10)	06:43		07:14			07:46		17:13 (T13)	07:23			07:52	
	21:03	28	20:38 (T10)	20:29		19:37			18:47	54	18:07 (T13)	17:10			17:04	
19	06:14		20:09 (T10)	06:44		07:15			07:47		17:13 (T13)	07:24			07:53	
	21:02	27	20:36 (T10)	20:27		19:35			18:46	54	18:07 (T13)	17:10			17:04	
20	06:15		20:10 (T10)	06:45		07:16			07:48		17:13 (T13)	07:25			07:53	
	21:01	26	20:36 (T10)	20:26		19:34			18:44	55	18:08 (T13)	17:09			17:05	
21	06:16		20:11 (T10)	06:46		07:17			07:49		17:12 (T13)	07:26			07:54	
	21:00	24	20:35 (T10)	20:24		19:32			18:43	56	18:08 (T13)	17:08			17:05	
22	06:17		20:12 (T10)	06:47		07:18			07:50		17:11 (T13)	07:27			07:54	
	21:00	23	20:35 (T10)	20:23		19:30			18:41	56	18:07 (T13)	17:08			17:06	
23	06:18		20:13 (T10)	06:48		07:19			07:52		17:11 (T13)	07:28			07:55	
	20:59	21	20:34 (T10)	20:21		19:28			18:40	56	18:07 (T13)	17:07			17:06	
24	06:18		20:14 (T10)	06:49		07:20			07:53		17:11 (T13)	07:30			07:55	
	20:58	19	20:33 (T10)	20:20		19:27			18:38	57	18:08 (T13)	17:06			17:07	
25	06:19		20:15 (T10)	06:50		07:21		18:32 (T12)	07:54		17:11 (T13)	07:31			07:56	
	20:57	18	20:33 (T10)	20:18		19:25	8	18:40 (T12)	18:37	57	18:08 (T13)	17:06			17:07	
26	06:20		20:16 (T10)	06:51		07:22		18:28 (T12)	07:55		17:11 (T13)	07:32			07:56	
	20:56	15	20:31 (T10)	20:17		19:23	15	18:43 (T12)	18:36	56	18:07 (T13)	17:05			17:08	
27	06:21		20:17 (T10)	06:52		07:23		18:25 (T12)	07:56		17:10 (T13)	07:33			07:56	
	20:55	13	20:30 (T10)	20:15		19:22	20	18:45 (T12)	18:34	57	18:07 (T13)	17:05			17:09	
28	06:22		20:19 (T10)	06:53		07:24		18:23 (T12)	07:57		17:10 (T13)	07:34			07:57	
	20:54	10	20:29 (T10)	20:14		19:20	24	18:47 (T12)	18:33	56	18:06 (T13)	17:04			17:09	
29	06:23		20:22 (T10)	06:54		07:25		18:21 (T12)	07:59		17:11 (T13)	07:35			07:57	
	20:53	6	20:28 (T10)	20:12		19:18	27	18:48 (T12)	18:32	56	18:07 (T13)	17:04			17:10	
30	06:24			06:55		07:27		18:20 (T12)	08:00		17:11 (T13)	07:36			07:57	
	20:52			20:11		19:16	28	18:48 (T12)	18:30	55	18:06 (T13)	17:04			17:11	
31	06:25			06:56					08:01		17:11 (T13)				07:57	
	20:51			20:09					18:29	54	18:05 (T13)				17:12	
Potential sun hours	460			429		375			345			297			287	
Total, worst case		825					122			1569			571			
Sun reduction		0.66					0.59			0.48			0.30			
Oper. time red.		1.00					1.00			1.00			1.00			
Wind dir. red.		0.54					0.67			0.70			0.72			
Total reduction		0.37					0.40			0.35			0.22			
Total, real		303					49			545			126			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1375 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8838)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February	March		April		May		June		
1	07:57		08:46 (T71)	07:43		07:07		07:16		18:16 (T69)	06:30	
	17:13	45	09:31 (T71)	17:48		18:22		19:56	73	19:29 (T69)	20:27	108
2	07:57		08:47 (T71)	07:42		07:06		07:15		18:16 (T69)	06:29	
	17:14	45	09:32 (T71)	17:49		18:23		19:57	74	19:30 (T69)	20:28	104
3	07:57		08:48 (T71)	07:41		07:04		07:13		18:15 (T69)	06:28	
	17:15	44	09:32 (T71)	17:50		18:24		19:58	74	19:29 (T69)	20:29	94
4	07:57		08:49 (T71)	07:40		07:02		07:11		18:15 (T69)	06:27	
	17:16	43	09:32 (T71)	17:51		18:25		19:59	74	19:29 (T69)	20:30	80
5	07:57		08:49 (T71)	07:39		07:01		07:10		18:15 (T69)	06:25	
	17:17	43	09:32 (T71)	17:53		18:26		20:00	74	19:29 (T69)	20:31	80
6	07:57		08:50 (T71)	07:38		06:59		07:08		18:14 (T69)	06:24	
	17:18	42	09:32 (T71)	17:54		18:28		20:00	75	19:29 (T69)	20:32	79
7	07:57		08:51 (T71)	07:37		06:58		07:06		18:14 (T69)	06:23	
	17:19	41	09:32 (T71)	17:55		18:29		20:01	74	19:28 (T69)	20:33	78
8	07:57		08:52 (T71)	07:36		07:56		07:05		07:34 (T68)	06:22	
	17:20	40	09:32 (T71)	17:57		19:30		20:02	86	19:28 (T69)	20:34	77
9	07:57		08:54 (T71)	07:35		07:54		07:03		07:27 (T68)	06:21	
	17:21	38	09:32 (T71)	17:58		19:31		20:03	97	19:27 (T69)	20:35	75
10	07:57		08:54 (T71)	07:33		07:53		07:02		07:23 (T68)	06:20	
	17:22	37	09:31 (T71)	17:59		19:32		20:04	105	19:27 (T69)	20:36	73
11	07:56		08:55 (T71)	07:32		07:51		07:00		07:20 (T68)	06:18	
	17:23	36	09:31 (T71)	18:00		19:33		20:06	111	19:27 (T69)	20:37	72
12	07:56		08:57 (T71)	07:31		07:50		06:58		07:17 (T68)	06:17	
	17:24	34	09:31 (T71)	18:01		19:34		20:07	114	19:26 (T69)	20:38	72
13	07:56		08:57 (T71)	07:30		07:48		06:57		07:16 (T68)	06:16	
	17:25	33	09:30 (T71)	18:03		19:35		20:08	117	19:26 (T69)	20:39	70
14	07:55		08:59 (T71)	07:28		07:46		18:49 (T69)	06:55		07:14 (T68)	06:15
	17:26	31	09:30 (T71)	18:04		19:37	17	19:06 (T69)	20:09	119	19:24 (T69)	20:40
15	07:55		09:00 (T71)	07:27		07:45		18:45 (T69)	06:54		07:13 (T68)	06:14
	17:27	28	09:28 (T71)	18:05		19:38	26	19:11 (T69)	20:10	120	19:24 (T69)	20:41
16	07:55		09:02 (T71)	07:26		07:43		18:40 (T69)	06:52		07:11 (T68)	06:13
	17:28	26	09:28 (T71)	18:06		19:39	34	19:14 (T69)	20:11	122	19:23 (T69)	20:42
17	07:54		09:04 (T71)	07:25		07:41		18:37 (T69)	06:51		07:10 (T68)	06:12
	17:30	22	09:26 (T71)	18:08		19:40	40	19:17 (T69)	20:12	123	19:23 (T69)	20:43
18	07:54		09:07 (T71)	07:23		07:40		18:35 (T69)	06:49		07:08 (T68)	06:11
	17:31	18	09:25 (T71)	18:09		19:41	44	19:19 (T69)	20:13	124	19:21 (T69)	20:44
19	07:53		09:09 (T71)	07:22		07:38		18:32 (T69)	06:47		07:07 (T68)	06:11
	17:32	13	09:22 (T71)	18:10		19:42	49	19:21 (T69)	20:14	125	19:21 (T69)	20:45
20	07:53			07:20		07:36		18:30 (T69)	06:46		07:05 (T68)	06:10
	17:33			18:11		19:43	51	19:21 (T69)	20:15	124	19:19 (T69)	20:46
21	07:52			07:19		07:35		18:29 (T69)	06:44		07:04 (T68)	06:09
	17:34			18:12		19:44	54	19:23 (T69)	20:16	125	19:19 (T69)	20:47
22	07:51			07:18		07:33		18:27 (T69)	06:43		07:02 (T68)	06:08
	17:35			18:14		19:45	57	19:24 (T69)	20:17	125	19:17 (T69)	20:48
23	07:51			07:16		07:31		18:25 (T69)	06:42		07:01 (T67)	06:07
	17:37			18:15		19:46	60	19:25 (T69)	20:18	124	19:16 (T69)	20:49
24	07:50			07:15		07:30		18:24 (T69)	06:40		06:59 (T67)	06:07
	17:38			18:16		19:47	62	19:26 (T69)	20:19	123	19:14 (T69)	20:50
25	07:49			07:13		07:28		18:23 (T69)	06:39		06:58 (T67)	06:06
	17:39			18:17		19:48	64	19:27 (T69)	20:20	122	19:13 (T69)	20:51
26	07:48			07:12		07:26		18:21 (T69)	06:37		06:57 (T67)	06:05
	17:40			18:18		19:50	66	19:27 (T69)	20:21	122	19:12 (T69)	20:52
27	07:48			07:10		07:25		18:21 (T69)	06:36		06:55 (T67)	06:05
	17:42			18:20		19:51	67	19:28 (T69)	20:23	120	19:10 (T69)	20:52
28	07:47			07:09		07:23		18:19 (T69)	06:35		06:54 (T67)	06:04
	17:43			18:21		19:52	70	19:29 (T69)	20:24	118	19:08 (T69)	20:53
29	07:46					07:21		18:18 (T69)	06:33		06:53 (T67)	06:03
	17:44					19:53	71	19:29 (T69)	20:25	115	19:06 (T69)	20:54
30	07:45					07:20		18:18 (T69)	06:32		06:51 (T67)	06:03
	17:45					19:54	71	19:29 (T69)	20:26	112	19:03 (T69)	20:55
31	07:44					07:18		18:17 (T69)				06:02
	17:46					19:55	72	19:29 (T69)				20:56
Potential sun hours	297			297		370			399			448
Total, worst case		659					975			3211		
Sun reduction		0.31					0.44			0.52		
Oper. time red.		1.00					1.00			1.00		
Wind dir. red.		0.53					0.64			0.65		
Total reduction		0.16					0.28			0.33		
Total, real		106					269			1071		

	June		
1	06:02		07:06 (T68)
	20:57	53	07:59 (T68)
2	06:01		07:07 (T68)
	20:57	52	07:59 (T68)
3	06:01		07:08 (T68)
	20:58	51	07:59 (T68)
4	06:01		07:08 (T68)
	20:59	50	07:58 (T68)
5	06:00		07:09 (T68)
	20:59	49	07:58 (T68)
6	06:00		07:10 (T68)
	21:00	48	07:58 (T68)
7	06:00		07:11 (T68)
	21:01	47	07:58 (T68)
8	05:59		07:11 (T68)
	21:01	46	07:57 (T68)
9	05:59		07:12 (T68)
	21:02	45	07:57 (T68)
10	05:59		07:13 (T68)
	21:03	44	07:57 (T68)
11	05:59		07:13 (T68)
	21:03	44	07:57 (T68)
12	05:59		07:14 (T68)
	21:04	43	07:57 (T68)
13	05:59		07:15 (T68)
	21:04	41	07:56 (T68)
14	05:59		07:15 (T68)
	21:05	41	07:56 (T68)
15	05:59		07:16 (T68)
	21:05	40	07:56 (T68)
16	05:59		07:16 (T68)
	21:06	40	07:56 (T68)
17	05:59		07:16 (T68)
	21:06	40	07:56 (T68)
18	05:59		07:17 (T68)
	21:06	39	07:56 (T68)
19	05:59		07:17 (T68)
	21:07	39	07:56 (T68)
20	05:59		07:17 (T68)
	21:07	39	07:56 (T68)
21	05:59		07:18 (T68)
	21:07	39	07:57 (T68)
22	05:59		07:18 (T68)
	21:07	39	07:57 (T68)
23	06:00		07:18 (T68)
	21:08	39	07:57 (T68)
24	06:00		07:18 (T68)
	21:08	39	07:57 (T68)
25	06:00		07:18 (T68)
	21:08	40	07:58 (T68)
26	06:00		07:18 (T68)
	21:08	40	07:58 (T68)
27	06:01		07:18 (T68)
	21:08	40	07:58 (T68)
28	06:01		07:18 (T68)
	21:08	41	07:59 (T68)
29	06:02		07:18 (T68)
	21:08	41	07:59 (T68)
30	06:02		07:18 (T68)
	21:08	43	08:01 (T68)
31			
Potential sun hours	452		
Total, worst case		1292	
Sun reduction		0.64	
Oper. time red.		1.00	
Wind dir. red.		0.67	
Total reduction		0.42	
Total, real		542	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1375 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8838)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:03		07:18 (T68)	06:27		07:07 (T68)	06:57		07:19 (T68)	07:28	07:02			07:37		08:37 (T71)
	21:08	43	08:01 (T68)	20:50	71	08:18 (T68)	20:07	111	19:26 (T69)	19:15	17:28			17:04	36	09:13 (T71)
2	06:03		07:18 (T68)	06:28		07:06 (T67)	06:58		07:22 (T68)	07:29	07:03			07:38		08:37 (T71)
	21:08	44	08:02 (T68)	20:49	73	08:19 (T68)	20:05	105	19:26 (T69)	19:13	17:27			17:04	37	09:14 (T71)
3	06:04		07:17 (T68)	06:29		07:05 (T67)	06:59		07:25 (T68)	07:30	07:04			07:39		08:37 (T71)
	21:08	45	08:02 (T68)	20:48	74	08:19 (T68)	20:04	97	19:25 (T69)	19:11	17:26			17:04	38	09:15 (T71)
4	06:04		07:17 (T68)	06:30		07:03 (T67)	07:00		07:30 (T68)	07:31	07:05			07:40		08:37 (T71)
	21:08	46	08:03 (T68)	20:47	76	08:19 (T68)	20:02	88	19:25 (T69)	19:10	17:25			17:03	39	09:16 (T71)
5	06:05		07:17 (T68)	06:31		07:02 (T67)	07:01		18:11 (T69)	07:32	07:07			07:41		08:36 (T71)
	21:08	46	08:03 (T68)	20:45	77	08:19 (T68)	20:01	74	19:25 (T69)	19:08	17:23			17:03	41	09:17 (T71)
6	06:05		07:17 (T68)	06:31		07:01 (T67)	07:02		18:10 (T69)	07:33	07:08			07:42		08:36 (T71)
	21:07	47	08:04 (T68)	20:44	78	08:19 (T68)	19:57	75	19:25 (T69)	19:07	17:22			17:03	42	09:18 (T71)
7	06:06		07:16 (T68)	06:32		07:00 (T67)	07:03		18:10 (T69)	07:34	07:09			07:43		08:36 (T71)
	21:07	48	08:04 (T68)	20:43	79	08:19 (T68)	19:56	74	19:24 (T69)	19:05	17:21			17:03	43	09:19 (T71)
8	06:07		07:16 (T68)	06:33		07:00 (T67)	07:04		18:10 (T69)	07:35	07:10			07:44		08:37 (T71)
	21:07	49	08:05 (T68)	20:42	80	08:20 (T68)	19:54	74	19:24 (T69)	19:03	17:20			17:03	43	09:20 (T71)
9	06:07		07:16 (T68)	06:34		06:59 (T67)	07:05		18:10 (T69)	07:36	07:11			07:44		08:37 (T71)
	21:06	50	08:06 (T68)	20:41	80	08:19 (T68)	19:52	73	19:23 (T69)	19:02	17:19			17:03	44	09:21 (T71)
10	06:08		07:15 (T68)	06:35		06:58 (T67)	07:06		18:09 (T69)	07:37	07:13			07:45		08:37 (T71)
	21:06	51	08:06 (T68)	20:39	97	19:04 (T69)	19:51	74	19:23 (T69)	19:00	17:18			17:03	45	09:22 (T71)
11	06:09		07:15 (T68)	06:36		06:58 (T67)	07:07		18:09 (T69)	07:38	07:14			07:46		08:37 (T71)
	21:06	52	08:07 (T68)	20:38	105	19:08 (T69)	19:49	73	19:22 (T69)	18:58	17:17			17:03	45	09:22 (T71)
12	06:09		07:15 (T68)	06:37		06:59 (T67)	07:08		18:08 (T69)	07:39	07:15			07:47		08:37 (T71)
	21:05	53	08:08 (T68)	20:37	110	19:11 (T69)	19:47	73	19:21 (T69)	18:57	17:16			17:03	45	09:22 (T71)
13	06:10		07:14 (T68)	06:38		07:00 (T67)	07:09		18:08 (T69)	07:40	07:16			07:48		08:37 (T71)
	21:05	54	08:08 (T68)	20:35	114	19:13 (T69)	19:45	72	19:20 (T69)	18:55	17:15			17:03	46	09:23 (T71)
14	06:11		07:14 (T68)	06:39		07:01 (T67)	07:10		18:08 (T69)	07:41	07:17			07:49		08:38 (T71)
	21:04	55	08:09 (T68)	20:34	117	19:15 (T69)	19:44	71	19:19 (T69)	18:54	17:14			17:04	46	09:24 (T71)
15	06:12		07:13 (T68)	06:40		07:02 (T67)	07:11		18:09 (T69)	07:42	07:19			07:49		08:38 (T71)
	21:04	57	08:10 (T68)	20:33	118	19:16 (T69)	19:42	69	19:18 (T69)	18:52	17:13			17:04	47	09:25 (T71)
16	06:12		07:13 (T68)	06:41		07:03 (T67)	07:12		18:09 (T69)	07:43	07:20			07:50		08:38 (T71)
	21:03	58	08:11 (T68)	20:31	121	19:18 (T69)	19:40	68	19:17 (T69)	18:51	17:13			17:04	47	09:25 (T71)
17	06:13		07:12 (T68)	06:42		07:04 (T67)	07:13		18:09 (T69)	07:45	07:21			07:51		08:39 (T71)
	21:03	59	08:11 (T68)	20:30	121	19:19 (T69)	19:39	67	19:16 (T69)	18:49	17:12			17:04	47	09:26 (T71)
18	06:14		07:12 (T68)	06:43		07:05 (T67)	07:14		18:10 (T69)	07:46	07:22			07:51		08:40 (T71)
	21:02	60	08:12 (T68)	20:28	123	19:20 (T69)	19:37	65	19:15 (T69)	18:48	17:11			17:05	47	09:27 (T71)
19	06:15		07:12 (T68)	06:44		07:06 (T67)	07:15		18:10 (T69)	07:47	07:23			07:52		08:39 (T71)
	21:01	61	08:13 (T68)	20:27	123	19:21 (T69)	19:35	63	19:13 (T69)	18:46	17:10			17:05	48	09:27 (T71)
20	06:16		07:12 (T68)	06:45		07:07 (T67)	07:16		18:11 (T69)	07:48	07:24			07:53		08:40 (T71)
	21:01	61	08:13 (T68)	20:26	124	19:22 (T69)	19:34	60	19:11 (T69)	18:45	17:10			17:05	48	09:28 (T71)
21	06:16		07:11 (T68)	06:46		07:08 (T68)	07:17		18:12 (T69)	07:49	07:26			07:53		08:40 (T71)
	21:00	63	08:14 (T68)	20:24	125	19:23 (T69)	19:32	58	19:10 (T69)	18:43	17:09			17:06	48	09:28 (T71)
22	06:17		07:11 (T68)	06:47		07:08 (T68)	07:18		18:13 (T69)	07:50	07:27			07:54		08:41 (T71)
	20:59	64	08:15 (T68)	20:23	125	19:23 (T69)	19:30	55	19:08 (T69)	18:42	17:08			17:06	48	09:29 (T71)
23	06:18		07:10 (T68)	06:48		07:09 (T68)	07:19		18:14 (T69)	07:51	07:28		08:46 (T71)	07:54		08:41 (T71)
	20:58	65	08:15 (T68)	20:21	125	19:23 (T69)	19:28	52	19:06 (T69)	18:40	17:08	13	08:59 (T71)	17:07	48	09:29 (T71)
24	06:19		07:10 (T68)	06:49		07:10 (T68)	07:20		18:15 (T69)	07:52	07:29		08:44 (T71)	07:55		08:42 (T71)
	20:57	65	08:15 (T68)	20:20	125	19:24 (T69)	19:27	50	19:05 (T69)	18:39	17:07	18	09:02 (T71)	17:07	48	09:30 (T71)
25	06:20		07:09 (T68)	06:50		07:11 (T68)	07:21		18:17 (T69)	07:54	07:30		08:42 (T71)	07:55		08:42 (T71)
	20:57	67	08:16 (T68)	20:18	124	19:24 (T69)	19:25	45	19:02 (T69)	18:37	17:06	22	09:04 (T71)	17:08	48	09:30 (T71)
26	06:21		07:09 (T68)	06:51		07:12 (T68)	07:22		18:19 (T69)	07:55	07:31		08:40 (T71)	07:55		08:43 (T71)
	20:56	68	08:17 (T68)	20:17	123	19:25 (T69)	19:23	41	19:00 (T69)	18:36	17:06	26	09:06 (T71)	17:09	47	09:30 (T71)
27	06:22		07:09 (T68)	06:52		07:13 (T68)	07:23		18:21 (T69)	07:56	07:32		08:40 (T71)	07:56		08:44 (T71)
	20:55	68	08:17 (T68)	20:15	122	19:25 (T69)	19:22	36	18:57 (T69)	18:35	17:06	28	09:08 (T71)	17:09	47	09:31 (T71)
28	06:23		07:09 (T68)	06:53		07:14 (T68)	07:24		18:24 (T69)	07:57	07:34		08:39 (T71)	07:56		08:44 (T71)
	20:54	69	08:18 (T68)	20:13	120	19:25 (T69)	19:20	29	18:53 (T69)	18:33	17:05	31	09:10 (T71)	17:10	47	09:31 (T71)
29	06:24		07:09 (T68)	06:54		07:15 (T68)	07:25		18:28 (T69)	07:58	07:35		08:38 (T71)	07:56		08:45 (T71)
	20:53	69	08:18 (T68)	20:12	118	19:25 (T69)	19:18	21	18:49 (T69)	18:32	17:05	33	09:11 (T71)	17:11	46	09:31 (T71)
30	06:25		07:08 (T68)	06:55		07:16 (T68)	07:26			07:59	07:36		08:38 (T71)	07:56		08:45 (T71)
	20:52	71	08:19 (T68)	20:10	116	19:26 (T69)	19:17			18:31	17:04	34	09:12 (T71)	17:12	46	09:31 (T71)
31	06:26		07:08 (T68)	06:56		07:17 (T68)				08:01				07:57		08:46 (T71)
	20:51	71	08:19 (T68)	20:09	114	19:26 (T69)				18:29				17:12	45	09:31 (T71)
Potential sun hours	459			428			375			345	298			288		
Total, worst case		1779			3298			1913				205			1392	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.67			0.66			0.64				0.53			0.53	
Total reduction		0.43			0.40			0.37				0.16			0.11	
Total, real		770			1305			711				32			160	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1431 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8883)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February		March			April			May			June		
1	07:57		15:34 (T44)	07:43		07:07			07:16		07:35 (T76)	06:30		19:03 (T77)	06:01		19:53 (T42)
	17:13	51	16:25 (T44)	17:47		18:22			19:56	67	19:34 (T77)	20:27	8	19:11 (T77)	20:57	39	20:32 (T42)
2	07:57		15:35 (T44)	07:42		07:06			07:14		07:33 (T76)	06:29			06:01		19:53 (T42)
	17:14	50	16:25 (T44)	17:49		18:23			19:57	72	19:35 (T77)	20:28			20:58	40	20:33 (T42)
3	07:57		15:35 (T44)	07:41		07:04			07:13		07:32 (T76)	06:28			06:01		19:52 (T42)
	17:15	50	16:25 (T44)	17:50		18:24			19:58	76	19:37 (T77)	20:29			20:58	41	20:33 (T42)
4	07:57		15:36 (T44)	07:40		07:02			07:11		07:30 (T76)	06:26			06:00		19:53 (T42)
	17:16	50	16:26 (T44)	17:51		18:25			19:59	79	19:37 (T77)	20:30			20:59	41	20:34 (T42)
5	07:57		15:37 (T44)	07:39		07:01			07:09		07:28 (T76)	06:25			06:00		19:53 (T42)
	17:17	49	16:26 (T44)	17:52		18:26			20:00	82	19:38 (T77)	20:31			21:00	42	20:35 (T42)
6	07:57		15:37 (T44)	07:38		06:59			07:08		07:27 (T76)	06:24			05:59		19:52 (T42)
	17:17	49	16:26 (T44)	17:54		18:27			20:00	85	19:39 (T77)	20:32			21:00	43	20:35 (T42)
7	07:57		15:37 (T44)	07:37		06:58			07:06		07:25 (T76)	06:23			05:59		19:52 (T42)
	17:18	48	16:25 (T44)	17:55		18:29			20:01	87	19:39 (T77)	20:33			21:01	44	20:36 (T42)
8	07:57		15:38 (T44)	07:36		07:56			07:05		07:24 (T76)	06:22			05:59		19:53 (T42)
	17:19	48	16:26 (T44)	17:56		19:30			20:02	88	19:39 (T77)	20:34			21:02	44	20:37 (T42)
9	07:57		15:39 (T44)	07:35		07:54			07:03		07:23 (T76)	06:20			05:59		19:53 (T42)
	17:20	47	16:26 (T44)	17:57		19:31			20:03	89	19:39 (T77)	20:35			21:02	45	20:38 (T42)
10	07:57		15:40 (T44)	07:34		07:53			07:01		07:23 (T76)	06:19			05:59		19:53 (T42)
	17:21	46	16:26 (T44)	17:59		19:32			20:05	88	19:38 (T77)	20:36			21:03	45	20:38 (T42)
11	07:57		15:41 (T44)	07:32		07:51			07:00		07:23 (T76)	06:18			05:58		19:54 (T42)
	17:23	45	16:26 (T44)	18:00		19:33			20:06	88	19:38 (T77)	20:37			21:03	45	20:39 (T42)
12	07:56		15:42 (T44)	07:31		07:50			06:58		07:23 (T76)	06:17			05:58		19:53 (T42)
	17:24	44	16:26 (T44)	18:01		19:34			20:07	87	19:38 (T77)	20:38			21:04	46	20:39 (T42)
13	07:56		15:43 (T44)	07:30		07:48			06:57		07:24 (T76)	06:16			05:58		19:53 (T42)
	17:25	43	16:26 (T44)	18:02		19:35			20:08	85	19:38 (T77)	20:39			21:05	46	20:39 (T42)
14	07:56		15:44 (T44)	07:29		07:46			06:55		07:25 (T76)	06:15		20:09 (T42)	05:58		19:53 (T42)
	17:26	41	16:25 (T44)	18:04		19:36			20:09	81	19:37 (T77)	20:40	8	20:17 (T42)	21:05	46	20:39 (T42)
15	07:55		15:45 (T44)	07:27		07:45			06:53		07:25 (T76)	06:14		20:06 (T42)	05:58		19:53 (T42)
	17:27	41	16:26 (T44)	18:05		19:38			20:10	78	19:36 (T77)	20:41	13	20:19 (T42)	21:05	47	20:40 (T42)
16	07:55		15:46 (T44)	07:26		07:43			06:52		07:27 (T76)	06:13		20:04 (T42)	05:58		19:53 (T42)
	17:28	39	16:25 (T44)	18:06		19:39			20:11	75	19:36 (T77)	20:42	16	20:20 (T42)	21:06	47	20:40 (T42)
17	07:54		15:47 (T44)	07:25		07:41			06:50		07:29 (T76)	06:12		20:02 (T42)	05:58		19:55 (T42)
	17:29	38	16:25 (T44)	18:07		19:40			20:12	69	19:35 (T77)	20:43	18	20:20 (T42)	21:06	46	20:41 (T42)
18	07:54		15:48 (T44)	07:23		07:40			06:49		07:33 (T76)	06:11		20:00 (T42)	05:58		19:55 (T42)
	17:30	36	16:24 (T44)	18:09		19:41			20:13	60	19:35 (T77)	20:44	21	20:21 (T42)	21:07	47	20:42 (T42)
19	07:53		15:50 (T44)	07:22		07:38			06:47		18:43 (T77)	06:10		19:59 (T42)	05:58		19:55 (T42)
	17:32	34	16:24 (T44)	18:10		19:42			20:14	50	19:33 (T77)	20:45	23	20:22 (T42)	21:07	47	20:42 (T42)
20	07:53		15:52 (T44)	07:20		07:36			06:46		18:44 (T77)	06:09		19:58 (T42)	05:59		19:55 (T42)
	17:33	31	16:23 (T44)	18:11		19:43			20:15	49	19:33 (T77)	20:46	25	20:23 (T42)	21:07	47	20:42 (T42)
21	07:52		15:53 (T44)	07:19		07:35			06:44		18:45 (T77)	06:09		19:56 (T42)	05:59		19:55 (T42)
	17:34	28	16:21 (T44)	18:12		19:44			20:16	47	19:32 (T77)	20:47	27	20:23 (T42)	21:08	47	20:42 (T42)
22	07:52		15:56 (T44)	07:18		07:33			06:43		18:45 (T77)	06:08		19:56 (T42)	05:59		19:55 (T42)
	17:35	24	16:20 (T44)	18:13		19:45			20:17	46	19:31 (T77)	20:48	29	20:25 (T42)	21:08	47	20:42 (T42)
23	07:51		15:58 (T44)	07:16		07:31			06:41		18:46 (T77)	06:07		19:55 (T42)	05:59		19:56 (T42)
	17:36	20	16:18 (T44)	18:15		19:46			20:18	44	19:30 (T77)	20:49	30	20:25 (T42)	21:08	47	20:43 (T42)
24	07:50		16:01 (T44)	07:15		07:30		19:09 (T77)	06:40		18:47 (T77)	06:06		19:54 (T42)	05:59		19:56 (T42)
	17:38	15	16:16 (T44)	18:16		19:47	14	19:23 (T77)	20:19	41	19:28 (T77)	20:50	32	20:26 (T42)	21:08	47	20:43 (T42)
25	07:49			07:13		07:28		19:04 (T77)	06:38		18:48 (T77)	06:06		19:55 (T42)	06:00		19:56 (T42)
	17:39			18:17		19:48	23	19:27 (T77)	20:21	39	19:27 (T77)	20:51	32	20:27 (T42)	21:08	47	20:43 (T42)
26	07:49			07:12		07:26		19:00 (T77)	06:37		18:49 (T77)	06:05		19:54 (T42)	06:00		19:57 (T42)
	17:40			18:18		19:50	28	19:28 (T77)	20:22	36	19:25 (T77)	20:52	34	20:28 (T42)	21:08	46	20:43 (T42)
27	07:48			07:10		07:24		07:43 (T76)	06:36		18:51 (T77)	06:04		19:54 (T42)	06:00		19:56 (T42)
	17:41			18:19		19:51	37	19:29 (T77)	20:23	32	19:23 (T77)	20:53	35	20:29 (T42)	21:08	47	20:43 (T42)
28	07:47			07:09		07:23		07:42 (T76)	06:34		18:53 (T77)	06:04		19:53 (T42)	06:01		19:56 (T42)
	17:42			18:21		19:52	44	19:30 (T77)	20:24	28	19:21 (T77)	20:54	36	20:29 (T42)	21:09	47	20:43 (T42)
29	07:46					07:21		07:40 (T76)	06:33		18:54 (T77)	06:03		19:53 (T42)	06:01		19:57 (T42)
	17:44					19:53	51	19:31 (T77)	20:25	24	19:18 (T77)	20:54	37	20:30 (T42)	21:09	46	20:43 (T42)
30	07:45					07:19		07:38 (T76)	06:32		18:58 (T77)	06:02		19:53 (T42)	06:02		19:57 (T42)
	17:45					19:54	57	19:32 (T77)	20:26	17	19:15 (T77)	20:55	38	20:31 (T42)	21:08	46	20:43 (T42)
31	07:44					07:18		07:37 (T76)				06:02		19:52 (T42)			
	17:46					19:55	62	19:34 (T77)				20:56	39	20:31 (T42)			
Potential sun hours	297			297		370			399			448			453		
Total, worst case		967					316			1889			501			1355	
Sun reduction		0.31					0.44			0.52			0.57			0.64	
Oper. time red.		1.00					1.00			1.00			1.00			1.00	
Wind dir. red.		0.74					0.62			0.62			0.54			0.54	
Total reduction		0.24					0.28			0.34			0.32			0.36	
Total, real		232					90			636			161			488	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1431 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8883)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		19:58 (T42)	06:26			06:57			07:22 (T76)	07:27			07:37		15:23 (T44)
	21:08	45	20:43 (T42)	20:50			20:07	88		19:37 (T77)	19:15			17:04	45	16:08 (T44)
2	06:03		19:57 (T42)	06:27			06:58			07:22 (T76)	07:29			07:38		15:22 (T44)
	21:08	46	20:43 (T42)	20:49			20:06	88		19:37 (T77)	19:13			17:03	46	16:08 (T44)
3	06:03		19:58 (T42)	06:28			06:59			07:21 (T76)	07:30			07:39		15:22 (T44)
	21:08	45	20:43 (T42)	20:48			20:04	89		19:37 (T77)	19:11			17:03	47	16:09 (T44)
4	06:04		19:58 (T42)	06:29			07:00			07:21 (T76)	07:31			07:40		15:23 (T44)
	21:08	44	20:42 (T42)	20:47			20:02	88		19:36 (T77)	19:10			17:03	48	16:11 (T44)
5	06:04		19:59 (T42)	06:30			07:01			07:22 (T76)	07:32			07:41		15:23 (T44)
	21:08	43	20:42 (T42)	20:46			20:01	87		19:36 (T77)	19:08			17:03	49	16:12 (T44)
6	06:05		19:58 (T42)	06:31			07:02			07:23 (T76)	07:33			07:42		15:23 (T44)
	21:08	44	20:42 (T42)	20:44			19:57	85		19:35 (T77)	19:06			17:03	48	16:11 (T44)
7	06:05		19:59 (T42)	06:32			07:03			07:24 (T76)	07:34			07:43		15:23 (T44)
	21:07	43	20:42 (T42)	20:43			19:56	82		19:34 (T77)	19:05			17:03	49	16:12 (T44)
8	06:06		20:00 (T42)	06:33			07:04			07:25 (T76)	07:35			07:44		15:23 (T44)
	21:07	42	20:42 (T42)	20:42			19:54	80		19:33 (T77)	19:03			17:03	50	16:13 (T44)
9	06:07		19:59 (T42)	06:34			07:05			07:26 (T76)	07:36			07:45		15:23 (T44)
	21:07	42	20:41 (T42)	20:41			19:52	76		19:31 (T77)	19:01			17:03	50	16:13 (T44)
10	06:07		20:00 (T42)	06:35			07:06			07:26 (T76)	07:37			07:46		15:24 (T44)
	21:06	41	20:41 (T42)	20:39			19:51	71		19:28 (T77)	19:00			17:03	50	16:14 (T44)
11	06:08		20:01 (T42)	06:36			07:07			07:27 (T76)	07:38			07:46		15:24 (T44)
	21:06	40	20:41 (T42)	20:38			19:49	68		19:27 (T77)	18:58			17:03	51	16:15 (T44)
12	06:09		20:00 (T42)	06:37		19:10 (T77)	07:08			07:28 (T76)	07:39			07:47		15:25 (T44)
	21:05	40	20:40 (T42)	20:37	11	19:21 (T77)	19:47	63		19:25 (T77)	18:57			17:03	51	16:16 (T44)
13	06:10		20:01 (T42)	06:38		19:05 (T77)	07:09			07:29 (T76)	07:40			07:48		15:25 (T44)
	21:05	39	20:40 (T42)	20:36	20	19:25 (T77)	19:45	57		19:23 (T77)	18:55			17:03	51	16:16 (T44)
14	06:10		20:02 (T42)	06:39		19:03 (T77)	07:10			07:30 (T76)	07:41			07:49		15:25 (T44)
	21:05	37	20:39 (T42)	20:34	25	19:28 (T77)	19:44	52		19:22 (T77)	18:54			17:03	51	16:16 (T44)
15	06:11		20:02 (T42)	06:40		19:00 (T77)	07:11			07:31 (T76)	07:42			07:50		15:25 (T44)
	21:04	37	20:39 (T42)	20:33	30	19:30 (T77)	19:42	46		19:20 (T77)	18:52			17:03	52	16:17 (T44)
16	06:12		20:02 (T42)	06:41		18:57 (T77)	07:12			07:32 (T76)	07:44			07:50		15:26 (T44)
	21:03	36	20:38 (T42)	20:31	33	19:30 (T77)	19:40	38		19:18 (T77)	18:50			17:04	52	16:18 (T44)
17	06:13		20:03 (T42)	06:42		18:55 (T77)	07:13			18:48 (T77)	07:45			07:51		15:26 (T44)
	21:03	34	20:37 (T42)	20:30	37	19:32 (T77)	19:39	29		19:17 (T77)	18:49			17:04	52	16:18 (T44)
18	06:14		20:04 (T42)	06:43		18:54 (T77)	07:14			18:51 (T77)	07:46			07:52		15:27 (T44)
	21:02	33	20:37 (T42)	20:29	39	19:33 (T77)	19:37	24		19:15 (T77)	18:47			17:04	51	16:18 (T44)
19	06:14		20:05 (T42)	06:44		18:52 (T77)	07:15			18:54 (T77)	07:47			07:52		15:27 (T44)
	21:01	32	20:37 (T42)	20:27	42	19:34 (T77)	19:35	16		19:10 (T77)	18:46			17:05	52	16:19 (T44)
20	06:15		20:05 (T42)	06:45		18:51 (T77)	07:16				07:48			07:53		15:27 (T44)
	21:01	31	20:36 (T42)	20:26	44	19:35 (T77)	19:33				18:44			17:05	52	16:19 (T44)
21	06:16		20:05 (T42)	06:46		18:50 (T77)	07:17				07:49			07:53		15:28 (T44)
	21:00	30	20:35 (T42)	20:24	45	19:35 (T77)	19:32				18:43			17:06	52	16:20 (T44)
22	06:17		20:06 (T42)	06:47		18:49 (T77)	07:18				07:50			07:54		15:28 (T44)
	20:59	28	20:34 (T42)	20:23	47	19:36 (T77)	19:30				18:41			17:06	52	16:20 (T44)
23	06:18		20:07 (T42)	06:48		18:48 (T77)	07:19				07:51			07:54		15:29 (T44)
	20:58	26	20:33 (T42)	20:21	49	19:37 (T77)	19:28				18:40			17:07	52	16:21 (T44)
24	06:19		20:09 (T42)	06:49		18:47 (T77)	07:20				07:53			07:55		15:29 (T44)
	20:58	24	20:33 (T42)	20:20	50	19:37 (T77)	19:27				18:39			17:07	52	16:21 (T44)
25	06:20		20:10 (T42)	06:50		07:35 (T76)	07:21				07:54			07:55		15:29 (T44)
	20:57	22	20:32 (T42)	20:18	61	19:37 (T77)	19:25				18:37			17:08	52	16:21 (T44)
26	06:21		20:11 (T42)	06:51		07:32 (T76)	07:22				07:55			07:56		15:31 (T44)
	20:56	20	20:31 (T42)	20:17	69	19:38 (T77)	19:23				18:36			17:08	52	16:23 (T44)
27	06:22		20:13 (T42)	06:52		07:29 (T76)	07:23				07:56			07:56		15:31 (T44)
	20:55	18	20:31 (T42)	20:15	75	19:38 (T77)	19:22				18:34			17:09	52	16:23 (T44)
28	06:22		20:15 (T42)	06:53		07:27 (T76)	07:24				07:57			07:56		15:31 (T44)
	20:54	15	20:30 (T42)	20:14	79	19:38 (T77)	19:20				18:33			17:10	52	16:23 (T44)
29	06:23		20:17 (T42)	06:54		07:26 (T76)	07:25				07:58			07:57		15:32 (T44)
	20:53	11	20:28 (T42)	20:12	81	19:38 (T77)	19:18				18:32			17:10	51	16:23 (T44)
30	06:24			06:55		07:24 (T76)	07:26				08:00			07:57		15:33 (T44)
	20:52			20:10	85	19:38 (T77)	19:16				18:31			17:11	51	16:24 (T44)
31	06:25			06:56		07:23 (T76)					08:01			07:57		15:33 (T44)
	20:51			20:09	87	19:38 (T77)					18:29			17:12	51	16:24 (T44)
Potential sun hours	460			429			375				345	297		287		
Total, worst case		988			1009			1227					433		1566	
Sun reduction		0.66			0.61			0.59					0.30		0.22	
Oper. time red.		1.00			1.00			1.00					1.00		1.00	
Wind dir. red.		0.54			0.62			0.63					0.74		0.74	
Total reduction		0.37			0.39			0.38					0.23		0.17	
Total, real		367			397			470					100		266	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1438 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8890)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:57	07:44	07:07			07:16		07:45 (T22)	06:30		19:54 (T21)	06:01		19:34 (T21)
	17:13	17:47	18:22			19:56	35	08:20 (T22)	20:27	9	20:03 (T21)	20:57	51	20:25 (T21)
2	07:58	07:43	07:06			07:14		07:45 (T22)	06:29		19:49 (T21)	06:01		19:33 (T21)
	17:13	17:48	18:23			19:57	34	08:19 (T22)	20:28	16	20:05 (T21)	20:58	51	20:24 (T21)
3	07:58	07:42	07:04			07:13		07:47 (T22)	06:27		19:46 (T21)	06:00		19:34 (T21)
	17:14	17:50	18:24			19:58	31	08:18 (T22)	20:29	21	20:07 (T21)	20:59	50	20:24 (T21)
4	07:58	07:40	07:02			07:11		07:47 (T22)	06:26		19:44 (T21)	06:00		19:35 (T21)
	17:15	17:51	18:25			19:59	30	08:17 (T22)	20:30	24	20:08 (T21)	20:59	50	20:25 (T21)
5	07:58	07:39	07:01			07:09		07:48 (T22)	06:25		19:42 (T21)	05:59		19:34 (T21)
	17:16	17:52	18:26			20:00	27	08:15 (T22)	20:31	27	20:09 (T21)	21:00	50	20:24 (T21)
6	07:58	07:38	06:59			07:08		07:50 (T22)	06:24		19:41 (T21)	05:59		19:35 (T21)
	17:17	17:53	18:27			20:00	23	08:13 (T22)	20:32	29	20:10 (T21)	21:01	50	20:25 (T21)
7	07:57	07:37	06:58			07:06		07:51 (T22)	06:22		19:39 (T21)	05:59		19:36 (T21)
	17:18	17:55	18:28			20:01	20	08:11 (T22)	20:33	31	20:10 (T21)	21:01	49	20:25 (T21)
8	07:57	07:36	07:56			07:04		07:53 (T22)	06:21		19:38 (T21)	05:59		19:36 (T21)
	17:19	17:56	19:30			20:02	14	08:07 (T22)	20:34	33	20:11 (T21)	21:02	49	20:25 (T21)
9	07:57	07:35	07:54			07:03			06:20		19:37 (T21)	05:58		19:36 (T21)
	17:20	17:57	19:31			20:03			20:35	35	20:12 (T21)	21:03	48	20:24 (T21)
10	07:57	07:34	07:53			07:01			06:19		19:36 (T21)	05:58		19:36 (T21)
	17:21	17:59	19:32			20:05			20:37	37	20:13 (T21)	21:03	49	20:25 (T21)
11	07:57	07:32	07:51			07:00			06:18		19:35 (T21)	05:58		19:36 (T21)
	17:22	18:00	19:33			20:06			20:38	39	20:14 (T21)	21:04	49	20:25 (T21)
12	07:56	07:31	07:50			06:58			06:17		19:35 (T21)	05:58		19:37 (T21)
	17:23	18:01	19:34			20:07			20:39	40	20:15 (T21)	21:04	48	20:25 (T21)
13	07:56	07:30	07:48			06:56			06:16		19:34 (T21)	05:58		19:37 (T21)
	17:24	18:02	19:35			20:08			20:40	42	20:16 (T21)	21:05	48	20:25 (T21)
14	07:56	07:29	07:46			06:55			06:15		19:34 (T21)	05:58		19:37 (T21)
	17:25	18:03	19:36			20:09			20:41	43	20:17 (T21)	21:05	48	20:25 (T21)
15	07:55	07:27	07:45			06:53			06:14		19:33 (T21)	05:58		19:38 (T21)
	17:27	18:05	19:37			20:10			20:42	45	20:18 (T21)	21:06	47	20:25 (T21)
16	07:55	07:26	07:43		08:03 (T22)	06:52			06:13		19:33 (T21)	05:58		19:38 (T21)
	17:28	18:06	19:39	10	08:13 (T22)	20:11			20:43	46	20:19 (T21)	21:06	48	20:26 (T21)
17	07:55	07:25	07:41		08:00 (T22)	06:50			06:12		19:32 (T21)	05:58		19:38 (T21)
	17:29	18:07	19:40	16	08:16 (T22)	20:12			20:44	48	20:20 (T21)	21:06	48	20:26 (T21)
18	07:54	07:23	07:40		07:59 (T22)	06:49			06:11		19:33 (T21)	05:58		19:38 (T21)
	17:30	18:08	19:41	20	08:19 (T22)	20:13			20:45	49	20:22 (T21)	21:07	48	20:26 (T21)
19	07:54	07:22	07:38		07:57 (T22)	06:47			06:10		19:33 (T21)	05:58		19:38 (T21)
	17:31	18:10	19:42	23	08:20 (T22)	20:14			20:46	49	20:22 (T21)	21:07	48	20:26 (T21)
20	07:53	07:20	07:36		07:55 (T22)	06:46			06:09		19:32 (T21)	05:58		19:40 (T21)
	17:32	18:11	19:43	26	08:21 (T22)	20:15			20:47	51	20:23 (T21)	21:07	47	20:27 (T21)
21	07:52	07:19	07:34		07:54 (T22)	06:44			06:08		19:32 (T21)	05:58		19:40 (T21)
	17:34	18:12	19:44	29	08:23 (T22)	20:16			20:47	51	20:23 (T21)	21:08	47	20:27 (T21)
22	07:52	07:18	07:33		07:52 (T22)	06:43			06:07		19:32 (T21)	05:59		19:40 (T21)
	17:35	18:13	19:45	31	08:23 (T22)	20:17			20:48	51	20:23 (T21)	21:08	47	20:27 (T21)
23	07:51	07:16	07:31		07:50 (T22)	06:41			06:07		19:32 (T21)	05:59		19:40 (T21)
	17:36	18:14	19:46	33	08:23 (T22)	20:18			20:49	52	20:24 (T21)	21:08	47	20:27 (T21)
24	07:50	07:15	07:29		07:48 (T22)	06:40			06:06		19:32 (T21)	05:59		19:40 (T21)
	17:37	18:16	19:47	35	08:23 (T22)	20:20			20:50	52	20:24 (T21)	21:08	48	20:28 (T21)
25	07:50	07:13	07:28		07:47 (T22)	06:38			06:05		19:32 (T21)	05:59		19:40 (T21)
	17:38	18:17	19:48	37	08:24 (T22)	20:21			20:51	51	20:23 (T21)	21:08	48	20:28 (T21)
26	07:49	07:12	07:26		07:46 (T22)	06:37			06:04		19:33 (T21)	06:00		19:40 (T21)
	17:40	18:18	19:49	38	08:24 (T22)	20:22			20:52	51	20:24 (T21)	21:09	48	20:28 (T21)
27	07:48	07:10	07:24		07:45 (T22)	06:35			06:04		19:32 (T21)	06:00		19:41 (T21)
	17:41	18:19	19:51	38	08:23 (T22)	20:23			20:53	52	20:24 (T21)	21:09	47	20:28 (T21)
28	07:47	07:09	07:23		07:46 (T22)	06:34			06:03		19:33 (T21)	06:00		19:41 (T21)
	17:42	18:20	19:52	37	08:23 (T22)	20:24			20:54	51	20:24 (T21)	21:09	47	20:28 (T21)
29	07:46		07:21		07:45 (T22)	06:33			06:03		19:33 (T21)	06:01		19:40 (T21)
	17:43		19:53	38	08:23 (T22)	20:25			20:55	51	20:24 (T21)	21:09	48	20:28 (T21)
30	07:45		07:19		07:45 (T22)	06:31			06:02		19:33 (T21)	06:01		19:41 (T21)
	17:45		19:54	37	08:22 (T22)	20:26			20:55	52	20:25 (T21)	21:09	48	20:29 (T21)
31	07:44		07:18		07:45 (T22)				06:02		19:33 (T21)			
	17:46		19:55	37	08:22 (T22)				20:56	51	20:24 (T21)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				485			214			1279			1451	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.62			0.62			0.56			0.56	
Total reduction				0.27			0.32			0.32			0.36	
Total, real				132			69			407			519	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1438 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8890)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02	19:41 (T21)	06:26	19:46 (T21)	06:57		07:27	07:02	07:37
	21:09	48 20:29 (T21)	20:50	40 20:26 (T21)	20:07		19:15	17:28	17:03
2	06:02	19:41 (T21)	06:27	19:46 (T21)	06:58		07:28	07:03	07:38
	21:09	49 20:30 (T21)	20:49	39 20:25 (T21)	20:06		19:13	17:26	17:03
3	06:03	19:41 (T21)	06:28	19:47 (T21)	06:59		07:30	07:04	07:39
	21:08	48 20:29 (T21)	20:48	37 20:24 (T21)	20:04		19:11	17:25	17:03
4	06:03	19:41 (T21)	06:29	19:48 (T21)	07:00	07:51 (T22)	07:31	07:06	07:40
	21:08	49 20:30 (T21)	20:47	35 20:23 (T21)	20:02	14 08:05 (T22)	19:10	17:24	17:03
5	06:04	19:41 (T21)	06:30	19:49 (T21)	07:01	07:48 (T22)	07:32	07:07	07:41
	21:08	49 20:30 (T21)	20:46	33 20:22 (T21)	20:01	20 08:08 (T22)	19:08	17:23	17:02
6	06:04	19:41 (T21)	06:31	19:50 (T21)	07:02	07:46 (T22)	07:33	07:08	07:42
	21:08	50 20:31 (T21)	20:45	31 20:21 (T21)	19:57	23 08:09 (T22)	19:06	17:22	17:02
7	06:05	19:42 (T21)	06:32	19:51 (T21)	07:03	07:43 (T22)	07:34	07:09	07:43
	21:08	49 20:31 (T21)	20:43	28 20:19 (T21)	19:56	27 08:10 (T22)	19:05	17:21	17:02
8	06:06	19:41 (T21)	06:33	19:53 (T21)	07:04	07:41 (T22)	07:35	07:10	07:44
	21:07	50 20:31 (T21)	20:42	25 20:18 (T21)	19:54	30 08:11 (T22)	19:03	17:20	17:02
9	06:06	19:41 (T21)	06:34	19:54 (T21)	07:05	07:40 (T22)	07:36	07:12	07:45
	21:07	51 20:32 (T21)	20:41	23 20:17 (T21)	19:52	31 08:11 (T22)	19:01	17:19	17:02
10	06:07	19:42 (T21)	06:35	19:55 (T21)	07:06	07:39 (T22)	07:37	07:13	07:46
	21:07	50 20:32 (T21)	20:40	20 20:15 (T21)	19:51	33 08:12 (T22)	19:00	17:18	17:02
11	06:08	19:41 (T21)	06:36	19:58 (T21)	07:07	07:38 (T22)	07:38	07:14	07:47
	21:06	51 20:32 (T21)	20:38	16 20:14 (T21)	19:49	34 08:12 (T22)	18:58	17:17	17:02
12	06:09	19:41 (T21)	06:37	20:04 (T21)	07:08	07:37 (T22)	07:39	07:15	07:47
	21:06	51 20:32 (T21)	20:37	5 20:09 (T21)	19:47	36 08:13 (T22)	18:57	17:16	17:02
13	06:09	19:42 (T21)	06:38		07:09	07:36 (T22)	07:40	07:16	07:48
	21:05	51 20:33 (T21)	20:36		19:45	37 08:13 (T22)	18:55	17:15	17:03
14	06:10	19:41 (T21)	06:39		07:10	07:35 (T22)	07:41	07:18	07:49
	21:05	51 20:32 (T21)	20:34		19:44	38 08:13 (T22)	18:53	17:14	17:03
15	06:11	19:41 (T21)	06:40		07:11	07:35 (T22)	07:42	07:19	07:50
	21:04	52 20:33 (T21)	20:33		19:42	38 08:13 (T22)	18:52	17:13	17:03
16	06:12	19:42 (T21)	06:41		07:12	07:35 (T22)	07:44	07:20	07:50
	21:04	51 20:33 (T21)	20:32		19:40	37 08:12 (T22)	18:50	17:12	17:03
17	06:12	19:42 (T21)	06:42		07:13	07:34 (T22)	07:45	07:21	07:51
	21:03	51 20:33 (T21)	20:30		19:39	38 08:12 (T22)	18:49	17:11	17:04
18	06:13	19:42 (T21)	06:43		07:14	07:34 (T22)	07:46	07:22	07:52
	21:02	52 20:34 (T21)	20:29		19:37	37 08:11 (T22)	18:47	17:10	17:04
19	06:14	19:41 (T21)	06:44		07:15	07:35 (T22)	07:47	07:24	07:52
	21:02	52 20:33 (T21)	20:27		19:35	36 08:11 (T22)	18:46	17:10	17:04
20	06:15	19:42 (T21)	06:45		07:16	07:36 (T22)	07:48	07:25	07:53
	21:01	51 20:33 (T21)	20:26		19:33	34 08:10 (T22)	18:44	17:09	17:05
21	06:16	19:42 (T21)	06:46		07:17	07:37 (T22)	07:49	07:26	07:54
	21:00	51 20:33 (T21)	20:24		19:32	32 08:09 (T22)	18:43	17:08	17:05
22	06:17	19:42 (T21)	06:47		07:18	07:38 (T22)	07:50	07:27	07:54
	20:59	51 20:33 (T21)	20:23		19:30	29 08:07 (T22)	18:41	17:08	17:06
23	06:18	19:43 (T21)	06:48		07:19	07:39 (T22)	07:51	07:28	07:55
	20:59	51 20:34 (T21)	20:21		19:28	27 08:06 (T22)	18:40	17:07	17:06
24	06:18	19:43 (T21)	06:49		07:20	07:40 (T22)	07:53	07:29	07:55
	20:58	50 20:33 (T21)	20:20		19:27	24 08:04 (T22)	18:38	17:06	17:07
25	06:19	19:43 (T21)	06:50		07:21	07:41 (T22)	07:54	07:31	07:55
	20:57	50 20:33 (T21)	20:18		19:25	21 08:02 (T22)	18:37	17:06	17:07
26	06:20	19:43 (T21)	06:51		07:22	07:42 (T22)	07:55	07:32	07:56
	20:56	48 20:31 (T21)	20:17		19:23	18 08:00 (T22)	18:36	17:05	17:08
27	06:21	19:43 (T21)	06:52		07:23	07:43 (T22)	07:56	07:33	07:56
	20:55	47 20:30 (T21)	20:15		19:21	13 07:56 (T22)	18:34	17:05	17:09
28	06:22	19:43 (T21)	06:53		07:24		07:57	07:34	07:56
	20:54	46 20:29 (T21)	20:14		19:20		18:33	17:04	17:09
29	06:23	19:44 (T21)	06:54		07:25		07:58	07:35	07:57
	20:53	44 20:28 (T21)	20:12		19:18		18:32	17:04	17:10
30	06:24	19:44 (T21)	06:55		07:26		08:00	07:36	07:57
	20:52	44 20:28 (T21)	20:10		19:16		18:30	17:04	17:11
31	06:25	19:45 (T21)	06:56				08:01		07:57
	20:51	42 20:27 (T21)	20:09				18:29		17:12
Potential sun hours	460		429		375		345	297	287
Total, worst case		1530		332		707			
Sun reduction		0.66		0.61		0.59			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.56		0.56		0.62			
Total reduction		0.37		0.34		0.37			
Total, real		564		113		258			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1445 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8896)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April		May		June	
1	07:58	07:44	07:07	07:16		06:30		06:01	06:35 (T12)
	17:13	17:47	18:22	19:56		20:27	34	07:40 (T13)	20:57 36 07:11 (T12)
2	07:58	07:43	07:06	07:14		06:29		07:07 (T13)	06:01 06:33 (T12)
	17:14	17:49	18:23	19:57		20:28	32	07:39 (T13)	20:58 39 07:12 (T12)
3	07:58	07:42	07:04	07:13		06:27		07:07 (T13)	06:00 06:32 (T12)
	17:14	17:50	18:24	19:58		20:29	30	07:37 (T13)	20:59 42 07:14 (T12)
4	07:58	07:41	07:03	07:11		06:26		07:09 (T13)	06:00 06:31 (T12)
	17:15	17:51	18:25	19:59		20:30	27	07:36 (T13)	20:59 44 07:15 (T12)
5	07:58	07:40	07:01	07:10		06:25		07:10 (T13)	06:00 06:30 (T12)
	17:16	17:52	18:26	20:00		20:32	24	07:34 (T13)	21:00 46 07:16 (T12)
6	07:58	07:39	06:59	07:08		06:24		07:12 (T13)	05:59 06:29 (T12)
	17:17	17:54	18:27	20:00		20:33	20	07:32 (T13)	21:01 48 07:17 (T12)
7	07:58	07:37	06:58	07:06	07:25 (T13)	06:23		07:15 (T13)	05:59 06:29 (T12)
	17:18	17:55	18:29	20:01	8 07:33 (T13)	20:34	15	07:30 (T13)	21:02 49 07:18 (T12)
8	07:58	07:36	07:56	07:05	07:24 (T13)	06:21		07:18 (T13)	05:59 06:29 (T12)
	17:19	17:56	19:30	20:03	14 07:38 (T13)	20:35	7	07:25 (T13)	21:02 51 07:20 (T12)
9	07:57	07:35	07:55	07:03	07:22 (T13)	06:20			05:58 06:28 (T12)
	17:20	17:57	19:31	20:04	18 07:40 (T13)	20:36			21:03 53 07:21 (T12)
10	07:57	07:34	07:53	07:01	07:20 (T13)	06:19			05:58 06:27 (T12)
	17:21	17:59	19:32	20:05	21 07:41 (T13)	20:37			21:03 54 07:21 (T12)
11	07:57	07:33	07:51	07:00	07:19 (T13)	06:18			05:58 06:27 (T12)
	17:22	18:00	19:33	20:06	24 07:43 (T13)	20:38			21:04 54 07:21 (T12)
12	07:57	07:31	07:50	06:58	07:17 (T13)	06:17			05:58 06:27 (T12)
	17:23	18:01	19:34	20:07	27 07:44 (T13)	20:39			21:04 55 07:22 (T12)
13	07:56	07:30	07:48	06:57	07:16 (T13)	06:16			05:58 06:26 (T12)
	17:24	18:02	19:35	20:08	29 07:45 (T13)	20:40			21:05 57 07:23 (T12)
14	07:56	07:29	07:46	06:55	07:14 (T13)	06:15			05:58 06:26 (T12)
	17:26	18:04	19:37	20:09	31 07:45 (T13)	20:41			21:05 57 07:23 (T12)
15	07:56	07:28	07:45	06:53	07:12 (T13)	06:14			05:58 06:26 (T12)
	17:27	18:05	19:38	20:10	33 07:45 (T13)	20:42			21:06 58 07:24 (T12)
16	07:55	07:26	07:43	06:52	07:11 (T13)	06:13			05:58 06:26 (T12)
	17:28	18:06	19:39	20:11	35 07:46 (T13)	20:43			21:06 58 07:24 (T12)
17	07:55	07:25	07:41	06:50	07:09 (T13)	06:12			05:58 06:26 (T12)
	17:29	18:07	19:40	20:12	37 07:46 (T13)	20:44			21:07 59 07:25 (T12)
18	07:54	07:23	07:40	06:49	07:08 (T13)	06:11			05:58 06:26 (T12)
	17:30	18:09	19:41	20:13	38 07:46 (T13)	20:45			21:07 59 07:25 (T12)
19	07:54	07:22	07:38	06:47	07:06 (T13)	06:10			05:58 06:27 (T12)
	17:31	18:10	19:42	20:14	40 07:46 (T13)	20:46			21:07 59 07:26 (T12)
20	07:53	07:21	07:36	06:46	07:05 (T13)	06:09			05:58 06:27 (T12)
	17:33	18:11	19:43	20:15	41 07:46 (T13)	20:47			21:08 59 07:26 (T12)
21	07:53	07:19	07:35	06:44	07:03 (T13)	06:08			05:58 06:27 (T12)
	17:34	18:12	19:44	20:17	43 07:46 (T13)	20:48			21:08 59 07:26 (T12)
22	07:52	07:18	07:33	06:43	07:03 (T13)	06:08			05:59 06:27 (T12)
	17:35	18:13	19:45	20:18	43 07:46 (T13)	20:49			21:08 59 07:26 (T12)
23	07:51	07:16	07:31	06:41	07:03 (T13)	06:07			05:59 06:27 (T12)
	17:36	18:15	19:46	20:19	43 07:46 (T13)	20:50			21:08 59 07:26 (T12)
24	07:51	07:15	07:30	06:40	07:03 (T13)	06:06			05:59 06:28 (T12)
	17:37	18:16	19:47	20:20	42 07:45 (T13)	20:50			21:09 59 07:27 (T12)
25	07:50	07:13	07:28	06:38	07:03 (T13)	06:05			05:59 06:28 (T12)
	17:39	18:17	19:49	20:21	42 07:45 (T13)	20:51			21:09 59 07:27 (T12)
26	07:49	07:12	07:26	06:37	07:03 (T13)	06:05			06:00 06:28 (T12)
	17:40	18:18	19:50	20:22	40 07:43 (T13)	20:52			21:09 59 07:27 (T12)
27	07:48	07:10	07:25	06:36	07:03 (T13)	06:04			06:00 06:29 (T12)
	17:41	18:19	19:51	20:23	40 07:43 (T13)	20:53			21:09 58 07:27 (T12)
28	07:47	07:09	07:23	06:34	07:04 (T13)	06:03		06:44 (T12)	06:01 06:29 (T12)
	17:42	18:21	19:52	20:24	39 07:43 (T13)	20:54	16	07:00 (T12)	21:09 58 07:27 (T12)
29	07:47		07:21	06:33	07:04 (T13)	06:03		06:40 (T12)	06:01 06:30 (T12)
	17:44		19:53	20:25	37 07:41 (T13)	20:55	23	07:03 (T12)	21:09 57 07:27 (T12)
30	07:46		07:19	06:31	07:05 (T13)	06:02		06:38 (T12)	06:01 06:31 (T12)
	17:45		19:54	20:26	36 07:41 (T13)	20:56	29	07:07 (T12)	21:09 55 07:26 (T12)
31	07:45		07:18			06:02		06:36 (T12)	
	17:46		19:55			20:56	32	07:08 (T12)	
Potential sun hours	297	297	370	399		449		453	
Total, worst case					801		289		1619
Sun reduction					0.52		0.57		0.64
Oper. time red.					1.00		1.00		1.00
Wind dir. red.					0.66		0.68		0.73
Total reduction					0.34		0.39		0.46
Total, real					275		112		750

