Paulding Wind Farm IV LLC
Case No. 18-91-EL-BGN

Application Part 5 of 11

Part 5 includes:

- **Exhibit G Geotechnical Work Plan**
- **Exhibit H Socioeconomic Report**
- **Exhibit I Sound Impact Assessment**
- **Exhibit J Cumulative Sound Assessment**
- **Exhibit K Shadow Flicker Report**

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Date Filed: July 2, 2018

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Case No. 18-91-EL-BGN

Exhibit G

Geotechnical Work Plan

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Re: OPSB Submittal Content
Timber Road IV Wind Farm
Pauling County, Ohio
Terracon Project: N6175013

Dear Mr. Ross:

Please find for your use excerpts from our forthcoming Geotechnical Report for the above referenced project. We understand that content concerning Terracon's exploration and testing procedures, as well as earthwork recommendations, are needed for EDP Renewables North America's (EDPR's) upcoming permit application submittal to the Ohio Power Siting Board (OPSB).

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this content, or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.

Daniel R. Pratt, E.I., P.G.
Senior Staff Engineer

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Senior Engineer

SCOPE OF GEOTECHNICAL SERVICES

Based on EDPR's Scope of Work – Wind Power Plant Geotechnical Investigation, Final Draft Document, dated January 17, 2017, we are to conduct test borings at each proposed wind turbine location, as well as at the locations of proposed transmission tower structures, MET towers, and substation. In addition, test borings will be performed at selected access road locations, and in public road areas that will be subjected to the construction traffic in connection with preparing a Pre-Construction Road Condition Report.

Our testing will also include performance of field electrical resistivity testing, field thermal conductivity testing, and seismic refraction testing at selected locations within the limits of the Timber Road IV Wind Farm.

Our test procedures for the various studies that are to be performed by Terracon are summarized in the following section:

FIELD EXPLORATION AND TESTING OPERATIONS

Field Exploration

Number of Borings [1]	Boring Depth (feet)	Planned Location
37	75 or refusal	WTG locations
9	7.5 or refusal	Access Roads
3	30 or refusal	Substation
TBD	40 or refusal	Met Towers
TBD	60 or refusal [2]	Transmission Lines
2	30 or refusal	Laydown Yards
198	4	Public Roads

1. The number of borings are subject to change depending on the final site layout.
2. If refusal is encountered at less than 60 feet below the existing ground surface, 10 feet of rock core will be obtained and the boring terminated.

Boring Layout and Elevations: The test boring locations and elevations for the WTGs, substation, met towers and T-lines will be determined by EDPR. The boring locations for the laydown yards, access roads, and public road study will be selected and field located by Terracon using a handheld GPS unit (estimated horizontal accuracy of about ±10 feet). The approximate elevations of these borings will be obtained from Google Earth.

Subsurface Exploration Procedures: We will advance the borings with a track-mounted Diedrich D-50 rotary drill rig using continuous flight hollow stem augers, owned and operated by

Ohio Testbor. In general, continuous soil sampling will be performed from a depth of about 1 foot to 11 feet below the existing site grades. At greater depths, soil sampling will be performed at approximate 5-foot intervals to the terminal depth of the test borings.

Soil sampling will be performed using split-barrel soil sampling procedures. In the split-barrel sampling procedure, a standard 2-inch outer diameter split-barrel sampling spoon is driven into the ground by a 140-pound automatic hammer falling a distance of 30 inches. The number of blows required to advance the sampling spoon the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Test (SPT) resistance value. The SPT resistance values, also referred to as N-values, are indicated on the boring logs at the test depths. When split-barrel refusal is encountered in bedrock, the number of inches of penetration into the rock for 50 hammer blows will be recorded.

In addition to conducting split-barrel sampling, thin-walled (Shelby) tube samples will be obtained if medium stiff or softer cohesive formations are obtained. In the thin-walled tube sampling procedure, a thin-walled, seamless steel tube with a sharp cutting edge is pushed hydraulically into the soil to obtain a relatively undisturbed sample.

We observe and record groundwater levels during while drilling and at the completion of each boring. To better establish longer-term groundwater information, temporary piezometers are installed at each turbine location. The temporary piezometers generally extended to a depth of about 15 feet and consisted of 10 feet of slotted well screen at the bottom and 10 feet of solid riser pipe above the well screen. Sand was used to backfill the annular space between the well screen and the bore hole. Above the sand pack, bentonite chips were used as backfill up to the ground surface to prevent surface water infiltration. It is intended to measure the water level within the piezometers monthly over a period of six months.

The sampling depths, penetration distances, and other sampling information are recorded on the field boring logs. The samples will be placed in appropriate containers and taken to our soil laboratory for testing and classification by a geotechnical engineer. Our exploration team prepares field boring logs as part of the drilling operations. These field logs include visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs are prepared from the field logs. The final boring logs represent the geotechnical engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Seismic Refraction Testing: Terracon will use a seismic refraction system (SRS) to collect seismic refraction data at least two WTG locations. The seismic refraction system will consist of a SeismicSource DAQLink III seismograph in a linear array of 24 geophones to perform a seismic survey using the Multi-Channel Analysis of Surface Waves (MASW) and P-wave Refraction methods. Two perpendicular lines will be tested at each location and consist of 299-

foot lines (13-foot geophone spacing) in order to provide representative s-wave (Vs) and p-wave (Vp) seismic velocity profiles for use in the design of the WTG foundations.

The MASW testing utilizes a seismograph and a linear array of twenty-four 4.5Hz geophones to collect MASW data. MASW is performed by collecting surface waves created by a seismic source consisting of a sledgehammer striking an aluminum ground plate. The data is then processed using dispersion analysis software (SurfSeis, engineered by the Kansas Geological Survey) that extracts the fundamental-mode dispersion curve. The curve is inverted and modeled to yield a 1D shear-wave velocity profile along the array to an approximate depth of 100 feet.

For the P-Wave Refraction (compression) refraction survey, seismic source shots are to be taken at five locations along each array using an instrumented sledge hammer and metal plate. The first-arrival travel times of compression waves (p-waves), produced by the p-wave source, are recorded on a laptop using Vibrascope software and returned to the office for analysis. Using SeisOpt@2D and SeisOpt Picker, developed by SeisOpt, the first-arrival travel times are picked and the survey geometry entered to perform forward modeling using a non-linear optimization technique called adaptive simulated annealing. This algorithm will determine the compressive wave velocity model for a corresponding depth and resolution, with the minimum travel-time error, without searching through every possible model. The resulting model provides a p-wave velocity (Vp) depth profile.

Seismic testing uses shear and compressive wave arrival times and dispersion to detect changes in the subsurface of the area being investigated. Changes in the travel time and dispersion generally indicate material property changes such as, but not limited to, density and wave speed, which in some cases can be used to derive qualitative and quantitative soil and rock properties.

Electrical Earth Resistivity: Electrical resistivity tests will be performed at the substation and at selected collection system locations. The electrical resistivity testing is performed using the Wenner 4-Pin Method and a Megger Model DET 2/2 Earth Resistivity Meter.

At each location, electrical resistivity readings are performed along 3 traverses each with two at a 90-degrees arrangement to each other and one on a diagonal between the 90-degree traverses, in general resistivity test measurements are taken at 1, 2, 5, 7.5, 10, 15, 20, 25, 50, 75, 100, 125, 150, 175, 200, 250 and 300 feet probe spacing. Additionally, the diagonal traverse line at the collection system locations will include readings at 350, 400, 450, and 500 feet probe spacings.

A probe depth of 3 inches is used for probe spacings from 1 to 20 feet. For probe spacing greater than 20 feet, a probe depth of about 12 inches is used.

Field Thermal Conductivity Sampling: Terracon will retain Geotherm USA to perform the in-situ testing and sampling and provide a report detailing findings and coordinate with EDPR's electrical engineering consultant to aid in evaluating the required backfill and cable sizing for underground collection cabling. Terracon will subcontract equipment and operators to excavate test pits to assist Geotherm USA to collect the bulk samples and perform their in-situ thermal testing. After Geotherm USA has completed their testing, the test pits will be backfilled with on-site material.

Public Road Study: Falling weight deflectometer (FWD) testing will be performed by our subcontractor, American Engineering Testing, Inc., along designated paved roadways within the project area in general accordance with ASTM D 4694. To obtain adequate information to evaluate the condition of the roads, American Engineering Testing plans to perform ten FWD tests be performed per mile instead of the minimum 4 tests per mile noted in EDP Renewables SOW document. Terracon and our subcontractors will provide traffic control during the performance of the FWD testing program. Upon completion of the field work, American Engineering Testing, Inc. will prepare a Preconstruction Road Condition Investigation Report, which will be included in a Pre-Construction Road Survey Report prepared by Terracon.

Laboratory Testing

The project engineer reviews the field data and assigns various laboratory tests to better understand the engineering properties of the various soil strata as necessary for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods are applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D6913 Standard Test Method for Particle-Size Distribution (Gradation) of Soils using Sieve Analysis
- ASTM D7928 Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
- ASTM D2435 Standard Test Methods for One-Dimensional Consolidation Properties of Soils Using Incremental Loading
- Testing to evaluate corrosivity characteristics to include pH, laboratory electrical resistivity, soluble sulfate and soluble chloride

The laboratory testing program will include examination of soil samples by an engineer. Based on the material's texture and plasticity, we describe and classify the soil samples in accordance with the Unified Soil Classification System.

Geotechnical Engineering Report

The results of our field and laboratory programs will be evaluated by a professional engineer licensed in the State of Ohio. Based on the results of our evaluations, preliminary and final engineering reports (including roadway assessments and unimproved gravel road designs) will be prepared. The final report will provide a description of the project and geotechnical engineering recommendations which will address the following:

- Public Roads
  - Summary of drilling, sampling, testing procedures and testing results
  - Existing pavement surface and base course thickness
  - Existing subgrade support parameters
  - Boring logs and laboratory test data
  - Subgrade preparation and earthwork considerations
  - Recommendations for pavement design for roadway improvements

- Private Roads
  - Summary of drilling, sampling, testing procedures and testing results
  - Existing topsoil thickness
  - Existing subgrade support parameters
  - Boring logs and laboratory test data
  - Subgrade preparation and earthwork considerations
  - Recommendations for aggregate pavement design

- Turbine Locations
  - Summary of drilling, sampling, testing procedures and testing results
  - Boring logs and laboratory test data
  - Discussion of seismicity in the region
  - Piezometer reading summary table and design groundwater levels for each turbine location
  - Foundation recommendations including allowable bearing capacity, estimated settlement, shear and elastic modulus, over-excavation requirements, engineered backfill requirements and subgrade enhancements as necessary
  - Estimate of foundation settlement potentials and shrink/swell potential, if applicable

- T-Line and MET Tower Structures and Substation
  - Summary of drilling, sampling, testing procedures and testing results
  - Boring logs and laboratory test data
  - Discussion of seismicity in the region
  - Foundation design recommendations

- Estimate of foundation settlement potentials

- Laydown Yard
  - Summary of drilling, sampling, testing procedures and testing results
  - Earthwork construction recommendations

- Erection Crane Pads
  - Summary of drilling, sampling, testing procedures and testing results
  - Boring logs and laboratory test data
  - Recommendations for aggregate section and crane mat use

WORK IN PROGRESS

Terracon's field work is currently in progress. Between March 7 and April 20, 2018, 37 WTG locations were drilled (i.e., 35 locations and two re-drills due to relocation of WTG sites). In addition, three test borings were performed at the proposed substation location and nine test borings have been drilled within proposed access road areas. Terracon is currently in the process of drilling the test borings in the public road areas. It is anticipated that test boring operations for the remaining WTGs, T-line structures, MET towers, and laydown yards will resume in August pending landowner approvals and finalization of the locations of these structures. Based on the initial borings completed, we have prepared the following preliminary earthwork recommendations for this project.

PRELIMINARY EARTHWORK RECOMMENDATIONS

Earthwork will include clearing and grubbing, excavations and fill placement. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria as necessary to render the site in the state considered in our geotechnical engineering evaluation for WTG foundations and access roads.

Site Preparation

We recommend that earthwork operations begin with stripping of vegetation and root zone soils from the proposed construction areas. Based on our visual observation of the near surface soils, it appears that in general stripping depths should range between about 1 and 1½ feet. may be expected.

It is likely that agricultural field tiles will be encountered within proposed foundation and access drive areas. Field tiles should be plugged or rerouted around the foundation and access drive areas.

After stripping and cutting to design subgrade elevation, and prior to placement of new fill in areas below final grades, we recommend that the exposed subgrades be observed and evaluated for the presence of soft or otherwise unsuitable materials. We recommend testing include proofrolling to help locate weak or unstable areas at or just below the exposed subgrade level. Proofrolling should be performed using heavy rubber-tired equipment, such as a loaded dump truck, having a minimum gross weight of about 20 tons or equivalent loading to the maximum anticipated axle load. Unsuitable areas observed at this time should be stabilized.

Some undercutting or subgrade stabilization should be expected, especially during wet periods of the year. Methods of stabilization, which are outlined below, could include scarification and recompaction, removal of unstable materials and replacement with granular fill (with or without geofabric) and chemical stabilization. The most suitable method of stabilization, if required, will be dependent upon factors such as schedule, weather, size of area to be stabilized and the nature of the instability.

- **Scarification and Recompaction** - It may be feasible to scarify, dry, and recompact the exposed soils. The success of this procedure would depend primarily upon favorable weather and sufficient time to dry the soils. Even with adequate time and weather, stable subgrades may not be achievable if the thickness of the soft soil is greater than about 1 to 1½ feet.

- **Undercut and Granular Replacement** - The use of crushed stone or gravel could be considered to improve subgrade stability. Typical undercut depths would range from about ½ foot to 2 feet. The use geogrid could also be considered. Equipment should not be operated above the fabric or geogrid until one full lift of granular fill is placed above it.

- **Chemical Stabilization** - Improvement of subgrades with Portland cement, quick lime, or lime kiln dust could be considered for unstable and plastic soils. Chemical modification should be performed by a pre-qualified contractor having experience with successfully stabilizing subgrades in the project area on similar sized projects with similar soil conditions.

If earthwork takes place during freezing conditions, the exposed subgrades should be allowed to thaw and then be recompacted prior to placing subsequent lifts of structural fill. Alternatively, the frozen material could be excavated from the subgrade to reveal unfrozen soil prior to placing subsequent lifts of fill or foundation components. The frozen soil should not be reused as structural fill until allowed to thaw and adjusted to the proper moisture content, which may not be possible during winter months.

We recommend that a qualified geotechnical technician be present during site preparation operations to observe stripping depths, the removal of unsuitable soils, the preparation of the

subgrade, and to verify that that the exposed subgrade has been prepared in accordance with the project plans and specifications.

Fill Material Types

Fill required to achieve design grades should meet the following material property requirements:

Fill Type [1]	USCS Classification	Acceptable Locations for Placement
Native, low plasticity cohesive soils	CL, CL-ML	All locations and elevations
Native high plasticity cohesive soils	CH	All locations and elevations except not within 2 feet of the finished subgrade elevation within proposed access drive areas and not below foundation bearing elevations.
Imported granular materials [2]	GW, GM, GC, SW, SM, SC	All locations and elevations

1. Engineered fill should consist of approved materials that are free of organic matter and debris. Frozen material should not be used, and fill should not be placed on a frozen subgrade. A sample of each material type should be submitted to the geotechnical engineer for evaluation
2. Maximum particle size of 3 inches

Fill Compaction Requirements

Engineered fill should meet the following compaction requirements.

Item	Description
Maximum fill lift thickness	9 inches or less in loose thickness when heavy, tamping foot or vibratory drum compaction equipment is used 6 inches or less in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is used
Minimum compaction requirements [1,2]	98% of the material's standard Proctor maximum dry density (ASTM D 698)
Moisture content – low plasticity cohesive soils	Within the range of -2% to +3% of the optimum moisture content as determined by the standard Proctor test at the time of placement and compaction
Moisture content –granular materials	Workable moisture contents [2]

1. We recommend that compacted structural fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. If the granular material is a coarse sand or gravel, or of a uniform size, or has a low fines content, compaction comparison to relative density may be more appropriate. In this case, granular materials should be compacted to at least 70% relative density (ASTM D 4253 and D 4254).
3. Sufficient to achieve satisfactory compaction without the material pumping when proof rolled.

Grading and Drainage

All grades must provide effective drainage away from the foundation for the WTG foundations, and other completed structures. Water retained next to the WTG foundations can result in soil movements greater than those discussed in this report. Greater movements can result in unacceptable differential foundation movements.

Exposed ground should be sloped and maintained at a minimum 4 percent away from the WTGs for at least 10 feet beyond the perimeter of the foundation footprint. After WTG construction, final grades should be verified to document effective drainage has been achieved. Grades around the structures should also be periodically inspected and adjusted as necessary as part of the structure's maintenance program.

Earthwork Construction Considerations

Upon completion of filling and grading, care should be taken to maintain the subgrade water content prior to construction of site improvements. Construction traffic over the completed subgrades should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. Water collecting over, or adjacent to, construction areas should be removed. If the subgrade freezes, desiccates, saturates, or is disturbed, the affected material should be removed, or the materials should be scarified, moisture conditioned, and recompacted, prior to the construction of the planned structures or other site improvements.

As a minimum, excavations should be performed in accordance with OSHA 29 CFR, Part 1926, Subpart P, "Excavations" and its appendices, and in accordance with any applicable local, and/or state regulations.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

Terracon should be retained during the construction phase of the project to observe earthwork and to perform necessary tests and observations during subgrade preparation; proof-rolling; placement and compaction of controlled compacted fills; backfilling of excavations into the completed subgrade, and just prior to construction/installation of foundations.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Geotechnical Engineer. In the event that unanticipated conditions are encountered, the Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

GENERAL COMMENTS

As noted, the earthwork recommendations contained within this submittal are preliminary in nature and are subject to modification depending on the subsurface conditions encountered within the remaining test borings left to be performed and the results of additional laboratory testing.

Exhibit H

Socioeconomic Report

1) Socioeconomic Report

- **Figure 1 – Regional Facility Location**
- **Figure 2 – 5-Mile Study Area**

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Date Filed: July 2, 2018

Socioeconomic Report

Timber Road IV Wind Farm

Benton, Blue Creek, Crane, Harrison, and Paulding Townships, Paulding County, Ohio

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Figure 1: Regional Facility Location
Figure 2: 5-Mile Study Area

EXECUTIVE SUMMARY

This socioeconomic report is prepared in support of the proposed Timber Road IV Wind Farm ("the Facility"), a wind-powered electric generation facility in Paulding County of the State of Ohio (See Figure 1). The Facility (Figure 2) will consist of turbines, along with access roads, electric collection cables, a Facility substation, a laydown yard for construction staging, and up to three meteorological towers. The energy generated at the Facility will deliver power to one point of interconnection (POI) at the Logtown 138 kilovolt (kV) switching station. The Facility will have an output capacity of up to 125.1 megawatts (MW) and will operate at a generating capacity of 34% to 38%, generating a total of approximately 370,000 to 420,000 megawatt hours (MWh) per year to the regional power grid. Construction is scheduled to begin in 2019.

The focus of this report is to assess the potential socioeconomic impacts of this Facility on the 25 municipalities within a 5-mile radius from the Facility ("the Study Area"; see Figure 1), as well as across the State of Ohio. This involves a review of past and current demographic and economic characteristics and trends in the Study Area, and where applicable, those of the greater region. The regional economy surrounding the Study Area is shaped in large part by the agricultural industries of Paulding, Defiance, and Van Wert Counties as well as regional metropolitan areas of northwestern Ohio. Potential impacts including those to employment, earnings, and overall economic output resulting from Facility construction and operation are assessed in light of socioeconomic conditions within the State of Ohio and the Study Area.

In short, the Timber Road IV Wind Farm is expected to produce a positive economic impact throughout the state and on the communities within the Study Area. Through lease payments to private landowners, short- and long-term job creation, and tax payments to the county, the Facility will generate revenue to the county without requiring significant services or expenditures on their behalf.

Part I: Introduction

This socioeconomic report is prepared in support of the proposed Facility, a wind-powered electric generation facility in Paulding County of the State of Ohio (See Figure 1). The Facility (Figure 2) will consist of turbines, along with access roads, electric collection cables, a Facility substation, a laydown yard for construction staging, and up to three meteorological towers. The energy generated at the Facility will deliver power to one POI at the Logtown 138 kV switching station. The Facility will have an output capacity of up to 125.1 megawatts (MW) and will operate at a generating capacity of 34% to 38%, generating a total of approximately 370,000 to 420,000 MWh per year to the regional power grid. Construction is scheduled to begin in 2019.

This analysis examines estimated impacts to the state and local economy generated by the construction and operation of the Facility. It includes a review of existing demographic and economic characteristics in the area, as well as several trends affecting both. When such comparison is informative, state and federal demographic and economic data are also included. Unless noted otherwise, the Study Area for this report includes the following 25 municipalities in Defiance, Paulding and Van Wert Counties, Ohio and Allen County, Indiana; all of which are found wholly or partially within a 5-mile radius of the Facility (the Study Area):

- Benton Township
- Blue Creek Township
- Carryall Township
- Crane Township
- Emerald Township
- Harrison Township
- Hoaglin Township
- Jackson Township
- Latty Township
- Maumee Township
- Monroe Township
- Paulding Township
- Scipio Township
- Tully Township
- Union Township
- Village of Antwerp
- Village of Broughton
- Village of Cecil
- Village of Convoy
- Village of Haviland
- Village of Latty
- Village of Paulding
- Village of Payne
- Village of Scott*
- City of Woodburn

*Note: The Village of Scott is geographically split between Paulding and Van Wert Counties.

Part II of this report provides an examination of population trends within the State of Ohio, State of Indiana, and the Study Area, from 1990 through 2010, including projected population growth through 2030. In addition, Part II provides data regarding the civilian labor force for 2016 by state and county (latest data available). Part III reviews the types of potential impacts that could be experienced throughout the region, including those regarding housing demand, commercial and industrial employment, and transportation networks. Part IV describes the methods of analysis of potential economic benefits provided within this report, including an overview of the Job and Economic Development Impact (JEDI) Wind Model. This model was created by MRG & Associates, under contract with the National Renewable Energy Laboratory and is an industry standard for economic impact investigation. This is followed by the JEDI results (Part V), which describes the jobs created by the construction and operation of the Facility, as well as a summary of payments to landowners as a result of land leases for turbines. Part VI reviews potential impacts of the Facility from the perspective of local taxing jurisdictions. The findings of this report are summarized in Part VII, followed by Part VIII, a bibliography of cited sources.

Part II: Socioeconomic Profile

1. Population trends

Census data reveals that these communities have experienced histories of small population growth and decline over the past two decades. The 2016 populations for the State of Ohio, State of Indiana, and Allen, Defiance, Paulding, and Van Wert Counties are shown in Table 1 below. Indiana and Ohio showed a notable increase in population 8.4% and 2.1%, respectively. All three counties in Ohio showed a decrease in population from 2000 to 2016. Defiance County only decreased by -2.6%, while Paulding and Van Wert County decreased by -6.1% and -3.9%, respectively, during the same time frame.

Table 1: County Population Trends and Densities

County	2000 Pop.	2010 Pop.	2016 Pop.	% Change 2000-2016	Est. 2026 Pop.	% Change 2016-2026	Population Density (people per square mile)
Defiance County	39,500	39,037	38,488	-2.6%	37,872	-1.6%	93.5
Paulding County	20,293	19,614	19,057	-6.1%	18,332	-3.8%	45.8
Van Wert County	29,659	28,744	28,501	-3.9%	27,806	-2.4%	69.7
Allen County (IN)	331,849	355,329	365,565	10.2%	338,961	6.4%	563.5
State of Ohio	11,353,140	11,536,504	11,586,941	2.1%	11,736,076	1.3%	284.2
State of Indiana	6,080,485	6,483,802	6,589,578	8.4%	6,938,826	5.3%	185.1

Source: U.S. Census Bureau, 2000 and 2010 Decennial Census, Census Reporter, and American Community Survey 5-Year Estimates 2012-2016. Projections derived from each municipality's respective 2000-2016 growth rates.

The trends experienced by each community from 2000 to 2016 are expected to continue regardless of whether the proposed Facility is built. Over the next decade, the total population within the Study Area is projected to decrease by -3.5% from 2016 to 2026, from 33,273 to 32,108; compared to the projected statewide increase of 1.3% in Ohio and 5.3% in Indiana during the same time span. Ohio county population projections are expected to decline between the same time span. Paulding County is projected to experience the greatest decrease in population (-3.8%) from 2016-2026, while Defiance County is projected to experience a -1.6% decline and Van Wert County is expected to experience a -2.4% decline in population during the same time span. Conversely, the population in Allen County is anticipated to increase by 6.4% over that 10-year timeframe. As indicated in Table 2, a majority of the local municipalities also demonstrate a general decrease in population from 2000 to 2016. Notable exceptions include small municipalities, such as the Village of Haviland, which experienced a population increase of 25% over the same time span (Table 2). Allen County, Indiana also experienced a notable growth in population by 10.2% from 2000 to 2016.See Table 2 for more specific localized population trends.

Table 2: Municipal Population Trends and Densities

Jurisdiction within 5-Miles Radius of Facility	2000 Pop.	2010 Pop.	2016 Pop.	% Change 2000-2016	Est. 2026 Pop.	% Change 2016-2026	Population Density (people per square mile)
Benton Township	1,035	1,046	879	-15.1%	796	-9.4%	24.1
Blue Creek Township	804	781	828	3.0%	843	1.9%	22.8
Carryall Township	3,046	2,980	2,899	-4.8%	2,812	-3.0%	81
Crane Township	1,530	1,420	1,418	-7.3%	1,353	-4.6%	39.2
Emerald Township	824	789	641	-22.2%	552	-13.9%	19.6
Harrison Township	1,566	1,459	1,482	-5.4%	1,432	-3.4%	41.1
Hoaglin Township	605	662	408	-32.6%	325	-20.4%	12.7
Jackson Township	1,886	1,795	1,842	-2.3%	1,815	-1.5%	50.1
Jackson Township, IN	489	504	366	-25.2%	308	-15.8%	14.4
Latty Township	1,026	1,017	973	-5.2%	942	-3.2%	26.7
Maumee Township, IN	2,619	2,620	2,692	2.8%	2,739	1.7%	102.1
Monroe Township, IN	1,963	1,927	1,741	-11.3%	1,824	-7.1%	70.4
Paulding Township	4,008	4,022	3,908	-2.5%	3,847	-1.6%	108.2
Scipio Township, IN	414	414	527	2.7%	536	1.7%	39.9
Tully Township	2,119	2,054	1,903	-10.2%	1,782	-6.4%	52.7
Union Township	1,009	942	816	-19.1%	718	-12.0%	22.4
Village of Antwerp	1,740	1,736	1,522	-12.5%	1,403	-7.8%	1,142.5
Village of Broughton	166	120	108	-34.9%	84	-21.8%	497.3
Village of Cecil	216	188	179	-17.1%	160	-10.7%	122.5
Village of Convoy	1,110	1,085	1,169	5.3%	1,208	3.3%	2,083.5
Village of Haviland	180	215	225	25.0%	260	15.6%	572.2
Village of Latty	200	193	165	-17.5%	147	-10.9%	614
Village of Paulding	3,595	3,605	3,615	0.6%	3,628	0.3%	1,529.4
Village of Payne	1,166	1,194	1,167	0.1%	1,168	0.1%	1,719.8
Village of Scott	322	286	319	-0.9%	317	-0.6%	393.3
City of Woodburn, IN	1,579	1,520	1,481	-6.2%	1,423	-3.9%	1,591.1
Total[1]	35,217	34,574	33,273	-5.5%	32,108	-3.5%	--

Source: U.S. Census Bureau, 2000 and 2010 Decennial Census, Census Reporter, and American Community Survey 5-Year Estimates 2012-2016. Projections derived from each municipality's respective 2000-2016 growth rates.

Although construction employment related to the construction of the Facility will be substantial, this employment is relatively short term and is not expected to result in the permanent relocation of construction workers to the area;

[1] Totals calculated by formula, may reflect rounding errors.

therefore, the Facility is not anticipated to generate significant population growth within the Study Area. The number of potential short- and long-term employment opportunities associated with the construction and operation of the Facility is discussed in further detail below.