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1445 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8896)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02	06:31 (T12)	06:26		06:57	07:18 (T13)	07:28	07:02	07:37
	21:09 55	07:26 (T12)	20:50		20:07 24	07:42 (T13)	19:15	17:28	17:03
2	06:02	06:32 (T12)	06:27		06:58	07:19 (T13)	07:29	07:03	07:38
	21:09 54	07:26 (T12)	20:49		20:06 21	07:40 (T13)	19:13	17:27	17:03
3	06:03	06:32 (T12)	06:28		06:59	07:20 (T13)	07:30	07:05	07:39
	21:09 53	07:25 (T12)	20:48		20:04 18	07:38 (T13)	19:11	17:25	17:03
4	06:03	06:33 (T12)	06:29		07:00	07:21 (T13)	07:31	07:06	07:40
	21:08 52	07:25 (T12)	20:47		20:02 14	07:35 (T13)	19:10	17:24	17:03
5	06:04	06:35 (T12)	06:30	07:27 (T13)	07:01	07:22 (T13)	07:32	07:07	07:41
	21:08 50	07:25 (T12)	20:46 10	07:37 (T13)	20:01 8	07:30 (T13)	19:08	17:23	17:03
6	06:05	06:35 (T12)	06:31	07:23 (T13)	07:02		07:33	07:08	07:42
	21:08 49	07:24 (T12)	20:45 17	07:40 (T13)	19:57		19:06	17:22	17:02
7	06:05	06:37 (T12)	06:32	07:21 (T13)	07:03		07:34	07:09	07:43
	21:08 46	07:23 (T12)	20:44 22	07:43 (T13)	19:56		19:05	17:21	17:02
8	06:06	06:37 (T12)	06:33	07:19 (T13)	07:04		07:35	07:11	07:44
	21:07 45	07:22 (T12)	20:42 25	07:44 (T13)	19:54		19:03	17:20	17:02
9	06:07	06:39 (T12)	06:34	07:18 (T13)	07:05		07:36	07:12	07:45
	21:07 42	07:21 (T12)	20:41 28	07:46 (T13)	19:52		19:02	17:19	17:02
10	06:07	06:40 (T12)	06:35	07:16 (T13)	07:06		07:37	07:13	07:46
	21:07 41	07:21 (T12)	20:40 31	07:47 (T13)	19:51		19:00	17:18	17:02
11	06:08	06:41 (T12)	06:36	07:15 (T13)	07:07		07:38	07:14	07:47
	21:06 38	07:19 (T12)	20:39 33	07:48 (T13)	19:49		18:58	17:17	17:02
12	06:09	06:43 (T12)	06:37	07:14 (T13)	07:08		07:39	07:15	07:48
	21:06 34	07:17 (T12)	20:37 35	07:49 (T13)	19:47		18:57	17:16	17:03
13	06:09	06:46 (T12)	06:38	07:13 (T13)	07:09		07:40	07:17	07:48
	21:05 30	07:16 (T12)	20:36 36	07:49 (T13)	19:46		18:55	17:15	17:03
14	06:10	06:48 (T12)	06:39	07:11 (T13)	07:10		07:42	07:18	07:49
	21:05 26	07:14 (T12)	20:35 38	07:49 (T13)	19:44		18:54	17:14	17:03
15	06:11	06:51 (T12)	06:40	07:11 (T13)	07:11		07:43	07:19	07:50
	21:04 19	07:10 (T12)	20:33 39	07:50 (T13)	19:42		18:52	17:13	17:03
16	06:12	06:56 (T12)	06:41	07:10 (T13)	07:12		07:44	07:20	07:51
	21:04 10	07:06 (T12)	20:32 40	07:50 (T13)	19:40		18:50	17:12	17:03
17	06:13		06:42	07:09 (T13)	07:13		07:45	07:21	07:51
	21:03		20:30 41	07:50 (T13)	19:39		18:49	17:11	17:04
18	06:13		06:43	07:09 (T13)	07:14		07:46	07:23	07:52
	21:03		20:29 41	07:50 (T13)	19:37		18:47	17:10	17:04
19	06:14		06:44	07:08 (T13)	07:15		07:47	07:24	07:53
	21:02		20:27 43	07:51 (T13)	19:35		18:46	17:10	17:04
20	06:15		06:45	07:08 (T13)	07:16		07:48	07:25	07:53
	21:01		20:26 43	07:51 (T13)	19:34		18:44	17:09	17:05
21	06:16		06:46	07:08 (T13)	07:17		07:49	07:26	07:54
	21:00		20:25 43	07:51 (T13)	19:32		18:43	17:08	17:05
22	06:17		06:47	07:08 (T13)	07:18		07:51	07:27	07:54
	21:00		20:23 42	07:50 (T13)	19:30		18:41	17:08	17:06
23	06:18		06:48	07:09 (T13)	07:19		07:52	07:29	07:55
	20:59		20:22 41	07:50 (T13)	19:28		18:40	17:07	17:06
24	06:19		06:49	07:10 (T13)	07:20		07:53	07:30	07:55
	20:58		20:20 40	07:50 (T13)	19:27		18:39	17:06	17:07
25	06:19		06:50	07:11 (T13)	07:21		07:54	07:31	07:56
	20:57		20:18 38	07:49 (T13)	19:25		18:37	17:06	17:07
26	06:20		06:51	07:12 (T13)	07:22		07:55	07:32	07:56
	20:56		20:17 37	07:49 (T13)	19:23		18:36	17:05	17:08
27	06:21		06:52	07:13 (T13)	07:23		07:56	07:33	07:56
	20:55		20:15 35	07:48 (T13)	19:22		18:34	17:05	17:09
28	06:22		06:53	07:14 (T13)	07:24		07:57	07:34	07:57
	20:54		20:14 33	07:47 (T13)	19:20		18:33	17:05	17:09
29	06:23		06:54	07:15 (T13)	07:26		07:59	07:35	07:57
	20:53		20:12 31	07:46 (T13)	19:18		18:32	17:04	17:10
30	06:24		06:55	07:16 (T13)	07:27		08:00	07:36	07:57
	20:52		20:11 29	07:45 (T13)	19:16		18:30	17:04	17:11
31	06:25		06:56	07:17 (T13)			08:01		07:57
	20:51		20:09 26	07:43 (T13)			18:29		17:12
Potential sun hours	460		429		375		345	297	287
Total, worst case		644		917		85			
Sun reduction		0.66		0.61		0.59			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.73		0.66		0.66			
Total reduction		0.48		0.40		0.39			
Total, real		308		370		33			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1461 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8909)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:57	07:43	07:07			07:16		18:52 (T5)	06:30		18:44 (T5)	06:01		20:02 (T3)
	17:12	17:47	18:21			19:56	42	19:34 (T4)	20:27	47	19:31 (T5)	20:57	24	20:26 (T3)
2	07:57	07:42	07:05			07:14		18:50 (T5)	06:28		18:46 (T5)	06:00		20:03 (T3)
	17:13	17:48	18:22			19:57	45	19:35 (T4)	20:28	44	19:30 (T5)	20:58	23	20:26 (T3)
3	07:57	07:41	07:04			07:12		18:48 (T5)	06:27		18:47 (T5)	06:00		20:04 (T3)
	17:14	17:49	18:24			19:58	48	19:36 (T4)	20:29	42	19:29 (T5)	20:58	22	20:26 (T3)
4	07:57	07:40	07:02			07:11		18:48 (T5)	06:26		18:48 (T5)	05:59		20:04 (T3)
	17:15	17:51	18:25			19:59	49	19:37 (T4)	20:30	39	19:27 (T5)	20:59	21	20:25 (T3)
5	07:57	07:39	07:01			07:09		18:46 (T5)	06:24		18:49 (T5)	05:59		20:05 (T3)
	17:16	17:52	18:26			20:00	52	19:38 (T4)	20:31	36	19:25 (T5)	21:00	20	20:25 (T3)
6	07:57	07:38	06:59			07:07		18:44 (T5)	06:23		18:51 (T5)	05:59		20:06 (T3)
	17:17	17:53	18:27			20:00	55	19:39 (T5)	20:32	32	19:23 (T5)	21:00	19	20:25 (T3)
7	07:57	07:37	06:57			07:06		18:44 (T5)	06:22		18:53 (T5)	05:58		20:06 (T3)
	17:18	17:54	18:28			20:01	57	19:41 (T5)	20:33	29	19:22 (T5)	21:01	18	20:24 (T3)
8	07:57	07:36	07:56			07:04		18:43 (T5)	06:21		18:55 (T5)	05:58		20:07 (T3)
	17:19	17:56	19:29			20:02	58	19:41 (T5)	20:34	24	19:19 (T5)	21:02	17	20:24 (T3)
9	07:57	07:35	07:54			07:02		18:42 (T5)	06:20		18:58 (T5)	05:58		20:08 (T3)
	17:20	17:57	19:30			20:03	59	19:41 (T5)	20:35	23	20:13 (T3)	21:02	16	20:24 (T3)
10	07:57	07:33	07:53			07:01		18:41 (T5)	06:19		19:03 (T5)	05:58		20:08 (T3)
	17:21	17:58	19:32			20:04	61	19:42 (T5)	20:36	17	20:14 (T3)	21:03	16	20:24 (T3)
11	07:57	07:32	07:51			06:59		18:40 (T5)	06:17		20:05 (T3)	05:58		20:09 (T3)
	17:22	17:59	19:33			20:05	61	19:41 (T5)	20:37	10	20:15 (T3)	21:04	14	20:23 (T3)
12	07:56	07:31	07:49			06:58		18:41 (T5)	06:16		20:04 (T3)	05:57		20:10 (T3)
	17:23	18:01	19:34			20:06	61	19:42 (T5)	20:38	12	20:16 (T3)	21:04	13	20:23 (T3)
13	07:56	07:30	07:48			06:56		18:40 (T5)	06:15		20:03 (T3)	05:57		20:11 (T3)
	17:24	18:02	19:35			20:07	62	19:42 (T5)	20:39	14	20:17 (T3)	21:05	12	20:23 (T3)
14	07:56	07:28	07:46			06:54		18:40 (T5)	06:14		20:02 (T3)	05:57		20:11 (T3)
	17:25	18:03	19:36			20:09	62	19:42 (T5)	20:40	15	20:17 (T3)	21:05	12	20:23 (T3)
15	07:55	07:27	07:44			06:53		18:39 (T5)	06:13		20:01 (T3)	05:57		20:12 (T3)
	17:26	18:04	19:37			20:10	62	19:41 (T5)	20:41	17	20:18 (T3)	21:06	11	20:23 (T3)
16	07:55	07:26	07:43			06:51		18:38 (T5)	06:12		20:01 (T3)	05:57		20:13 (T3)
	17:27	18:06	19:38			20:11	63	19:41 (T5)	20:42	18	20:19 (T3)	21:06	9	20:22 (T3)
17	07:54	07:24	07:41			06:50		18:39 (T5)	06:11		20:00 (T3)	05:57		20:13 (T3)
	17:28	18:07	19:39			20:12	62	19:41 (T5)	20:43	20	20:20 (T3)	21:06	9	20:22 (T3)
18	07:54	07:23	07:39			06:48		18:38 (T5)	06:10		20:00 (T3)	05:57		20:14 (T3)
	17:30	18:08	19:40			20:13	62	19:40 (T5)	20:44	21	20:21 (T3)	21:07	8	20:22 (T3)
19	07:53	07:22	07:38			06:47		18:39 (T5)	06:10		19:59 (T3)	05:58		20:14 (T3)
	17:31	18:09	19:42			20:14	61	19:40 (T5)	20:45	22	20:21 (T3)	21:07	8	20:22 (T3)
20	07:53	07:20	07:36			06:45		18:38 (T5)	06:09		20:00 (T3)	05:58		20:14 (T3)
	17:32	18:10	19:43			20:15	61	19:39 (T5)	20:46	23	20:23 (T3)	21:07	8	20:22 (T3)
21	07:52	07:19	07:34			06:44		18:39 (T5)	06:08		20:00 (T3)	05:58		20:14 (T3)
	17:33	18:12	19:44			20:16	60	19:39 (T5)	20:47	24	20:24 (T3)	21:08	7	20:21 (T3)
22	07:52	07:17	07:33			06:42		18:40 (T5)	06:07		20:00 (T3)	05:58		20:15 (T3)
	17:34	18:13	19:45			20:17	59	19:39 (T5)	20:48	24	20:24 (T3)	21:08	7	20:22 (T3)
23	07:51	07:16	07:31			06:41		18:39 (T5)	06:06		19:59 (T3)	05:58		20:15 (T3)
	17:36	18:14	19:46			20:18	59	19:38 (T5)	20:49	26	20:25 (T3)	21:08	8	20:23 (T3)
24	07:50	07:14	07:29			06:39		18:40 (T5)	06:05		20:00 (T3)	05:59		20:15 (T3)
	17:37	18:15	19:47			20:19	58	19:38 (T5)	20:50	27	20:27 (T3)	21:08	8	20:23 (T3)
25	07:49	07:13	07:27			06:38		18:40 (T5)	06:05		20:00 (T3)	05:59		20:14 (T3)
	17:38	18:16	19:48			20:20	56	19:36 (T5)	20:51	27	20:27 (T3)	21:08	9	20:23 (T3)
26	07:49	07:11	07:26			06:36		18:41 (T5)	06:04		20:00 (T3)	05:59		20:15 (T3)
	17:39	18:18	19:49			20:21	55	19:36 (T5)	20:52	26	20:26 (T3)	21:08	9	20:24 (T3)
27	07:48	07:10	07:24		19:07 (T5)	06:35		18:42 (T5)	06:03		20:01 (T3)	06:00		20:14 (T3)
	17:41	18:19	19:50	17	19:24 (T5)	20:23	53	19:35 (T5)	20:53	26	20:27 (T3)	21:09	10	20:24 (T3)
28	07:47	07:08	07:22		19:02 (T5)	06:34		18:42 (T5)	06:03		20:01 (T3)	06:00		20:15 (T3)
	17:42	18:20	19:51	27	19:29 (T4)	20:24	52	19:34 (T5)	20:54	25	20:26 (T3)	21:09	11	20:26 (T3)
29	07:46		07:21		18:59 (T5)	06:32		18:43 (T5)	06:02		20:02 (T3)	06:00		20:14 (T3)
	17:43		19:52	32	19:31 (T4)	20:25	50	19:33 (T5)	20:54	25	20:27 (T3)	21:09	12	20:26 (T3)
30	07:45		07:19		18:56 (T5)	06:31		18:44 (T5)	06:02		20:02 (T3)	06:01		20:13 (T3)
	17:44		19:53	36	19:32 (T4)	20:26	48	19:32 (T5)	20:55	24	20:26 (T3)	21:09	13	20:26 (T3)
31	07:44		07:17		18:54 (T5)				06:01		20:03 (T3)			
	17:46		19:55	39	19:33 (T4)				20:56	23	20:26 (T3)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				151			1693			782			394	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.61			0.61			0.58			0.55	
Total reduction				0.27			0.32			0.33			0.35	
Total, real				41			538			257			139	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1461 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8909)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:01	20:14 (T3)	06:26	20:15 (T3)	06:57	18:39 (T5)	07:27	07:02	07:37
	21:08 13	20:27 (T3)	20:50 11	20:26 (T3)	20:07 61	19:40 (T5)	19:14	17:27	17:03
2	06:02	20:13 (T3)	06:27	20:15 (T3)	06:58	18:39 (T5)	07:28	07:03	07:38
	21:08 15	20:28 (T3)	20:49 9	20:24 (T3)	20:05 61	19:40 (T5)	19:13	17:26	17:03
3	06:02	20:13 (T3)	06:28	19:10 (T5)	06:59	18:40 (T5)	07:29	07:04	07:39
	21:08 16	20:29 (T3)	20:48 20	20:23 (T3)	20:04 59	19:39 (T5)	19:11	17:25	17:02
4	06:03	20:12 (T3)	06:29	19:07 (T5)	07:00	18:40 (T5)	07:30	07:05	07:40
	21:08 17	20:29 (T3)	20:47 22	20:22 (T3)	20:02 58	19:38 (T5)	19:09	17:24	17:02
5	06:03	20:12 (T3)	06:30	19:04 (T5)	07:01	18:40 (T5)	07:31	07:07	07:41
	21:08 18	20:30 (T3)	20:46 26	19:30 (T5)	20:00 57	19:37 (T5)	19:08	17:23	17:02
6	06:04	20:12 (T3)	06:31	19:02 (T5)	07:02	18:40 (T5)	07:32	07:08	07:42
	21:08 19	20:31 (T3)	20:44 30	19:32 (T5)	19:57 55	19:35 (T5)	19:06	17:21	17:02
7	06:05	20:12 (T3)	06:32	19:00 (T5)	07:03	18:41 (T5)	07:33	07:09	07:43
	21:07 19	20:31 (T3)	20:43 34	19:34 (T5)	19:55 52	19:33 (T4)	19:04	17:20	17:02
8	06:05	20:12 (T3)	06:33	18:58 (T5)	07:04	18:42 (T5)	07:35	07:10	07:44
	21:07 20	20:32 (T3)	20:42 37	19:35 (T5)	19:54 50	19:32 (T4)	19:03	17:19	17:02
9	06:06	20:12 (T3)	06:34	18:57 (T5)	07:05	18:42 (T5)	07:36	07:11	07:45
	21:07 21	20:33 (T3)	20:41 39	19:36 (T5)	19:52 48	19:30 (T4)	19:01	17:18	17:02
10	06:07	20:11 (T3)	06:35	18:55 (T5)	07:06	18:43 (T5)	07:37	07:13	07:46
	21:06 22	20:33 (T3)	20:39 43	19:38 (T5)	19:50 45	19:28 (T4)	18:59	17:17	17:02
11	06:07	20:11 (T3)	06:36	18:54 (T5)	07:07	18:44 (T5)	07:38	07:14	07:46
	21:06 23	20:34 (T3)	20:38 45	19:39 (T5)	19:49 43	19:27 (T4)	18:58	17:16	17:02
12	06:08	20:11 (T3)	06:37	18:53 (T5)	07:08	18:46 (T5)	07:39	07:15	07:47
	21:06 23	20:34 (T3)	20:37 47	19:40 (T5)	19:47 39	19:25 (T4)	18:56	17:15	17:02
13	06:09	20:10 (T3)	06:38	18:51 (T5)	07:09	18:47 (T5)	07:40	07:16	07:48
	21:05 24	20:34 (T3)	20:35 49	19:40 (T5)	19:45 36	19:23 (T4)	18:55	17:14	17:02
14	06:10	20:10 (T3)	06:39	18:50 (T5)	07:10	18:49 (T5)	07:41	07:17	07:49
	21:05 25	20:35 (T3)	20:34 51	19:41 (T5)	19:43 33	19:22 (T4)	18:53	17:13	17:02
15	06:10	20:10 (T3)	06:40	18:49 (T5)	07:11	18:52 (T5)	07:42	07:19	07:50
	21:04 26	20:36 (T3)	20:33 53	19:42 (T5)	19:42 28	19:20 (T4)	18:51	17:12	17:03
16	06:11	20:10 (T3)	06:41	18:48 (T5)	07:12	18:55 (T5)	07:43	07:20	07:50
	21:03 26	20:36 (T3)	20:31 54	19:42 (T5)	19:40 22	19:17 (T4)	18:50	17:12	17:03
17	06:12	20:09 (T3)	06:42	18:47 (T5)	07:13		07:44	07:21	07:51
	21:03 27	20:36 (T3)	20:30 56	19:43 (T5)	19:38		18:48	17:11	17:03
18	06:13	20:09 (T3)	06:43	18:47 (T5)	07:14		07:46	07:22	07:52
	21:02 27	20:36 (T3)	20:28 56	19:43 (T5)	19:37		18:47	17:10	17:03
19	06:14	20:10 (T3)	06:44	18:46 (T5)	07:15		07:47	07:23	07:52
	21:01 26	20:36 (T3)	20:27 58	19:44 (T5)	19:35		18:45	17:09	17:04
20	06:14	20:10 (T3)	06:45	18:45 (T5)	07:16		07:48	07:25	07:53
	21:01 26	20:36 (T3)	20:26 59	19:44 (T5)	19:33		18:44	17:08	17:04
21	06:15	20:10 (T3)	06:46	18:44 (T5)	07:17		07:49	07:26	07:53
	21:00 25	20:35 (T3)	20:24 60	19:44 (T5)	19:31		18:42	17:08	17:05
22	06:16	20:10 (T3)	06:47	18:44 (T5)	07:18		07:50	07:27	07:54
	20:59 25	20:35 (T3)	20:23 60	19:44 (T5)	19:30		18:41	17:07	17:05
23	06:17	20:09 (T3)	06:48	18:43 (T5)	07:19		07:51	07:28	07:54
	20:58 24	20:33 (T3)	20:21 61	19:44 (T5)	19:28		18:39	17:07	17:06
24	06:18	20:10 (T3)	06:49	18:43 (T5)	07:20		07:52	07:29	07:55
	20:58 22	20:32 (T3)	20:20 61	19:44 (T5)	19:26		18:38	17:06	17:06
25	06:19	20:10 (T3)	06:50	18:42 (T5)	07:21		07:54	07:30	07:55
	20:57 22	20:32 (T3)	20:18 62	19:44 (T5)	19:25		18:37	17:05	17:07
26	06:20	20:10 (T3)	06:51	18:42 (T5)	07:22		07:55	07:32	07:56
	20:56 21	20:31 (T3)	20:16 62	19:44 (T5)	19:23		18:35	17:05	17:08
27	06:21	20:11 (T3)	06:52	18:41 (T5)	07:23		07:56	07:33	07:56
	20:55 19	20:30 (T3)	20:15 63	19:44 (T5)	19:21		18:34	17:04	17:08
28	06:22	20:11 (T3)	06:53	18:41 (T5)	07:24		07:57	07:34	07:56
	20:54 18	20:29 (T3)	20:13 62	19:43 (T5)	19:19		18:33	17:04	17:09
29	06:23	20:12 (T3)	06:54	18:40 (T5)	07:25		07:58	07:35	07:57
	20:53 17	20:29 (T3)	20:12 62	19:42 (T5)	19:18		18:31	17:04	17:10
30	06:24	20:13 (T3)	06:55	18:40 (T5)	07:26		07:59	07:36	07:57
	20:52 15	20:28 (T3)	20:10 62	19:42 (T5)	19:16		18:30	17:03	17:10
31	06:25	20:14 (T3)	06:56	18:39 (T5)			08:01		07:57
	20:51 13	20:27 (T3)	20:09 62	19:41 (T5)			18:29		17:11
Potential sun hours	460		429		375		345	297	287
Total, worst case	654		1476		747				
Sun reduction	0.66		0.61		0.59				
Oper. time red.	1.00		1.00		1.00				
Wind dir. red.	0.55		0.61		0.61				
Total reduction	0.36		0.37		0.36				
Total, real	239		549		270				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1468 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8914)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March	April	May		June		July		August		September	October	November	December
1	07:57	07:43	07:07	07:16	06:31		06:02		06:03		06:27		06:57	07:28	07:02	07:37
	17:13	17:48	18:22	19:56	20:27		20:57	66	07:29 (T71)	21:08	69	07:37 (T71)	20:50	36	07:24 (T71)	20:07	19:15	17:28	17:04
2	07:57	07:42	07:06	07:15	06:29		06:01		06:23 (T71)	06:03		06:28 (T71)	06:28		06:49 (T71)	06:58	07:29	07:03	07:38
	17:14	17:49	18:23	19:57	20:28		20:57	67	07:30 (T71)	21:08	69	07:37 (T71)	20:49	33	07:22 (T71)	20:05	19:13	17:27	17:04
3	07:57	07:41	07:04	07:13	06:28		06:01		06:23 (T71)	06:04		06:28 (T71)	06:29		06:50 (T71)	06:59	07:30	07:04	07:39
	17:15	17:50	18:24	19:58	20:29		20:58	67	07:30 (T71)	21:08	69	07:37 (T71)	20:48	30	07:20 (T71)	20:04	19:11	17:26	17:04
4	07:57	07:40	07:02	07:11	06:27		06:01		06:23 (T71)	06:04		06:29 (T71)	06:30		06:52 (T71)	07:00	07:31	07:05	07:40
	17:16	17:52	18:25	19:59	20:30		20:59	67	07:30 (T71)	21:08	68	07:37 (T71)	20:47	26	07:18 (T71)	20:02	19:10	17:25	17:03
5	07:57	07:39	07:01	07:10	06:25		06:00		06:23 (T71)	06:05		06:29 (T71)	06:31		06:56 (T71)	07:01	07:32	07:07	07:41
	17:17	17:53	18:26	20:00	20:31		20:59	68	07:31 (T71)	21:08	68	07:37 (T71)	20:45	18	07:14 (T71)	20:01	19:08	17:23	17:03
6	07:57	07:38	06:59	07:08	06:24		06:00		06:23 (T71)	06:05		06:29 (T71)	06:32		07:02 (T71)	07:02	07:33	07:08	07:42
	17:18	17:54	18:28	20:00	20:32		21:00	68	07:31 (T71)	21:07	68	07:37 (T71)	20:44	6	07:08 (T71)	19:57	19:07	17:22	17:03
7	07:57	07:37	06:58	07:06	06:23	06:49 (T71)	06:00		06:23 (T71)	06:06		06:29 (T71)	06:32			07:03	07:34	07:09	07:43
	17:19	17:55	18:29	20:01	20:33	12 07:01 (T71)	21:01	69	07:32 (T71)	21:07	68	07:37 (T71)	20:43			19:56	19:05	17:21	17:03
8	07:57	07:36	07:56	07:05	06:22	06:45 (T71)	05:59		06:23 (T71)	06:07		06:30 (T71)	06:33			07:04	07:35	07:10	07:44
	17:20	17:57	19:30	20:02	20:34	21 07:06 (T71)	21:01	68	07:31 (T71)	21:07	67	07:37 (T71)	20:42			19:54	19:03	17:20	17:03
9	07:57	07:35	07:54	07:03	06:21	06:41 (T71)	05:59		06:23 (T71)	06:07		06:30 (T71)	06:34			07:05	07:36	07:11	07:44
	17:21	17:58	19:31	20:03	20:35	28 07:09 (T71)	21:02	69	07:32 (T71)	21:06	68	07:38 (T71)	20:41			19:52	19:02	17:19	17:03
10	07:57	07:33	07:53	07:02	06:20	06:40 (T71)	05:59		06:23 (T71)	06:08		06:30 (T71)	06:35			07:06	07:37	07:13	07:45
	17:22	17:59	19:32	20:04	20:36	31 07:11 (T71)	21:03	69	07:32 (T71)	21:06	67	07:37 (T71)	20:39			19:51	19:00	17:18	17:03
11	07:56	07:32	07:51	07:00	06:18	06:39 (T71)	05:59		06:23 (T71)	06:09		06:31 (T71)	06:36			07:07	07:38	07:14	07:46
	17:23	18:00	19:33	20:06	20:37	34 07:13 (T71)	21:03	69	07:32 (T71)	21:06	66	07:37 (T71)	20:38			19:49	18:58	17:17	17:03
12	07:56	07:31	07:50	06:58	06:17	06:38 (T71)	05:59		06:24 (T71)	06:09		06:32 (T71)	06:37			07:08	07:39	07:15	07:47
	17:24	18:01	19:34	20:07	20:38	37 07:15 (T71)	21:04	69	07:33 (T71)	21:05	65	07:37 (T71)	20:37			19:47	18:57	17:16	17:03
13	07:56	07:30	07:48	06:57	06:16	06:37 (T71)	05:59		06:24 (T71)	06:10		06:32 (T71)	06:38			07:09	07:40	07:16	07:48
	17:25	18:03	19:35	20:08	20:39	40 07:17 (T71)	21:04	69	07:33 (T71)	21:05	65	07:37 (T71)	20:35			19:45	18:55	17:15	17:03
14	07:55	07:28	07:46	06:55	06:15	06:36 (T71)	05:59		06:24 (T71)	06:11		06:33 (T71)	06:39			07:10	07:41	07:17	07:49
	17:26	18:04	19:37	20:09	20:40	42 07:18 (T71)	21:05	69	07:33 (T71)	21:04	64	07:37 (T71)	20:34			19:44	18:54	17:14	17:04
15	07:55	07:27	07:45	06:54	06:14	06:35 (T71)	05:59		06:24 (T71)	06:12		06:34 (T71)	06:40			07:11	07:42	07:19	07:49
	17:27	18:05	19:38	20:10	20:41	44 07:19 (T71)	21:05	69	07:33 (T71)	21:04	63	07:37 (T71)	20:33			19:42	18:52	17:13	17:04
16	07:55	07:26	07:43	06:52	06:13	06:34 (T71)	05:59		06:24 (T71)	06:12		06:35 (T71)	06:41			07:12	07:43	07:20	07:50
	17:28	18:06	19:39	20:11	20:42	46 07:20 (T71)	21:06	70	07:34 (T71)	21:03	62	07:37 (T71)	20:31			19:40	18:51	17:13	17:04
17	07:54	07:25	07:41	06:51	06:12	06:33 (T71)	05:59		06:24 (T71)	06:13		06:35 (T71)	06:42			07:13	07:45	07:21	07:51
	17:30	18:08	19:40	20:12	20:43	48 07:21 (T71)	21:06	70	07:34 (T71)	21:03	61	07:36 (T71)	20:30			19:39	18:49	17:12	17:04
18	07:54	07:23	07:40	06:49	06:12	06:32 (T71)	05:59		06:25 (T71)	06:14		06:36 (T71)	06:43			07:14	07:46	07:22	07:51
	17:31	18:09	19:41	20:13	20:44	49 07:21 (T71)	21:06	69	07:34 (T71)	21:02	60	07:36 (T71)	20:28			19:37	18:48	17:11	17:05
19	07:53	07:22	07:38	06:47	06:11	06:31 (T71)	05:59		06:25 (T71)	06:15		06:37 (T71)	06:44			07:15	07:47	07:23	07:52
	17:32	18:10	19:42	20:14	20:45	51 07:22 (T71)	21:07	69	07:34 (T71)	21:01	59	07:36 (T71)	20:27			19:35	18:46	17:10	17:05
20	07:53	07:20	07:36	06:46	06:10	06:31 (T71)	05:59		06:25 (T71)	06:16		06:38 (T71)	06:45			07:16	07:48	07:24	07:52
	17:33	18:11	19:43	20:15	20:46	53 07:24 (T71)	21:07	69	07:34 (T71)	21:01	57	07:35 (T71)	20:26			19:34	18:45	17:10	17:05
21	07:52	07:19	07:35	06:44	06:09	06:30 (T71)	05:59		06:26 (T71)	06:16		06:39 (T71)	06:46			07:17	07:49	07:26	07:53
	17:34	18:12	19:44	20:16	20:47	54 07:24 (T71)	21:07	69	07:35 (T71)	21:00	56	07:35 (T71)	20:24			19:32	18:43	17:09	17:06
22	07:51	07:18	07:33	06:43	06:08	06:29 (T71)	05:59		06:26 (T71)	06:17		06:40 (T71)	06:47			07:18	07:50	07:27	07:54
	17:35	18:14	19:45	20:17	20:48	56 07:25 (T71)	21:07	69	07:35 (T71)	20:59	55	07:35 (T71)	20:23			19:30	18:42	17:08	17:06
23	07:51	07:16	07:31	06:42	06:07	06:28 (T71)	06:00		06:26 (T71)	06:18		06:40 (T71)	06:48			07:19	07:51	07:28	07:54
	17:37	18:15	19:46	20:18	20:49	57 07:25 (T71)	21:08	69	07:35 (T71)	20:58	53	07:33 (T71)	20:21			19:28	18:40	17:08	17:07
24	07:50	07:15	07:30	06:40	06:07	06:28 (T71)	06:00		06:26 (T71)	06:19		06:41 (T71)	06:49			07:20	07:52	07:29	07:55
	17:38	18:16	19:47	20:19	20:50	58 07:26 (T71)	21:08	69	07:35 (T71)	20:57	52	07:33 (T71)	20:20			19:27	18:39	17:07	17:07
25	07:49	07:13	07:28	06:39	06:06	06:27 (T71)	06:00		06:26 (T71)	06:20		06:42 (T71)	06:50			07:21	07:54	07:30	07:55
	17:39	18:17	19:48	20:20	20:51	59 07:26 (T71)	21:08	70	07:36 (T71)	20:57	50	07:32 (T71)	20:18			19:25	18:37	17:07	17:08
26	07:48	07:12	07:26	06:37	06:05	06:26 (T71)	06:00		06:26 (T71)	06:21		06:43 (T71)	06:51			07:22	07:55	07:31	07:55
	17:40	18:18	19:50	20:21	20:52	60 07:26 (T71)	21:08	70	07:36 (T71)	20:56	49	07:32 (T71)	20:17			19:23	18:36	17:06	17:09
27	07:48	07:10	07:25	06:36	06:05	06:26 (T71)	06:01		06:26 (T71)	06:22		06:44 (T71)	06:52			07:23	07:56	07:32	07:56
	17:42	18:20	19:51	20:23	20:52	61 07:27 (T71)	21:08	70	07:36 (T71)	20:55	47	07:31 (T71)	20:15			19:22	18:35	17:06	17:09
28	07:47	07:09	07:23	06:35	06:04	06:25 (T71)	06:01		06:27 (T71)	06:23		06:45 (T71)	06:53			07:24	07:57	07:33	07:56
	17:43	18:21	19:52	20:24	20:53	62 07:27 (T71)	21:08	69	07:36 (T71)	20:54	45	07:30 (T71)	20:13			19:20	18:33	17:05	17:10
29	07:46		07:21	06:33	06:03	06:25 (T71)	06:02		06:27 (T71)	06:24		06:46 (T71)	06:54			07:25	07:58	07:35	07:56
	17:44		19:53	20:25	20:54	63 07:28 (T71)	21:08	69	07:36 (T71)	20:53	43	07:29 (T71)	20:12			19:18	18:32	17:05	17:11
30	07:45		07:20	06:32	06:03	06:24 (T71)	06:02		06:28 (T71)	06:25		06:47 (T71)	06:55			07:26	07:59	07:36	07:56
	17:45		19:54	20:26	20:55	64 07:28 (T71)	21:08	69	07:37 (T71)	20:52	41	07:28 (T71)	20:10			19:17	18:31	17:04	17:12
31	07:44		07:18		06:02	06:24 (T71)				06:26		06:48 (T71)	06:56				08:01		07:57
	17:47		19:55		20:56	65 07:29 (T71)				20:51	39	07:27 (T71)	20:09				18:29		17:12
Potential sun hours	297	297	370	399	448		452		459		428		375	345	298	288
Total, worst case					1195		2063		1833		149					
Sun reduction					0.57		0.64		0.66		0.61					
Oper. time red.					1.00		1.00		1.00		1.00					
Wind dir. red.					0.71		0.71		0.71		0.71					
Total reduction					0.41		0.46		0.47		0.43					
Total, real					486		941		862		65					