2. Employment statistics

Table 3 illustrates the size of the local labor force and level of unemployment in counties located either wholly or partially within five miles of the proposed Facility, as well as across Ohio and Indiana. Annual average unemployment has decreased both statewide and countywide from 2014 to 2016. The annual unemployment rate for Defiance and Paulding Counties has been relatively consistent with that of the state over the last two years, while the annual unemployment rate for Van Wert County has been slightly lower compared to that of Ohio statewide levels. A decrease in unemployment rate has also been observed in Allen County and the State of Indiana during the same 3-year timeframe. Table 4a through Table 4f illustrates employment figures in the States of Ohio and Indiana, and Defiance, Paulding, Van Wert, and Allen Counties broken down by sector for 2016.

Table 3: Local Labor Force and Unemployment

Place	Labor Force	Employed	Unemployed	Unemployment rate, 2016 (annual)	Unemployment rate, 2015 (annual)	Unemployment rate, 2014 (annual)
Defiance County	18,432	17,539	893	4.8%	4.9%	5.5%
Paulding County	8,860	8,456	404	4.6%	4.8%	5.5%
Van Wert County	14,273	13,703	570	4.0%	4.1%	4.9%
Allen County, IN	180,637	172,951	7,686	4.3%	4.6%	5.7%
State of Ohio	5,739,296	5,451,315	287,981	5.0%	4.9%	5.8%
State of Indiana	3,327,139	3,180,104	147,035	3.5%	4.8%	6.0%

Note: Not Seasonally Adjusted; Source: U.S. Bureau of Labor Statistics, 2016.

Table 4a: Employment and Payroll by NAICS Sector in the State of Ohio

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll ($1,000)	Annual payroll ($1,000)	Total establishments
Total for all sectors	4,719,985	52,632,423	213,161,303	251,668
Agriculture, forestry, fishing and hunting	1,204	8,631	39,876	269
Mining, quarrying, and oil and gas extraction	12,932	209,203	782,917	743
Utilities	23,839	772,796	2,334,102	667
Construction	179,883	2,139,534	10,690,205	19,731
Manufacturing	663,884	9,079,228	36,324,428	14,139
Wholesale trade	235,573	3,588,415	14,334,142	14,035
Retail trade	565,140	3,521,203	14,591,663	36,339
Transportation and warehousing	171,286	1,902,972	8,103,911	7,448
Information	84,415	1,472,345	5,770,568	3,752
Finance and insurance	241,764	5,486,773	18,452,171	17,247
Real estate and rental and leasing	65,324	839,757	3,144,738	10,075
Professional, scientific, and technical services	250,042	3,924,804	16,715,335	24,087
Management of companies and enterprises	150,099	4,165,339	15,062,999	2,186
Administrative and support and waste management and remediation services	397,326	2,874,844	12,629,484	13,526
Educational services	120,934	820,867	3,369,061	3,089
Health care and social assistance	824,772	8,466,783	35,979,928	28,976
Arts, entertainment, and recreation	67,047	480,459	2,442,370	3,766
Accommodation and food services	461,895	1,580,929	6,927,919	23,697
Other services (except public administration)	202,085	1,295,507	5,456,190	27,493
Industries not classified	541	2,034	9,296	403

Source: U.S. Census Bureau, 2018

Table 4b: Employment and Payroll by NAICS Sector in the State of Indiana

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll ($1,000)	Annual payroll ($1,000)	Total establishments
Total for all sectors	2,660,503	28,131,240	113,315,432	145,116
Agriculture, forestry, fishing and hunting	1,445	13,410	63,923	264
Mining, quarrying, and oil and gas extraction	6,036	98,618	395,847	287
Utilities	15,667	407,580	1,400,624	545
Construction	117,203	1,355,624	6,602,423	13,035
Manufacturing	489,137	6,581,620	26,179,217	7,991
Wholesale trade	129,252	2,352,880	8,439,554	7,668
Retail trade	317,863	1,902,917	7,973,837	21,426
Transportation and warehousing	123,332	1,267,117	5,384,598	5,294
Information	42,870	634,358	2,574,307	2,048
Finance and insurance	98,502	1,940,453	6,672,325	9,424
Real estate and rental and leasing	32,599	339,339	1,352,610	6,235
Professional, scientific, and technical services	111,959	1,715,307	6,969,737	12,928
Management of companies and enterprises	51,319	1,406,351	4,662,229	926
Administrative and support and waste management and remediation services	206,965	1,372,366	6,127,473	7,314
Educational services	68,282	460,780	1,912,509	1,646
Health care and social assistance	418,733	4,294,403	18,113,918	16,342
Arts, entertainment, and recreation	33,471	245,149	1,040,217	2,107
Accommodation and food services	269,899	945,169	4,061,592	13,123
Other services (except public administration)	125,707	796,822	3,383,824	16,313
Industries not classified	262	977	4,668	200

Source: U.S. Census Bureau, 2018

Table 4c: Employment and Payroll by NAICS Sector in Defiance County, Ohio

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll ($1,000)	Annual payroll ($1,000)	Total establishments
Total for all sectors	13,809	148,828	538,773	813
Agriculture, forestry, fishing and hunting	-	-	-	-
Mining, quarrying, and oil and gas extraction	-	-	-	-
Utilities	13	855	2,528	3
Construction	314	2,820	14,704	63
Manufacturing	3,444	73,870	225,842	42
Wholesale trade	469	4,999	22,014	41
Retail trade	2,346	13,620	58,109	141
Transportation and warehousing	612	6,985	28,051	35
Information	206	2,008	8,211	16
Finance and insurance	606	9,092	32,752	57
Real estate and rental and leasing	80	575	2,420	26
Professional, scientific, and technical services	210	1,955	9,104	46
Management of companies and enterprises	77	1,256	5,818	5
Administrative and support and waste management and remediation services	499	2,889	13,400	28
Educational services	478	2,073	7,874	8
Health care and social assistance	2,100	18,158	74,539	87
Arts, entertainment, and recreation	68	286	1,299	9
Accommodation and food services	1,574	4,725	20,780	87
Other services (except public administration)	713	2,662	11,328	119
Industries not classified	-	-	-	-

Source: U.S. Census Bureau, 2018

Table 4d: Employment and Payroll by NAICS Sector in Paulding County, Ohio

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll ($1,000)	Annual payroll ($1,000)	Total establishments
Total for all sectors	3,551	27,045	121,655	299
Agriculture, forestry, fishing and hunting	-	-	-	-
Mining, quarrying, and oil and gas extraction	b	D	D	2
Utilities	b	D	D	3
Construction	83	709	4,119	26
Manufacturing	1,219	11,377	53,853	33
Wholesale trade	175	1,616	7,583	17
Retail trade	408	2,070	8,512	49
Transportation and warehousing	169	1,269	5,654	16
Information	25	180	696	4
Finance and insurance	101	928	4,089	22
Real estate and rental and leasing	40	115	425	6
Professional, scientific, and technical services	61	431	1,728	14
Management of companies and enterprises	a	D	D	1
Administrative and support and waste management and remediation services	129	2,156	8,339	11
Educational services	b	D	D	1
Health care and social assistance	556	3,414	14,615	28
Arts, entertainment, and recreation	a	D	D	1
Accommodation and food services	272	671	3,180	24
Other services (except public administration)	129	561	2,238	39
Industries not classified	a	D	D	2

a: 0-19 employees
b: 20-99 employees
D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
Source: U.S. Census Bureau, 2018

Table 4e: Employment and Payroll by NAICS Sector in Van Wert County, Ohio

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll ($1,000)	Annual payroll ($1,000)	Total establishments
Total for all sectors	9,772	80,762	352,742	544
Agriculture, forestry, fishing and hunting	a	D	D	1
Mining, quarrying, and oil and gas extraction	a	D	D	1
Utilities	44	1,025	3,805	5
Construction	224	1,903	9,398	39
Manufacturing	3,387	33,887	147,393	37
Wholesale trade	331	3,282	15,267	29
Retail trade	1,124	5,812	25,543	84
Transportation and warehousing	308	3,275	13,012	28
Information	45	293	1,170	8
Finance and insurance	752	12,041	51,346	39
Real estate and rental and leasing	71	552	2,659	13
Professional, scientific, and technical services	321	2,365	11,594	31
Management of companies and enterprises	a	D	D	1
Administrative and support and waste management and remediation services	336	1,617	7,390	18
Educational services	41	160	684	5
Health care and social assistance	1,403	10,912	46,918	62
Arts, entertainment, and recreation	85	219	1,111	8
Accommodation and food services	816	1,870	8,606	48
Other services (except public administration)	471	1,509	6,567	86
Industries not classified	a	D	D	1

a: 0-19 employees
D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
Source: U.S. Census Bureau, 2018

Table 4f: Employment and Payroll by NAICS Sector in Allen County, Indiana

NAICS code description	Paid employees for pay period including March 12, 2015	First-quarter payroll ($1,000)	Annual payroll ($1,000)	Total establishments
Total for all sectors	170,038	1,804,696	7,046,259	9,084
Agriculture, forestry, fishing and hunting	32	174	527	11
Mining, quarrying, and oil and gas extraction	105	690	3,429	6
Utilities	e	D	D	15
Construction	7,933	96,040	453,386	858
Manufacturing	25,527	420,515	1,464,193	478
Wholesale trade	9,663	124,064	497,138	587
Retail trade	21,316	131,061	547,685	1,263
Transportation and warehousing	6,326	72,016	302,912	304
Information	3,093	46,468	172,093	126
Finance and insurance	8,505	187,045	601,335	661
Real estate and rental and leasing	2,236	19,026	83,276	437
Professional, scientific, and technical services	5,735	70,248	301,494	857
Management of companies and enterprises	3,546	80,947	272,560	62
Administrative and support and waste management and remediation services	9,366	56,166	262,386	484
Educational services	4,011	23,269	97,374	123
Health care and social assistance	32,855	339,629	1,421,463	993
Arts, entertainment, and recreation	2,382	9,038	41,325	131
Accommodation and food services	16,666	53,433	225,970	718
Other services (except public administration)	10,346	61,412	257,881	958
Industries not classified	18	76	163	12

e: 250-499 employees
D: Withheld to avoid disclosing data for individual companies; data are included in higher level totals.
Source: U.S. Census Bureau, 2018

Part III: Regional Development Impacts

The Study Area is primarily agricultural, and while it is predominantly rural, the City of Toledo (northeast of the Study Area), the City of Fort Wayne, Indiana (west of the Study Area), and the City of Dayton (south of the Study Area), are all significant metropolitan regions and in relative proximity to the Study Area. The Study Area, which includes portions of Paulding, Defiance, Van Wert, and Allen Counties, is primarily agricultural in nature. The regional context for the development of this Facility is discussed in further detail below, concentrating on three primary components: housing, commercial and industrial development, and transportation. In addition, the compatibility of the proposed Facility with regional developmental goals and plans is reviewed.

1. Housing

As with all sectors of the economy, the housing market throughout the region has felt the impact of population loss. Owner-occupied vacancy rates in Paulding County (2.4%) and Van Wert County (3.5%) are slightly higher than the Ohio statewide average (1.9%), while the rate for Defiance County (1.0%) is slightly lower. The average rate of owner-occupied vacancies in Allen County (1.6%) falls slightly below the statewide average in Indiana (2%). The rental vacancy rate in Allen County (8.2%), Defiance County (6.2%), Paulding County (7.0%), and Van Wert County (7.3%) is slightly higher than the statewide Ohio and Indiana averages (6.0% and 7.6%, respectively) (Table 5).

Defiance, Paulding, and Van Wert Counties feature a median monthly gross rent level of $669, $619, $653, respectively, all of which are below the statewide average of $743/month. Similarly, the median monthly gross rent level in Allen County ($691) is lower that the Indiana statewide average of $758/month. Each county in the Study Area has a lower percentage of households whose rent accounts for more than 35% of their household income, compared to their respective statewide values. In addition, the median housing values of Defiance, Paulding, Van Wert, and Allen Counties are below the statewide averages of both Ohio ($131,900) and Indiana ($126,500).

It is estimated that 3,595 housing units within Defiance, Paulding, and Van Wert Counties, and 13,042 within Allen County are currently vacant. Given these figures, in addition to the population projections discussed in Part II of this report, it is not expected that the development of the Facility will have a significant impact on the regional housing market. While the Facility development may not represent a widespread boom for rental property owners, it is worth noting that the availability of vacant rental housing also indicates that the Facility should not have a destabilizing effect on current renters.

Table 5: Study Area Housing Characteristics

Municipality/County/ State	Total housing units	Occupied units	Vacant units	Vacancy rate		Median housing value of owner-occupied units	Median gross rent (monthly)	% of households with gross rent > 35% of household income
				Home - owner	Rental			
Benton Township	401	401	0	0.0%	0.0%	$103,500	$716	18.0%
Blue Creek Township	379	306	73	1.6%	1.4%	$108,700	$534	19.7%
Carryall Township	1,255	1,170	85	1.5%	2.0%	$93,300	$588	26.7%
Crane Township	621	582	39	0.0%	4.3%	$101,100	$774	41.5%
Emerald Township	317	250	67	0.0%	0.0%	$101,400	(x)	(x)
Harrison Township	636	609	27	0.0%	0.0%	$81,400	$553	18.2%
Hoaglin Township	285	233	52	9.0%	0.0%	$122,200	(x)	0.0%
Jackson Township	789	742	47	0.0%	0.0%	$93,400	$683	47.3%
Jackson Township, IN	194	147	47	0.0%	0.0%	$117,000	(x)	0.0%
Latty Township	460	420	40	0.0%	0.0%	$76,700	$814	23.0%
Maumee Township, IN	1,031	986	45	2.9%	3.0%	$108,400	$736	14.9%
Monroe Township, IN	779	714	65	1.7%	11.5%	$93,200	$622	34.4%
Paulding Township	1,848	1,588	260	0.0%	14.7%	$81,300	$584	26.2%
Scipio Township, IN	161	161	0	0.0%	0.0%	$165,100	(x)	100%
Tully Township	845	733	112	6.3%	24.0%	$90,000	$588	4.7%
Union Township	362	336	26	1.6%	0.0%	$123,700	$574	0.0%
Village of Antwerp	735	671	64	2.8%	2.8%	$78,800	$552	31.5%
Village of Broughton	54	44	10	0.0%	0.0%	$52,000	(x)	0.0%
Village of Cecil	87	73	14	0.0%	15.8%	$51,600	$629	86.7%
Village of Convoy	494	432	62	4.9%	26.1%	$68,900	$588	4.7%
Village of Haviland	108	94	14	6.9%	2.0%	$78,800	$579	28.6%
Village of Latty	72	67	5	0.0%	0.0%	$90,000	$708	57.1%
Village of Paulding	1,694	1,505	189	0.0%	10.7%	$79,600	$598	27.1%
Village of Payne	549	522	27	0.0%	0.0%	$70,300	$558	14.6%
Village of Scott	146	117	29	4.9%	0.0%	$41,900	$571	0.0%
City of Woodburn, IN	599	566	33	5.0%	5.0%	$85,100	$775	22%
Defiance County	16,712	15,378	1,334	1.0%	6.2%	$109,400	$669	38.5%
Paulding County	8,685	7,659	1,026	2.4%	7.0%	$91,100	$619	28.8%
Van Wert County	12,662	11,427	1,235	3.5%	7.3%	$98,900	$653	33.5%
Allen County, IN	154,525	141,483	13,042	1.6%	8.2%	$116,400	$691	35.8%
Ohio Statewide	5,146,944	4,601,449	545,495	1.8%	6.0%	$131,900	$743	39.0%
Indiana Statewide	2,830,669	2,513,828	316,841	2.0%	7.6%	$126,500	$758	39.0%

Source: U.S. Census Bureau, American Community Survey 5-Year Estimates 2012-2016. (x) = data unavailable

2. Commercial and Industrial Development

The Environmental Law & Policy Center estimated that the State of Ohio is currently home to 106 wind power supply chain businesses, providing 1,000 to 2,000 jobs throughout the state (ELPC, 2011). Wind energy technology manufacturing opportunities include rotors, controls, drive trains, generators, and towers. Several of these manufacturers and other wind power-related businesses are located in the Greater Cleveland Region (AWEA, 2015).

The diversification of Ohio's energy portfolio will have significant and positive economic impacts beyond a reduced dependence on coal imported from outside of the state. The Environment Ohio Research & Policy Center estimated that if the State of Ohio increased wind power production to 20% of the state's total energy portfolio by 2020, such development would create 3,100 permanent, full-time positions within the state, and result in cumulative wages totaling $3.7 billion. This same analysis estimated that such a commitment would result in an increase in gross state product of approximately $8.2 billion by 2020 (Environment Ohio, 2007).

These impacts are principally due to the impact of wind energy development on the manufacturing sector. The State of Ohio is uniquely positioned to take advantage of advanced manufacturing opportunities for the development and distribution of wind power technology, according to the Renewable Energy Policy Project's (2004) report, "Wind Turbine Development: Location of Manufacturing Activity." This analysis estimates that if the United States were to invest $50 billion into 50,000 MW of new wind power production, Ohio manufacturers could stand to create 11,688 jobs in wind turbine and related manufacturing, accounting for 1.95% of the total investment; by way of comparison, the American Wind Energy Association estimates that the State of Ohio alone has enough wind resources to generate nearly 359 MW at 80m hub height and 110,439 MW at 110m hub height of onshore wind energy (AWEA, 2015).

Specific short- and long-term economic impacts of this Facility on commercial and industrial development throughout the region are described in further detail in Part V of this report.

3. Transportation

The region surrounding the Facility features numerous interstates, U.S, and state highways, county and local roadway networks, freight rail lines, and small airports. The main transportation routes to the Facility are U.S. Route 24 to the north and U.S. Route 49 to the south. U.S. Route 127 to the east runs adjacent to the Facility. State Routes 111, 114 and 613 (east and west) and State Route 49 (north and south), provide direct access into the Facility. These and other primary routes facilitate transportation between the Facility and the surrounding metropolitan areas.

Workers coming to and from the site will most likely enter via State Route 49 and 613 from U.S. Route 24 and 49. Construction traffic bound for the substation will likely use State Route 49 as the primary route. The proposed Facility is not expected to cause any substantial disruption to major transportation corridors serving the Study Area.

Freight rail lines connect several of the municipalities throughout the Study Area. CSX and Norfolk Southern operate the majority of Ohio's freight rail system, although smaller operators such as Grand Trunk Western Railway also operate in the area. Study Area municipalities connected to freight rail lines include the Townships of Carryall, Crane, Emerald, Harrison, Jackson, Paulding, Tully, and Union, and the Villages of Antwerp, Broughton, Cecil, Latty, and Payne. The rail system may be used for the transportation of a very small number of turbine component and equipment suppliers, but the Applicant does not anticipate making any modifications to the system.

The Study Area is also in proximity to the Defiance Memorial Airport, the Van Wert County Airport, the Williams County Airport, and the Ruhe's Airport. Construction and operation of the Facility will be designed according to Federal Aviation Administration (FAA) standards and are not expected to result in any adverse impacts to the regional air transportation network. The Applicant will file a notice of proposed construction or alteration (Form 7460-1) with the FAA to confirm the structures will not result in a substantial adverse impact.

4. Local and Regional Plan Compatibility

The current land use of the Study Area is predominately agricultural. The Facility will be compatible with the existing agricultural land use. Only a select number of the municipalities within the five-mile Study Area have adopted comprehensive land use plans, strategic downtown plans, and/or economic development plans. Each of these are summarized below:

- <u>Maumee Valley Planning Organization (MVPO) Comprehensive Economic Development Strategy (CEDS)</u>

  In late 2012, the MVPO, with financial support from the US Economic Development Authority, finalized a CEDS for Defiance, Fulton, Henry, Paulding, and Williams Counties. This CEDS represents a prioritized action plan that strategizes steps to achieve economic development goals. These goals aim to increase employment growth and investment, improve the efficiency and effectiveness of economic development efforts, enhance and promote quality of life assets, ensure that the current and future workforce needs of businesses are met, and ensure that the current and future infrastructure needs of the region are met. Wind energy, along with its supply chain manufacturers were mentioned in the plan as substantial investors and growing components of the regional economy, and the proposed Facility is compatible with

each of the goals supported by the CEDS. This strategy is in the process of being updated and is expected to be completed in September of 2018.

- Paulding County Community Development Plan

  The Paulding County Vision Board, comprised of representatives from the County, Villages and Townships, is currently in the process of developing a Community Development Plan that will describe the history, current conditions, and future vision for the County. Upon doing so, it is intended to develop a road map for making that vision a reality. Draft goals presented by the Paulding County Visioning Board in May 2018 include sidewalk improvements, road repair, addressing drug problems, sewer and water, upkeep of properties and downtown areas, increasing local industry, improving reliability of internet and cell phone coverage. Wind energy is not mentioned specifically in the draft plan; however, as a strategy to increase employment growth and investment, natural resources can be advertised as an asset of the county to increase the number of employment options.

- Village of Antwerp Comprehensive Plan:

  In 2014, the Village of Antwerp adopted a Comprehensive Plan that provides an overview of the community, changes and trends throughout the years, an overview of existing land use, and a vision and strategy for future development. That vision features four critical elements: 1) redeveloping areas near U.S. Route 24 and State Route 4 and 2) revitalizing the downtown area, 3) becoming more walkable and bike-able, and 4) expanding recreational/pedestrian/cycling amenities. The proposed Facility provides economic activity within the village, which in turn, will provide additional revenues to assist in implementing this vision.

- Allen County Comprehensive Plan

  In 2007, the "Plan-it Allen!" Comprehensive Plan was developed under the guidance of the Comprehensive Committee of Allen County and Fort Wayne to serve as a guide for community decision making in Allen County, Indiana. This joint land use and development plan creates a path towards community inclusivity, economic development, protection and enhancement of natural resources, and preservation and revitalization of communities. The plan does not specifically reference wind energy; however, it does emphasize the use of renewable energy as a method for improving air quality and aiding environmental stewardship. Another primary goal is the enhancement of community appearance, specifically to ensure new development is complementary to existing local character. Whether or not a wind facility negatively impacts local character is subjective, to some extent. Some people may feel the Facility will impact local character, which would represent an inconsistency.

- Allen County Strategic Plan: Update

  The Allen County Strategic Plan was initially drafted in 2009, then updated in 2010 and 2011, to reflect changes in goals and implementation strategies. The primary goals include the improvement of community services, development and growth of the local economy, collaborative government, development of a well-informed community, and implementation of conservation techniques. Wind energy is referenced within the plan as a potential indicator of improvement towards the goal of implementation of conservation techniques. Allen County strives to increase knowledge, awareness, and implementation of conservation programs and techniques.

The Facility is in an area that is largely rural in nature with a majority of impacts from the Facility construction and operation occurring on land used for agriculture. The economic benefits of the turbines for local agriculturalists, as well as their overall compatibility with farming practices, will support and aid in the preservation of local farming operations. Furthermore, the jobs and economic development created by Facility may help to create and retain existing local employment opportunities. Therefore, the development of this Facility is compatible with the goals and strategies of existing local and regional plans.

5. Concurrent or secondary uses

Facility components will be located on portions of leased land with existing rural residential or agricultural uses. These existing uses are expected to continue throughout the lifetime of the Facility.

Part IV: Assessing Job and Economic Development Impacts

1. Jobs and Economic Development Impact (JEDI) Model

The proposed Timber Road IV Wind Farm is anticipated to have local and statewide economic benefits. Wind power development, like other commercial development projects, can expand the local, regional, and statewide economies through both direct and indirect means. Income generated from direct employment during the construction and operation phases of the wind farm is used to purchase local goods and services, creating a ripple effect throughout the state. The job and economic impacts of the Facility were assessed using the Job and Economic Impact (JEDI) wind model. Created by the National Renewable Energy Laboratory (NREL), a national laboratory of the United States Department of Energy (USDOE), the JEDI model allows users to estimate exactly the jobs and economic development impacts from wind power generation projects for both the construction and operation phases of a proposed project (USDOE NREL, 2017). These economic development impacts, categorized by the levels of impact and indicators described below, include onsite jobs and earnings, economic output from these onsite earnings, local revenue/supply chain jobs and earnings, economic output from these local revenue/supply chain earnings, induced jobs and earnings, and economic output from these induced jobs and earnings. It then calculates the aforementioned indicators for each level of impact using project-specific data provided by the Applicant and geographically-defined multipliers. These multipliers are produced by IMPLAN Group, LLC using a software/database system called IMPLAN (IMpact analysis for PLANing), a widely-used and widely-accepted general input-output modeling software and data system that tracks unique industry groups in various levels of the regional data (IMPLAN Group, 2018).

Using the JEDI wind model, this report analyzes three levels of impact that the proposed Facility may have on the economy:

> **On-site labor impacts:** These are the direct impacts experienced by the companies/individuals residing in the State of Ohio engaged in the onsite construction and operation of the Facility. These values represent expenditure of dollars on labor (wages, salaries and associated expenses) by Facility onsite construction personnel as well as operation and maintenance (O&M) personnel. On-site labor impacts do not reflect material expenditures. Most other input-output models consider this level as “direct impacts”, referring to changes in jobs, economic activity and earnings associated with the immediate impacts created by the investment, which would include the equipment installed onsite, the concrete used onsite, etc. However, the immediate economic impacts of the physical items used onsite, normally included in direct impacts, typically occur at some geographic distance from the project itself. Because of JEDI's focus on the local impacts of a Facility, only the labor associated with the on-site location of the Facility (Construction and Construction-Related Services) is counted at this level.

Local revenue and supply chain impacts: These impacts measure the estimated increase in demand for goods and services in industry sectors that supply or otherwise support the companies engaged in construction and operation (also known as "backward-linked" industries). These measures account for the demand for goods and services such as turbine components, project analysis, legal services, financing, insurance, etc. Most other input-output models consider this level as "indirect impacts", referring to economic impacts associated with linked sectors in the economy that are upstream of the direct impacts, such as suppliers of hardware used to make the equipment installed onsite or the concrete used onsite. However, because of JEDI's focus on the local impacts of the Facility, labor for components of this Facility (e.g. turbine manufacturers) occurring at off-site locations is also counted in this level as a local revenue and supply chain impact.

Induced impacts: Induced impacts measure the estimated effect of increased household income resulting from the project. Induced impacts reflect the reinvestment of earned wages, as measured throughout the first two levels of economic impact. This reinvestment can occur anywhere within the local, regional, or state economy, on household goods, entertainment, food, clothing, transportation, etc.

Each of these three levels of impact can be measured in terms of three indicators: jobs (as expressed through the increase in employment demand), the amount of money earned through those jobs, and the overall economic output associated with each level of economic impact. These indicators are described in further detail:

Jobs: Jobs refer to the increase in employment demand because of Facility development. These positions are measured across each level of impact, so that they capture the estimated number of jobs on site, in supporting industries, and in the businesses, that benefit from household spending. For the purposes of this analysis, this term refers to the total number of year-long full-time equivalent (FTE) positions created by the Facility. Persons employed for less than full time or less than a full year are included in this total, each representing a fraction of a FTE position (e.g. a half-time, year-round position is 0.5 FTE).

Earnings: This measures the wages and salary compensation paid to the employees described above.

Output: Output refers to the value of industry production in the state economy, across all appropriate sectors, associated with each level of impact. For the manufacturing sector, output is calculated by total sales plus or minus changes in inventory. For the retail sector, output is equal to gross profit margin. For the service sector, it is equal to sales volume. For example, output would include the profits incurred by those businesses that sell electrical transmission line, concrete, or motor vehicle fuel to the Applicant.

2. Methodology

Calculating the number of jobs and economic output from a proposed facility using the JEDI model is a two-step process. The first step requires Facility-specific data inputs (such as year of construction, size of Facility, turbine size and location). These facility-specific data were used to provide a baseline set of assumptions that would produce a conservative estimate of the total positive jobs and economic impacts produced by this Facility. Note that the Applicant presents a turbine layout of up to 54 turbines for permitting purposes, with the exception of the economic analysis for the socioeconomic report; this layout is presented and analyzed throughout the rest of the Ohio Power Siting Board (OPSB) Application. The socioeconomic report analyzes the total number of positive jobs and economic impacts produced by the Facility based on a 31-turbine layout to avoid overestimating the Facility's economic benefits in the OPSB Application.