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1472 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8918)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		16:22 (T46)	07:43		16:49 (T45)	07:07		16:58 (T45)	07:16			06:30		19:38 (T44)	06:01		19:25 (T44)
	17:13	21	16:43 (T46)	17:47	34	17:23 (T45)	18:22	23	17:21 (T45)	19:56			20:27	27	20:05 (T44)	20:57	57	20:22 (T44)
2	07:57		16:23 (T46)	07:42		16:48 (T45)	07:06		17:01 (T45)	07:14			06:29		19:37 (T44)	06:01		19:26 (T44)
	17:14	20	16:43 (T46)	17:49	37	17:25 (T45)	18:23	16	17:17 (T45)	19:57			20:28	29	20:06 (T44)	20:58	57	20:23 (T44)
3	07:57		16:24 (T46)	07:41		16:48 (T45)	07:04			07:13			06:28		19:34 (T44)	06:01		19:25 (T44)
	17:15	19	16:43 (T46)	17:50	38	17:26 (T45)	18:24			19:58			20:29	32	20:06 (T44)	20:58	57	20:22 (T44)
4	07:57		16:25 (T46)	07:40		16:47 (T45)	07:02			07:11			06:26		19:33 (T44)	06:00		19:26 (T44)
	17:16	18	16:43 (T46)	17:51	41	17:28 (T45)	18:25			19:59			20:30	34	20:07 (T44)	20:59	56	20:22 (T44)
5	07:57		16:26 (T46)	07:39		16:46 (T45)	07:01			07:09			06:25		19:32 (T44)	06:00		19:27 (T44)
	17:17	17	16:43 (T46)	17:52	42	17:28 (T45)	18:26			20:00			20:31	37	20:09 (T44)	21:00	56	20:23 (T44)
6	07:57		16:27 (T46)	07:38		16:45 (T45)	06:59			07:08			06:24		19:31 (T44)	06:00		19:26 (T44)
	17:17	16	16:43 (T46)	17:54	45	17:30 (T45)	18:27			20:00			20:32	39	20:10 (T44)	21:00	56	20:22 (T44)
7	07:57		16:27 (T46)	07:37		16:45 (T45)	06:58			07:06			06:23		19:30 (T44)	05:59		19:27 (T44)
	17:18	15	16:42 (T46)	17:55	46	17:31 (T45)	18:29			20:01			20:33	41	20:11 (T44)	21:01	55	20:22 (T44)
8	07:57		16:29 (T46)	07:36		16:45 (T45)	07:56			07:05			06:22		19:29 (T44)	05:59		19:27 (T44)
	17:19	13	16:42 (T46)	17:56	48	17:33 (T45)	19:30			20:02			20:34	43	20:12 (T44)	21:02	56	20:23 (T44)
9	07:57		16:31 (T46)	07:35		16:45 (T45)	07:54			07:03			06:20		19:28 (T44)	05:59		19:28 (T44)
	17:20	10	16:41 (T46)	17:58	49	17:34 (T45)	19:31			20:03			20:35	45	20:13 (T44)	21:02	55	20:23 (T44)
10	07:57		16:33 (T46)	07:34		16:45 (T45)	07:53			07:01			06:19		19:27 (T44)	05:59		19:28 (T44)
	17:21	7	16:40 (T46)	17:59	50	17:35 (T45)	19:32			20:04			20:36	46	20:13 (T44)	21:03	55	20:23 (T44)
11	07:57			07:32		16:44 (T45)	07:51			07:00			06:18		19:26 (T44)	05:58		19:29 (T44)
	17:23			18:00	51	17:35 (T45)	19:33			20:06			20:37	48	20:14 (T44)	21:03	54	20:23 (T44)
12	07:56			07:31		16:44 (T45)	07:50			06:58			06:17		19:25 (T44)	05:58		19:28 (T44)
	17:24			18:01	51	17:35 (T45)	19:34			20:07			20:38	50	20:15 (T44)	21:04	55	20:23 (T44)
13	07:56			07:30		16:45 (T45)	07:48			06:57			06:16		19:25 (T44)	05:58		19:28 (T44)
	17:25			18:02	51	17:36 (T45)	19:35			20:08			20:39	51	20:16 (T44)	21:05	55	20:23 (T44)
14	07:56			07:29		16:44 (T45)	07:46			06:55			06:15		19:24 (T44)	05:58		19:29 (T44)
	17:26			18:04	51	17:35 (T45)	19:36			20:09			20:40	53	20:17 (T44)	21:05	54	20:23 (T44)
15	07:55			07:27		16:44 (T45)	07:45			06:53			06:14		19:25 (T44)	05:58		19:29 (T44)
	17:27			18:05	51	17:35 (T45)	19:38			20:10			20:41	54	20:19 (T44)	21:05	54	20:23 (T44)
16	07:55			07:26		16:45 (T45)	07:43			06:52			06:13		19:25 (T44)	05:58		19:29 (T44)
	17:28			18:06	51	17:36 (T45)	19:39			20:11			20:42	55	20:20 (T44)	21:06	54	20:23 (T44)
17	07:54			07:25		16:45 (T45)	07:41			06:50			06:12		19:24 (T44)	05:58		19:30 (T44)
	17:29			18:07	50	17:35 (T45)	19:40			20:12			20:43	56	20:20 (T44)	21:06	54	20:24 (T44)
18	07:54			07:23		16:45 (T45)	07:40			06:49			06:11		19:24 (T44)	05:58		19:31 (T44)
	17:30			18:09	50	17:35 (T45)	19:41			20:13			20:44	57	20:21 (T44)	21:07	53	20:24 (T44)
19	07:53			07:22		16:46 (T45)	07:38			06:47			06:10		19:24 (T44)	05:58		19:31 (T44)
	17:32			18:10	49	17:35 (T45)	19:42			20:14			20:45	57	20:21 (T44)	21:07	53	20:24 (T44)
20	07:53			07:20		16:46 (T45)	07:36			06:46			06:09		19:23 (T44)	05:59		19:31 (T44)
	17:33			18:11	47	17:33 (T45)	19:43			20:15			20:46	58	20:21 (T44)	21:07	53	20:24 (T44)
21	07:52			07:19		16:47 (T45)	07:35			06:44			06:09		19:23 (T44)	05:59		19:31 (T44)
	17:34			18:12	46	17:33 (T45)	19:44			20:16			20:47	58	20:21 (T44)	21:07	53	20:24 (T44)
22	07:52			07:18		16:47 (T45)	07:33			06:43			06:08		19:24 (T44)	05:59		19:31 (T44)
	17:35			18:13	45	17:32 (T45)	19:45			20:17			20:48	57	20:21 (T44)	21:08	53	20:24 (T44)
23	07:51			07:16		16:49 (T45)	07:31			06:41			06:07		19:24 (T44)	05:59		19:32 (T44)
	17:36			18:15	42	17:31 (T45)	19:46			20:18			20:49	57	20:21 (T44)	21:08	53	20:25 (T44)
24	07:50		17:02 (T45)	07:15		16:49 (T45)	07:30			06:40			06:06		19:23 (T44)	05:59		19:32 (T44)
	17:38	10	17:12 (T45)	18:16	41	17:30 (T45)	19:47			20:19			20:50	58	20:21 (T44)	21:08	53	20:25 (T44)
25	07:49		16:58 (T45)	07:13		16:51 (T45)	07:28			06:38			06:06		19:24 (T44)	06:00		19:32 (T44)
	17:39	16	17:14 (T45)	18:17	38	17:29 (T45)	19:48			20:21			20:51	58	20:22 (T44)	21:08	53	20:25 (T44)
26	07:49		16:56 (T45)	07:12		16:52 (T45)	07:26			06:37			06:05		19:24 (T44)	06:00		19:32 (T44)
	17:40	19	17:15 (T45)	18:18	35	17:27 (T45)	19:50			20:22			20:52	58	20:22 (T44)	21:08	54	20:26 (T44)
27	07:48		16:55 (T45)	07:10		16:54 (T45)	07:24			06:36			06:04		19:25 (T44)	06:00		19:32 (T44)
	17:41	22	17:17 (T45)	18:19	32	17:26 (T45)	19:51			20:23			20:53	57	20:22 (T44)	21:08	54	20:26 (T44)
28	07:47		16:53 (T45)	07:09		16:55 (T45)	07:23			06:34		19:52 (T44)	06:04		19:24 (T44)	06:01		19:32 (T44)
	17:42	25	17:18 (T45)	18:21	28	17:23 (T45)	19:52			20:24	3	19:55 (T44)	20:54	58	20:22 (T44)	21:08	54	20:26 (T44)
29	07:46		16:52 (T45)				07:21			06:33		19:44 (T44)	06:03		19:24 (T44)	06:01		19:33 (T44)
	17:44	27	17:19 (T45)				19:53			20:25	17	20:01 (T44)	20:54	57	20:21 (T44)	21:08	54	20:27 (T44)
30	07:45		16:51 (T45)				07:19			06:32		19:41 (T44)	06:02		19:25 (T44)	06:02		19:32 (T44)
	17:45	30	17:21 (T45)				19:54			20:26	23	20:04 (T44)	20:55	57	20:22 (T44)	21:08	55	20:27 (T44)
31	07:44		16:50 (T45)				07:18						06:02		19:25 (T44)			
	17:46	32	17:22 (T45)				19:55						20:56	58	20:23 (T44)			
Potential sun hours	297			297			370			399			448			453		
Total, worst case		337			1239			39			43			1545			1635	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.73			0.72			0.72			0.56			0.56			0.56	
Total reduction		0.23			0.30			0.33			0.30			0.33			0.37	
Total, real		78			367			13			13			509			604	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1472 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8918)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September	October			November			December		
1	06:02		19:33 (T44)	06:26		19:36 (T44)	06:57	07:27			07:02		16:14 (T45)	07:37		
	21:08	54	20:27 (T44)	20:50	49	20:25 (T44)	20:07	19:15			17:28	50	17:04 (T45)	17:04		
2	06:03		19:32 (T44)	06:27		19:37 (T44)	06:58	07:29			07:03		16:15 (T45)	07:38		16:15 (T46)
	21:08	55	20:27 (T44)	20:49	47	20:24 (T44)	20:06	19:13			17:27	49	17:04 (T45)	17:03	7	16:22 (T46)
3	06:03		19:33 (T44)	06:28		19:37 (T44)	06:59	07:30			07:04		16:15 (T45)	07:39		16:14 (T46)
	21:08	55	20:28 (T44)	20:48	46	20:23 (T44)	20:04	19:11			17:26	47	17:02 (T45)	17:03	10	16:24 (T46)
4	06:04		19:33 (T44)	06:29		19:38 (T44)	07:00	07:31			07:06		16:15 (T45)	07:40		16:13 (T46)
	21:08	55	20:28 (T44)	20:47	44	20:22 (T44)	20:02	19:10			17:24	46	17:01 (T45)	17:03	13	16:26 (T46)
5	06:04		19:33 (T44)	06:30		19:39 (T44)	07:01	07:32			07:07		16:15 (T45)	07:41		16:12 (T46)
	21:08	55	20:28 (T44)	20:46	42	20:21 (T44)	20:01	19:08			17:23	44	16:59 (T45)	17:03	15	16:27 (T46)
6	06:05		19:32 (T44)	06:31		19:40 (T44)	07:02	07:33			07:08		16:17 (T45)	07:42		16:12 (T46)
	21:08	56	20:28 (T44)	20:44	40	20:20 (T44)	19:57	19:06			17:22	42	16:59 (T45)	17:03	16	16:28 (T46)
7	06:05		19:33 (T44)	06:32		19:41 (T44)	07:03	07:34			07:09		16:17 (T45)	07:43		16:12 (T46)
	21:07	56	20:29 (T44)	20:43	38	20:19 (T44)	19:56	19:05			17:21	40	16:57 (T45)	17:03	17	16:29 (T46)
8	06:06		19:33 (T44)	06:33		19:42 (T44)	07:04	07:35			07:10		16:18 (T45)	07:44		16:12 (T46)
	21:07	57	20:30 (T44)	20:42	36	20:18 (T44)	19:54	19:03			17:20	38	16:56 (T45)	17:03	18	16:30 (T46)
9	06:07		19:33 (T44)	06:34		19:43 (T44)	07:05	07:36			07:12		16:18 (T45)	07:45		16:12 (T46)
	21:07	56	20:29 (T44)	20:41	34	20:17 (T44)	19:52	19:01			17:19	37	16:55 (T45)	17:03	19	16:31 (T46)
10	06:07		19:33 (T44)	06:35		19:44 (T44)	07:06	07:37			07:13		16:20 (T45)	07:46		16:12 (T46)
	21:06	57	20:30 (T44)	20:39	32	20:16 (T44)	19:51	19:00			17:18	34	16:54 (T45)	17:03	20	16:32 (T46)
11	06:08		19:33 (T44)	06:36		19:46 (T44)	07:07	07:38		17:38 (T45)	07:14		16:21 (T45)	07:46		16:13 (T46)
	21:06	57	20:30 (T44)	20:38	28	20:14 (T44)	19:49	18:58	10	17:48 (T45)	17:17	32	16:53 (T45)	17:03	20	16:33 (T46)
12	06:09		19:33 (T44)	06:37		19:48 (T44)	07:08	07:39		17:33 (T45)	07:15		16:22 (T45)	07:47		16:13 (T46)
	21:05	57	20:30 (T44)	20:37	25	20:13 (T44)	19:47	18:57	19	17:52 (T45)	17:16	30	16:52 (T45)	17:03	21	16:34 (T46)
13	06:10		19:33 (T44)	06:38		19:50 (T44)	07:09	07:40		17:29 (T45)	07:16		16:24 (T45)	07:48		16:13 (T46)
	21:05	57	20:30 (T44)	20:36	22	20:12 (T44)	19:45	18:55	26	17:55 (T45)	17:15	27	16:51 (T45)	17:03	22	16:35 (T46)
14	06:10		19:33 (T44)	06:39		19:54 (T44)	07:10	07:41		17:27 (T45)	07:18		16:25 (T45)	07:49		16:13 (T46)
	21:04	58	20:31 (T44)	20:34	15	20:09 (T44)	19:44	18:54	29	17:56 (T45)	17:14	25	16:50 (T45)	17:03	22	16:35 (T46)
15	06:11		19:34 (T44)	06:40			07:11	07:42		17:25 (T45)	07:19		16:27 (T45)	07:50		16:13 (T46)
	21:04	57	20:31 (T44)	20:33			19:42	18:52	34	17:59 (T45)	17:13	22	16:49 (T45)	17:03	22	16:35 (T46)
16	06:12		19:33 (T44)	06:41			07:12	07:44		17:23 (T45)	07:20		16:29 (T45)	07:50		16:14 (T46)
	21:03	58	20:31 (T44)	20:31			19:40	18:50	37	18:00 (T45)	17:12	19	16:48 (T45)	17:04	22	16:36 (T46)
17	06:13		19:33 (T44)	06:42			07:13	07:45		17:22 (T45)	07:21		16:32 (T45)	07:51		16:14 (T46)
	21:03	58	20:31 (T44)	20:30			19:39	18:49	39	18:01 (T45)	17:11	16	16:48 (T45)	17:04	22	16:36 (T46)
18	06:14		19:33 (T44)	06:43			07:14	07:46		17:20 (T45)	07:22		16:36 (T45)	07:52		16:15 (T46)
	21:02	58	20:31 (T44)	20:29			19:37	18:47	42	18:02 (T45)	17:11	10	16:46 (T45)	17:04	22	16:37 (T46)
19	06:14		19:34 (T44)	06:44			07:15	07:47		17:19 (T45)	07:23			07:52		16:15 (T46)
	21:01	57	20:31 (T44)	20:27			19:35	18:46	43	18:02 (T45)	17:10			17:05	23	16:38 (T46)
20	06:15		19:34 (T44)	06:45			07:16	07:48		17:18 (T45)	07:25			07:53		16:15 (T46)
	21:01	58	20:32 (T44)	20:26			19:33	18:44	45	18:03 (T45)	17:09			17:05	23	16:38 (T46)
21	06:16		19:33 (T44)	06:46			07:17	07:49		17:17 (T45)	07:26			07:53		16:16 (T46)
	21:00	58	20:31 (T44)	20:24			19:32	18:43	47	18:04 (T45)	17:09			17:06	23	16:39 (T46)
22	06:17		19:34 (T44)	06:47			07:18	07:50		17:16 (T45)	07:27			07:54		16:16 (T46)
	20:59	57	20:31 (T44)	20:23			19:30	18:41	48	18:04 (T45)	17:08			17:06	23	16:39 (T46)
23	06:18		19:34 (T44)	06:48			07:19	07:51		17:16 (T45)	07:28			07:54		16:17 (T46)
	20:58	57	20:31 (T44)	20:21			19:28	18:40	48	18:04 (T45)	17:07			17:07	23	16:40 (T46)
24	06:19		19:34 (T44)	06:49			07:20	07:53		17:15 (T45)	07:29			07:55		16:17 (T46)
	20:58	57	20:31 (T44)	20:20			19:27	18:39	49	18:04 (T45)	17:07			17:07	23	16:40 (T46)
25	06:20		19:34 (T44)	06:50			07:21	07:54		17:14 (T45)	07:30			07:55		16:17 (T46)
	20:57	57	20:31 (T44)	20:18			19:25	18:37	50	18:04 (T45)	17:06			17:08	23	16:40 (T46)
26	06:21		19:35 (T44)	06:51			07:22	07:55		17:15 (T45)	07:32			07:56		16:19 (T46)
	20:56	56	20:31 (T44)	20:17			19:23	18:36	50	18:05 (T45)	17:06			17:08	22	16:41 (T46)
27	06:22		19:35 (T44)	06:52			07:23	07:56		17:14 (T45)	07:33			07:56		16:19 (T46)
	20:55	56	20:31 (T44)	20:15			19:21	18:34	51	18:05 (T45)	17:05			17:09	22	16:41 (T46)
28	06:22		19:35 (T44)	06:53			07:24	07:57		17:14 (T45)	07:34			07:56		16:19 (T46)
	20:54	55	20:30 (T44)	20:14			19:20	18:33	51	18:05 (T45)	17:05			17:10	22	16:41 (T46)
29	06:23		19:35 (T44)	06:54			07:25	07:58		17:13 (T45)	07:35			07:57		16:20 (T46)
	20:53	53	20:28 (T44)	20:12			19:18	18:32	51	18:04 (T45)	17:04			17:10	21	16:41 (T46)
30	06:24		19:35 (T44)	06:55			07:26	08:00		17:14 (T45)	07:36			07:57		16:20 (T46)
	20:52	52	20:27 (T44)	20:10			19:16	18:31	51	18:05 (T45)	17:04			17:11	22	16:42 (T46)
31	06:25		19:36 (T44)	06:56				08:01		17:14 (T45)				07:57		16:22 (T46)
	20:51	50	20:26 (T44)	20:09				18:29	51	18:05 (T45)				17:12	21	16:43 (T46)
Potential sun hours	460			429			375	345			297			287		
Total, worst case		1739			498				871			608			599	
Sun reduction		0.66			0.61				0.48			0.30			0.22	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.56			0.56				0.72			0.72			0.74	
Total reduction		0.38			0.35				0.36			0.22			0.17	
Total, real		663			175				310			135			100	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1473 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8919)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:57		14:40 (T20)	07:43			07:07		17:19 (T19)	07:16		17:58 (T19)	06:30		19:25 (T17)	06:01		19:42 (T17)
	17:13	10	14:50 (T20)	17:47			18:21	38	17:57 (T19)	19:56	66	19:04 (T19)	20:27	40	20:05 (T17)	20:57	12	19:54 (T17)
2	07:57			07:42			07:06		17:16 (T19)	07:14		17:58 (T19)	06:29		19:24 (T17)	06:01		19:44 (T17)
	17:13			17:48			18:23	43	17:59 (T19)	19:57	64	19:02 (T19)	20:28	41	20:05 (T17)	20:58	7	19:51 (T17)
3	07:58			07:41			07:04		17:14 (T19)	07:13		17:59 (T19)	06:27		19:24 (T17)	06:00		
	17:14			17:50			18:24	46	18:00 (T19)	19:58	63	19:02 (T19)	20:29	43	20:07 (T17)	20:59		
4	07:58			07:40			07:02		17:12 (T19)	07:11		18:00 (T19)	06:26		19:23 (T17)	06:00		
	17:15			17:51			18:25	51	18:03 (T19)	19:59	60	19:00 (T19)	20:30	45	20:08 (T17)	20:59		
5	07:58			07:39			07:01		17:10 (T19)	07:09		18:00 (T19)	06:25		19:23 (T17)	05:59		
	17:16			17:52			18:26	54	18:04 (T19)	20:00	59	18:59 (T19)	20:31	46	20:09 (T17)	21:00		
6	07:58			07:38			06:59		17:09 (T19)	07:08		18:02 (T19)	06:24		19:23 (T17)	05:59		
	17:17			17:53			18:27	56	18:05 (T19)	20:00	56	18:58 (T19)	20:32	47	20:10 (T17)	21:01		
7	07:57			07:37			06:58		17:07 (T19)	07:06		18:03 (T19)	06:22		19:23 (T17)	05:59		
	17:18			17:55			18:28	59	18:06 (T19)	20:01	53	18:56 (T19)	20:33	46	20:09 (T17)	21:01		
8	07:57			07:36			07:56		18:05 (T19)	07:04		18:03 (T19)	06:21		19:23 (T17)	05:58		
	17:19			17:56			19:30	62	19:07 (T19)	20:02	51	18:54 (T19)	20:34	46	20:09 (T17)	21:02		
9	07:57			07:35			07:54		18:05 (T19)	07:03		18:05 (T19)	06:20		19:23 (T17)	05:58		
	17:20			17:57			19:31	63	19:08 (T19)	20:03	48	18:53 (T19)	20:35	46	20:09 (T17)	21:03		
10	07:57			07:34			07:53		18:03 (T19)	07:01		18:07 (T19)	06:19		19:23 (T17)	05:58		
	17:21			17:58			19:32	66	19:09 (T19)	20:04	43	18:50 (T19)	20:36	46	20:09 (T17)	21:03		
11	07:57			07:32			07:51		18:02 (T19)	06:59		18:09 (T19)	06:18		19:23 (T17)	05:58		
	17:22			18:00			19:33	67	19:09 (T19)	20:06	40	18:49 (T19)	20:38	46	20:09 (T17)	21:04		
12	07:56			07:31			07:49		18:01 (T19)	06:58		18:11 (T19)	06:17		19:23 (T17)	05:58		
	17:23			18:01			19:34	69	19:10 (T19)	20:07	35	18:46 (T19)	20:39	45	20:08 (T17)	21:04		
13	07:56			07:30			07:48		18:00 (T19)	06:56		18:13 (T19)	06:16		19:24 (T17)	05:58		
	17:24			18:02			19:35	70	19:10 (T19)	20:08	29	18:42 (T19)	20:40	44	20:08 (T17)	21:05		
14	07:56			07:29			07:46		17:59 (T19)	06:55		18:17 (T19)	06:15		19:24 (T17)	05:58		
	17:25			18:03			19:36	71	19:10 (T19)	20:09	22	18:39 (T19)	20:41	44	20:08 (T17)	21:05		
15	07:55			07:27			07:44		17:59 (T19)	06:53		18:22 (T19)	06:14		19:24 (T17)	05:58		
	17:26			18:05			19:37	72	19:11 (T19)	20:10	10	18:32 (T19)	20:42	43	20:07 (T17)	21:06		
16	07:55			07:26			07:43		17:58 (T19)	06:52			06:13		19:25 (T17)	05:58		
	17:28			18:06			19:38	73	19:11 (T19)	20:11			20:43	42	20:07 (T17)	21:06		
17	07:55			07:25			07:41		17:57 (T19)	06:50			06:12		19:25 (T17)	05:58		
	17:29			18:07			19:40	74	19:11 (T19)	20:12			20:44	41	20:06 (T17)	21:06		
18	07:54			07:23			07:39		17:57 (T19)	06:48			06:11		19:26 (T17)	05:58		
	17:30			18:08			19:41	74	19:11 (T19)	20:13			20:45	40	20:06 (T17)	21:07		
19	07:53			07:22			07:38		17:57 (T19)	06:47		19:46 (T17)	06:10		19:27 (T17)	05:58		
	17:31			18:10			19:42	74	19:11 (T19)	20:14	6	19:52 (T17)	20:46	39	20:06 (T17)	21:07		
20	07:53			07:20			07:36		17:56 (T19)	06:45		19:40 (T17)	06:09		19:28 (T17)	05:58		
	17:32			18:11			19:43	74	19:10 (T19)	20:15	14	19:54 (T17)	20:46	37	20:05 (T17)	21:07		
21	07:52			07:19			07:34		17:56 (T19)	06:44		19:37 (T17)	06:08		19:28 (T17)	05:58		
	17:33			18:12			19:44	75	19:11 (T19)	20:16	17	19:54 (T17)	20:47	36	20:04 (T17)	21:08		
22	07:52			07:18			07:33		17:56 (T19)	06:42		19:35 (T17)	06:07		19:29 (T17)	05:58		
	17:35			18:13			19:45	74	19:10 (T19)	20:17	21	19:56 (T17)	20:48	34	20:03 (T17)	21:08		
23	07:51			07:16			07:31		17:55 (T19)	06:41		19:32 (T17)	06:07		19:30 (T17)	05:59		
	17:36			18:14			19:46	75	19:10 (T19)	20:18	24	19:56 (T17)	20:49	33	20:03 (T17)	21:08		
24	07:50			07:15			07:29		17:55 (T19)	06:40		19:31 (T17)	06:06		19:31 (T17)	05:59		
	17:37			18:16			19:47	74	19:09 (T19)	20:19	27	19:58 (T17)	20:50	31	20:02 (T17)	21:08		
25	07:50			07:13			07:28		17:56 (T19)	06:38		19:30 (T17)	06:05		19:31 (T17)	05:59		
	17:38			18:17			19:48	73	19:09 (T19)	20:21	29	19:59 (T17)	20:51	30	20:01 (T17)	21:08		
26	07:49			07:12		17:32 (T19)	07:26		17:56 (T19)	06:37		19:28 (T17)	06:04		19:33 (T17)	06:00		
	17:40			18:18	12	17:44 (T19)	19:49	72	19:08 (T19)	20:22	32	20:00 (T17)	20:52	28	20:01 (T17)	21:09		
27	07:48			07:10		17:26 (T19)	07:24		17:55 (T19)	06:35		19:28 (T17)	06:04		19:34 (T17)	06:00		
	17:41			18:19	25	17:51 (T19)	19:50	72	19:07 (T19)	20:23	33	20:01 (T17)	20:53	26	20:00 (T17)	21:09		
28	07:47			07:09		17:22 (T19)	07:23		17:56 (T19)	06:34		19:26 (T17)	06:03		19:35 (T17)	06:00		
	17:42			18:20	32	17:54 (T19)	19:52	71	19:07 (T19)	20:24	35	20:01 (T17)	20:54	24	19:59 (T17)	21:09		
29	07:46						07:21		17:56 (T19)	06:33		19:26 (T17)	06:03		19:36 (T17)	06:01		
	17:43						19:53	70	19:06 (T19)	20:25	37	20:03 (T17)	20:55	22	19:58 (T17)	21:09		
30	07:45						07:19		17:56 (T19)	06:31		19:25 (T17)	06:02		19:38 (T17)	06:01		
	17:45						19:54	69	19:05 (T19)	20:26	39	20:04 (T17)	20:55	19	19:57 (T17)	21:09		
31	07:44						07:18		17:57 (T19)				06:01		19:39 (T17)			
	17:46						19:55	68	19:05 (T19)				20:56	16	19:55 (T17)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		10			69			2049			1013			1166			19	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.73			0.66			0.66			0.63			0.57			0.57	
Total reduction		0.23			0.27			0.30			0.33			0.33			0.37	
Total, real		2			19			605			338			381			7	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1473 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8919)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02			06:26		19:34 (T17)	06:57		18:08 (T19)	07:27		17:40 (T19)	07:02		07:37			
	21:09			20:50	45	20:19 (T17)	20:07	40	18:48 (T19)	19:15	69	18:49 (T19)	17:28		17:03			
2	06:02			06:27		19:34 (T17)	06:58		18:06 (T19)	07:28		17:40 (T19)	07:03		07:38			
	21:09			20:49	45	20:19 (T17)	20:05	43	18:49 (T19)	19:13	68	18:48 (T19)	17:26		17:03			
3	06:03			06:28		19:34 (T17)	06:59		18:03 (T19)	07:29		17:40 (T19)	07:04		07:39			
	21:08			20:48	45	20:19 (T17)	20:04	48	18:51 (T19)	19:11	67	18:47 (T19)	17:25		17:03			
4	06:03			06:29		19:33 (T17)	07:00		18:01 (T19)	07:31		17:41 (T19)	07:06		07:40			
	21:08			20:47	47	20:20 (T17)	20:02	51	18:52 (T19)	19:10	64	18:45 (T19)	17:24		17:03			
5	06:04			06:30		19:33 (T17)	07:01		17:59 (T19)	07:32		17:41 (T19)	07:07		07:41			
	21:08			20:46	47	20:20 (T17)	20:01	53	18:52 (T19)	19:08	63	18:44 (T19)	17:23		17:02			
6	06:04			06:31		19:33 (T17)	07:02		17:57 (T19)	07:33		17:43 (T19)	07:08		07:42			
	21:08			20:45	47	20:20 (T17)	19:57	56	18:53 (T19)	19:06	60	18:43 (T19)	17:22		17:02			
7	06:05			06:32		19:33 (T17)	07:03		17:55 (T19)	07:34		17:44 (T19)	07:09		07:43			
	21:08			20:43	46	20:19 (T17)	19:56	59	18:54 (T19)	19:05	58	18:42 (T19)	17:21		17:02			
8	06:06			06:33		19:32 (T17)	07:04		17:54 (T19)	07:35		17:45 (T19)	07:10		07:44			
	21:07			20:42	45	20:17 (T17)	19:54	60	18:54 (T19)	19:03	55	18:40 (T19)	17:20		17:02			
9	06:06			06:34		19:32 (T17)	07:05		17:52 (T19)	07:36		17:46 (T19)	07:12		07:45			
	21:07			20:41	44	20:16 (T17)	19:52	63	18:55 (T19)	19:01	52	18:38 (T19)	17:18		17:02			
10	06:07		19:54 (T17)	06:35		19:32 (T17)	07:06		17:51 (T19)	07:37		17:47 (T19)	07:13		07:46			
	21:07	3	19:57 (T17)	20:40	43	20:15 (T17)	19:50	64	18:55 (T19)	19:00	49	18:36 (T19)	17:17		17:02			
11	06:08		19:50 (T17)	06:36		19:32 (T17)	07:07		17:50 (T19)	07:38		17:49 (T19)	07:14		07:47		14:30 (T20)	
	21:06	10	20:00 (T17)	20:38	42	20:14 (T17)	19:49	66	18:56 (T19)	18:58	45	18:34 (T19)	17:16		17:02	10	14:40 (T20)	
12	06:08		19:48 (T17)	06:37		19:33 (T17)	07:08		17:49 (T19)	07:39		17:51 (T19)	07:15		07:47		14:29 (T20)	
	21:06	15	20:03 (T17)	20:37	40	20:13 (T17)	19:47	67	18:56 (T19)	18:56	40	18:31 (T19)	17:15		17:02	14	14:43 (T20)	
13	06:09		19:47 (T17)	06:38		19:33 (T17)	07:09		17:48 (T19)	07:40		17:53 (T19)	07:16		07:48		14:28 (T20)	
	21:05	18	20:05 (T17)	20:36	38	20:11 (T17)	19:45	68	18:56 (T19)	18:55	35	18:28 (T19)	17:15		17:02	17	14:45 (T20)	
14	06:10		19:45 (T17)	06:39		19:33 (T17)	07:10		17:47 (T19)	07:41		17:56 (T19)	07:18		07:49		14:28 (T20)	
	21:05	21	20:06 (T17)	20:34	37	20:10 (T17)	19:44	70	18:57 (T19)	18:53	29	18:25 (T19)	17:14		17:03	19	14:47 (T20)	
15	06:11		19:44 (T17)	06:40		19:34 (T17)	07:11		17:46 (T19)	07:42		18:01 (T19)	07:19		07:50		14:26 (T20)	
	21:04	23	20:07 (T17)	20:33	35	20:09 (T17)	19:42	71	18:57 (T19)	18:52	20	18:21 (T19)	17:13		17:03	21	14:47 (T20)	
16	06:11		19:44 (T17)	06:41		19:34 (T17)	07:12		17:45 (T19)	07:44			07:20		07:50		14:26 (T20)	
	21:04	25	20:09 (T17)	20:31	33	20:07 (T17)	19:40	72	18:57 (T19)	18:50			17:12		17:03	23	14:49 (T20)	
17	06:12		19:43 (T17)	06:42		19:35 (T17)	07:13		17:44 (T19)	07:45			07:21		07:51		14:27 (T20)	
	21:03	27	20:10 (T17)	20:30	31	20:06 (T17)	19:39	73	18:57 (T19)	18:49			17:11		17:03	23	14:50 (T20)	
18	06:13		19:41 (T17)	06:43		19:36 (T17)	07:14		17:43 (T19)	07:46			07:22		07:52		14:26 (T20)	
	21:02	29	20:10 (T17)	20:29	29	20:05 (T17)	19:37	73	18:56 (T19)	18:47			17:10		17:04	24	14:50 (T20)	
19	06:14		19:41 (T17)	06:44		19:37 (T17)	07:15		17:42 (T19)	07:47			07:24		07:52		14:27 (T20)	
	21:02	30	20:11 (T17)	20:27	26	20:03 (T17)	19:35	74	18:56 (T19)	18:46			17:10		17:04	24	14:51 (T20)	
20	06:15		19:40 (T17)	06:45		19:38 (T17)	07:16		17:42 (T19)	07:48			07:25		07:53		14:26 (T20)	
	21:01	32	20:12 (T17)	20:26	24	20:02 (T17)	19:33	74	18:56 (T19)	18:44			17:09		17:05	25	14:51 (T20)	
21	06:16		19:39 (T17)	06:46		19:40 (T17)	07:17		17:41 (T19)	07:49			07:26		07:54		14:27 (T20)	
	21:00	34	20:13 (T17)	20:24	21	20:01 (T17)	19:32	75	18:56 (T19)	18:43			17:08		17:05	26	14:53 (T20)	
22	06:17		19:39 (T17)	06:47		19:42 (T17)	07:18		17:41 (T19)	07:50			07:27		07:54		14:27 (T20)	
	20:59	35	20:14 (T17)	20:23	17	19:59 (T17)	19:30	74	18:55 (T19)	18:41			17:07		17:06	26	14:53 (T20)	
23	06:17		19:38 (T17)	06:48		19:45 (T17)	07:19		17:40 (T19)	07:51			07:28		07:55		14:28 (T20)	
	20:59	37	20:15 (T17)	20:21	13	19:58 (T17)	19:28	75	18:55 (T19)	18:40			17:07		17:06	25	14:53 (T20)	
24	06:18		19:38 (T17)	06:49		19:51 (T17)	07:20		17:40 (T19)	07:53			07:29		07:55		14:29 (T20)	
	20:58	38	20:16 (T17)	20:20	3	19:54 (T17)	19:26	74	18:54 (T19)	18:38			17:06		17:07	24	14:53 (T20)	
25	06:19		19:36 (T17)	06:50			07:21		17:40 (T19)	07:54			07:31		07:55		14:30 (T20)	
	20:57	40	20:16 (T17)	20:18			19:25	74	18:54 (T19)	18:37			17:06		17:07	24	14:54 (T20)	
26	06:20		19:36 (T17)	06:51			07:22		17:40 (T19)	07:55			07:32		07:56		14:30 (T20)	
	20:56	40	20:16 (T17)	20:17			19:23	73	18:53 (T19)	18:36			17:05		17:08	24	14:54 (T20)	
27	06:21		19:36 (T17)	06:52			07:23		17:39 (T19)	07:56			07:33		07:56		14:31 (T20)	
	20:55	41	20:17 (T17)	20:15			19:21	73	18:52 (T19)	18:34			17:05		17:09	23	14:54 (T20)	
28	06:22		19:35 (T17)	06:53		18:23 (T19)	07:24		17:39 (T19)	07:57			07:34		07:56		14:32 (T20)	
	20:54	43	20:18 (T17)	20:14	12	18:35 (T19)	19:20	73	18:52 (T19)	18:33			17:04		17:09	21	14:53 (T20)	
29	06:23		19:35 (T17)	06:54		18:18 (T19)	07:25		17:39 (T19)	07:58			07:35		07:57		14:34 (T20)	
	20:53	43	20:18 (T17)	20:12	22	18:40 (T19)	19:18	72	18:51 (T19)	18:31			17:04		17:10	20	14:54 (T20)	
30	06:24		19:35 (T17)	06:55		18:14 (T19)	07:26		17:40 (T19)	08:00			07:36		07:57		14:35 (T20)	
	20:52	43	20:18 (T17)	20:10	29	18:43 (T19)	19:16	70	18:50 (T19)	18:30			17:04		17:11	18	14:53 (T20)	
31	06:25		19:34 (T17)	06:56		18:11 (T19)				08:01					07:57		14:37 (T20)	
	20:51	45	20:19 (T17)	20:09	35	18:46 (T19)				18:29					17:11	15	14:52 (T20)	
Potential sun hours	460			429			375			345			297		287			
Total, worst case		672			941			1978			774					446		
Sun reduction		0.66			0.61			0.59			0.48					0.22		
Oper. time red.		1.00			1.00			1.00			1.00					1.00		
Wind dir. red.		0.57			0.58			0.66			0.66					0.73		
Total reduction		0.38			0.36			0.40			0.32					0.16		
Total, real		255			335			783			249					73		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1493 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8933)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	15:54 (T77)	07:43	16:13 (T77)	07:07	17:29 (T42)	07:16		06:30	19:30 (T41)	06:01	
	17:13	51 16:45 (T77)	17:47	34 16:47 (T77)	18:22	31 18:00 (T42)	19:56		20:27	35 20:05 (T41)	20:57	
2	07:57	15:54 (T77)	07:42	16:15 (T77)	07:06	17:27 (T42)	07:14		06:29	19:30 (T41)	06:01	
	17:14	52 16:46 (T77)	17:49	31 16:46 (T77)	18:23	34 18:01 (T42)	19:57		20:28	34 20:04 (T41)	20:58	
3	07:57	15:54 (T77)	07:41	16:17 (T77)	07:04	17:25 (T42)	07:13		06:28	19:30 (T41)	06:01	
	17:15	52 16:46 (T77)	17:50	27 16:44 (T77)	18:24	37 18:02 (T42)	19:58		20:29	33 20:03 (T41)	20:58	
4	07:57	15:55 (T77)	07:40	16:19 (T77)	07:02	17:25 (T42)	07:11		06:26	19:30 (T41)	06:00	
	17:16	52 16:47 (T77)	17:51	24 16:43 (T77)	18:25	39 18:04 (T42)	19:59		20:30	33 20:03 (T41)	20:59	
5	07:57	15:55 (T77)	07:39	16:23 (T77)	07:01	17:23 (T42)	07:09		06:25	19:31 (T41)	06:00	
	17:17	52 16:47 (T77)	17:52	17 16:40 (T77)	18:26	41 18:04 (T42)	20:00		20:31	31 20:02 (T41)	21:00	
6	07:57	15:56 (T77)	07:38	16:27 (T77)	06:59	17:23 (T42)	07:08		06:24	19:32 (T41)	05:59	
	17:17	52 16:48 (T77)	17:54	7 16:34 (T77)	18:27	43 18:06 (T42)	20:00		20:32	30 20:02 (T41)	21:00	
7	07:57	15:55 (T77)	07:37	07:57 (T76)	06:58	17:21 (T42)	07:06		06:23	19:33 (T41)	05:59	
	17:18	53 16:48 (T77)	17:55	1 07:58 (T76)	18:29	46 18:07 (T42)	20:01		20:33	28 20:01 (T41)	21:01	
8	07:57	15:56 (T77)	07:36	07:56 (T76)	07:56	18:20 (T42)	07:05		06:22	19:34 (T41)	05:59	
	17:19	52 16:48 (T77)	17:56	6 08:02 (T76)	19:30	48 19:08 (T42)	20:02		20:34	26 20:00 (T41)	21:02	
9	07:57	15:56 (T77)	07:35	07:55 (T76)	07:54	18:20 (T42)	07:03		06:20	19:35 (T41)	05:59	
	17:20	53 16:49 (T77)	17:57	9 08:04 (T76)	19:31	50 19:10 (T42)	20:03		20:35	24 19:59 (T41)	21:02	
10	07:57	15:57 (T77)	07:34	07:54 (T76)	07:53	18:19 (T42)	07:01		06:19	19:35 (T41)	05:59	
	17:21	53 16:50 (T77)	17:59	12 08:06 (T76)	19:32	51 19:10 (T42)	20:05		20:36	22 19:57 (T41)	21:03	
11	07:57	15:57 (T77)	07:32	07:52 (T76)	07:51	18:18 (T42)	07:00		06:18	19:36 (T41)	05:58	
	17:23	52 16:49 (T77)	18:00	14 08:06 (T76)	19:33	52 19:10 (T42)	20:06		20:37	19 19:55 (T41)	21:04	
12	07:56	15:58 (T77)	07:31	07:51 (T76)	07:50	18:18 (T42)	06:58		06:17	19:38 (T41)	05:58	
	17:24	52 16:50 (T77)	18:01	17 08:08 (T76)	19:34	53 19:11 (T42)	20:07		20:38	16 19:54 (T41)	21:04	
13	07:56	15:58 (T77)	07:30	07:50 (T76)	07:48	18:18 (T42)	06:57		06:16	19:41 (T41)	05:58	
	17:25	53 16:51 (T77)	18:02	19 08:09 (T76)	19:35	52 19:10 (T42)	20:08		20:39	10 19:51 (T41)	21:05	
14	07:56	15:58 (T77)	07:29	07:48 (T76)	07:46	18:17 (T42)	06:55		06:15		05:58	
	17:26	53 16:51 (T77)	18:04	21 08:09 (T76)	19:36	53 19:10 (T42)	20:09		20:41		21:05	
15	07:55	15:59 (T77)	07:27	07:47 (T76)	07:45	18:18 (T42)	06:53		06:14		05:58	
	17:27	52 16:51 (T77)	18:05	23 08:10 (T76)	19:38	52 19:10 (T42)	20:10		20:42		21:05	
16	07:55	15:59 (T77)	07:26	07:46 (T76)	07:43	18:17 (T42)	06:52	19:45 (T41)	06:13		05:58	
	17:28	52 16:51 (T77)	18:06	24 08:10 (T76)	19:39	52 19:09 (T42)	20:11	5 19:50 (T41)	20:42		21:06	
17	07:54	16:00 (T77)	07:25	07:44 (T76)	07:41	18:17 (T42)	06:50	19:41 (T41)	06:12		05:58	
	17:29	52 16:52 (T77)	18:07	26 08:10 (T76)	19:40	51 19:08 (T42)	20:12	9 19:50 (T41)	20:43		21:06	
18	07:54	16:00 (T77)	07:23	07:43 (T76)	07:40	18:18 (T42)	06:49	19:39 (T41)	06:11		05:58	
	17:30	52 16:52 (T77)	18:09	27 08:10 (T76)	19:41	50 19:08 (T42)	20:13	13 19:52 (T41)	20:44		21:07	
19	07:53	16:01 (T77)	07:22	07:42 (T76)	07:38	18:18 (T42)	06:47	19:37 (T41)	06:10		05:58	
	17:32	51 16:52 (T77)	18:10	28 08:10 (T76)	19:42	49 19:07 (T42)	20:14	15 19:52 (T41)	20:45		21:07	
20	07:53	16:02 (T77)	07:20	07:40 (T76)	07:36	18:18 (T42)	06:46	19:35 (T41)	06:09		05:59	
	17:33	50 16:52 (T77)	18:11	30 08:10 (T76)	19:43	48 19:06 (T42)	20:15	19 19:54 (T41)	20:46		21:07	
21	07:52	16:02 (T77)	07:19	07:40 (T76)	07:35	18:19 (T42)	06:44	19:35 (T41)	06:09		05:59	
	17:34	50 16:52 (T77)	18:12	30 08:10 (T76)	19:44	47 19:06 (T42)	20:16	20 19:55 (T41)	20:47		21:08	
22	07:52	16:03 (T77)	07:18	07:40 (T76)	07:33	18:20 (T42)	06:43	19:33 (T41)	06:08		05:59	
	17:35	49 16:52 (T77)	18:13	28 08:08 (T76)	19:45	44 19:04 (T42)	20:17	23 19:56 (T41)	20:48		21:08	
23	07:51	16:04 (T77)	07:16	07:41 (T76)	07:31	18:20 (T42)	06:41	19:33 (T41)	06:07		05:59	
	17:36	48 16:52 (T77)	18:15	27 08:08 (T76)	19:46	43 19:03 (T42)	20:18	24 19:57 (T41)	20:49		21:08	
24	07:50	16:04 (T77)	07:15	07:41 (T76)	07:30	18:22 (T42)	06:40	19:31 (T41)	06:06		05:59	
	17:38	48 16:52 (T77)	18:16	25 08:06 (T76)	19:47	40 19:02 (T42)	20:19	27 19:58 (T41)	20:50		21:08	
25	07:49	16:05 (T77)	07:13	07:43 (T76)	07:28	18:23 (T42)	06:38	19:31 (T41)	06:06		06:00	
	17:39	46 16:51 (T77)	18:17	35 17:54 (T42)	19:48	37 19:00 (T42)	20:21	28 19:59 (T41)	20:51		21:08	
26	07:49	16:05 (T77)	07:12	07:44 (T76)	07:26	18:24 (T42)	06:37	19:30 (T41)	06:05		06:00	
	17:40	46 16:51 (T77)	18:18	39 17:56 (T42)	19:50	34 18:58 (T42)	20:22	29 19:59 (T41)	20:52		21:08	
27	07:48	16:07 (T77)	07:10	07:47 (T76)	07:24	18:25 (T42)	06:36	19:30 (T41)	06:04		06:00	
	17:41	44 16:51 (T77)	18:19	38 17:58 (T42)	19:51	30 18:55 (T42)	20:23	31 20:01 (T41)	20:53		21:08	
28	07:47	16:08 (T77)	07:09	07:50 (T76)	07:23	18:28 (T42)	06:34	19:30 (T41)	06:04		06:01	
	17:42	43 16:51 (T77)	18:21	35 17:59 (T42)	19:52	25 18:53 (T42)	20:24	32 20:02 (T41)	20:54		21:09	
29	07:46	16:09 (T77)			07:21	18:30 (T42)	06:33	19:29 (T41)	06:03		06:01	
	17:44	41 16:50 (T77)			19:53	20 18:50 (T42)	20:25	33 20:02 (T41)	20:54		21:09	
30	07:45	16:10 (T77)			07:19	18:35 (T42)	06:32	19:29 (T41)	06:02		06:02	
	17:45	39 16:49 (T77)			19:54	9 18:44 (T42)	20:26	35 20:04 (T41)	20:55		21:09	
31	07:44	16:12 (T77)			07:18				06:02			
	17:46	36 16:48 (T77)			19:55				20:56			
Potential sun hours	297		297		370		399		448		453	
Total, worst case		1531		654		1261		343		341		
Sun reduction		0.31		0.40		0.44		0.52		0.57		
Oper. time red.		1.00		1.00		1.00		1.00		1.00		
Wind dir. red.		0.74		0.61		0.67		0.57		0.57		
Total reduction		0.23		0.25		0.30		0.30		0.33		
Total, real		359		164		380		105		114		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1493 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8933)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December	
1	06:02		06:26	19:48 (T41)	06:57		07:27	17:57 (T42)	07:02	07:23 (T76)	07:37	15:39 (T77)
	21:08		20:50 17	20:05 (T41)	20:07		19:15 53	18:50 (T42)	17:28 11	07:34 (T76)	17:04 52	16:31 (T77)
2	06:03		06:27	19:46 (T41)	06:58		07:29	17:57 (T42)	07:03	07:25 (T76)	07:38	15:39 (T77)
	21:08		20:49 21	20:07 (T41)	20:06		19:13 52	18:49 (T42)	17:27 9	07:34 (T76)	17:03 53	16:32 (T77)
3	06:03		06:28	19:45 (T41)	06:59		07:30	17:57 (T42)	07:04	07:26 (T76)	07:39	15:40 (T77)
	21:08		20:48 23	20:08 (T41)	20:04		19:11 51	18:48 (T42)	17:26 5	07:31 (T76)	17:03 53	16:33 (T77)
4	06:04		06:29	19:44 (T41)	07:00		07:31	17:56 (T42)	07:06		07:40	15:41 (T77)
	21:08		20:47 25	20:09 (T41)	20:02		19:10 51	18:47 (T42)	17:24		17:03 52	16:33 (T77)
5	06:04		06:30	19:43 (T41)	07:01		07:32	17:57 (T42)	07:07	15:56 (T77)	07:41	15:41 (T77)
	21:08		20:46 27	20:10 (T41)	20:01		19:08 49	18:46 (T42)	17:23 9	16:05 (T77)	17:03 53	16:34 (T77)
6	06:05		06:31	19:42 (T41)	07:02		07:33	17:58 (T42)	07:08	15:52 (T77)	07:42	15:42 (T77)
	21:08		20:44 29	20:11 (T41)	19:57		19:06 46	18:44 (T42)	17:22 18	16:10 (T77)	17:03 52	16:34 (T77)
7	06:05		06:32	19:41 (T41)	07:03		07:34	17:58 (T42)	07:09	15:49 (T77)	07:43	15:41 (T77)
	21:07		20:43 31	20:12 (T41)	19:56		19:05 45	18:43 (T42)	17:21 24	16:13 (T77)	17:03 52	16:33 (T77)
8	06:06		06:33	19:40 (T41)	07:04		07:35	17:58 (T42)	07:10	15:47 (T77)	07:44	15:42 (T77)
	21:07		20:42 32	20:12 (T41)	19:54		19:03 43	18:41 (T42)	17:20 27	16:14 (T77)	17:03 52	16:34 (T77)
9	06:07		06:34	19:40 (T41)	07:05		07:36	17:59 (T42)	07:12	15:46 (T77)	07:45	15:42 (T77)
	21:07		20:41 33	20:13 (T41)	19:52		19:01 40	18:39 (T42)	17:19 31	16:17 (T77)	17:03 52	16:34 (T77)
10	06:07		06:35	19:39 (T41)	07:06		07:37	17:59 (T42)	07:13	15:44 (T77)	07:46	15:43 (T77)
	21:06		20:39 34	20:13 (T41)	19:51		19:00 38	18:37 (T42)	17:18 34	16:18 (T77)	17:03 52	16:35 (T77)
11	06:08		06:36	19:39 (T41)	07:07		07:38	18:00 (T42)	07:14	15:42 (T77)	07:46	15:44 (T77)
	21:06		20:38 34	20:13 (T41)	19:49		18:58 36	18:36 (T42)	17:17 37	16:19 (T77)	17:03 51	16:35 (T77)
12	06:09		06:37	19:38 (T41)	07:08		07:39	18:01 (T42)	07:15	15:41 (T77)	07:47	15:44 (T77)
	21:06		20:37 35	20:13 (T41)	19:47		18:57 33	18:34 (T42)	17:16 39	16:20 (T77)	17:03 52	16:36 (T77)
13	06:10		06:38	19:38 (T41)	07:09	18:28 (T42)	07:40	18:03 (T42)	07:16	15:41 (T77)	07:48	15:45 (T77)
	21:05		20:36 34	20:12 (T41)	19:45 5	18:33 (T42)	18:55 29	18:32 (T42)	17:15 41	16:22 (T77)	17:03 51	16:36 (T77)
14	06:10		06:39	19:38 (T41)	07:10	18:21 (T42)	07:41	08:20 (T76)	07:18	15:40 (T77)	07:49	15:45 (T77)
	21:05		20:34 33	20:11 (T41)	19:44 18	18:39 (T42)	18:54 37	18:30 (T42)	17:14 43	16:23 (T77)	17:03 51	16:36 (T77)
15	06:11		06:40	19:38 (T41)	07:11	18:17 (T42)	07:42	08:18 (T76)	07:19	15:39 (T77)	07:50	15:46 (T77)
	21:04		20:33 31	20:09 (T41)	19:42 25	18:42 (T42)	18:52 40	18:30 (T42)	17:13 44	16:23 (T77)	17:03 51	16:37 (T77)
16	06:12		06:41	19:37 (T41)	07:12	18:15 (T42)	07:44	08:16 (T76)	07:20	15:38 (T77)	07:50	15:46 (T77)
	21:03		20:31 30	20:07 (T41)	19:40 29	18:44 (T42)	18:50 38	18:28 (T42)	17:12 46	16:24 (T77)	17:04 51	16:37 (T77)
17	06:13		06:42	19:37 (T41)	07:13	18:12 (T42)	07:45	08:14 (T76)	07:21	15:39 (T77)	07:51	15:46 (T77)
	21:03		20:30 29	20:06 (T41)	19:39 34	18:46 (T42)	18:49 31	18:23 (T42)	17:11 46	16:25 (T77)	17:04 51	16:37 (T77)
18	06:14		06:43	19:37 (T41)	07:14	18:10 (T42)	07:46	08:13 (T76)	07:22	15:38 (T77)	07:52	15:47 (T77)
	21:02		20:29 27	20:04 (T41)	19:37 37	18:47 (T42)	18:47 25	08:38 (T76)	17:11 48	16:26 (T77)	17:04 51	16:38 (T77)
19	06:14		06:44	19:37 (T41)	07:15	18:08 (T42)	07:47	08:11 (T76)	07:23	15:38 (T77)	07:52	15:48 (T77)
	21:02		20:27 26	20:03 (T41)	19:35 40	18:48 (T42)	18:46 28	08:39 (T76)	17:10 48	16:26 (T77)	17:05 51	16:39 (T77)
20	06:15		06:45	19:37 (T41)	07:16	18:07 (T42)	07:48	08:10 (T76)	07:25	15:38 (T77)	07:53	15:48 (T77)
	21:01		20:26 25	20:02 (T41)	19:33 42	18:49 (T42)	18:44 29	08:39 (T76)	17:09 49	16:27 (T77)	17:05 51	16:39 (T77)
21	06:16		06:46	19:38 (T41)	07:17	18:05 (T42)	07:49	08:10 (T76)	07:26	15:38 (T77)	07:53	15:49 (T77)
	21:00		20:24 22	20:00 (T41)	19:32 44	18:49 (T42)	18:43 30	08:40 (T76)	17:08 50	16:28 (T77)	17:05 51	16:40 (T77)
22	06:17		06:47	19:39 (T41)	07:18	18:04 (T42)	07:50	08:11 (T76)	07:27	15:38 (T77)	07:54	15:49 (T77)
	20:59		20:23 20	19:59 (T41)	19:30 46	18:50 (T42)	18:41 29	08:40 (T76)	17:08 50	16:28 (T77)	17:06 51	16:40 (T77)
23	06:18		06:48	19:39 (T41)	07:19	18:03 (T42)	07:51	08:12 (T76)	07:28	15:37 (T77)	07:54	15:50 (T77)
	20:59		20:21 18	19:57 (T41)	19:28 47	18:50 (T42)	18:40 28	08:40 (T76)	17:07 51	16:28 (T77)	17:07 51	16:41 (T77)
24	06:19		06:49	19:41 (T41)	07:20	18:02 (T42)	07:53	08:13 (T76)	07:29	15:37 (T77)	07:55	15:50 (T77)
	20:58		20:20 15	19:56 (T41)	19:27 49	18:51 (T42)	18:39 27	08:40 (T76)	17:07 52	16:29 (T77)	17:07 51	16:41 (T77)
25	06:20		06:50	19:42 (T41)	07:21	18:01 (T42)	07:54	08:15 (T76)	07:30	15:38 (T77)	07:55	15:50 (T77)
	20:57		20:18 12	19:54 (T41)	19:25 50	18:51 (T42)	18:37 25	08:40 (T76)	17:06 52	16:30 (T77)	17:08 51	16:41 (T77)
26	06:21		06:51	19:44 (T41)	07:22	18:00 (T42)	07:55	08:16 (T76)	07:32	15:38 (T77)	07:56	15:51 (T77)
	20:56		20:17 9	19:53 (T41)	19:23 51	18:51 (T42)	18:36 24	08:40 (T76)	17:06 52	16:30 (T77)	17:08 51	16:42 (T77)
27	06:22		06:52	19:48 (T41)	07:23	17:59 (T42)	07:56	08:17 (T76)	07:33	15:38 (T77)	07:56	15:51 (T77)
	20:55		20:15 3	19:51 (T41)	19:22 52	18:51 (T42)	18:34 22	08:39 (T76)	17:05 52	16:30 (T77)	17:09 51	16:42 (T77)
28	06:22		06:53		07:24	17:58 (T42)	07:57	08:18 (T76)	07:34	15:38 (T77)	07:56	15:52 (T77)
	20:54		20:14		19:20 53	18:51 (T42)	18:33 20	08:38 (T76)	17:05 53	16:31 (T77)	17:10 50	16:42 (T77)
29	06:23		06:54		07:25	17:58 (T42)	07:58	08:19 (T76)	07:35	15:38 (T77)	07:57	15:52 (T77)
	20:53		20:12		19:18 52	18:50 (T42)	18:32 18	08:37 (T76)	17:04 53	16:31 (T77)	17:10 51	16:43 (T77)
30	06:24	19:54 (T41)	06:55		07:26	17:57 (T42)	08:00	08:21 (T76)	07:36	15:39 (T77)	07:57	15:53 (T77)
	20:52 5	19:59 (T41)	20:10		19:16 53	18:50 (T42)	18:30 16	08:37 (T76)	17:04 52	16:31 (T77)	17:11 51	16:44 (T77)
31	06:25	19:50 (T41)	06:56				08:01	08:22 (T76)			07:57	15:53 (T77)
	20:51 13	20:03 (T41)	20:09				18:29 14	08:36 (T76)			17:12 52	16:45 (T77)
Potential sun hours	460		429		375		345		297		287	
Total, worst case	18		675		727		1047		1126		1595	
Sun reduction	0.66		0.61		0.59		0.48		0.30		0.22	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.57		0.57		0.67		0.62		0.73		0.74	
Total reduction	0.39		0.36		0.40		0.31		0.23		0.17	
Total, real	7		241		293		322		254		266	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1495 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8935)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March			April			May			June		
1	07:58		08:20 (T26)	07:44		08:21 (T26)	07:07			07:16		07:43 (T75)	06:30		07:08 (T24)	06:01		07:22 (T24)
	17:13	78	10:13 (T25)	17:47	25	08:46 (T26)	18:22			19:56	28	08:11 (T75)	20:27	67	08:15 (T24)	20:57	37	07:59 (T24)
2	07:58		08:20 (T26)	07:43		08:22 (T26)	07:06			07:15		07:45 (T75)	06:29		07:08 (T24)	06:01		07:23 (T24)
	17:14	79	10:14 (T25)	17:49	23	08:45 (T26)	18:23			19:57	25	08:10 (T75)	20:28	67	08:15 (T24)	20:58	36	07:59 (T24)
3	07:58		08:20 (T26)	07:42		08:24 (T26)	07:04			07:13		07:45 (T75)	06:28		07:07 (T24)	06:01		07:24 (T24)
	17:15	79	10:14 (T25)	17:50	20	08:44 (T26)	18:24			19:58	23	08:08 (T75)	20:29	67	08:14 (T24)	20:59	34	07:58 (T24)
4	07:58		08:20 (T26)	07:41		08:27 (T26)	07:03			07:11		07:46 (T75)	06:26		07:07 (T24)	06:00		07:25 (T24)
	17:16	79	10:14 (T25)	17:51	14	08:41 (T26)	18:25			19:59	20	08:06 (T75)	20:30	67	08:14 (T24)	20:59	33	07:58 (T24)
5	07:58		08:20 (T26)	07:40		08:31 (T26)	07:01			07:10		07:48 (T75)	06:25		07:08 (T24)	06:00		07:26 (T24)
	17:17	79	10:14 (T25)	17:53	7	08:38 (T26)	18:26			20:00	17	08:05 (T75)	20:32	66	08:14 (T24)	21:00	31	07:57 (T24)
6	07:58		08:20 (T26)	07:39			07:00			07:08		07:51 (T75)	06:24		07:08 (T24)	05:59		07:27 (T24)
	17:17	79	10:14 (T25)	17:54			18:28			20:00	10	08:01 (T75)	20:33	66	08:14 (T24)	21:01	29	07:56 (T24)
7	07:58		08:20 (T26)	07:37			06:58			07:06			06:23		07:08 (T24)	05:59		07:28 (T24)
	17:18	79	10:14 (T25)	17:55			18:29			20:02			20:34	66	08:14 (T24)	21:01	27	07:55 (T24)
8	07:58		08:20 (T26)	07:36			07:56			07:05		07:45 (T24)	06:22		07:08 (T24)	05:59		07:29 (T24)
	17:19	79	10:14 (T25)	17:56			19:30			20:03	6	07:51 (T24)	20:35	66	08:14 (T24)	21:02	26	07:55 (T24)
9	07:57		08:19 (T26)	07:35			07:55			07:03		07:37 (T24)	06:20		07:08 (T24)	05:59		07:30 (T24)
	17:20	79	10:13 (T25)	17:58			19:31			20:04	20	07:57 (T24)	20:36	65	08:13 (T24)	21:03	24	07:54 (T24)
10	07:57		08:19 (T26)	07:34			07:53			07:01		07:32 (T24)	06:19		07:09 (T24)	05:59		07:32 (T24)
	17:21	79	10:13 (T25)	17:59			19:32			20:05	29	08:01 (T24)	20:37	64	08:13 (T24)	21:03	22	07:54 (T24)
11	07:57		08:19 (T26)	07:33			07:51			07:00		07:29 (T24)	06:18		07:08 (T24)	05:58		07:33 (T24)
	17:23	78	10:13 (T25)	18:00			19:33			20:06	35	08:04 (T24)	20:38	64	08:12 (T24)	21:04	20	07:53 (T24)
12	07:57		08:18 (T26)	07:31			07:50			06:58		07:26 (T24)	06:17		07:08 (T24)	05:58		07:33 (T24)
	17:24	78	10:12 (T25)	18:01			19:34			20:07	39	08:05 (T24)	20:39	63	08:11 (T24)	21:04	18	07:51 (T24)
13	07:56		08:18 (T26)	07:30			07:48			06:57		07:25 (T24)	06:16		07:09 (T24)	05:58		07:34 (T24)
	17:25	77	10:12 (T25)	18:03			19:36			20:08	43	08:08 (T24)	20:40	62	08:11 (T24)	21:05	17	07:51 (T24)
14	07:56		08:18 (T26)	07:29			07:46			06:55		07:22 (T24)	06:15		07:09 (T24)	05:58		07:35 (T24)
	17:26	77	10:12 (T25)	18:04			19:37			20:09	47	08:09 (T24)	20:41	61	08:10 (T24)	21:05	15	07:50 (T24)
15	07:56		08:17 (T26)	07:28			07:45			06:54		07:21 (T24)	06:14		07:10 (T24)	05:58		07:36 (T24)
	17:27	76	10:11 (T25)	18:05			19:38			20:10	49	08:10 (T24)	20:42	61	08:11 (T24)	21:06	14	07:50 (T24)
16	07:55		08:17 (T26)	07:26			07:43			06:52		07:19 (T24)	06:13		07:11 (T24)	05:58		07:37 (T24)
	17:28	75	10:11 (T25)	18:06			19:39			20:11	52	08:11 (T24)	20:43	59	08:10 (T24)	21:06	12	07:49 (T24)
17	07:55		08:16 (T26)	07:25			07:41			06:50		07:18 (T24)	06:12		07:11 (T24)	05:58		07:39 (T24)
	17:29	73	10:09 (T25)	18:07			19:40			20:12	54	08:12 (T24)	20:44	58	08:09 (T24)	21:07	10	07:49 (T24)
18	07:54		08:16 (T26)	07:24			07:40		07:59 (T75)	06:49		07:17 (T24)	06:11		07:12 (T24)	05:58		07:40 (T24)
	17:30	72	10:09 (T25)	18:09			19:41	8	08:07 (T75)	20:13	56	08:13 (T24)	20:45	57	08:09 (T24)	21:07	9	07:49 (T24)
19	07:54		08:15 (T26)	07:22			07:38		07:57 (T75)	06:47		07:16 (T24)	06:10		07:12 (T24)	05:58		07:40 (T24)
	17:32	70	10:07 (T25)	18:10			19:42	13	08:10 (T75)	20:14	58	08:14 (T24)	20:46	56	08:08 (T24)	21:07	8	07:48 (T24)
20	07:53		08:14 (T26)	07:21			07:36		07:56 (T75)	06:46		07:14 (T24)	06:09		07:12 (T24)	05:58		07:41 (T24)
	17:33	67	10:05 (T25)	18:11			19:43	16	08:12 (T75)	20:15	60	08:14 (T24)	20:47	55	08:07 (T24)	21:08	7	07:48 (T24)
21	07:53		08:14 (T26)	07:19			07:35		07:54 (T75)	06:44		07:14 (T24)	06:09		07:14 (T24)	05:59		07:41 (T24)
	17:34	65	10:04 (T25)	18:12			19:44	19	08:13 (T75)	20:17	61	08:15 (T24)	20:48	53	08:07 (T24)	21:08	7	07:48 (T24)
22	07:52		08:14 (T26)	07:18			07:33		07:52 (T75)	06:43		07:12 (T24)	06:08		07:14 (T24)	05:59		07:41 (T24)
	17:35	60	10:02 (T25)	18:14			19:45	22	08:14 (T75)	20:18	62	08:14 (T24)	20:49	52	08:06 (T24)	21:08	7	07:48 (T24)
23	07:51		08:14 (T26)	07:16			07:31		07:50 (T75)	06:41		07:12 (T24)	06:07		07:15 (T24)	05:59		07:42 (T24)
	17:36	53	09:58 (T25)	18:15			19:46	24	08:14 (T75)	20:19	63	08:15 (T24)	20:50	50	08:05 (T24)	21:08	7	07:49 (T24)
24	07:51		08:14 (T26)	07:15			07:30		07:49 (T75)	06:40		07:11 (T24)	06:06		07:15 (T24)	05:59		07:41 (T24)
	17:38	38	09:51 (T25)	18:16			19:48	26	08:15 (T75)	20:20	64	08:15 (T24)	20:50	49	08:04 (T24)	21:09	8	07:49 (T24)
25	07:50		08:15 (T26)	07:13			07:28		07:47 (T75)	06:39		07:10 (T24)	06:06		07:16 (T24)	06:00		07:40 (T24)
	17:39	35	08:50 (T26)	18:17			19:49	28	08:15 (T75)	20:21	65	08:15 (T24)	20:51	48	08:04 (T24)	21:09	10	07:50 (T24)
26	07:49		08:16 (T26)	07:12			07:26		07:45 (T75)	06:37		07:10 (T24)	06:05		07:17 (T24)	06:00		07:40 (T24)
	17:40	34	08:50 (T26)	18:18			19:50	29	08:14 (T75)	20:22	66	08:16 (T24)	20:52	46	08:03 (T24)	21:09	12	07:52 (T24)
27	07:48		08:16 (T26)	07:10			07:25		07:44 (T75)	06:36		07:09 (T24)	06:04		07:18 (T24)	06:00		07:39 (T24)
	17:41	34	08:50 (T26)	18:19			19:51	31	08:15 (T75)	20:23	66	08:15 (T24)	20:53	45	08:03 (T24)	21:09	13	07:52 (T24)
28	07:47		08:17 (T26)	07:09			07:23		07:43 (T75)	06:34		07:09 (T24)	06:04		07:19 (T24)	06:01		07:38 (T24)
	17:42	32	08:49 (T26)	18:21			19:52	31	08:14 (T75)	20:24	67	08:16 (T24)	20:54	43	08:02 (T24)	21:09	15	07:53 (T24)
29	07:47		08:18 (T26)				07:21		07:43 (T75)	06:33		07:09 (T24)	06:03		07:19 (T24)	06:01		07:38 (T24)
	17:44	31	08:49 (T26)				19:53	30	08:13 (T75)	20:25	67	08:16 (T24)	20:55	42	08:01 (T24)	21:09	17	07:55 (T24)
30	07:46		08:19 (T26)				07:20		07:43 (T75)	06:32		07:08 (T24)	06:02		07:20 (T24)	06:02		07:37 (T24)
	17:45	29	08:48 (T26)				19:54	30	08:13 (T75)	20:26	67	08:15 (T24)	20:56	41	08:01 (T24)	21:09	18	07:55 (T24)
31	07:45		08:20 (T26)				07:18		07:43 (T75)				06:02		07:22 (T24)			
	17:46	27	08:47 (T26)				19:55	29	08:12 (T75)				20:56	39	08:01 (T24)			
Potential sun hours	297			297			370			399			449			453		
Total, worst case		1970			89			336			1319			1765			543	
Sun reduction		0.31			0.40			0.44			0.52			0.57			0.64	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.52			0.52			0.62			0.66			0.66			0.66	
Total reduction		0.16			0.20			0.26			0.33			0.36			0.41	
Total, real		306			18			88			434			641			221	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1495 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8935)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October	November			December		
1	06:02		07:37 (T24)	06:26		07:19 (T24)	06:57		07:29 (T24)	07:28	07:02			07:37		08:01 (T26)
	21:09	20	07:57 (T24)	20:50	63	08:22 (T24)	20:07	34	08:03 (T24)	19:15	17:28			17:04	78	09:55 (T25)
2	06:03		07:36 (T24)	06:27		07:19 (T24)	06:58		07:31 (T24)	07:29	07:03			07:38		08:02 (T26)
	21:09	21	07:57 (T24)	20:49	63	08:22 (T24)	20:06	29	08:00 (T24)	19:13	17:27			17:03	79	09:56 (T25)
3	06:03		07:36 (T24)	06:28		07:18 (T24)	06:59		07:35 (T24)	07:30	07:05			07:39		08:03 (T26)
	21:09	23	07:59 (T24)	20:48	65	08:23 (T24)	20:04	20	07:55 (T24)	19:12	17:26			17:03	79	09:57 (T25)
4	06:04		07:35 (T24)	06:29		07:18 (T24)	07:00		07:41 (T24)	07:31	07:06			07:40		08:04 (T26)
	21:08	25	08:00 (T24)	20:47	65	08:23 (T24)	20:03	7	07:48 (T24)	19:10	17:24			17:03	79	09:58 (T25)
5	06:04		07:34 (T24)	06:30		07:18 (T24)	07:01			07:32	07:07			07:41		08:05 (T26)
	21:08	27	08:01 (T24)	20:46	65	08:23 (T24)	20:01			19:08	17:23			17:03	79	09:59 (T25)
6	06:05		07:33 (T24)	06:31		07:18 (T24)	07:02		07:47 (T75)	07:33	07:08		08:00 (T26)	07:42		08:06 (T26)
	21:08	28	08:01 (T24)	20:45	66	08:24 (T24)	19:58	9	07:56 (T75)	19:07	17:22	8	08:08 (T26)	17:03	79	10:00 (T25)
7	06:05		07:33 (T24)	06:32		07:17 (T24)	07:03		07:44 (T75)	07:34	07:09		07:56 (T26)	07:43		08:07 (T26)
	21:08	30	08:03 (T24)	20:44	67	08:24 (T24)	19:56	15	07:59 (T75)	19:05	17:21	16	08:12 (T26)	17:03	79	10:01 (T25)
8	06:06		07:33 (T24)	06:33		07:17 (T24)	07:04		07:41 (T75)	07:35	07:11		07:55 (T26)	07:44		08:08 (T26)
	21:07	31	08:04 (T24)	20:42	67	08:24 (T24)	19:54	20	08:01 (T75)	19:03	17:20	20	08:15 (T26)	17:03	79	10:02 (T25)
9	06:07		07:31 (T24)	06:34		07:17 (T24)	07:05		07:39 (T75)	07:36	07:12		07:53 (T26)	07:45		08:09 (T26)
	21:07	34	08:05 (T24)	20:41	67	08:24 (T24)	19:52	23	08:02 (T75)	19:02	17:19	23	08:16 (T26)	17:03	79	10:03 (T25)
10	06:07		07:31 (T24)	06:35		07:17 (T24)	07:06		07:38 (T75)	07:37	07:13		07:52 (T26)	07:46		08:10 (T26)
	21:07	35	08:06 (T24)	20:40	67	08:24 (T24)	19:51	25	08:03 (T75)	19:00	17:18	25	08:17 (T26)	17:03	79	10:04 (T25)
11	06:08		07:31 (T24)	06:36		07:17 (T24)	07:07		07:37 (T75)	07:38	07:14		07:51 (T26)	07:47		08:10 (T26)
	21:06	36	08:07 (T24)	20:39	67	08:24 (T24)	19:49	27	08:04 (T75)	18:58	17:17	27	08:18 (T26)	17:03	78	10:03 (T25)
12	06:09		07:29 (T24)	06:37		07:17 (T24)	07:08		07:36 (T75)	07:39	07:15		07:50 (T26)	07:48		08:11 (T26)
	21:06	39	08:08 (T24)	20:37	67	08:24 (T24)	19:47	28	08:04 (T75)	18:57	17:16	30	08:20 (T26)	17:03	77	10:04 (T25)
13	06:10		07:29 (T24)	06:38		07:17 (T24)	07:09		07:35 (T75)	07:40	07:17		07:50 (T26)	07:48		08:12 (T26)
	21:05	40	08:09 (T24)	20:36	67	08:24 (T24)	19:46	30	08:05 (T75)	18:55	17:15	31	08:21 (T26)	17:03	78	10:05 (T25)
14	06:10		07:29 (T24)	06:39		07:17 (T24)	07:10		07:34 (T75)	07:42	07:18		07:49 (T26)	07:49		08:13 (T26)
	21:05	41	08:10 (T24)	20:35	67	08:24 (T24)	19:44	31	08:05 (T75)	18:54	17:14	32	08:21 (T26)	17:03	77	10:06 (T25)
15	06:11		07:28 (T24)	06:40		07:17 (T24)	07:11		07:32 (T75)	07:43	07:19		07:49 (T26)	07:50		08:13 (T26)
	21:04	43	08:11 (T24)	20:33	66	08:23 (T24)	19:42	31	08:03 (T75)	18:52	17:13	34	08:23 (T26)	17:03	78	10:06 (T25)
16	06:12		07:27 (T24)	06:41		07:17 (T24)	07:12		07:32 (T75)	07:44	07:20		07:49 (T26)	07:51		08:14 (T26)
	21:04	44	08:11 (T24)	20:32	66	08:23 (T24)	19:41	31	08:03 (T75)	18:51	17:12	34	08:23 (T26)	17:04	77	10:07 (T25)
17	06:13		07:26 (T24)	06:42		07:17 (T24)	07:13		07:33 (T75)	07:45	07:21		07:48 (T26)	07:51		08:15 (T26)
	21:03	46	08:12 (T24)	20:30	66	08:23 (T24)	19:39	30	08:03 (T75)	18:49	17:11	35	08:23 (T26)	17:04	77	10:08 (T25)
18	06:14		07:26 (T24)	06:43		07:17 (T24)	07:14		07:34 (T75)	07:46	07:23		07:48 (T26)	07:52		08:15 (T26)
	21:03	47	08:13 (T24)	20:29	65	08:22 (T24)	19:37	28	08:02 (T75)	18:47	17:11	38	09:25 (T25)	17:04	77	10:08 (T25)
19	06:14		07:26 (T24)	06:44		07:17 (T24)	07:15		07:35 (T75)	07:47	07:24		07:49 (T26)	07:53		08:16 (T26)
	21:02	48	08:14 (T24)	20:27	64	08:21 (T24)	19:35	26	08:01 (T75)	18:46	17:10	53	09:33 (T25)	17:05	77	10:09 (T25)
20	06:15		07:25 (T24)	06:45		07:17 (T24)	07:16		07:36 (T75)	07:48	07:25		07:49 (T26)	07:53		08:17 (T26)
	21:01	50	08:15 (T24)	20:26	63	08:20 (T24)	19:34	24	08:00 (T75)	18:44	17:09	60	09:37 (T25)	17:05	77	10:10 (T25)
21	06:16		07:24 (T24)	06:46		07:17 (T24)	07:17		07:37 (T75)	07:49	07:26		07:49 (T26)	07:54		08:17 (T26)
	21:00	51	08:15 (T24)	20:25	62	08:19 (T24)	19:32	22	07:59 (T75)	18:43	17:09	65	09:39 (T25)	17:05	77	10:10 (T25)
22	06:17		07:23 (T24)	06:47		07:18 (T24)	07:18		07:38 (T75)	07:51	07:27		07:50 (T26)	07:54		08:18 (T26)
	21:00	53	08:16 (T24)	20:23	60	08:18 (T24)	19:30	20	07:58 (T75)	18:42	17:08	67	09:41 (T25)	17:06	77	10:11 (T25)
23	06:18		07:23 (T24)	06:48		07:18 (T24)	07:19		07:39 (T75)	07:52	07:28		07:52 (T26)	07:55		08:18 (T26)
	20:59	54	08:17 (T24)	20:22	59	08:17 (T24)	19:29	17	07:56 (T75)	18:40	17:07	70	09:44 (T25)	17:07	77	10:11 (T25)
24	06:19		07:23 (T24)	06:49		07:19 (T24)	07:20		07:40 (T75)	07:53	07:30		07:53 (T26)	07:55		08:18 (T26)
	20:58	55	08:18 (T24)	20:20	57	08:16 (T24)	19:27	14	07:54 (T75)	18:39	17:07	72	09:46 (T25)	17:07	77	10:11 (T25)
25	06:20		07:22 (T24)	06:50		07:19 (T24)	07:22		07:41 (T75)	07:54	07:31		07:54 (T26)	07:56		08:19 (T26)
	20:57	57	08:19 (T24)	20:18	56	08:15 (T24)	19:25	10	07:51 (T75)	18:37	17:06	73	09:47 (T25)	17:08	77	10:12 (T25)
26	06:21		07:22 (T24)	06:51		07:20 (T24)	07:23			07:55	07:32		07:55 (T26)	07:56		08:19 (T26)
	20:56	57	08:19 (T24)	20:17	54	08:14 (T24)	19:23			18:36	17:06	75	09:49 (T25)	17:08	78	10:12 (T25)
27	06:22		07:22 (T24)	06:52		07:21 (T24)	07:24			07:56	07:33		07:56 (T26)	07:56		08:19 (T26)
	20:55	58	08:20 (T24)	20:15	52	08:13 (T24)	19:22			18:35	17:05	76	09:50 (T25)	17:09	77	10:12 (T25)
28	06:22		07:21 (T24)	06:53		07:22 (T24)	07:25			07:58	07:34		07:57 (T26)	07:57		08:20 (T26)
	20:54	60	08:21 (T24)	20:14	49	08:11 (T24)	19:20			18:33	17:05	77	09:51 (T25)	17:10	77	10:13 (T25)
29	06:23		07:20 (T24)	06:54		07:23 (T24)	07:26			07:59	07:35		07:59 (T26)	07:57		08:20 (T26)
	20:53	60	08:20 (T24)	20:12	46	08:09 (T24)	19:18			18:32	17:04	77	09:53 (T25)	17:10	78	10:13 (T25)
30	06:24		07:20 (T24)	06:55		07:25 (T24)	07:27			08:00	07:36		08:00 (T26)	07:57		08:20 (T26)
	20:52	61	08:21 (T24)	20:11	42	08:07 (T24)	19:17			18:31	17:04	78	09:54 (T25)	17:11	77	10:13 (T25)
31	06:25		07:19 (T24)	06:56		07:27 (T24)				08:01				07:57		08:20 (T26)
	20:51	62	08:21 (T24)	20:09	38	08:05 (T24)				18:29				17:12	78	10:13 (T25)
Potential sun hours	460			429			375			345	297			287		
Total, worst case		1336			1888			551				1196			2412	
Sun reduction		0.66			0.61			0.59				0.30			0.22	
Oper. time red.		1.00			1.00			1.00				1.00			1.00	
Wind dir. red.		0.66			0.66			0.63				0.52			0.52	
Total reduction		0.42			0.39			0.36				0.15			0.11	
Total, real		562			733			197				179			267	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1505 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8943)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February			March			April	May			June		
1	07:57	07:43			07:07		17:10 (T71)	07:16	06:30			06:02		19:44 (T68)
	17:13	17:48			18:22	35	17:45 (T71)	19:56	20:27			20:56	41	20:25 (T68)
2	07:57	07:42			07:06		17:11 (T71)	07:15	06:29			06:01		19:45 (T68)
	17:14	17:49			18:23	33	17:44 (T71)	19:57	20:28			20:57	41	20:26 (T68)
3	07:57	07:41			07:04		17:12 (T71)	07:13	06:28		19:58 (T68)	06:01		19:46 (T68)
	17:15	17:50			18:24	30	17:42 (T71)	19:58	20:29	9	20:07 (T68)	20:58	40	20:26 (T68)
4	07:57	07:40			07:02		17:14 (T71)	07:11	06:27		19:54 (T68)	06:01		19:45 (T68)
	17:16	17:51			18:25	27	17:41 (T71)	19:59	20:30	13	20:07 (T68)	20:59	40	20:25 (T68)
5	07:57	07:39			07:01		17:16 (T71)	07:10	06:25		19:52 (T68)	06:00		19:46 (T68)
	17:17	17:53			18:26	23	17:39 (T71)	20:00	20:31	16	20:08 (T68)	20:59	40	20:26 (T68)
6	07:57	07:38		17:23 (T71)	06:59		17:19 (T71)	07:08	06:24		19:51 (T68)	06:00		19:47 (T68)
	17:18	17:54	7	17:30 (T71)	18:28	17	17:36 (T71)	20:00	20:32	18	20:09 (T68)	21:00	39	20:26 (T68)
7	07:57	07:37		17:19 (T71)	06:58		17:24 (T71)	07:06	06:23		19:49 (T68)	06:00		19:46 (T68)
	17:19	17:55	13	17:32 (T71)	18:29	6	17:30 (T71)	20:01	20:33	22	20:11 (T68)	21:01	39	20:25 (T68)
8	07:57	07:36		17:17 (T71)	07:56			07:05	06:22		19:48 (T68)	05:59		19:47 (T68)
	17:20	17:56	16	17:33 (T71)	19:30			20:02	20:34	24	20:12 (T68)	21:01	38	20:25 (T68)
9	07:57	07:35		17:16 (T71)	07:54			07:03	06:21		19:47 (T68)	05:59		19:48 (T68)
	17:21	17:58	19	17:35 (T71)	19:31			20:03	20:35	26	20:13 (T68)	21:02	37	20:25 (T68)
10	07:57	07:33		17:14 (T71)	07:53			07:01	06:20		19:46 (T68)	05:59		19:48 (T68)
	17:22	17:59	21	17:35 (T71)	19:32			20:04	20:36	28	20:14 (T68)	21:03	38	20:26 (T68)
11	07:56	07:32		17:13 (T71)	07:51			07:00	06:18		19:46 (T68)	05:59		19:49 (T68)
	17:23	18:00	24	17:37 (T71)	19:33			20:05	20:37	29	20:15 (T68)	21:03	37	20:26 (T68)
12	07:56	07:31		17:12 (T71)	07:50			06:58	06:17		19:45 (T68)	05:59		19:49 (T68)
	17:24	18:01	26	17:38 (T71)	19:34			20:07	20:38	31	20:16 (T68)	21:04	37	20:26 (T68)
13	07:56	07:30		17:11 (T71)	07:48			06:57	06:16		19:45 (T68)	05:59		19:50 (T68)
	17:25	18:03	29	17:40 (T71)	19:35			20:08	20:39	32	20:17 (T68)	21:04	36	20:26 (T68)
14	07:55	07:28		17:10 (T71)	07:46			06:55	06:15		19:44 (T68)	05:59		19:50 (T68)
	17:26	18:04	31	17:41 (T71)	19:36			20:09	20:40	33	20:17 (T68)	21:05	36	20:26 (T68)
15	07:55	07:27		17:09 (T71)	07:45			06:54	06:14		19:44 (T68)	05:58		19:50 (T68)
	17:27	18:05	33	17:42 (T71)	19:38			20:10	20:41	34	20:18 (T68)	21:05	36	20:26 (T68)
16	07:55	07:26		17:09 (T71)	07:43			06:52	06:13		19:43 (T68)	05:59		19:51 (T68)
	17:28	18:06	35	17:44 (T71)	19:39			20:11	20:42	36	20:19 (T68)	21:06	35	20:26 (T68)
17	07:54	07:24		17:08 (T71)	07:41			06:50	06:12		19:43 (T68)	05:59		19:51 (T68)
	17:29	18:08	37	17:45 (T71)	19:40			20:12	20:43	37	20:20 (T68)	21:06	35	20:26 (T68)
18	07:54	07:23		17:08 (T71)	07:40			06:49	06:11		19:42 (T68)	05:59		19:51 (T68)
	17:31	18:09	38	17:46 (T71)	19:41			20:13	20:44	39	20:21 (T68)	21:06	35	20:26 (T68)
19	07:53	07:22		17:07 (T71)	07:38			06:47	06:11		19:42 (T68)	05:59		19:51 (T68)
	17:32	18:10	40	17:47 (T71)	19:42			20:14	20:45	39	20:21 (T68)	21:07	35	20:26 (T68)
20	07:53	07:20		17:07 (T71)	07:36			06:46	06:10		19:43 (T68)	05:59		19:51 (T68)
	17:33	18:11	42	17:49 (T71)	19:43			20:15	20:46	40	20:23 (T68)	21:07	35	20:26 (T68)
21	07:52	07:19		17:08 (T71)	07:35			06:44	06:09		19:43 (T68)	05:59		19:51 (T68)
	17:34	18:12	43	17:51 (T71)	19:44			20:16	20:47	41	20:24 (T68)	21:07	35	20:26 (T68)
22	07:51	07:17		17:07 (T71)	07:33			06:43	06:08		19:42 (T68)	05:59		19:52 (T68)
	17:35	18:14	43	17:50 (T71)	19:45			20:17	20:48	42	20:24 (T68)	21:07	35	20:27 (T68)
23	07:51	07:16		17:08 (T71)	07:31			06:41	06:07		19:42 (T68)	06:00		19:52 (T68)
	17:37	18:15	42	17:50 (T71)	19:46			20:18	20:49	43	20:25 (T68)	21:08	35	20:27 (T68)
24	07:50	07:15		17:07 (T71)	07:30			06:40	06:07		19:43 (T68)	06:00		19:52 (T68)
	17:38	18:16	42	17:49 (T71)	19:47			20:19	20:50	43	20:26 (T68)	21:08	35	20:27 (T68)
25	07:49	07:13		17:08 (T71)	07:28			06:39	06:06		19:43 (T68)	06:00		19:53 (T68)
	17:39	18:17	41	17:49 (T71)	19:48			20:20	20:51	43	20:26 (T68)	21:08	35	20:28 (T68)
26	07:48	07:12		17:08 (T71)	07:26			06:37	06:05		19:43 (T68)	06:00		19:53 (T68)
	17:40	18:18	40	17:48 (T71)	19:49			20:21	20:52	42	20:25 (T68)	21:08	35	20:28 (T68)
27	07:48	07:10		17:09 (T71)	07:25			06:36	06:05		19:43 (T68)	06:01		19:52 (T68)
	17:41	18:19	39	17:48 (T71)	19:51			20:22	20:52	43	20:26 (T68)	21:08	36	20:28 (T68)
28	07:47	07:09		17:09 (T71)	07:23			06:34	06:04		19:43 (T68)	06:01		19:53 (T68)
	17:43	18:21	38	17:47 (T71)	19:52			20:24	20:53	43	20:26 (T68)	21:08	36	20:29 (T68)
29	07:46				07:21			06:33	06:03		19:44 (T68)	06:02		19:53 (T68)
	17:44				19:53			20:25	20:54	42	20:26 (T68)	21:08	36	20:29 (T68)
30	07:45				07:20			06:32	06:03		19:44 (T68)	06:02		19:53 (T68)
	17:45				19:54			20:26	20:55	42	20:26 (T68)	21:08	37	20:30 (T68)
31	07:44				07:18				06:02		19:45 (T68)			
	17:46				19:55				20:56	41	20:26 (T68)			
Potential sun hours	297	297			370			399	448			452		
Total, worst case			739			171				971			1105	
Sun reduction			0.40			0.44				0.57			0.64	
Oper. time red.			1.00			1.00				1.00			1.00	
Wind dir. red.			0.70			0.70				0.56			0.56	
Total reduction			0.29			0.31				0.32			0.36	
Total, real			212			54				313			400	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1505 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8943)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September	October		November		December
1	06:02	19:53 (T68)	06:27	19:55 (T68)	06:57	07:27		07:02	16:44 (T71)	07:37
	21:08 37	20:30 (T68)	20:50 30	20:25 (T68)	20:07	19:15		17:28 21	17:05 (T71)	17:04
2	06:03	19:52 (T68)	06:28	19:56 (T68)	06:58	07:28		07:03	16:45 (T71)	07:38
	21:08 38	20:30 (T68)	20:49 28	20:24 (T68)	20:05	19:13		17:27 18	17:03 (T71)	17:04
3	06:03	19:53 (T68)	06:28	19:56 (T68)	06:59	07:30		07:04	16:48 (T71)	07:39
	21:08 37	20:30 (T68)	20:48 27	20:23 (T68)	20:04	19:11		17:26 15	17:03 (T71)	17:03
4	06:04	19:53 (T68)	06:29	19:57 (T68)	07:00	07:31		07:05	16:50 (T71)	07:40
	21:08 38	20:31 (T68)	20:46 25	20:22 (T68)	20:02	19:10		17:25 11	17:01 (T71)	17:03
5	06:05	19:53 (T68)	06:30	19:58 (T68)	07:01	07:32		07:07	16:53 (T71)	07:41
	21:07 38	20:31 (T68)	20:45 23	20:21 (T68)	20:00	19:08		17:23 7	17:00 (T71)	17:03
6	06:05	19:53 (T68)	06:31	19:59 (T68)	07:02	07:33		07:08		07:42
	21:07 39	20:32 (T68)	20:44 21	20:20 (T68)	19:57	19:06		17:22		17:03
7	06:06	19:52 (T68)	06:32	20:01 (T68)	07:03	07:34	17:57 (T71)	07:09		07:43
	21:07 40	20:32 (T68)	20:43 18	20:19 (T68)	19:56	19:05 13	18:10 (T71)	17:21		17:03
8	06:06	19:53 (T68)	06:33	20:03 (T68)	07:04	07:35	17:53 (T71)	07:10		07:43
	21:07 39	20:32 (T68)	20:42 15	20:18 (T68)	19:54	19:03 20	18:13 (T71)	17:20		17:03
9	06:07	19:53 (T68)	06:34	20:05 (T68)	07:05	07:36	17:50 (T71)	07:11		07:44
	21:06 40	20:33 (T68)	20:41 11	20:16 (T68)	19:52	19:02 25	18:15 (T71)	17:19		17:03
10	06:08	19:52 (T68)	06:35	20:08 (T68)	07:06	07:37	17:48 (T71)	07:13		07:45
	21:06 41	20:33 (T68)	20:39 7	20:15 (T68)	19:50	19:00 28	18:16 (T71)	17:18		17:03
11	06:08	19:53 (T68)	06:36		07:07	07:38	17:46 (T71)	07:14		07:46
	21:06 41	20:34 (T68)	20:38		19:49	18:58 31	18:17 (T71)	17:17		17:03
12	06:09	19:53 (T68)	06:37		07:08	07:39	17:44 (T71)	07:15		07:47
	21:05 41	20:34 (T68)	20:37		19:47	18:57 34	18:18 (T71)	17:16		17:03
13	06:10	19:52 (T68)	06:38		07:09	07:40	17:43 (T71)	07:16		07:48
	21:05 42	20:34 (T68)	20:35		19:45	18:55 36	18:19 (T71)	17:15		17:03
14	06:11	19:52 (T68)	06:39		07:10	07:41	17:41 (T71)	07:17		07:48
	21:04 42	20:34 (T68)	20:34		19:44	18:54 38	18:19 (T71)	17:14		17:03
15	06:11	19:53 (T68)	06:40		07:11	07:42	17:40 (T71)	07:18		07:49
	21:04 42	20:35 (T68)	20:33		19:42	18:52 40	18:20 (T71)	17:13		17:04
16	06:12	19:53 (T68)	06:41		07:12	07:43	17:40 (T71)	07:20		07:50
	21:03 42	20:35 (T68)	20:31		19:40	18:51 41	18:21 (T71)	17:12		17:04
17	06:13	19:52 (T68)	06:42		07:13	07:45	17:40 (T71)	07:21		07:51
	21:02 43	20:35 (T68)	20:30		19:39	18:49 41	18:21 (T71)	17:12		17:04
18	06:14	19:52 (T68)	06:43		07:14	07:46	17:39 (T71)	07:22		07:51
	21:02 43	20:35 (T68)	20:28		19:37	18:47 42	18:21 (T71)	17:11		17:05
19	06:15	19:52 (T68)	06:44		07:15	07:47	17:38 (T71)	07:23		07:52
	21:01 43	20:35 (T68)	20:27		19:35	18:46 43	18:21 (T71)	17:10		17:05
20	06:16	19:53 (T68)	06:45		07:16	07:48	17:38 (T71)	07:24		07:52
	21:00 43	20:36 (T68)	20:26		19:33	18:45 43	18:21 (T71)	17:09		17:05
21	06:16	19:53 (T68)	06:46		07:17	07:49	17:37 (T71)	07:26		07:53
	21:00 42	20:35 (T68)	20:24		19:32	18:43 43	18:20 (T71)	17:09		17:06
22	06:17	19:52 (T68)	06:47		07:18	07:50	17:38 (T71)	07:27		07:54
	20:59 42	20:34 (T68)	20:23		19:30	18:42 41	18:19 (T71)	17:08		17:06
23	06:18	19:52 (T68)	06:48		07:19	07:51	17:38 (T71)	07:28		07:54
	20:58 41	20:33 (T68)	20:21		19:28	18:40 39	18:17 (T71)	17:08		17:07
24	06:19	19:53 (T68)	06:49		07:20	07:52	17:38 (T71)	07:29		07:54
	20:57 39	20:32 (T68)	20:20		19:27	18:39 38	18:16 (T71)	17:07		17:07
25	06:20	19:53 (T68)	06:50		07:21	07:54	17:38 (T71)	07:30		07:55
	20:57 39	20:32 (T68)	20:18		19:25	18:37 36	18:14 (T71)	17:06		17:08
26	06:21	19:53 (T68)	06:51		07:22	07:55	17:39 (T71)	07:31		07:55
	20:56 38	20:31 (T68)	20:17		19:23	18:36 34	18:13 (T71)	17:06		17:09
27	06:22	19:54 (T68)	06:52		07:23	07:56	17:39 (T71)	07:32		07:56
	20:55 36	20:30 (T68)	20:15		19:22	18:35 33	18:12 (T71)	17:05		17:09
28	06:23	19:54 (T68)	06:53		07:24	07:57	17:40 (T71)	07:33		07:56
	20:54 35	20:29 (T68)	20:13		19:20	18:33 30	18:10 (T71)	17:05		17:10
29	06:24	19:54 (T68)	06:54		07:25	07:58	17:40 (T71)	07:35		07:56
	20:53 35	20:29 (T68)	20:12		19:18	18:32 29	18:09 (T71)	17:05		17:11
30	06:25	19:55 (T68)	06:55		07:26	07:59	17:42 (T71)	07:36		07:56
	20:52 33	20:28 (T68)	20:10		19:16	18:31 26	18:08 (T71)	17:04		17:11
31	06:26	19:54 (T68)	06:56			08:01	17:43 (T71)			07:57
	20:51 32	20:26 (T68)	20:09			18:29 23	18:06 (T71)			17:12
Potential sun hours	459		428		375	345		298		288
Total, worst case	1221		205			847		72		
Sun reduction	0.66		0.61			0.48		0.30		
Oper. time red.	1.00		1.00			1.00		1.00		
Wind dir. red.	0.56		0.56			0.70		0.70		
Total reduction	0.37		0.35			0.34		0.21		
Total, real	456		71			291		15		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1518 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8953)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April	May	June
1	07:57	08:19 (T68)	07:43	08:19 (T68)	07:07		07:27 (T67)	06:30	06:02
	17:13	93 16:12 (T69)	17:48	58 09:17 (T68)	18:22	3	07:30 (T67)	19:56	20:27	20:57
2	07:57	08:19 (T68)	07:42	08:19 (T68)	07:06		07:25 (T67)	07:15	06:29	06:01
	17:14	94 16:13 (T69)	17:49	58 09:17 (T68)	18:23	8	07:33 (T67)	19:57	20:28	20:57
3	07:57	08:19 (T68)	07:41	08:20 (T68)	07:04		07:23 (T67)	07:13	06:28	06:01
	17:15	95 16:13 (T69)	17:50	57 09:17 (T68)	18:24	12	07:35 (T67)	19:58	20:29	20:58
4	07:57	08:19 (T68)	07:40	08:19 (T68)	07:02		07:22 (T67)	07:11	06:27	06:01
	17:16	95 16:13 (T69)	17:51	57 09:16 (T68)	18:25	15	07:37 (T67)	19:59	20:30	20:59
5	07:57	08:19 (T68)	07:39	08:20 (T68)	07:01		07:20 (T67)	07:10	06:25	06:00
	17:17	95 16:13 (T69)	17:53	55 09:15 (T68)	18:26	18	07:38 (T67)	20:00	20:31	20:59
6	07:57	08:19 (T68)	07:38	08:20 (T68)	06:59		07:19 (T67)	07:08	06:24	06:00
	17:18	96 16:14 (T69)	17:54	55 09:15 (T68)	18:28	20	07:39 (T67)	20:00	20:32	21:00
7	07:57	08:19 (T68)	07:37	08:21 (T68)	06:58		07:17 (T67)	07:06	06:23	06:00
	17:19	96 16:14 (T69)	17:55	54 09:15 (T68)	18:29	22	07:39 (T67)	20:01	20:33	21:01
8	07:57	08:19 (T68)	07:36	08:22 (T68)	07:56		08:15 (T67)	07:05	06:22	05:59
	17:20	96 16:14 (T69)	17:56	52 09:14 (T68)	19:30	24	08:39 (T67)	20:02	20:34	21:01
9	07:57	08:19 (T68)	07:35	08:23 (T68)	07:54		08:14 (T67)	07:03	06:21	05:59
	17:21	96 16:14 (T69)	17:58	51 09:14 (T68)	19:31	26	08:40 (T67)	20:03	20:35	21:02
10	07:57	08:18 (T68)	07:33	08:23 (T68)	07:53		08:12 (T67)	07:02	06:20	05:59
	17:22	97 16:14 (T69)	17:59	49 09:12 (T68)	19:32	28	08:40 (T67)	20:04	20:36	21:03
11	07:56	08:18 (T68)	07:32	08:24 (T68)	07:51		08:10 (T67)	07:00	06:18	05:59
	17:23	97 16:14 (T69)	18:00	48 09:12 (T68)	19:33	29	08:39 (T67)	20:06	20:37	21:03
12	07:56	08:18 (T68)	07:31	08:25 (T68)	07:50		08:09 (T67)	06:58	06:17	05:59
	17:24	96 16:14 (T69)	18:01	46 09:11 (T68)	19:34	30	08:39 (T67)	20:07	20:38	21:04
13	07:56	08:17 (T68)	07:30	08:27 (T68)	07:48		08:07 (T67)	06:57	06:16	05:59
	17:25	97 16:13 (T69)	18:03	43 09:10 (T68)	19:35	32	08:39 (T67)	20:08	20:39	21:04
14	07:55	08:17 (T68)	07:28	08:27 (T68)	07:46		08:06 (T67)	06:55	06:15	05:59
	17:26	96 16:13 (T69)	18:04	41 09:08 (T68)	19:37	32	08:38 (T67)	20:09	20:40	21:05
15	07:55	08:16 (T68)	07:27	08:29 (T68)	07:45		08:07 (T67)	06:54	06:14	05:59
	17:27	97 16:13 (T69)	18:05	38 09:07 (T68)	19:38	30	08:37 (T67)	20:10	20:41	21:05
16	07:55	08:17 (T68)	07:26	08:31 (T68)	07:43		08:08 (T67)	06:52	06:13	05:59
	17:28	95 16:13 (T69)	18:06	34 09:05 (T68)	19:39	28	08:36 (T67)	20:11	20:42	21:06
17	07:54	08:16 (T68)	07:25	08:33 (T68)	07:41		08:08 (T67)	06:51	06:12	05:59
	17:30	94 16:12 (T69)	18:08	29 09:02 (T68)	19:40	26	08:34 (T67)	20:12	20:43	21:06
18	07:54	08:17 (T68)	07:23	08:36 (T68)	07:40		08:10 (T67)	06:49	06:11	05:59
	17:31	93 16:12 (T69)	18:09	24 09:00 (T68)	19:41	24	08:34 (T67)	20:13	20:44	21:06
19	07:53	08:16 (T68)	07:22	08:39 (T68)	07:38		08:11 (T67)	06:47	06:11	05:59
	17:32	91 16:10 (T69)	18:10	16 08:55 (T68)	19:42	20	08:31 (T67)	20:14	20:45	21:07
20	07:53	08:17 (T68)	07:20		07:36		08:12 (T67)	06:46	06:10	05:59
	17:33	89 16:10 (T69)	18:11		19:43	16	08:28 (T67)	20:15	20:46	21:07
21	07:52	08:17 (T68)	07:19		07:35		08:16 (T67)	06:44	06:09	05:59
	17:34	85 16:08 (T69)	18:12		19:44	9	08:25 (T67)	20:16	20:47	21:07
22	07:51	08:17 (T68)	07:18		07:33			06:43	06:08	05:59
	17:35	83 16:07 (T69)	18:14		19:45			20:17	20:48	21:07
23	07:51	08:17 (T68)	07:16		07:31			06:42	06:07	06:00
	17:37	78 16:05 (T69)	18:15		19:46			20:18	20:49	21:08
24	07:50	08:17 (T68)	07:15		07:30			06:40	06:07	06:00
	17:38	72 16:02 (T69)	18:16		19:47			20:19	20:50	21:08
25	07:49	08:17 (T68)	07:13		07:28			06:39	06:06	06:00
	17:39	58 09:15 (T68)	18:17		19:48			20:20	20:51	21:08
26	07:48	08:17 (T68)	07:12		07:26			06:37	06:05	06:00
	17:40	58 09:15 (T68)	18:18		19:50			20:21	20:52	21:08
27	07:48	08:17 (T68)	07:10		07:25			06:36	06:05	06:01
	17:42	59 09:16 (T68)	18:20		19:51			20:23	20:52	21:08
28	07:47	08:17 (T68)	07:09		07:23			06:34	06:04	06:01
	17:43	59 09:16 (T68)	18:21		19:52			20:24	20:53	21:08
29	07:46	08:18 (T68)			07:21			06:33	06:03	06:02
	17:44	59 09:17 (T68)			19:53			20:25	20:54	21:08
30	07:45	08:18 (T68)			07:20			06:32	06:03	06:02
	17:45	59 09:17 (T68)			19:54			20:26	20:55	21:08
31	07:44	08:19 (T68)			07:18				06:02	
	17:46	58 09:17 (T68)			19:55				20:56	
Potential sun hours	297		297		370			399	448	452
Total, worst case		2626		865		452				
Sun reduction		0.31		0.40		0.44				
Oper. time red.		1.00		1.00		1.00				
Wind dir. red.		0.61		0.52		0.58				
Total reduction		0.19		0.21		0.26				
Total, real		502		182		117				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1518 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8953)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August	September			October			November			December		
1	06:03	06:27	06:57			07:28		07:47 (T67)	07:02		07:53 (T68)	07:37		08:00 (T68)
	21:08	20:50	20:07			19:15	31	08:18 (T67)	17:28	49	08:42 (T68)	17:04	97	15:56 (T69)
2	06:03	06:28	06:58			07:29		07:48 (T67)	07:03		07:52 (T68)	07:38		08:01 (T68)
	21:08	20:49	20:05			19:13	30	08:18 (T67)	17:27	51	08:43 (T68)	17:04	97	15:57 (T69)
3	06:04	06:29	06:59			07:30		07:49 (T67)	07:04		07:52 (T68)	07:39		08:02 (T68)
	21:08	20:48	20:04			19:11	28	08:17 (T67)	17:26	52	08:44 (T68)	17:04	97	15:58 (T69)
4	06:04	06:30	07:00			07:31		07:50 (T67)	07:05		07:51 (T68)	07:40		08:03 (T68)
	21:08	20:47	20:02			19:10	27	08:17 (T67)	17:25	54	08:45 (T68)	17:03	96	15:58 (T69)
5	06:05	06:30	07:01			07:32		07:52 (T67)	07:07		07:50 (T68)	07:41		08:04 (T68)
	21:08	20:45	20:01			19:08	25	08:17 (T67)	17:23	55	08:45 (T68)	17:03	96	15:59 (T69)
6	06:05	06:31	07:02			07:33		07:53 (T67)	07:08		07:50 (T68)	07:42		08:05 (T68)
	21:07	20:44	19:57			19:07	23	08:16 (T67)	17:22	55	08:45 (T68)	17:03	96	16:00 (T69)
7	06:06	06:32	07:03			07:34		07:54 (T67)	07:09		07:50 (T68)	07:43		08:06 (T68)
	21:07	20:43	19:56			19:05	21	08:15 (T67)	17:21	56	08:46 (T68)	17:03	95	16:00 (T69)
8	06:07	06:33	07:04			07:35		07:55 (T67)	07:10		07:50 (T68)	07:44		08:07 (T68)
	21:07	20:42	19:54			19:03	19	08:14 (T67)	17:20	57	08:47 (T68)	17:03	95	16:01 (T69)
9	06:07	06:34	07:05			07:36		07:56 (T67)	07:11		07:49 (T68)	07:44		08:08 (T68)
	21:06	20:41	19:52			19:02	16	08:12 (T67)	17:19	58	08:47 (T68)	17:03	94	16:02 (T69)
10	06:08	06:35	07:06			07:37		07:57 (T67)	07:13		07:50 (T68)	07:45		08:09 (T68)
	21:06	20:39	19:51			19:00	14	08:11 (T67)	17:18	58	08:48 (T68)	17:03	94	16:03 (T69)
11	06:09	06:36	07:07			07:38		07:58 (T67)	07:14		07:49 (T68)	07:46		08:10 (T68)
	21:06	20:38	19:49			18:58	10	08:08 (T67)	17:17	59	08:48 (T68)	17:03	94	16:04 (T69)
12	06:09	06:37	07:08			07:39		07:59 (T67)	07:15		07:49 (T68)	07:47		08:10 (T68)
	21:05	20:37	19:47			18:57	6	08:05 (T67)	17:16	59	08:48 (T68)	17:03	93	16:03 (T69)
13	06:10	06:38	07:09			07:40			07:16		07:49 (T68)	07:48		08:11 (T68)
	21:05	20:35	19:45			18:55			17:15	59	08:48 (T68)	17:03	93	16:04 (T69)
14	06:11	06:39	07:10			07:41			07:17		07:50 (T68)	07:49		08:12 (T68)
	21:04	20:34	19:44			18:54			17:14	59	08:49 (T68)	17:04	92	16:05 (T69)
15	06:12	06:40	07:11			07:42			07:19		07:50 (T68)	07:49		08:13 (T68)
	21:04	20:33	19:42			18:52			17:13	59	08:49 (T68)	17:04	93	16:06 (T69)
16	06:12	06:41	07:12			07:44			07:20		07:50 (T68)	07:50		08:13 (T68)
	21:03	20:31	19:40			18:51			17:13	58	08:48 (T68)	17:04	92	16:06 (T69)
17	06:13	06:42	07:13			07:45			07:21		07:51 (T68)	07:51		08:14 (T68)
	21:03	20:30	19:39			18:49			17:12	58	08:49 (T68)	17:04	92	16:07 (T69)
18	06:14	06:43	07:14			07:46			07:22		07:51 (T68)	07:51		08:15 (T68)
	21:02	20:28	19:37			18:48			17:11	72	15:36 (T69)	17:05	91	16:07 (T69)
19	06:15	06:44	07:15			07:47			07:23		07:51 (T68)	07:52		08:15 (T68)
	21:01	20:27	19:35			18:46			17:10	78	15:39 (T69)	17:05	91	16:07 (T69)
20	06:16	06:45	07:16			07:48			07:24		07:52 (T68)	07:53		08:16 (T68)
	21:01	20:26	19:34			18:45			17:10	83	15:42 (T69)	17:05	91	16:08 (T69)
21	06:16	06:46	07:17			07:49			07:26		07:52 (T68)	07:53		08:16 (T68)
	21:00	20:24	19:32			18:43			17:09	85	15:43 (T69)	17:06	91	16:08 (T69)
22	06:17	06:47	07:18		08:02 (T67)	07:50		09:14 (T68)	07:27		07:53 (T68)	07:54		08:17 (T68)
	20:59	20:23	19:30	6	08:08 (T67)	18:42	7	09:21 (T68)	17:08	88	15:46 (T69)	17:06	91	16:09 (T69)
23	06:18	06:48	07:19		07:57 (T67)	07:51		09:08 (T68)	07:28		07:53 (T68)	07:54		08:17 (T68)
	20:58	20:21	19:28	15	08:12 (T67)	18:40	19	09:27 (T68)	17:08	91	15:47 (T69)	17:07	91	16:09 (T69)
24	06:19	06:49	07:20		07:55 (T67)	07:53		09:05 (T68)	07:29		07:54 (T68)	07:55		08:18 (T68)
	20:57	20:20	19:27	19	08:14 (T67)	18:39	25	09:30 (T68)	17:07	93	15:49 (T69)	17:07	91	16:10 (T69)
25	06:20	06:50	07:21		07:52 (T67)	07:54		09:02 (T68)	07:30		07:54 (T68)	07:55		08:18 (T68)
	20:57	20:18	19:25	24	08:16 (T67)	18:37	30	09:32 (T68)	17:06	95	15:50 (T69)	17:08	92	16:10 (T69)
26	06:21	06:51	07:22		07:51 (T67)	07:55		09:01 (T68)	07:31		07:55 (T68)	07:55		08:18 (T68)
	20:56	20:17	19:23	26	08:17 (T67)	18:36	34	09:35 (T68)	17:06	95	15:51 (T69)	17:09	91	16:10 (T69)
27	06:22	06:52	07:23		07:49 (T67)	07:56		08:59 (T68)	07:32		07:56 (T68)	07:56		08:19 (T68)
	20:55	20:15	19:22	28	08:17 (T67)	18:35	38	09:37 (T68)	17:06	97	15:53 (T69)	17:09	92	16:12 (T69)
28	06:23	06:53	07:24		07:48 (T67)	07:57		08:57 (T68)	07:34		07:57 (T68)	07:56		08:19 (T68)
	20:54	20:13	19:20	30	08:18 (T67)	18:33	41	09:38 (T68)	17:05	96	15:53 (T69)	17:10	93	16:12 (T69)
29	06:24	06:54	07:25		07:47 (T67)	07:58		08:55 (T68)	07:35		07:58 (T68)	07:56		08:19 (T68)
	20:53	20:12	19:18	31	08:18 (T67)	18:32	44	09:39 (T68)	17:05	97	15:54 (T69)	17:11	92	16:12 (T69)
30	06:25	06:55	07:26		07:46 (T67)	07:59		08:55 (T68)	07:36		07:59 (T68)	07:57		08:19 (T68)
	20:52	20:10	19:17	32	08:18 (T67)	18:31	46	09:41 (T68)	17:04	96	15:55 (T69)	17:12	93	16:12 (T69)
31	06:26	06:56				08:01		08:54 (T68)				07:57		08:19 (T68)
	20:51	20:09				18:29	48	09:42 (T68)				17:12	93	16:12 (T69)
Potential sun hours	459	428	375			345			298			288		
Total, worst case				211			582			2122			2889	
Sun reduction				0.59			0.48			0.30			0.22	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.58			0.54			0.57			0.65	
Total reduction				0.35			0.26			0.17			0.15	
Total, real				73			154			366			421	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1526 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8960)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February		March		April		May	June
1	07:57	07:43		07:07		07:31 (T61)	07:16	08:21 (T61)	06:31	06:02
	17:13	17:48		18:22	76	08:47 (T61)	19:56	73	09:34 (T61)	20:27	20:57
2	07:57	07:42		07:06		07:29 (T61)	07:15	08:22 (T61)	06:29	06:01
	17:14	17:49		18:23	79	08:48 (T61)	19:57	71	09:33 (T61)	20:28	20:58
3	07:57	07:41		07:04		07:29 (T61)	07:13	08:22 (T61)	06:28	06:01
	17:15	17:50		18:24	80	08:49 (T61)	19:58	69	09:31 (T61)	20:29	20:58
4	07:57	07:40		07:03		07:28 (T61)	07:11	08:23 (T61)	06:27	06:01
	17:16	17:52		18:25	81	08:49 (T61)	19:59	66	09:29 (T61)	20:30	20:59
5	07:57	07:39		07:01		07:26 (T61)	07:10	08:25 (T61)	06:25	06:00
	17:17	17:53		18:27	83	08:49 (T61)	20:00	63	09:28 (T61)	20:31	21:00
6	07:57	07:38		06:59		07:26 (T61)	07:08	08:25 (T61)	06:24	06:00
	17:18	17:54		18:28	84	08:50 (T61)	20:00	61	09:26 (T61)	20:32	21:00
7	07:57	07:37		06:58		07:25 (T61)	07:06	08:26 (T61)	06:23	06:00
	17:19	17:55		18:29	85	08:50 (T61)	20:01	58	09:24 (T61)	20:33	21:01
8	07:57	07:36		07:56		08:24 (T61)	07:05	08:28 (T61)	06:22	05:59
	17:20	17:57		19:30	86	09:50 (T61)	20:02	54	09:22 (T61)	20:34	21:02
9	07:57	07:35		07:55		08:24 (T61)	07:03	08:29 (T61)	06:21	05:59
	17:21	17:58		19:31	86	09:50 (T61)	20:04	50	09:19 (T61)	20:35	21:02
10	07:57	07:34		07:53		08:22 (T61)	07:02	08:31 (T61)	06:20	05:59
	17:22	17:59		19:32	88	09:50 (T61)	20:05	47	09:18 (T61)	20:36	21:03
11	07:57	07:32		07:51		08:23 (T61)	07:00	08:33 (T61)	06:19	05:59
	17:23	18:00		19:33	88	09:51 (T61)	20:06	41	09:14 (T61)	20:37	21:03
12	07:56	07:31		07:50		08:22 (T61)	06:58	08:35 (T61)	06:17	05:59
	17:24	18:02		19:34	88	09:50 (T61)	20:07	36	09:11 (T61)	20:38	21:04
13	07:56	07:30		07:48		08:21 (T61)	06:57	08:38 (T61)	06:16	05:59
	17:25	18:03		19:36	89	09:50 (T61)	20:08	30	09:08 (T61)	20:39	21:04
14	07:56	07:29		07:46		08:21 (T61)	06:55	08:41 (T61)	06:15	05:59
	17:26	18:04		19:37	89	09:50 (T61)	20:09	22	09:03 (T61)	20:40	21:05
15	07:55	07:27		07:45		08:20 (T61)	06:54	08:50 (T61)	06:14	05:59
	17:27	18:05		19:38	90	09:50 (T61)	20:10	5	08:55 (T61)	20:41	21:05
16	07:55	07:26	07:59 (T61)	07:43		08:20 (T61)	06:52		06:13	05:59
	17:28	18:06	22 08:21 (T61)	19:39	89	09:49 (T61)	20:11		20:42	21:06
17	07:54	07:25	07:54 (T61)	07:41		08:20 (T61)	06:51		06:12	05:59
	17:30	18:08	31 08:25 (T61)	19:40	89	09:49 (T61)	20:12		20:43	21:06
18	07:54	07:23	07:51 (T61)	07:40		08:19 (T61)	06:49		06:12	05:59
	17:31	18:09	38 08:29 (T61)	19:41	89	09:48 (T61)	20:13		20:44	21:07
19	07:53	07:22	07:48 (T61)	07:38		08:19 (T61)	06:48		06:11	05:59
	17:32	18:10	44 08:32 (T61)	19:42	89	09:48 (T61)	20:14		20:45	21:07
20	07:53	07:21	07:45 (T61)	07:36		08:18 (T61)	06:46		06:10	05:59
	17:33	18:11	49 08:34 (T61)	19:43	89	09:47 (T61)	20:15		20:46	21:07
21	07:52	07:19	07:44 (T61)	07:35		08:19 (T61)	06:45		06:09	05:59
	17:34	18:13	53 08:37 (T61)	19:44	88	09:47 (T61)	20:16		20:47	21:07
22	07:52	07:18	07:41 (T61)	07:33		08:18 (T61)	06:43		06:08	05:59
	17:35	18:14	57 08:38 (T61)	19:45	88	09:46 (T61)	20:17		20:48	21:08
23	07:51	07:16	07:40 (T61)	07:31		08:18 (T61)	06:42		06:07	06:00
	17:37	18:15	60 08:40 (T61)	19:46	86	09:44 (T61)	20:18		20:49	21:08
24	07:50	07:15	07:37 (T61)	07:30		08:19 (T61)	06:40		06:07	06:00
	17:38	18:16	64 08:41 (T61)	19:48	85	09:44 (T61)	20:20		20:50	21:08
25	07:49	07:13	07:36 (T61)	07:28		08:19 (T61)	06:39		06:06	06:00
	17:39	18:17	67 08:43 (T61)	19:49	84	09:43 (T61)	20:21		20:51	21:08
26	07:49	07:12	07:34 (T61)	07:26		08:19 (T61)	06:37		06:05	06:01
	17:40	18:18	70 08:44 (T61)	19:50	83	09:42 (T61)	20:22		20:52	21:08
27	07:48	07:10	07:33 (T61)	07:25		08:19 (T61)	06:36		06:05	06:01
	17:42	18:20	72 08:45 (T61)	19:51	82	09:41 (T61)	20:23		20:53	21:08
28	07:47	07:09	07:32 (T61)	07:23		08:19 (T61)	06:35		06:04	06:01
	17:43	18:21	74 08:46 (T61)	19:52	81	09:40 (T61)	20:24		20:54	21:08
29	07:46			07:21		08:19 (T61)	06:33		06:03	06:02
	17:44			19:53	79	09:38 (T61)	20:25		20:54	21:08
30	07:45			07:20		08:20 (T61)	06:32		06:03	06:02
	17:45			19:54	78	09:38 (T61)	20:26		20:55	21:08
31	07:44			07:18		08:21 (T61)			06:02	
	17:47			19:55	75	09:36 (T61)			20:56	
Potential sun hours	297	297		370			399		448	452
Total, worst case			701		2626			746		
Sun reduction			0.40		0.44			0.52		
Oper. time red.			1.00		1.00			1.00		
Wind dir. red.			0.57		0.57			0.57		
Total reduction			0.23		0.25			0.30		
Total, real			160		657			221		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1526 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8960)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August		September		October		November	December
1	06:03	06:27		06:58		08:32 (T61)	07:28	08:00 (T61)	07:02	07:37
	21:08	20:50		20:07	41	09:13 (T61)	19:15	89	09:29 (T61)	17:28	17:04
2	06:03	06:28		06:59		08:29 (T61)	07:29	08:00 (T61)	07:03	07:38
	21:08	20:49		20:06	47	09:16 (T61)	19:13	89	09:29 (T61)	17:27	17:04
3	06:04	06:29		07:00		08:27 (T61)	07:30	08:01 (T61)	07:04	07:39
	21:08	20:48		20:04	50	09:17 (T61)	19:12	88	09:29 (T61)	17:26	17:04
4	06:04	06:30		07:01		08:25 (T61)	07:31	08:01 (T61)	07:06	07:40
	21:08	20:47		20:02	54	09:19 (T61)	19:10	87	09:28 (T61)	17:25	17:03
5	06:05	06:31		07:02		08:23 (T61)	07:32	08:01 (T61)	07:07	07:41
	21:08	20:46		20:01	58	09:21 (T61)	19:08	87	09:28 (T61)	17:24	17:03
6	06:05	06:32		07:03		08:21 (T61)	07:33	08:01 (T61)	07:08	07:42
	21:08	20:44		19:57	61	09:22 (T61)	19:07	86	09:27 (T61)	17:22	17:03
7	06:06	06:33		07:04		08:20 (T61)	07:34	08:01 (T61)	07:09	07:43
	21:07	20:43		19:56	63	09:23 (T61)	19:05	85	09:26 (T61)	17:21	17:03
8	06:07	06:34		07:05		08:18 (T61)	07:35	08:02 (T61)	07:10	07:44
	21:07	20:42		19:54	66	09:24 (T61)	19:03	83	09:25 (T61)	17:20	17:03
9	06:07	06:35		07:06		08:17 (T61)	07:36	08:02 (T61)	07:12	07:45
	21:07	20:41		19:52	68	09:25 (T61)	19:02	82	09:24 (T61)	17:19	17:03
10	06:08	06:36		07:07		08:15 (T61)	07:37	08:02 (T61)	07:13	07:46
	21:06	20:39		19:51	71	09:26 (T61)	19:00	81	09:23 (T61)	17:18	17:03
11	06:09	06:37		07:07		08:14 (T61)	07:38	08:03 (T61)	07:14	07:46
	21:06	20:38		19:49	73	09:27 (T61)	18:59	79	09:22 (T61)	17:17	17:03
12	06:09	06:38		07:08		08:13 (T61)	07:39	08:03 (T61)	07:15	07:47
	21:05	20:37		19:47	75	09:28 (T61)	18:57	78	09:21 (T61)	17:16	17:03
13	06:10	06:39		07:09		08:12 (T61)	07:40	08:04 (T61)	07:16	07:48
	21:05	20:36		19:46	77	09:29 (T61)	18:55	75	09:19 (T61)	17:15	17:03
14	06:11	06:40		07:10		08:11 (T61)	07:41	08:06 (T61)	07:18	07:49
	21:04	20:34		19:44	78	09:29 (T61)	18:54	73	09:19 (T61)	17:14	17:04
15	06:12	06:41		07:11		08:09 (T61)	07:43	08:06 (T61)	07:19	07:49
	21:04	20:33		19:42	80	09:29 (T61)	18:52	71	09:17 (T61)	17:13	17:04
16	06:12	06:42		07:12		08:08 (T61)	07:44	08:07 (T61)	07:20	07:50
	21:03	20:31		19:40	81	09:29 (T61)	18:51	69	09:16 (T61)	17:13	17:04
17	06:13	06:43		07:13		08:07 (T61)	07:45	08:08 (T61)	07:21	07:51
	21:03	20:30		19:39	83	09:30 (T61)	18:49	66	09:14 (T61)	17:12	17:04
18	06:14	06:44		07:14		08:06 (T61)	07:46	08:09 (T61)	07:22	07:52
	21:02	20:29		19:37	84	09:30 (T61)	18:48	63	09:12 (T61)	17:11	17:05
19	06:15	06:45		07:15		08:05 (T61)	07:47	08:11 (T61)	07:23	07:52
	21:01	20:27		19:35	85	09:30 (T61)	18:46	59	09:10 (T61)	17:10	17:05
20	06:16	06:46		07:16		08:05 (T61)	07:48	08:13 (T61)	07:25	07:53
	21:01	20:26		19:34	86	09:31 (T61)	18:45	56	09:09 (T61)	17:10	17:06
21	06:17	06:47		07:17		08:04 (T61)	07:49	08:15 (T61)	07:26	07:53
	21:00	20:24		19:32	87	09:31 (T61)	18:43	52	09:07 (T61)	17:09	17:06
22	06:17	06:48		07:18		08:03 (T61)	07:50	08:17 (T61)	07:27	07:54
	20:59	20:23		19:30	88	09:31 (T61)	18:42	47	09:04 (T61)	17:08	17:06
23	06:18	06:49		07:19		08:03 (T61)	07:52	08:19 (T61)	07:28	07:54
	20:58	20:21		19:29	88	09:31 (T61)	18:40	42	09:01 (T61)	17:08	17:07
24	06:19	06:50		07:20		08:02 (T61)	07:53	08:21 (T61)	07:29	07:55
	20:58	20:20		19:27	89	09:31 (T61)	18:39	37	08:58 (T61)	17:07	17:08
25	06:20	06:51		07:21		08:02 (T61)	07:54	08:26 (T61)	07:30	07:55
	20:57	20:18		19:25	89	09:31 (T61)	18:38	29	08:55 (T61)	17:07	17:08
26	06:21	06:52		07:23		08:01 (T61)	07:55	08:30 (T61)	07:31	07:56
	20:56	20:17		19:23	90	09:31 (T61)	18:36	20	08:50 (T61)	17:06	17:09
27	06:22	06:53		07:24		08:01 (T61)	07:56			07:33	07:56
	20:55	20:15		19:22	89	09:30 (T61)	18:35			17:06	17:09
28	06:23	06:54	08:49 (T61)	07:25		08:01 (T61)	07:57			07:34	07:56
	20:54	20:14	8 08:57 (T61)	19:20	89	09:30 (T61)	18:33			17:05	17:10
29	06:24	06:55	08:42 (T61)	07:26		08:00 (T61)	07:58			07:35	07:56
	20:53	20:12	22 09:04 (T61)	19:18	90	09:30 (T61)	18:32			17:05	17:11
30	06:25	06:56	08:38 (T61)	07:27		08:00 (T61)	08:00			07:36	07:57
	20:52	20:10	30 09:08 (T61)	19:17	89	09:29 (T61)	18:31			17:04	17:12
31	06:26	06:57	08:34 (T61)				08:01				07:57
	20:51	20:09	37 09:11 (T61)				18:30				17:12
Potential sun hours	459	428		375			345			298	288
Total, worst case			97		2269			1773			
Sun reduction			0.61		0.59			0.48			
Oper. time red.			1.00		1.00			1.00			
Wind dir. red.			0.57		0.57			0.57			
Total reduction			0.35		0.34			0.27			
Total, real			34		762			484			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1531 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8965)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June		
1	07:58	07:44	07:07			07:16		07:36 (T26)	06:30		06:51 (T25)	06:01		06:28 (T75)
	17:13	17:48	18:22			19:56	31	08:07 (T26)	20:27	60	07:51 (T25)	20:57	69	07:45 (T25)
2	07:58	07:43	07:06			07:15		07:37 (T26)	06:29		06:51 (T25)	06:01		06:29 (T75)
	17:14	17:49	18:23			19:57	30	08:07 (T26)	20:28	60	07:51 (T25)	20:58	68	07:45 (T25)
3	07:58	07:42	07:04			07:13		07:37 (T26)	06:28		06:50 (T25)	06:01		06:29 (T75)
	17:15	17:50	18:24			19:58	28	08:05 (T26)	20:29	62	07:52 (T25)	20:59	66	07:44 (T25)
4	07:58	07:41	07:03			07:11		07:38 (T26)	06:26		06:49 (T25)	06:00		06:30 (T75)
	17:16	17:51	18:25			19:59	25	08:03 (T26)	20:30	62	07:51 (T25)	20:59	65	07:44 (T25)
5	07:58	07:40	07:01			07:10		07:39 (T26)	06:25		06:49 (T25)	06:00		06:31 (T75)
	17:17	17:53	18:26			20:00	24	08:03 (T26)	20:32	62	07:51 (T25)	21:00	63	07:44 (T25)
6	07:58	07:39	07:00			07:08		07:40 (T26)	06:24		06:49 (T25)	06:00		06:31 (T75)
	17:17	17:54	18:28			20:00	20	08:00 (T26)	20:33	62	07:51 (T25)	21:01	60	07:43 (T25)
7	07:58	07:37	06:58			07:06		07:42 (T26)	06:23		06:49 (T25)	05:59		06:32 (T75)
	17:18	17:55	18:29			20:02	15	07:57 (T26)	20:34	62	07:51 (T25)	21:01	58	07:43 (T25)
8	07:58	07:36	07:56			07:05		07:45 (T26)	06:22		06:49 (T25)	05:59		06:34 (T75)
	17:19	17:56	19:30			20:03	9	07:54 (T26)	20:35	63	07:52 (T25)	21:02	55	07:43 (T25)
9	07:57	07:35	07:55			07:03			06:20		06:49 (T25)	05:59		06:35 (T75)
	17:20	17:58	19:31			20:04			20:36	63	07:52 (T25)	21:03	53	07:43 (T25)
10	07:57	07:34	07:53			07:01			06:19		06:40 (T75)	05:59		06:36 (T75)
	17:21	17:59	19:32			20:05			20:37	65	07:52 (T25)	21:03	51	07:43 (T25)
11	07:57	07:33	07:51			07:00			06:18		06:38 (T75)	05:58		06:37 (T75)
	17:23	18:00	19:33			20:06			20:38	67	07:50 (T25)	21:04	49	07:43 (T25)
12	07:57	07:31	07:50			06:58			06:17		06:37 (T75)	05:58		06:37 (T75)
	17:24	18:01	19:34			20:07			20:39	70	07:50 (T25)	21:04	46	07:42 (T25)
13	07:56	07:30	07:48			06:57			06:16		06:36 (T75)	05:58		06:38 (T75)
	17:25	18:03	19:36			20:08			20:40	72	07:50 (T25)	21:05	44	07:42 (T25)
14	07:56	07:29	07:46			06:55			06:15		06:36 (T75)	05:58		07:03 (T25)
	17:26	18:04	19:37			20:09			20:41	74	07:51 (T25)	21:05	39	07:42 (T25)
15	07:56	07:28	07:45			06:54			06:14		06:35 (T75)	05:58		07:03 (T25)
	17:27	18:05	19:38			20:10			20:42	75	07:51 (T25)	21:06	39	07:42 (T25)
16	07:55	07:26	07:43			06:52		07:16 (T25)	06:13		06:34 (T75)	05:58		07:03 (T25)
	17:28	18:06	19:39			20:11	16	07:32 (T25)	20:43	76	07:50 (T25)	21:06	39	07:42 (T25)
17	07:55	07:25	07:41			06:50		07:12 (T25)	06:12		06:33 (T75)	05:58		07:05 (T25)
	17:29	18:08	19:40			20:12	24	07:36 (T25)	20:44	77	07:50 (T25)	21:07	38	07:43 (T25)
18	07:54	07:24	07:40			06:49		07:08 (T25)	06:11		06:32 (T75)	05:58		07:05 (T25)
	17:30	18:09	19:41			20:13	31	07:39 (T25)	20:45	78	07:50 (T25)	21:07	37	07:42 (T25)
19	07:54	07:22	07:38		07:57 (T26)	06:47		07:07 (T25)	06:10		06:31 (T75)	05:58		07:05 (T25)
	17:32	18:10	19:42	2	07:59 (T26)	20:14	34	07:41 (T25)	20:46	78	07:49 (T25)	21:07	37	07:42 (T25)
20	07:53	07:21	07:36		07:56 (T26)	06:46		07:05 (T25)	06:09		06:30 (T75)	05:59		07:05 (T25)
	17:33	18:11	19:43	8	08:04 (T26)	20:15	37	07:42 (T25)	20:47	78	07:49 (T25)	21:08	37	07:42 (T25)
21	07:53	07:19	07:35		07:54 (T26)	06:44		07:04 (T25)	06:09		06:30 (T75)	05:59		07:05 (T25)
	17:34	18:12	19:44	12	08:06 (T26)	20:17	40	07:44 (T25)	20:48	78	07:49 (T25)	21:08	37	07:42 (T25)
22	07:52	07:18	07:33		07:52 (T26)	06:43		07:02 (T25)	06:08		06:29 (T75)	05:59		07:05 (T25)
	17:35	18:14	19:45	15	08:07 (T26)	20:18	43	07:45 (T25)	20:49	78	07:48 (T25)	21:08	37	07:42 (T25)
23	07:51	07:16	07:31		07:50 (T26)	06:41		07:01 (T25)	06:07		06:28 (T75)	05:59		07:06 (T25)
	17:36	18:15	19:46	17	08:07 (T26)	20:19	45	07:46 (T25)	20:50	79	07:48 (T25)	21:08	37	07:43 (T25)
24	07:51	07:15	07:30		07:49 (T26)	06:40		06:59 (T25)	06:06		06:27 (T75)	05:59		07:06 (T25)
	17:38	18:16	19:48	20	08:09 (T26)	20:20	48	07:47 (T25)	20:50	79	07:47 (T25)	21:09	37	07:43 (T25)
25	07:50	07:13	07:28		07:47 (T26)	06:39		06:58 (T25)	06:06		06:27 (T75)	06:00		07:06 (T25)
	17:39	18:17	19:49	22	08:09 (T26)	20:21	50	07:48 (T25)	20:51	78	07:47 (T25)	21:09	37	07:43 (T25)
26	07:49	07:12	07:26		07:45 (T26)	06:37		06:57 (T25)	06:05		06:26 (T75)	06:00		07:07 (T25)
	17:40	18:18	19:50	24	08:09 (T26)	20:22	52	07:49 (T25)	20:52	79	07:47 (T25)	21:09	38	07:45 (T25)
27	07:48	07:10	07:25		07:44 (T26)	06:36		06:55 (T25)	06:04		06:27 (T75)	06:00		07:06 (T25)
	17:41	18:20	19:51	26	08:10 (T26)	20:23	54	07:49 (T25)	20:53	77	07:47 (T25)	21:09	39	07:45 (T25)
28	07:47	07:09	07:23		07:42 (T26)	06:34		06:54 (T25)	06:04		06:27 (T75)	06:01		07:06 (T25)
	17:43	18:21	19:52	27	08:09 (T26)	20:24	56	07:50 (T25)	20:54	76	07:46 (T25)	21:09	39	07:45 (T25)
29	07:47		07:21		07:40 (T26)	06:33		06:53 (T25)	06:03		06:27 (T75)	06:01		06:43 (T75)
	17:44		19:53	29	08:09 (T26)	20:25	57	07:50 (T25)	20:55	73	07:45 (T25)	21:09	42	07:46 (T25)
30	07:46		07:20		07:39 (T26)	06:32		06:51 (T25)	06:02		06:28 (T75)	06:02		06:42 (T75)
	17:45		19:54	30	08:09 (T26)	20:26	59	07:50 (T25)	20:56	72	07:46 (T25)	21:09	45	07:46 (T25)
31	07:45		07:18		07:37 (T26)				06:02		06:28 (T75)			
	17:46		19:55	31	08:08 (T26)				20:56	71	07:46 (T25)			
Potential sun hours	297	297	370			399			449			453		
Total, worst case				263			828			2206			1401	
Sun reduction				0.44			0.52			0.57			0.64	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.63			0.67			0.68			0.68	
Total reduction				0.28			0.35			0.39			0.44	
Total, real				73			287			858			611	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1531 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8965)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October	November	December
1	06:02		06:41 (T75)	06:26		06:48 (T75)	06:57	07:28	07:02	07:37
	21:09	49	07:47 (T25)	20:50	70	08:01 (T25)	20:07	19:15	17:28	17:04
2	06:03		06:40 (T75)	06:27		06:49 (T75)	06:58	07:29	07:03	07:38
	21:09	50	07:47 (T25)	20:49	67	08:01 (T25)	20:06	19:13	17:27	17:03
3	06:03		06:40 (T75)	06:28		06:50 (T75)	06:59	07:30	07:05	07:39
	21:09	53	07:48 (T25)	20:48	64	08:01 (T25)	20:04	19:12	17:26	17:03
4	06:04		06:39 (T75)	06:29		06:58 (T25)	07:00	07:43 (T26)	07:31	07:06	07:40
	21:08	55	07:48 (T25)	20:47	63	08:01 (T25)	20:03	8	07:51 (T26)	19:10	17:24	17:03
5	06:04		06:39 (T75)	06:30		06:58 (T25)	07:01	07:39 (T26)	07:32	07:07	07:41
	21:08	57	07:49 (T25)	20:46	63	08:01 (T25)	20:01	15	07:54 (T26)	19:08	17:23	17:03
6	06:05		06:38 (T75)	06:31		06:58 (T25)	07:02	07:36 (T26)	07:33	07:08	07:42
	21:08	58	07:49 (T25)	20:45	63	08:01 (T25)	19:58	20	07:56 (T26)	19:07	17:22	17:03
7	06:05		06:38 (T75)	06:32		06:59 (T25)	07:03	07:34 (T26)	07:34	07:09	07:43
	21:08	61	07:50 (T25)	20:44	62	08:01 (T25)	19:56	24	07:58 (T26)	19:05	17:21	17:03
8	06:06		06:38 (T75)	06:33		06:59 (T25)	07:04	07:33 (T26)	07:35	07:11	07:44
	21:07	63	07:51 (T25)	20:42	62	08:01 (T25)	19:54	26	07:59 (T26)	19:03	17:20	17:03
9	06:07		06:37 (T75)	06:34		06:59 (T25)	07:05	07:31 (T26)	07:36	07:12	07:45
	21:07	65	07:51 (T25)	20:41	61	08:00 (T25)	19:52	28	07:59 (T26)	19:02	17:19	17:03
10	06:07		06:37 (T75)	06:35		06:59 (T25)	07:06	07:30 (T26)	07:37	07:13	07:46
	21:07	67	07:52 (T25)	20:40	61	08:00 (T25)	19:51	30	08:00 (T26)	19:00	17:18	17:03
11	06:08		06:37 (T75)	06:36		06:59 (T25)	07:07	07:29 (T26)	07:38	07:14	07:47
	21:06	69	07:53 (T25)	20:39	61	08:00 (T25)	19:49	31	08:00 (T26)	18:58	17:17	17:03
12	06:09		06:36 (T75)	06:37		07:00 (T25)	07:08	07:29 (T26)	07:39	07:15	07:48
	21:06	70	07:53 (T25)	20:37	59	07:59 (T25)	19:47	31	08:00 (T26)	18:57	17:16	17:03
13	06:10		06:36 (T75)	06:38		07:00 (T25)	07:09	07:30 (T26)	07:41	07:17	07:48
	21:05	72	07:54 (T25)	20:36	59	07:59 (T25)	19:46	30	08:00 (T26)	18:55	17:15	17:03
14	06:10		06:36 (T75)	06:39		07:01 (T25)	07:10	07:31 (T26)	07:42	07:18	07:49
	21:05	73	07:54 (T25)	20:35	57	07:58 (T25)	19:44	29	08:00 (T26)	18:54	17:14	17:03
15	06:11		06:36 (T75)	06:40		07:02 (T25)	07:11	07:31 (T26)	07:43	07:19	07:50
	21:04	75	07:55 (T25)	20:33	55	07:57 (T25)	19:42	27	07:58 (T26)	18:52	17:13	17:03
16	06:12		06:35 (T75)	06:41		07:03 (T25)	07:12	07:32 (T26)	07:44	07:20	07:51
	21:04	76	07:55 (T25)	20:32	53	07:56 (T25)	19:41	26	07:58 (T26)	18:51	17:12	17:04
17	06:13		06:35 (T75)	06:42		07:04 (T25)	07:13	07:33 (T26)	07:45	07:21	07:51
	21:03	78	07:56 (T25)	20:30	51	07:55 (T25)	19:39	24	07:57 (T26)	18:49	17:11	17:04
18	06:14		06:36 (T75)	06:43		07:05 (T25)	07:14	07:34 (T26)	07:46	07:23	07:52
	21:03	78	07:57 (T25)	20:29	49	07:54 (T25)	19:37	22	07:56 (T26)	18:48	17:11	17:04
19	06:14		06:37 (T75)	06:44		07:06 (T25)	07:15	07:35 (T26)	07:47	07:24	07:53
	21:02	78	07:57 (T25)	20:27	47	07:53 (T25)	19:35	20	07:55 (T26)	18:46	17:10	17:05
20	06:15		06:38 (T75)	06:45		07:06 (T25)	07:16	07:36 (T26)	07:48	07:25	07:53
	21:01	78	07:58 (T25)	20:26	45	07:51 (T25)	19:34	18	07:54 (T26)	18:45	17:09	17:05
21	06:16		06:38 (T75)	06:46		07:07 (T25)	07:17	07:37 (T26)	07:49	07:26	07:54
	21:00	80	07:58 (T25)	20:25	42	07:49 (T25)	19:32	15	07:52 (T26)	18:43	17:09	17:06
22	06:17		06:39 (T75)	06:47		07:08 (T25)	07:18	07:38 (T26)	07:51	07:27	07:54
	21:00	79	07:58 (T25)	20:23	40	07:48 (T25)	19:30	12	07:50 (T26)	18:42	17:08	17:06
23	06:18		06:40 (T75)	06:48		07:09 (T25)	07:19	07:39 (T26)	07:52	07:28	07:55
	20:59	79	07:59 (T25)	20:22	37	07:46 (T25)	19:29	9	07:48 (T26)	18:40	17:07	17:07
24	06:19		06:41 (T75)	06:49		07:10 (T25)	07:20	07:40 (T26)	07:53	07:30	07:55
	20:58	78	07:59 (T25)	20:20	34	07:44 (T25)	19:27	4	07:44 (T26)	18:39	17:07	17:07
25	06:20		06:42 (T75)	06:50		07:11 (T25)	07:22		07:54	07:31	07:56
	20:57	78	08:00 (T25)	20:18	30	07:41 (T25)	19:25		18:37	17:06	17:08
26	06:21		06:43 (T75)	06:51		07:14 (T25)	07:23		07:55	07:32	07:56
	20:56	77	08:00 (T25)	20:17	24	07:38 (T25)	19:23		18:36	17:06	17:08
27	06:22		06:44 (T75)	06:52		07:18 (T25)	07:24		07:56	07:33	07:56
	20:55	77	08:01 (T25)	20:15	15	07:33 (T25)	19:22		18:35	17:05	17:09
28	06:23		06:45 (T75)	06:53			07:25		07:58	07:34	07:57
	20:54	75	08:01 (T25)	20:14			19:20		18:33	17:05	17:10
29	06:23		06:45 (T75)	06:54			07:26		07:59	07:35	07:57
	20:53	74	08:00 (T25)	20:12			19:18		18:32	17:04	17:10
30	06:24		06:46 (T75)	06:55			07:27		08:00	07:36	07:57
	20:52	74	08:01 (T25)	20:11			19:17		18:31	17:04	17:11
31	06:25		06:47 (T75)	06:56					08:01		07:57
	20:51	72	08:01 (T25)	20:09					18:29		17:12
Potential sun hours	460			429			375		345	297	287
Total, worst case		2168			1394			449				
Sun reduction		0.66			0.61			0.59				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.69			0.68			0.63				
Total reduction		0.45			0.41			0.37				
Total, real		980			576			166				