- Location: Ohio
- Year of Construction: 2019
- Total Project Nameplate Capacity: 125.1 MW
- Number of Projects: 1
- Number of Turbines: 31

Using this Facility-specific data, the JEDI model then creates a list of default values, which includes project cost values, default financial parameter values, default tax values, default lease payment values, and default local share of spending values. These default values are derived from 10 years of research by NREL, and stem from various sources, including interviews and surveys from leading project owners, developers, engineering and design firms, and construction firms active in the wind energy sector. The second step of the JEDI model methodology requires the review, and if warranted, the customization of default project cost values and financial parameter values to more reasonable estimates. The Applicant reviewed the default project cost values subtotaled by each of the following categories in the JEDI model: equipment during construction, balance of plant construction, labor during operation & maintenance, materials and services during operation & maintenance, financial parameters, tax parameters, land lease parameters and payroll parameters and determined whether they were appropriate for the project under review. As a result of that review, adjustments were made to specific default values. The remaining JEDI default values were reviewed and determined to be reasonable estimates based on the Applicant's previous experience in wind energy development.

Part V: Job and Economic Development Impacts on the Statewide Economy

The job and economic impact analysis presented here used the most currently available (2016) multiplier data specific to Ohio to estimate potential impacts on a statewide basis. An economic impact analysis was performed for the Timber Road IV Wind Farm (the Facility) to be constructed in 2019 with an output capacity of 125.1 MW and an assumed 31

turbines, sized at an average of 4.035 MW. The results of this analysis, estimated for both the construction and operation phases of the proposed Facility, are illustrated in Table 6 and summarized in the narrative that follows.

Table 6: Summary Results of Job and Economic Impact Analysis

	Jobs	Earnings (Millions)	Output (Millions)
Construction			
Project Development and Onsite Labor Total	208	$11.4	$11.8
Construction & Interconnection Labor	204	$11.1	-
Construction Related Services	5	$0.2	-
Turbine & Supply Chain Impacts	327	$18.8	$65.6
Induced Impacts	135	$7.3	$21.3
Total Impacts	**670**	**$37.4**	**$98.7**
Annual Operation			
Onsite Labor Impacts	7	$0.5	$0.5
Local Revenue and Supply Chain Impacts	8	$0.5	$2.5
Induced Impacts	7	$0.4	$1.2
Total Impacts	**22**	**$1.4**	**$4.2**

Source: NREL JEDI Model (version W12.23.16) (USDOE NREL, 2018)
Notes: Earnings and Output values are millions of dollars in 2018 dollars. Totals may not add up due to independent rounding. Results are based on model default values. For example, the unrounded construction and interconnection labor jobs is 203.6 (rounded to 204) FTE positions and the construction related services jobs is 4.7 (rounded to 5) FTE positions, which total 208.3 (rounded to 208) FTE positions. All values are rounded, therefore totals based on the unrounded values may not add up to the totals of the rounded values shown here in this table.

Demand for new jobs associated with the Facility will be created during both the initial construction period and the years following construction, in which the Facility is in operation. The money injected into the statewide economy through the creation of these jobs will have long-term, positive impacts on individuals and businesses in Ohio as it ripples through the economy.

1. Statewide Job and Economic Development Impact: Construction

Based upon JEDI model computations, it is anticipated that construction of the proposed Facility will directly generate employment of an estimated 208 FTE onsite construction and construction-related service positions for Ohio residents, which will be for Construction and Interconnection Labor and Construction Related Services. The JEDI model estimates in a total of $11.1 million for annual earnings of the 204 onsite construction jobs. Turbine manufacturing and supply chain industries could in turn generate an additional 327 jobs across the State of Ohio over the course of Facility construction. In addition, Facility construction could induce demand for 135 jobs statewide through the spending of additional household income. Based on the results of the model, the total impact of potentially 670 new jobs could result in up to $37.4 million of earnings, assuming a 2019 construction schedule and wage rates consistent with statewide averages. Facility construction labor wages for similar construction positions within the Toledo region range

from an average of $18.64 per hour for construction laborers, $31.11 for electricians, and $45.85 for construction managers (Bureau of Labor Statistics, 2017). Local, regional, and statewide employment during the construction phase will primarily benefit those in the construction trades, including equipment operators, truck drivers, laborers, and electricians. Facility construction will also require workers with specialized skills, such as crane operators, turbine assemblers, specialized excavators, and high voltage electrical workers. It is anticipated that many of the highly-specialized workers will come from outside the area and will remain only for the duration of construction.

In addition to jobs and earnings, the construction of the Facility is expected to have a positive impact on statewide economic output, a measurement of the value of goods and services produced and sold by backward-linked industries. As described in the definition above, output provides a general measurement of the amount of profit earned by manufacturers, retailers, and service providers connected to a given project. Based on the results of the model, the value of economic output associated with Facility construction is estimated to be $98.7 million. Between workers' additional household income and industries' increased production, the impacts associated with the Facility are likely to be experienced throughout many different sectors of the statewide economy. Pursuant to Section 5727.75 of the Ohio Revised Code (ORC), the Facility may qualify for tax incentives based on the degree to which it employs in-state construction labor (see Part VI). At the time of the publication of this report, it is not yet known what portion of construction labor will be Ohio-domiciled.

2. Statewide Job and Economic Development Impact: Operations and Management

Based upon JEDI model computations, the operation and maintenance of the proposed Facility is estimated to generate 7 full-time equivalent onsite jobs with combined estimated annual earnings of approximately $0.5 million. These 7 jobs are anticipated to be comprised of project management, technician, and administrative personnel. Wage rates are projected to be consistent with statewide averages which are estimated to be $18.86 per hour for payroll and timekeeping clerks, $25.55 per hour for industrial engineering technicians, and, $51.21 for industrial production Managers (Bureau of Labor Statistics, 2017). These 7 full-time onsite jobs generated by the wind energy Facility comprise the Facility's direct long-term employment impact.

Operations and maintenance should also generate new jobs in other sectors of the economy through supply chain impacts and the expenditure of new and/or increased household earnings. Increased employment demand throughout the supply chain is estimated to result in approximately 8 jobs with annual earnings of approximately $0.5 million. In addition, it is estimated that 7 jobs with associated annual earnings of $0.4 million will be induced through the increased household spending associated with Facility operations. In total, while in operation, this Facility is estimated to generate demand for 22 jobs per year with annual earnings of approximately $1.4 million. Total economic output could also increase by an estimated $4.2 million as a result of Facility operations and maintenance.

3. Land Lease Payments

Operation of the Facility will result in payment to local landowners in association with the lease agreements executed to host Facility components. These annual lease and easement payments will offer direct benefits to participating landowners, which will be in addition to any income generated from the surrounding land use (e.g. agricultural production). The Applicant estimates that these payments will total approximately $375,300 on an annual basis each year the Facility is in operation, although this value is contingent upon project details still in development (e.g., turbine choice and layout). The Facility will also generate lease payments during the construction phase; while the value is currently unknown, the lease payments will have a beneficial impact on the local economy during construction. These lease payments will have a positive impact on the region, to the extent that landowners will spend their revenue locally.

Part VI: Local Tax Revenues

1. Legislative Context

Wind energy projects in the State of Ohio can be exempted from tangible personal property and real property tax payments if they meet certain conditions. These conditions are enumerated in Section 5727.75 of the ORC. Operators of these exempted projects, known as qualified energy projects (QEP), are instead required to make annual payments in lieu of taxes (PILOT). In order to be certified as a QEP by the state, a project must meet certain criteria, including:

- an application for certification of the energy project as a QEP that complies with the requirements under Section 5727.75 of the ORC and OAC 122:23-1 must be submitted to the director of the Ohio Development Services Agency (ODSA) on or before December 31, 2020;
- an application under Section 4906.20 of the ORC must be submitted to the Ohio Power Siting Board (OPSB) on or before December 31, 2020;
- the county commissioners of a county in which property of the project is located must have adopted a resolution approving the application submitted to ODSA or the county commissioners must pass a resolution declaring the county an alternative energy zone (AEZ);
- at least 50% of the full-time equivalent construction and installation employees, as defined in Section 5727.75 of the ORC, must be Ohio-domiciled; and
- construction must begin by January 1, 2021.

If an applicant is granted exemption from taxation for any of the tax years 2011 through 2021, the QEP will be exempt from taxation for tax year 2022 and all ensuing years if the property was placed into service before January 1, 2022. The amount of PILOT to be paid annually to the county treasurer, ranging from $6,000 and $8,000, is assessed per megawatt (MW) of nameplate capacity, with the rate dependent on the percentage of construction/installation employees who are domiciled in Ohio. The PILOT would be: $6,000 per MW, if during construction/installation the

project employs 75% or more Ohio-domiciled employees; $7,000 per MW, if during construction/installation the project employs 60% or more Ohio-domiciled employees; and $8,000 per MW, if during construction/installation the project employs the minimum requirement of 50% or more Ohio-domiciled employees (Table 7). County commissioners may require an additional service payment, as long as the total of the additional payment and the PILOT do not exceed $9,000 per MW.

Table 7: Service Payment per Megawatt Schedule

Annual Service Payment per Megawatt of Nameplate Capacity	Ratio of Ohio-Domiciled Full-Time Equivalent Employees
$6,000	75% or More
$7,000	60% to 74%
$8,000	50% to 59%

2. Estimated Payments In Lieu Of Taxes

Turbines for the Timber Road IV Wind Farm are anticipated to be located in a total of five municipalities (Crane, Harrison, Paulding, Benton, and Blue Creek Townships) in Paulding County, along with three school districts: Wayne Trace Local School District, Antwerp Local School District, and Paulding Exempted Village School District. Table 8 displays the total estimated overall PILOT revenues to be distributed. The first $6,000 to $8,000 per MW collected will be distributed taxing units in the county, and any additional service payment about the first $6,000 to $8,000 goes into the county's general fund in accordance with Section 5727.75 of the ORC.

Table 8: Estimated Total PILOT Revenue

Total Facility capacity (MW)	PILOT at $6,000/MW	PILOT at $7,000/MW	PILOT at $8,000/MW	PILOT at $9,000/MW
125.1	$750,600	$875,000	$1,000,800	$1,125,900

Part VII: Conclusion

The socioeconomic effects of the Timber Road IV Wind Farm, when assessed in light of regional and local economic trends, will have a positive impact on the communities within the Study Area and across the State of Ohio. Lease payments, short- and long-term job creation, and PILOT revenues will benefit private landowners, businesses, and taxing jurisdictions, and the county. The Facility is not expected to generate significant expenditures from these beneficiaries; therefore, it will have a positive impact on the social and economic conditions of these communities and across Ohio.

1. Total Statewide Economic Benefit

   The construction of the Timber Road IV Wind Farm is expected to produce a total of $37.4 million in employment earnings and $98.7 million in total economic output. Subsequently, each year the Facility is operational it is expected to generate approximately $1.4 million in earnings and $4.2 million in total economic output.

2. Statewide Employment Benefits

   During the construction period, the Facility is expected to support demand for a total of 670 onsite, supply chain, and induced employment positions. It is expected to support a total of 22 positions during each year of its operation.

3. Land Lease Revenues

   The development of the Facility will result in $375,000 in annual lease payments made to participating landowners.

4. Property Tax Revenues

   Construction of the proposed Timber Road IV Wind Farm will increase local government revenues through payments in lieu of taxes (PILOT). Though the agreements outlining these payments are not yet finalized, it is estimated that annual PILOT revenues could amount to approximately $750,600 to $1.125 million to be distributed for the benefit of the county and the local taxing units.

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Figures

Exhibit H

- **Figure 1 – Regional Facility Location**

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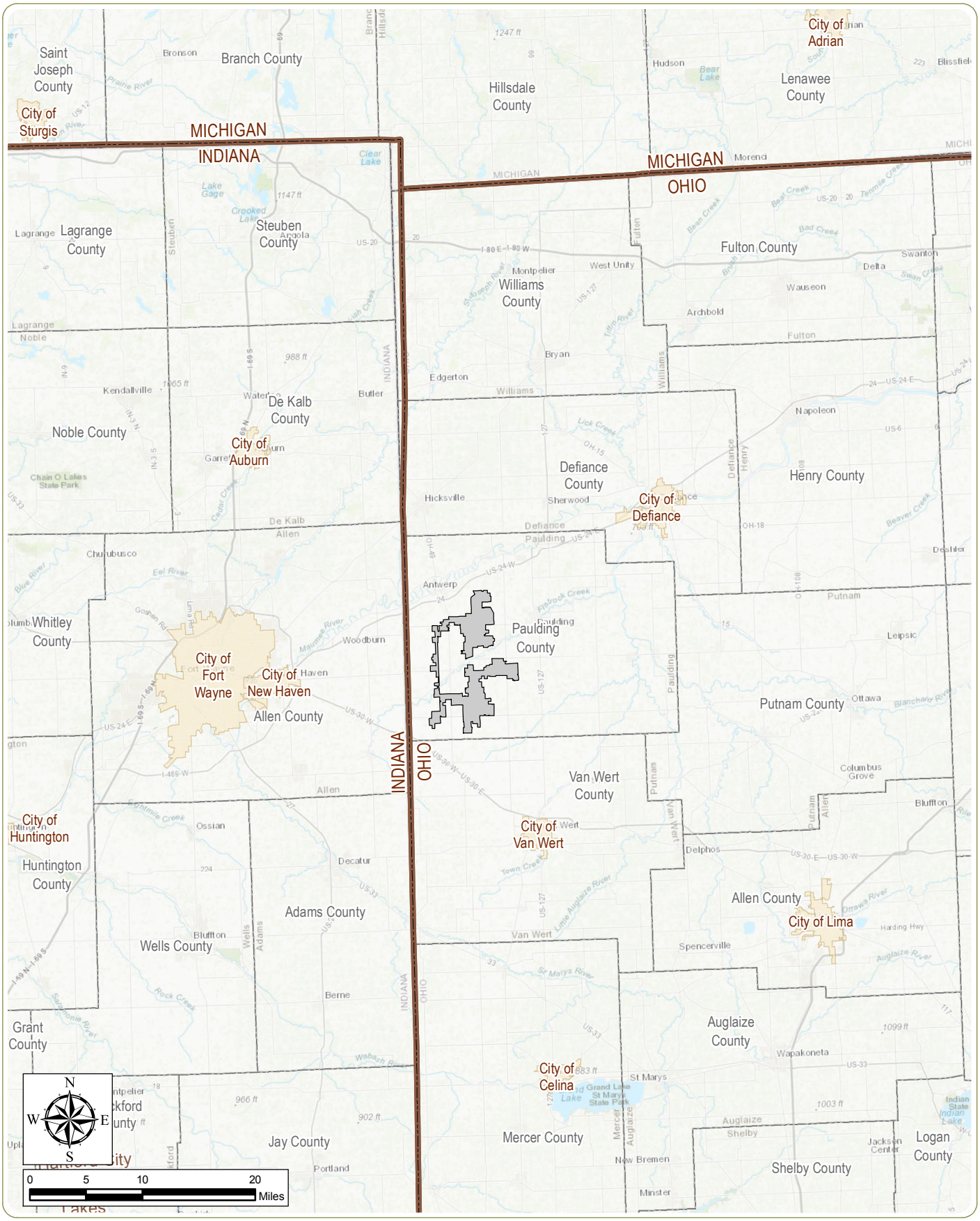
Date Filed: July 2, 2018



Timber Road IV Wind Project

Paulding County, Ohio

Figure 1: Regional Project Location

Notes:

1. Basemap: ESRI ArcGIS Online "World Topographic Map" map service.
2. This map was generated in ArcMap on June 15, 2018.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

Project Area

City with Population Over 10,000

County Boundary

State Boundary

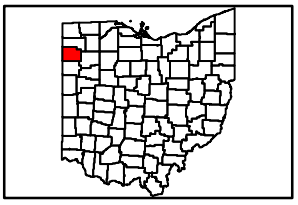


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Exhibit H

- **Figure 2 – 5-Mile Study Area**

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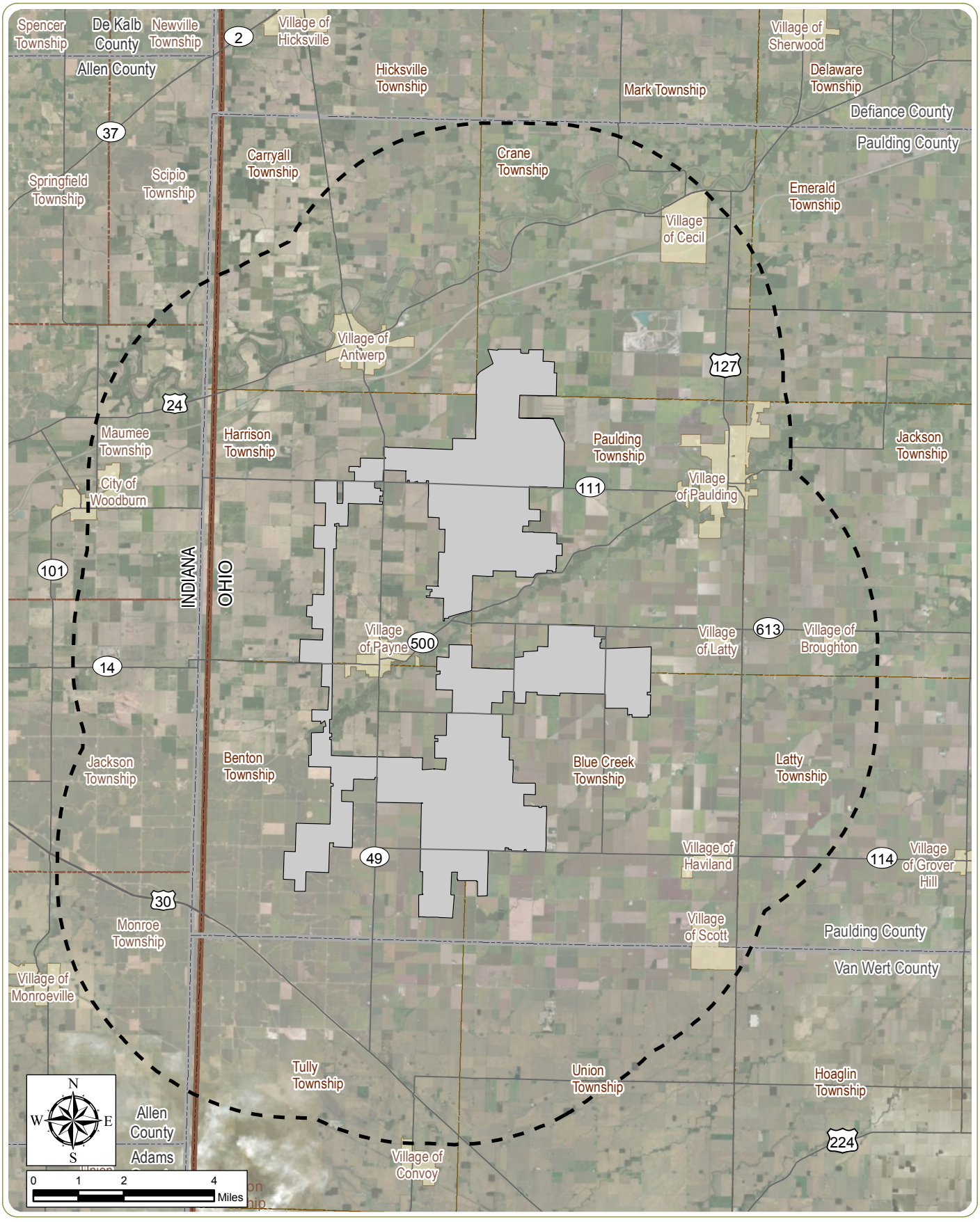

Timber Road IV Wind Project

Paulding County, Ohio

Figure 2: Study Area

5 Mile Study Area
Project Area
City/Village
Township Boundary
County Boundary
State Boundary

Notes:
1. Basemap: ESRI ArcGIS Online "World Imagery" map service.
2. This map was generated in ArcMap on June 15, 2018.
3. This is a color graphic. Reproduction in grayscale may misrepresent the data.

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Paulding Wind Farm IV LLC
Case No. 18-91-EL-BGN

Exhibit I

Sound Impact Assessment

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Timber Road IV Wind Farm
Acoustic Assessment

Paulding County, Ohio

June 2018

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APPENDICES

Appendix A Tabulated Acoustic Modeling Results by NSA
Appendix B Tabulated Acoustic Modeling Results for Additional WTG Models

ACRONYMS AND ABBREVIATIONS

AEP	American Electric Power
AGL	above ground level
ANSI	American National Standards Institute
CadnaA	Computer-Aided Noise Abatement Program
dB	decibel
dBA	A-weighted decibel
dBL	linear decibel
EDPR	EDP Renewables North America LLC
Hz	Hertz
IEC	International Electrotechnical Commission
ISO	International Organization for Standardization
kHz	kilohertz
L_{eq}	equivalent sound level
L_{max}	maximum instantaneous sound level
L_p	sound pressure levels
L_W	sound power level
m	meter
ML	monitoring location
m/s	velocity in meters per second
mph	miles per hour
MVA	megavolt ampere
MW	megawatt
NEMA	National Electrical Manufacturers Association
NIST	National Institute of Standards and Technology
NSA	noise sensitive area
OPSB	Ohio Power Siting Board
µPa	micropascals
Project	Timber Road IV Wind Farm
pW	picowatt
Tetra Tech	Tetra Tech, Inc.
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
W	watt
WTG	wind turbine generator

1.0 INTRODUCTION

EDP Renewables North America LLC (EDPR) currently operates the existing Timber Road I, II, and III Wind Farm and proposes to construct and operate the Timber Road IV Wind Farm (Project) in Paulding County, Ohio. The Project wind turbine generator (WTG) layout, dated May 21, 2018, includes locations for 54 Acciona AW132 3.3-megawatt (MW) WTGs. The rotor-diameters for the Acciona is 433 feet (132 meters) and has a hub height of 276 feet (84 meters). The Project infrastructure also includes a 138-kilovolt transmission line, which connects the Project to the American Electric Power (AEP) transmission system. Operational sound associated with the transmission line will be analyzed and provided in a separate submittal to the Ohio Power Siting Board (OPSB). There is also a Project substation located on the west side the Project area near the intersection of County Roads 33 and 48. Substation data were obtained from EDPR assuming the on-site transformer rated at 55/73/92-megavolt ampere (MVA). To characterize the existing acoustic environment within the Project area, Tetra Tech, Inc. (Tetra Tech) completed a baseline sound survey. In addition, an acoustic modeling analysis was conducted to review operational sound levels resulting from the Project and compliance was assessed at nearby noise sensitive areas (NSAs) (e.g., residences) relative to the OPSB noise requirements. The results of the baseline sound survey and modeling analysis are documented in this Acoustic Assessment report.

1.1 Project Area

The Timber Road IV Wind Farm is located within Paulding County, in northwestern Ohio, with Van Wert County bordering the Project to the south and the state of Indiana bordering the Project to the west. The topography of Paulding County, and the Project Area, is characterized as level to gently sloping. The highest elevation in the county, about 236 meters (775 feet) above sea level, is along U.S. Highway 30 in the southwestern portion of the county. The lowest elevation, about 209 meters (685 feet) above sea level, is at the point where the Maumee River flows into Defiance County. The uniformity of the landscape is broken only by the dissecting nature of the Auglaize and Maumee Rivers and their tributaries, as well as other creeks in the area (e.g., Blue Creek, Wildcat Creek, Cunningham Creek, etc.). These bodies of water are responsible for most of the gently sloping to steep relief in the county.

The Project is located on privately owned lands approximately 2.4 kilometers (1.5 mile) southeast of the Town of Antwerp and just east of the Town of Payne. The main Project area is bounded by U.S. Highway 24 to the north, the county border to the south, Ohio State Route 49 to the west, and U.S Highway 127 to the east. Land use within Paulding County is primarily agricultural. The primary enterprises within the Project site are grain farming and some livestock production and dairying. Residences are widely scattered throughout the Project site with 407 identified within 1-mile radius of the Project site. Patches of trees and shrubs exist throughout and are found primarily between agricultural fields, in drainages, and as shelter belts around homesteads. Figure 1-1 presents the locations of the current Project wind turbines and discrete NSAs that were included in the modeling analysis. Noise monitoring stations and on-site meteorological stations used in the baseline sound survey are also identified.

ML-1
TRIV 3030
ML-2
ML-3
ML-4
TRIV 9500

Legend

- Acciona AW132 Wind Turbine
- Timber Road IV Baseline Monitoring Location
- Noise Sensitive Areas
- On-site Meteorological Station
- Timber Road IV Substation

N

0 1 2

Miles

FIGURE 1-1
TIMBER ROAD IV WIND FARM
PROJECT LAYOUT

PAULDING COUNTY, OHIO

R:\PROJECTS\TIMBER_ROAD_IV_6272\NOISE\MAPS\REPORT\Figure_1-1_Project_Layout.mxd

1.2 Acoustic Terminology

Airborne sound is described as the rapid fluctuation or oscillation of air pressure above and below atmospheric pressure, creating a sound wave. Sound is characterized by properties of the sound waves, which are frequency, wavelength, period, amplitude, and velocity. Noise is defined as unwanted sound. A sound source is defined by a sound power level (L_W), which is independent of any external factors. The acoustic sound power is the rate at which acoustical energy is radiated outward and is expressed in units of watts (W). Sound energy travels in the form of a wave, a rapid fluctuation or oscillation of air pressure above and below atmospheric pressure. A sound pressure level (L_P) is a measure of this fluctuation and can be directly determined with a microphone or calculated from information about the source sound power level and the surrounding environment through predictive acoustic modeling. While the sound power of a source is strictly a function of the total amount of acoustic energy being radiated by the source, the sound pressure levels produced by a source are a function of the distance from the source and the effective radiating area or physical size of the source. In general, the magnitude of a source's sound power level is always considerably higher than the observed sound pressure level near a source due to the fact that the acoustic energy is being radiated in various directions.

Sound levels are presented on a logarithmic scale to account for the large pressure response range of the human ear, and are expressed in units of decibels (dB). A dB is defined as the ratio between a measured value and a reference value usually corresponding to the lower threshold of human hearing defined as 20 micropascals (µPa). Conversely, sound power is commonly referenced to 1 picowatt (pW), which is one trillionth of a watt. Broadband sound includes sound energy summed across the frequency spectrum. In addition to broadband sound pressure levels, analysis of the various frequency components of the sound spectrum is often completed to determine tonal characteristics. The unit of frequency is Hertz (Hz), which corresponds to the rate in cycles per second that sound pressure waves are generated. Typically, a sound frequency analysis examines 11 octave (or 33 1/3 octave) bands ranging from 20 Hz (low) to 20,000 Hz (high). This range encompasses the entire human audible frequency range. Since the human ear does not perceive every frequency with equal loudness, spectrally varying sounds are often adjusted with a weighting filter. The A-weighted filter is applied to compensate for the frequency response of the human auditory system. Sound exposure in acoustic assessments is commonly measured and calculated as A-weighted dB (dBA). Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear in this report are presented as dBL.

Sound can be measured, modeled, and presented in various formats, with the most common metric being the equivalent sound level (L_{eq}). The equivalent sound level has been shown to provide both an effective and uniform method for comparing time-varying sound levels and is widely used in acoustic assessments in the State of Ohio Estimates of noise sources and outdoor acoustic environments, and the comparison of relative loudness are presented in Table 1-1. Table 1-2 provides additional reference information on acoustic terminology.