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1549 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8980)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May	June
1	07:57	15:54 (T69)	07:43	15:47 (T69)	07:07	07:27 (T68)	07:16	07:35 (T67)	06:30	06:02
	17:13 46	16:40 (T69)	17:48 83	17:10 (T69)	18:22 96	17:01 (T69)	19:56 45	08:44 (T68)	20:27	20:57
2	07:57	15:54 (T69)	07:42	15:47 (T69)	07:06	07:25 (T68)	07:15	07:34 (T67)	06:29	06:01
	17:14 47	16:41 (T69)	17:49 83	17:10 (T69)	18:23 96	16:59 (T69)	19:57 36	08:39 (T68)	20:28	20:57
3	07:57	15:53 (T69)	07:41	15:47 (T69)	07:04	07:23 (T68)	07:13	07:32 (T67)	06:28	06:01
	17:15 49	16:42 (T69)	17:50 84	17:11 (T69)	18:24 96	16:57 (T69)	19:58 27	07:59 (T67)	20:29	20:58
4	07:57	15:53 (T69)	07:40	15:46 (T69)	07:02	07:22 (T68)	07:11	07:30 (T67)	06:27	06:01
	17:16 50	16:43 (T69)	17:51 84	17:10 (T69)	18:25 95	16:56 (T69)	19:59 28	07:58 (T67)	20:30	20:59
5	07:57	15:53 (T69)	07:39	15:46 (T69)	07:01	07:20 (T68)	07:10	07:29 (T67)	06:25	06:00
	17:17 52	16:45 (T69)	17:53 85	17:11 (T69)	18:26 93	16:53 (T69)	20:00 29	07:58 (T67)	20:31	20:59
6	07:57	15:53 (T69)	07:38	15:46 (T69)	06:59	07:19 (T68)	07:08	07:28 (T67)	06:24	06:00
	17:18 53	16:46 (T69)	17:54 85	17:11 (T69)	18:28 90	16:51 (T69)	20:00 29	07:57 (T67)	20:32	21:00
7	07:57	15:53 (T69)	07:37	15:46 (T69)	06:58	07:17 (T68)	07:06	07:28 (T67)	06:23	06:00
	17:19 54	16:47 (T69)	17:55 85	17:11 (T69)	18:29 88	16:48 (T69)	20:01 28	07:56 (T67)	20:33	21:01
8	07:57	15:53 (T69)	07:36	15:47 (T69)	07:56	08:15 (T68)	07:05	07:30 (T67)	06:22	05:59
	17:20 55	16:48 (T69)	17:57 85	17:12 (T69)	19:30 84	17:45 (T69)	20:02 25	07:55 (T67)	20:34	21:01
9	07:57	15:53 (T69)	07:35	15:47 (T69)	07:54	08:15 (T68)	07:03	07:30 (T67)	06:21	05:59
	17:21 57	16:50 (T69)	17:58 85	17:12 (T69)	19:31 76	17:41 (T69)	20:03 23	07:53 (T67)	20:35	21:02
10	07:57	15:52 (T69)	07:33	15:46 (T69)	07:53	08:13 (T68)	07:02	07:31 (T67)	06:20	05:59
	17:22 58	16:50 (T69)	17:59 85	17:11 (T69)	19:32 56	09:09 (T68)	20:04 20	07:51 (T67)	20:36	21:03
11	07:56	15:52 (T69)	07:32	15:47 (T69)	07:51	08:12 (T68)	07:00	07:33 (T67)	06:18	05:59
	17:23 59	16:51 (T69)	18:00 85	17:12 (T69)	19:33 56	09:08 (T68)	20:06 17	07:50 (T67)	20:37	21:03
12	07:56	15:52 (T69)	07:31	15:47 (T69)	07:50	08:13 (T68)	06:58	07:35 (T67)	06:17	05:59
	17:24 61	16:53 (T69)	18:01 85	17:12 (T69)	19:34 56	09:09 (T68)	20:07 11	07:46 (T67)	20:38	21:04
13	07:56	15:51 (T69)	07:30	15:48 (T69)	07:48	08:12 (T68)	06:57		06:16	05:59
	17:25 62	16:53 (T69)	18:03 84	17:12 (T69)	19:35 57	09:09 (T68)	20:08		20:39	21:04
14	07:55	15:51 (T69)	07:28	15:47 (T69)	07:46	08:11 (T68)	06:55		06:15	05:59
	17:26 64	16:55 (T69)	18:04 84	17:11 (T69)	19:37 57	09:08 (T68)	20:09		20:40	21:05
15	07:55	15:50 (T69)	07:27	15:48 (T69)	07:45	08:11 (T68)	06:54		06:14	05:59
	17:27 65	16:55 (T69)	18:05 83	17:11 (T69)	19:38 57	09:08 (T68)	20:10		20:41	21:05
16	07:55	15:50 (T69)	07:26	15:49 (T69)	07:43	08:11 (T68)	06:52		06:13	05:59
	17:28 67	16:57 (T69)	18:06 82	17:11 (T69)	19:39 57	09:08 (T68)	20:11		20:42	21:06
17	07:54	15:50 (T69)	07:25	15:49 (T69)	07:41	08:10 (T68)	06:51		06:12	05:59
	17:30 67	16:57 (T69)	18:08 81	17:10 (T69)	19:40 57	09:07 (T68)	20:12		20:43	21:06
18	07:54	15:50 (T69)	07:23	15:50 (T69)	07:40	08:11 (T68)	06:49		06:11	05:59
	17:31 69	16:59 (T69)	18:09 80	17:10 (T69)	19:41 56	09:07 (T68)	20:13		20:44	21:06
19	07:53	15:49 (T69)	07:22	15:49 (T69)	07:38	08:10 (T68)	06:47		06:11	05:59
	17:32 70	16:59 (T69)	18:10 80	17:09 (T69)	19:42 56	09:06 (T68)	20:14		20:45	21:07
20	07:53	15:49 (T69)	07:20	15:51 (T69)	07:36	08:10 (T68)	06:46		06:10	05:59
	17:33 72	17:01 (T69)	18:11 78	17:09 (T69)	19:43 55	09:05 (T68)	20:15		20:46	21:07
21	07:52	15:49 (T69)	07:19	15:52 (T69)	07:35	08:11 (T68)	06:44		06:09	05:59
	17:34 73	17:02 (T69)	18:12 77	17:09 (T69)	19:44 54	09:05 (T68)	20:16		20:47	21:07
22	07:51	15:48 (T69)	07:18	15:52 (T69)	07:33	08:11 (T68)	06:43		06:08	05:59
	17:35 74	17:02 (T69)	18:14 76	17:08 (T69)	19:45 52	09:03 (T68)	20:17		20:48	21:07
23	07:51	15:49 (T69)	07:16	15:53 (T69)	07:31	08:11 (T68)	06:42		06:07	06:00
	17:37 75	17:04 (T69)	18:15 74	17:07 (T69)	19:46 51	09:02 (T68)	20:18		20:49	21:08
24	07:50	15:48 (T69)	07:15	15:53 (T69)	07:30	07:49 (T67)	06:40		06:07	06:00
	17:38 76	17:04 (T69)	18:16 73	17:06 (T69)	19:47 52	09:01 (T68)	20:19		20:50	21:08
25	07:49	15:48 (T69)	07:13	07:38 (T68)	07:28	07:47 (T67)	06:39		06:06	06:00
	17:39 77	17:05 (T69)	18:17 83	17:06 (T69)	19:48 55	09:00 (T68)	20:20		20:51	21:08
26	07:48	15:47 (T69)	07:12	07:33 (T68)	07:26	07:45 (T67)	06:37		06:05	06:00
	17:40 78	17:05 (T69)	18:18 90	17:04 (T69)	19:50 56	08:58 (T68)	20:21		20:52	21:08
27	07:48	15:47 (T69)	07:10	07:30 (T68)	07:25	07:44 (T67)	06:36		06:05	06:01
	17:42 79	17:06 (T69)	18:20 94	17:03 (T69)	19:51 56	08:57 (T68)	20:23		20:52	21:08
28	07:47	15:47 (T69)	07:09	07:28 (T68)	07:23	07:42 (T67)	06:35		06:04	06:01
	17:43 80	17:07 (T69)	18:21 96	17:02 (T69)	19:52 56	08:55 (T68)	20:24		20:53	21:08
29	07:46	15:47 (T69)			07:21	07:40 (T67)	06:33		06:03	06:02
	17:44 81	17:08 (T69)			19:53 54	08:52 (T68)	20:25		20:54	21:08
30	07:45	15:47 (T69)			07:20	07:39 (T67)	06:32		06:03	06:02
	17:45 82	17:09 (T69)			19:54 53	08:51 (T68)	20:26		20:55	21:08
31	07:44	15:47 (T69)			07:18	07:37 (T67)			06:02	
	17:46 82	17:09 (T69)			19:55 49	08:47 (T68)			20:56	
Potential sun hours	297		297		370		399		448	452
Total, worst case	2034		2329		2022		318			
Sun reduction	0.31		0.40		0.44		0.52			
Oper. time red.	1.00		1.00		1.00		1.00			
Wind dir. red.	0.73		0.72		0.61		0.63			
Total reduction	0.23		0.29		0.27		0.33			
Total, real	467		684		550		106			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1549 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8980)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July	August			September			October			November			December		
1	06:03	06:27			06:57		07:32 (T67)	07:28		07:51 (T68)	07:02		15:16 (T69)	07:37		15:34 (T69)
	21:08	20:50			20:07	17	07:49 (T67)	19:15	57	08:48 (T68)	17:28	85	16:41 (T69)	17:04	60	16:34 (T69)
2	06:03	06:28			06:58		07:30 (T67)	07:29		07:51 (T68)	07:03		15:16 (T69)	07:38		15:35 (T69)
	21:08	20:49			20:05	20	07:50 (T67)	19:13	56	08:47 (T68)	17:27	85	16:41 (T69)	17:04	58	16:33 (T69)
3	06:04	06:29			06:59		07:28 (T67)	07:30		07:51 (T68)	07:04		15:16 (T69)	07:39		15:36 (T69)
	21:08	20:48			20:04	23	07:51 (T67)	19:11	55	08:46 (T68)	17:26	85	16:41 (T69)	17:04	57	16:33 (T69)
4	06:04	06:30			07:00		07:27 (T67)	07:31		07:51 (T68)	07:05		15:16 (T69)	07:40		15:37 (T69)
	21:08	20:47			20:02	25	07:52 (T67)	19:10	71	17:15 (T69)	17:25	85	16:41 (T69)	17:03	55	16:32 (T69)
5	06:05	06:31			07:01		07:25 (T67)	07:32		07:52 (T68)	07:07		15:16 (T69)	07:41		15:38 (T69)
	21:08	20:45			20:01	28	07:53 (T67)	19:08	80	17:20 (T69)	17:23	85	16:41 (T69)	17:03	54	16:32 (T69)
6	06:05	06:31			07:02		07:24 (T67)	07:33		07:53 (T68)	07:08		15:16 (T69)	07:42		15:39 (T69)
	21:07	20:44			19:57	29	07:53 (T67)	19:07	86	17:24 (T69)	17:22	84	16:40 (T69)	17:03	53	16:32 (T69)
7	06:06	06:32			07:03		07:24 (T67)	07:34		07:54 (T68)	07:09		15:17 (T69)	07:43		15:40 (T69)
	21:07	20:43			19:56	29	07:53 (T67)	19:05	90	17:26 (T69)	17:21	84	16:41 (T69)	17:03	52	16:32 (T69)
8	06:07	06:33			07:04		07:25 (T67)	07:35		07:55 (T68)	07:10		15:17 (T69)	07:44		15:41 (T69)
	21:07	20:42			19:54	28	07:53 (T67)	19:03	92	17:28 (T69)	17:20	84	16:41 (T69)	17:03	51	16:32 (T69)
9	06:07	06:34			07:05		07:26 (T67)	07:36		07:56 (T68)	07:11		15:17 (T69)	07:44		15:42 (T69)
	21:06	20:41			19:52	27	07:53 (T67)	19:02	94	17:29 (T69)	17:19	83	16:40 (T69)	17:03	50	16:32 (T69)
10	06:08	06:35			07:06		07:27 (T67)	07:37		07:57 (T68)	07:13		15:18 (T69)	07:45		15:44 (T69)
	21:06	20:39			19:51	34	08:31 (T68)	19:00	95	17:31 (T69)	17:18	83	16:41 (T69)	17:03	47	16:31 (T69)
11	06:09	06:36			07:07		07:28 (T67)	07:38		07:58 (T68)	07:14		15:18 (T69)	07:46		15:45 (T69)
	21:06	20:38			19:49	44	08:36 (T68)	18:58	96	17:32 (T69)	17:17	82	16:40 (T69)	17:03	47	16:32 (T69)
12	06:09	06:37			07:08		07:28 (T67)	07:39		07:59 (T68)	07:15		15:18 (T69)	07:47		15:45 (T69)
	21:05	20:37			19:47	49	08:38 (T68)	18:57	96	17:33 (T69)	17:16	82	16:40 (T69)	17:03	46	16:31 (T69)
13	06:10	06:38			07:09		07:29 (T67)	07:40		08:00 (T68)	07:16		15:18 (T69)	07:48		15:46 (T69)
	21:05	20:35			19:45	52	08:40 (T68)	18:55	96	17:34 (T69)	17:15	81	16:39 (T69)	17:03	45	16:31 (T69)
14	06:11	06:39			07:10		07:30 (T67)	07:41		08:01 (T68)	07:17		15:20 (T69)	07:49		15:47 (T69)
	21:04	20:34			19:44	54	08:42 (T68)	18:54	95	17:35 (T69)	17:14	80	16:40 (T69)	17:04	44	16:31 (T69)
15	06:12	06:40			07:11		07:31 (T67)	07:42		08:03 (T68)	07:19		15:20 (T69)	07:49		15:48 (T69)
	21:04	20:33			19:42	56	08:44 (T68)	18:52	93	17:36 (T69)	17:13	79	16:39 (T69)	17:04	43	16:31 (T69)
16	06:12	06:41			07:12		07:32 (T67)	07:44		08:07 (T68)	07:20		15:20 (T69)	07:50		15:48 (T69)
	21:03	20:31			19:40	57	08:45 (T68)	18:51	87	17:37 (T69)	17:13	78	16:38 (T69)	17:04	43	16:31 (T69)
17	06:13	06:42			07:13		07:33 (T67)	07:45		08:13 (T68)	07:21		15:22 (T69)	07:51		15:50 (T69)
	21:03	20:30			19:39	56	08:46 (T68)	18:49	76	17:37 (T69)	17:12	77	16:39 (T69)	17:04	41	16:31 (T69)
18	06:14	06:43			07:14		07:34 (T67)	07:46		16:25 (T69)	07:22		15:22 (T69)	07:51		15:51 (T69)
	21:02	20:28			19:37	55	08:47 (T68)	18:48	73	17:38 (T69)	17:11	76	16:38 (T69)	17:05	41	16:32 (T69)
19	06:15	06:44			07:15		07:35 (T67)	07:47		16:23 (T69)	07:23		15:23 (T69)	07:52		15:51 (T69)
	21:01	20:27			19:35	52	08:47 (T68)	18:46	75	17:38 (T69)	17:10	75	16:38 (T69)	17:05	40	16:31 (T69)
20	06:16	06:45			07:16		07:58 (T68)	07:48		16:22 (T69)	07:24		15:23 (T69)	07:53		15:52 (T69)
	21:01	20:26			19:34	50	08:48 (T68)	18:45	77	17:39 (T69)	17:10	74	16:37 (T69)	17:05	40	16:32 (T69)
21	06:16	06:46			07:17		07:57 (T68)	07:49		16:22 (T69)	07:26		15:24 (T69)	07:53		15:52 (T69)
	21:00	20:24			19:32	51	08:48 (T68)	18:43	78	17:40 (T69)	17:09	73	16:37 (T69)	17:06	40	16:32 (T69)
22	06:17	06:47			07:18		07:56 (T68)	07:50		16:21 (T69)	07:27		15:25 (T69)	07:54		15:53 (T69)
	20:59	20:23			19:30	53	08:49 (T68)	18:42	79	17:40 (T69)	17:08	72	16:37 (T69)	17:06	40	16:33 (T69)
23	06:18	06:48			07:19		07:55 (T68)	07:51		16:20 (T69)	07:28		15:26 (T69)	07:54		15:53 (T69)
	20:58	20:21			19:28	54	08:49 (T68)	18:40	80	17:40 (T69)	17:08	71	16:37 (T69)	17:07	40	16:33 (T69)
24	06:19	06:49			07:20		07:54 (T68)	07:53		16:19 (T69)	07:29		15:27 (T69)	07:55		15:54 (T69)
	20:57	20:20			19:27	55	08:49 (T68)	18:39	81	17:40 (T69)	17:07	69	16:36 (T69)	17:07	40	16:34 (T69)
25	06:20	06:50			07:21		07:53 (T68)	07:54		16:18 (T69)	07:30		15:28 (T69)	07:55		15:54 (T69)
	20:57	20:18			19:25	56	08:49 (T68)	18:37	82	17:40 (T69)	17:06	67	16:35 (T69)	17:08	41	16:35 (T69)
26	06:21	06:51			07:22		07:53 (T68)	07:55		16:18 (T69)	07:31		15:28 (T69)	07:55		15:54 (T69)
	20:56	20:17			19:23	56	08:49 (T68)	18:36	83	17:41 (T69)	17:06	67	16:35 (T69)	17:09	41	16:35 (T69)
27	06:22	06:52			07:23		07:52 (T68)	07:56		16:18 (T69)	07:32		15:30 (T69)	07:56		15:54 (T69)
	20:55	20:15			19:22	57	08:49 (T68)	18:35	83	17:41 (T69)	17:06	65	16:35 (T69)	17:09	43	16:37 (T69)
28	06:23	06:53			07:24		07:52 (T68)	07:57		16:17 (T69)	07:34		15:31 (T69)	07:56		15:54 (T69)
	20:54	20:13			19:20	57	08:49 (T68)	18:33	84	17:41 (T69)	17:05	64	16:35 (T69)	17:10	43	16:37 (T69)
29	06:24	06:54			07:25		07:51 (T68)	07:58		16:16 (T69)	07:35		15:32 (T69)	07:56		15:54 (T69)
	20:53	20:12			19:18	58	08:49 (T68)	18:32	85	17:41 (T69)	17:05	62	16:34 (T69)	17:11	44	16:38 (T69)
30	06:25	06:55			07:26		07:51 (T68)	07:59		16:17 (T69)	07:36		15:33 (T69)	07:57		15:54 (T69)
	20:52	20:10			19:17	57	08:48 (T68)	18:31	85	17:42 (T69)	17:04	61	16:34 (T69)	17:12	44	16:38 (T69)
31	06:26	06:56		07:35 (T67)				08:01		16:16 (T69)				07:57		15:54 (T69)
	20:51	20:09	11	07:46 (T67)				18:29	85	17:41 (T69)				17:12	45	16:39 (T69)
Potential sun hours	459	428			375			345			298			288		
Total, worst case			11			1339			2545			2298			1428	
Sun reduction			0.61			0.59			0.48			0.30			0.22	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.64			0.59			0.69			0.73			0.73	
Total reduction			0.40			0.36			0.33			0.22			0.16	
Total, real			4			476			851			510			233	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1551 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8982)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57	15:52 (T77)	07:43	08:10 (T76)	07:07	17:09 (T42)	07:16	19:13 (T41)	06:30		06:01	20:00 (T40)
	17:13 33	16:25 (T77)	17:47 34	17:23 (T42)	18:22 26	17:35 (T42)	19:56 21	19:34 (T41)	20:27		20:57 26	20:26 (T40)
2	07:57	15:52 (T77)	07:42	08:11 (T76)	07:06	17:10 (T42)	07:14	19:11 (T41)	06:29		06:01	20:01 (T40)
	17:14 33	16:25 (T77)	17:49 38	17:25 (T42)	18:23 22	17:32 (T42)	19:57 24	19:35 (T41)	20:28		20:58 26	20:27 (T40)
3	07:57	15:53 (T77)	07:41	08:13 (T76)	07:04	17:13 (T42)	07:13	19:11 (T41)	06:28		06:01	20:01 (T40)
	17:15 32	16:25 (T77)	17:50 40	17:26 (T42)	18:24 15	17:28 (T42)	19:58 26	19:37 (T41)	20:29		20:58 25	20:26 (T40)
4	07:57	15:54 (T77)	07:40	08:14 (T76)	07:02		07:11	19:11 (T41)	06:26		06:00	20:02 (T40)
	17:16 31	16:25 (T77)	17:51 41	17:28 (T42)	18:25		19:59 26	19:37 (T41)	20:30		20:59 24	20:26 (T40)
5	07:57	15:55 (T77)	07:39	08:15 (T76)	07:01		07:09	19:10 (T41)	06:25		06:00	20:03 (T40)
	17:16 30	16:25 (T77)	17:52 42	17:29 (T42)	18:26		20:00 28	19:38 (T41)	20:31		21:00 23	20:26 (T40)
6	07:57	08:20 (T76)	07:38	08:16 (T76)	06:59		07:08	19:10 (T41)	06:24	20:07 (T40)	05:59	20:03 (T40)
	17:17 32	16:25 (T77)	17:54 41	17:30 (T42)	18:27		20:00 30	19:40 (T41)	20:32 3	20:10 (T40)	21:00 22	20:25 (T40)
7	07:57	08:19 (T76)	07:37	08:19 (T76)	06:58		07:06	19:10 (T41)	06:23	20:05 (T40)	05:59	20:04 (T40)
	17:18 31	16:24 (T77)	17:55 38	17:31 (T42)	18:29		20:01 30	19:40 (T41)	20:33 6	20:11 (T40)	21:01 21	20:25 (T40)
8	07:57	08:19 (T76)	07:36	17:04 (T42)	07:56		07:05	19:11 (T41)	06:22	20:03 (T40)	05:59	20:05 (T40)
	17:19 32	16:24 (T77)	17:56 29	17:33 (T42)	19:30		20:02 30	19:41 (T41)	20:34 9	20:12 (T40)	21:02 20	20:25 (T40)
9	07:57	08:19 (T76)	07:35	17:04 (T42)	07:54		07:03	19:10 (T41)	06:20	20:01 (T40)	05:59	20:06 (T40)
	17:20 33	16:24 (T77)	17:57 30	17:34 (T42)	19:31		20:03 30	19:40 (T41)	20:35 11	20:12 (T40)	21:02 18	20:24 (T40)
10	07:57	08:19 (T76)	07:34	17:03 (T42)	07:53		07:01	19:10 (T41)	06:19	20:00 (T40)	05:59	20:06 (T40)
	17:21 31	16:23 (T77)	17:59 33	17:36 (T42)	19:32		20:05 29	19:39 (T41)	20:36 13	20:13 (T40)	21:03 18	20:24 (T40)
11	07:57	08:18 (T76)	07:32	17:02 (T42)	07:51		07:00	19:12 (T41)	06:18	19:59 (T40)	05:58	20:07 (T40)
	17:23 31	16:22 (T77)	18:00 34	17:36 (T42)	19:33		20:06 26	19:38 (T41)	20:37 15	20:14 (T40)	21:04 17	20:24 (T40)
12	07:56	08:18 (T76)	07:31	17:02 (T42)	07:50		06:58	19:12 (T41)	06:17	19:58 (T40)	05:58	20:07 (T40)
	17:24 29	16:21 (T77)	18:01 36	17:38 (T42)	19:34		20:07 24	19:36 (T41)	20:38 17	20:15 (T40)	21:04 16	20:23 (T40)
13	07:56	08:18 (T76)	07:30	17:02 (T42)	07:48		06:57	19:14 (T41)	06:16	19:58 (T40)	05:58	20:08 (T40)
	17:25 28	16:20 (T77)	18:02 38	17:40 (T42)	19:35		20:08 21	19:35 (T41)	20:39 18	20:16 (T40)	21:05 15	20:23 (T40)
14	07:56	08:17 (T76)	07:29	17:01 (T42)	07:46		06:55	19:15 (T41)	06:15	19:57 (T40)	05:58	20:08 (T40)
	17:26 24	16:18 (T77)	18:04 39	17:40 (T42)	19:36		20:09 17	19:32 (T41)	20:41 20	20:17 (T40)	21:05 15	20:23 (T40)
15	07:55	08:17 (T76)	07:27	17:01 (T42)	07:45		06:53	19:17 (T41)	06:14	19:57 (T40)	05:58	20:09 (T40)
	17:27 17	08:34 (T76)	18:05 41	17:42 (T42)	19:38		20:10 12	19:29 (T41)	20:42 21	20:18 (T40)	21:05 13	20:22 (T40)
16	07:55	08:16 (T76)	07:26	17:01 (T42)	07:43		06:52		06:13	19:57 (T40)	05:58	20:09 (T40)
	17:28 18	08:34 (T76)	18:06 43	17:44 (T42)	19:39		20:11		20:42 23	20:20 (T40)	21:06 13	20:22 (T40)
17	07:54	08:16 (T76)	07:25	17:00 (T42)	07:41		06:50		06:12	19:57 (T40)	05:58	20:11 (T40)
	17:29 19	08:35 (T76)	18:07 44	17:44 (T42)	19:40		20:12		20:43 23	20:20 (T40)	21:06 12	20:23 (T40)
18	07:54	08:15 (T76)	07:23	17:01 (T42)	07:40		06:49		06:11	19:57 (T40)	05:58	20:11 (T40)
	17:30 21	08:36 (T76)	18:09 43	17:44 (T42)	19:41		20:13		20:44 24	20:21 (T40)	21:07 12	20:23 (T40)
19	07:53	08:15 (T76)	07:22	17:01 (T42)	07:38		06:47		06:10	19:56 (T40)	05:58	20:11 (T40)
	17:31 22	08:37 (T76)	18:10 43	17:44 (T42)	19:42		20:14		20:45 26	20:22 (T40)	21:07 12	20:23 (T40)
20	07:53	08:14 (T76)	07:20	17:01 (T42)	07:36		06:46		06:09	19:56 (T40)	05:58	20:12 (T40)
	17:33 23	08:37 (T76)	18:11 43	17:44 (T42)	19:43		20:15		20:46 27	20:23 (T40)	21:07 11	20:23 (T40)
21	07:52	08:13 (T76)	07:19	17:01 (T42)	07:35		06:44		06:09	19:56 (T40)	05:59	20:12 (T40)
	17:34 24	08:37 (T76)	18:12 43	17:44 (T42)	19:44		20:16		20:47 27	20:23 (T40)	21:08 11	20:23 (T40)
22	07:52	08:13 (T76)	07:18	17:01 (T42)	07:33		06:43		06:08	19:57 (T40)	05:59	20:12 (T40)
	17:35 26	08:39 (T76)	18:13 42	17:43 (T42)	19:45		20:17		20:48 28	20:25 (T40)	21:08 11	20:23 (T40)
23	07:51	08:12 (T76)	07:16	17:02 (T42)	07:31		06:41		06:07	19:57 (T40)	05:59	20:13 (T40)
	17:36 27	08:39 (T76)	18:15 40	17:42 (T42)	19:46		20:18		20:49 28	20:25 (T40)	21:08 11	20:24 (T40)
24	07:50	08:11 (T76)	07:15	17:02 (T42)	07:30		06:40		06:06	19:57 (T40)	05:59	20:12 (T40)
	17:37 28	08:39 (T76)	18:16 39	17:41 (T42)	19:47		20:19		20:50 29	20:26 (T40)	21:08 12	20:24 (T40)
25	07:49	08:10 (T76)	07:13	17:04 (T42)	07:28		06:38		06:06	19:58 (T40)	06:00	20:12 (T40)
	17:39 29	08:39 (T76)	18:17 37	17:41 (T42)	19:48		20:21		20:51 29	20:27 (T40)	21:08 12	20:24 (T40)
26	07:49	08:09 (T76)	07:12	17:04 (T42)	07:26	19:25 (T41)	06:37		06:05	19:58 (T40)	06:00	20:13 (T40)
	17:40 30	08:39 (T76)	18:18 35	17:39 (T42)	19:50 3	19:28 (T41)	20:22		20:52 29	20:27 (T40)	21:08 12	20:25 (T40)
27	07:48	08:09 (T76)	07:10	17:06 (T42)	07:24	19:21 (T41)	06:36		06:04	19:58 (T40)	06:00	20:12 (T40)
	17:41 31	08:40 (T76)	18:19 32	17:38 (T42)	19:51 8	19:29 (T41)	20:23		20:53 29	20:27 (T40)	21:08 13	20:25 (T40)
28	07:47	08:08 (T76)	07:09	17:06 (T42)	07:23	19:19 (T41)	06:34		06:04	19:59 (T40)	06:01	20:12 (T40)
	17:42 32	08:40 (T76)	18:21 30	17:36 (T42)	19:52 11	19:30 (T41)	20:24		20:54 28	20:27 (T40)	21:09 14	20:26 (T40)
29	07:46	08:09 (T76)			07:21	19:16 (T41)	06:33		06:03	19:58 (T40)	06:01	20:12 (T40)
	17:44 31	08:40 (T76)			19:53 15	19:31 (T41)	20:25		20:54 29	20:27 (T40)	21:09 15	20:27 (T40)
30	07:45	08:09 (T76)			07:19	19:15 (T41)	06:32		06:02	19:59 (T40)	06:02	20:11 (T40)
	17:45 31	08:40 (T76)			19:54 17	19:32 (T41)	20:26		20:55 28	20:27 (T40)	21:09 16	20:27 (T40)
31	07:44	08:10 (T76)			07:18	19:14 (T41)			06:02	19:59 (T40)		
	17:46 29	08:39 (T76)			19:55 20	19:34 (T41)			20:56 27	20:26 (T40)		
Potential sun hours	297		297		370		399		449		453	
Total, worst case	868		1068		137		374		567		486	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.61		0.68		0.66		0.61		0.55		0.55	
Total reduction	0.19		0.28		0.30		0.33		0.32		0.36	
Total, real	168		298		40		122		183		176	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1551 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8982)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September		October		November		December		
1	06:02		20:11 (T40)	06:26		20:09 (T40)	06:57		19:11 (T41)	07:27		07:02		16:32 (T42)	07:37		08:00 (T76)
	21:08	17	20:28 (T40)	20:50	16	20:25 (T40)	20:07	26	19:37 (T41)	19:15		17:28	32	17:04 (T42)	17:04	31	16:04 (T77)
2	06:03		20:11 (T40)	06:27		20:10 (T40)	06:58		19:09 (T41)	07:29		07:03		16:34 (T42)	07:38		08:01 (T76)
	21:08	17	20:28 (T40)	20:49	14	20:24 (T40)	20:06	29	19:38 (T41)	19:13		17:27	30	17:04 (T42)	17:03	31	16:05 (T77)
3	06:03		20:11 (T40)	06:28		20:11 (T40)	06:59		19:08 (T41)	07:30		07:04		16:34 (T42)	07:39		08:03 (T76)
	21:08	18	20:29 (T40)	20:48	12	20:23 (T40)	20:04	30	19:38 (T41)	19:11		17:26	28	17:02 (T42)	17:03	33	16:08 (T77)
4	06:04		20:10 (T40)	06:29		20:12 (T40)	07:00		19:08 (T41)	07:31		07:06		07:49 (T76)	07:40		08:04 (T76)
	21:08	20	20:30 (T40)	20:47	10	20:22 (T40)	20:02	30	19:38 (T41)	19:10		17:24	38	17:01 (T42)	17:03	32	16:09 (T77)
5	06:04		20:10 (T40)	06:30		20:13 (T40)	07:01		19:07 (T41)	07:32		07:07		07:46 (T76)	07:41		08:05 (T76)
	21:08	21	20:31 (T40)	20:46	8	20:21 (T40)	20:01	30	19:37 (T41)	19:08		17:23	40	16:59 (T42)	17:03	32	16:10 (T77)
6	06:05		20:09 (T40)	06:31		20:15 (T40)	07:02		19:06 (T41)	07:33		07:08		07:45 (T76)	07:42		08:06 (T76)
	21:08	22	20:31 (T40)	20:44	5	20:20 (T40)	19:57	30	19:36 (T41)	19:06		17:22	42	16:59 (T42)	17:03	32	16:11 (T77)
7	06:05		20:10 (T40)	06:32		20:18 (T40)	07:03		19:06 (T41)	07:34		07:09		07:44 (T76)	07:43		08:06 (T76)
	21:07	22	20:32 (T40)	20:43	1	20:19 (T40)	19:56	28	19:34 (T41)	19:05		17:21	40	16:57 (T42)	17:03	31	16:11 (T77)
8	06:06		20:10 (T40)	06:33			07:04		19:06 (T41)	07:35		07:10		07:42 (T76)	07:44		15:41 (T77)
	21:07	23	20:33 (T40)	20:42			19:54	27	19:33 (T41)	19:03		17:20	40	16:56 (T42)	17:03	31	16:12 (T77)
9	06:07		20:09 (T40)	06:34			07:05		19:05 (T41)	07:36		07:12		07:42 (T76)	07:45		15:41 (T77)
	21:07	24	20:33 (T40)	20:41			19:52	26	19:31 (T41)	19:01		17:19	38	16:56 (T42)	17:03	32	16:13 (T77)
10	06:07		20:09 (T40)	06:35			07:06		19:05 (T41)	07:37		07:13		07:41 (T76)	07:46		15:42 (T77)
	21:06	25	20:34 (T40)	20:39			19:51	23	19:28 (T41)	19:00	11	18:01 (T42)	17:18	33	16:54 (T42)	17:03	32	16:14 (T77)
11	06:08		20:09 (T40)	06:36			07:07		19:05 (T41)	07:38		17:46 (T42)	07:14		07:41 (T76)	07:46		15:42 (T77)
	21:06	25	20:34 (T40)	20:38			19:49	22	19:27 (T41)	18:58	18	18:04 (T42)	17:17	29	08:10 (T76)	17:03	33	16:15 (T77)
12	06:09		20:08 (T40)	06:37			07:08		19:05 (T41)	07:39		17:43 (T42)	07:15		07:40 (T76)	07:47		15:42 (T77)
	21:06	26	20:34 (T40)	20:37			19:47	20	19:25 (T41)	18:57	24	18:07 (T42)	17:16	31	08:11 (T76)	17:03	33	16:15 (T77)
13	06:10		20:08 (T40)	06:38			07:09		19:06 (T41)	07:40		17:40 (T42)	07:16		07:41 (T76)	07:48		15:43 (T77)
	21:05	27	20:35 (T40)	20:36			19:45	17	19:23 (T41)	18:55	28	18:08 (T42)	17:15	31	08:12 (T76)	17:03	33	16:16 (T77)
14	06:10		20:08 (T40)	06:39			07:10		19:06 (T41)	07:41		17:38 (T42)	07:18		07:40 (T76)	07:49		15:42 (T77)
	21:05	28	20:36 (T40)	20:34			19:44	16	19:22 (T41)	18:54	31	18:09 (T42)	17:14	32	08:12 (T76)	17:03	34	16:16 (T77)
15	06:11		20:08 (T40)	06:40			07:11		19:08 (T41)	07:42		17:38 (T42)	07:19		07:41 (T76)	07:50		15:43 (T77)
	21:04	28	20:36 (T40)	20:33			19:42	12	19:20 (T41)	18:52	33	18:11 (T42)	17:13	31	08:12 (T76)	17:03	34	16:17 (T77)
16	06:12		20:07 (T40)	06:41			07:12		19:09 (T41)	07:44		17:36 (T42)	07:20		07:42 (T76)	07:50		15:43 (T77)
	21:03	29	20:36 (T40)	20:31			19:40	9	19:18 (T41)	18:50	36	18:12 (T42)	17:12	30	08:12 (T76)	17:04	35	16:18 (T77)
17	06:13		20:07 (T40)	06:42			07:13		19:12 (T41)	07:45		17:35 (T42)	07:21		07:44 (T76)	07:51		15:43 (T77)
	21:03	30	20:37 (T40)	20:30			19:39	5	19:17 (T41)	18:49	38	18:13 (T42)	17:11	29	08:13 (T76)	17:04	35	16:18 (T77)
18	06:14		20:07 (T40)	06:43			07:14			07:46		17:34 (T42)	07:22		07:45 (T76)	07:52		15:44 (T77)
	21:02	30	20:37 (T40)	20:29			19:37			18:47	39	18:13 (T42)	17:11	28	08:13 (T76)	17:04	35	16:19 (T77)
19	06:14		20:07 (T40)	06:44			07:15			07:47		17:33 (T42)	07:23		07:46 (T76)	07:52		15:44 (T77)
	21:02	30	20:37 (T40)	20:27			19:35			18:46	40	18:13 (T42)	17:10	27	08:13 (T76)	17:05	36	16:20 (T77)
20	06:15		20:07 (T40)	06:45			07:16			07:48		17:32 (T42)	07:25		07:48 (T76)	07:53		15:44 (T77)
	21:01	29	20:36 (T40)	20:26			19:33			18:44	41	18:13 (T42)	17:09	26	08:14 (T76)	17:05	36	16:20 (T77)
21	06:16		20:06 (T40)	06:46			07:17			07:49		17:32 (T42)	07:26		07:49 (T76)	07:53		15:45 (T77)
	21:00	29	20:35 (T40)	20:24			19:32			18:43	42	18:14 (T42)	17:08	24	08:13 (T76)	17:05	36	16:21 (T77)
22	06:17		20:07 (T40)	06:47			07:18			07:50		17:31 (T42)	07:27		07:50 (T76)	07:54		15:45 (T77)
	20:59	27	20:34 (T40)	20:23			19:30			18:41	43	18:14 (T42)	17:08	23	08:13 (T76)	17:06	36	16:21 (T77)
23	06:18		20:07 (T40)	06:48			07:19			07:51		17:31 (T42)	07:28		07:51 (T76)	07:54		15:46 (T77)
	20:59	26	20:33 (T40)	20:21			19:28			18:40	43	18:14 (T42)	17:07	22	08:13 (T76)	17:07	36	16:22 (T77)
24	06:19		20:07 (T40)	06:49			07:20			07:53		17:30 (T42)	07:29		07:52 (T76)	07:55		15:46 (T77)
	20:58	26	20:33 (T40)	20:20			19:27			18:39	44	18:14 (T42)	17:07	21	08:13 (T76)	17:07	36	16:22 (T77)
25	06:20		20:07 (T40)	06:50			07:21			07:54		17:31 (T42)	07:30		07:54 (T76)	07:55		15:47 (T77)
	20:57	25	20:32 (T40)	20:18			19:25			18:37	44	18:15 (T42)	17:06	19	08:13 (T76)	17:08	35	16:22 (T77)
26	06:21		20:07 (T40)	06:51			07:22			07:55		17:31 (T42)	07:32		07:55 (T76)	07:56		15:48 (T77)
	20:56	24	20:31 (T40)	20:17			19:23			18:36	42	18:13 (T42)	17:06	18	08:13 (T76)	17:08	35	16:23 (T77)
27	06:22		20:08 (T40)	06:52			07:23			07:56		17:30 (T42)	07:33		07:56 (T76)	07:56		15:48 (T77)
	20:55	23	20:31 (T40)	20:15			19:21			18:34	41	18:11 (T42)	17:05	17	08:13 (T76)	17:09	35	16:23 (T77)
28	06:22		20:07 (T40)	06:53		19:19 (T41)	07:24			07:57		17:30 (T42)	07:34		07:57 (T76)	07:56		15:48 (T77)
	20:54	22	20:29 (T40)	20:14	12	19:31 (T41)	19:20			18:33	40	18:10 (T42)	17:05	23	15:57 (T77)	17:10	35	16:23 (T77)
29	06:23		20:07 (T40)	06:54		19:16 (T41)	07:25			07:58		17:30 (T42)	07:35		07:58 (T76)	07:57		15:49 (T77)
	20:53	21	20:28 (T40)	20:12	17	19:33 (T41)	19:18			18:32	38	18:08 (T42)	17:04	27	16:00 (T77)	17:10	34	16:23 (T77)
30	06:24		20:08 (T40)	06:55		19:14 (T41)	07:26			08:00		17:32 (T42)	07:36		07:59 (T76)	07:57		15:50 (T77)
	20:52	19	20:27 (T40)	20:10	21	19:35 (T41)	19:16			18:30	35	18:07 (T42)	17:04	29	16:02 (T77)	17:11	34	16:24 (T77)
31	06:25		20:08 (T40)	06:56		19:12 (T41)				08:01		17:32 (T42)				07:57		15:51 (T77)
	20:51	18	20:26 (T40)	20:09	24	19:36 (T41)				18:29	34	18:06 (T42)				17:12	33	16:24 (T77)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		751			140			380			785			878			1046	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.58			0.61			0.71			0.58			0.74	
Total reduction		0.37			0.36			0.37			0.35			0.18			0.17	
Total, real		280			51			141			273			155			173	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1552 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8983)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January	February	March			April			May			June
1	07:58	07:44	07:07			07:16		07:41 (T25)	06:30		06:50 (T75)	06:01
	17:13	17:48	18:22			19:56	76	08:57 (T25)	20:27	59	08:33 (T25)	20:57
2	07:58	07:43	07:06		07:25 (T26)	07:15		07:41 (T25)	06:29		06:49 (T75)	06:01
	17:14	17:49	18:23	8	07:33 (T26)	19:57	77	08:58 (T25)	20:28	59	08:31 (T25)	20:58
3	07:58	07:42	07:04		07:24 (T26)	07:13		07:40 (T25)	06:28		06:48 (T75)	06:01
	17:15	17:50	18:24	12	07:36 (T26)	19:58	77	08:57 (T25)	20:29	56	08:29 (T25)	20:59
4	07:58	07:41	07:03		07:22 (T26)	07:11		07:39 (T25)	06:26		06:46 (T75)	06:00
	17:16	17:51	18:25	15	07:37 (T26)	19:59	78	08:57 (T25)	20:30	54	08:26 (T25)	20:59
5	07:58	07:40	07:01		07:20 (T26)	07:10		07:39 (T25)	06:25		06:45 (T75)	06:00
	17:17	17:53	18:26	18	07:38 (T26)	20:00	78	08:57 (T25)	20:32	51	08:24 (T25)	21:00
6	07:58	07:39	07:00		07:19 (T26)	07:08		07:38 (T25)	06:24		06:44 (T75)	05:59
	17:17	17:54	18:28	21	07:40 (T26)	20:00	79	08:57 (T25)	20:33	47	08:21 (T25)	21:01
7	07:58	07:37	06:58		07:17 (T26)	07:06		07:37 (T25)	06:23		06:43 (T75)	05:59
	17:18	17:55	18:29	23	07:40 (T26)	20:02	79	08:56 (T25)	20:34	41	08:18 (T25)	21:01
8	07:58	07:36	07:56		08:16 (T26)	07:05		07:37 (T25)	06:22		06:42 (T75)	05:59
	17:19	17:56	19:30	25	08:41 (T26)	20:03	79	08:56 (T25)	20:35	25	07:07 (T75)	21:02
9	07:57	07:35	07:55		08:14 (T26)	07:03		07:37 (T25)	06:20		06:41 (T75)	05:59
	17:20	17:58	19:31	27	08:41 (T26)	20:04	79	08:56 (T25)	20:36	26	07:07 (T75)	21:03
10	07:57	07:34	07:53		08:12 (T26)	07:01		07:36 (T25)	06:19		06:40 (T75)	05:59
	17:21	17:59	19:32	29	08:41 (T26)	20:05	79	08:55 (T25)	20:37	27	07:07 (T75)	21:03
11	07:57	07:33	07:51		08:11 (T26)	07:00		07:37 (T25)	06:18		06:38 (T75)	05:58
	17:23	18:00	19:33	31	08:42 (T26)	20:06	78	08:55 (T25)	20:38	27	07:05 (T75)	21:04
12	07:57	07:31	07:50		08:09 (T26)	06:58		07:36 (T25)	06:17		06:38 (T75)	05:58
	17:24	18:01	19:34	32	08:41 (T26)	20:07	78	08:54 (T25)	20:39	27	07:05 (T75)	21:04
13	07:56	07:30	07:48		08:07 (T26)	06:57		07:36 (T25)	06:16		06:38 (T75)	05:58
	17:25	18:03	19:36	34	08:41 (T26)	20:08	78	08:54 (T25)	20:40	27	07:05 (T75)	21:05
14	07:56	07:29	07:46		08:06 (T26)	06:55		07:36 (T25)	06:15		06:40 (T75)	05:58
	17:26	18:04	19:37	35	08:41 (T26)	20:09	76	08:52 (T25)	20:41	25	07:05 (T75)	21:05
15	07:56	07:28	07:45		08:05 (T26)	06:54		07:37 (T25)	06:14		06:40 (T75)	05:58
	17:27	18:05	19:38	35	08:40 (T26)	20:10	75	08:52 (T25)	20:42	25	07:05 (T75)	21:06
16	07:55	07:26	07:43		08:05 (T26)	06:52		07:36 (T25)	06:13		06:41 (T75)	05:58
	17:28	18:06	19:39	36	08:41 (T25)	20:11	75	08:51 (T25)	20:43	23	07:04 (T75)	21:06
17	07:55	07:25	07:41		08:05 (T25)	06:50		07:37 (T25)	06:12		06:41 (T75)	05:58
	17:29	18:07	19:40	39	08:44 (T25)	20:12	74	08:51 (T25)	20:44	22	07:03 (T75)	21:07
18	07:54	07:24	07:40		08:02 (T25)	06:49		07:37 (T25)	06:11		06:42 (T75)	05:58
	17:30	18:09	19:41	44	08:46 (T25)	20:13	72	08:49 (T25)	20:45	20	07:02 (T75)	21:07
19	07:54	07:22	07:38		07:59 (T25)	06:47		07:38 (T25)	06:10		06:43 (T75)	05:58
	17:32	18:10	19:42	49	08:48 (T25)	20:14	71	08:49 (T25)	20:46	18	07:01 (T75)	21:07
20	07:53	07:21	07:36		07:57 (T25)	06:46		07:37 (T25)	06:09		06:44 (T75)	05:59
	17:33	18:11	19:43	53	08:50 (T25)	20:15	70	08:47 (T25)	20:47	16	07:00 (T75)	21:08
21	07:53	07:19	07:35		07:55 (T25)	06:44		07:38 (T25)	06:09		06:46 (T75)	05:59
	17:34	18:12	19:44	56	08:51 (T25)	20:17	69	08:47 (T25)	20:48	14	07:00 (T75)	21:08
22	07:52	07:18	07:33		07:53 (T25)	06:43		07:38 (T25)	06:08		06:47 (T75)	05:59
	17:35	18:14	19:45	59	08:52 (T25)	20:18	67	08:45 (T25)	20:49	11	06:58 (T75)	21:08
23	07:51	07:16	07:31		07:51 (T25)	06:41		07:39 (T25)	06:07		06:50 (T75)	05:59
	17:36	18:15	19:46	62	08:53 (T25)	20:19	65	08:44 (T25)	20:50	5	06:55 (T75)	21:08
24	07:51	07:15	07:30		07:50 (T25)	06:40		07:39 (T25)	06:06			05:59
	17:38	18:16	19:48	64	08:54 (T25)	20:20	64	08:43 (T25)	20:50			21:09
25	07:50	07:13	07:28		07:48 (T25)	06:39		07:40 (T25)	06:06			06:00
	17:39	18:17	19:49	67	08:55 (T25)	20:21	62	08:42 (T25)	20:51			21:09
26	07:49	07:12	07:26		07:47 (T25)	06:37		07:42 (T25)	06:05			06:00
	17:40	18:18	19:50	68	08:55 (T25)	20:22	59	08:41 (T25)	20:52			21:09
27	07:48	07:10	07:25		07:46 (T25)	06:36		07:42 (T25)	06:04			06:00
	17:41	18:19	19:51	70	08:56 (T25)	20:23	57	08:39 (T25)	20:53			21:09
28	07:47	07:09	07:23		07:45 (T25)	06:34		06:54 (T75)	06:04			06:01
	17:43	18:21	19:52	71	08:56 (T25)	20:24	59	08:38 (T25)	20:54			21:09
29	07:47		07:21		07:43 (T25)	06:33		06:53 (T75)	06:03			06:01
	17:44		19:53	74	08:57 (T25)	20:25	60	08:37 (T25)	20:55			21:09
30	07:46		07:20		07:43 (T25)	06:32		06:51 (T75)	06:02			06:02
	17:45		19:54	74	08:57 (T25)	20:26	60	08:34 (T25)	20:56			21:09
31	07:45		07:18		07:42 (T25)				06:02			
	17:46		19:55	75	08:57 (T25)				20:56			
Potential sun hours	297	297	370			399			449			453
Total, worst case				1306			2150			705		
Sun reduction				0.44			0.52			0.57		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.61			0.62			0.67		
Total reduction				0.27			0.32			0.38		
Total, real				348			694			269		