Table 1-1. Sound Pressure Levels (L_P) and Relative Loudness of Typical Noise Sources and Soundscapes

Noise Source or Activity	Sound Level (dBA)	Subjective Impression	Relative Loudness (perception of different sound levels)
Jet aircraft takeoff from carrier (50 ft)	140	Threshold of pain	64 times as loud
50-hp siren (100 ft)	130		32 times as loud
Loud rock concert near stage or Jet takeoff (200 ft)	120	Uncomfortably loud	16 times as loud
Float plane takeoff (100 ft)	110		8 times as loud
Jet takeoff (2,000 ft)	100	Very loud	4 times as loud
Heavy truck or motorcycle (25 ft)	90		2 times as loud
Garbage disposal, food blender (2 ft), or Pneumatic drill (50 ft)	80	Loud	Reference loudness
Vacuum cleaner (10 ft)	70	Moderate	1/2 as loud
Passenger car at 65 mph (25 ft)	65		
Large store air-conditioning unit (20 ft)	60		1/4 as loud
Light auto traffic (100 ft)	50	Quiet	1/8 as loud
Quiet rural residential area with no activity	45		
Bedroom or quiet living room or Bird calls	40	Faint	1/16 as loud
Typical wilderness area	35		
Quiet library, soft whisper (15 ft)	30	Very quiet	1/32 as loud
Wilderness with no wind or animal activity	25	Extremely quiet	
High-quality recording studio	20		1/64 as loud
Acoustic test chamber	10	Just audible	
	0	Threshold of hearing	

Adapted from: Beranek 1988; EPA 1971

Table 1-2. Acoustic Terms and Definitions

Term	Definition
Noise	Typically defined as unwanted sound. This word adds the subjective response of humans to the physical phenomenon of sound. It is commonly used when negative effects on people are known to occur.
Sound Pressure Level (L_P)	Pressure fluctuations in a medium. Sound pressure is measured in decibels referenced to 20 microPascals, the approximate threshold of human perception to sound at 1,000 Hz.
Sound Power Level (L_W)	The total acoustic power of a noise source measured in decibels referenced to picowatts (one trillionth of a watt). Noise specifications are provided by equipment manufacturers as sound power as it is independent of the environment in which it is located. A sound level meter does not directly measure sound power.
A-Weighted Decibel (dBA)	Environmental sound is typically composed of acoustic energy across all frequencies. To compensate for the auditory frequency response of the human ear, an A-weighting filter is commonly used for describing environmental sound levels. Sound levels that are A-weighted are presented as dBA in this report.
Unweighted Decibels (dBL)	Unweighted sound levels are referred to as linear. Linear decibels are used to determine a sound's tonality and to engineer solutions to reduce or control noise as techniques are different for low and high frequency noise. Sound levels that are linear are presented as dBL in this report
Propagation and Attenuation	Propagation is the decrease in amplitude of an acoustic signal due to geometric spreading losses with increased distance from the source. Additional sound attenuation factors include air absorption, terrain effects, sound interaction with the ground, diffraction of sound around objects and topographical features, foliage, and meteorological conditions including wind velocity, temperature, humidity, and atmospheric conditions.
Octave Bands	The audible range of humans spans from 20 to 20,000 Hz and is typically divided into center frequencies ranging from 31 to 8,000 Hz for noise modeling evaluations.
Broadband Sound	Noise which covers a wide range of frequencies within the audible spectrum, i.e., 200 to 2,000 Hz.
Masking	Interference in the perception of one sound by the presence of another sound. At elevated wind speeds, leaf rustle and noise made by the wind itself can mask wind turbine sound levels, which remain relatively constant.
Frequency (Hz)	The rate of oscillation of a sound, measured in units of Hz or kilohertz (kHz). One hundred Hz is a rate of one hundred times (or cycles) per second. The frequency of a sound is the property perceived as pitch: a low-frequency sound (such as a bass note) oscillates at a relatively slow rate, and a high-frequency sound (such as a treble note) oscillates at a relatively high rate. For comparative purposes, the lowest note on a full range piano is approximately 32 Hz and middle C is 261 Hz.

Note: Compiled by Tetra Tech from multiple technical and engineering resources.

2.0 NOISE REGULATIONS AND GUIDELINES

The OPSB Rule §4906-17-08(A)(3) provides certification requirements for noise that must be adequately addressed during both Project construction and operation, which were recently revised. There are no noise requirements at the county or local levels.

2.1 OPSB Application Filing Requirements for Wind-Powered Electric Generation Facilities

The OPSB has adopted rules that implement certification requirements for wind energy facilities. Subsection (A) Health and safety of Sec. 4906-17-08 Social and ecological data, require the applicant to address the following:

- 4906-4-08(A)(3): Noise. The applicant shall provide information on noise from the construction and operation of the facility.
    - 4906-4-08(A)(3)(a): Describe the construction noise levels expected at the nearest property boundary. The description shall address:
        - 4906-4-08(A)(3)(a)(i): Blasting activities.
        - 4906-4-08(A)(3)(a)(ii): Operation of earth moving equipment.
        - 4906-4-08(A)(3)(a)(iii): Driving of piles, rock breaking or hammering, and horizontal directional drilling.
        - 4906-4-08(A)(3)(a)(iv): Erection of structures.
        - 4906-4-08(A)(3)(a)(v): Truck Traffic.
        - 4906-4-08(A)(3)(a)(vi): Installation of equipment.
- 4906-4-08(A)(3)(b): Describe the operational noise levels expected at the nearest property boundary. The description shall address:
    - 4906-4-08(A)(3)(b)(i): Operational noise from generation equipment. In addition, for a wind farm, cumulative operational noise levels at the property boundary for each property adjacent to or within the project area, under both day and nighttime operations. The applicant shall use generally accepted computer modeling software (developed for wind turbine noise measurement) or similar wind turbine noise methodology, including consideration of broadband, tonal, and low-frequency noise levels.
    - 4906-4-08(A)(3)(b)(ii): Processing equipment.
    - 4906-4-08(A)(3)(b)(iii): Associated road traffic.
- 4906-4-08(A)(3)(c): Indicate the location of any noise-sensitive areas within one mile of the facility, and the operational noise level at each habitable residence, school, church, and other noise-sensitive receptors, under both day and nighttime operations. Sensitive receptor, for the purposes of this rule, refers to any occupied building.

- 4906-4-08(A)(3)(d): Describe equipment and procedures to mitigate the effects of noise emissions from the proposed facility during construction and operation, including limits on the time of day at which construction activities may occur.
- 4906-4-08(A)(3)(e): Submit a preconstruction background noise study of the project area that includes measurements taken under both day and nighttime conditions.

The OPSB provides additional guidance, including numerical decibel limits, within §4906-4-09(F):

- 4906-4-09(F)(1): General construction activities shall be limited to the hours of seven a.m. to seven p.m., or until dusk when sunset occurs after seven p.m. Impact pile driving, hoe ram, and blasting operations, if required, shall be limited to the hours between ten a.m. to five p.m., Monday through Friday. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary. Sensitive receptor, for purposes of this rule, refers to any occupied building. The applicant shall notify property owners or affected tenants within the meaning of paragraph (B)(2) of rule 4906-3-03 of the Administrative Code of upcoming construction activities including potential for nighttime construction activities.
- 4906-4-09(F)(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 (L_{eq}) 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 L_{eq} plus five dBA; or the validly measured ambient L_{eq} plus five dBA at the location of the sensitive receptor. After measured ambient L_{eq} 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.

3.0 EXISTING ACOUSTIC CONDITIONS

Tetra Tech conducted a long-term baseline sound survey to characterize the existing acoustic environment near the Project. The baseline sound survey commenced on January 30, 2018 with data logged continuously over a two-week period ending February 14, 2018.

A long-term baseline survey is requisite to provide a statistically relevant data set, covering the full range of wind speeds that would occur under the future WTG operational scenarios that were considered. This section summarizes the methodologies used by Tetra Tech to conduct the sound survey, describes the measurement locations, and presents the measured ambient sound levels.

3.1 Field Methodology

Ambient sound level measurements were conducted using a Larson Davis Model 831 precision integrating sound-level analyzer that meets the requirements of American National Standards Institute (ANSI) Standards for Type 1 instruments. This instrument has an operating range of 5 to 140 dB and an overall frequency range of 8 to 20,000 Hz. The Larson Davis 831 sound level analyzer is designed for service as a long-term environmental sound level data logger measuring the A-weighted sound level. Each analyzer used was enclosed in a weatherproof case and equipped with a self-contained microphone tripod. During the measurements, the microphone and windscreen were tripod-mounted at an approximate height of 1.5 to 1.7 meters (4.9 to 5.6 feet) above grade. The sound level meter was calibrated at the beginning and end of the measurement period using a Larson Davis Model CAL200 acoustic calibrator following procedures that are traceable to the National Institute of Standards and Technology (NIST). Table 3-1 lists the measurement equipment employed during the survey. The analyzers were programmed to sample and store A-weighted and octave band sound level data, including equivalent (L_{eq}).

Table 3-1. Measurement Equipment

Description	Manufacturer	Type
Signal Analyzer	Larson Davis	831
Preamplifier	Larson Davis	PRM902
Microphone	PCB	377B02
Windscreen	ACO Pacific	7-inch
Calibrator	Larson Davis	CAL200

3.2 Monitoring Locations

Monitoring locations were selected with the assistance of EDPR to be representative of residences that would be in proximity to WTGs. Measurements were made in ten-minute intervals at each location and those measurements were correlated with wind speed data collected by on-site meteorological towers as shown in Figure 1-1. Using the sound level measurement and wind speed data, a regression analysis was conducted for each monitoring

location and the best fit correlation coefficient using a second order polynomial equation was evaluated. The 10-minute L_{eq} sound levels were divided into daytime (7:00 am to 10:00 pm) and nighttime (10:00 pm to 7:00 am) periods to show diurnal variation at a monitoring position. The scattering and R^2 coefficient is expected and likely caused by noise associated with roadway traffic, periodic aircraft flyovers and short-term natural sounds such as wildlife and cattle, in addition to anthropogenic activity. Short-term agricultural activities may also act as contributing factors to the scatter seen at the monitoring sites.

Additional descriptions of the monitoring locations and field observations are provided in Sections 3.2.1 to 3.2.4. Time history and regression analysis plots are also given for each monitoring location.

3.2.1 Monitoring Location 1

Monitoring location 1 was situated at a residence at 6870 Road 111 in Payne, Ohio (UTM Zone 16N: 693795, 4556292). Larson Davis 831, Serial No. 3216, was used to collect data at this location. The distance to the closest WTG is approximately 900 meters. Observations during deployment were that the location was relatively quiet with agricultural activities and sporadic noise from animals onsite contributing to ambient sound levels. Figure 3-1 includes photographs of the monitoring location relative to one of the residential structures and the viewpoint from the monitoring in the direction of the Project. Figure 3-2 provides the time history and Figure 3-3 provides the regression analyses of ambient sound levels during daytime and nighttime monitoring periods.

Figure 3-1. Photographs of ML-1

View towards the Project

View towards the Residence

Figure 3-2. ML-1 Time History Plot

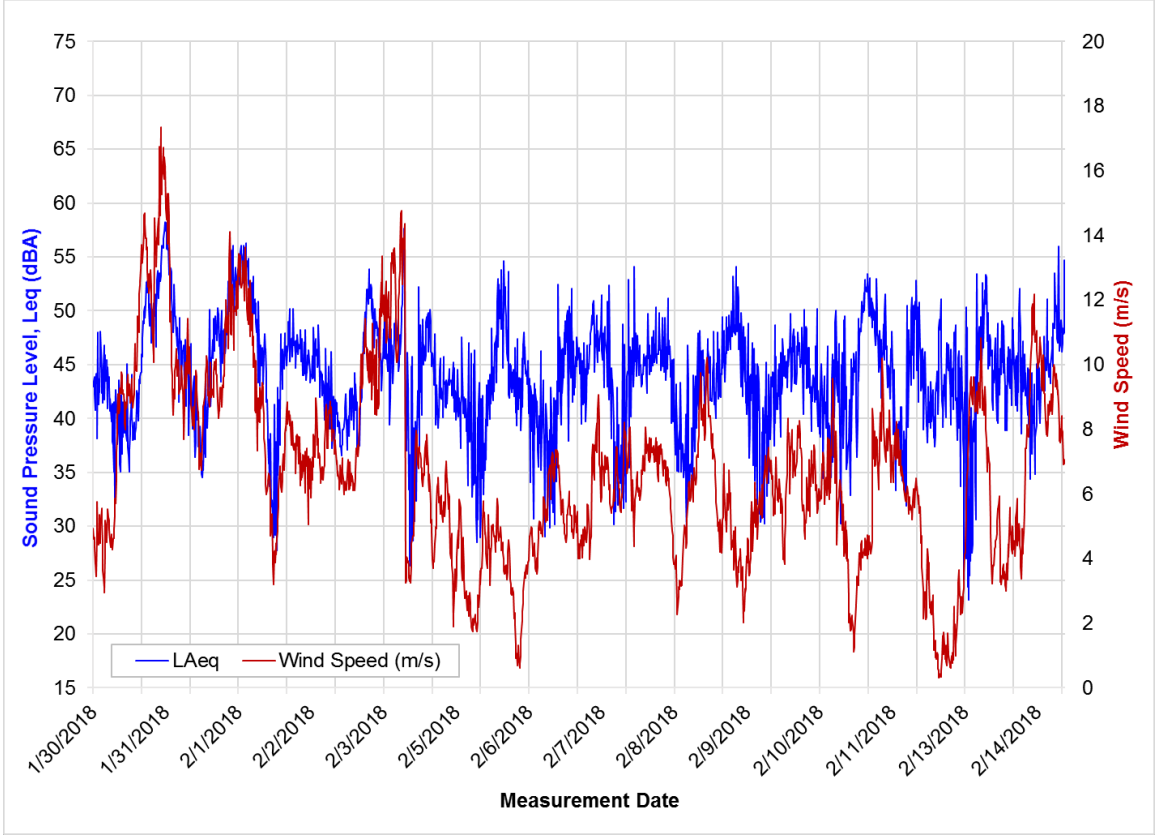
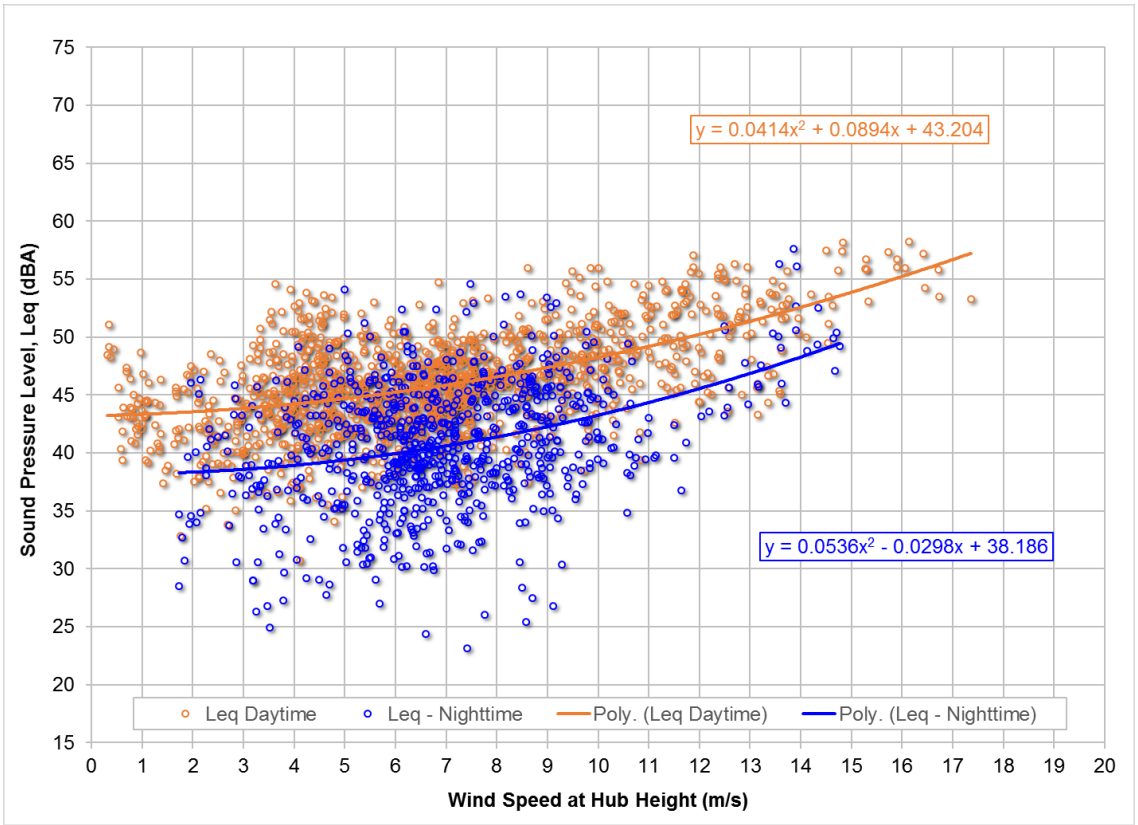


Figure 3-3. ML-1 Regression Analysis



3.2.2 Monitoring Location 2

Monitoring location 2 was situated at a residence along 6747 Road 82 in Payne, Ohio (UTM Zone 16N: 693757, 4549973). Larson Davis 831, Serial No. 4001, was used to collect data at this location. The distance to the closest WTG is approximately 500 meters. Observations during deployment were that the location was relatively quiet with agricultural activities and sporadic roadway noise potentially contributing to ambient sound levels. Figure 3-4 includes photographs of the monitoring location relative to one of the residential structures and the viewpoint from the monitoring in the direction of the Project. Figure 3-5 provides the time history and Figure 3-6 provides the regression analyses of ambient sound levels during daytime and nighttime monitoring periods.

Figure 3-4. Photographs of ML-2

View towards the Project

View towards the Residence

Figure 3-5. ML-2 Time History Plot

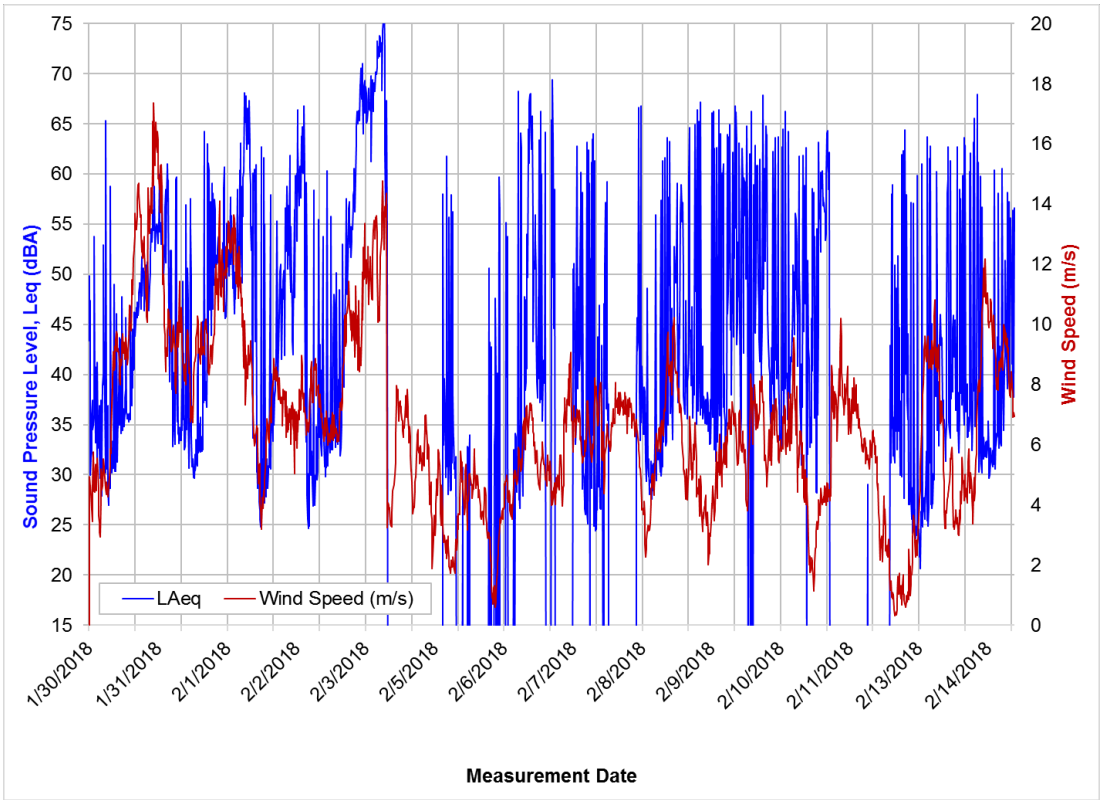
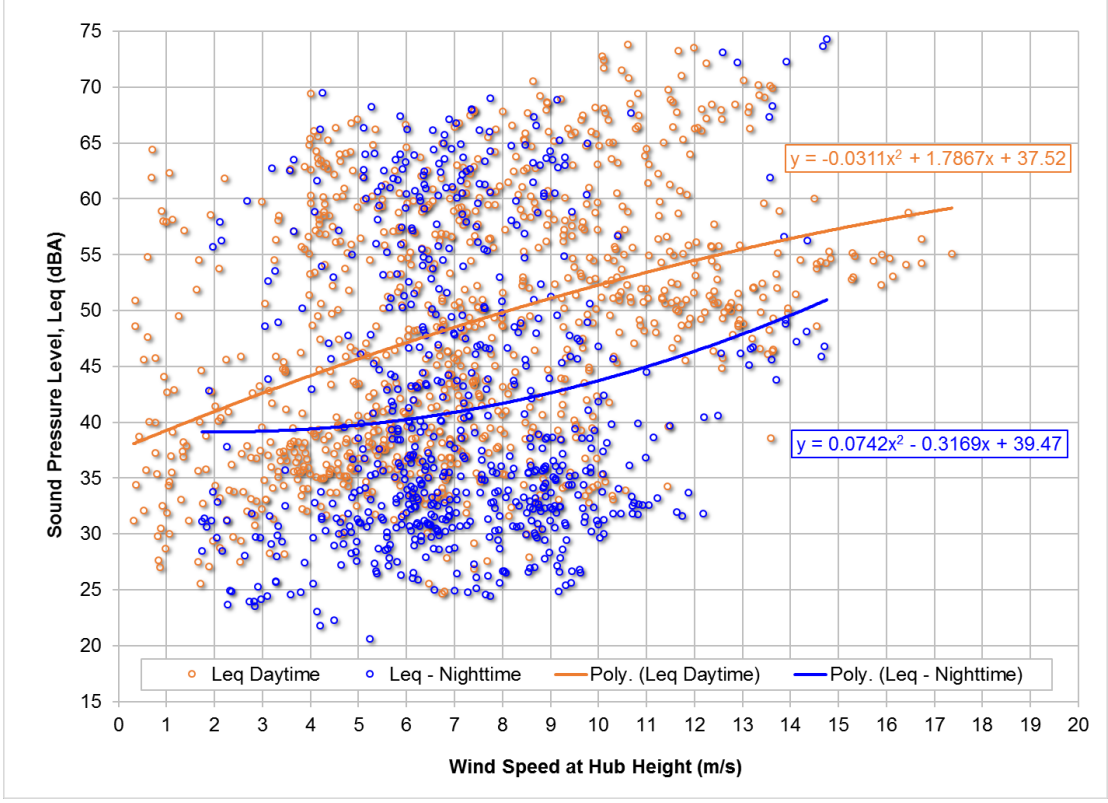


Figure 3-6. ML-2 Regression Analysis



3.2.3 Monitoring Location 3

Monitoring location 3 was situated at a residence along 9631 Road 82 114 in Paulding, Ohio (UTM Zone 16N: 698384, 4550078). Larson Davis 831, Serial No. 4277, was used to collect data at this location. The distance to the closest WTG is approximately 425 meters. Observations during deployment were that the location was relatively quiet with agricultural activities and sporadic roadway noise potentially contributing to ambient sound levels. Figure 3-7 includes photographs of the monitoring location relative to one of the residential structures and the viewpoint from the monitoring in the direction of the Project. Figure 3-8 provides the time history and Figure 3-9 provides the regression analyses of ambient sound levels during daytime and nighttime monitoring periods.

Figure 3-7. Photographs of ML-3

View towards the Project

View towards the Residence

Figure 3-8. ML-3 Time History Plot

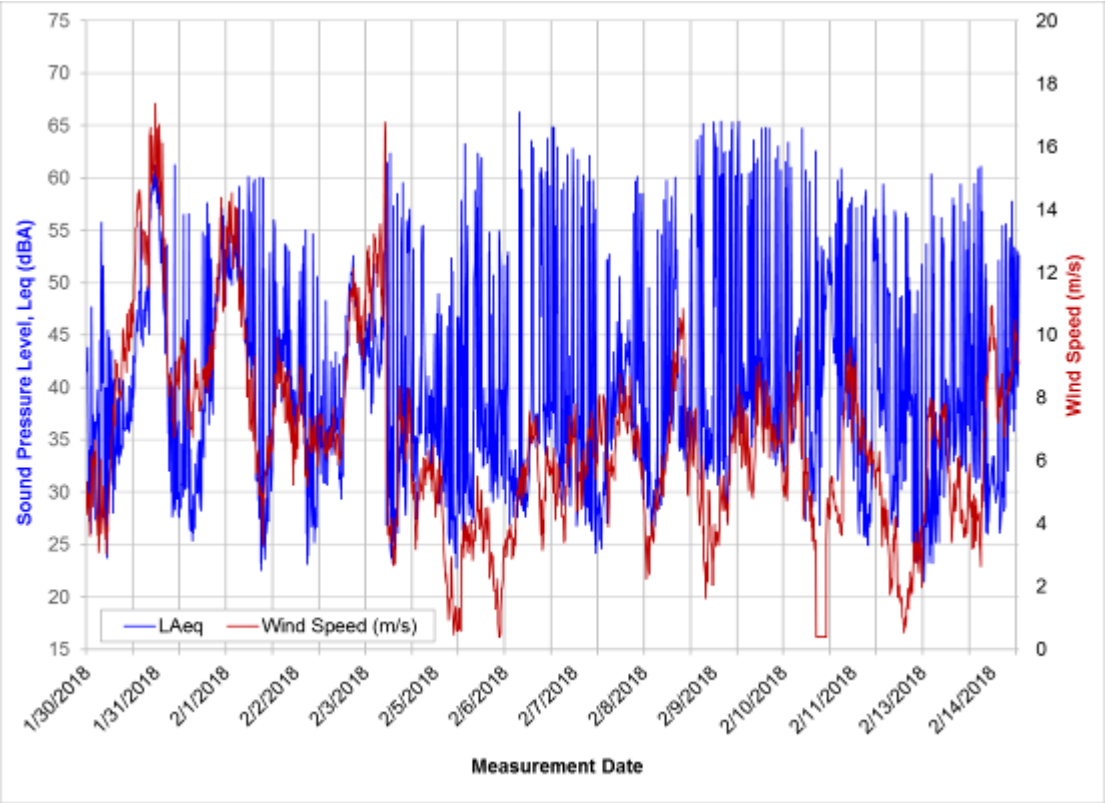
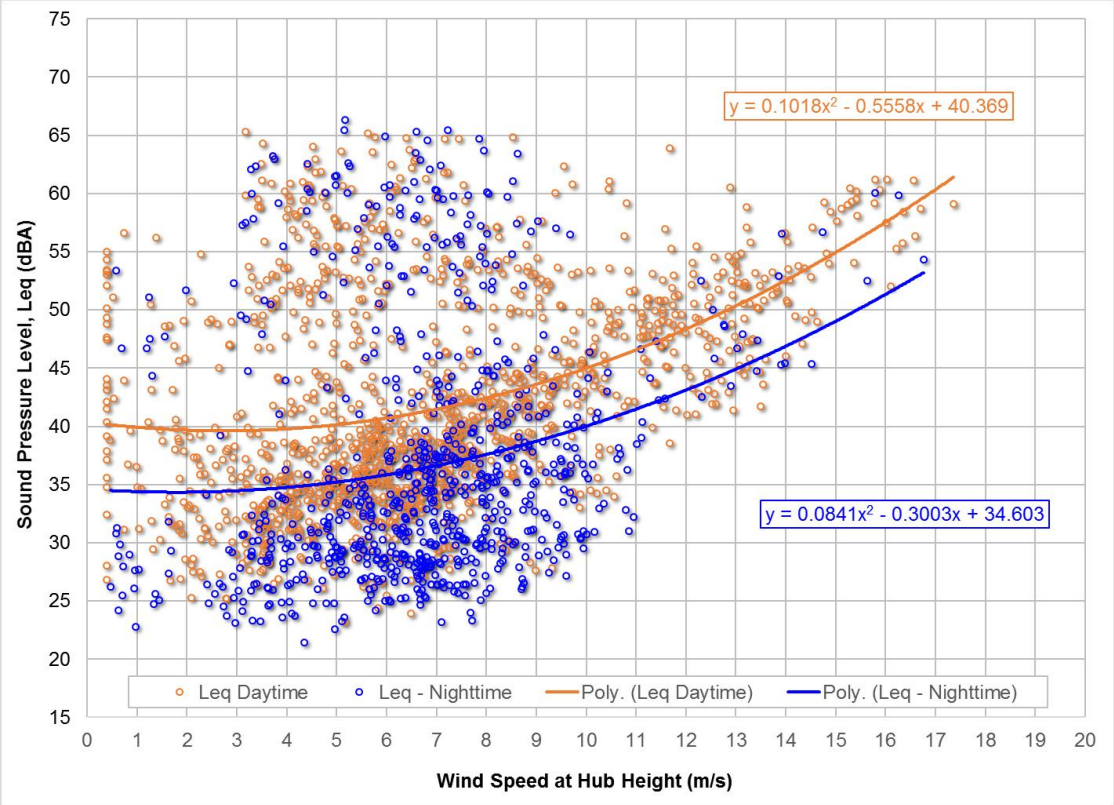


Figure 3-9. ML-3 Regression Analysis



3.2.4 Monitoring Location 4

Monitoring location 4 was situated at a residence along 7475 Road 48 in Payne, Ohio (UTM Zone 16N: 694959, 4545096). Larson Davis 831, Serial No. 3847, was used to collect data at this location. The distance to the closest WTG is approximately 515 meters. Observations during deployment were that the location was relatively quiet with agricultural activities and sporadic roadway noise potentially contributing to ambient sound levels. Figure 3-10 includes photographs of the monitoring location relative to one of the residential structures and the viewpoint from the monitoring in the direction of the Project. Figure 3-11 provides the time history and Figure 3-12 provides the regression analyses of ambient sound levels during daytime and nighttime monitoring periods.

Figure 3-10. Photographs of ML-4

View towards the Project

View towards the Residence

Figure 3-11. ML-4 Time History Plot

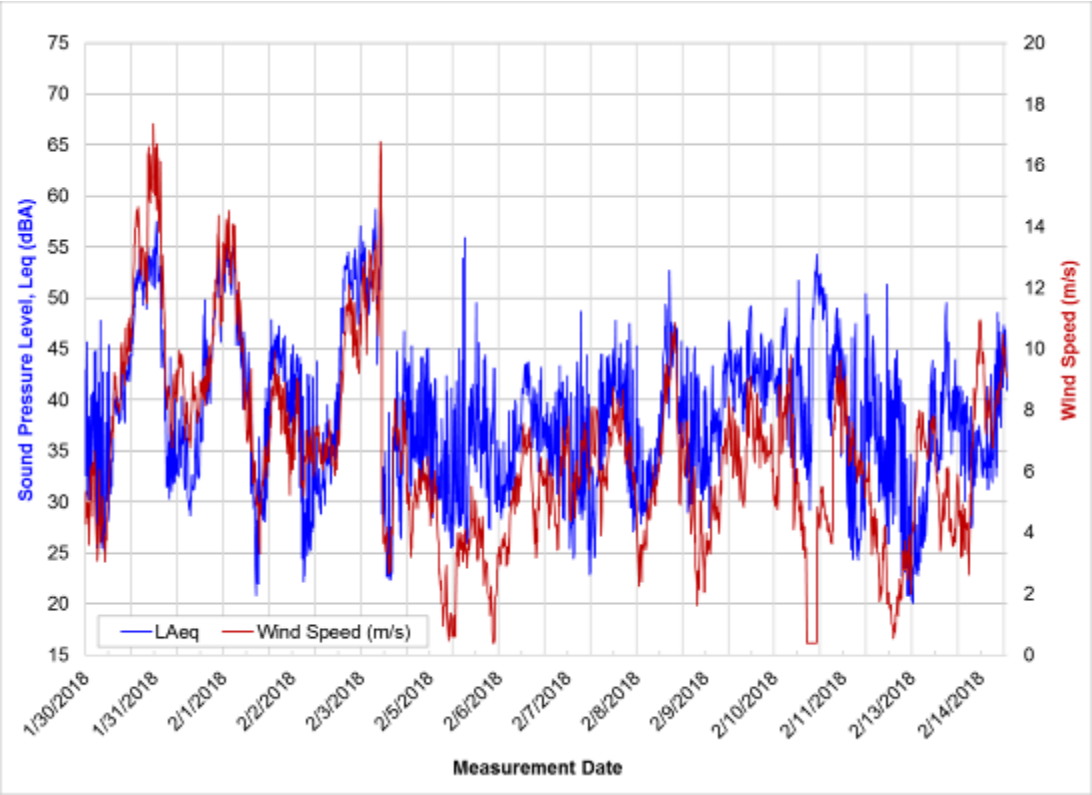
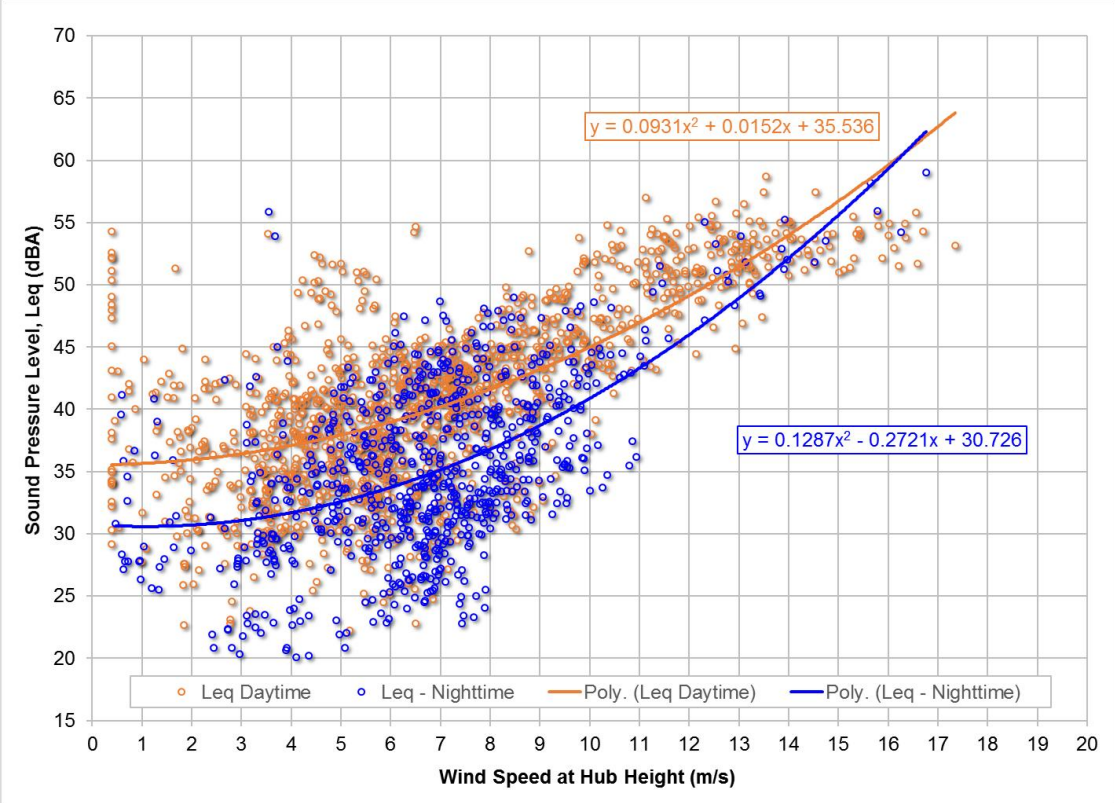


Figure 3-12. ML-4 Regression Analysis



3.3 Baseline Sound Survey Results

Table 3-2 provides the results of the regression analyses for each monitoring location and cumulatively for all locations, representing the ambient sound levels across the Project area. Table 3-2 displays daytime and nighttime ambient sound levels for each monitoring location and the Timber Road IV Wind Farm Project area for wind speed conditions ranging from calm to maximum rotational wind speed. The results show a generally homogenous ambient acoustic environment throughout the Project area with limited variation in measured sound levels.

Table 3-2. Baseline Sound Survey Results, L_{eq} (dBA)

Monitoring Location	Coordinates (UTM Zone 16N)		Time Period	Wind Speed (m/s)									
	Easting (m)	Northing (m)		3	4	5	6	7	8	9	10	11	12
ML-1	693795	4556292	Day	43	44	44	44	45	45	46	46	47	48
			Night	39	39	39	40	41	41	42	43	44	46
ML-2	693757	4549973	Day	43	44	46	47	49	50	51	52	53	54
			Night	39	39	40	40	41	42	43	44	45	46
ML-3	698384	4550078	Day	43	44	46	47	49	51	54	56	59	62
			Night	34	35	35	36	37	38	39	40	41	43
ML-4	694959	4545096	Day	36	37	38	39	40	42	43	45	47	49
			Night	31	32	33	34	35	37	39	41	43	46
Timber Road IV Wind Farm Project Site			Day	40	41	41	42	43	44	45	47	48	50
			Night	38	38	39	39	40	42	43	45	46	48

4.0 ACOUSTIC MODELING METHODOLOGY

Sound generated by an operating WTG is comprised of both aerodynamic and mechanical sound with the dominant sound component from modern utility scale WTGs being largely aerodynamic. Aerodynamic sound refers to the sound produced from air flow and the interaction with the WTG tower structure and moving rotor blades. Mechanical sound is generated at the gearbox, generator, and cooling fan, and is radiated from the surfaces of the nacelle and machinery enclosure and by openings in the nacelle casing. Due to the improved design of WTG mechanical components and the use of improved noise damping materials within the nacelle, including elastomeric elements supporting the generator and gearbox, mechanical noise emissions have been minimized. Sound reduction elements designed as a part of the WTGs include impact noise insulation of the gearbox and generator, sound reduced gearbox, sound reduced nacelle, and rotor blades designed to minimize noise generation.

Wind energy facilities, in comparison to other energy-related facilities, are somewhat unique in that the sound generated by each individual WTG will increase as the wind speed across the site increases. Wind turbine sound is negligible when the rotor is at rest, increases as the rotor tip speed increases, and is generally constant once rated power output and maximum rotational speed are achieved. Under this condition, the WTG maximum sound power level will be reached at approximately 7 meters per second [m/s] according to the Gamesa specifications. It is important to recognize as wind speeds increase, the background ambient sound level will generally increase as well, resulting in acoustic masking effects; however, this trend is also affected by local contributing sound sources. The net result is that during periods of elevated wind speeds when higher WTG sound emissions occur, the sound produced from a WTG operating at maximum rotational speed may be largely or fully masked due to wind generated sound in foliage or vegetation. In practical terms, this means a nearby receptor would tend to hear leaves or vegetation rustling rather than WTG noise. This relationship is expected to further minimize the potential for any adverse noise effects of the Project. Conversely, these acoustic masking effects may be limited during periods of unusually high wind shear or at receiver locations that are sheltered from the prevailing wind direction.

4.1 Acoustic Modeling Software and Calculation Methods

The operational acoustic assessment was performed using the Project WTG layout dated May 21, 2018, consisting of 54 proposed WTG locations. Nine different WTG models are under consideration for the Project and all were modeled using the May 21, 2018 site layout. Based on that review, the Acciona AW321/3300 was found to results in the greatest number of potential noise impacts at NSAs and therefore, was selected to be featured in this report. In addition to the WTGs, the Project will also include a collection substation with a 55/73/92 MVA transformer. WTG sound source data were obtained from Acciona (Acciona 2017) and substation transformer data were obtained from EDPR.

The acoustic modeling analysis was conducted using the most recent version of DataKustic GmbH's computer-aided noise abatement program or CadnaA (v 2017 MR1). CadnaA is a comprehensive 3-dimensional acoustic software model that conforms to the International Organization for Standardization (ISO) standard ISO 9613-2 "Attenuation of Sound during Propagation Outdoors." The engineering methods specified in this standard consist of full (1/1) octave band algorithms that incorporate geometric spreading due to wave divergence, reflection

from surfaces, atmospheric absorption, screening by topography and obstacles, ground effects, source directivity, heights of both sources and receptors, seasonal foliage effects, and meteorological conditions. Topographical information was imported into the acoustic model using the official United States Geological Survey (USGS) digital elevation dataset to accurately represent terrain in three dimensions. Terrain conditions, vegetation type, ground cover, and the density and height of foliage can also influence the absorption that takes place when sound waves travel over land. The ISO 9613-2 standard accounts for ground absorption rates by assigning a numerical coefficient of G=0 for acoustically hard, reflective surfaces and G=1 for absorptive surfaces and soft ground. If the ground is hard-packed dirt, typically found in industrial complexes, pavement, bare rock or for sound traveling over water, the absorption coefficient is defined as G=0 to account for reduced sound attenuation and higher reflectivity. In contrast, ground covered in vegetation, including suburban lawns, livestock and agricultural fields (both fallow with bare soil and planted with crops), will be acoustically absorptive and aid in sound attenuation (i.e., G=1.0). A mixed (semi-reflective) ground factor of G=0.5 was used in the Project acoustic modeling analysis. In addition to geometrical divergence, attenuation factors include topographical features, terrain coverage, and/or other natural or anthropogenic obstacles that can affect sound attenuation and result in acoustical screening. To be conservative, sound attenuation through foliage and diffraction around and over existing anthropogenic structures such as buildings was ignored.

Sound attenuation by the atmosphere is not strongly dependent on temperature and humidity; however, the temperature of 10^{o}Celsius (50^{o}Fahrenheit) and 70 percent relative humidity parameters were selected. Atmospheric absorption depends on temperature and humidity and is most important at higher frequencies. Over short distances, the effects of atmospheric absorption are minimal. The ISO 9613-2 standard calculates attenuation for meteorological conditions favorable to propagation, i.e., downwind sound propagation or what might occur typically during a moderate atmospheric ground level inversion. Though a physical impracticality, the ISO 9613-2 standard simulates omnidirectional downwind propagation. For receivers located between discrete WTG locations or WTG groupings, the acoustic model may result in over-prediction. In addition, the acoustic modeling algorithms essentially assume laminar atmospheric conditions, in which neighboring layers of air do not mix. This conservative assumption does not take into consideration turbulent eddies and micrometeorological inhomogeneities that may form when winds change speed or direction, which can interfere with the sound wave propagation path and increase attenuation effects.

4.2 Acoustic Modeling Input Parameters

To assist project developers and acoustical engineers, wind turbine manufacturers report WTG sound power data at integer wind speeds referenced to the effective hub height, ranging from cut-in to full-rated power per International Electrotechnical Commission (IEC) standard IEC 61400-11:2006 Wind Turbine Generator Systems – Part 11: Acoustic Noise Measurement Techniques. This accepted IEC standard was developed to ensure consistent and comparable sound emission data of utility-scale WTGs between manufacturers. Table 4-1 presents a summary of sound power data correlated to wind speeds 10 meter above ground level (AGL) using a roughness length coefficient of 0.05 meter. The roughness length describes the vertical wind profile per IEC specification in a neutral atmosphere with the wind profile following a logarithmic curve.

The specification for the WTGs includes an expected warranty confidence interval, or k-factor, of 1 dB, which was added to the nominal sound power level in the acoustic model. This confidence interval incorporates the uncertainty in independent sound power level measurements conducted, the applied probability level and standard deviation for test measurement reproducibility, and product variability.

Table 4-1. Broadband Sound Power Levels (dBA) Correlated with Wind Speed

	WTG L_{max} Sound Power Level (L_W) at Reference Wind Speed (m/s)				
Wind Speed	6.0	7.0	8.0	9.0	10.0
Acciona AW132/3300	108.5	108.5	108.5	108.5	108.5

Wind turbines can be somewhat directional, radiating more sound in some directions than others. The IEC test measurement protocol requires that sound measurements are made for the maximum downwind directional location when reporting apparent sound power levels. Thus, it is assumed that WTG directivity and sound generating efficiencies are inherently incorporated in the sound source data and used in acoustic model development. A summary of sound power data by octave band center frequency for WTGs operating at maximum rotation are presented in Table 4-2 (1/1 octave band frequency data provided with stated intended use limited for informational purposes only).

Table 4-2. Sound Power Level by Octave Band Center Frequency

	Octave Band Sound Power Level (dBA)									Broadband
Frequency (Hz)	32	63	125	250	500	1000	2000	4000	8000	**(dBA)**
Acciona AW132/3300	73.6	84.7	98.1	103.8	103.0	99.5	97.9	95.9	89.3	108.5

4.3 Critical Design Wind Speed

The critical design wind speed is defined as the operational condition when the greatest differential occurs between the pre-construction background sound level and the wind turbine sound power level at the corresponding given wind speed. Although not initially intuitive, the operational noise condition that results in the greatest incremental increase relative to baseline may not occur at full-rated power when the wind turbine is at its maximum noise emission level. Table 4-3 identifies the critical design wind speed for the Acciona AW132/3300 by comparing the net differential between the wind turbine sound power level and the background nighttime L_{eq} sound level measured during the 2018 survey and at an 84-meter hub height. Table 4-3 shows that for the Acciona AW132/3300, the critical design wind speed occurs at the reference wind speed range of 6 m/s (13.4 miles per hours [mph]). Acoustic modeling was completed for Project operation at the critical design wind speed, where the sound power octave band data was scaled accordingly. The results from modeling this scenario were then used to evaluate the feasibility of the Project to operate within OPSB criterion. Since the critical design wind speed was determined to occur at 6 m/s, the 39 dBA nighttime L_{eq} sound level at that wind speed was

used to derive the effective OPSB criterion of 44 dBA, which is the project ambient nighttime L_{eq} sound level plus five dBA.

Table 4-3. Acciona AW132 Critical Design Operational Condition

10-meter AGL Wind Speed	6 m/s	7 m/s	8 m/s	9 m/s	10 m/s
Acciona AW132 L_{max} Sound Power Level at Reference Wind Speed	108.5	108.5	108.5	108.5	108.5
Background Nighttime L_{eq}	**39.0**	40.0	42.0	43.0	45.0
Net Differential	**69.5**	68.5	66.5	65.5	63.5

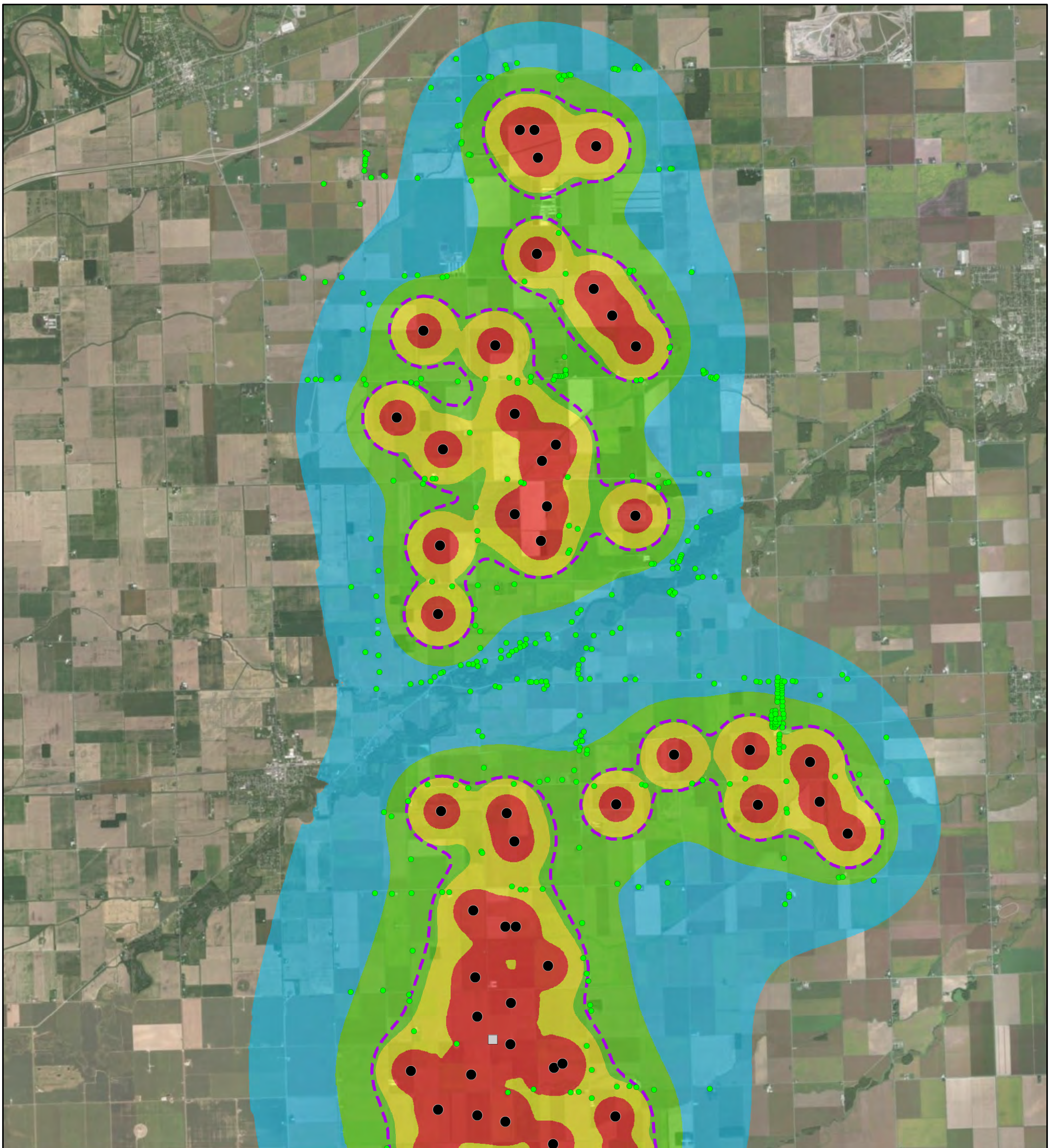
Bold type indicates critical design wind speeds.

4.4 Acoustic Modeling Results and Compliance

Acoustic modeling was completed for WTG critical design wind speed (6 m/s) operating conditions. In addition, sound energy contribution from the Project substation was included in the acoustic modeling analysis. When calculating received sound levels, it was assumed that the Project substation and all WTGs were operating continuously and concurrently at the given operating condition. A sound contour plot displaying Project operational sound levels in color-coded isopleths is provided in Figure 4-1. Figure 4-1 shows broadband (dBA) operational sound levels at wind speeds corresponding to wind turbine operation at the critical design wind speed. Table A-1 (Appendix A) presents the results of the Timber Road IV Wind Farm acoustic modeling analysis and includes the ID, Universal Transverse Mercator (UTM) coordinates, NSA status (participant or non-participant) and the received sound levels at each NSA. The tabulated results and contour plot are independent of the existing acoustic environment and are representative of expected Project sound levels only.

Acoustic modeling results indicate that there are 97 potential exceedances of the OPSB 44 dBA noise criterion. However, demonstration of compliance with the standard is not required at 39 of those NSAs since they have participating agreements signed. The remaining 58 NSAs are exceeding the OPSB noise criterion but are considered non-participating landowners. If there is a complaint about the noise impacts, once the wind farm is operational, the Project will at its expense hire a third-party sound consultant to analyze the real sound impacts of the operating wind farm on that receptor. If the sound threshold is not met the Project will re-engage with the landowner and reach a mutually agreed upon mitigation measure.

A summary of acoustic modeling results for the eight other WTG models analyzed is provided in Table B-1 (Appendix B). Table B-1 presents the effective OPSB noise criterion, based on the ambient nighttime L_{eq} sound level at the critical design wind speed for each WTG model, the total number of exceedances of that criterion, and the number of non-participants expected to exceed that criterion.



Legend

- Acciona AW132 Wind Turbine
- Noise Sensitive Areas
- Timber Road IV Substation
- Sound Level Exceeding 44 dBA OPSB Noise Criterion

Sound Level Contour Ranges (dBA)

- 35 - 40 dBA
- 40 - 45 dBA
- 45 - 50 dBA
- > 50 dBA

FIGURE 4-1
TIMBER ROAD IV WIND FARM
RECEIVED SOUND LEVELS: WIND TURBINES AT CRITICAL WIND SPEED

PAULDING COUNTY, OHIO

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5.0 OTHER SOUND CONSIDERATIONS

5.1 Substation Noise

Substations have switching, protection and control equipment and typically one or more transformers, which generate the sound generally described as a low humming. There are three main sound sources associated with a transformer: core noise, load noise and noise generated by the operation of the cooling equipment. The core vibrational noise is the principal noise source and does not vary significantly with electrical load. Transformers are designed and catalogued by MVA ratings. Just as horsepower ratings designate the power capacity of an electric motor, a transformer's MVA rating indicates its maximum power output capacity. The National Electrical Manufacturers Association (NEMA) published NEMA Standards TR1-1993 (R2000), which establish the maximum noise level allowed for transformers, voltage regulators, and shunt reactors based on the equipment's method of cooling its dielectric fluid (air-cooled vs. oil-cooled) and the electric power rating.

Transformer noise is generated and will attenuate with distance at different rates depending on the transformer dimensions, voltage rating, and design. The noise produced by substation transformers is primarily caused by the load current in the transformer's conducting coils (or windings) and consequently the main frequency of this sound is twice the supply frequency. The characteristic humming sound consists of tonal components generated at harmonics of 120 Hz. Most of the acoustical energy resides in the fundamental tone (120 Hz) and the first 3 or 4 harmonics (240, 360, 480, 600 Hz). In addition to core vibration noise, transformer cooling fans may generate broadband noise, limited to periods when high heat loads require additional cooling capacity. The resulting audible sound is a combination of core noise and the broadband fan noise. Circuit-breaker operations may also cause audible noise, particularly the operation of air-blast breakers which is characterized as an impulsive sound event of very short duration. This is expected to occur only a few times throughout the year, and was therefore not considered in this analysis.

The proposed Timber Road IV electrical substation would be located near the intersection of County Roads 52 and 59. The transformer at this substation was modeled using the latest version of CadnaA implementing ISO 9613-2. Transformer sound source levels for the Timber Road IV substation were derived based on a 55/73/92 MVA rating and a maximum NEMA rating of 88 dBA. Table 5-4 presents the transformer sound source data by octave band center frequency calculated based on the estimated transformer NEMA and MVA ratings using standardized engineering guidelines.

Table 5-4. Transformer Sound Power Level

	Octave Band Sound Power Level (dB)								Broadband (dBA)
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Transformer	102	104	99	99	93	88	83	76	108

Transformers the size of the one proposed for the Timber Road IV Wind Farm can present a noise concern if the separation distance is less than a few hundred feet between the

transformer and NSAs. The proposed Timber Road IV transformer location is approximately 545 meters (1,788 feet) from the nearest NSA and poses little concern from a noise perspective.

5.2 Construction Noise

The development of Timber Road IV Wind Farm will involve construction to establish access roads, excavate and form WTG foundations, prepare the site for crane-lifting and assemble and commission the WTGs. Work on large-scale wind projects such as the Timber Road IV Wind Farm is generally divided into four phases consisting of the following:

1. *Site Clearing*: The initial site mobilization phase includes the establishment of temporary site offices, workshops, stores, and other on-site facilities. Installation of erosion and sedimentation control measures will be completed as well as the preparation of initial haulage routes.

2. *Excavation*: This phase would begin with the excavation and formation of access roads and preparation of laydown areas. Excavation for the concrete turbine foundations would also be completed.

3. *Foundation Work*: Construction of the reinforced concrete turbine foundations would take place in addition to installation of the internal transmission network.

4. *Wind Turbine Installation*: Delivery of the turbine components would occur followed by their installation and commissioning.

Work on these construction activities is expected to overlap. It is likely that the WTGs will be erected in small groupings. Each grouping may undergo periodic testing and commissioning prior to commencement of full commercial operation. Other construction activities include those for the supporting infrastructure such as the substation, maintenance building, and the overhead transmission line.