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1552 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8983)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November	December
1	06:02			06:26		06:49 (T75)	06:57		07:35 (T25)	07:28		07:48 (T26)	07:02	07:37
	21:09			20:50	27	07:16 (T75)	20:07	79	08:54 (T25)	19:15	33	08:21 (T26)	17:28	17:04
2	06:03			06:27		06:49 (T75)	06:58		07:35 (T25)	07:29		07:49 (T26)	07:03	07:38
	21:09			20:49	27	07:16 (T75)	20:06	79	08:54 (T25)	19:13	31	08:20 (T26)	17:27	17:03
3	06:03			06:28		06:50 (T75)	06:59		07:35 (T25)	07:30		07:50 (T26)	07:05	07:39
	21:09			20:48	26	07:16 (T75)	20:04	79	08:54 (T25)	19:12	30	08:20 (T26)	17:26	17:03
4	06:04			06:29		06:51 (T75)	07:00		07:34 (T25)	07:31		07:51 (T26)	07:06	07:40
	21:08			20:47	25	07:16 (T75)	20:03	79	08:53 (T25)	19:10	28	08:19 (T26)	17:24	17:03
5	06:04			06:30		06:52 (T75)	07:01		07:34 (T25)	07:32		07:52 (T26)	07:07	07:41
	21:08			20:46	34	08:24 (T25)	20:01	79	08:53 (T25)	19:08	26	08:18 (T26)	17:23	17:03
6	06:05			06:31		06:53 (T75)	07:02		07:34 (T25)	07:33		07:53 (T26)	07:08	07:42
	21:08			20:45	44	08:29 (T25)	19:58	79	08:53 (T25)	19:07	24	08:17 (T26)	17:22	17:03
7	06:05			06:32		06:54 (T75)	07:03		07:34 (T25)	07:34		07:54 (T26)	07:09	07:43
	21:08			20:44	49	08:32 (T25)	19:56	78	08:52 (T25)	19:05	22	08:16 (T26)	17:21	17:03
8	06:06			06:33		06:55 (T75)	07:04		07:34 (T25)	07:35		07:55 (T26)	07:11	07:44
	21:07			20:42	52	08:35 (T25)	19:54	78	08:52 (T25)	19:03	20	08:15 (T26)	17:20	17:03
9	06:07			06:34		06:56 (T75)	07:05		07:34 (T25)	07:36		07:56 (T26)	07:12	07:45
	21:07			20:41	56	08:37 (T25)	19:52	78	08:52 (T25)	19:02	17	08:13 (T26)	17:19	17:03
10	06:07			06:35		06:57 (T75)	07:06		07:34 (T25)	07:37		07:57 (T26)	07:13	07:46
	21:07			20:40	58	08:39 (T25)	19:51	77	08:51 (T25)	19:00	14	08:11 (T26)	17:18	17:03
11	06:08			06:36		06:58 (T75)	07:07		07:34 (T25)	07:38		07:58 (T26)	07:14	07:47
	21:06			20:39	58	08:40 (T25)	19:49	76	08:50 (T25)	18:58	10	08:08 (T26)	17:17	17:03
12	06:09			06:37		06:59 (T75)	07:08		07:34 (T25)	07:39		07:59 (T26)	07:15	07:48
	21:06			20:37	60	08:42 (T25)	19:47	76	08:50 (T25)	18:57	5	08:04 (T26)	17:16	17:03
13	06:10			06:38		07:00 (T75)	07:09		07:34 (T25)	07:40			07:17	07:48
	21:05			20:36	60	08:43 (T25)	19:46	75	08:49 (T25)	18:55			17:15	17:03
14	06:10			06:39		07:01 (T75)	07:10		07:35 (T25)	07:42			07:18	07:49
	21:05			20:35	60	08:45 (T25)	19:44	73	08:48 (T25)	18:54			17:14	17:03
15	06:11			06:40		07:02 (T75)	07:11		07:34 (T25)	07:43			07:19	07:50
	21:04			20:33	58	08:46 (T25)	19:42	72	08:46 (T25)	18:52			17:13	17:03
16	06:12			06:41		07:49 (T25)	07:12		07:34 (T25)	07:44			07:20	07:51
	21:04			20:32	58	08:47 (T25)	19:41	71	08:45 (T25)	18:51			17:12	17:04
17	06:13			06:42		07:48 (T25)	07:13		07:35 (T25)	07:45			07:21	07:51
	21:03			20:30	60	08:48 (T25)	19:39	69	08:44 (T25)	18:49			17:11	17:04
18	06:14			06:43		07:47 (T25)	07:14		07:35 (T25)	07:46			07:23	07:52
	21:03			20:29	62	08:49 (T25)	19:37	67	08:42 (T25)	18:47			17:11	17:04
19	06:14			06:44		07:45 (T25)	07:15		07:36 (T25)	07:47			07:24	07:53
	21:02			20:27	64	08:49 (T25)	19:35	65	08:41 (T25)	18:46			17:10	17:05
20	06:15			06:45		07:44 (T25)	07:16		07:37 (T25)	07:48			07:25	07:53
	21:01			20:26	65	08:49 (T25)	19:34	62	08:39 (T25)	18:45			17:09	17:05
21	06:16		06:58 (T75)	06:46		07:43 (T25)	07:17		07:38 (T25)	07:49			07:26	07:54
	21:00	8	07:06 (T75)	20:25	67	08:50 (T25)	19:32	60	08:38 (T25)	18:43			17:09	17:06
22	06:17		06:56 (T75)	06:47		07:42 (T25)	07:18		07:39 (T25)	07:51			07:27	07:54
	21:00	12	07:08 (T75)	20:23	69	08:51 (T25)	19:30	57	08:36 (T25)	18:42			17:08	17:06
23	06:18		06:55 (T75)	06:48		07:41 (T25)	07:19		07:40 (T25)	07:52			07:28	07:55
	20:59	15	07:10 (T75)	20:22	70	08:51 (T25)	19:29	54	08:34 (T25)	18:40			17:07	17:07
24	06:19		06:54 (T75)	06:49		07:40 (T25)	07:20		07:42 (T25)	07:53			07:30	07:55
	20:58	17	07:11 (T75)	20:20	72	08:52 (T25)	19:27	50	08:32 (T25)	18:39			17:07	17:07
25	06:20		06:53 (T75)	06:50		07:40 (T25)	07:22		07:43 (T25)	07:54			07:31	07:56
	20:57	19	07:12 (T75)	20:18	72	08:52 (T25)	19:25	46	08:29 (T25)	18:37			17:06	17:08
26	06:21		06:52 (T75)	06:51		07:39 (T25)	07:23		07:45 (T25)	07:55			07:32	07:56
	20:56	21	07:13 (T75)	20:17	74	08:53 (T25)	19:23	42	08:27 (T25)	18:36			17:06	17:08
27	06:22		06:52 (T75)	06:52		07:38 (T25)	07:24		07:47 (T26)	07:56			07:33	07:56
	20:55	22	07:14 (T75)	20:15	75	08:53 (T25)	19:22	36	08:23 (T25)	18:35			17:05	17:09
28	06:22		06:51 (T75)	06:53		07:38 (T25)	07:25		07:46 (T26)	07:58			07:34	07:57
	20:54	24	07:15 (T75)	20:14	75	08:53 (T25)	19:20	34	08:20 (T26)	18:33			17:05	17:10
29	06:23		06:50 (T75)	06:54		07:37 (T25)	07:26		07:45 (T26)	07:59			07:35	07:57
	20:53	25	07:15 (T75)	20:12	76	08:53 (T25)	19:18	35	08:20 (T26)	18:32			17:04	17:10
30	06:24		06:49 (T75)	06:55		07:36 (T25)	07:27		07:46 (T26)	08:00			07:36	07:57
	20:52	26	07:15 (T75)	20:11	78	08:54 (T25)	19:17	34	08:20 (T26)	18:31			17:04	17:11
31	06:25		06:49 (T75)	06:56		07:36 (T25)				08:01				07:57
	20:51	27	07:16 (T75)	20:09	78	08:54 (T25)				18:29				17:12
Potential sun hours	460			429			375			345			297	287
Total, worst case		216			1809			1939			260			
Sun reduction		0.66			0.61			0.59			0.48			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.63			0.62			0.58			
Total reduction		0.46			0.38			0.36			0.28			
Total, real		99			696			704			72			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1568 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8991)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April	May	June
1	07:57	15:53 (T30)	07:44		08:04 (T31)	07:07	07:27 (T28)	07:16	06:30	06:01
	17:13	44 16:37 (T30)	17:47	28	08:32 (T31)	18:22	37 08:04 (T28)	19:56	20:27	20:57
2	07:57	15:53 (T30)	07:43		08:03 (T31)	07:06	07:25 (T28)	07:14	06:29	06:01
	17:14	45 16:38 (T30)	17:49	30	08:33 (T31)	18:23	39 08:04 (T28)	19:57	20:28	20:58
3	07:58	15:54 (T30)	07:42		08:02 (T31)	07:04	07:23 (T28)	07:13	06:28	06:00
	17:15	44 16:38 (T30)	17:50	31	08:33 (T31)	18:24	43 18:02 (T27)	19:58	20:29	20:58
4	07:58	15:54 (T30)	07:40		08:01 (T31)	07:02	07:22 (T28)	07:11	06:26	06:00
	17:15	45 16:39 (T30)	17:51	32	08:33 (T31)	18:25	53 18:04 (T27)	19:59	20:30	20:59
5	07:58	15:55 (T30)	07:39		08:00 (T31)	07:01	07:20 (T28)	07:09	06:25	06:00
	17:16	44 16:39 (T30)	17:52	33	08:33 (T31)	18:26	58 18:04 (T27)	20:00	20:31	21:00
6	07:58	15:55 (T30)	07:38		08:00 (T31)	06:59	07:19 (T28)	07:08	06:24	05:59
	17:17	45 16:40 (T30)	17:54	31	08:31 (T31)	18:27	63 18:06 (T27)	20:00	20:32	21:01
7	07:57	15:56 (T30)	07:37		08:00 (T31)	06:58	07:17 (T28)	07:06	06:23	05:59
	17:18	44 16:40 (T30)	17:55	31	08:31 (T31)	18:29	68 18:07 (T27)	20:01	20:33	21:01
8	07:57	15:56 (T30)	07:36		08:01 (T31)	07:56	08:16 (T28)	07:05	06:21	05:59
	17:19	44 16:40 (T30)	17:56	30	08:31 (T31)	19:30	71 19:08 (T27)	20:02	20:34	21:02
9	07:57	15:56 (T30)	07:35		08:02 (T31)	07:54	08:17 (T28)	07:03	06:20	05:59
	17:20	44 16:40 (T30)	17:57	28	08:30 (T31)	19:31	72 19:10 (T27)	20:03	20:35	21:03
10	07:57	15:57 (T30)	07:34		08:04 (T31)	07:53	08:16 (T28)	07:01	06:19	05:58
	17:21	44 16:41 (T30)	17:59	26	08:30 (T31)	19:32	75 19:10 (T27)	20:05	20:37	21:03
11	07:57	15:58 (T30)	07:32		08:04 (T31)	07:51	08:16 (T28)	07:00	06:18	05:58
	17:22	43 16:41 (T30)	18:00	24	08:28 (T31)	19:33	76 19:11 (T27)	20:06	20:38	21:04
12	07:56	15:58 (T30)	07:31		08:06 (T31)	07:50	08:17 (T28)	06:58	06:17	05:58
	17:23	43 16:41 (T30)	18:01	20	08:26 (T31)	19:34	77 19:13 (T27)	20:07	20:39	21:04
13	07:56	15:59 (T30)	07:30		08:08 (T31)	07:48	08:17 (T28)	06:56	06:16	05:58
	17:25	42 16:41 (T30)	18:02	17	08:25 (T31)	19:35	77 19:14 (T27)	20:08	20:40	21:05
14	07:56	15:59 (T30)	07:29		08:12 (T31)	07:46	08:17 (T28)	06:55	06:15	05:58
	17:26	42 16:41 (T30)	18:04	10	08:22 (T31)	19:36	78 19:15 (T27)	20:09	20:41	21:05
15	07:55	16:00 (T30)	07:27			07:45	08:18 (T28)	06:53	06:14	05:58
	17:27	42 16:42 (T30)	18:05			19:38	77 19:16 (T27)	20:10	20:42	21:06
16	07:55	16:00 (T30)	07:26			07:43	08:18 (T28)	06:52	06:13	05:58
	17:28	41 16:41 (T30)	18:06			19:39	77 19:17 (T27)	20:11	20:43	21:06
17	07:55	16:02 (T30)	07:25			07:41	08:19 (T28)	06:50	06:12	05:58
	17:29	40 16:42 (T30)	18:07			19:40	74 19:17 (T27)	20:12	20:44	21:06
18	07:54	08:15 (T31)	07:23			07:40	08:20 (T28)	06:49	06:11	05:58
	17:30	43 16:41 (T30)	18:09			19:41	71 19:17 (T27)	20:13	20:45	21:07
19	07:53	08:15 (T31)	07:22			07:38	08:21 (T28)	06:47	06:10	05:58
	17:31	43 16:41 (T30)	18:10			19:42	66 19:15 (T27)	20:14	20:46	21:07
20	07:53	08:14 (T31)	07:21			07:36	08:23 (T28)	06:46	06:09	05:58
	17:33	45 16:41 (T30)	18:11			19:43	61 19:14 (T27)	20:15	20:46	21:07
21	07:52	08:13 (T31)	07:19		07:39 (T28)	07:35	08:25 (T28)	06:44	06:08	05:59
	17:34	46 16:40 (T30)	18:12	12	07:51 (T28)	19:44	56 19:14 (T27)	20:16	20:47	21:08
22	07:52	08:13 (T31)	07:18		07:37 (T28)	07:33	08:28 (T28)	06:43	06:08	05:59
	17:35	46 16:40 (T30)	18:13	17	07:54 (T28)	19:45	46 19:12 (T27)	20:17	20:48	21:08
23	07:51	08:12 (T31)	07:16		07:36 (T28)	07:31	08:34 (T28)	06:41	06:07	05:59
	17:36	46 16:40 (T30)	18:15	21	07:57 (T28)	19:46	30 19:10 (T27)	20:18	20:49	21:08
24	07:50	08:11 (T31)	07:15		07:34 (T28)	07:30	18:46 (T27)	06:40	06:06	05:59
	17:37	46 16:39 (T30)	18:16	24	07:58 (T28)	19:47	23 19:09 (T27)	20:20	20:50	21:08
25	07:50	08:10 (T31)	07:13		07:33 (T28)	07:28	18:47 (T27)	06:38	06:05	06:00
	17:39	46 16:38 (T30)	18:17	27	08:00 (T28)	19:48	19 19:06 (T27)	20:21	20:51	21:08
26	07:49	08:10 (T31)	07:12		07:31 (T28)	07:26	18:50 (T27)	06:37	06:05	06:00
	17:40	45 16:37 (T30)	18:18	30	08:01 (T28)	19:50	12 19:02 (T27)	20:22	20:52	21:09
27	07:48	08:09 (T31)	07:10		07:30 (T28)	07:24		06:36	06:04	06:00
	17:41	43 16:36 (T30)	18:19	32	08:02 (T28)	19:51		20:23	20:53	21:09
28	07:47	08:08 (T31)	07:09		07:28 (T28)	07:23		06:34	06:03	06:01
	17:42	40 16:34 (T30)	18:20	35	08:03 (T28)	19:52		20:24	20:54	21:09
29	07:46	08:07 (T31)				07:21		06:33	06:03	06:01
	17:44	34 16:30 (T30)				19:53		20:25	20:55	21:09
30	07:45	08:06 (T31)				07:19		06:31	06:02	06:01
	17:45	26 08:32 (T31)				19:54		20:26	20:55	21:09
31	07:44	08:05 (T31)				07:18			06:02	
	17:46	27 08:32 (T31)				19:55			20:56	
Potential sun hours	297		297			370		399	449	453
Total, worst case		1312		569			1499			
Sun reduction		0.31		0.40			0.44			
Oper. time red.		1.00		1.00			1.00			
Wind dir. red.		0.70		0.55			0.61			
Total reduction		0.22		0.22			0.27			
Total, real		293		127			410			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1568 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8991)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September			October			November			December		
1	06:02		06:26		06:57			07:27		07:56 (T28)	07:02		07:32 (T31)	07:37		15:40 (T30)
	21:09		20:50		20:07			19:15	76	18:52 (T27)	17:28	27	07:59 (T31)	17:04	43	16:23 (T30)
2	06:02		06:27		06:58			07:29		07:55 (T28)	07:03		07:32 (T31)	07:38		15:40 (T30)
	21:08		20:49		20:06			19:13	75	18:50 (T27)	17:27	28	08:00 (T31)	17:03	44	16:24 (T30)
3	06:03		06:28		06:59			07:30		07:54 (T28)	07:04		07:31 (T31)	07:39		15:41 (T30)
	21:08		20:48		20:04			19:11	75	18:49 (T27)	17:25	30	08:01 (T31)	17:03	43	16:24 (T30)
4	06:03		06:29		07:00			07:31		07:53 (T28)	07:06		07:30 (T31)	07:40		15:41 (T30)
	21:08		20:47		20:02			19:10	74	18:47 (T27)	17:24	31	08:01 (T31)	17:03	44	16:25 (T30)
5	06:04		06:30		07:01			07:32		07:54 (T28)	07:07		07:29 (T31)	07:41		15:41 (T30)
	21:08		20:46		20:01			19:08	71	18:46 (T27)	17:23	32	08:01 (T31)	17:03	44	16:25 (T30)
6	06:05		06:31		07:02			07:33		07:54 (T28)	07:08		07:30 (T31)	07:42		15:41 (T30)
	21:08		20:45		19:57			19:06	68	18:44 (T27)	17:22	33	08:03 (T31)	17:03	45	16:26 (T30)
7	06:05		06:32		07:03			07:34		07:54 (T28)	07:09		07:31 (T31)	07:43		15:42 (T30)
	21:08		20:43		19:56			19:05	66	18:43 (T27)	17:21	32	08:03 (T31)	17:02	44	16:26 (T30)
8	06:06		06:33		07:04			07:35		07:55 (T28)	07:10		07:32 (T31)	07:44		15:42 (T30)
	21:07		20:42		19:54			19:03	60	18:41 (T27)	17:20	31	08:03 (T31)	17:02	45	16:27 (T30)
9	06:07		06:34		07:05			07:36		07:56 (T28)	07:12		07:34 (T31)	07:45		15:42 (T30)
	21:07		20:41		19:52			19:01	56	18:39 (T27)	17:19	29	08:03 (T31)	17:02	44	16:26 (T30)
10	06:07		06:35		07:06			07:37		07:57 (T28)	07:13		07:35 (T31)	07:46		15:42 (T30)
	21:06		20:40		19:51			19:00	49	18:37 (T27)	17:18	28	08:03 (T31)	17:02	45	16:27 (T30)
11	06:08		06:36		07:07			07:38		07:58 (T28)	07:14		07:36 (T31)	07:47		15:43 (T30)
	21:06		20:38		19:49			18:58	40	08:38 (T28)	17:17	27	08:03 (T31)	17:02	44	16:27 (T30)
12	06:09		06:37		07:08			07:39		07:59 (T28)	07:15		07:37 (T31)	07:47		15:44 (T30)
	21:06		20:37		19:47			18:57	38	08:37 (T28)	17:16	26	08:03 (T31)	17:03	44	16:28 (T30)
13	06:09		06:38		07:09			07:40		08:00 (T28)	07:16		07:39 (T31)	07:48		15:44 (T30)
	21:05		20:36		19:45			18:55	36	08:36 (T28)	17:15	35	16:03 (T30)	17:03	44	16:28 (T30)
14	06:10		06:39		07:10			07:41		08:02 (T28)	07:18		07:40 (T31)	07:49		15:45 (T30)
	21:05		20:34		19:44			18:53	34	08:36 (T28)	17:14	41	16:06 (T30)	17:03	44	16:29 (T30)
15	06:11		06:40		07:11			07:42		08:03 (T28)	07:19		07:41 (T31)	07:50		15:45 (T30)
	21:04		20:33		19:42			18:52	32	08:35 (T28)	17:13	43	16:08 (T30)	17:03	44	16:29 (T30)
16	06:12		06:41		07:12			07:44		08:04 (T28)	07:20		07:43 (T31)	07:50		15:45 (T30)
	21:04		20:32		19:40			18:50	29	08:33 (T28)	17:12	45	16:10 (T30)	17:03	45	16:30 (T30)
17	06:13		06:42		07:13		18:39 (T27)	07:45		08:05 (T28)	07:21		07:44 (T31)	07:51		15:46 (T30)
	21:03		20:30		19:39	10	18:49 (T27)	18:49	26	08:31 (T28)	17:11	46	16:12 (T30)	17:04	44	16:30 (T30)
18	06:13		06:43		07:14		18:35 (T27)	07:46		08:06 (T28)	07:22		07:45 (T31)	07:52		15:46 (T30)
	21:02		20:29		19:37	18	18:53 (T27)	18:47	23	08:29 (T28)	17:10	46	16:13 (T30)	17:04	44	16:30 (T30)
19	06:14		06:44		07:15		18:32 (T27)	07:47		08:07 (T28)	07:24		07:46 (T31)	07:52		15:47 (T30)
	21:02		20:27		19:35	23	18:55 (T27)	18:46	20	08:27 (T28)	17:10	46	16:14 (T30)	17:04	44	16:31 (T30)
20	06:15		06:45		07:16		18:30 (T27)	07:48		08:09 (T28)	07:25		07:48 (T31)	07:53		15:47 (T30)
	21:01		20:26		19:33	26	18:56 (T27)	18:44	16	08:25 (T28)	17:09	46	16:15 (T30)	17:05	44	16:31 (T30)
21	06:16		06:46		07:17		08:14 (T28)	07:49		08:10 (T28)	07:26		07:49 (T31)	07:53		15:48 (T30)
	21:00		20:24		19:32	44	18:57 (T27)	18:43	11	08:21 (T28)	17:08	46	16:16 (T30)	17:05	44	16:32 (T30)
22	06:17		06:47		07:18		08:10 (T28)	07:50			07:27		07:50 (T31)	07:54		15:48 (T30)
	20:59		20:23		19:30	53	18:58 (T27)	18:41			17:08	45	16:17 (T30)	17:06	44	16:32 (T30)
23	06:18		06:48		07:19		08:08 (T28)	07:51			07:28		07:51 (T31)	07:54		15:49 (T30)
	20:59		20:21		19:28	58	18:58 (T27)	18:40			17:07	43	16:17 (T30)	17:06	44	16:33 (T30)
24	06:19		06:49		07:20		08:05 (T28)	07:53			07:29		07:53 (T31)	07:55		15:49 (T30)
	20:58		20:20		19:27	66	18:59 (T27)	18:39			17:07	43	16:19 (T30)	17:07	44	16:33 (T30)
25	06:20		06:50		07:21		08:03 (T28)	07:54			07:31		15:40 (T30)	07:55		15:49 (T30)
	20:57		20:18		19:25	70	18:59 (T27)	18:37			17:06	40	16:20 (T30)	17:07	44	16:33 (T30)
26	06:20		06:51		07:22		08:02 (T28)	07:55			07:32		15:40 (T30)	07:56		15:50 (T30)
	20:56		20:17		19:23	72	18:59 (T27)	18:36			17:05	40	16:20 (T30)	17:08	44	16:34 (T30)
27	06:21		06:52		07:23		08:00 (T28)	07:56			07:33		15:39 (T30)	07:56		15:50 (T30)
	20:55		20:15		19:21	76	18:59 (T27)	18:34			17:05	42	16:21 (T30)	17:09	45	16:35 (T30)
28	06:22		06:53		07:24		07:59 (T28)	07:57		08:40 (T31)	07:34		15:39 (T30)	07:56		15:51 (T30)
	20:54		20:14		19:20	77	18:57 (T27)	18:33	11	08:51 (T31)	17:05	42	16:21 (T30)	17:09	44	16:35 (T30)
29	06:23		06:54		07:25		07:58 (T28)	07:58		08:37 (T31)	07:35		15:39 (T30)	07:57		15:52 (T30)
	20:53		20:12		19:18	77	18:56 (T27)	18:32	18	08:55 (T31)	17:04	42	16:21 (T30)	17:10	44	16:36 (T30)
30	06:24		06:55		07:26		07:57 (T28)	08:00		08:35 (T31)	07:36		15:39 (T30)	07:57		15:52 (T30)
	20:52		20:10		19:16	77	18:54 (T27)	18:30	21	08:56 (T31)	17:04	43	16:22 (T30)	17:11	44	16:36 (T30)
31	06:25		06:56					08:01		08:34 (T31)				07:57		15:52 (T30)
	20:51		20:09					18:29	24	08:58 (T31)				17:12	45	16:37 (T30)
Potential sun hours	460		429		375			345			297			287		
Total, worst case						747			1049			1128			1368	
Sun reduction						0.59			0.48			0.30			0.22	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.62			0.59			0.64			0.74	
Total reduction						0.37			0.29			0.20			0.17	
Total, real						280			302			223			228	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1603 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9023)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:58		15:41 (T13)	07:44		17:09 (T12)	07:07	07:16			06:30		19:16 (T10)	06:01		20:00 (T9)
	17:13	45	16:26 (T13)	17:47	14	17:23 (T12)	18:22	19:56			20:27	28	19:44 (T10)	20:57	25	20:25 (T9)
2	07:58		15:42 (T13)	07:43		17:09 (T12)	07:06	07:14			06:29		19:17 (T10)	06:01		20:00 (T9)
	17:13	45	16:27 (T13)	17:48	15	17:24 (T12)	18:23	19:57			20:28	25	19:42 (T10)	20:58	24	20:24 (T9)
3	07:58		15:43 (T13)	07:42		17:08 (T12)	07:04	07:13			06:27		19:19 (T10)	06:00		20:01 (T9)
	17:14	44	16:27 (T13)	17:50	18	17:26 (T12)	18:24	19:58			20:29	21	19:40 (T10)	20:59	23	20:24 (T9)
4	07:58		15:43 (T13)	07:41		17:08 (T12)	07:03	07:11			06:26		19:21 (T10)	06:00		20:02 (T9)
	17:15	44	16:27 (T13)	17:51	19	17:27 (T12)	18:25	19:59			20:30	17	19:38 (T10)	20:59	22	20:24 (T9)
5	07:58		15:44 (T13)	07:40		17:07 (T12)	07:01	07:09		19:31 (T10)	06:25		19:25 (T10)	05:59		20:02 (T9)
	17:16	43	16:27 (T13)	17:52	22	17:29 (T12)	18:26	20:00	7	19:38 (T10)	20:31	13	20:09 (T9)	21:00	21	20:23 (T9)
6	07:58		15:45 (T13)	07:38		17:07 (T12)	06:59	07:08		19:27 (T10)	06:24		20:03 (T9)	05:59		20:03 (T9)
	17:17	43	16:28 (T13)	17:54	23	17:30 (T12)	18:27	20:00	13	19:40 (T10)	20:33	7	20:10 (T9)	21:01	20	20:23 (T9)
7	07:58		15:46 (T13)	07:37		17:06 (T12)	06:58	07:06		19:23 (T10)	06:22		20:02 (T9)	05:59		20:04 (T9)
	17:18	42	16:28 (T13)	17:55	25	17:31 (T12)	18:29	20:01	17	19:40 (T10)	20:34	9	20:11 (T9)	21:01	19	20:23 (T9)
8	07:58		15:47 (T13)	07:36		17:06 (T12)	07:56	07:05		19:22 (T10)	06:21		19:59 (T9)	05:59		20:05 (T9)
	17:19	41	16:28 (T13)	17:56	26	17:32 (T12)	19:30	20:03	20	19:42 (T10)	20:35	12	20:11 (T9)	21:02	18	20:23 (T9)
9	07:57		15:47 (T13)	07:35		17:07 (T12)	07:55	07:03		19:19 (T10)	06:20		19:58 (T9)	05:58		20:05 (T9)
	17:20	40	16:27 (T13)	17:57	27	17:34 (T12)	19:31	20:04	24	19:43 (T10)	20:36	15	20:13 (T9)	21:03	17	20:22 (T9)
10	07:57		15:48 (T13)	07:34		17:07 (T12)	07:53	07:01		19:17 (T10)	06:19		19:58 (T9)	05:58		20:06 (T9)
	17:21	40	16:28 (T13)	17:59	28	17:35 (T12)	19:32	20:05	26	19:43 (T10)	20:37	16	20:14 (T9)	21:03	16	20:22 (T9)
11	07:57		15:50 (T13)	07:33		17:08 (T12)	07:51	07:00		19:17 (T10)	06:18		19:57 (T9)	05:58		20:07 (T9)
	17:22	38	16:28 (T13)	18:00	29	17:37 (T12)	19:33	20:06	28	19:45 (T10)	20:38	18	20:15 (T9)	21:04	14	20:21 (T9)
12	07:57		15:50 (T13)	07:31		17:07 (T12)	07:50	06:58		19:15 (T10)	06:17		19:56 (T9)	05:58		20:07 (T9)
	17:23	37	16:27 (T13)	18:01	30	17:37 (T12)	19:34	20:07	31	19:46 (T10)	20:39	20	20:16 (T9)	21:04	14	20:21 (T9)
13	07:56		15:51 (T13)	07:30		17:08 (T12)	07:48	06:56		19:15 (T10)	06:16		19:56 (T9)	05:58		20:08 (T9)
	17:24	36	16:27 (T13)	18:02	29	17:37 (T12)	19:35	20:08	32	19:47 (T10)	20:40	20	20:16 (T9)	21:05	13	20:21 (T9)
14	07:56		15:53 (T13)	07:29		17:09 (T12)	07:46	06:55		19:13 (T10)	06:15		19:55 (T9)	05:58		20:09 (T9)
	17:25	34	16:27 (T13)	18:04	28	17:37 (T12)	19:36	20:09	35	19:48 (T10)	20:41	22	20:17 (T9)	21:05	11	20:20 (T9)
15	07:56		15:54 (T13)	07:27		17:09 (T12)	07:45	06:53		19:12 (T10)	06:14		19:55 (T9)	05:58		20:10 (T9)
	17:27	32	16:26 (T13)	18:05	27	17:36 (T12)	19:38	20:10	36	19:48 (T10)	20:42	23	20:18 (T9)	21:06	10	20:20 (T9)
16	07:55		15:55 (T13)	07:26		17:10 (T12)	07:43	06:52		19:12 (T10)	06:13		19:55 (T9)	05:58		20:11 (T9)
	17:28	31	16:26 (T13)	18:06	25	17:35 (T12)	19:39	20:11	38	19:50 (T10)	20:43	24	20:19 (T9)	21:06	9	20:20 (T9)
17	07:55		15:56 (T13)	07:25		17:12 (T12)	07:41	06:50		19:11 (T10)	06:12		19:55 (T9)	05:58		20:11 (T9)
	17:29	29	16:25 (T13)	18:07	22	17:34 (T12)	19:40	20:12	39	19:50 (T10)	20:44	25	20:20 (T9)	21:07	8	20:19 (T9)
18	07:54		15:59 (T13)	07:23		17:13 (T12)	07:40	06:49		19:11 (T10)	06:11		19:55 (T9)	05:58		20:12 (T9)
	17:30	26	16:25 (T13)	18:08	19	17:32 (T12)	19:41	20:13	41	19:52 (T10)	20:45	27	20:22 (T9)	21:07	7	20:19 (T9)
19	07:54		16:00 (T13)	07:22		17:16 (T12)	07:38	06:47		19:10 (T10)	06:10		19:55 (T9)	05:58		20:12 (T9)
	17:31	23	16:23 (T13)	18:10	14	17:30 (T12)	19:42	20:14	43	19:53 (T10)	20:46	27	20:22 (T9)	21:07	7	20:19 (T9)
20	07:53		16:02 (T13)	07:21		17:20 (T12)	07:36	06:46		19:11 (T10)	06:09		19:55 (T9)	05:58		20:14 (T9)
	17:32	19	16:21 (T13)	18:11	5	17:25 (T12)	19:43	20:15	42	19:53 (T10)	20:47	28	20:23 (T9)	21:08	5	20:19 (T9)
21	07:53		16:06 (T13)	07:19			07:35	06:44		19:10 (T10)	06:08		19:55 (T9)	05:58		20:14 (T9)
	17:34	14	16:20 (T13)	18:12			19:44	20:16	42	19:52 (T10)	20:48	29	20:24 (T9)	21:08	5	20:19 (T9)
22	07:52		16:11 (T13)	07:18			07:33	06:43		19:11 (T10)	06:07		19:55 (T9)	05:59		20:14 (T9)
	17:35	4	16:15 (T13)	18:13			19:45	20:18	41	19:52 (T10)	20:49	29	20:24 (T9)	21:08	5	20:19 (T9)
23	07:51			07:16			07:31	06:41		19:11 (T10)	06:07		19:56 (T9)	05:59		20:13 (T9)
	17:36			18:15			19:46	20:19	41	19:52 (T10)	20:50	30	20:26 (T9)	21:08	6	20:19 (T9)
24	07:50			07:15			07:30	06:40		19:11 (T10)	06:06		19:56 (T9)	05:59		20:14 (T9)
	17:37			18:16			19:47	20:20	40	19:51 (T10)	20:50	30	20:26 (T9)	21:09	7	20:21 (T9)
25	07:50			07:13			07:28	06:38		19:12 (T10)	06:05		19:56 (T9)	05:59		20:13 (T9)
	17:38			18:17			19:48	20:21	39	19:51 (T10)	20:51	30	20:26 (T9)	21:09	8	20:21 (T9)
26	07:49			07:12			07:26	06:37		19:11 (T10)	06:05		19:57 (T9)	06:00		20:13 (T9)
	17:40			18:18			19:50	20:22	38	19:49 (T10)	20:52	30	20:27 (T9)	21:09	8	20:21 (T9)
27	07:48			07:10			07:24	06:35		19:12 (T10)	06:04		19:57 (T9)	06:00		20:13 (T9)
	17:41			18:19			19:51	20:23	37	19:49 (T10)	20:53	29	20:26 (T9)	21:09	10	20:23 (T9)
28	07:47		17:15 (T12)	07:09			07:23	06:34		19:13 (T10)	06:03		19:58 (T9)	06:00		20:12 (T9)
	17:42	3	17:18 (T12)	18:20			19:52	20:24	35	19:48 (T10)	20:54	28	20:26 (T9)	21:09	11	20:23 (T9)
29	07:46		17:13 (T12)				07:21	06:33		19:14 (T10)	06:03		19:58 (T9)	06:01		20:12 (T9)
	17:43	6	17:19 (T12)				19:53	20:25	32	19:46 (T10)	20:55	28	20:26 (T9)	21:09	12	20:24 (T9)
30	07:46		17:11 (T12)				07:19	06:31		19:15 (T10)	06:02		19:59 (T9)	06:01		20:12 (T9)
	17:45	9	17:20 (T12)				19:54	20:26	30	19:45 (T10)	20:56	27	20:26 (T9)	21:09	13	20:25 (T9)
31	07:45		17:10 (T12)				07:18				06:02		19:59 (T9)			
	17:46	11	17:21 (T12)				19:55				20:56	26	20:25 (T9)			
Potential sun hours	297			297			370	399			449			453		
Total, worst case		779			445				847			713			388	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.74			0.71				0.58			0.56			0.55	
Total reduction		0.24			0.30				0.32			0.33			0.37	
Total, real		188			133				269			237			144	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1603 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9023)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December		
1	06:02		20:11 (T9)	06:26		20:07 (T9)	06:57		19:16 (T10)	07:28			07:02		16:37 (T12)	07:37		15:32 (T13)
	21:09	14	20:25 (T9)	20:50	19	20:26 (T9)	20:07	28	19:44 (T10)	19:15			17:28	28	17:05 (T12)	17:03	38	16:10 (T13)
2	06:02		20:11 (T9)	06:27		20:08 (T9)	06:58		19:16 (T10)	07:29			07:03		16:36 (T12)	07:38		15:31 (T13)
	21:09	15	20:26 (T9)	20:49	17	20:25 (T9)	20:06	26	19:42 (T10)	19:13			17:27	27	17:03 (T12)	17:03	40	16:11 (T13)
3	06:03		20:10 (T9)	06:28		20:08 (T9)	06:59		19:17 (T10)	07:30			07:05		16:36 (T12)	07:39		15:31 (T13)
	21:09	17	20:27 (T9)	20:48	16	20:24 (T9)	20:04	24	19:41 (T10)	19:11			17:25	26	17:02 (T12)	17:03	40	16:11 (T13)
4	06:03		20:10 (T9)	06:29		20:09 (T9)	07:00		19:19 (T10)	07:31			07:06		16:36 (T12)	07:40		15:31 (T13)
	21:08	18	20:28 (T9)	20:47	14	20:23 (T9)	20:02	20	19:39 (T10)	19:10			17:24	24	17:00 (T12)	17:03	41	16:12 (T13)
5	06:04		20:09 (T9)	06:30		20:10 (T9)	07:01		19:20 (T10)	07:32			07:07		16:37 (T12)	07:41		15:31 (T13)
	21:08	19	20:28 (T9)	20:46	12	20:22 (T9)	20:01	18	19:38 (T10)	19:08			17:23	23	17:00 (T12)	17:03	42	16:13 (T13)
6	06:05		20:09 (T9)	06:31		20:12 (T9)	07:02		19:23 (T10)	07:33			07:08		16:37 (T12)	07:42		15:31 (T13)
	21:08	20	20:29 (T9)	20:45	9	20:21 (T9)	19:57	13	19:36 (T10)	19:06			17:22	21	16:58 (T12)	17:02	43	16:14 (T13)
7	06:05		20:09 (T9)	06:32		20:13 (T9)	07:03		19:27 (T10)	07:34			07:09		16:38 (T12)	07:43		15:31 (T13)
	21:08	21	20:30 (T9)	20:44	7	20:20 (T9)	19:56	7	19:34 (T10)	19:05			17:21	19	16:57 (T12)	17:02	43	16:14 (T13)
8	06:06		20:08 (T9)	06:33		19:33 (T10)	07:04			07:35			07:11		16:39 (T12)	07:44		15:32 (T13)
	21:07	22	20:30 (T9)	20:42	14	20:18 (T9)	19:54			19:03			17:20	17	16:56 (T12)	17:02	43	16:15 (T13)
9	06:06		20:08 (T9)	06:34		19:30 (T10)	07:05			07:36			07:12		16:40 (T12)	07:45		15:32 (T13)
	21:07	23	20:31 (T9)	20:41	18	19:48 (T10)	19:52			19:01			17:19	15	16:55 (T12)	17:02	44	16:16 (T13)
10	06:07		20:08 (T9)	06:35		19:28 (T10)	07:06			07:37			07:13		16:40 (T12)	07:46		15:32 (T13)
	21:07	24	20:32 (T9)	20:40	22	19:50 (T10)	19:51			19:00			17:18	14	16:54 (T12)	17:02	45	16:17 (T13)
11	06:08		20:07 (T9)	06:36		19:26 (T10)	07:07			07:38			07:14		16:41 (T12)	07:47		15:32 (T13)
	21:06	25	20:32 (T9)	20:38	26	19:52 (T10)	19:49			18:58			17:17	11	16:52 (T12)	17:02	44	16:16 (T13)
12	06:09		20:07 (T9)	06:37		19:24 (T10)	07:08			07:39			07:15		16:43 (T12)	07:48		15:32 (T13)
	21:06	26	20:33 (T9)	20:37	28	19:52 (T10)	19:47			18:57			17:16	9	16:52 (T12)	17:02	45	16:17 (T13)
13	06:09		20:07 (T9)	06:38		19:22 (T10)	07:09			07:40			07:17		16:45 (T12)	07:48		15:32 (T13)
	21:05	27	20:34 (T9)	20:36	31	19:53 (T10)	19:46			18:55			17:15	6	16:51 (T12)	17:03	46	16:18 (T13)
14	06:10		20:07 (T9)	06:39		19:21 (T10)	07:10			07:41			07:18		16:47 (T12)	07:49		15:33 (T13)
	21:05	28	20:35 (T9)	20:34	33	19:54 (T10)	19:44			18:53			17:14	2	16:49 (T12)	17:03	46	16:19 (T13)
15	06:11		20:06 (T9)	06:40		19:20 (T10)	07:11			07:43			07:19			07:50		15:33 (T13)
	21:04	29	20:35 (T9)	20:33	35	19:55 (T10)	19:42			18:52			17:13			17:03	46	16:19 (T13)
16	06:12		20:06 (T9)	06:41		19:19 (T10)	07:12			07:44			07:20			07:51		15:33 (T13)
	21:04	29	20:35 (T9)	20:32	37	19:56 (T10)	19:40			18:50			17:12			17:03	46	16:19 (T13)
17	06:12		20:06 (T9)	06:42		19:18 (T10)	07:13			07:45			07:21			07:51		15:34 (T13)
	21:03	30	20:36 (T9)	20:30	38	19:56 (T10)	19:39			18:49			17:11			17:04	46	16:20 (T13)
18	06:13		20:06 (T9)	06:43		19:17 (T10)	07:14			07:46			07:23			07:52		15:34 (T13)
	21:03	30	20:36 (T9)	20:29	40	19:57 (T10)	19:37			18:47			17:10			17:04	46	16:20 (T13)
19	06:14		20:05 (T9)	06:44		19:17 (T10)	07:15			07:47			07:24			07:53		15:35 (T13)
	21:02	31	20:36 (T9)	20:27	40	19:57 (T10)	19:35			18:46			17:10			17:04	46	16:21 (T13)
20	06:15		20:05 (T9)	06:45		19:16 (T10)	07:16			07:48			07:25		15:46 (T13)	07:53		15:36 (T13)
	21:01	31	20:36 (T9)	20:26	41	19:57 (T10)	19:34			18:44			17:09	4	15:50 (T13)	17:05	46	16:22 (T13)
21	06:16		20:05 (T9)	06:46		19:15 (T10)	07:17			07:49			07:26		15:41 (T13)	07:54		15:36 (T13)
	21:00	30	20:35 (T9)	20:24	42	19:57 (T10)	19:32			18:43			17:08	14	15:55 (T13)	17:05	46	16:22 (T13)
22	06:17		20:05 (T9)	06:47		19:15 (T10)	07:18			07:50		17:48 (T12)	07:27		15:38 (T13)	07:54		15:36 (T13)
	21:00	30	20:35 (T9)	20:23	42	19:57 (T10)	19:30			18:41	9	17:57 (T12)	17:08	19	15:57 (T13)	17:06	47	16:23 (T13)
23	06:18		20:06 (T9)	06:48		19:15 (T10)	07:19			07:52		17:45 (T12)	07:28		15:37 (T13)	07:55		15:37 (T13)
	20:59	28	20:34 (T9)	20:21	42	19:57 (T10)	19:28			18:40	15	18:00 (T12)	17:07	23	16:00 (T13)	17:06	46	16:23 (T13)
24	06:18		20:06 (T9)	06:49		19:14 (T10)	07:20			07:53		17:43 (T12)	07:30		15:36 (T13)	07:55		15:37 (T13)
	20:58	27	20:33 (T9)	20:20	42	19:56 (T10)	19:27			18:38	20	18:03 (T12)	17:06	26	16:02 (T13)	17:07	46	16:23 (T13)
25	06:19		20:06 (T9)	06:50		19:14 (T10)	07:21			07:54		17:41 (T12)	07:31		15:35 (T13)	07:56		15:38 (T13)
	20:57	27	20:33 (T9)	20:18	41	19:55 (T10)	19:25			18:37	23	18:04 (T12)	17:06	28	16:03 (T13)	17:07	46	16:24 (T13)
26	06:20		20:05 (T9)	06:51		19:14 (T10)	07:22			07:55		17:40 (T12)	07:32		15:34 (T13)	07:56		15:38 (T13)
	20:56	26	20:31 (T9)	20:17	39	19:53 (T10)	19:23			18:36	25	18:05 (T12)	17:05	30	16:04 (T13)	17:08	46	16:24 (T13)
27	06:21		20:05 (T9)	06:52		19:14 (T10)	07:23			07:56		17:39 (T12)	07:33		15:33 (T13)	07:56		15:38 (T13)
	20:55	25	20:30 (T9)	20:15	38	19:52 (T10)	19:22			18:34	26	18:05 (T12)	17:05	32	16:05 (T13)	17:09	46	16:24 (T13)
28	06:22		20:05 (T9)	06:53		19:14 (T10)	07:24			07:57		17:38 (T12)	07:34		15:32 (T13)	07:57		15:40 (T13)
	20:54	24	20:29 (T9)	20:14	36	19:50 (T10)	19:20			18:33	28	18:06 (T12)	17:04	34	16:06 (T13)	17:09	46	16:26 (T13)
29	06:23		20:06 (T9)	06:54		19:14 (T10)	07:25			07:59		17:38 (T12)	07:35		15:32 (T13)	07:57		15:40 (T13)
	20:53	22	20:28 (T9)	20:12	35	19:49 (T10)	19:18			18:32	29	18:07 (T12)	17:04	36	16:08 (T13)	17:10	46	16:26 (T13)
30	06:24		20:06 (T9)	06:55		19:15 (T10)	07:27			08:00		17:37 (T12)	07:36		15:32 (T13)	07:57		15:40 (T13)
	20:52	22	20:28 (T9)	20:11	32	19:47 (T10)	19:16			18:30	30	18:07 (T12)	17:04	37	16:09 (T13)	17:11	46	16:26 (T13)
31	06:25		20:07 (T9)	06:56		19:15 (T10)				08:01		17:36 (T12)				07:57		15:41 (T13)
	20:51	20	20:27 (T9)	20:09	31	19:46 (T10)				18:29	29	18:05 (T12)				17:12	45	16:26 (T13)
Potential sun hours	460			429			375			345			297			287		
Total, worst case		760			917			136			234			525			1382	
Sun reduction		0.66			0.61			0.59			0.48			0.30			0.22	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.55			0.58			0.58			0.71			0.73			0.74	
Total reduction		0.38			0.37			0.36			0.36			0.23			0.17	
Total, real		291			340			49			84			120			237	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1620 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9038)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January		February		March		April		May		June	
1	07:57		07:43	08:04 (T44)	07:07		07:16	07:35 (T77)	06:30		06:02	06:25 (T42)
	17:13		17:48 11	08:15 (T44)	18:22		19:56 28	08:03 (T77)	20:27		20:57 40	07:05 (T42)
2	07:57		07:42	08:03 (T44)	07:06		07:15	07:33 (T77)	06:29		06:01	06:25 (T42)
	17:14		17:49 14	08:17 (T44)	18:23		19:57 30	08:03 (T77)	20:28		20:58 40	07:05 (T42)
3	07:57		07:41	08:02 (T44)	07:04		07:13	07:32 (T77)	06:28		06:01	06:25 (T42)
	17:15		17:50 16	08:18 (T44)	18:24		19:58 32	08:04 (T77)	20:29		20:58 39	07:04 (T42)
4	07:58		07:40	08:01 (T44)	07:03		07:11	07:30 (T77)	06:26		06:00	06:25 (T42)
	17:16		17:51 18	08:19 (T44)	18:25		19:59 33	08:03 (T77)	20:30		20:59 40	07:05 (T42)
5	07:57		07:39	08:00 (T44)	07:01		07:10	07:29 (T77)	06:25		06:00	06:26 (T42)
	17:17		17:53 20	08:20 (T44)	18:26		20:00 35	08:04 (T77)	20:31		21:00 39	07:05 (T42)
6	07:57		07:38	07:58 (T44)	06:59		07:08	07:27 (T77)	06:24	06:44 (T42)	06:00	06:26 (T42)
	17:18		17:54 21	08:19 (T44)	18:28		20:00 36	08:03 (T77)	20:32 2	06:46 (T42)	21:01 38	07:04 (T42)
7	07:57		07:37	07:57 (T44)	06:58		07:06	07:25 (T77)	06:23	06:43 (T42)	05:59	06:26 (T42)
	17:19		17:55 23	08:20 (T44)	18:29		20:01 37	08:02 (T77)	20:33 8	06:51 (T42)	21:01 39	07:05 (T42)
8	07:57		07:36	07:56 (T44)	07:56		07:05	07:26 (T77)	06:22	06:42 (T42)	05:59	06:27 (T42)
	17:20		17:56 24	08:20 (T44)	19:30		20:02 36	08:02 (T77)	20:34 12	06:54 (T42)	21:02 38	07:05 (T42)
9	07:57		07:35	07:55 (T44)	07:55		07:03	07:25 (T77)	06:20	06:41 (T42)	05:59	06:27 (T42)
	17:21		17:58 26	08:21 (T44)	19:31		20:04 36	08:01 (T77)	20:35 14	06:55 (T42)	21:02 38	07:05 (T42)
10	07:57		07:34	07:54 (T44)	07:53		07:01	07:25 (T77)	06:19	06:40 (T42)	05:59	06:28 (T42)
	17:22		17:59 27	08:21 (T44)	19:32		20:05 35	08:00 (T77)	20:36 17	06:57 (T42)	21:03 37	07:05 (T42)
11	07:57		07:32	07:52 (T44)	07:51		07:00	07:26 (T77)	06:18	06:38 (T42)	05:58	06:28 (T42)
	17:23		18:00 28	08:20 (T44)	19:33		20:06 34	08:00 (T77)	20:38 19	06:57 (T42)	21:04 38	07:06 (T42)
12	07:56		07:31	07:51 (T44)	07:50		06:58	07:26 (T77)	06:17	06:37 (T42)	05:58	06:29 (T42)
	17:24		18:01 30	08:21 (T44)	19:34		20:07 32	07:58 (T77)	20:39 21	06:58 (T42)	21:04 37	07:06 (T42)
13	07:56		07:30	07:50 (T44)	07:48		06:57	07:28 (T77)	06:16	06:36 (T42)	05:58	06:28 (T42)
	17:25		18:03 31	08:21 (T44)	19:35		20:08 29	07:57 (T77)	20:40 23	06:59 (T42)	21:05 37	07:05 (T42)
14	07:56		07:29	07:51 (T44)	07:46		06:55	07:28 (T77)	06:15	06:36 (T42)	05:58	06:28 (T42)
	17:26		18:04 29	08:20 (T44)	19:37		20:09 27	07:55 (T77)	20:41 25	07:01 (T42)	21:05 37	07:05 (T42)
15	07:55		07:27	07:51 (T44)	07:45		06:53	07:30 (T77)	06:14	06:35 (T42)	05:58	06:28 (T42)
	17:27		18:05 28	08:19 (T44)	19:38		20:10 24	07:54 (T77)	20:42 26	07:01 (T42)	21:06 37	07:05 (T42)
16	07:55		07:26	07:52 (T44)	07:43		06:52	07:31 (T77)	06:13	06:34 (T42)	05:58	06:30 (T42)
	17:28		18:06 27	08:19 (T44)	19:39		20:11 21	07:52 (T77)	20:43 28	07:02 (T42)	21:06 36	07:06 (T42)
17	07:54		07:25	07:53 (T44)	07:41		06:50	07:34 (T77)	06:12	06:33 (T42)	05:58	06:30 (T42)
	17:29		18:07 24	08:17 (T44)	19:40		20:12 15	07:49 (T77)	20:44 29	07:02 (T42)	21:06 36	07:06 (T42)
18	07:54		07:23	07:54 (T44)	07:40		06:49	07:37 (T77)	06:11	06:32 (T42)	05:58	06:30 (T42)
	17:30		18:09 22	08:16 (T44)	19:41		20:13 7	07:44 (T77)	20:45 30	07:02 (T42)	21:07 36	07:06 (T42)
19	07:53		07:22	07:56 (T44)	07:38		06:47		06:10	06:31 (T42)	05:58	06:30 (T42)
	17:32		18:10 18	08:14 (T44)	19:42		20:14		20:45 32	07:03 (T42)	21:07 36	07:06 (T42)
20	07:53		07:21	07:58 (T44)	07:36		06:46		06:09	06:30 (T42)	05:59	06:30 (T42)
	17:33		18:11 13	08:11 (T44)	19:43		20:15		20:46 33	07:03 (T42)	21:07 36	07:06 (T42)
21	07:52		07:19		07:35		06:44		06:09	06:30 (T42)	05:59	06:30 (T42)
	17:34		18:12		19:44		20:16		20:47 34	07:04 (T42)	21:08 36	07:06 (T42)
22	07:52		07:18		07:33		06:43		06:08	06:29 (T42)	05:59	06:30 (T42)
	17:35		18:14		19:45		20:17		20:48 35	07:04 (T42)	21:08 36	07:06 (T42)
23	07:51		07:16		07:31		06:41		06:07	06:28 (T42)	05:59	06:31 (T42)
	17:36		18:15		19:46		20:18		20:49 36	07:04 (T42)	21:08 36	07:07 (T42)
24	07:50		07:15		07:30		06:40		06:06	06:27 (T42)	05:59	06:31 (T42)
	17:38		18:16		19:47		20:20		20:50 37	07:04 (T42)	21:08 36	07:07 (T42)
25	07:50		07:13		07:28	07:47 (T77)	06:39		06:06	06:27 (T42)	06:00	06:31 (T42)
	17:39		18:17		19:49 7	07:54 (T77)	20:21		20:51 37	07:04 (T42)	21:08 36	07:07 (T42)
26	07:49		07:12		07:26	07:45 (T77)	06:37		06:05	06:26 (T42)	06:00	06:32 (T42)
	17:40		18:18		19:50 12	07:57 (T77)	20:22		20:52 38	07:04 (T42)	21:08 36	07:08 (T42)
27	07:48		07:10		07:25	07:44 (T77)	06:36		06:04	06:26 (T42)	06:00	06:32 (T42)
	17:41		18:19		19:51 15	07:59 (T77)	20:23		20:53 39	07:05 (T42)	21:09 36	07:08 (T42)
28	07:47		07:09		07:23	07:42 (T77)	06:34		06:04	06:25 (T42)	06:01	06:31 (T42)
	17:43		18:21		19:52 19	08:01 (T77)	20:24		20:54 39	07:04 (T42)	21:09 37	07:08 (T42)
29	07:46	08:07 (T44)			07:21	07:40 (T77)	06:33		06:03	06:25 (T42)	06:01	06:32 (T42)
	17:44 2	08:09 (T44)			19:53 21	08:01 (T77)	20:25		20:54 40	07:05 (T42)	21:09 37	07:09 (T42)
30	07:45	08:06 (T44)			07:20	07:39 (T77)	06:32		06:03	06:24 (T42)	06:02	06:32 (T42)
	17:45 6	08:12 (T44)			19:54 24	08:03 (T77)	20:26		20:55 41	07:05 (T42)	21:09 37	07:09 (T42)
31	07:44	08:05 (T44)			07:18	07:37 (T77)			06:02	06:25 (T42)		
	17:46 9	08:14 (T44)			19:55 26	08:03 (T77)			20:56 40	07:05 (T42)		
Potential sun hours	297		297		370		399		448		453	
Total, worst case	17		450		124		527		735		1117	
Sun reduction	0.31		0.40		0.44		0.52		0.57		0.64	
Oper. time red.	1.00		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.	0.55		0.55		0.64		0.64		0.71		0.71	
Total reduction	0.17		0.22		0.28		0.33		0.40		0.45	
Total, real	3		97		34		173		293		501	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1620 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9038)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July			August			September			October			November			December	
1	06:02		06:32 (T42)	06:26		06:48 (T42)	06:57		07:25 (T77)	07:28			07:02		07:23 (T44)	07:37	
	21:09	38	07:10 (T42)	20:50	20	07:08 (T42)	20:07	34	07:59 (T77)	19:15			17:28	27	07:50 (T44)	17:04	
2	06:03		06:32 (T42)	06:27		06:49 (T42)	06:58		07:24 (T77)	07:29			07:03		07:25 (T44)	07:38	
	21:08	37	07:09 (T42)	20:49	18	07:07 (T42)	20:06	35	07:59 (T77)	19:13			17:27	26	07:51 (T44)	17:03	
3	06:03		06:32 (T42)	06:28		06:50 (T42)	06:59		07:23 (T77)	07:30			07:04		07:26 (T44)	07:39	
	21:08	38	07:10 (T42)	20:48	16	07:06 (T42)	20:04	36	07:59 (T77)	19:11			17:26	24	07:50 (T44)	17:03	
4	06:04		06:32 (T42)	06:29		06:51 (T42)	07:00		07:23 (T77)	07:31			07:06		07:27 (T44)	07:40	
	21:08	38	07:10 (T42)	20:47	13	07:04 (T42)	20:02	36	07:59 (T77)	19:10			17:24	23	07:50 (T44)	17:03	
5	06:04		06:32 (T42)	06:30		06:52 (T42)	07:01		07:22 (T77)	07:32			07:07		07:28 (T44)	07:41	
	21:08	39	07:11 (T42)	20:46	10	07:02 (T42)	20:01	37	07:59 (T77)	19:08			17:23	21	07:49 (T44)	17:03	
6	06:05		06:32 (T42)	06:31		06:53 (T42)	07:02		07:23 (T77)	07:33			07:08		07:30 (T44)	07:42	
	21:08	39	07:11 (T42)	20:44	6	06:59 (T42)	19:57	36	07:59 (T77)	19:06			17:22	19	07:49 (T44)	17:03	
7	06:06		06:32 (T42)	06:32			07:03		07:24 (T77)	07:34			07:09		07:31 (T44)	07:43	
	21:07	39	07:11 (T42)	20:43			19:56	35	07:59 (T77)	19:05			17:21	17	07:48 (T44)	17:03	
8	06:06		06:33 (T42)	06:33			07:04		07:25 (T77)	07:35			07:10		07:32 (T44)	07:44	
	21:07	39	07:12 (T42)	20:42			19:54	33	07:58 (T77)	19:03			17:20	15	07:47 (T44)	17:03	
9	06:07		06:32 (T42)	06:34			07:05		07:26 (T77)	07:36			07:12		07:34 (T44)	07:45	
	21:07	40	07:12 (T42)	20:41			19:52	32	07:58 (T77)	19:02			17:19	13	07:47 (T44)	17:03	
10	06:08		06:33 (T42)	06:35			07:06		07:27 (T77)	07:37			07:13		07:35 (T44)	07:46	
	21:06	39	07:12 (T42)	20:40			19:51	30	07:57 (T77)	19:00			17:18	11	07:46 (T44)	17:03	
11	06:08		06:33 (T42)	06:36			07:07		07:28 (T77)	07:38			07:14		07:36 (T44)	07:47	
	21:06	40	07:13 (T42)	20:38			19:49	28	07:56 (T77)	18:58			17:17	8	07:44 (T44)	17:03	
12	06:09		06:32 (T42)	06:37			07:08		07:28 (T77)	07:39			07:15		07:37 (T44)	07:47	
	21:06	40	07:12 (T42)	20:37			19:47	26	07:54 (T77)	18:57			17:16	6	07:43 (T44)	17:03	
13	06:10		06:33 (T42)	06:38			07:09		07:29 (T77)	07:40			07:16		07:39 (T44)	07:48	
	21:05	40	07:13 (T42)	20:36			19:46	24	07:53 (T77)	18:55			17:15	2	07:41 (T44)	17:03	
14	06:10		06:33 (T42)	06:39			07:10		07:30 (T77)	07:41			07:18			07:49	
	21:05	40	07:13 (T42)	20:34			19:44	22	07:52 (T77)	18:54			17:14			17:03	
15	06:11		06:34 (T42)	06:40			07:11		07:31 (T77)	07:43			07:19			07:50	
	21:04	40	07:14 (T42)	20:33			19:42	19	07:50 (T77)	18:52			17:13			17:03	
16	06:12		06:34 (T42)	06:41			07:12		07:32 (T77)	07:44			07:20			07:50	
	21:03	39	07:13 (T42)	20:32			19:40	16	07:48 (T77)	18:50			17:12			17:04	
17	06:13		06:35 (T42)	06:42			07:13		07:33 (T77)	07:45			07:21			07:51	
	21:03	38	07:13 (T42)	20:30			19:39	13	07:46 (T77)	18:49			17:12			17:04	
18	06:14		06:36 (T42)	06:43			07:14		07:34 (T77)	07:46			07:22			07:52	
	21:02	38	07:14 (T42)	20:29			19:37	8	07:42 (T77)	18:47			17:11			17:04	
19	06:14		06:37 (T42)	06:44			07:15			07:47			07:24			07:52	
	21:02	37	07:14 (T42)	20:27			19:35			18:46			17:10			17:05	
20	06:15		06:38 (T42)	06:45			07:16			07:48			07:25			07:53	
	21:01	36	07:14 (T42)	20:26			19:34			18:44			17:09			17:05	
21	06:16		06:38 (T42)	06:46			07:17			07:49		08:32 (T44)	07:26			07:53	
	21:00	35	07:13 (T42)	20:24			19:32			18:43	7	08:39 (T44)	17:09			17:06	
22	06:17		06:39 (T42)	06:47			07:18			07:50		08:28 (T44)	07:27			07:54	
	20:59	34	07:13 (T42)	20:23			19:30			18:42	15	08:43 (T44)	17:08			17:06	
23	06:18		06:40 (T42)	06:48			07:19			07:52		08:26 (T44)	07:28			07:54	
	20:59	33	07:13 (T42)	20:21			19:28			18:40	19	08:45 (T44)	17:07			17:07	
24	06:19		06:41 (T42)	06:49			07:20			07:53		08:24 (T44)	07:29			07:55	
	20:58	32	07:13 (T42)	20:20			19:27			18:39	22	08:46 (T44)	17:07			17:07	
25	06:20		06:42 (T42)	06:50		07:39 (T77)	07:21			07:54		08:23 (T44)	07:30			07:55	
	20:57	31	07:13 (T42)	20:18	9	07:48 (T77)	19:25			18:37	25	08:48 (T44)	17:06			17:08	
26	06:21		06:43 (T42)	06:51		07:35 (T77)	07:22			07:55		08:22 (T44)	07:32			07:56	
	20:56	30	07:13 (T42)	20:17	16	07:51 (T77)	19:23			18:36	26	08:48 (T44)	17:06			17:08	
27	06:22		06:44 (T42)	06:52		07:33 (T77)	07:23			07:56		08:21 (T44)	07:33			07:56	
	20:55	29	07:13 (T42)	20:15	21	07:54 (T77)	19:22			18:35	28	08:49 (T44)	17:05			17:09	
28	06:23		06:45 (T42)	06:53		07:31 (T77)	07:24			07:57		08:20 (T44)	07:34			07:56	
	20:54	27	07:12 (T42)	20:14	24	07:55 (T77)	19:20			18:33	29	08:49 (T44)	17:05			17:10	
29	06:23		06:45 (T42)	06:54		07:29 (T77)	07:25			07:58		08:20 (T44)	07:35			07:57	
	20:53	26	07:11 (T42)	20:12	27	07:56 (T77)	19:18			18:32	30	08:50 (T44)	17:04			17:10	
30	06:24		06:46 (T42)	06:55		07:28 (T77)	07:27			08:00		08:21 (T44)	07:36			07:57	
	20:52	24	07:10 (T42)	20:10	29	07:57 (T77)	19:16			18:31	29	08:50 (T44)	17:04			17:11	
31	06:25		06:47 (T42)	06:56		07:26 (T77)				08:01		08:22 (T44)				07:57	
	20:51	22	07:09 (T42)	20:09	32	07:58 (T77)				18:29	28	08:50 (T44)				17:12	
Potential sun hours	460			429			375			345			297			287	
Total, worst case		1097			241			500			258			212			
Sun reduction		0.66			0.61			0.59			0.48			0.30			
Oper. time red.		1.00			1.00			1.00			1.00			1.00			
Wind dir. red.		0.71			0.66			0.64			0.55			0.55			
Total reduction		0.46			0.40			0.37			0.26			0.16			
Total, real		507			96			187			67			34			