The construction of the Project may cause short-term but unavoidable noise impacts. The sound levels resulting from construction activities vary significantly depending on several factors such as the type and age of equipment, the specific equipment manufacturer and model, the operations being performed, and the overall condition of the equipment and exhaust system mufflers. The list of construction equipment that may be used on the Project and estimates of near and far sound source levels are presented in Table 5-5.

As stated in OPSB Rule §4906-4-09(F)(1), general construction activities will be limited to daytime hours (7:00 am to 7:00 pm) whereas more specialized activities such as impact pile driving, hoe ram and blasting operations will be further limited to the hours between 10:00 am to 5:00 pm. Construction activities that do not involve noise increases above ambient levels at sensitive receptors are permitted outside of daylight hours when necessary.

All reasonable efforts will be made to minimize the impact of noise resulting from construction activities. As the design of the Project progresses and construction scheduling is finalized, the construction engineer normally notifies the community via public notice or alternative method of the expected Project construction commencement and duration to help minimize the effects of construction noise. In addition, the location of stationary equipment and the siting of

construction laydown areas will be carefully selected to be as far removed from existing NSAs as is practical. Candidate construction noise mitigation measures include scheduling louder construction activities during daytime hours and equipping internal combustion engines with appropriate sized muffler systems to minimize noise excessive emissions.

Table 5-5. Estimated L_{max} Sound Pressure Levels from Construction Equipment

Equipment	Estimated Sound Pressure Level at 50 feet (dBA)	Estimated Sound Pressure Level at 2000 feet (dBA)
Crane	85	53
Forklift	80	48
Backhoe	80	48
Grader	85	53
Man basket	85	53
Dozer	83 - 88	51 - 56
Loader	83 - 88	51 - 56
Scissor Lift	85	53
Truck	84	52
Welder	73	41
Compressor	80	48
Concrete Pump	77	45

Source: FHWA 2006; Bolt et al. 1977

Construction activity will generate traffic having potential noise effects, such as trucks travelling to and from the site on public roads. At the early stage of the construction phase, equipment and materials will be delivered to the site, such as hydraulic excavators and associated spreading and compacting equipment needed to form access roads and foundation platforms for each turbine. Once the access roads are constructed, equipment for lifting the towers and turbine components will arrive. Traffic noise is categorized into two categories: (1) the noise that will occur during the initial temporary traffic movements related to turbine delivery, haulage of components and remaining construction; and (2) maintenance and ongoing traffic from staff and contractors, which is expected to be minor.

6.0 CONCLUSIONS

Project operational sound has been calculated and compared to the effective OPSB noise criterion of 44 dBA, which was calculated in a consistent manner to noise criterion prescribed in previous guidance provided by the OPSB such as the Opinion, Order and Certificates issued to the previous phases of the Timber Road Wind Farm, Timber Road II/IV Wind Farm. Acoustic modeling analysis per ISO 9613-2 and inclusive of a number of conservative assumptions and under critical design (6.0 m/s) wind speed operational conditions demonstrates the Project will result in 97 potential exceedances. However, demonstration of compliance with the standard is not required at 39 of those NSAs since they have participating agreements signed. The remaining 58 NSAs are exceeding the OPSB noise criterion but are considered non-participating landowners. If there is a complaint about the noise impacts, once the wind farm is operational, the Project will at its expense hire a third-party sound consultant to analyze the real sound impacts of the operating wind farm on that receptor. If the sound threshold is not met the Project will re-engage with the landowner and reach a mutually agreed upon mitigation measure.

7.0 REFERENCES

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Appendix A

Acciona AW132/3300
Tabulated Acoustic Modeling Results by NSA

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
1	Non-Participant	694804	4541440	39
2	Non-Participant	694868	4541453	39
3	Non-Participant	694865	4541526	39
4	Non-Participant	695792	4541850	37
5	Non-Participant	694886	4540643	36
6	Non-Participant	694050	4540185	36
7	Non-Participant	692859	4540871	39
8	Participant	692934	4540958	40
9	Non-Participant	692795	4541087	40
10	Participant	693258	4541787	48
11	Non-Participant	692647	4541792	41
12	Non-Participant	692095	4541693	38
13	Non-Participant	691684	4559516	32
14	Non-Participant	692267	4559188	34
15	Non-Participant	692448	4559621	34
16	Non-Participant	692337	4559726	33
17	Non-Participant	692337	4559817	33
18	Non-Participant	692671	4559632	35
19	Non-Participant	692642	4559651	34
20	Non-Participant	693179	4559615	36
21	Non-Participant	694035	4559563	40
22	Non-Participant	695522	4556755	43
23	Participant	695467	4557635	47
24	Participant	695431	4558729	47
25	Non-Participant	695543	4558081	48
26	Participant	694887	4557958	47
27	Non-Participant	693647	4558040	40
28	Non-Participant	693585	4558029	41
29	Non-Participant	693179	4558058	40
30	Non-Participant	692974	4558050	39
31	Non-Participant	692314	4557770	38
32	Non-Participant	691972	4558025	35
33	Non-Participant	691365	4558017	33
34	Non-Participant	691641	4556388	37
35	Non-Participant	691560	4556396	36
36	Non-Participant	691427	4556385	36
37	Non-Participant	691920	4556430	38
38	Non-Participant	691890	4556414	38
39	Non-Participant	692327	4556398	41

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
40	Non-Participant	692356	4556315	42
41	Non-Participant	693075	4556351	44
42	Non-Participant	693167	4556335	44
43	Non-Participant	693235	4556408	44
44	Non-Participant	693818	4556359	44
45	Participant	694260	4556411	46
46	Participant	694648	4556424	47
47	Participant	694777	4556375	47
48	Participant	694771	4556337	48
49	Non-Participant	694985	4556353	46
50	Non-Participant	694988	4556446	45
51	Non-Participant	695542	4556511	43
52	Non-Participant	695541	4556486	43
53	Non-Participant	695540	4556474	43
54	Non-Participant	695496	4556454	43
55	Non-Participant	695470	4556453	43
56	Non-Participant	695426	4556450	43
57	Non-Participant	695398	4556451	43
58	Non-Participant	695376	4556449	43
59	Non-Participant	695353	4556388	44
60	Participant	694014	4555545	48
61	Non-Participant	695576	4554840	50
62	Participant	694880	4554736	51
63	Participant	694831	4554755	50
64	Non-Participant	694618	4554810	48
65	Participant	693472	4554816	47
66	Non-Participant	693421	4554817	47
67	Non-Participant	693293	4554817	46
68	Non-Participant	693267	4554733	44
69	Non-Participant	692795	4554775	42
70	Non-Participant	694108	4554354	45
71	Non-Participant	692440	4553859	39
72	Non-Participant	692128	4553092	37
73	Non-Participant	692527	4552940	39
74	Non-Participant	692553	4552549	39
75	Participant	692547	4552347	39
76	Participant	693737	4553099	47
77	Non-Participant	693413	4553167	47
78	Non-Participant	694139	4553835	45

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
79	Non-Participant	694131	4553976	45
80	Non-Participant	694729	4553134	43
81	Non-Participant	694442	4553077	42
82	Non-Participant	694145	4553117	43
83	Participant	695604	4553678	48
84	Participant	695597	4554069	49
85	Non-Participant	695733	4554015	46
86	Non-Participant	695733	4552672	39
87	Non-Participant	695641	4552529	39
88	Non-Participant	695250	4552332	39
89	Non-Participant	695273	4552268	39
90	Non-Participant	694911	4552259	39
91	Non-Participant	695059	4552185	39
92	Non-Participant	694906	4552170	39
93	Non-Participant	694810	4552194	39
94	Non-Participant	694867	4552147	39
95	Non-Participant	694816	4552121	39
96	Non-Participant	694749	4552085	39
97	Non-Participant	694685	4552062	39
98	Non-Participant	694594	4552197	39
99	Non-Participant	694511	4552075	39
100	Non-Participant	694638	4551996	39
101	Non-Participant	694512	4551954	39
102	Participant	694095	4552733	44
103	Non-Participant	694185	4552113	40
104	Non-Participant	694101	4552476	43
105	Non-Participant	694181	4552381	42
106	Non-Participant	694124	4551901	40
107	Non-Participant	694145	4551825	39
108	Non-Participant	694263	4551906	39
109	Participant	693867	4551846	40
110	Non-Participant	694060	4551861	40
111	Non-Participant	693998	4551857	40
112	Non-Participant	693591	4551729	40
113	Non-Participant	693550	4551713	40
114	Non-Participant	693452	4551655	39
115	Non-Participant	693389	4551580	39
116	Non-Participant	693238	4551562	39
117	Non-Participant	693072	4551541	38

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
118	Non-Participant	692525	4551466	37
119	Non-Participant	692570	4551734	37
120	Non-Participant	692554	4551992	38
121	Non-Participant	692353	4552048	37
122	Non-Participant	694217	4550702	40
123	Non-Participant	695927	4551621	38
124	Non-Participant	695778	4551615	38
125	Non-Participant	695762	4551042	39
126	Non-Participant	695710	4550592	40
127	Non-Participant	695769	4550634	40
128	Non-Participant	695808	4550635	40
129	Non-Participant	695790	4550722	40
130	Non-Participant	695827	4550779	39
131	Non-Participant	694720	4549946	47
132	Non-Participant	695708	4549981	42
133	Non-Participant	695680	4550166	42
134	Non-Participant	695253	4550012	42
135	Non-Participant	695123	4549980	43
136	Non-Participant	694241	4550205	42
137	Participant	693339	4549935	47
138	Non-Participant	693989	4549882	46
139	Participant	693786	4549926	47
140	Non-Participant	693029	4549676	45
141	Non-Participant	692762	4549437	41
142	Non-Participant	692643	4549495	40
143	Non-Participant	692116	4546631	40
144	Non-Participant	693083	4548204	42
145	Non-Participant	692776	4548193	41
146	Non-Participant	692502	4548199	39
147	Non-Participant	693076	4548742	42
148	Participant	693577	4548229	46
149	Non-Participant	693684	4548215	48
150	Non-Participant	694202	4548876	48
151	Non-Participant	694214	4548853	48
152	Participant	695170	4548275	45
153	Non-Participant	694901	4548262	47
154	Non-Participant	694821	4548265	47
155	Non-Participant	694682	4548312	47
156	Non-Participant	695761	4548929	42

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
157	Non-Participant	696363	4548357	41
158	Non-Participant	695808	4547727	43
159	Non-Participant	695825	4547167	46
160	Non-Participant	695881	4546924	44
161	Non-Participant	695903	4546803	44
162	Non-Participant	695935	4546429	44
163	Non-Participant	693103	4547287	43
164	Non-Participant	692626	4546661	42
165	Non-Participant	693056	4546493	44
166	Non-Participant	693047	4546586	44
167	Non-Participant	693122	4546000	46
168	Participant	693804	4545804	52
169	Participant	695874	4545768	49
170	Participant	695955	4544938	49
171	Participant	695959	4545383	49
172	Non-Participant	695753	4545046	50
173	Participant	695619	4545029	50
174	Participant	695030	4545083	51
175	Participant	694624	4545027	51
176	Non-Participant	695959	4543015	41
177	Non-Participant	695887	4543415	43
178	Non-Participant	695843	4543411	43
179	Non-Participant	695918	4543463	44
180	Non-Participant	695875	4543470	44
181	Non-Participant	695830	4543480	44
182	Non-Participant	695788	4543476	44
183	Non-Participant	695471	4543411	44
184	Participant	694562	4543398	48
185	Non-Participant	694131	4543371	45
186	Non-Participant	694450	4543870	46
187	Participant	693604	4543342	46
188	Non-Participant	693472	4543446	46
189	Non-Participant	693230	4543419	48
190	Non-Participant	692731	4543745	44
191	Non-Participant	692692	4544139	44
192	Non-Participant	692352	4559883	33
193	Non-Participant	692347	4559919	33
194	Non-Participant	692347	4560010	33
195	Non-Participant	692385	4559991	33

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
196	Non-Participant	693396	4561055	36
197	Non-Participant	693801	4561506	36
198	Non-Participant	694762	4561447	39
199	Non-Participant	694580	4561406	39
200	Non-Participant	694607	4561348	40
201	Non-Participant	695454	4561184	41
202	Non-Participant	695454	4561246	41
203	Non-Participant	695433	4561230	41
204	Non-Participant	695554	4561243	41
205	Non-Participant	695601	4561260	40
206	Non-Participant	695625	4561252	40
207	Non-Participant	695517	4561242	41
208	Non-Participant	695481	4561173	41
209	Non-Participant	694329	4561224	40
210	Non-Participant	694361	4561220	40
211	Non-Participant	694311	4561228	40
212	Participant	695438	4559008	43
213	Participant	696560	4558098	44
214	Participant	696623	4558134	44
215	Participant	696564	4558135	44
216	Non-Participant	696378	4561330	37
217	Non-Participant	696299	4561344	38
218	Non-Participant	696333	4561350	37
219	Non-Participant	696675	4561392	36
220	Non-Participant	696646	4561355	36
221	Non-Participant	696704	4561360	36
222	Non-Participant	696716	4561341	36
223	Non-Participant	697026	4559749	38
224	Non-Participant	697240	4559757	37
225	Non-Participant	697216	4559753	37
226	Non-Participant	693830	4560859	39
227	Non-Participant	693822	4560441	40
228	Non-Participant	693861	4560449	40
229	Non-Participant	693882	4560177	41
230	Non-Participant	693877	4560154	40
231	Non-Participant	694164	4561203	39
232	Non-Participant	694162	4561186	39
233	Participant	694029	4559969	42
234	Participant	694015	4559980	41

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
235	Participant	693996	4559981	41
236	Non-Participant	697553	4558108	38
237	Non-Participant	697209	4556916	46
238	Non-Participant	697200	4556896	46
239	Non-Participant	697775	4556504	38
240	Non-Participant	697738	4556488	38
241	Non-Participant	697746	4556510	38
242	Non-Participant	697737	4556538	38
243	Non-Participant	697856	4556435	37
244	Non-Participant	697889	4556430	37
245	Non-Participant	697925	4556408	37
246	Non-Participant	697947	4556443	37
247	Non-Participant	697849	4554289	37
248	Non-Participant	697630	4554045	39
249	Non-Participant	697139	4554745	42
250	Non-Participant	697180	4554758	41
251	Non-Participant	697674	4554896	38
252	Non-Participant	697817	4554887	37
253	Participant	697018	4554678	43
254	Non-Participant	697486	4553827	39
255	Non-Participant	697014	4554872	41
256	Non-Participant	696609	4554860	43
257	Participant	696954	4553461	40
258	Non-Participant	696908	4553460	41
259	Non-Participant	697389	4553596	39
260	Non-Participant	697321	4553410	39
261	Non-Participant	697248	4553382	39
262	Non-Participant	697378	4553564	39
263	Non-Participant	697362	4553532	39
264	Non-Participant	697347	4553501	39
265	Non-Participant	697243	4553488	39
266	Non-Participant	697324	4553385	38
267	Non-Participant	697234	4553034	38
268	Non-Participant	697220	4552980	38
269	Non-Participant	697202	4553005	38
270	Non-Participant	697257	4552965	37
271	Non-Participant	697284	4552992	37
272	Non-Participant	696277	4552965	39
273	Non-Participant	695783	4552722	39

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
274	Participant	695579	4553631	48
275	Non-Participant	696671	4556375	46
276	Non-Participant	696745	4556386	46
277	Non-Participant	695482	4550011	42
278	Participant	696002	4549917	47
279	Participant	696755	4549939	47
280	Non-Participant	696811	4549921	46
281	Participant	697555	4549956	46
282	Participant	697726	4550011	44
283	Participant	698403	4550037	49
284	Non-Participant	698160	4549950	46
285	Participant	699064	4549548	49
286	Non-Participant	699066	4549487	49
287	Non-Participant	699024	4548760	42
288	Non-Participant	699894	4548459	42
289	Non-Participant	699961	4548463	42
290	Non-Participant	700591	4549340	44
291	Non-Participant	696706	4548305	39
292	Non-Participant	697167	4548367	39
293	Non-Participant	696358	4545124	48
294	Non-Participant	696556	4545127	47
295	Non-Participant	696669	4545116	45
296	Non-Participant	696947	4545073	43
297	Non-Participant	697839	4545089	37
298	Non-Participant	699105	4548190	38
299	Non-Participant	699103	4548144	38
300	Non-Participant	699038	4548034	38
301	Non-Participant	696463	4543476	46
302	Non-Participant	695768	4550527	40
303	Non-Participant	695874	4550434	41
304	Non-Participant	695889	4550489	41
305	Non-Participant	695760	4550478	40
306	Participant	699065	4549987	49
307	Participant	699836	4550062	49
308	Participant	700226	4550097	43
309	Non-Participant	698951	4550449	49
310	Non-Participant	699011	4550542	48
311	Non-Participant	698940	4550508	49
312	Non-Participant	698946	4550576	48

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
313	Non-Participant	698945	4550649	48
314	Non-Participant	698951	4550704	47
315	Non-Participant	698948	4550742	47
316	Non-Participant	698831	4550891	46
317	Non-Participant	698842	4550858	47
318	Non-Participant	698841	4551110	43
319	Non-Participant	698835	4550933	45
320	Non-Participant	698832	4550980	44
321	Non-Participant	698819	4551002	44
322	Non-Participant	698820	4551043	43
323	Non-Participant	698884	4551112	42
324	Non-Participant	699001	4551132	42
325	Non-Participant	699016	4551013	43
326	Non-Participant	699010	4550906	44
327	Non-Participant	699000	4551189	41
328	Non-Participant	698998	4551270	41
329	Non-Participant	698922	4551300	41
330	Non-Participant	698994	4551326	40
331	Non-Participant	698926	4551342	40
332	Non-Participant	698992	4551384	40
333	Non-Participant	698921	4551401	40
334	Non-Participant	698991	4551439	40
335	Non-Participant	698922	4551462	40
336	Non-Participant	698994	4551473	39
337	Non-Participant	698922	4551501	39
338	Non-Participant	698916	4551532	39
339	Non-Participant	698991	4551517	39
340	Non-Participant	698990	4551552	39
341	Non-Participant	698987	4551597	39
342	Non-Participant	698916	4551595	39
343	Non-Participant	698775	4551576	39
344	Non-Participant	698639	4551573	39
345	Non-Participant	698582	4551576	39
346	Non-Participant	697913	4551548	39
347	Non-Participant	696654	4551622	38
348	Non-Participant	694150	4550796	39
349	Non-Participant	694022	4551427	38
350	Non-Participant	694418	4551510	38
351	Non-Participant	694482	4551493	38

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
352	Non-Participant	694765	4551623	38
353	Non-Participant	694964	4551571	38
354	Non-Participant	695001	4551571	38
355	Non-Participant	695075	4551572	38
356	Non-Participant	695155	4551575	38
357	Non-Participant	695200	4551470	38
358	Non-Participant	695249	4551519	38
359	Non-Participant	695231	4551576	38
360	Non-Participant	695743	4551710	38
361	Non-Participant	695746	4551787	38
362	Non-Participant	695749	4551849	38
363	Non-Participant	695810	4551927	38
364	Non-Participant	695959	4552096	38
365	Non-Participant	695870	4552113	38
366	Non-Participant	695989	4552317	38
367	Non-Participant	696286	4552355	38
368	Non-Participant	696415	4552432	38
369	Non-Participant	696493	4551616	38
370	Non-Participant	698391	4551644	39
371	Non-Participant	697608	4553384	37
372	Non-Participant	697656	4553240	37
373	Non-Participant	697724	4553251	37
374	Non-Participant	697915	4553253	36
375	Non-Participant	699207	4551584	38
376	Non-Participant	698927	4551647	38
377	Non-Participant	698883	4551067	43
378	Non-Participant	698881	4550847	47
379	Non-Participant	698887	4550878	46
380	Non-Participant	698888	4550899	45
381	Non-Participant	698916	4550900	44
382	Non-Participant	698940	4550933	44
383	Non-Participant	698886	4550937	44
384	Non-Participant	698896	4550984	44
385	Non-Participant	699595	4551359	39
386	Non-Participant	699948	4551690	36
387	Non-Participant	700030	4551625	36
388	Non-Participant	700662	4549989	40
389	Non-Participant	697299	4543543	40
390	Non-Participant	695540	4556549	43

Table A-1. Summary of Acoustic Modeling Results, Acciona AW132/3300

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA L_{eq})
		Easting (X)	Northing (Y)	Critical Design Wind Speed
391	Non-Participant	691710	4557948	35
392	Participant	692415	4557592	39
393	Participant	692308	4557194	39
394	Non-Participant	692555	4553348	40
395	Non-Participant	695705	4552319	38
396	Non-Participant	697342	4552341	37
397	Non-Participant	697668	4551676	39
398	Non-Participant	698946	4550997	43
399	Non-Participant	698918	4551258	41
400	Non-Participant	699016	4551064	42
401	Non-Participant	698998	4550853	44
402	Non-Participant	699033	4551576	39
403	Non-Participant	699158	4551587	39
404	Non-Participant	700651	4550688	38
405	Non-Participant	700454	4548399	40
406	Non-Participant	695954	4546326	44
407	Participant	693678	4541829	49

Appendix B

Tabulated Acoustic Modeling Results for Additional WTG Models

Table B-1 Summary of Acoustic Modeling Results for Additional WTGs

Receptor ID	WTG Model							
	Acciona AW140-3000 (HH = 105 m)	**Acciona AW132-3000 (HH = 112.5 m)**	**Vestas V136-3.6 (HH = 82 m)**	**Vestas V136-3.6 (HH = 105 m)**	**Vestas V150-4.2 (HH = 105 m)**	**Gamesa G126-2.625 (HH = 84 m)**	**Gamesa G132-3.55 (HH = 84 m)**	**Gamesa G132-3.55 (HH = 114 m)**
Effective OPSB Noise Criterion (dBA)	45	44	48	48	48	47	47	47
Number of Exceedances of Effective Criterion	86	79	24	24	22	20	16	14
Number of Non-Participants with Exceedances	49	43	8	8	7	5	2	2

Paulding Wind Farm IV LLC
Case No. 18-91-EL-BGN

Exhibit J

Cumulative Sound Assessment

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Date Filed: July 2, 2018

TETRA TECH

To: Sarah Distelrath, EDPR
From: Tricia Pellerin and Tiffanie Ramos, Tetra Tech
Subject: Timber Road IV Wind Farm – Cumulative Acoustic Modeling Analysis with Timber Road Phase I, Timber Road Phase III, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm
Date: June 20, 2018

EDP Renewables North America LLC (EDPR) proposes to construct and operate the Timber Road IV Wind Farm (Project) in Paulding County, Ohio, which would potentially consist of 54 Acciona AW132 3.3-megawatt (MW) wind turbine generators (WTGs) and a collection substation, which includes one onsite transformer rated at 55/73/92-megavolt ampere (MVA). Project details including applicable noise criterion, acoustic modeling methodology, modeling inputs and results are presented in the Timber Road IV Acoustic Assessment Report (Tetra Tech, 2018).

The Ohio Power Siting Board (OPSB) prescribes noise criterion that does not permit noise levels at any non-participating sensitive receptor within one mile of the project boundary to exceed the project area ambient nighttime average sound level (L_{eq}) by five A-weighted decibels (dBA).Within the Acoustic Assessment, the critical design wind speed for the Acciona AW132/3300 WTG was determined to occur at 6 m/s, which translates to a project area ambient nighttime average sound level of 39 dBA L_{eq} and corresponding effective OPSB noise criterion of 44 dBA.

In addition to analyzing the proposed Project in isolation, Tetra Tech modeled Timber Road IV in conjunction with adjacent operational phases Timber Road II and III as well as the Blue Creek Wind Farm and Northwest Ohio Wind Farm. Due to the proximity of those wind energy facilities, sound emissions from their respective WTGs could contribute to received sound levels at noise sensitive areas (NSAs; i.e., residences) within the Timber Road IV Project area.

Acoustic Modeling Methodology and Input Parameters

All wind energy facilities considered in the cumulative effects assessment were modeled using CadnaA and the same modeling approach as presented in the Timber Road IV Wind Farm Acoustic Assessment. That report also provides sound profile characteristics for the Timber Road IV WTGs and substation.

Timber Road II Wind Farm consists of 55 Vestas V100 1.8-MW WTGs with hub height 95 meters (312 feet) and rotor diameter of 100 meters (328 feet). Table 1 provides a summary of sound power data for the Vestas V100 WTG used for Timber Road II, correlated by wind speed at a height of 10 meters (32.8 feet) above ground level (AGL). A confidence interval, or k-factor, of 2 dB was incorporated into the acoustic modeling analysis per the manufacturer specification.

Table 1. Vestas V100 Broadband Sound Power Levels (dBA) Correlated with Wind Speed

	WTG L_{max} Sound Power Level (L_W) at Reference Wind Speed							
Wind Speed	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
Vestas V100 1.8 MW	93.8	96.4	100.7	104.4	105.0	105.0	105.0	105.0

A summary of sound power data for the Vestas V100 by octave band center frequency is presented in Table 2.

Table 2. Vestas V100 Sound Power Level by Octave Band Center Frequency

	Octave Band Sound Power Level (dBA)								Broadband (dBA)
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Vestas V100 1.8 MW	87.7	93.3	96.7	98.5	99.4	97.6	93.8	79.9	105.0

Timber Road III Wind Farm consists of 48 Gamesa G114 2.1-MW WTGs with hub height 93 meters (305 feet) and rotor diameter of 114 meters (374 feet). Table 3 presents a summary of sound power data correlated to wind speeds 10 meters (32.8 feet) AGL. The specification for the Gamesa G114 includes an expected warranty confidence interval, or k-factor, of 2 dB, which was added to the nominal sound power level in the acoustic model.

Table 3. Gamesa G114 Broadband Sound Power Levels (dBA) Correlated with Wind Speed

	WTG L_{max} Sound Power Level (L_W) at Reference Wind Speed (m/s)										
Wind Speed	3 .0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0
Gamesa G114	95.8	95.8	96.8	99.5	101.9	104.1	106.2	106.6	106.6	106.6	106.6

A summary of sound power data by octave band center frequency for the Gamesa G114 operating at maximum rotation are presented in Table 4 (1/1 octave band frequency data provided with stated intended use limited for informational purposes only).

Table 4. Gamesa G114 Sound Power Level by Octave Band Center Frequency

	Octave Band Sound Power Level (dBA)								Broadband (dBA)
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Gamesa G114	84.3	91.7	97.6	101.3	101.7	99.0	92.7	81.2	106.6

The existing Timber Roads II and III electrical substation transformer sound source levels were derived based on a 173 megavolt ampere (MVA) rating. Table 5 presents the transformer sound source data by octave band center frequency calculated based on the estimated transformer National Electrical Manufacturers Association (NEMA) and MVA ratings using standardized engineering guidelines.

Table 5. Transformer Sound Power Level

	Octave Band Sound Power Level (dB)								Broadband (dBA)
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Transformer	99.0	101.0	96.0	96.0	90.0	85.0	80.0	73.0	97.0

The Blue Creek Wind Farm is owned and operated by Avangrid Renewables and consists of 49 nearby Gamesa G90 2.0 MW WTGs with hub height of 100 meters and rotor diameter of 90 meters. Sound power data correlated by wind speed for the Gamesa G90 for the full range of operational wind speeds was not made available to Tetra Tech. Table 6 presents a summary of sound power data by octave band center frequency for the Gamesa G90 operating at maximum rotation. The specification for the Gamesa G90 includes an expected warranty confidence interval, or k-factor, of 2 dB, which was added to the nominal sound power level in the acoustic model.

Table 6. Gamesa G90 Sound Power Level by Octave Band Center Frequency

	Octave Band Sound Power Level (dBA)								Broadband (dBA)
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
Gamesa G90	84.0	93.0	100.0	102.0	100.0	97.0	95.0	91.0	106.8

The Northwest Ohio Wind Farm is owned and operated by Starwood Energy Group and consists of 41 nearby Gamesa GE-116 2.5 MW WTGs with hub height of 94 meters and rotor diameter of 116 meters. Sound power data correlated by wind speed for the GE-116 the full range of operational wind speeds was not made available to Tetra Tech. Table 7 presents a summary of sound power data by octave band center frequency for the GE-116 operating at maximum rotation. The specification for the GE-116 includes an expected warranty confidence interval, or k-factor, of 2 dB, which was added to the nominal sound power level in the acoustic model.