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1666 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9078)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	January			February			March	April			May			June		
1	07:57			07:43		16:31 (T45)	07:07	07:16			06:30		19:15 (T44)	06:01		19:16 (T44)
	17:13			17:47	51	17:22 (T45)	18:22	19:56			20:27	50	20:05 (T44)	20:57	52	20:08 (T44)
2	07:57			07:42		16:31 (T45)	07:06	07:14			06:29		19:14 (T44)	06:01		19:17 (T44)
	17:14			17:49	51	17:22 (T45)	18:23	19:57			20:28	52	20:06 (T44)	20:58	51	20:08 (T44)
3	07:57			07:41		16:31 (T45)	07:04	07:13			06:28		19:13 (T44)	06:01		19:17 (T44)
	17:15			17:50	52	17:23 (T45)	18:24	19:58			20:29	53	20:06 (T44)	20:58	50	20:07 (T44)
4	07:57			07:40		16:31 (T45)	07:02	07:11			06:26		19:13 (T44)	06:00		19:18 (T44)
	17:16			17:51	52	17:23 (T45)	18:25	19:59			20:30	54	20:07 (T44)	20:59	50	20:08 (T44)
5	07:57			07:39		16:31 (T45)	07:01	07:09			06:25		19:12 (T44)	06:00		19:19 (T44)
	17:17			17:52	51	17:22 (T45)	18:26	20:00			20:31	57	20:09 (T44)	21:00	49	20:08 (T44)
6	07:57			07:38		16:31 (T45)	06:59	07:08			06:24		19:12 (T44)	06:00		19:19 (T44)
	17:17			17:54	51	17:22 (T45)	18:27	20:00			20:32	58	20:10 (T44)	21:00	48	20:07 (T44)
7	07:57			07:37		16:31 (T45)	06:58	07:06			06:23		19:12 (T44)	05:59		19:19 (T44)
	17:18			17:55	51	17:22 (T45)	18:29	20:01			20:33	58	20:10 (T44)	21:01	48	20:07 (T44)
8	07:57		16:47 (T45)	07:36		16:32 (T45)	07:56	07:05			06:22		19:12 (T44)	05:59		19:20 (T44)
	17:19	3	16:50 (T45)	17:56	50	17:22 (T45)	19:30	20:02			20:34	58	20:10 (T44)	21:02	47	20:07 (T44)
9	07:57		16:44 (T45)	07:35		16:33 (T45)	07:54	07:03			06:20		19:11 (T44)	05:59		19:21 (T44)
	17:20	10	16:54 (T45)	17:58	49	17:22 (T45)	19:31	20:03			20:35	60	20:11 (T44)	21:02	46	20:07 (T44)
10	07:57		16:42 (T45)	07:34		16:33 (T45)	07:53	07:01			06:19		19:10 (T44)	05:59		19:21 (T44)
	17:21	14	16:56 (T45)	17:59	49	17:22 (T45)	19:32	20:05			20:36	60	20:10 (T44)	21:03	46	20:07 (T44)
11	07:57		16:40 (T45)	07:32		16:33 (T45)	07:51	07:00			06:18		19:10 (T44)	05:58		19:22 (T44)
	17:23	16	16:56 (T45)	18:00	48	17:21 (T45)	19:33	20:06			20:37	60	20:10 (T44)	21:03	45	20:07 (T44)
12	07:56		16:39 (T45)	07:31		16:34 (T45)	07:50	06:58			06:17		19:10 (T44)	05:58		19:22 (T44)
	17:24	19	16:58 (T45)	18:01	47	17:21 (T45)	19:34	20:07			20:38	60	20:10 (T44)	21:04	44	20:06 (T44)
13	07:56		16:39 (T45)	07:30		16:35 (T45)	07:48	06:57			06:16		19:10 (T44)	05:58		19:22 (T44)
	17:25	20	16:59 (T45)	18:02	46	17:21 (T45)	19:35	20:08			20:39	60	20:10 (T44)	21:05	44	20:06 (T44)
14	07:56		16:37 (T45)	07:29		16:35 (T45)	07:46	06:55			06:15		19:10 (T44)	05:58		19:22 (T44)
	17:26	23	17:00 (T45)	18:04	44	17:19 (T45)	19:36	20:09			20:40	60	20:10 (T44)	21:05	44	20:06 (T44)
15	07:55		16:37 (T45)	07:27		16:36 (T45)	07:45	06:53			06:14		19:11 (T44)	05:58		19:23 (T44)
	17:27	24	17:01 (T45)	18:05	43	17:19 (T45)	19:38	20:10			20:41	60	20:11 (T44)	21:05	43	20:06 (T44)
16	07:55		16:36 (T45)	07:26		16:38 (T45)	07:43	06:52			06:13		19:11 (T44)	05:58		19:23 (T44)
	17:28	26	17:02 (T45)	18:06	40	17:18 (T45)	19:39	20:11			20:42	60	20:11 (T44)	21:06	43	20:06 (T44)
17	07:54		16:35 (T45)	07:25		16:38 (T45)	07:41	06:50			06:12		19:11 (T44)	05:58		19:24 (T44)
	17:29	29	17:04 (T45)	18:07	38	17:16 (T45)	19:40	20:12			20:43	60	20:11 (T44)	21:06	43	20:07 (T44)
18	07:54		16:34 (T45)	07:23		16:40 (T45)	07:40	06:49			06:11		19:11 (T44)	05:58		19:25 (T44)
	17:30	31	17:05 (T45)	18:09	35	17:15 (T45)	19:41	20:13			20:44	59	20:10 (T44)	21:07	42	20:07 (T44)
19	07:53		16:35 (T45)	07:22		16:42 (T45)	07:38	06:47			06:10		19:11 (T44)	05:58		19:25 (T44)
	17:32	32	17:07 (T45)	18:10	32	17:14 (T45)	19:42	20:14			20:45	59	20:10 (T44)	21:07	42	20:07 (T44)
20	07:53		16:34 (T45)	07:20		16:44 (T45)	07:36	06:46		19:36 (T44)	06:09		19:11 (T44)	05:59		19:25 (T44)
	17:33	33	17:07 (T45)	18:11	27	17:11 (T45)	19:43	20:15	14	19:50 (T44)	20:46	59	20:10 (T44)	21:07	42	20:07 (T44)
21	07:52		16:33 (T45)	07:19		16:47 (T45)	07:35	06:44		19:32 (T44)	06:09		19:11 (T44)	05:59		19:25 (T44)
	17:34	35	17:08 (T45)	18:12	22	17:09 (T45)	19:44	20:16	23	19:55 (T44)	20:47	58	20:09 (T44)	21:07	42	20:07 (T44)
22	07:52		16:33 (T45)	07:18		16:50 (T45)	07:33	06:43		19:28 (T44)	06:08		19:12 (T44)	05:59		19:25 (T44)
	17:35	37	17:10 (T45)	18:13	15	17:05 (T45)	19:45	20:17	28	19:56 (T44)	20:48	58	20:10 (T44)	21:08	42	20:07 (T44)
23	07:51		16:33 (T45)	07:16			07:31	06:41		19:26 (T44)	06:07		19:12 (T44)	05:59		19:26 (T44)
	17:36	38	17:11 (T45)	18:15			19:46	20:18	31	19:57 (T44)	20:49	58	20:10 (T44)	21:08	42	20:08 (T44)
24	07:50		16:32 (T45)	07:15			07:30	06:40		19:24 (T44)	06:06		19:13 (T44)	05:59		19:26 (T44)
	17:38	41	17:13 (T45)	18:16			19:47	20:19	33	19:57 (T44)	20:50	56	20:09 (T44)	21:08	42	20:08 (T44)
25	07:49		16:31 (T45)	07:13			07:28	06:38		19:22 (T44)	06:06		19:14 (T44)	06:00		19:26 (T44)
	17:39	43	17:14 (T45)	18:17			19:48	20:21	37	19:59 (T44)	20:51	56	20:10 (T44)	21:08	42	20:08 (T44)
26	07:49		16:31 (T45)	07:12			07:26	06:37		19:20 (T44)	06:05		19:14 (T44)	06:00		19:26 (T44)
	17:40	44	17:15 (T45)	18:18			19:50	20:22	39	19:59 (T44)	20:52	55	20:09 (T44)	21:08	43	20:09 (T44)
27	07:48		16:32 (T45)	07:10			07:24	06:36		19:19 (T44)	06:04		19:15 (T44)	06:00		19:26 (T44)
	17:41	45	17:17 (T45)	18:19			19:51	20:23	42	20:01 (T44)	20:53	54	20:09 (T44)	21:08	43	20:09 (T44)
28	07:47		16:31 (T45)	07:09			07:23	06:34		19:18 (T44)	06:04		19:15 (T44)	06:01		19:26 (T44)
	17:42	47	17:18 (T45)	18:21			19:52	20:24	44	20:02 (T44)	20:54	54	20:09 (T44)	21:08	43	20:09 (T44)
29	07:46		16:31 (T45)				07:21	06:33		19:16 (T44)	06:03		19:15 (T44)	06:01		19:26 (T44)
	17:44	48	17:19 (T45)				19:53	20:25	46	20:02 (T44)	20:54	53	20:08 (T44)	21:08	44	20:10 (T44)
30	07:45		16:31 (T45)				07:19	06:32		19:16 (T44)	06:02		19:16 (T44)	06:02		19:26 (T44)
	17:45	50	17:21 (T45)				19:54	20:26	48	20:04 (T44)	20:55	52	20:08 (T44)	21:08	44	20:10 (T44)
31	07:44		16:31 (T45)				07:18				06:02		19:16 (T44)			
	17:46	50	17:21 (T45)				19:55				20:56	52	20:08 (T44)			
Potential sun hours	297			297			370	399			448			453		
Total, worst case		758			944				385			1763			1346	
Sun reduction		0.31			0.40				0.52			0.57			0.64	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.73			0.73				0.57			0.57			0.57	
Total reduction		0.23			0.30				0.30			0.33			0.37	
Total, real		176			282				117			588			504	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm) Sun set (hh:mm)	Minutes with flicker	First time (hh:mm) with flicker Last time (hh:mm) with flicker	(WTG causing flicker first time) (WTG causing flicker last time)

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

SHADOW - Calendar

Calculation: 2019-09-04_Emerson GE TurbinesShadow receptor: 1666 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9078)

Assumptions for shadow calculations

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067	738	557	368	264	8,760

	July		August		September	October		November		December	
1	06:02	19:26 (T44)	06:26	19:21 (T44)	06:57	07:27		07:02	16:02 (T45)	07:37	16:22 (T45)
	21:08 45	20:11 (T44)	20:50 60	20:21 (T44)	20:07	19:15		17:28 49	16:51 (T45)	17:04 16	16:38 (T45)
2	06:03	19:26 (T44)	06:27	19:21 (T44)	06:58	07:29		07:03	16:02 (T45)	07:38	16:24 (T45)
	21:08 45	20:11 (T44)	20:49 60	20:21 (T44)	20:06	19:13		17:27 50	16:52 (T45)	17:03 14	16:38 (T45)
3	06:03	19:26 (T44)	06:28	19:21 (T44)	06:59	07:30		07:04	16:02 (T45)	07:39	16:26 (T45)
	21:08 46	20:12 (T44)	20:48 59	20:20 (T44)	20:04	19:11		17:26 50	16:52 (T45)	17:03 12	16:38 (T45)
4	06:04	19:25 (T44)	06:29	19:21 (T44)	07:00	07:31		07:06	16:01 (T45)	07:40	16:30 (T45)
	21:08 47	20:12 (T44)	20:47 59	20:20 (T44)	20:02	19:10		17:24 51	16:52 (T45)	17:03 5	16:35 (T45)
5	06:04	19:26 (T44)	06:30	19:21 (T44)	07:01	07:32		07:07	16:01 (T45)	07:41	
	21:08 47	20:13 (T44)	20:46 59	20:20 (T44)	20:01	19:08		17:23 51	16:52 (T45)	17:03	
6	06:05	19:25 (T44)	06:31	19:22 (T44)	07:02	07:33		07:08	16:01 (T45)	07:42	
	21:08 48	20:13 (T44)	20:44 58	20:20 (T44)	19:57	19:06		17:22 52	16:53 (T45)	17:03	
7	06:05	19:25 (T44)	06:32	19:22 (T44)	07:03	07:34		07:09	16:01 (T45)	07:43	
	21:07 49	20:14 (T44)	20:43 57	20:19 (T44)	19:56	19:05		17:21 52	16:53 (T45)	17:03	
8	06:06	19:25 (T44)	06:33	19:22 (T44)	07:04	07:35		07:10	16:01 (T45)	07:44	
	21:07 50	20:15 (T44)	20:42 56	20:18 (T44)	19:54	19:03		17:20 51	16:52 (T45)	17:03	
9	06:07	19:25 (T44)	06:34	19:22 (T44)	07:05	07:36		07:12	16:01 (T45)	07:45	
	21:07 49	20:14 (T44)	20:41 55	20:17 (T44)	19:52	19:01		17:19 51	16:52 (T45)	17:03	
10	06:07	19:25 (T44)	06:35	19:23 (T44)	07:06	07:37		07:13	16:02 (T45)	07:46	
	21:06 50	20:15 (T44)	20:39 53	20:16 (T44)	19:51	19:00		17:18 51	16:53 (T45)	17:03	
11	06:08	19:25 (T44)	06:36	19:23 (T44)	07:07	07:38		07:14	16:02 (T45)	07:46	
	21:06 51	20:16 (T44)	20:38 51	20:14 (T44)	19:49	18:58		17:17 50	16:52 (T45)	17:03	
12	06:09	19:24 (T44)	06:37	19:24 (T44)	07:08	07:39		07:15	16:02 (T45)	07:47	
	21:05 52	20:16 (T44)	20:37 49	20:13 (T44)	19:47	18:57		17:16 50	16:52 (T45)	17:03	
13	06:10	19:24 (T44)	06:38	19:24 (T44)	07:09	07:40		07:16	16:03 (T45)	07:48	16:16 (T46)
	21:05 53	20:17 (T44)	20:36 48	20:12 (T44)	19:45	18:55		17:15 48	16:51 (T45)	17:03 3	16:19 (T46)
14	06:10	19:24 (T44)	06:39	19:25 (T44)	07:10	07:41		07:18	16:03 (T45)	07:49	16:14 (T46)
	21:04 53	20:17 (T44)	20:34 46	20:11 (T44)	19:44	18:54		17:14 47	16:50 (T45)	17:03 7	16:21 (T46)
15	06:11	19:24 (T44)	06:40	19:26 (T44)	07:11	07:42		07:19	16:04 (T45)	07:50	16:14 (T46)
	21:04 54	20:18 (T44)	20:33 43	20:09 (T44)	19:42	18:52		17:13 45	16:49 (T45)	17:03 8	16:22 (T46)
16	06:12	19:23 (T44)	06:41	19:27 (T44)	07:12	07:44		07:20	16:04 (T45)	07:50	16:14 (T46)
	21:03 55	20:18 (T44)	20:31 41	20:08 (T44)	19:40	18:50		17:12 44	16:48 (T45)	17:04 9	16:23 (T46)
17	06:13	19:23 (T44)	06:42	19:27 (T44)	07:13	07:45		07:21	16:05 (T45)	07:51	16:14 (T46)
	21:03 55	20:18 (T44)	20:30 39	20:06 (T44)	19:39	18:49		17:11 43	16:48 (T45)	17:04 10	16:24 (T46)
18	06:14	19:23 (T44)	06:43	19:28 (T44)	07:14	07:46		07:22	16:06 (T45)	07:52	16:14 (T46)
	21:02 56	20:19 (T44)	20:29 36	20:04 (T44)	19:37	18:47		17:11 40	16:46 (T45)	17:04 11	16:25 (T46)
19	06:14	19:23 (T44)	06:44	19:30 (T44)	07:15	07:47	17:25 (T45)	07:23	16:07 (T45)	07:52	16:15 (T46)
	21:01 56	20:19 (T44)	20:27 33	20:03 (T44)	19:35	18:46 6	17:31 (T45)	17:10 38	16:45 (T45)	17:05 11	16:26 (T46)
20	06:15	19:23 (T44)	06:45	19:31 (T44)	07:16	07:48	17:19 (T45)	07:25	16:07 (T45)	07:53	16:15 (T46)
	21:01 57	20:20 (T44)	20:26 31	20:02 (T44)	19:33	18:44 18	17:37 (T45)	17:09 37	16:44 (T45)	17:05 11	16:26 (T46)
21	06:16	19:22 (T44)	06:46	19:34 (T44)	07:17	07:49	17:16 (T45)	07:26	16:09 (T45)	07:53	16:15 (T46)
	21:00 57	20:19 (T44)	20:24 26	20:00 (T44)	19:32	18:43 25	17:41 (T45)	17:09 35	16:44 (T45)	17:06 12	16:27 (T46)
22	06:17	19:22 (T44)	06:47	19:36 (T44)	07:18	07:50	17:14 (T45)	07:27	16:10 (T45)	07:54	16:15 (T46)
	20:59 58	20:20 (T44)	20:23 22	19:58 (T44)	19:30	18:41 28	17:42 (T45)	17:08 34	16:44 (T45)	17:06 12	16:27 (T46)
23	06:18	19:22 (T44)	06:48	19:41 (T44)	07:19	07:51	17:11 (T45)	07:28	16:11 (T45)	07:54	16:17 (T46)
	20:58 58	20:20 (T44)	20:21 12	19:53 (T44)	19:28	18:40 33	17:44 (T45)	17:07 32	16:43 (T45)	17:07 11	16:28 (T46)
24	06:19	19:22 (T44)	06:49		07:20	07:53	17:10 (T45)	07:29	16:11 (T45)	07:55	16:17 (T46)
	20:58 58	20:20 (T44)	20:20		19:27	18:39 35	17:45 (T45)	17:07 31	16:42 (T45)	17:07 11	16:28 (T46)
25	06:20	19:22 (T44)	06:50		07:21	07:54	17:08 (T45)	07:30	16:13 (T45)	07:55	16:17 (T46)
	20:57 59	20:21 (T44)	20:18		19:25	18:37 38	17:46 (T45)	17:06 29	16:42 (T45)	17:08 11	16:28 (T46)
26	06:21	19:22 (T44)	06:51		07:22	07:55	17:07 (T45)	07:32	16:15 (T45)	07:56	16:18 (T46)
	20:56 59	20:21 (T44)	20:17		19:23	18:36 41	17:48 (T45)	17:06 26	16:41 (T45)	17:08 11	16:29 (T46)
27	06:22	19:22 (T44)	06:52		07:23	07:56	17:06 (T45)	07:33	16:16 (T45)	07:56	16:19 (T46)
	20:55 59	20:21 (T44)	20:15		19:21	18:34 43	17:49 (T45)	17:05 25	16:41 (T45)	17:09 10	16:29 (T46)
28	06:22	19:22 (T44)	06:53		07:24	07:57	17:05 (T45)	07:34	16:17 (T45)	07:56	16:20 (T46)
	20:54 59	20:21 (T44)	20:14		19:20	18:33 44	17:49 (T45)	17:05 23	16:40 (T45)	17:10 8	16:28 (T46)
29	06:23	19:21 (T44)	06:54		07:25	07:58	17:04 (T45)	07:35	16:18 (T45)	07:57	16:21 (T46)
	20:53 60	20:21 (T44)	20:12		19:18	18:32 45	17:49 (T45)	17:04 21	16:39 (T45)	17:10 7	16:28 (T46)
30	06:24	19:21 (T44)	06:55		07:26	08:00	17:04 (T45)	07:36	16:20 (T45)	07:57	16:22 (T46)
	20:52 60	20:21 (T44)	20:10		19:16	18:31 47	17:51 (T45)	17:04 19	16:39 (T45)	17:11 5	16:27 (T46)
31	06:25	19:21 (T44)	06:56			08:01	17:03 (T45)			07:57	
	20:51 60	20:21 (T44)	20:09			18:29 48	17:51 (T45)			17:12	
Potential sun hours	460		429		375	345		297		287	
Total, worst case	1665		1053			451		1225		215	
Sun reduction	0.66		0.61			0.48		0.30		0.22	
Oper. time red.	1.00		1.00			1.00		1.00		1.00	
Wind dir. red.	0.57		0.57			0.73		0.73		0.74	
Total reduction	0.39		0.36			0.36		0.22		0.17	
Total, real	643		376			162		275		36	

Table layout: For each day in each month the following matrix apply

Day in month	Sun rise (hh:mm)		First time (hh:mm) with flicker	(WTG causing flicker first time)
	Sun set (hh:mm)	Minutes with flicker	Last time (hh:mm) with flicker	(WTG causing flicker last time)

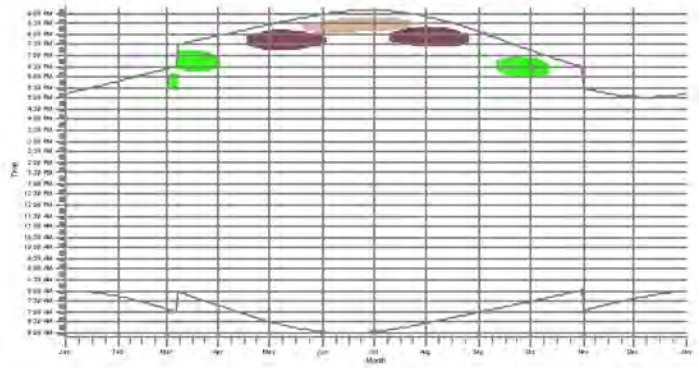
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

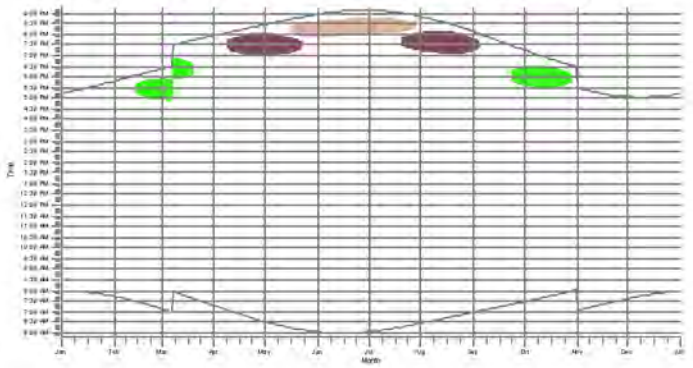
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