Table 7. GE-116 Sound Power Level by Octave Band Center Frequency

	Octave Band Sound Power Level (dBA)								Broadband (dBA)
Frequency (Hz)	63	125	250	500	1000	2000	4000	8000	
GE-116	88.8	96.2	99.7	102.2	101.5	96.6	86.7	66.6	107.0

Acoustic Modeling Results and Compliance

Cumulative acoustic modeling was completed assuming all WTGs were operating continuously and concurrently at the given operating condition. A sound contour plot displaying Project operational sound levels in color-coded isopleths is provided in Figure 1. Figure 1 shows broadband (dBA) operational sound levels at wind speeds corresponding to wind turbine

operation at the critical design wind speed. Table 8 presents the results of the cumulative acoustic modeling analysis and includes the ID, Universal Transverse Mercator (UTM) coordinates, NSA status (participant or non-participant) and the received sound levels at each NSA. The tabulated results and contour plot are independent of the existing acoustic environment and are representative of expected Project sound levels only.

Acoustic modeling results indicate that there are 140 potential exceedances of the OPSB 44 dBA noise criterion. However, demonstration of compliance with the standard is not required at 69 of those NSAs since they have participating agreements signed. The remaining 71 NSAs are exceeding the OPSB noise criterion but are considered non-participating landowners. If there is a complaint about the noise impacts, once the wind farm is operational, the Project will at its expense hire a third-party sound consultant to analyze the real sound impacts of the operating wind farm on that receptor. If the sound threshold is not met the Project will re-engage with the landowner and reach a mutually agreed upon mitigation measure.

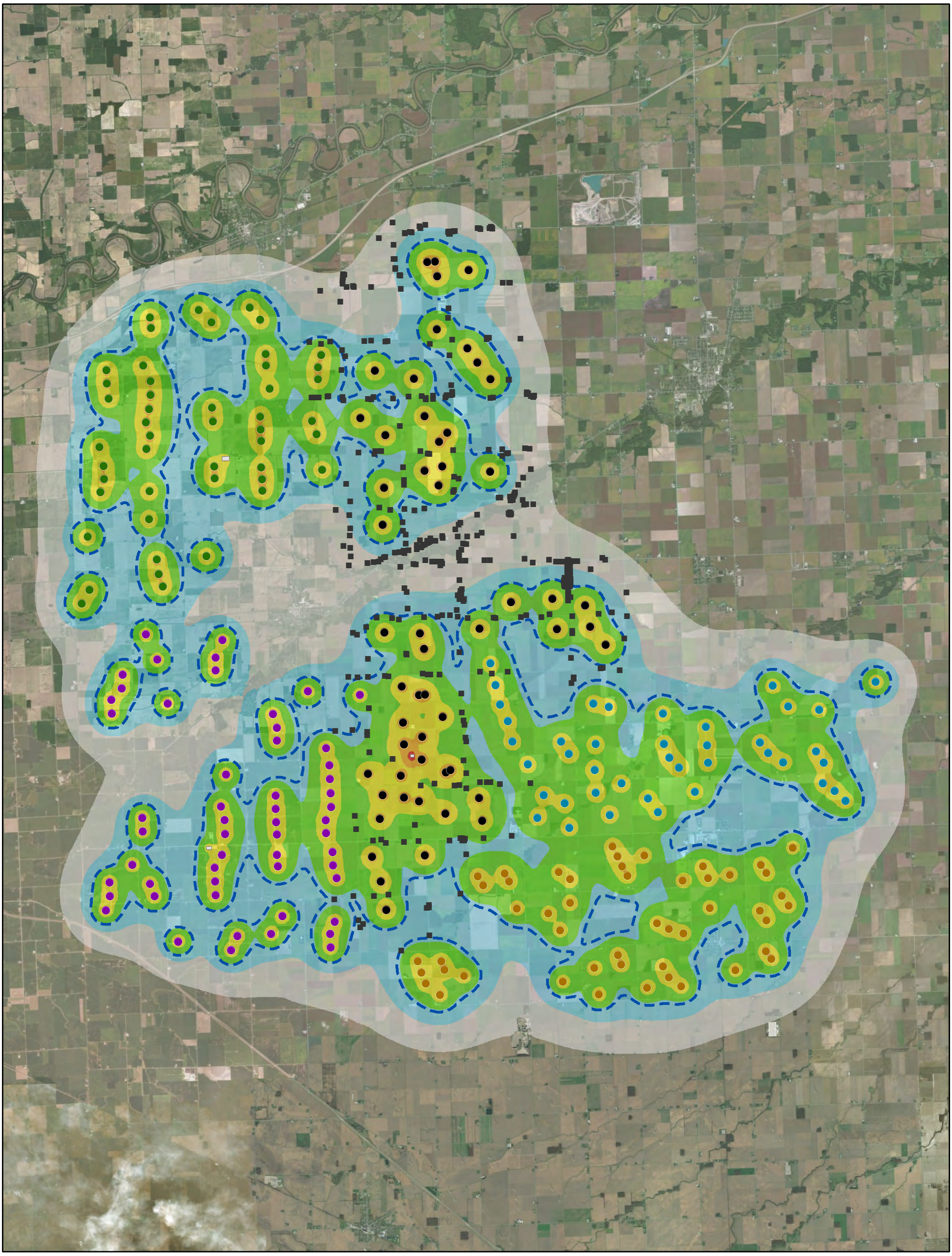

Figure 1 –
Timber Road IV Wind Farm
Cumulative Assessment
With Timber Road II & III, Blue Creek and NW Ohio Wind Farms
Received Sound Levels

PAULDING COUNTY, OHIO

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Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
1	Non-Participant	694804	4541440	42
2	Non-Participant	694868	4541453	42
3	Non-Participant	694865	4541526	42
4	Non-Participant	695792	4541850	44
5	Non-Participant	694886	4540643	44
6	Non-Participant	694050	4540185	45
7	Non-Participant	692859	4540871	43
8	Participant	692934	4540958	43
9	Non-Participant	692795	4541087	44
10	Participant	693258	4541787	49
11	Non-Participant	692647	4541792	44
12	Non-Participant	692095	4541693	45
13	Non-Participant	691684	4559516	37
14	Non-Participant	692267	4559188	37
15	Non-Participant	692448	4559621	36
16	Non-Participant	692337	4559726	36
17	Non-Participant	692337	4559817	36
18	Non-Participant	692671	4559632	36
19	Non-Participant	692642	4559651	36
20	Non-Participant	693179	4559615	37
21	Non-Participant	694035	4559563	41
22	Non-Participant	695522	4556755	43
23	Participant	695467	4557635	47
24	Participant	695431	4558729	47
25	Non-Participant	695543	4558081	48
26	Participant	694887	4557958	47
27	Non-Participant	693647	4558040	41
28	Non-Participant	693585	4558029	41
29	Non-Participant	693179	4558058	41
30	Non-Participant	692974	4558050	41
31	Non-Participant	692314	4557770	44
32	Non-Participant	691972	4558025	47
33	Non-Participant	691365	4558017	46
34	Non-Participant	691641	4556388	46
35	Non-Participant	691560	4556396	46
36	Non-Participant	691427	4556385	46
37	Non-Participant	691920	4556430	45

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
38	Non-Participant	691890	4556414	45
39	Non-Participant	692327	4556398	44
40	Non-Participant	692356	4556315	44
41	Non-Participant	693075	4556351	45
42	Non-Participant	693167	4556335	45
43	Non-Participant	693235	4556408	44
44	Non-Participant	693818	4556359	44
45	Participant	694260	4556411	47
46	Participant	694648	4556424	47
47	Participant	694777	4556375	47
48	Participant	694771	4556337	48
49	Non-Participant	694985	4556353	46
50	Non-Participant	694988	4556446	45
51	Non-Participant	695542	4556511	43
52	Non-Participant	695541	4556486	43
53	Non-Participant	695540	4556474	43
54	Non-Participant	695496	4556454	43
55	Non-Participant	695470	4556453	43
56	Non-Participant	695426	4556450	43
57	Non-Participant	695398	4556451	43
58	Non-Participant	695376	4556449	43
59	Non-Participant	695353	4556388	44
60	Participant	694014	4555545	48
61	Non-Participant	695576	4554840	50
62	Participant	694880	4554736	51
63	Participant	694831	4554755	50
64	Non-Participant	694618	4554810	48
65	Participant	693472	4554816	47
66	Non-Participant	693421	4554817	47
67	Non-Participant	693293	4554817	46
68	Non-Participant	693267	4554733	44
69	Non-Participant	692795	4554775	43
70	Non-Participant	694108	4554354	45
71	Non-Participant	692440	4553859	42
72	Non-Participant	692128	4553092	40
73	Non-Participant	692527	4552940	40
74	Non-Participant	692553	4552549	40

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
75	Participant	692547	4552347	40
76	Participant	693737	4553099	47
77	Non-Participant	693413	4553167	47
78	Non-Participant	694139	4553835	45
79	Non-Participant	694131	4553976	45
80	Non-Participant	694729	4553134	43
81	Non-Participant	694442	4553077	43
82	Non-Participant	694145	4553117	43
83	Participant	695604	4553678	48
84	Participant	695597	4554069	49
85	Non-Participant	695733	4554015	46
86	Non-Participant	695733	4552672	40
87	Non-Participant	695641	4552529	39
88	Non-Participant	695250	4552332	39
89	Non-Participant	695273	4552268	39
90	Non-Participant	694911	4552259	39
91	Non-Participant	695059	4552185	39
92	Non-Participant	694906	4552170	39
93	Non-Participant	694810	4552194	39
94	Non-Participant	694867	4552147	39
95	Non-Participant	694816	4552121	39
96	Non-Participant	694749	4552085	39
97	Non-Participant	694685	4552062	39
98	Non-Participant	694594	4552197	40
99	Non-Participant	694511	4552075	40
100	Non-Participant	694638	4551996	39
101	Non-Participant	694512	4551954	39
102	Participant	694095	4552733	44
103	Non-Participant	694185	4552113	41
104	Non-Participant	694101	4552476	43
105	Non-Participant	694181	4552381	42
106	Non-Participant	694124	4551901	40
107	Non-Participant	694145	4551825	40
108	Non-Participant	694263	4551906	40
109	Participant	693867	4551846	40
110	Non-Participant	694060	4551861	40
111	Non-Participant	693998	4551857	40

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
112	Non-Participant	693591	4551729	40
113	Non-Participant	693550	4551713	40
114	Non-Participant	693452	4551655	40
115	Non-Participant	693389	4551580	39
116	Non-Participant	693238	4551562	39
117	Non-Participant	693072	4551541	39
118	Non-Participant	692525	4551466	38
119	Non-Participant	692570	4551734	38
120	Non-Participant	692554	4551992	39
121	Non-Participant	692353	4552048	38
122	Non-Participant	694217	4550702	40
123	Non-Participant	695927	4551621	38
124	Non-Participant	695778	4551615	38
125	Non-Participant	695762	4551042	39
126	Non-Participant	695710	4550592	41
127	Non-Participant	695769	4550634	40
128	Non-Participant	695808	4550635	40
129	Non-Participant	695790	4550722	40
130	Non-Participant	695827	4550779	40
131	Non-Participant	694720	4549946	47
132	Non-Participant	695708	4549981	43
133	Non-Participant	695680	4550166	42
134	Non-Participant	695253	4550012	43
135	Non-Participant	695123	4549980	43
136	Non-Participant	694241	4550205	43
137	Participant	693339	4549935	47
138	Non-Participant	693989	4549882	46
139	Participant	693786	4549926	47
140	Non-Participant	693029	4549676	45
141	Non-Participant	692762	4549437	42
142	Non-Participant	692643	4549495	41
143	Non-Participant	692116	4546631	44
144	Non-Participant	693083	4548204	44
145	Non-Participant	692776	4548193	44
146	Non-Participant	692502	4548199	43
147	Non-Participant	693076	4548742	43
148	Participant	693577	4548229	46

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
149	Non-Participant	693684	4548215	48
150	Non-Participant	694202	4548876	48
151	Non-Participant	694214	4548853	48
152	Participant	695170	4548275	46
153	Non-Participant	694901	4548262	47
154	Non-Participant	694821	4548265	48
155	Non-Participant	694682	4548312	47
156	Non-Participant	695761	4548929	44
157	Non-Participant	696363	4548357	48
158	Non-Participant	695808	4547727	45
159	Non-Participant	695825	4547167	47
160	Non-Participant	695881	4546924	46
161	Non-Participant	695903	4546803	46
162	Non-Participant	695935	4546429	45
163	Non-Participant	693103	4547287	46
164	Non-Participant	692626	4546661	44
165	Non-Participant	693056	4546493	45
166	Non-Participant	693047	4546586	45
167	Non-Participant	693122	4546000	47
168	Participant	693804	4545804	52
169	Participant	695874	4545768	49
170	Participant	695955	4544938	49
171	Participant	695959	4545383	50
172	Non-Participant	695753	4545046	50
173	Participant	695619	4545029	51
174	Participant	695030	4545083	51
175	Participant	694624	4545027	51
176	Non-Participant	695959	4543015	45
177	Non-Participant	695887	4543415	45
178	Non-Participant	695843	4543411	45
179	Non-Participant	695918	4543463	45
180	Non-Participant	695875	4543470	45
181	Non-Participant	695830	4543480	45
182	Non-Participant	695788	4543476	45
183	Non-Participant	695471	4543411	45
184	Participant	694562	4543398	48
185	Non-Participant	694131	4543371	45

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
186	Non-Participant	694450	4543870	47
187	Participant	693604	4543342	47
188	Non-Participant	693472	4543446	47
189	Non-Participant	693230	4543419	49
190	Non-Participant	692731	4543745	46
191	Non-Participant	692692	4544139	46
192	Non-Participant	692352	4559883	36
193	Non-Participant	692347	4559919	35
194	Non-Participant	692347	4560010	35
195	Non-Participant	692385	4559991	35
196	Non-Participant	693396	4561055	36
197	Non-Participant	693801	4561506	36
198	Non-Participant	694762	4561447	40
199	Non-Participant	694580	4561406	40
200	Non-Participant	694607	4561348	40
201	Non-Participant	695454	4561184	41
202	Non-Participant	695454	4561246	41
203	Non-Participant	695433	4561230	41
204	Non-Participant	695554	4561243	41
205	Non-Participant	695601	4561260	40
206	Non-Participant	695625	4561252	40
207	Non-Participant	695517	4561242	41
208	Non-Participant	695481	4561173	41
209	Non-Participant	694329	4561224	40
210	Non-Participant	694361	4561220	40
211	Non-Participant	694311	4561228	40
212	Participant	695438	4559008	43
213	Participant	696560	4558098	44
214	Participant	696623	4558134	44
215	Participant	696564	4558135	44
216	Non-Participant	696378	4561330	37
217	Non-Participant	696299	4561344	38
218	Non-Participant	696333	4561350	37
219	Non-Participant	696675	4561392	36
220	Non-Participant	696646	4561355	36
221	Non-Participant	696704	4561360	36
222	Non-Participant	696716	4561341	36

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
223	Non-Participant	697026	4559749	38
224	Non-Participant	697240	4559757	37
225	Non-Participant	697216	4559753	37
226	Non-Participant	693830	4560859	39
227	Non-Participant	693822	4560441	40
228	Non-Participant	693861	4560449	40
229	Non-Participant	693882	4560177	41
230	Non-Participant	693877	4560154	41
231	Non-Participant	694164	4561203	39
232	Non-Participant	694162	4561186	39
233	Participant	694029	4559969	42
234	Participant	694015	4559980	42
235	Participant	693996	4559981	41
236	Non-Participant	697553	4558108	38
237	Non-Participant	697209	4556916	46
238	Non-Participant	697200	4556896	46
239	Non-Participant	697775	4556504	38
240	Non-Participant	697738	4556488	38
241	Non-Participant	697746	4556510	38
242	Non-Participant	697737	4556538	38
243	Non-Participant	697856	4556435	38
244	Non-Participant	697889	4556430	37
245	Non-Participant	697925	4556408	37
246	Non-Participant	697947	4556443	37
247	Non-Participant	697849	4554289	38
248	Non-Participant	697630	4554045	39
249	Non-Participant	697139	4554745	42
250	Non-Participant	697180	4554758	41
251	Non-Participant	697674	4554896	38
252	Non-Participant	697817	4554887	37
253	Participant	697018	4554678	44
254	Non-Participant	697486	4553827	39
255	Non-Participant	697014	4554872	42
256	Non-Participant	696609	4554860	43
257	Participant	696954	4553461	41
258	Non-Participant	696908	4553460	41
259	Non-Participant	697389	4553596	39

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
260	Non-Participant	697321	4553410	39
261	Non-Participant	697248	4553382	39
262	Non-Participant	697378	4553564	39
263	Non-Participant	697362	4553532	39
264	Non-Participant	697347	4553501	39
265	Non-Participant	697243	4553488	39
266	Non-Participant	697324	4553385	39
267	Non-Participant	697234	4553034	38
268	Non-Participant	697220	4552980	38
269	Non-Participant	697202	4553005	38
270	Non-Participant	697257	4552965	38
271	Non-Participant	697284	4552992	38
272	Non-Participant	696277	4552965	40
273	Non-Participant	695783	4552722	40
274	Participant	695579	4553631	48
275	Non-Participant	696671	4556375	46
276	Non-Participant	696745	4556386	46
277	Non-Participant	695482	4550011	42
278	Participant	696002	4549917	47
279	Participant	696755	4549939	47
280	Non-Participant	696811	4549921	47
281	Participant	697555	4549956	47
282	Participant	697726	4550011	45
283	Participant	698403	4550037	49
284	Non-Participant	698160	4549950	47
285	Participant	699064	4549548	49
286	Non-Participant	699066	4549487	49
287	Non-Participant	699024	4548760	43
288	Non-Participant	699894	4548459	44
289	Non-Participant	699961	4548463	44
290	Non-Participant	700591	4549340	45
291	Non-Participant	696706	4548305	50
292	Non-Participant	697167	4548367	47
293	Non-Participant	696358	4545124	49
294	Non-Participant	696556	4545127	48
295	Non-Participant	696669	4545116	47
296	Non-Participant	696947	4545073	45

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
297	Non-Participant	697839	4545089	47
298	Non-Participant	699105	4548190	43
299	Non-Participant	699103	4548144	43
300	Non-Participant	699038	4548034	43
301	Non-Participant	696463	4543476	48
302	Non-Participant	695768	4550527	41
303	Non-Participant	695874	4550434	41
304	Non-Participant	695889	4550489	41
305	Non-Participant	695760	4550478	41
306	Participant	699065	4549987	49
307	Participant	699836	4550062	49
308	Participant	700226	4550097	44
309	Non-Participant	698951	4550449	49
310	Non-Participant	699011	4550542	48
311	Non-Participant	698940	4550508	49
312	Non-Participant	698946	4550576	48
313	Non-Participant	698945	4550649	48
314	Non-Participant	698951	4550704	48
315	Non-Participant	698948	4550742	47
316	Non-Participant	698831	4550891	47
317	Non-Participant	698842	4550858	47
318	Non-Participant	698841	4551110	43
319	Non-Participant	698835	4550933	46
320	Non-Participant	698832	4550980	44
321	Non-Participant	698819	4551002	44
322	Non-Participant	698820	4551043	43
323	Non-Participant	698884	4551112	43
324	Non-Participant	699001	4551132	42
325	Non-Participant	699016	4551013	43
326	Non-Participant	699010	4550906	44
327	Non-Participant	699000	4551189	42
328	Non-Participant	698998	4551270	41
329	Non-Participant	698922	4551300	41
330	Non-Participant	698994	4551326	41
331	Non-Participant	698926	4551342	41
332	Non-Participant	698992	4551384	40
333	Non-Participant	698921	4551401	40

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
334	Non-Participant	698991	4551439	40
335	Non-Participant	698922	4551462	40
336	Non-Participant	698994	4551473	40
337	Non-Participant	698922	4551501	40
338	Non-Participant	698916	4551532	40
339	Non-Participant	698991	4551517	40
340	Non-Participant	698990	4551552	39
341	Non-Participant	698987	4551597	39
342	Non-Participant	698916	4551595	39
343	Non-Participant	698775	4551576	40
344	Non-Participant	698639	4551573	40
345	Non-Participant	698582	4551576	40
346	Non-Participant	697913	4551548	40
347	Non-Participant	696654	4551622	39
348	Non-Participant	694150	4550796	40
349	Non-Participant	694022	4551427	39
350	Non-Participant	694418	4551510	39
351	Non-Participant	694482	4551493	39
352	Non-Participant	694765	4551623	39
353	Non-Participant	694964	4551571	39
354	Non-Participant	695001	4551571	39
355	Non-Participant	695075	4551572	39
356	Non-Participant	695155	4551575	39
357	Non-Participant	695200	4551470	39
358	Non-Participant	695249	4551519	39
359	Non-Participant	695231	4551576	38
360	Non-Participant	695743	4551710	38
361	Non-Participant	695746	4551787	38
362	Non-Participant	695749	4551849	38
363	Non-Participant	695810	4551927	38
364	Non-Participant	695959	4552096	38
365	Non-Participant	695870	4552113	38
366	Non-Participant	695989	4552317	38
367	Non-Participant	696286	4552355	38
368	Non-Participant	696415	4552432	38
369	Non-Participant	696493	4551616	39
370	Non-Participant	698391	4551644	39

Table 8. Summary of Acoustic Modeling Results, Cumulative with Timber Road II Wind Farm, Timber Road III Wind Farm, the Blue Creek Wind Farm, and the Northwest Ohio Wind Farm

Receptor ID	Participant Status	UTM Coordinates (m)		Received Sound Levels (dBA)
		Easting (X)	Northing (Y)	
371	Non-Participant	697608	4553384	38
372	Non-Participant	697656	4553240	37
373	Non-Participant	697724	4553251	37
374	Non-Participant	697915	4553253	36
375	Non-Participant	699207	4551584	39
376	Non-Participant	698927	4551647	39
377	Non-Participant	698883	4551067	43
378	Non-Participant	698881	4550847	47
379	Non-Participant	698887	4550878	46
380	Non-Participant	698888	4550899	45
381	Non-Participant	698916	4550900	45
382	Non-Participant	698940	4550933	44
383	Non-Participant	698886	4550937	44
384	Non-Participant	698896	4550984	44
385	Non-Participant	699595	4551359	40
386	Non-Participant	699948	4551690	37
387	Non-Participant	700030	4551625	37
388	Non-Participant	700662	4549989	41
389	Non-Participant	697299	4543543	44
390	Non-Participant	695540	4556549	43
391	Non-Participant	691710	4557948	50
392	Participant	692415	4557592	44
393	Participant	692308	4557194	45
394	Non-Participant	692555	4553348	41
395	Non-Participant	695705	4552319	39
396	Non-Participant	697342	4552341	37
397	Non-Participant	697668	4551676	39
398	Non-Participant	698946	4550997	43
399	Non-Participant	698918	4551258	41
400	Non-Participant	699016	4551064	43
401	Non-Participant	698998	4550853	45
402	Non-Participant	699033	4551576	39
403	Non-Participant	699158	4551587	39
404	Non-Participant	700651	4550688	39
405	Non-Participant	700454	4548399	43
406	Non-Participant	695954	4546326	45
407	Participant	693678	4541829	49

Exhibit K

Shadow Flicker Report

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Shadow Flicker Report

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Attachment B: WindPRO Overview Reports and Calendars
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Attachment E: Cumulative Impact Analysis Overview Reports and Calendars

1.0 PROJECT OVERVIEW

Paulding Wind Farm IV, LLC (the Applicant), is proposing to construct a wind energy generation facility, permitting 54 turbine locations and associated necessary project infrastructure with the Ohio Power Siting Board (OPSB), in Crane, Harrison, Pauling, Benton, and Blue Creek Townships, in Paulding County, Ohio (hereafter referred to as the Project) (see Figure 1). The proposed Project will have an anticipated output capacity of 125.1 megawatts (MW). The Project is located in Paulding County, Ohio, approximately 5 miles east of the Indiana border, approximately 13 miles southwest of the City of Defiance, and approximately 18 miles northwest of the City of Van Wert. Land cover within the Project area is dominated by agriculture with single family residences generally occurring along the road frontage.

Several wind turbine generators are being considered for this Project. Each wind turbine consists of three major mechanical components: the tower, nacelle, and rotor with blades. The model with the largest rotor diameter is the Vestas V150 4.2 MW wind turbine. Assuming use of the Vestas V150 turbines or equivalent, the anticipated tower height or "hub height" (height from foundation to the center of the rotor), for each turbine is approximately 105 meters (344 feet). The Vestas V150 turbine has a blade length of 75 meters (246 feet) resulting in a rotor diameter of 150 meters (492 feet). These dimensions result in a total maximum height of 180 meters (591 feet). This model was selected for this analysis because it has the largest rotor diameter of any turbine model under consideration and would therefore produce the greatest amount of shadow flicker. Additional turbine models under consideration are presented in Table 1 below. The current Project turbine layout is depicted in Figure 2.

Table 1. Approximate Turbine Dimensions by Model

Turbine Model	Rated Power	Hub Height	Rotor Diameter	Blade Length	Total Height
Siemens Gamesa 126	2.625 MW	84 meters (276 feet)	126 meters (413 feet)	63 meters (206.5 feet)	147 meters (482 feet)
Siemens Gamesa 132	3.55 MW	114 meters (374 feet)	132 meters (433 feet)	66 meters (216.5 feet)	180 meters (591 feet)
Siemens Gamesa 132	3.5 5MW	84 meters (276 feet)	132 meters (433 feet)	66 meters (216.5 feet)	150 meters (492 feet)
Siemens Gamesa 145	4.2 MW	107.5 meters (353 feet)	145 meters (476 feet)	72.5 meters (238 feet)	180 meters (591 feet)
Vestas 136	3.6 MW	105 meters (344 feet)	136 meters (446 feet)	68 meters (223 feet)	173 meters (568 feet)
Vestas 136	3.6 MW	82 meters (269 feet)	136 meters (446 feet)	68 meters (223 feet)	150 meters (492 feet)
Vestas 150	4.2MW	105 meters (344 feet)	150 meters (492 feet)	75 meters (246 feet)	180 meters (591 feet)

Turbine Model	Rated Power	Hub Height	Rotor Diameter	Blade Length	Total Height
Acciona 140	3.0 MW	105 meters (344 feet)	140 meters (459 feet)	70 meters (230 feet)	175meters (574feet)
Acciona 132	3.0 MW	112.5 meters (369 feet)	132 meters (433 feet)	66 meters (216.5 feet)	178.5 meters (586 feet)
Acciona 132	3.465 MW	84 meters (276 feet)	132 meters (433 feet)	66 meters (216.5 feet)	150 meters (492 feet)

2.0 INTRODUCTION

Shadow flicker refers to the moving shadows that an operating wind turbine casts at times of the day when the turbine rotor is between the sun and a receptor's position. 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). During intervals of sunshine, 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 does not occur when fog or clouds obscure the sun, or when turbines are not operating.

The distance between a wind turbine and a potential shadow-flicker receptor affects the amount of the shadows cast by the blades, and therefore the intensity of flickering. Shadows cast close to a turbine will be more intense, distinct, and focused. This is because a greater proportion of the sun's disc is intermittently blocked by the turbine (BERR, 2009). Obstacles such as terrain, vegetation, and/or buildings occurring between receptors and wind turbines may significantly reduce or eliminate shadow-flicker effects. At distances beyond roughly 10 rotor diameters (approximately 1,500 meters based on the Vestas V150 turbine model or equivalent proposed for the Project) shadow-flicker effects are generally considered negligible (BERR, 2009; DECC, 2011; DOER, 2011).

Although shadow flicker has been alleged to cause or contribute to health effects, blade pass frequencies for modern commercial scale wind turbines are very low. According to the Epilepsy Society, approximately five percent of individuals with epilepsy have sensitivity to light (Epilepsy Society, 2012). Most people with photosensitive epilepsy are sensitive to flickering around 16-25 Hz (Hertz or Hz = 1 flash per second), although some people may be sensitive to rates as low as 3 Hz and as high as 60 Hz. Modern wind turbines (including the proposed Vestas V150 model) typically operate at a frequency of 1 Hz or less, and there is no evidence that wind turbines can trigger seizures (British Epilepsy Association, 2007; Ellenbogen et al., 2012; NHMRC, 2010; DECC, 2011).