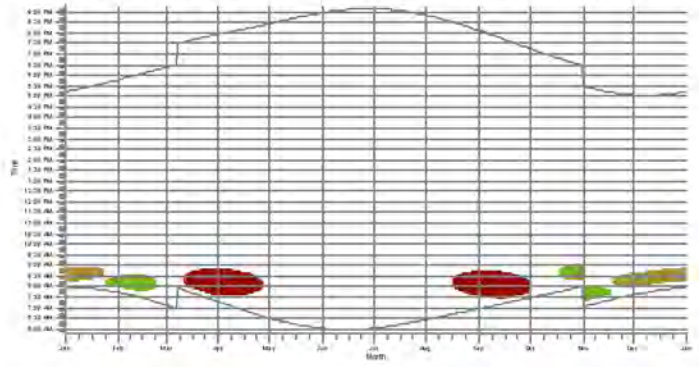
7: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7693)



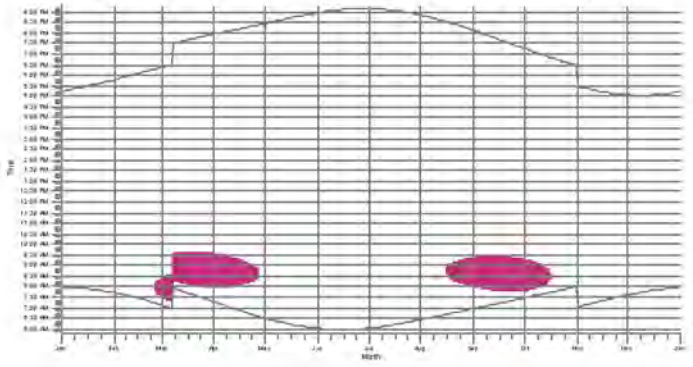
54: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7736)



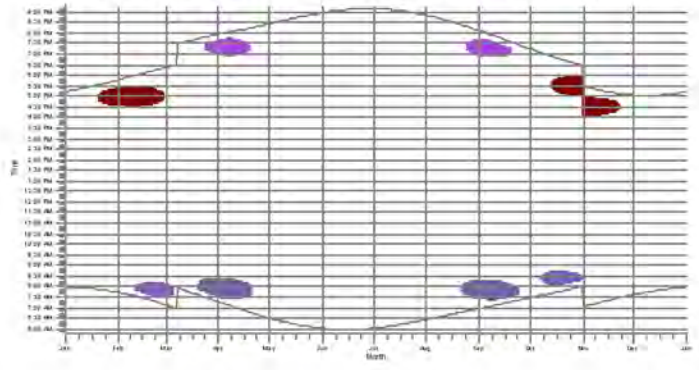
64: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7743)



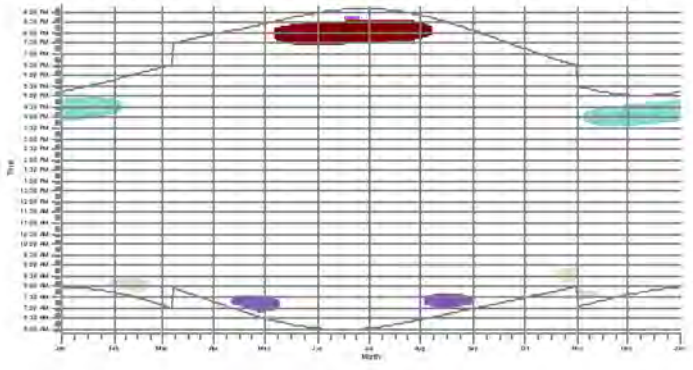
87: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7760)



91: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7764)



104: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7774)



WTGs

T30: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (689)
T57: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (698)
T59: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (699)
T27: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (724)
T28: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (725)
T31: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (726)
T35: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (729)
T36: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (730)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T49: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (738)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)
T78: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (760)

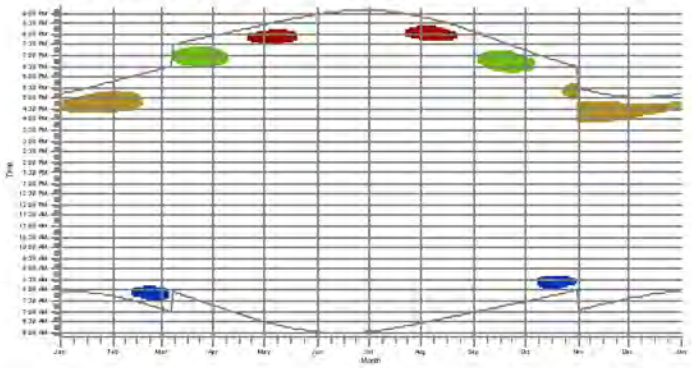
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

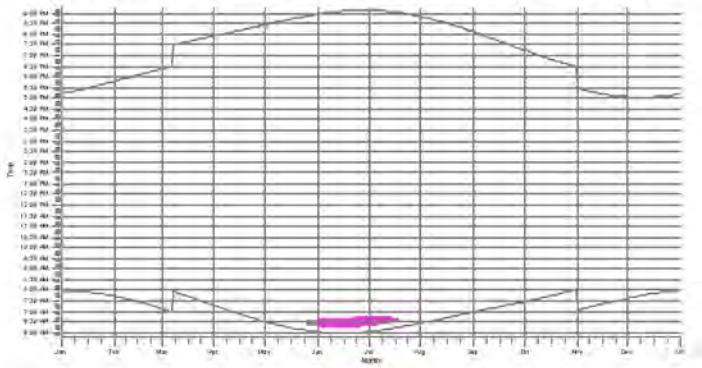
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

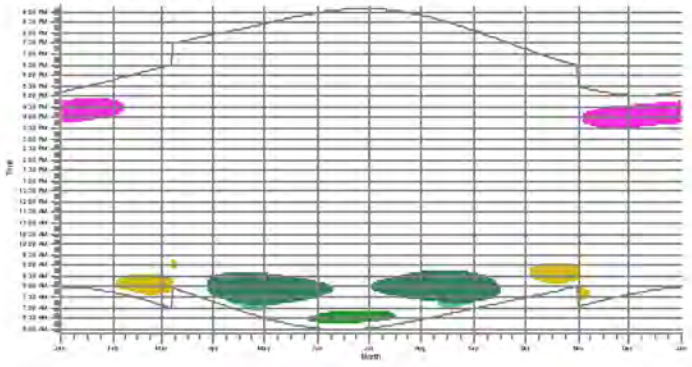
137: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7798)



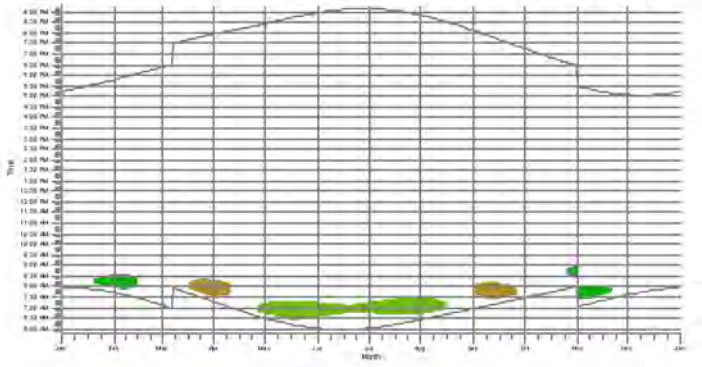
144: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7804)



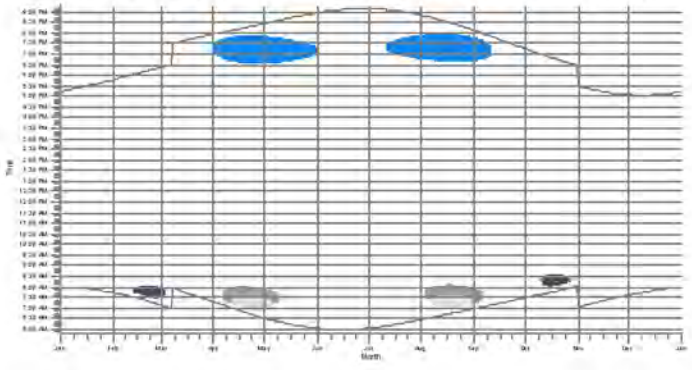
197: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7850)



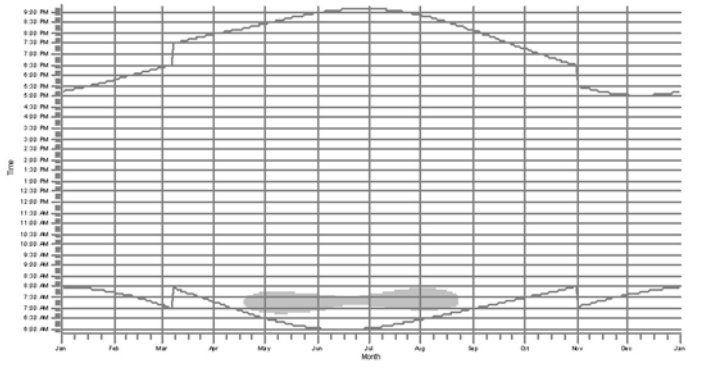
228: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7878)



232: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7882)



255: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7903)



WTGs

T39: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (693)
T55: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (697)
T7: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (708)
T8: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (709)
T9: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (710)
T10: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (711)
T11: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (712)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T44: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (735)
T54: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (742)
T56: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (743)
T58: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (744)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)

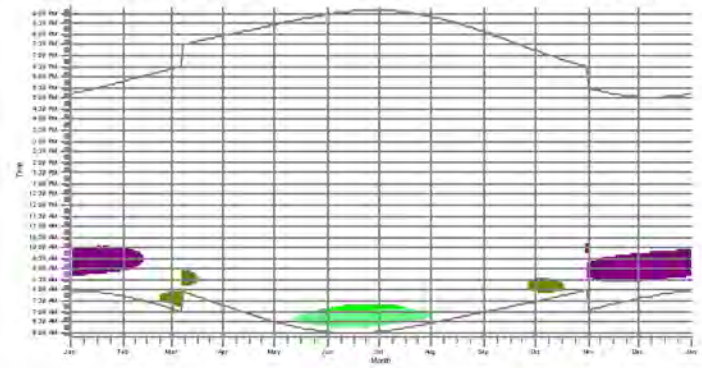
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

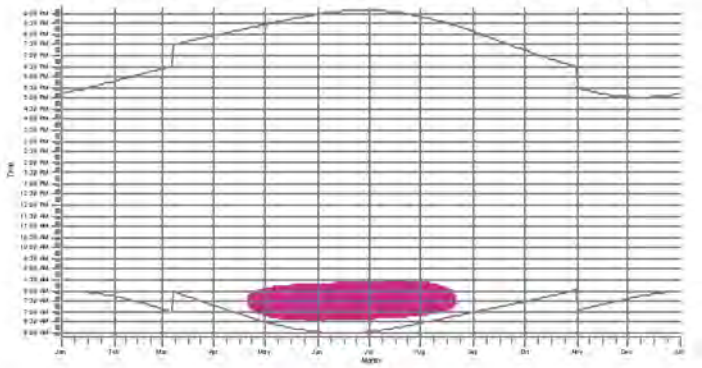
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

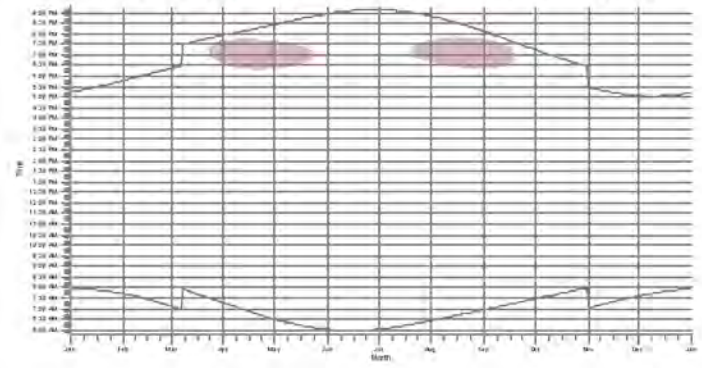
275: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7918)



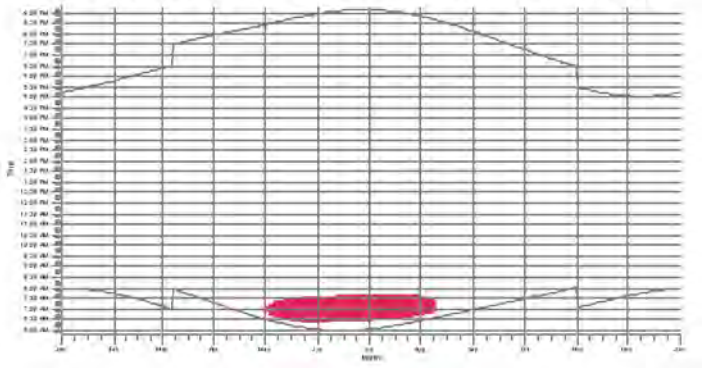
277: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7919)



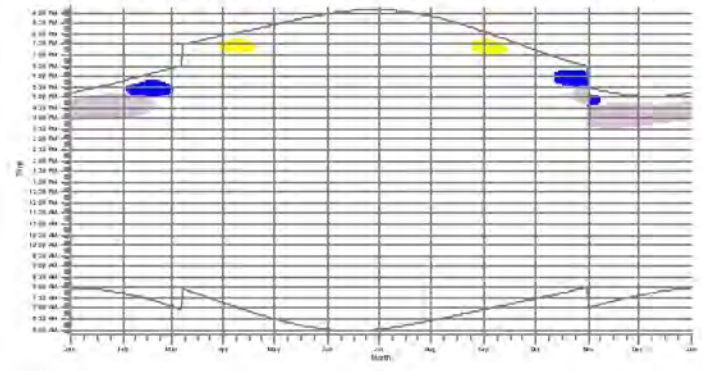
319: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7948)



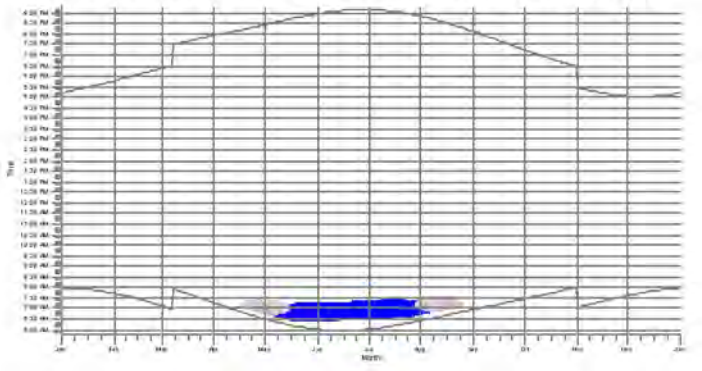
328: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7956)



332: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7960)



344: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7972)



WTGs

T3: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (683)
T4: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (684)
T34: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (690)
T37: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (691)
T38: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (692)
T62: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (700)
T5: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (706)
T43: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (734)
T49: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (738)
T79: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (761)
T87: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (768)

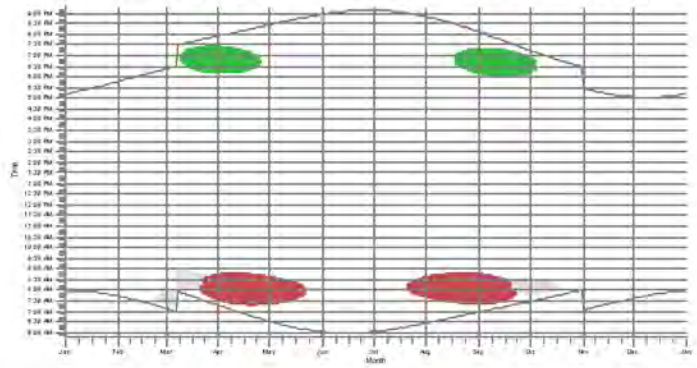
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

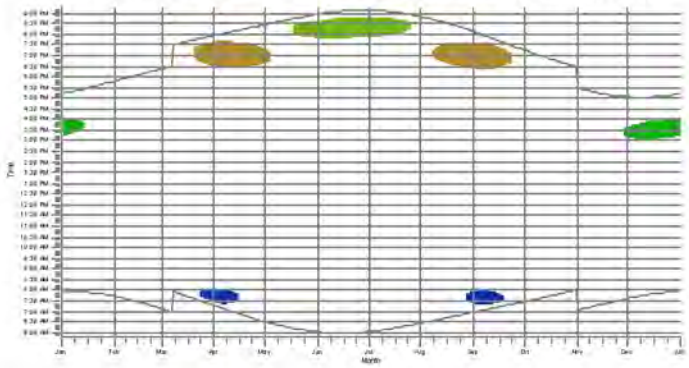
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

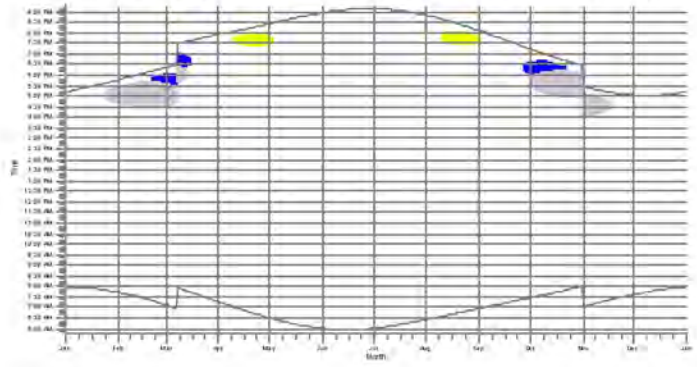
360: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (7986)



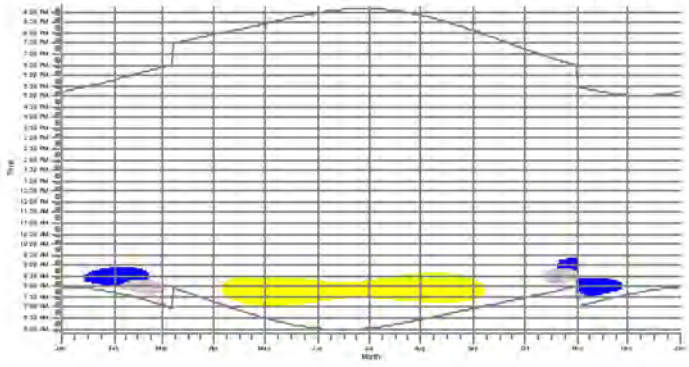
382: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8004)



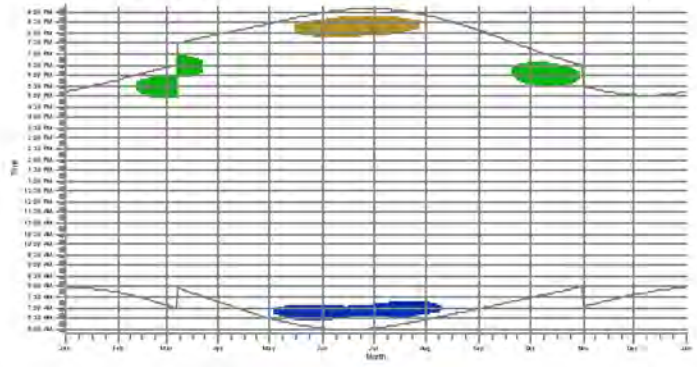
385: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8007)



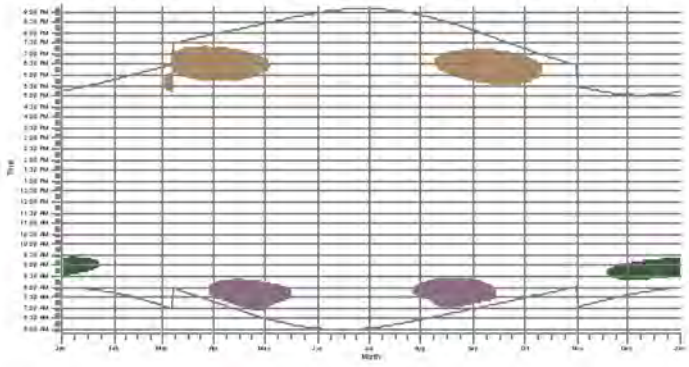
390: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8012)



399: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8021)



404: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8026)



WTGs

T3: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (683)
T4: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (684)
T5: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (706)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T44: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (735)
T67: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (750)
T68: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (751)
T69: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (752)
T71: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (754)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)
T84: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (765)
T85: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (766)
T86: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (767)

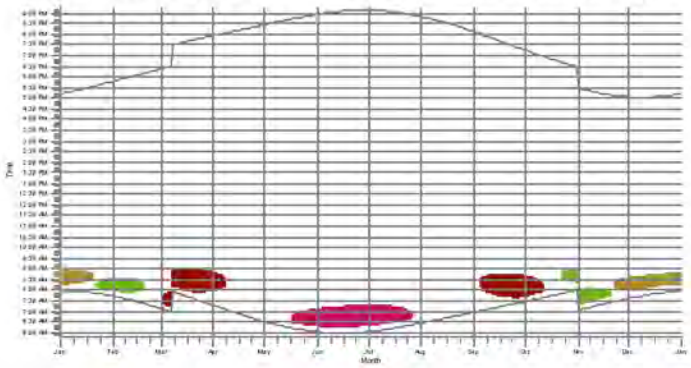
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

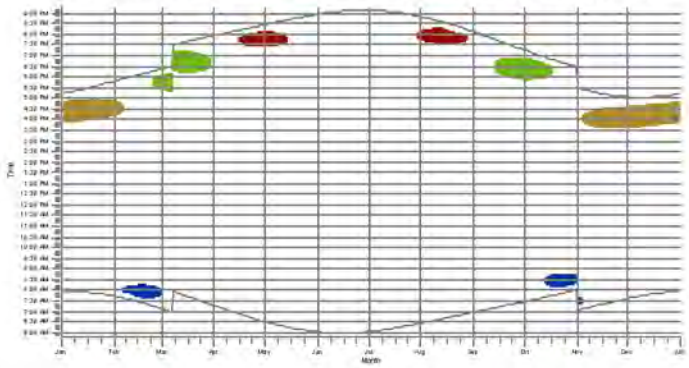
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

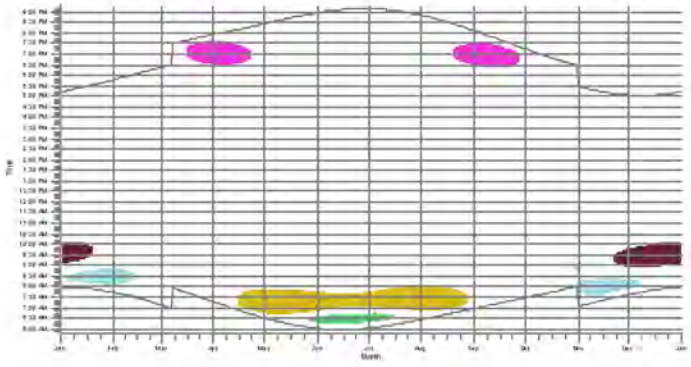
422: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8041)



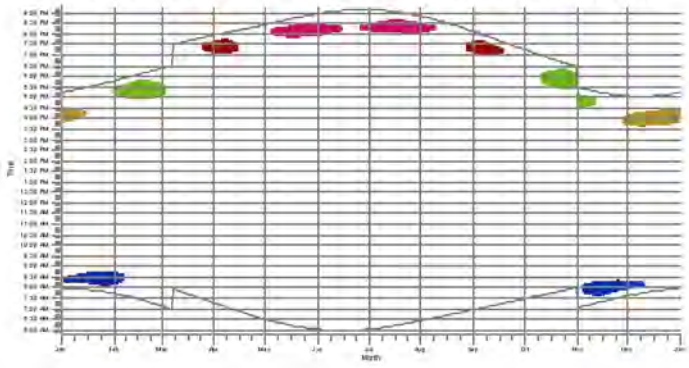
423: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8042)



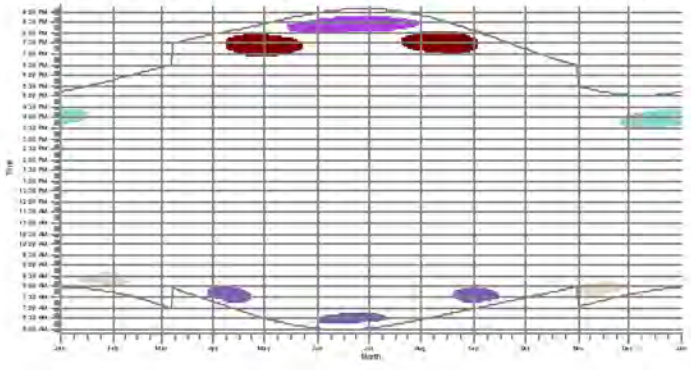
427: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8046)



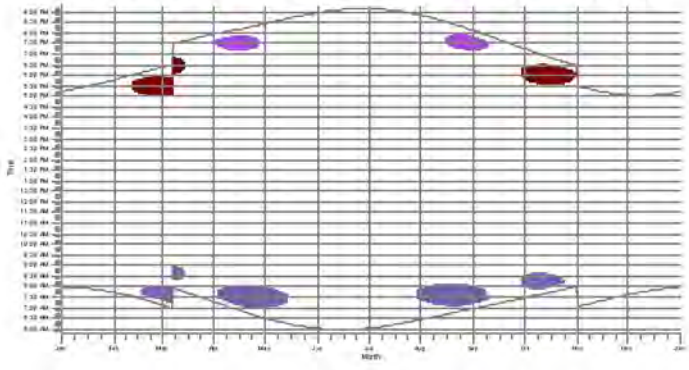
477: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8085)



500: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8106)



501: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8107)



WTGs

T30: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (689)
T8: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (709)
T10: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (711)
T11: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (712)
T12: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (713)
T13: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (714)
T27: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (724)
T28: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (725)
T31: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (726)
T35: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (729)
T36: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (730)
T40: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (731)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)

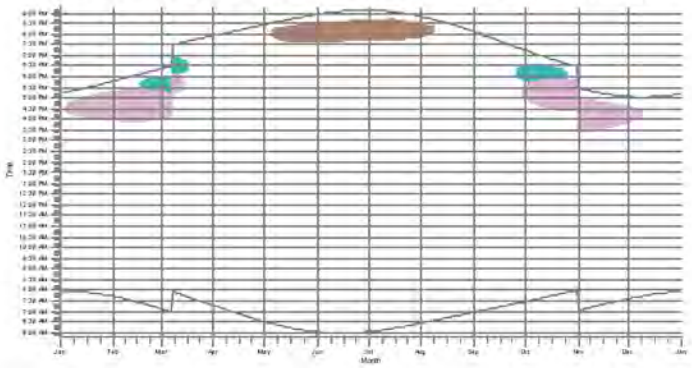
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

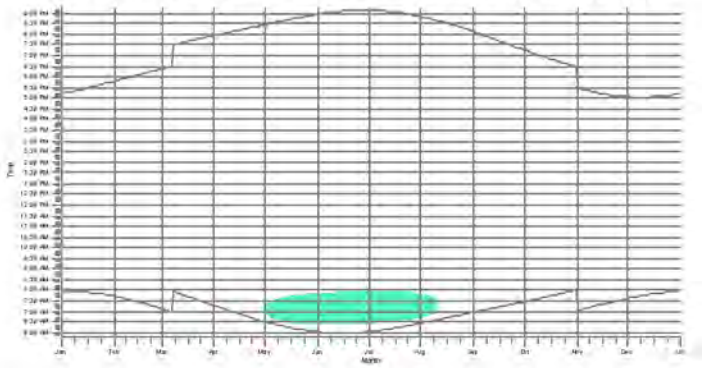
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

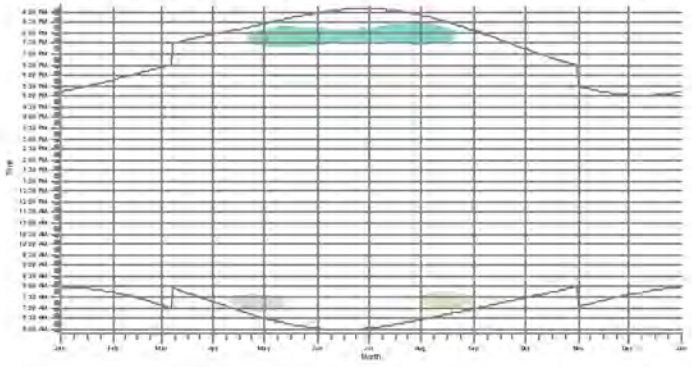
510: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8114)



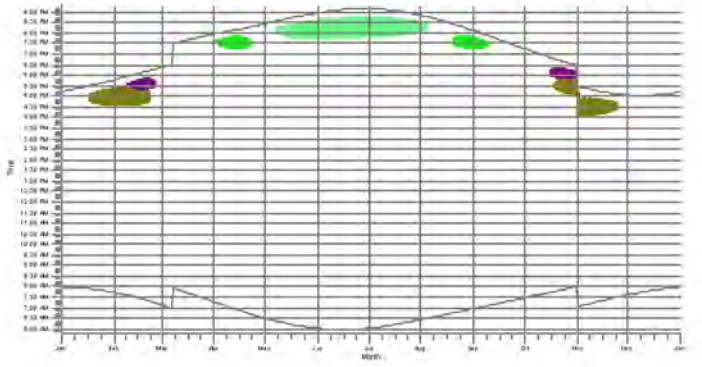
518: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8120)



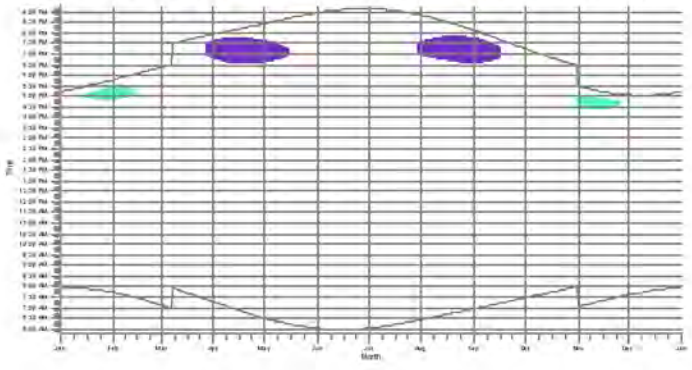
569: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8166)



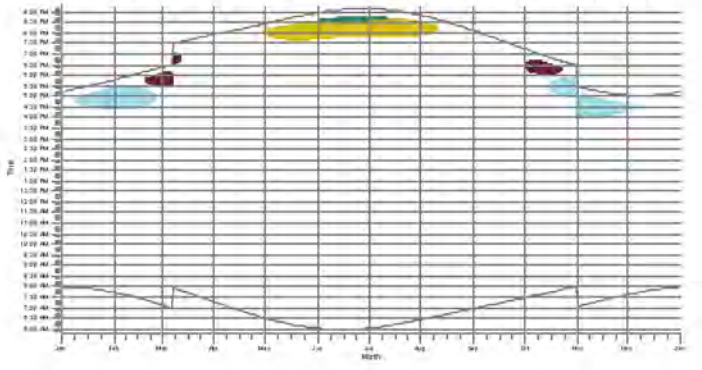
570: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8167)



576: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8173)



596: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8191)



WTGs

T34: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (690)
T37: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (691)
T38: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (692)
T62: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (700)
T9: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (710)
T10: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (711)
T12: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (713)
T13: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (714)
T35: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (729)
T36: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (730)
T45: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (736)
T46: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (737)
T60: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (745)
T79: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (761)
T87: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (768)

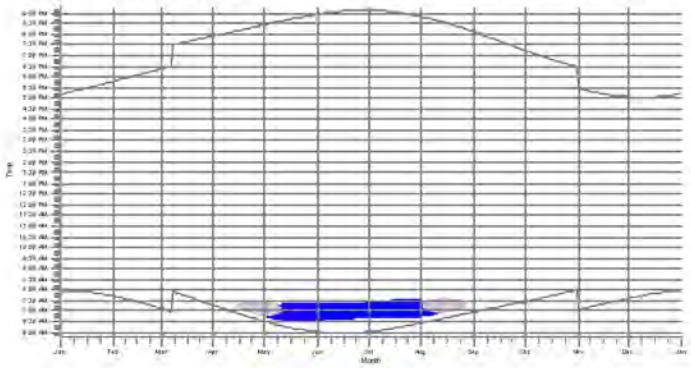
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

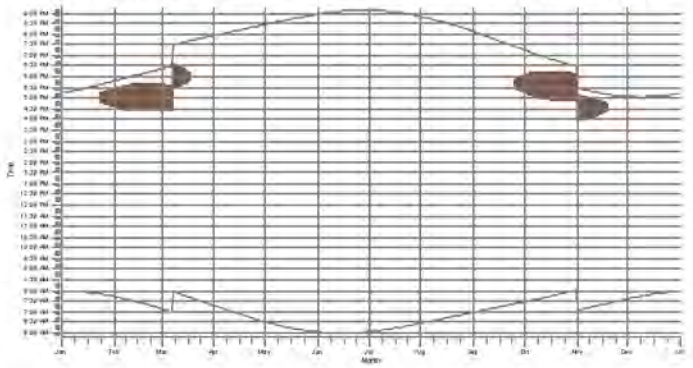
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

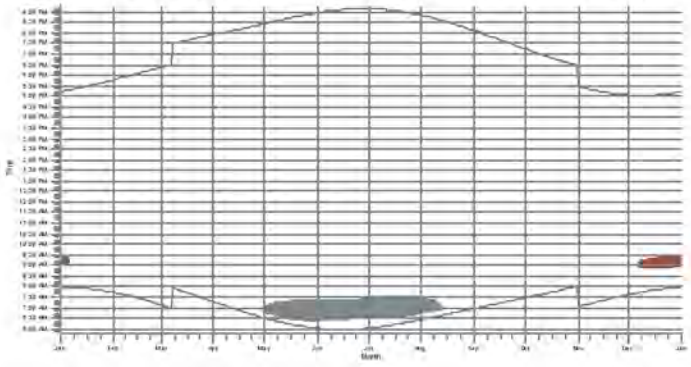
611: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8204)



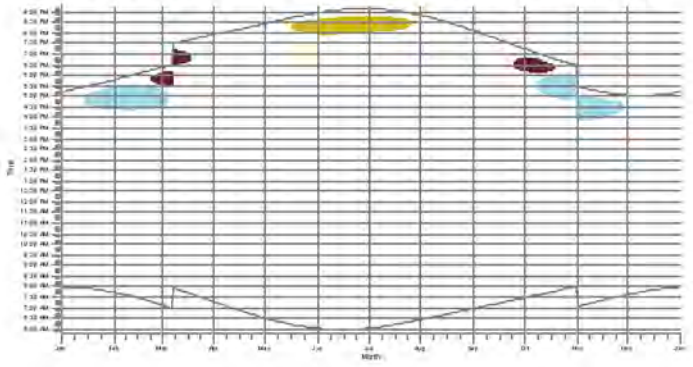
641: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8228)



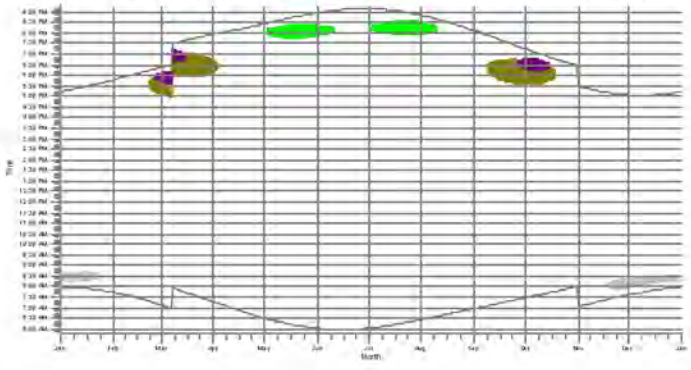
653: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8235)



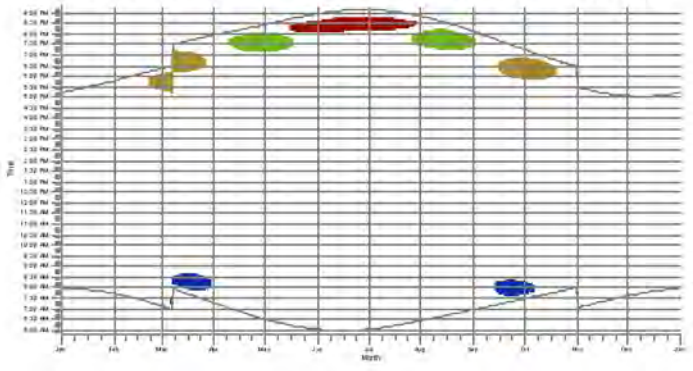
688: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8262)



693: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8267)



718: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8286)



WTGs

T4: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (684)
T34: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (690)
T37: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (691)
T38: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (692)
T39: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (693)
T5: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (706)
T10: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (711)
T12: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (713)
T13: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (714)
T18: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (719)
T21: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (721)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)
T81: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (763)

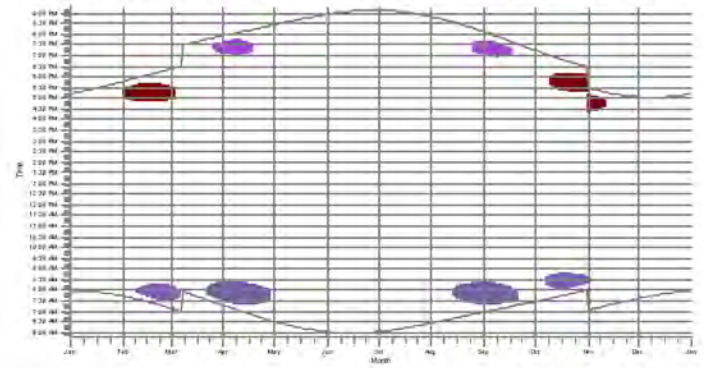
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

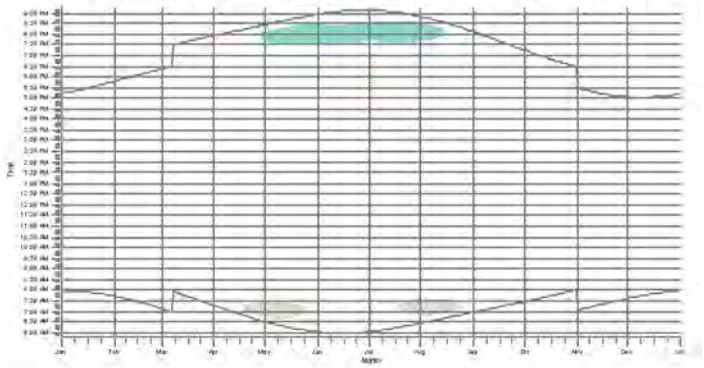
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

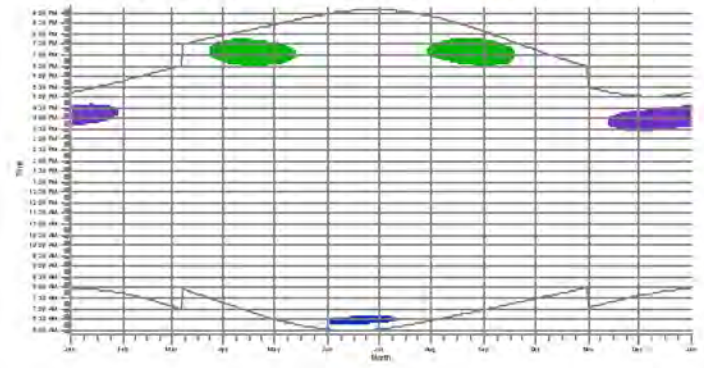
728: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8295)



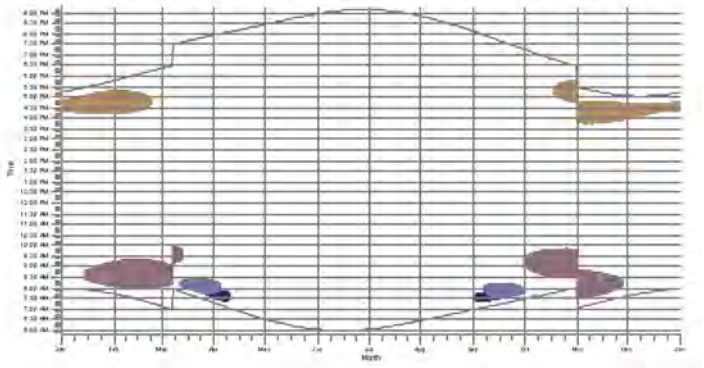
740: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8305)



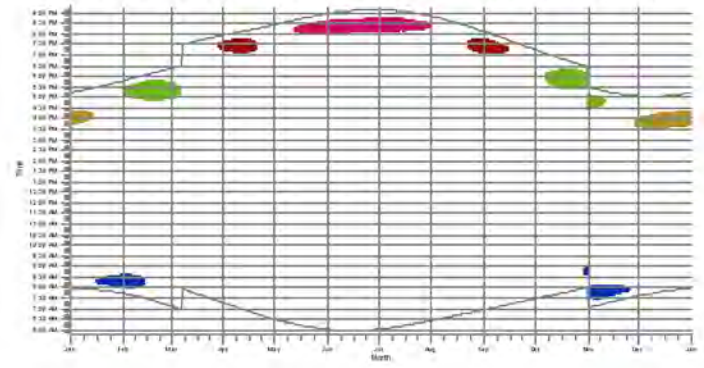
752: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8315)



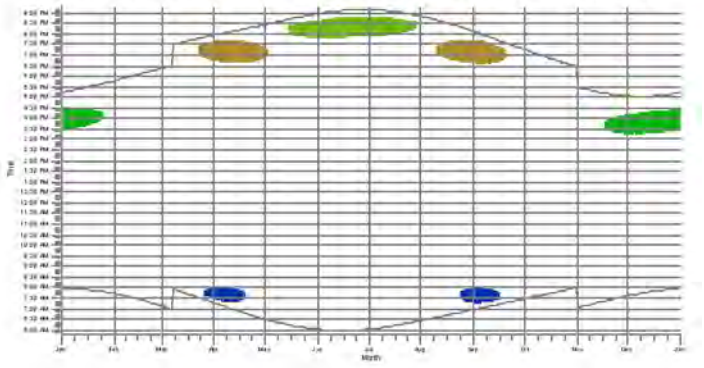
770: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8329)



779: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8336)



785: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8342)



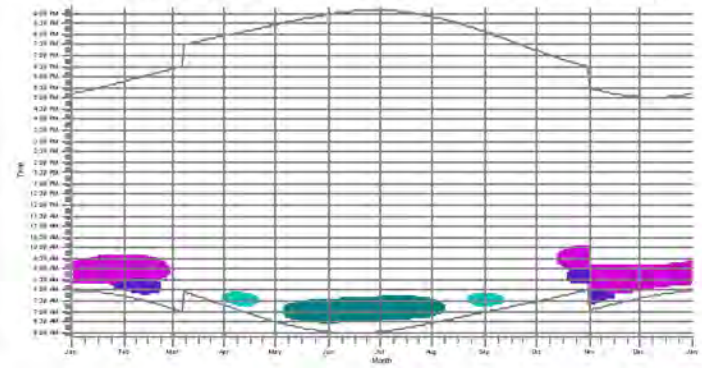
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

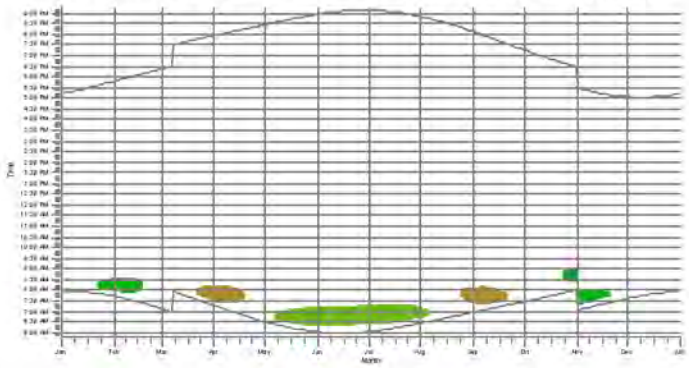
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

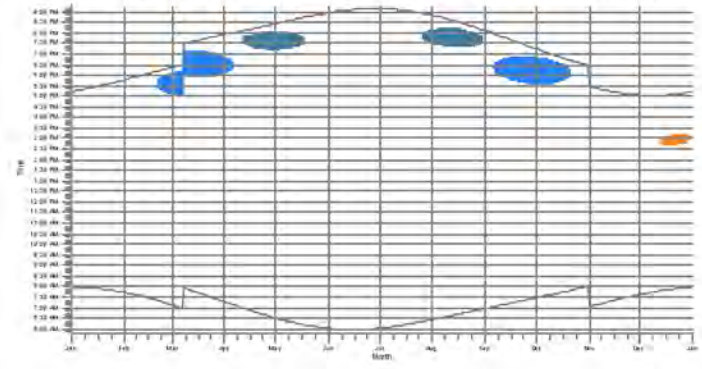
827: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8377)



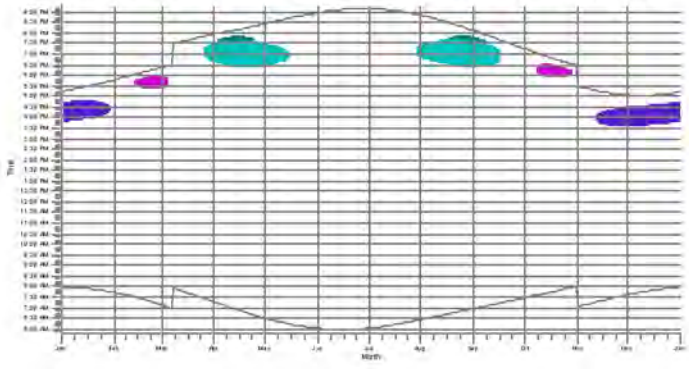
834: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8383)



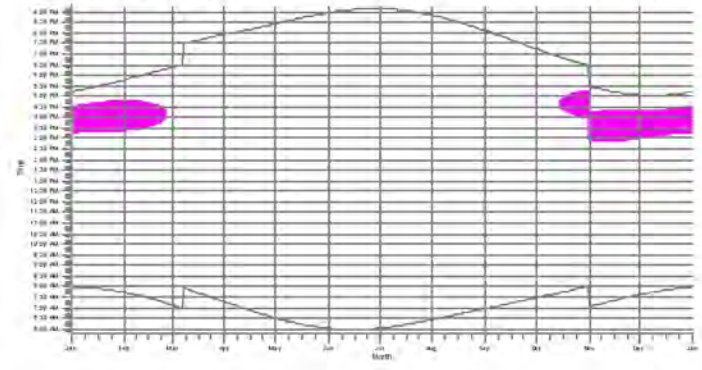
855: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8401)



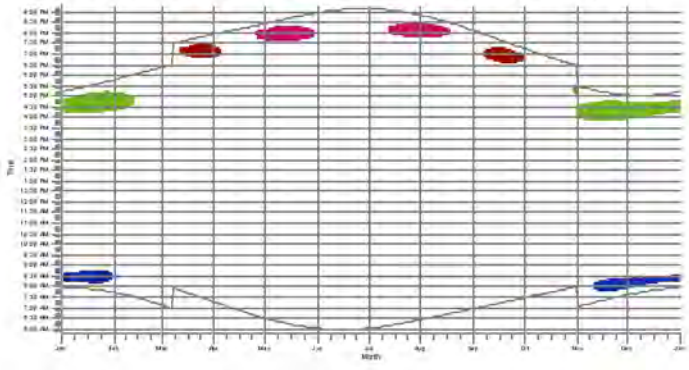
857: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8402)



860: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8403)



869: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8411)



WTGs

T23: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (686)
T24: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (687)
T75: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (702)
T20: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (704)
T17: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (718)
T19: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (720)
T25: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (722)
T26: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (723)
T40: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (731)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T44: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (735)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)

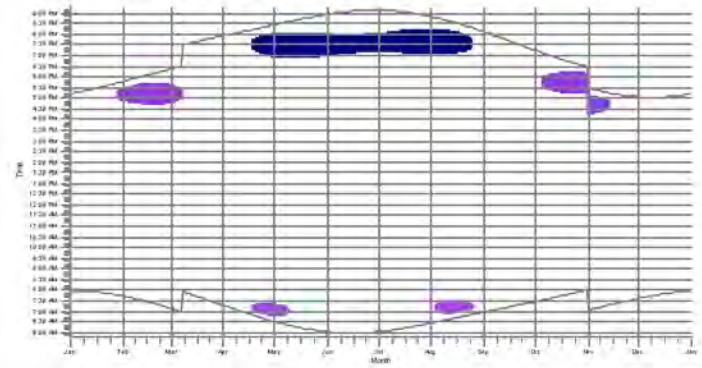
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

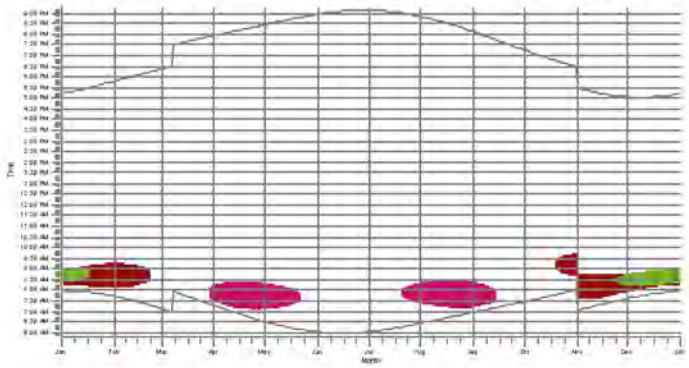
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

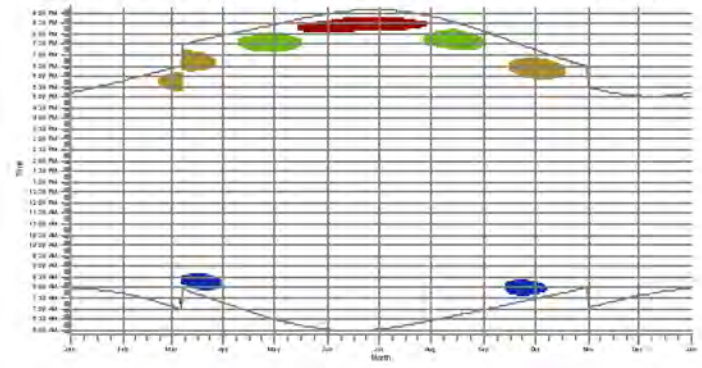
870: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8412)



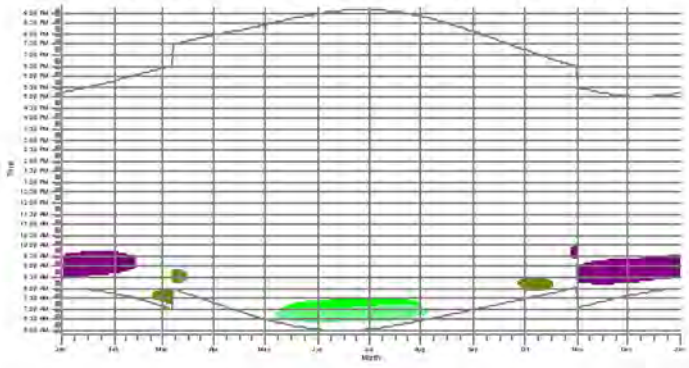
879: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8421)



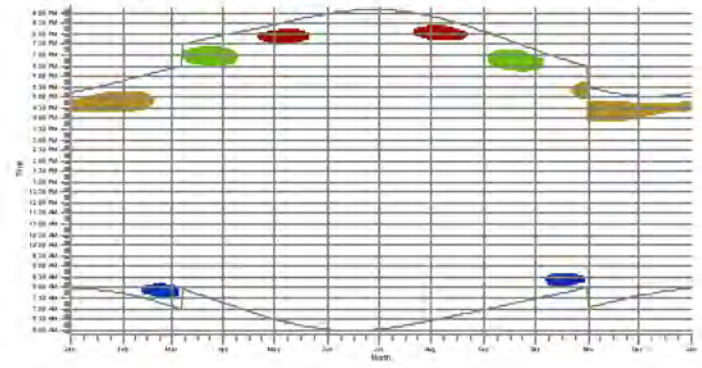
880: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8422)



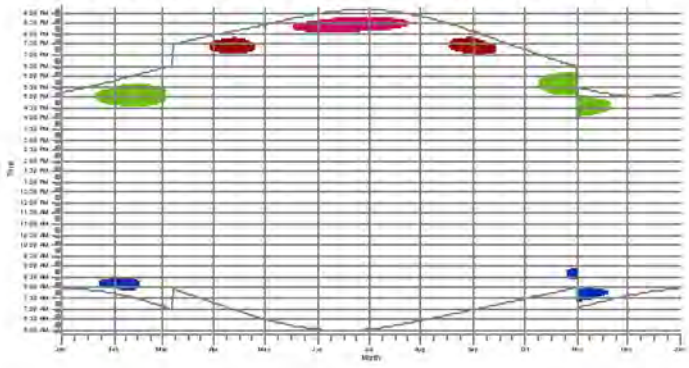
923: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8456)



932: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8465)



938: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8471)



WTGs

T29: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (688)
T34: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (690)
T37: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (691)
T38: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (692)
T27: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (724)
T32: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (727)
T40: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (731)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)
T87: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (768)

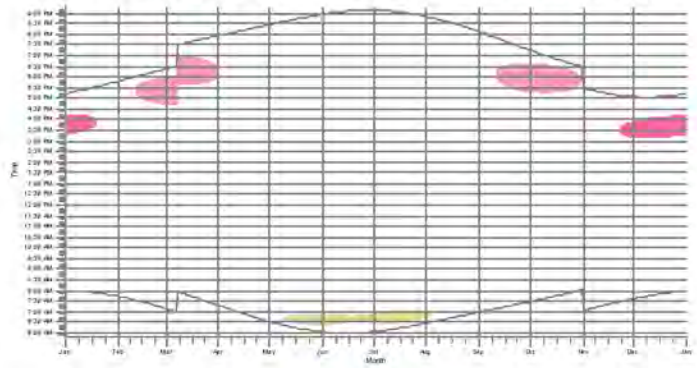
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

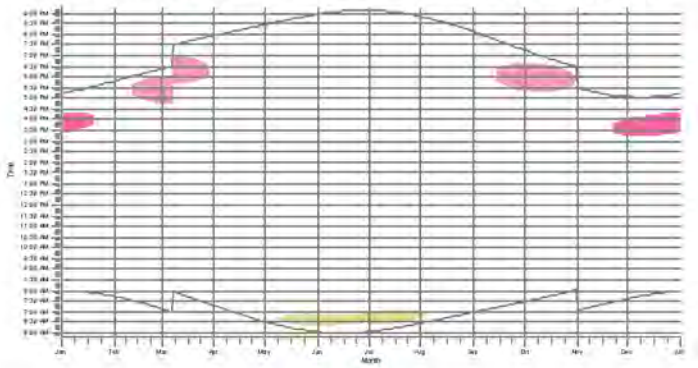
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

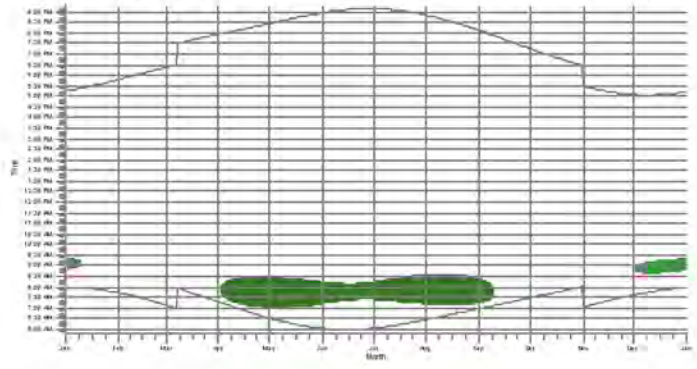
940: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8472)



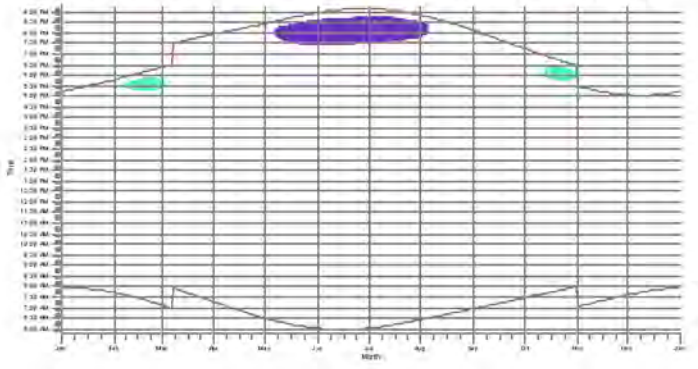
941: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8473)



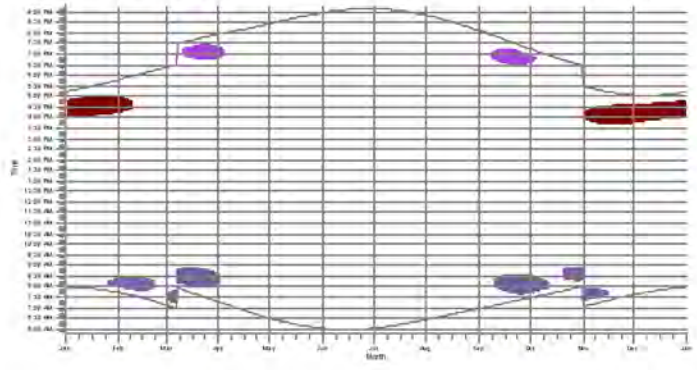
948: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8479)



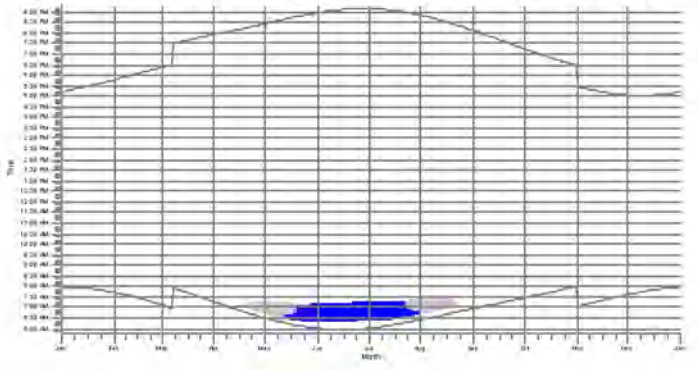
951: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8482)



956: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8486)



986: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8514)



WTGs

T4: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (684)
T30: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (689)
T63: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (701)
T5: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (706)
T27: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (724)
T28: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (725)
T31: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (726)
T45: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (736)
T46: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (737)
T51: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (739)
T52: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (740)
T53: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (741)
T61: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (746)

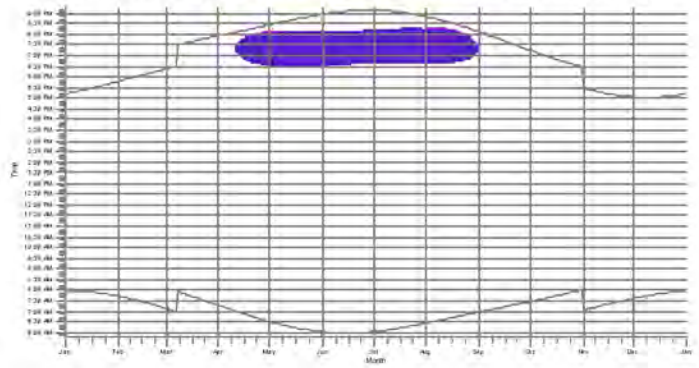
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

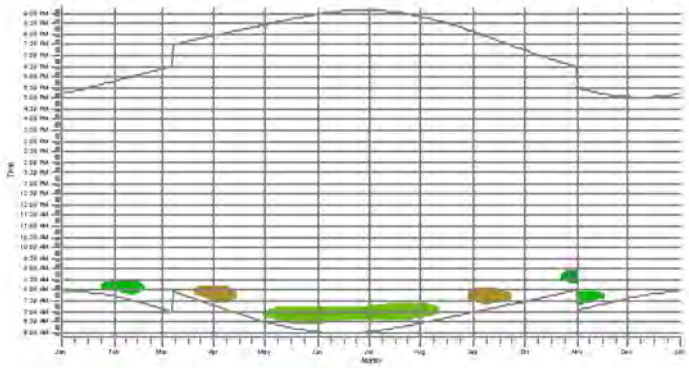
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

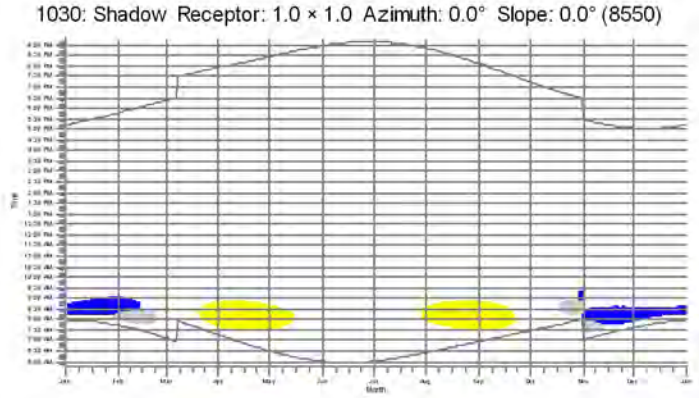
998: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8522)



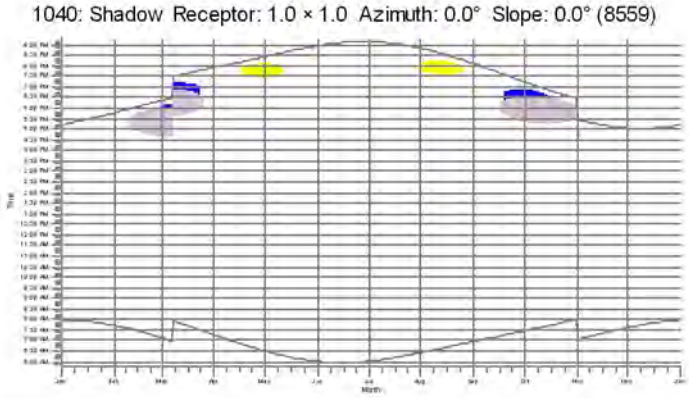
1022: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8544)



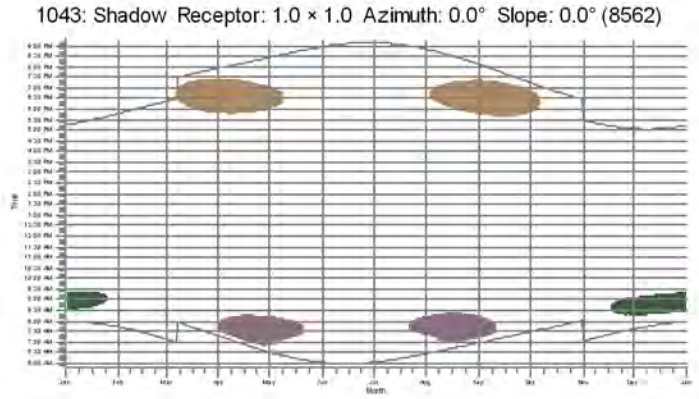
1030: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8550)



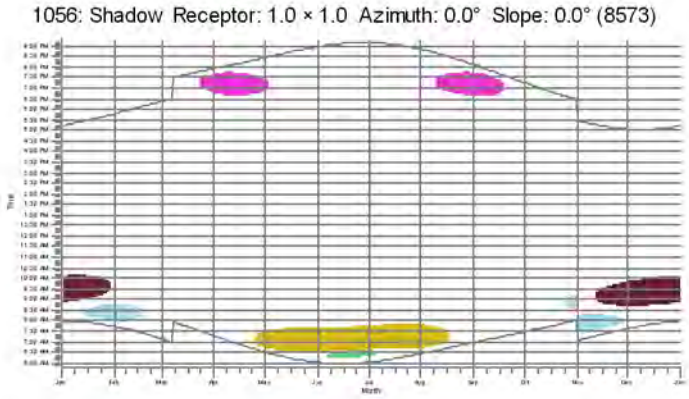
1040: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8559)



1043: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8562)



1056: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8573)



WTGs

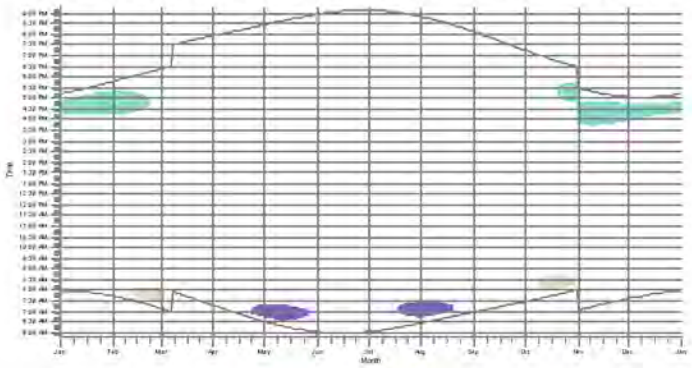
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

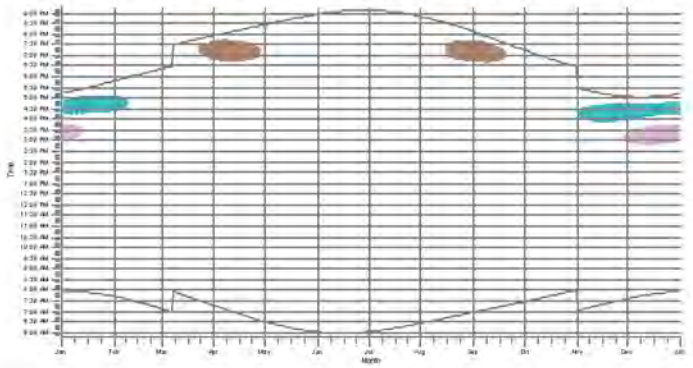
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

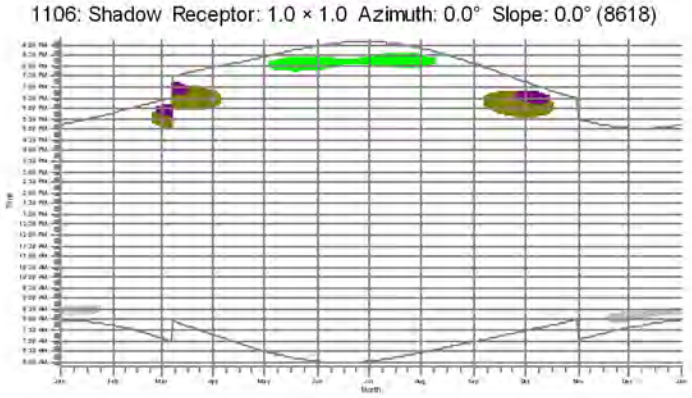
1067: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8582)



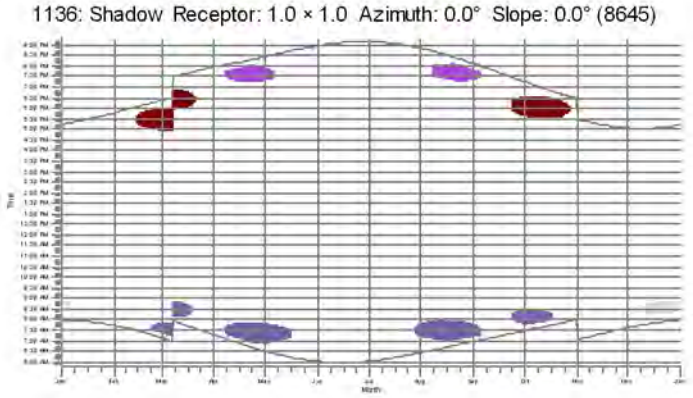
1085: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8598)



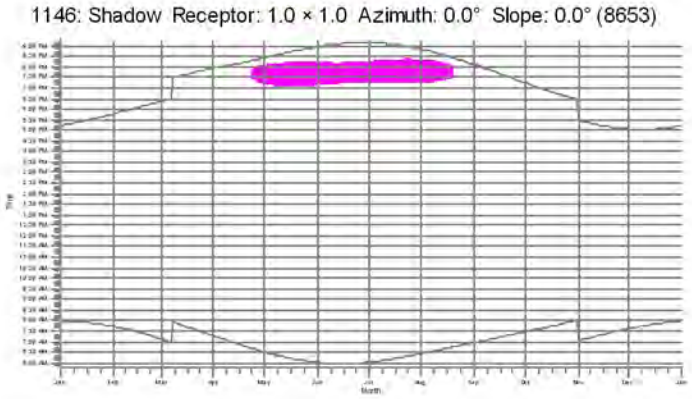
1106: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8618)



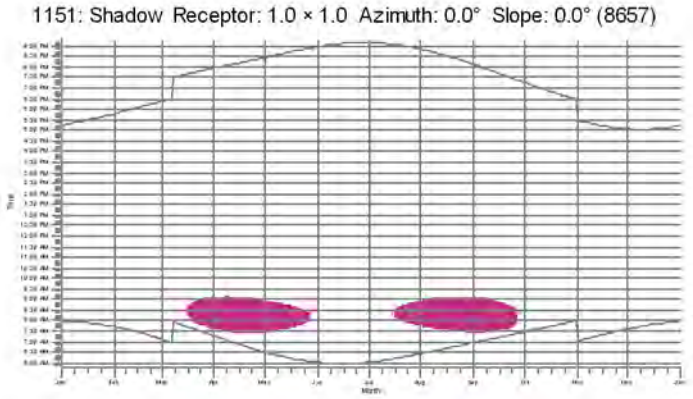
1136: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8645)



1146: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8653)



1151: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8657)



WTGs

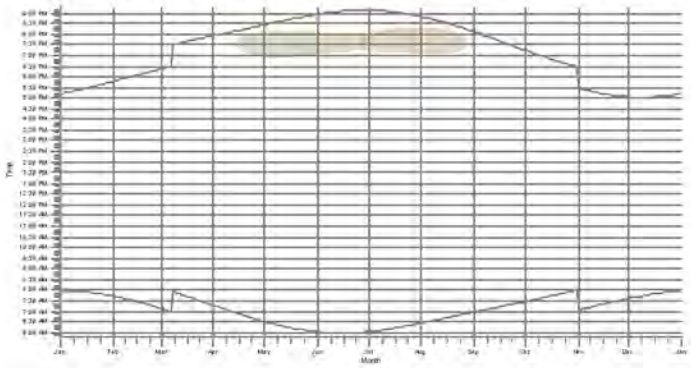
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

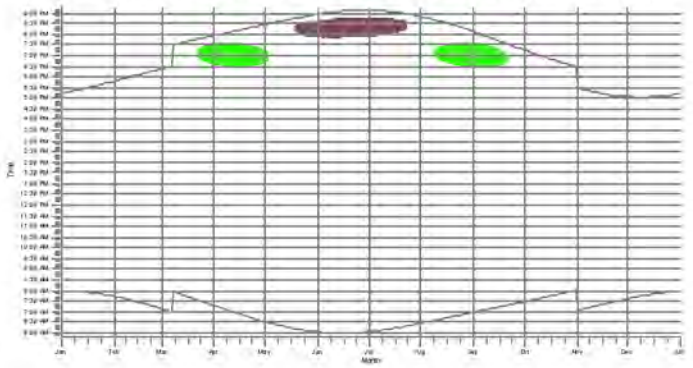
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

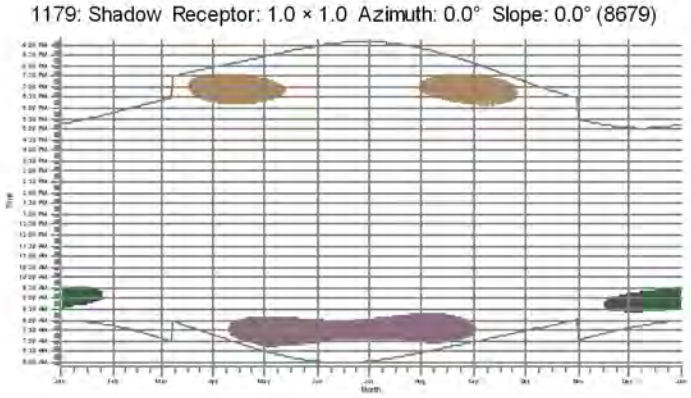
1158: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8662)



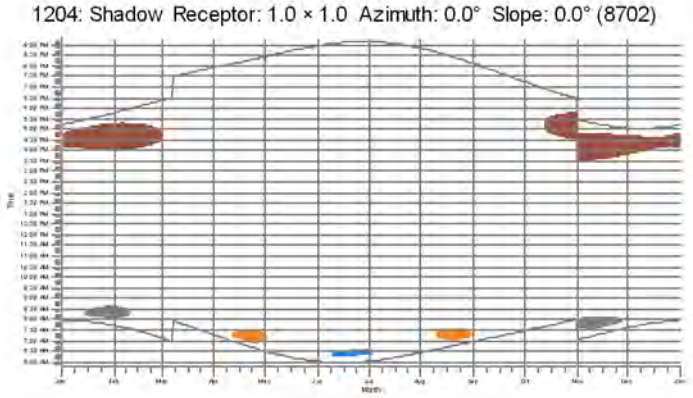
1174: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8675)



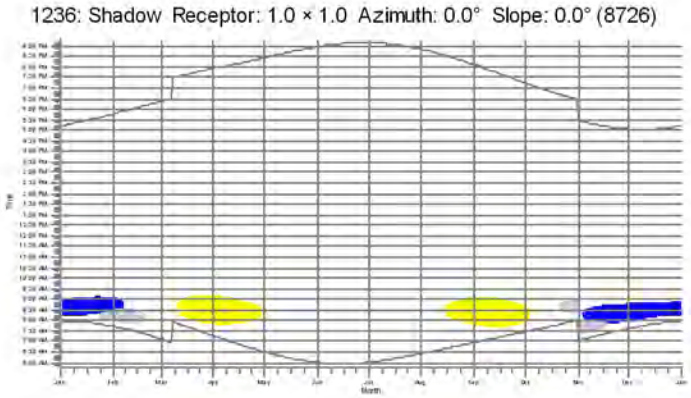
1179: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8679)



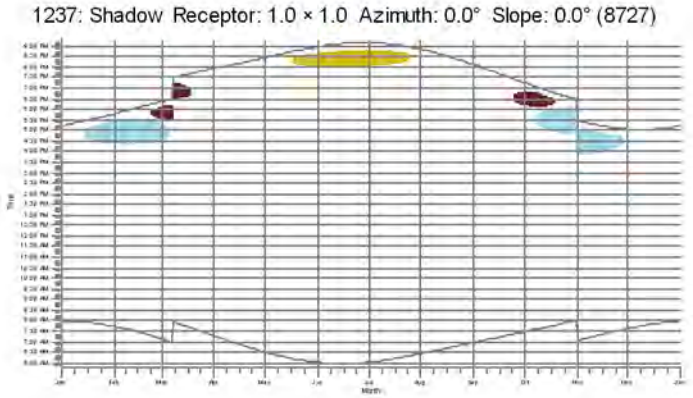
1204: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8702)



1236: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8726)



1237: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8727)



WTGs

T3: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (683)
T4: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (684)
T22: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (685)
T59: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (699)
T20: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (704)
T5: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (706)
T10: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (711)
T12: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (713)
T13: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (714)
T19: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (720)
T21: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (721)
T36: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (730)
T67: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (750)
T68: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (751)
T69: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (752)
T71: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (754)
T78: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (760)

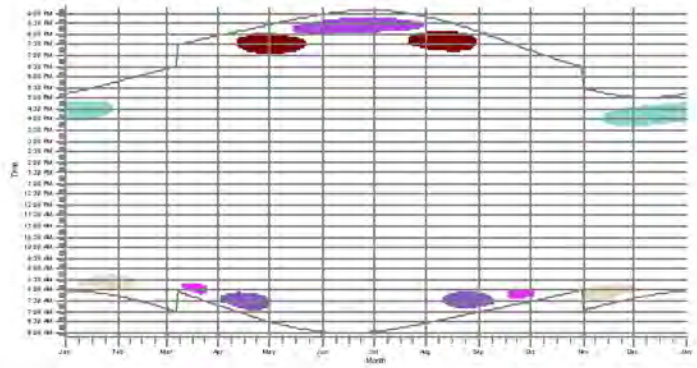
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

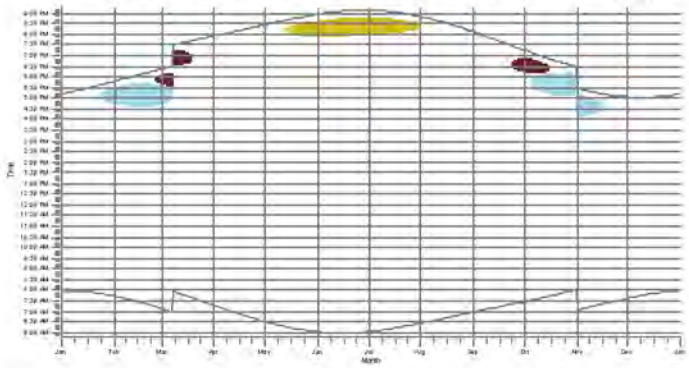
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

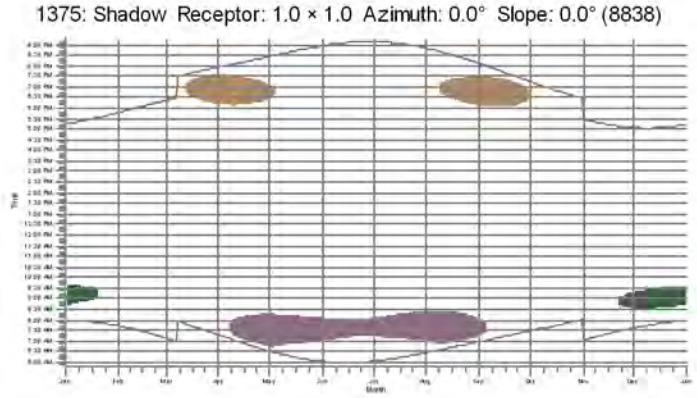
1269: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8753)



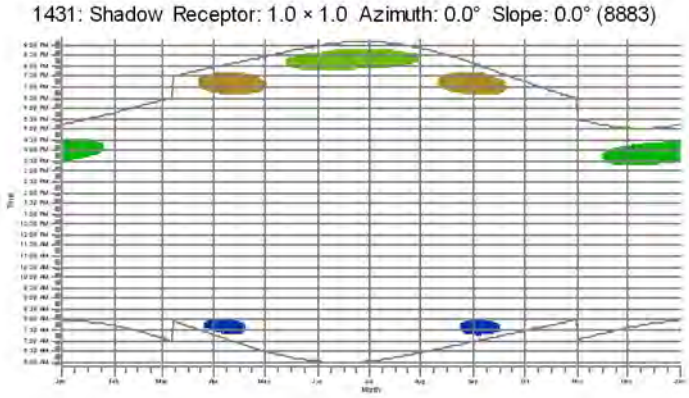
1314: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8792)



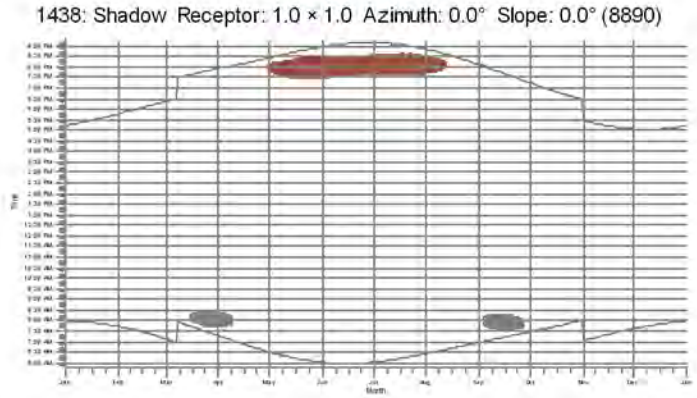
1375: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8838)



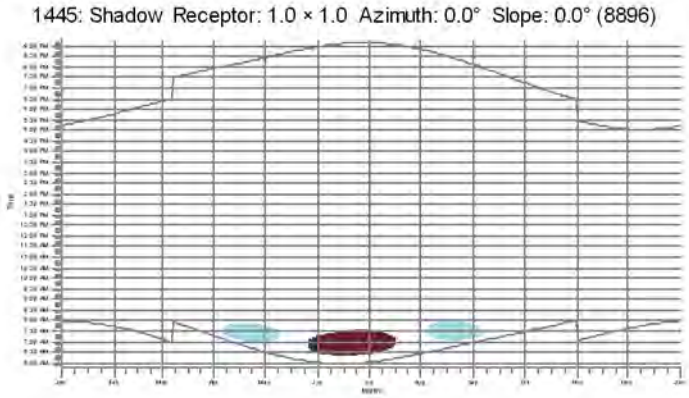
1431: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8883)

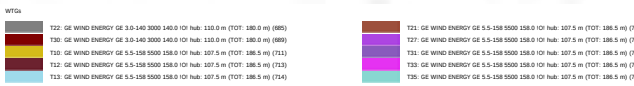


1438: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8890)



1445: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8896)





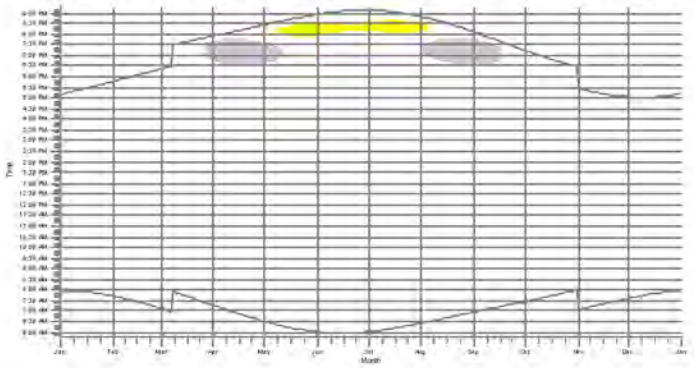
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

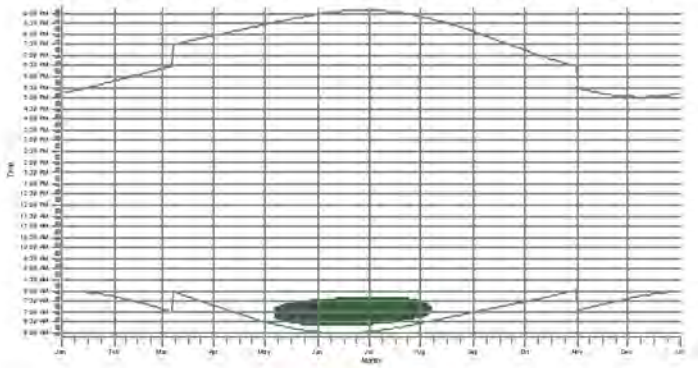
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

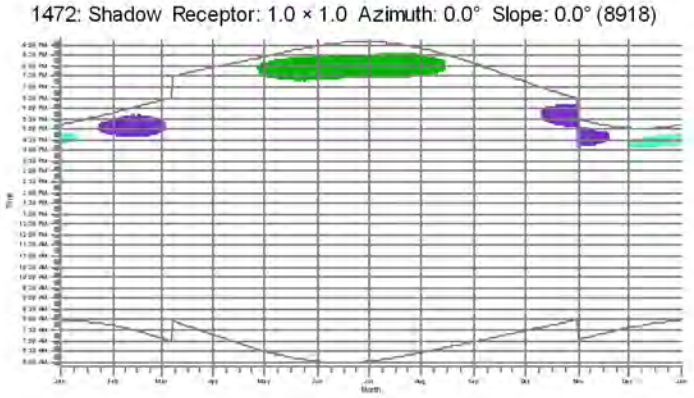
1461: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8909)



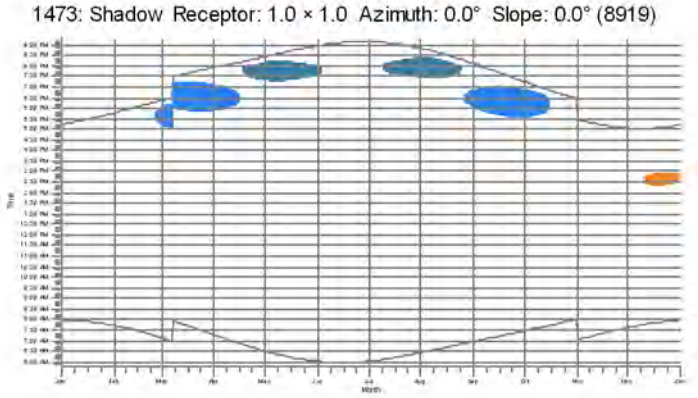
1468: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8914)



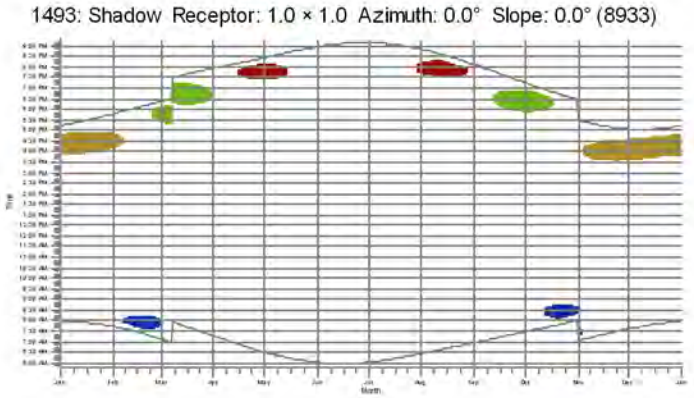
1472: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8918)



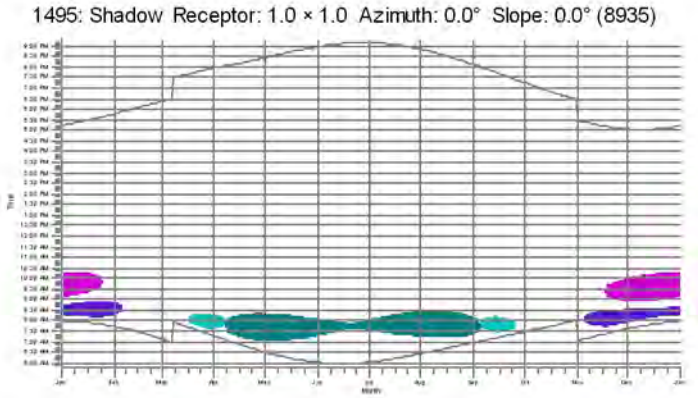
1473: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8919)



1493: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8933)



1495: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8935)



WTGs

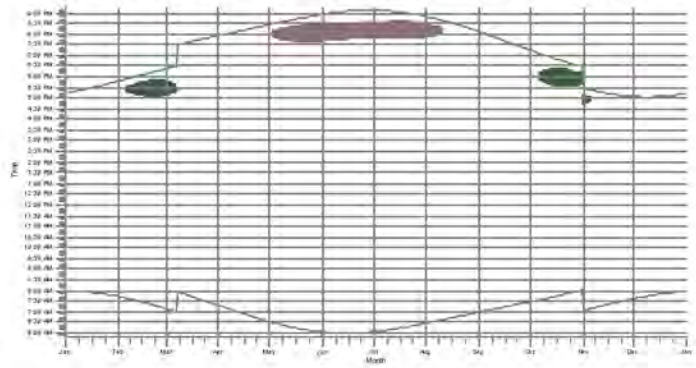
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

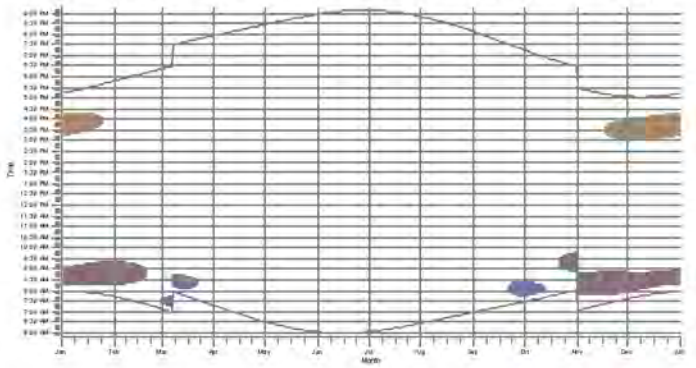
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

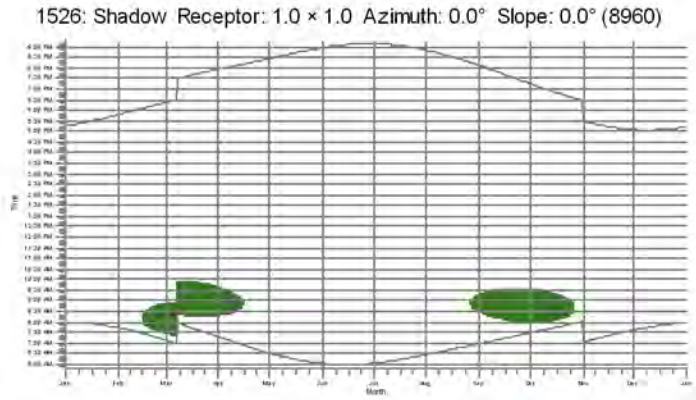
1505: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8943)



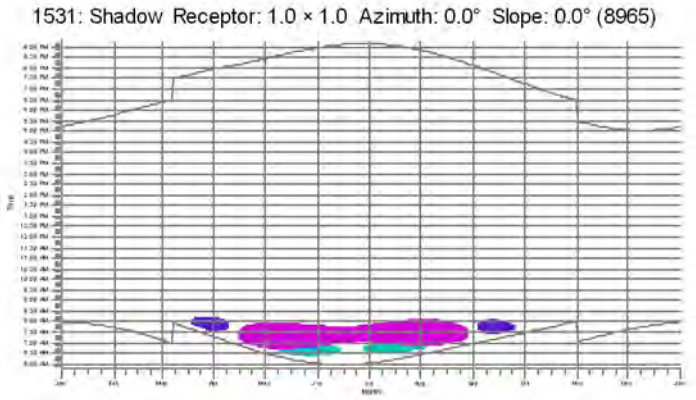
1518: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8953)



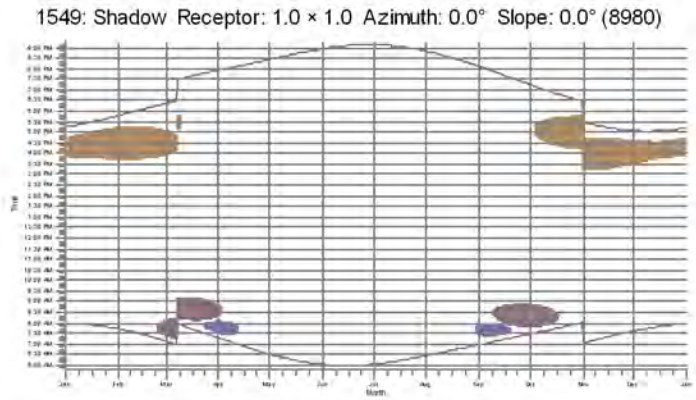
1526: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8960)



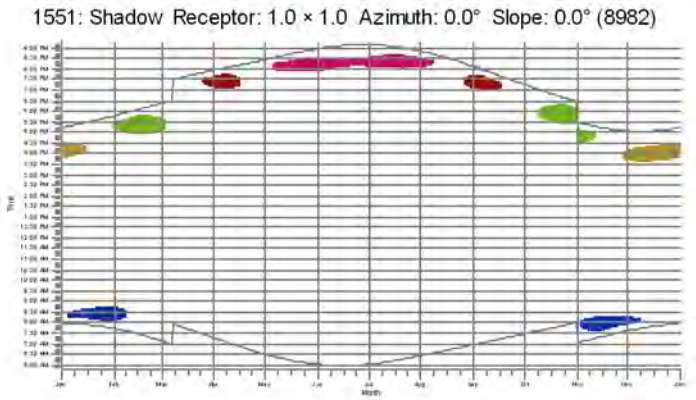
1531: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8965)



1549: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8980)



1551: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8982)



WTGs

T75: GE WIND ENERGY GE 3.0-140 3000 140.0 IOI hub: 110.0 m (TOT: 180.0 m) (702)
T25: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (722)
T26: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (723)
T40: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (731)
T41: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (732)
T42: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (733)
T61: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (746)
T67: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (750)
T68: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (751)
T69: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (752)
T71: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (754)
T76: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (758)
T77: GE WIND ENERGY GE 5.5-158 5500 158.0 IOI hub: 107.5 m (TOT: 186.5 m) (759)

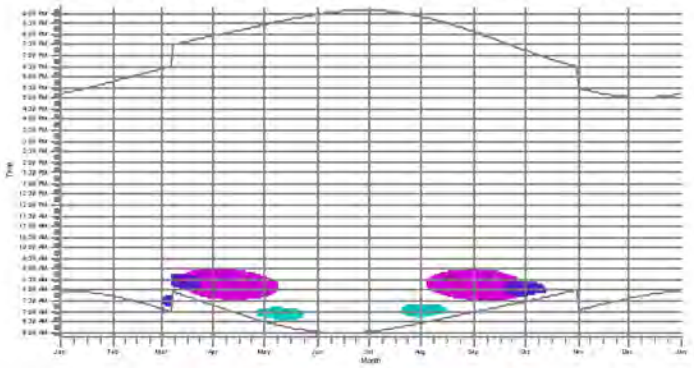
Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 11:32 PM/3.2.737

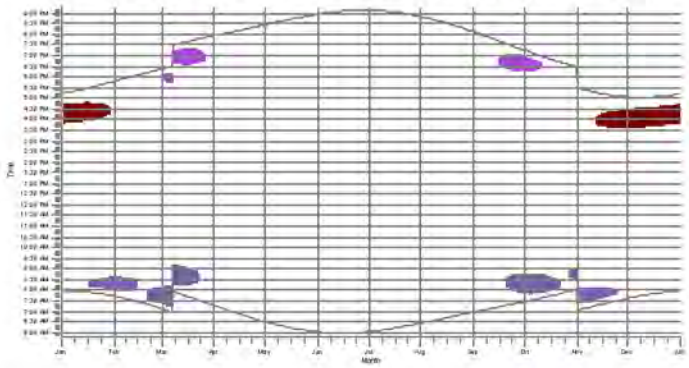
SHADOW - Calendar, graphical

Calculation: 2019-09-04_Emerson GE Turbines

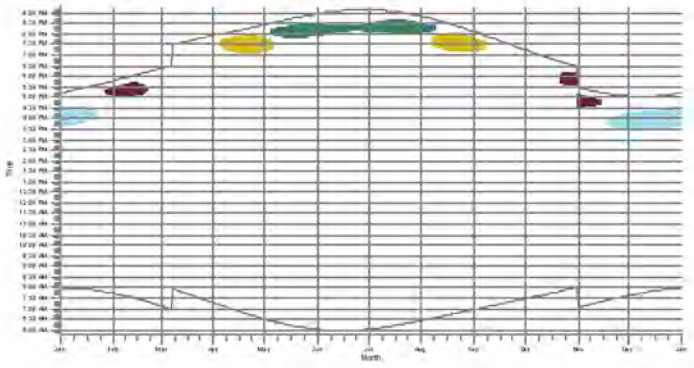
1552: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8983)



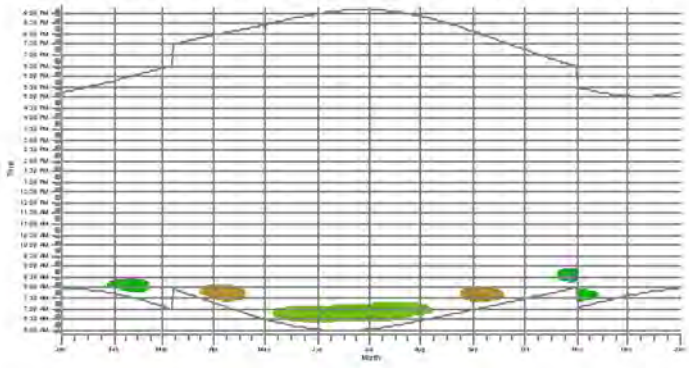
1568: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (8991)



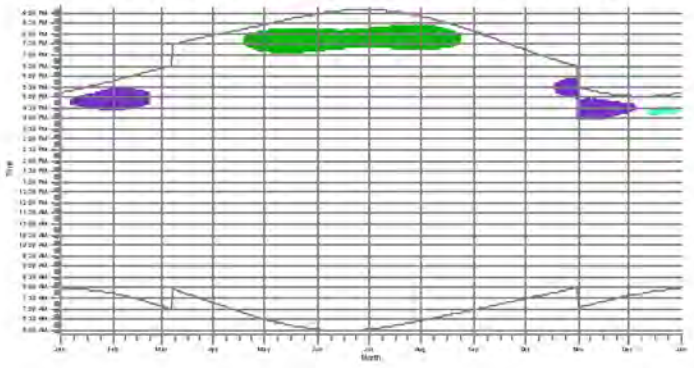
1603: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9023)



1620: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9038)



1666: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (9078)



WTGs

Attachment C

Cumulative Shadow Flicker Results

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 2:23 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_Vestas Scenario

Assumptions for shadow calculations

Maximum distance for influence	1,500	m
Minimum sun height over horizon for influence	3	°
Day step for calculation	1	days
Time step for calculation	1	minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067

W	WNW	NW	NNW	Sum
738	557	368	264	8,760

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_2018-10-16_Emerson SFA_2.wpo (5)
Obstacles not used in calculation
Eye height for map: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 17

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	RPM
			[m]					[kW]	[m]	[m]	[RPM]
T25	348,244	4,568,858	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T34	346,474	4,567,059	239.4	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T37	346,951	4,566,553	241.9	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T38	346,312	4,566,449	244.1	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4
T42	343,005	4,567,906	236.4	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T43	343,157	4,568,376	236.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T44	343,321	4,568,070	235.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T45	343,604	4,568,382	231.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T46	343,770	4,568,055	235.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T47	344,804	4,565,988	243.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T48	344,861	4,566,427	244.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T49	344,878	4,567,522	240.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T50	345,325	4,567,813	239.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T87	346,898	4,567,229	238.0	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) ...	Yes	VESTAS	V150-5.6-5,600	5,600	150.0	125.0	10.4

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
15	345,797	4,566,154	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
94	345,801	4,567,370	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
95	346,311	4,567,623	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
114	345,801	4,567,317	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
127	345,817	4,566,194	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
198	345,218	4,567,181	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
199	345,881	4,567,518	238.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
254	345,816	4,565,902	244.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
275	345,961	4,566,804	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
304	345,777	4,566,429	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
338	345,885	4,568,343	236.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
367	345,301	4,565,438	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
418	345,797	4,567,453	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
447	345,885	4,567,227	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
451	346,278	4,567,619	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 2:23 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_Vestas Scenario

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
467	345,810	4,565,930	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
476	345,887	4,567,695	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
489	345,814	4,567,816	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
533	345,465	4,565,556	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
544	345,907	4,565,791	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
626	345,557	4,566,604	241.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
639	345,728	4,565,326	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
665	346,372	4,567,707	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
743	346,219	4,567,625	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
772	345,803	4,567,357	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
826	345,797	4,567,414	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
852	345,721	4,565,328	245.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
864	345,799	4,567,218	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
872	345,753	4,568,254	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
908	346,325	4,567,718	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
909	345,809	4,567,858	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
923	345,895	4,566,816	240.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
959	345,203	4,565,546	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
968	345,811	4,566,113	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
999	345,898	4,567,282	239.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1013	346,750	4,567,586	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1061	345,713	4,565,364	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1091	346,439	4,567,620	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1105	345,804	4,567,260	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1119	345,792	4,566,007	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1127	345,882	4,567,698	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1137	345,804	4,566,473	242.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1177	345,821	4,566,197	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1190	345,804	4,566,058	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1191	345,520	4,566,585	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1224	345,826	4,565,981	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1309	346,437	4,567,694	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1318	345,917	4,565,508	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1319	345,782	4,567,136	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1362	346,362	4,567,630	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1374	345,885	4,568,329	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1395	345,808	4,566,059	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1496	345,809	4,568,267	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1574	345,179	4,565,533	245.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1586	345,822	4,567,489	239.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1592	346,159	4,567,667	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1595	345,904	4,565,792	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3164	345,904	4,565,110	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

Calculation Results

Shadow receptor

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
15	67:42	138	0:55	24:36
94	102:44	236	0:47	25:01
95	86:56	175	0:50	19:09
114	99:05	224	0:48	25:50
127	85:39	179	0:51	32:59
198	32:58	104	0:27	6:45
199	156:24	261	0:54	38:11
254	40:35	107	0:34	14:00
275	220:27	244	1:36	51:37
304	128:01	172	1:31	44:33
338	41:29	58	0:57	7:45
367	0:00	0	0:00	0:00
418	101:22	220	0:45	22:36
447	128:56	255	0:55	34:34

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 2:23 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_Vestas Scenario

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
451	81:14	165	0:49	19:08
467	53:03	114	0:47	18:59
476	140:40	244	1:01	40:08
489	121:38	182	1:09	38:40
533	2:43	17	0:11	0:53
544	21:43	83	0:30	7:13
626	137:04	220	1:26	42:39
639	0:00	0	0:00	0:00
665	85:35	134	0:52	15:20
743	77:10	162	0:45	19:33
772	102:43	238	0:47	25:20
826	102:16	225	0:46	23:51
852	0:00	0	0:00	0:00
864	111:38	243	0:49	31:43
872	66:07	70	1:14	12:44
908	91:42	167	0:49	17:40
909	119:29	179	1:09	37:11
923	227:17	255	1:21	58:37
959	0:00	0	0:00	0:00
968	77:45	163	0:55	29:34
999	125:22	248	0:55	31:22
1013	105:14	114	1:28	17:25
1061	0:00	0	0:00	0:00
1091	111:01	155	1:00	19:36
1105	99:47	215	0:49	27:41
1119	85:59	136	1:01	32:24
1127	141:36	245	1:02	40:29
1137	130:38	162	1:38	43:35
1177	86:17	179	0:49	33:19
1190	84:44	150	0:58	32:23
1191	136:47	207	1:26	42:33
1224	72:35	131	0:55	26:52
1309	84:48	127	0:57	14:41
1318	25:06	80	0:29	8:38
1319	142:17	277	1:02	43:33
1362	105:46	193	0:54	20:42
1374	47:28	64	0:58	9:00
1395	83:33	150	0:57	31:58
1496	65:49	74	1:08	12:49
1574	0:00	0	0:00	0:00
1586	106:13	228	0:46	23:08
1592	76:51	164	0:42	19:51
1595	21:47	83	0:30	7:14
3164	0:00	0	0:00	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
T25	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (507)	0:00	0:00
T34	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (508)	305:10	83:44
T37	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (509)	168:32	51:02
T38	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (510)	324:47	82:43
T42	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (35)	0:00	0:00
T43	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (36)	0:00	0:00
T44	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (37)	0:00	0:00
T45	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (38)	0:00	0:00
T46	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (39)	0:00	0:00
T47	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (40)	164:02	46:31
T48	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)	195:26	60:56
T49	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)	181:24	56:59
T50	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (43)	309:28	95:00
T87	VESTAS V150-5.6 5600 150.0 !O! hub: 125.0 m (TOT: 200.0 m) (511)	387:00	86:50

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 3:00 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_GE Scenario

Assumptions for shadow calculations

Maximum distance for influence	1,580	m
Minimum sun height over horizon for influence	3	°
Day step for calculation	1	days
Time step for calculation	1	minutes

Sunshine probability S/S0 (Sun hours/Possible sun hours) []

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.31	0.40	0.44	0.52	0.57	0.64	0.66	0.61	0.59	0.48	0.30	0.22

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
300	301	557	671	325	294	265	370	495	1,070	1,118	1,067

W	WNW	NW	NNW	Sum
738	557	368	264	8,760

A ZVI (Zones of Visual Influence) calculation is performed before flicker calculation so non visible WTG do not contribute to calculated flicker values. A WTG will be visible if it is visible from any part of the receiver window. The ZVI calculation is based on the following assumptions:
Height contours used: Height Contours: CONTOURLINE_2018-10-16_Emerson SFA_2.wpo (5)
Obstacles not used in calculation
Eye height for map: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 17

WTGs

	Easting	Northing	Z	Row data/Description	WTG type Valid	Manufact.	Type-generator	Power, rated	Rotor diameter	Hub height	RPM
			[m]					[kW]	[m]	[m]	[RPM]
T25	348,244	4,568,858	238.0	GE WIND ENERGY GE 4.8-158 4800 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 4.8-158-4,800	4,800	158.0	107.5	0.0
T34	346,474	4,567,059	239.4	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T37	346,951	4,566,553	241.9	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T38	346,312	4,566,449	244.1	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 11...	Yes	GE WIND ENERGY	GE 3.0-140-3,000	3,000	140.0	110.0	0.0
T42	343,005	4,567,906	236.4	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T43	343,157	4,568,376	236.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T44	343,321	4,568,070	235.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T45	343,604	4,568,382	231.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T46	343,770	4,568,055	235.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T47	344,804	4,565,988	243.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T48	344,861	4,566,427	244.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T49	344,878	4,567,522	240.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T50	345,325	4,567,813	239.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: ...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
T87	346,898	4,567,229	238.0	GE WIND ENERGY GE 4.8-158 4800 158.0 !O! hub: 10...	Yes	GE WIND ENERGY	GE 4.8-158-4,800	4,800	158.0	107.5	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
15	345,797	4,566,154	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
94	345,801	4,567,370	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
95	346,311	4,567,623	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
114	345,801	4,567,317	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
127	345,817	4,566,194	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
198	345,218	4,567,181	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
199	345,881	4,567,518	238.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
246	345,882	4,568,507	237.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
254	345,816	4,565,902	244.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
275	345,961	4,566,804	241.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
304	345,777	4,566,429	242.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
338	345,885	4,568,343	236.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
367	345,301	4,565,438	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
418	345,797	4,567,453	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
447	345,885	4,567,227	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 3:00 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_GE Scenario

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Elevation a.g.l.	Slope of window	Direction mode	Eye height (ZVI) a.g.l.
			[m]	[m]	[m]	[m]	[°]		[m]
451	346,278	4,567,619	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
467	345,810	4,565,930	244.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
476	345,887	4,567,695	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
489	345,814	4,567,816	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
533	345,465	4,565,556	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
544	345,907	4,565,791	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
548	345,388	4,565,187	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
626	345,557	4,566,604	241.9	1.0	1.0	1.0	90.0	"Green house mode"	2.0
639	345,728	4,565,326	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
665	346,372	4,567,707	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
743	346,219	4,567,625	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
772	345,803	4,567,357	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
826	345,797	4,567,414	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
852	345,721	4,565,328	245.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
864	345,799	4,567,218	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
872	345,753	4,568,254	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
908	346,325	4,567,718	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
909	345,809	4,567,858	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
923	345,895	4,566,816	240.4	1.0	1.0	1.0	90.0	"Green house mode"	2.0
959	345,203	4,565,546	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
968	345,811	4,566,113	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
999	345,898	4,567,282	239.8	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1013	346,750	4,567,586	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1061	345,713	4,565,364	245.5	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1091	346,439	4,567,620	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1105	345,804	4,567,260	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1119	345,792	4,566,007	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1127	345,882	4,567,698	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1137	345,804	4,566,473	242.3	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1177	345,821	4,566,197	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1190	345,804	4,566,058	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1191	345,520	4,566,585	242.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1224	345,826	4,565,981	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1309	346,437	4,567,694	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1318	345,917	4,565,508	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1319	345,782	4,567,136	240.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1362	346,362	4,567,630	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1374	345,885	4,568,329	236.7	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1395	345,808	4,566,059	244.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1496	345,809	4,568,267	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1574	345,179	4,565,533	245.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1586	345,822	4,567,489	239.6	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1592	346,159	4,567,667	238.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0
1595	345,904	4,565,792	245.1	1.0	1.0	1.0	90.0	"Green house mode"	2.0
3164	345,904	4,565,110	246.0	1.0	1.0	1.0	90.0	"Green house mode"	2.0

Calculation Results

Shadow receptor

	Shadow, worst case			Shadow, expected values
No.	Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow hours per year [h/year]
15	64:39	143	0:53	23:21
94	94:11	228	0:44	23:11
95	103:03	199	0:53	21:00
114	91:27	224	0:45	24:06
127	86:29	177	0:48	33:31
198	27:46	104	0:26	5:35
199	149:11	256	0:54	36:50
246	0:00	0	0:00	0:00
254	40:50	107	0:34	14:07
275	201:10	248	1:33	47:40
304	114:23	161	1:27	39:21
338	41:29	58	0:57	7:45

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
9/5/2019 3:00 PM/3.2.737

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_GE Scenario

...continued from previous page

No.	Shadow, worst case Shadow hours per year [h/year]	Shadow days per year [days/year]	Max shadow hours per day [h/day]	Shadow, expected values Shadow hours per year [h/year]
367	0:00	0	0:00	0:00
418	92:59	216	0:43	20:54
447	119:38	251	0:52	32:10
451	90:44	184	0:52	20:21
467	52:27	114	0:45	18:43
476	129:13	233	1:01	38:40
489	121:15	188	1:09	38:31
533	2:43	17	0:11	0:53
544	21:43	83	0:30	7:13
548	0:00	0	0:00	0:00
626	129:19	219	1:24	39:55
639	0:00	0	0:00	0:00
665	91:01	158	0:56	16:57
743	82:18	173	0:48	20:14
772	94:02	230	0:44	23:27
826	93:50	221	0:43	22:04
852	0:00	0	0:00	0:00
864	103:34	241	0:46	29:35
872	67:04	70	1:21	12:50
908	92:31	163	0:52	17:37
909	119:18	185	1:09	37:07
923	210:34	257	1:21	54:31
959	0:00	0	0:00	0:00
968	68:01	149	0:52	25:12
999	115:24	244	0:52	29:03
1013	88:00	102	1:25	14:30
1061	0:00	0	0:00	0:00
1091	120:37	176	1:04	21:33
1105	91:58	213	0:46	25:43
1119	83:19	136	0:58	31:11
1127	130:15	235	1:02	39:03
1137	117:50	152	1:35	38:56
1177	87:13	177	0:47	33:54
1190	81:04	150	0:55	30:44
1191	130:49	217	1:25	40:31
1224	71:02	131	0:52	26:09
1309	87:10	148	1:00	15:46
1318	25:06	80	0:29	8:38
1319	134:31	276	0:53	41:11
1362	113:06	189	0:57	21:25
1374	47:28	64	0:58	9:00
1395	79:49	150	0:54	30:17
1496	65:49	74	1:08	12:49
1574	0:00	0	0:00	0:00
1586	99:08	223	0:43	21:40
1592	80:08	173	0:44	20:14
1595	21:47	83	0:30	7:14
3164	0:00	0	0:00	0:00

Total amount of flickering on the shadow receptors caused by each WTG

No.	Name	Worst case [h/year]	Expected [h/year]
T25	GE WIND ENERGY GE 4.8-158 4800 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (515)	0:00	0:00
T34	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (512)	278:12	76:50
T37	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (513)	140:41	42:48
T38	GE WIND ENERGY GE 3.0-140 3000 140.0 !O! hub: 110.0 m (TOT: 180.0 m) (514)	295:23	75:56
T42	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (35)	0:00	0:00
T43	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (36)	0:00	0:00
T44	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (37)	0:00	0:00
T45	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (38)	0:00	0:00
T46	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (39)	0:00	0:00
T47	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (40)	164:02	46:31
T48	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)	195:26	60:56

To be continued on next page...

Licensed user:
EDR
217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

SHADOW - Main Result

Calculation: 2019-09-06_Cumulative Emerson SFA_GE Scenario

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
T49	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)	181:24	56:59
T50	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (43)	309:28	95:00
T87	GE WIND ENERGY GE 4.8-158 4800 158.0 !O! hub: 107.5 m (TOT: 186.5 m) (516)	355:48	79:47

Total times in Receptor wise and WTG wise tables can differ, as a WTG can lead to flicker at 2 or more receptors simultaneously and/or receptors may receive flicker from 2 or more WTGs simultaneously.

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 5

Setback Analysis Update
By Environmental Design & Research
September 6, 2019

1. Supplement to Figure 08-6 of the Application - Setbacks for GE140 and GE158 Turbine Models.

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000, Syracuse, New York 13202
P. 315.471.0688 • F. 315.471.1061 • www.edrdpc.com

memorandum

To:	Apex Clean Energy	EDR Project No:	17119
From:	Lindsay Donahoe		
Date:	September 6, 2019		
Reference:	Updated Setbacks		

Comments:

The setbacks evaluated in the Emerson Creek Wind Farm (the Facility) Certificate Application submitted to the Ohio Power Siting Board (OPSB) on January 31, 2019 (Case No. 18-1607-EL-BGN) were calculated based on the largest potential setback from all turbine models under consideration. Since the submittal of the Certificate Application to the OPSB, the Applicant is considering additional turbine models and dimensions (Table 1).

Table 1. Approximate Turbine Dimensions by Model

Turbine Model	Hub Height	Rotor Diameter	Maximum Total Height
Vestas V150[1]	125 meters (410 feet)	150 meters (492 feet)	200 meters (656 feet)
GE158	107.5 meters (353 feet)	158 meters (518 feet)	186.5 meters (612 feet)
GE140	110 meters (361 feet)	140 meters (459 feet)	180 meters (591 feet)

[1] The Vestas V150 was evaluated in the original Certificate Application with a hub height of 105 meters (344 feet) resulting in a total height of 180 meters (591 feet).

The new turbine models and turbine dimensions now under consideration for the Facility have been broken out into two potential permitting scenarios:

> Vestas Scenario: This scenario would use the Vestas V150 turbine with a hub height of 410 feet (125 meters) and a maximum blade tip height of 656 feet (200 meters) at all but three turbine sites. At sites T67, T70, and T82 a Vestas V150 turbine with a hub height of 344.5 feet and a maximum blade tip height of 590.5 feet (180 meters) will be used.
>
> GE Scenario: This scenario would use the GE158 turbine with a hub height of 353 feet (107.5 meters) and a maximum blade tip height of 612 feet (186.5 meters) at 64 of the proposed locations. The remaining 23 sites would use the GE140 turbine with a hub height of 361 feet (110 meters) and a maximum blade tip height of 590.5 feet (180 meters).

EDR has re-evaluated the setbacks presented in the Certificate Application based on these new turbine models and dimensions for both scenarios listed above. An updated setback map for the GE Scenario is attached. The setbacks associated with the Vestas Scenario are very similar, if not identical to those presented in the Certificate Application.

Therefore, an updated map was not provided for the Vestas Scenario. A comparison of the setbacks presented in the Certificate Application with the updated setbacks for the two potential permitting scenarios is provided below.

Setbacks to Wind Farm Property Line, Transmission Line, Pipelines, and Public Roads

The distance from a wind turbine base to the property line of the wind farm property, electric transmission line, gas pipeline, gas distribution line, hazardous liquid pipeline, or public road must be at least one and one-tenth times the total height of the turbine structure as measured from its tower's base to the tip of a blade at its highest point. The maximum total height of the tallest turbine model under consideration at the time of the Certificate Application submittal was 655 feet. Therefore, the turbine setback to the wind farm property was calculated to be 720.5 feet. Based on the new turbine models under consideration, the setback associated with the Vestas V150 is 721.6 feet. All proposed 87 turbine locations meet this requirement. The setback associated with the GE158 turbine model is 673 feet. All turbine locations meet this requirement (see attached Figure).

Setback to Property Line of Nearest Adjacent Property, including State or Federal Highway

The wind turbine must be at least 1,125 feet in horizontal distance from the tip of the turbine's nearest blade at ninety degrees to the property line of the nearest adjacent property and state or federal highway at the time of the Certificate Application. As presented in the Certificate Application, the maximum rotor diameter was 492 feet (based on the V150 turbine), resulting in a setback to the nearest adjacent property line of 1,371 feet. As the V150 was already evaluated in the Certificate Application, there is no change to the setback for the Vestas Scenario and all proposed 87 turbine locations meet this requirement. For the GE Scenario, the maximum rotor diameter is 518 feet, resulting in an updated setback of 1,384 feet. All 64 of the proposed GE158 proposed locations meet this setback (see attached Figure). Locations that did not meet that setback are proposed to use the GE140 turbine model, which would result in a setback of 1,355 feet.

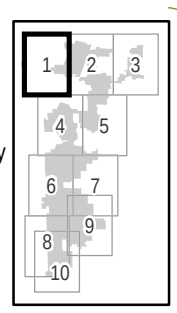
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Transmission Line
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- City/Village Boundary
- Township Boundary
- County Boundary



Sheet 1 of 10

EMERSON CREEK WIND

edr

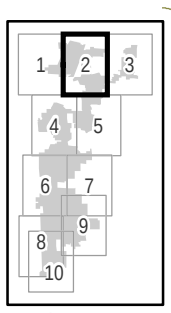
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- Township Boundary
- County Boundary



Sheet 2 of 10

EMERSON CREEK WIND

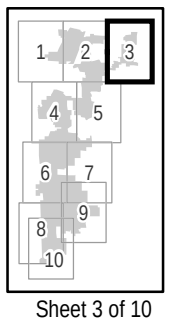
edr

Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio
Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Transmission Line
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- Township Boundary
- County Boundary



Sheet 3 of 10

EMERSON CREEK WIND

edr

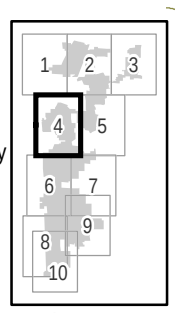
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Transmission Line
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- City/Village Boundary
- Township Boundary
- County Boundary



Sheet 4 of 10

EMERSON CREEK WIND

edr

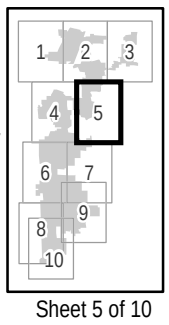
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- City/Village Boundary
- Township Boundary
- County Boundary



Sheet 5 of 10

EMERSON CREEK WIND

edr

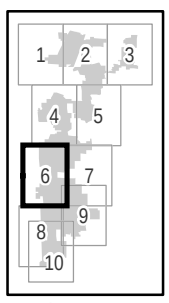
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- Township Boundary
- County Boundary



Sheet 6 of 10

EMERSON CREEK WIND

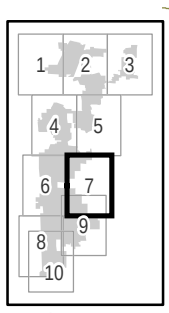
edr

Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio
Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- Township Boundary
- County Boundary



Sheet 7 of 10

EMERSON CREEK WIND

edr

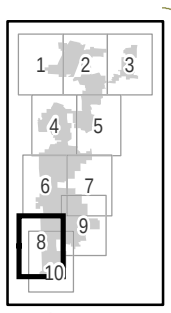
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- Township Boundary
- County Boundary



Sheet 8 of 10

EMERSON CREEK WIND

edr

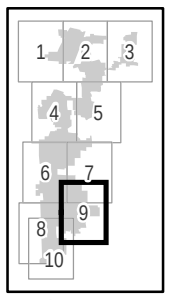
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- City/Village Boundary
- Township Boundary
- County Boundary



Sheet 9 of 10

EMERSON CREEK WIND

edr

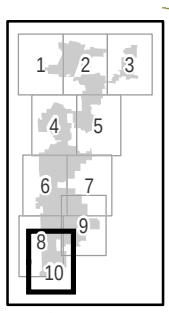
Emerson Creek Wind Farm

Erie, Huron, and Seneca Counties, Ohio

Figure 08-6: Wind Turbine State Setbacks

Notes: 1. Basemap: ESRI StreetMap North America, 2008. 2. This map was generated in ArcMap on September 6, 2019. 3. This is a color graphic. Reproduction in grayscale may misrepresent the data. 4. Facility components, parcel boundaries, pipeline, and receptor data provided by Apex; road data was obtained from ESRI StreetMap; existing transmission line data was obtained from HIFLD, a federally-managed database under the Department of Homeland Security. 5. Wind turbine setbacks include 1,384 feet from non-participating parcels, and state and federal highways, and 673 feet from existing pipelines, transmission lines, and public roads. 6. Map Scale 1:24,000.

- Wind Turbine Model GE140
- Wind Turbine Model GE158
- Habitable Residence
- Existing Pipeline
- 673-Foot GE158 Setback
- 1,384-Foot GE158 Setback
- Non-Participating Parcel
- Parcel Boundary
- Project Boundary
- Half Mile Study Area
- Township Boundary
- County Boundary



Sheet 10 of 10

EMERSON CREEK WIND

edr

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 6

Visual Impact Analysis Update
By Environmental Design & Research
September 5, 2019

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

Environmental Design & Research,
Landscape Architecture, Engineering & Environmental Services, D.P.C.
217 Montgomery Street, Suite 1000, Syracuse, New York 13202
P. 315.471.0688 • F. 315.471.1061 • www.edrdpc.com

memorandum

To:	Apex Clean Energy	EDR Project No:	17119
From:	Matthew Robinson		
Date:	September 5, 2019		
Reference:	Emerson Creek Turbine Model Update		

Comments:

The turbine model used for evaluation in the Visual Impact Assessment (VIA), viewshed analysis, and represented in the submitted visual simulations, is the Nordex 149 with two different hub heights. The taller of the two configurations has a maximum blade tip height of 655 feet (199.5 m) and was placed at all but three of the proposed turbine locations. The shorter configuration has a maximum blade tip height of 602 feet (183.5 m), and was located at the T67, T70 and T82 locations.

Since the submittal of the VIA the turbine model options have changed to include two potential scenarios.

> Scenario A: This scenario would use the Vestas V150 turbine with a hub height of 410 feet (125 m) and a maximum blade tip height of 656 feet (200 m) at all but the same three turbine sites listed above. At sites T67, T70, and T82 a Vestas V150 turbine with a hub height of 344.5 feet and a maximum blade tip height of 590.5 feet (180 m) will be used.
>
> Scenario B: This scenario would use the GE158 turbine with a hub height of 353 feet (107.5 m) and a maximum blade tip height of 612 feet (186.5 m) at 64 of the proposed locations. The remaining 23 sites would use the GE140 turbine with a hub height of 361 feet (110 m) and a maximum blade tip height of 590.5 (180 m).

In EDR's opinion, neither scenario would require an update to the VIA, viewshed analysis, or visual simulations that were originally submitted. In scenario B both proposed turbine models remain below the total blade tip height of the turbines used as part of the original analysis. Therefore, the analysis submitted continues to provide outcomes based on a worse case scenario. Option A does have a slightly taller total blade tip height, however the difference is only 1-1.5 feet (depending on rounding/conversion). In addition, all of the possible turbine models are similar in overall appearance. Consequently, the alternative turbine model scenarios will not change the outcome of the VIA, viewshed analysis, or visual simulations in a significant enough manner to require revised or supplemental analysis and the results/conclusions of the previous analyses remain accurate.

- Matthew Robinson -

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 7

GE Renewable Energy Technical Documentation Wind Turbine Generator Systems 3.0-140 April 3, 2019

CONFIDENTIAL

Firelands Wind, LLC has requested confidential treatment of these documents in accordance with OAC Rule 4906-2-21.

These documents contain confidential trade secret information and, as such, are entitled to confidential treatment under state and/or federal statutes and regulations.

The redacted versions have been filed with the OPSB.

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

Firelands Wind, LLC
Case No. 18-1607-EL-BGN
Fourth Supplement to Application
September 12, 2019

Attachment 8

GE Renewable Energy
Technical Documentation Wind Turbine Generator Systems 5.x-1583.0-140
April 2, 2019

CONFIDENTIAL

Firelands Wind, LLC has requested confidential treatment of these documents in accordance with OAC Rule 4906-2-21.

These documents contain confidential trade secret information and, as such, are entitled to confidential treatment under state and/or federal statutes and regulations.

The redacted versions have been filed with the OPSB.

Christine M.T. Pirik (0029759)
(Counsel of Record)
Terrence O'Donnell (0074213)
William V. Vorys (0093479)
Dickinson Wright PLLC
150 East Gay Street, Suite 2400
Columbus, Ohio 43215
Phone: (614) 591-5461
Email: cpirik@dickinsonwright.com
todonnell@dickinsonwright.com
wvorys@dickinsonwright.com
Attorneys for Firelands Wind, LLC

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/12/2019 1:27:42 PM

in

Case No(s). 18-1607-EL-BGN

Summary: Application - Fourth Supplement to Application - Updated Wind Turbine Models and Maps electronically filed by Christine M.T. Pirik on behalf of Firelands Wind, LLC