The location and duration of shadow flicker can be predicted using computer modeling programs and input data regarding turbine characteristics and weather conditions. A "worst-case" shadow-flicker scenario could be predicted based on the assumptions that there are no clouds or fog, wind conditions allow continuous turbine operation, the turbine rotor is continuously perpendicular to the sun, and the turbine rotor is positioned between the receptor and the sun. However, this "worst–case" scenario is not realistic because turbines do not operate continuously, are not always aligned perpendicular to the sun, and are not always positioned between the receptor and the sun. In addition, sunlight intensity and duration vary daily and seasonally, and obstacles that block shadows (terrain, vegetation, and buildings) exist in the landscape.

This report provides an assessment of the potential shadow flicker that could be experienced at sensitive receptors located in the vicinity of the proposed Project. Sensitive receptors include any known residential structures (both participating and non-participating), schools, office buildings, store fronts, or high-use public recreation areas that are located within a 10-rotor diameter area (1,500 meters) around the proposed turbines (Study Area).

3.0 METHODS

3.1 Shadow Flicker Analysis

The OPSB requires Applicants to evaluate and describe the potential cumulative impact from shadow flicker at the property boundary and sensitive receptors within a distance of ten rotor diameters or at least one-half mile, whichever is greater, of a turbine, including its plans to minimize potential impacts (Ohio Administrative Code [OAC] 4906-4-08(A)(9)). This shadow flicker analysis evaluated the potential impact of 54 Vestas V150 turbines, each with a rotor diameter of 150 meters and a hub height of 105 meters. Prior to conducting the shadow-flicker analysis, the Applicant identified potential receptors in the vicinity of the Project. A maximum distance of potential effect of 1,500 meters (10 rotor diameters) was used for this analysis to ensure that all potentially impacted receptors were identified and assessed.

The shadow flicker analysis for the proposed Project used *WindPRO 3.1.633* software and associated Shadow module. *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 54 proposed wind turbine sites (provided by the Applicant).
- The latitude and longitude coordinates of 358 potential sensitive receptors located within the 10-rotor diameter (1,500 meter) Study Area (provided by the Applicant).

- U.S. Geological Survey (USGS) 1:24,000 topographic mapping and USGS 10-meter resolution digital elevation model (DEM) data.
- The rotor diameter (150 meters) and hub height (105 meters) for the Vestas V150 turbine model.
- Annual wind rose data (provided by the Applicant), which is depicted in Table A1 of Attachment A (to determine the approximate directional frequency of rotor orientation throughout the year).
- 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 Fort Wayne, Indiana was used. Data were obtained from NOAA's "Comparative Climatic Data for the United States through 2015" (see Table A2 of Attachment A) (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 all existing trees and buildings adjacent to the receptors was not taken into consideration in the modeling.

Shadow-flicker effects on receptors are expressed in terms of predicted frequency (hours per year). Shadow isolines (i.e., contours indicating total number of hours of shadowing per average year) were calculated based on the data and assumptions outlined above. These isolines define the theoretical number of hours per year that shadow flicker would occur at any given location within a 1,500-meter radius of all proposed turbine locations (see Figure 3).

The model calculations include the cumulative sum of shadow flicker hours for all Project turbines. This omni-directional approach reports total shadow flicker results at a receptor regardless of the presence or orientation of windows at that particular 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 this "greenhouse" model is defined as a one square meter area located one meter above ground; actual house dimensions are not taken into consideration.

Because the shadow flicker analysis conducted for the proposed Project was based on the conservative assumptions that 1) all 54 turbines will be built, 2) the turbines are in continuous operation during daylight hours, and 3) that shadow flicker can be perceived at a receptor structure regardless of the presence or orientation of windows or the screening effects of all surrounding trees and buildings, the analysis presented herein is a conservative projection of the shadow-flicker effects at ground level.

Output from the model includes the following information: calculated shadow-flicker time (days per year, maximum hours per day, and total hours per year when shadow flicker is expected) at each of the 358 receptors located in the Study Area; tabulated and plotted time of day that structures are predicted to receive shadow flicker; and 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 (see Figure 3).

3.2 Cumulative Shadow Flicker Impacts

Because the proposed Project is located adjacent to the operating Timber Road II and III Wind Farms, the Northwest Ohio Wind Project, and the Blue Creek 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 Timber Road IV Wind Farm turbines that are also within a 10-rotor diameter distance of turbines in one or more of the existing wind farms). To evaluate the potential for cumulative shadow flicker impacts from the existing wind farms, a second shadow flicker analysis was run for selected turbines. The turbine models used for each project are:

- Timber Road II Wind Farm – Vestas V100-1.8 MW turbines with a rotor diameter of 100 meters,
- Timber Road III Wind Farm – Gamesa G114-2.1 MW turbines with a rotor diameter of 114 meters
- Northwest Ohio Wind Project – GE116-2.5 MW turbines with a rotor diameter of 116 meters
- Blue Creek Wind Farm – Gamesa G90-2 MW turbines with a rotor diameter of 90 meters.

To determine receptors that would be potentially affected by turbines from all five projects, a buffer defining the maximum distance of potential effect was applied to the existing turbines (1,000 meters for Timber Road II turbines, 1,140 meters for Timber Road III turbines, 1,160 meters for Northwest Ohio turbines, and 900 meters for Blue Creek Wind turbines) and to the proposed Timber Road IV turbines (1,500 meters). Thirty-seven receptors are located within the area where the existing wind farms buffers and the proposed Project buffer overlap. Therefore, these receptors have the potential for cumulative shadow flicker impacts (Figure 4).

The analysis was run using the same software and methodology as described in Section 3.1, along with latitude and longitude coordinates for the 37 receptors that were located in the area of potential cumulative impact and the latitude and longitude coordinates for the existing turbines

3.3 Shadow Flicker Threshold

Section 4906-4-09(E)(1) of the OAC requires that, "*The Facility shall be designed to avoid unreasonable adverse shadow flicker effect at any non-participating sensitive receptor within one thousand 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).

4.0 RESULTS

4.1 Shadow Flicker Analysis

A summary of the projected shadow flicker at each of the 358 receptors is presented below:

- 139 (39%) of the receptors are not expected to experience any shadow flicker,
- 1 (0%) of the receptors may be affected 0-1 hour/year,
- 72 (20%) of the receptors may be affected 1-10 hours/year,
- 57 (16%) of the receptors may be affected 10-20 hours/year,
- 31 (9%) of the receptors may be affected 20-30 hours/year,
- 58 (16%) of the receptors may be affected for more than 30 hours/year.

The results indicate 84% of the 358 receptors are predicted to receive less than 30 hours of shadow flicker per year. Sixteen percent of the receptors (58 receptors) are anticipated to receive more than 30 hours per year. At most receptor locations, shadow flicker will occur primarily in the early morning or late afternoon. The maximum daily duration of shadow flicker predicted at any receptor is 2 hours and 20 minutes (at receptor 287, see Attachment B).

Attachment B provides the results of the predicted shadow flicker at each structure. 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 a table indicating the amount of shadow flicker expected at each receptor and for receptors over 30 hours detailed calendars that illustrate the specific times of year and day that shadow flicker may occur.

As outlined above, results of the shadow flicker analysis for the Facility indicate that up to 58 receptors could exceed the 30-hour per year threshold. However, 22 of these receptors (38%) are located on properties owned by Project participants. The details regarding anticipated shadow flicker at all receptors predicted to receive in excess of 30 hours are summarized in below in Table 2.

Table 2. Receptors Predicted to Exceed 30 Hours of Shadow Flicker Annually

Receptor ID	Receptor Type	Project Status	Predicted Annual Shadow Flicker (hh:mm)	Predicted Max Daily Shadow Flicker (hh:mm)	Predicted Shadow Flicker (days/year)
294	Residential	Non-participating	30:48	0:40	136
55	Residential	Non-participating	32:08	0:40	176
281	Residential	Non-participating	32:45	1:05	124
51	Residential	Non-participating	33:14	0:47	178
25	Residential	Non-participating	33:34	1:09	148
191	Residential	Non-participating	33:59	0:49	94
54	Residential	Non-participating	34:06	0:38	179
70	Residential	Non-participating	34:14	1:05	177
52	Residential	Non-participating	35:40	0:47	178
53	Residential	Non-participating	36:13	0:47	180
318	Residential	Non-participating	36:51	1:49	102
160	Residential	Non-participating	37:20	0:57	140
238	Residential	Non-participating	37:29	1:03	132
239	Residential	Non-participating	37:37	1:04	123
291	Residential	Non-participating	37:41	0:59	152
379	Residential	Non-participating	38:34	1:40	112
161	Residential	Non-participating	39:08	0:54	131
285	Residential	Non-participating	42:53	1:05	233
149	Residential	Non-participating	42:59	1:40	126
159	Residential	Non-participating	43:21	1:00	216
85	Residential	Non-participating	43:46	1:05	146
316	Residential	Non-participating	44:31	1:06	159
104	Residential	Non-participating	45:27	0:59	114
78	Residential	Non-participating	45:36	1:29	155
315	Residential	Non-participating	49:51	1:06	175
138	Residential	Non-participating	49:53	1:54	110
314	Residential	Non-participating	57:59	1:09	199
64	Residential	Non-participating	59:13	1:30	172
151	Residential	Non-participating	60:15	1:07	121
150	Residential	Non-participating	60:16	1:06	132
313	Residential	Non-participating	62:46	1:11	209
311	Residential	Non-participating	64:32	1:12	214
79	Residential	Non-participating	68:45	1:13	197
312	Residential	Non-participating	70:12	1:13	197

Receptor ID	Receptor Type	Project Status	Predicted Annual Shadow Flicker (hh:mm)	Predicted Max Daily Shadow Flicker (hh:mm)	Predicted Shadow Flicker (days/year)
310	Residential	Non-participating	81:27	1:13	214
287	Residential	Non-participating	130:00	2:20	174
174	Residential	Participating	30:30	0:54	163
148	Residential	Participating	30:31	1:18	129
63	Residential	Participating	33:07	1:06	170
62	Residential	Participating	34:09	1:12	172
234	Residential	Participating	36:00	0:43	146
236	Residential	Participating	37:02	0:41	150
235	Residential	Participating	37:14	0:42	150
24	Residential	Participating	37:35	1:16	112
280	Residential	Participating	39:26	1:10	126
170	Residential	Participating	39:38	1:15	155
309	Residential	Participating	39:47	0:47	194
279	Residential	Participating	45:57	1:19	196
275	Residential	Participating	49:26	1:39	83
169	Residential	Participating	53:22	1:21	196
307	Residential	Participating	54:49	1:57	124
84	Residential	Participating	54:54	1:08	194
175	Residential	Participating	74:57	1:31	228
23	Residential	Participating	75:02	1:05	245
83	Residential	Participating	75:07	1:46	116
60	Residential	Participating	85:07	1:36	279
171	Residential	Participating	85:56	1:27	171
286	Residential	Participating	123:09	2:20	206

Details regarding shadow flicker effects predicted at the remaining non-participating receptors are presented in Table 3 below. Results of predicted shadow flicker at each receptor (participating and non-participating) is provided in Attachment B.

Table 3. Daily Effect to Non-Participating Receptors Predicted to Exceed 30 Hours of Shadow Flicker

Receptor ID	Predicted Annual Shadow Flicker (hh:mm)	Turbines Contributing to Shadow Flicker	Approximate Times of Day Receptor Potentially Affected by Flicker[1]
294	30:48	53, 61, 61a	4:15 PM – 4:30 PM 7:45 PM – 9:00 PM
55	32:08	7, 17, 47	6:45 AM – 7:30 AM

Receptor ID	Predicted Annual Shadow Flicker (hh:mm)	Turbines Contributing to Shadow Flicker	Approximate Times of Day Receptor Potentially Affected by Flicker[1]
			4:00 PM –5:15 PM
281	32:45	86	3:45 PM – 6:00 PM
51	33:14	7, 17, 47	6:45 AM – 7:30 AM 4:15 PM – 5:15 PM
25	33:34	15, 16	7:45 AM – 10:00 AM
191	33:59	80	6:30 AM – 7:30 AM
54	34:06	7, 17, 47	6:30 AM – 7:15 AM 4:00 PM – 5:30 PM
70	34:14	9, 10, 10A, 87	7:15 AM – 9:30 AM 3:45 PM – 4:30 PM
52	35:40	7, 17, 47	6:45 AM – 7:30 AM 4:00 PM – 5:00 PM 8:00 PM – 9:00 PM
53	36:13	7, 17, 47	6:30 AM – 7:30 AM 4:00 PM – 5:15 PM 8:00 PM – 9:00 PM
318	36:51	71, 72	8:45 AM – 9:30 AM 3:15 PM – 4:45 PM
160	37:20	58, 60	5:00 PM – 6:45 PM 7:00 PM – 8:30 PM
238	37:29	16, 17	6:30 PM – 8:00 PM 8:30 PM – 9:00 PM
239	37:37	16, 17	6:45 PM – 8:00 PM 8:30 PM – 9:00 PM
291	37:41	73, 74	5:00 PM – 7:15 PM 7:45 PM – 8:45 PM
379	38:34	58, 60	8:45 AM – 9:45 AM 3:15 PM – 5:30 PM
161	39:08	58, 60	5:45 PM – 7:15 PM 7:30 PM – 8:45 PM
285	42:53	66, 72, 73, 84	7:00 AM – 10:00 AM 8:15 PM – 9:00 PM
149	42:59	52b, 57, 78a,	7:30 PM – 10:15 PM
159	43:21	52b, 57, 58, 60	4:30 PM – 7:30 PM 8:00 PM – 9:00 PM
85	43:46	10, 19, 87	7:00 AM – 8:00 AM 5:00 PM – 7:15 PM 7:30 PM – 8:30 PM
316	44:31	71, 72	8:30 AM – 9:45 AM 4:00 PM – 6:30 PM
104	45:27	44	7:15 PM – 8:45 PM
78	45:36	9, 10, 10a	6:30 AM – 7:15 AM 7:30 AM – 8:30 AM 5:45 PM – 7:30 PM
315	49:51	71, 72	8:15 AM – 9:45 AM

Receptor ID	Predicted Annual Shadow Flicker (hh:mm)	Turbines Contributing to Shadow Flicker	Approximate Times of Day Receptor Potentially Affected by Flicker[1]
			4:15 PM – 6:45 PM
138	49:53	76, 77	7:15 PM – 8:45 PM
314	57:59	71, 72	8:00 AM – 10:00 AM 4:45 PM – 7:15 PM
64	59:13	10a, 42. 90	6:30 AM – 7:30 AM 8:00 AM – 9:30 AM 8:00 PM – 9:00 PM
151	60:15	78	6:45 AM – 8:15 AM
150	60:16	78	6:45 AM – 8:30 AM
313	62:46	71, 72	7:45 AM – 10:00 AM 5:30 PM – 7:30 PM
311	64:32	71, 72	7:45 AM – 10:00 AM 6:15 PM – 7:30 PM
79	68:45	9, 10, 10a, 87	6:30 AM – 7:15 AM 7:30 AM – 8:30 AM 4:45 PM – 7:00 PM
312	70:12	71, 72	7:30 AM – 10:00 AM 6:15 PM – 7:45 PM
310	81:27	71, 72	7:30 AM – 10:00 AM 6:30 PM – 8:00 PM
287	130:00	73, 74, 84	6:45 AM – 9:00 AM 7:00 AM – 8:30 AM

[1] The times of day represent the range of times during which each structure could potentially experience shadow flicker throughout the year; however, no structures will experience shadow flicker every day during all those hours. See Attachment B for detailed calendars that illustrate the specific time of year and day that each structure may experience shadow flicker.

Additional shadow flicker analyses were run for all other turbine models under consideration (Table 1) using the methods described above in Section 3.1. The number of receptors that were predicted to receive over 30 hours of shadow flicker ranged from 26 to 58, depending on turbine model. The number of receptors predicted to receive over 30 hours of shadow flicker are listed in Attachment C and in greater detail in Attachment D.

4.2 Cumulative Shadow Flicker

The receptors predicted to receive cumulative shadow flicker are presented in Table 4, below, 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 Project and the existing facilities. Only receptors that were originally predicted to have shadow flicker from the Timber Road IV Wind Farm are included in Table 4. Results from the cumulative shadow flicker analysis at each receptor in the cumulative impact area are included in Attachment E.

Table 4. Daily Effect to Structures with Potential Cumulative Shadow Flicker

Receptor ID	Receptor Status	Predicted Annual Shadow Flicker – Timber Road IV Only (hh:mm/year)	Cumulative Predicted Annual Shadow Flicker (hh:mm/year)	Predicted Max Daily Shadow Flicker – Timber Road IV Only (hh:mm/day)	Cumulative Predicted Max Daily Shadow Flicker (hh:mm/day)
35	Non-Participating	2:57	2:57	0:23	0:23
164	Non-Participating	3:04	10:05	0:20	0:26
145	Non-Participating	3:23	3:23	0:24	0:24
34	Non-Participating	3:33	3:33	0:25	0:25
40	Non-Participating	4:40	9:35	0:36	0:36
176	Non-Participating	4:46	4:46	0:27	0:27
12	Non-Participating	5:32	5:32	0:22	0:22
71	Non-Participating	5:33	5:33	0:30	0:30
163	Non-Participating	6:06	6:06	0:33	0:33
144	Non-Participating	6:34	6:34	0:34	0:34
158	Non-Participating	6:35	14:57	0:32	0:32
38	Non-Participating	8:01	8:01	0:32	0:32
31	Non-Participating	8:03	29:57	0:32	1:04
37	Non-Participating	8:06	8:06	0:33	0:33
192	Non-Participating	14:02	42:49	0:47	1:13
156	Non-Participating	16:58	21:49	0:32	0:32
297	Non-Participating	20:11	20:11	0:49	0:49
9	Non-Participating	24:06	36:48	0:42	0:42
11	Non-Participating	25:43	25:43	0:40	0:40
191	Non-Participating	33:59	46:01	0:49	0:58
159	Non-Participating	43:21	47:29	1:00	1:00

Receptor ID	Receptor Status	Predicted Annual Shadow Flicker – Timber Road IV Only (hh:mm/year)	Cumulative Predicted Annual Shadow Flicker (hh:mm/year)	Predicted Max Daily Shadow Flicker – Timber Road IV Only (hh:mm/day)	Cumulative Predicted Max Daily Shadow Flicker (hh:mm/day)
8	Participating	5:15	15:09	0:22	0:28
394	Participating	8:06	28:49	0:35	0:38
393	Participating	8:15	30:48	0:37	0:51
148	Participating	30:31	38:33	1:18	1:22

Of the 37 receptors located in the potential cumulative impact area described above, 12 were not originally predicted to receive any shadow flicker from Timber Road IV turbines (and hence, will not experience cumulative impacts and are not included above in Table 5). An additional 12 receptors were not predicted to receive any additional shadow flicker from the existing turbines; these receptors will also not experience cumulative shadow flicker impacts from the proposed Facility. As indicated in Table 4, the cumulative shadow flicker analysis results indicate that a total of 13 receptors will experience cumulative shadow flicker from Timber Road IV and the existing wind turbines in the area. Two non-participating receptors and one participating receptor that are not predicted to exceed the 30-hour threshold from the Timber Road IV turbines are predicted to receive over 30 hours due to the cumulative impact from the existing turbines.

5.0 CONCLUSIONS

In summary, *WindPRO* predicted that 58 receptors will receive more than 30 hours/year of shadow flicker from the Project wind turbines. Of the 58 receptors, 22 are located on properties owned by Project participants, while the remaining 36 receptors are non-participating. Although shadow flicker at these receptors is calculated to exceed the 30-hour per year threshold, the model included multiple conservative assumptions, including duplicate turbine locations at some sites. In other words, the turbine coordinates used in the model included several alternate locations (e.g., turbines 10 and 10a). In this example, only one of these turbines will actually be built, but since both were included in the analysis, the predicted shadow flicker at nearby receptors is higher than what will be actually be experienced.

The shadow flicker analysis also included numerous more general underlying assumptions that contribute to worst-case predicted shadow flicker results. The analysis does not take into account important real-world factors, including the actual location and orientation of windows and the screening effects associated with existing, site-specific conditions and obstacles such as trees and/or buildings. Also, the analysis assumes turbine rotors are in continuous motion. Given these assumptions, the predicted shadow-flicker frequency represents a conservative scenario and likely overstates the actual frequency of shadow flicker that would be experienced at any given receptor location. In addition, many of the modeled shadow flicker hours are expected to be low intensity because they would occur during

the early morning or late afternoon hours (Table 3) when the sun is low in the sky. As the sun sinks below the horizon, more of its light is scattered by the atmosphere, which has the effect of dampening its brightness and therefore reducing its ability to cast dark shadows (EMD, 2013).

Furthermore, to provide a worst-case scenario results, this analysis evaluated the potential impact of 54 Vestas V150 turbines, when in fact this layout would never be implemented. The Vestas V150 turbine was used in this analysis because it has the largest rotor diameter of any turbine model under consideration and would therefore produce the greatest amount of shadow flicker. The actual shadow flicker to be produced will be dependent on the turbine model selected, the number of turbines constructed, and the turbine sites selected for the Facility. The Vestas V150 turbine is being considered with a nameplate capacity of 4.2 MW. If this model is selected, the number of turbines required to achieve the 125.1 MW interconnection capacity would not exceed 30. Narrowing the pool of turbine sites from the 54 total sites analyzed herein will provide the opportunity for reducing and minimizing shadow-flicker impacts.

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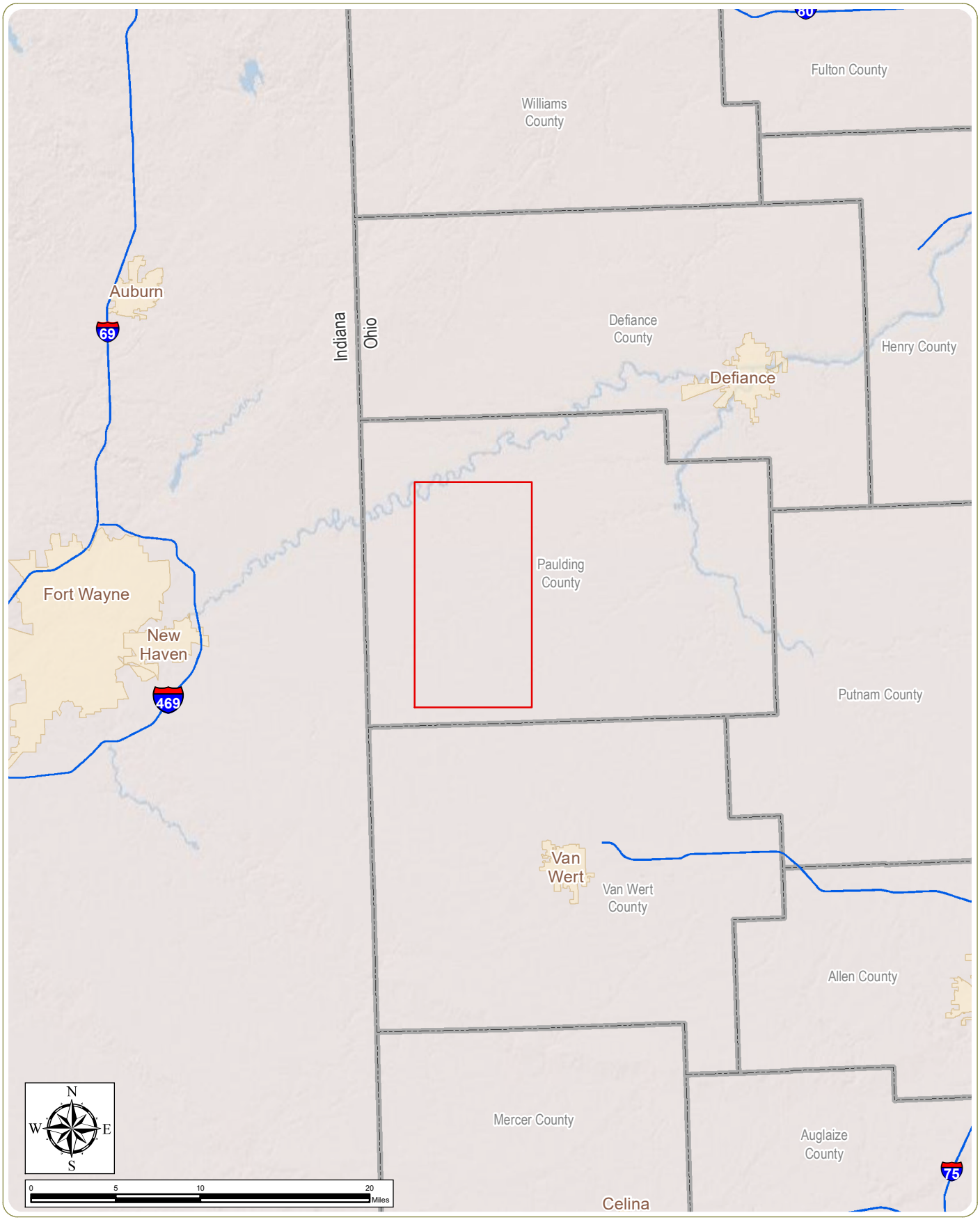
Figures



Timber Road IV Wind Farm

Crane, Harrison, Paulding, Benton, and Blue Creek Townships, Paulding County, Ohio

Figure 1: Regional Project Location

Notes: 1. Basemap: ESRI ArcGIS Online "World Shaded Relief" map service and ESRI StreetMap North America, 2008. **2.** This map was generated in ArcMap on June 4, 2018. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Project Area

TIMBER ROAD WIND FARM

edr

Timber Road IV Wind Farm

Crane, Harrison, Paulding, Benton, and Blue Creek Townships,
Paulding County, Ohio

Figure 2. Project Layout

Notes: 1. Basemap: ESRI Streetmap North America, 2008. **2.** This map was generated in ArcMap on June 8, 2018. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Receptor
- Wind Turbine
- 1,500-meter Study Area

TIMBER ROAD
WIND FARM

edr

Timber Road IV Wind Farm

Crane, Harrison, Paulding, Benton, and Blue Creek Townships,
Paulding County, Ohio

Figure 3. Projected Shadow Flicker

Notes: 1. Basemap: ESRI Streetmap North America, 2008. **2.** This map was generated in ArcMap on June 8, 2018. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

Non-participant > 30 hours/year
Participant > 30 hours/year
Receptor < 30 hours/year
Wind Turbine
1,500-meter Study Area

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

Shadow-flicker areas and isolines were created using WindPRO 3.1.633 software and associated Shadow module. The model is based on a "worst case" scenario where the model assumes that there are no clouds, the wind conditions allow for continuous turbine operation, the turbine is always directly between the receptor and the sun, and the turbine is always 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.

TIMBER ROAD WIND FARM

edr

Timber Road IV Wind Farm

Crane, Harrison, Paulding, Benton, and Blue Creek Townships, Paulding County, Ohio

Figure 4. Cumulative Impact Area

Notes: 1. Basemap: ESRI Streetmap North America, 2008. **2.** This map was generated in ArcMap on June 8, 2018. **3.** This is a color graphic. Reproduction in grayscale may misrepresent the data.

- Receptor
- Receptor in Cumulative Impact Area
- Receptors > 30 hours/year from Cumulative Impacts
- Wind Turbine
- Blue Creek Wind Turbine
- Northwest Ohio Wind Turbine
- Timber Road II Wind Turbine
- Timber Road III Turbine
- 1,500-meter Study Area
- 900 meter Blue Creek Study Area
- 1,160-meter Northwest Ohio Study Area
- 1,000-meter Timber Road II Study Area
- 1,140-meter Timber Road III Study Area
- Cumulative Impact Area

TIMBER ROAD WIND FARM

edr

Attachment A

Wind Rose and Sunshine Data

Table A1. Wind Rose Data

SECTOR	N	NNE	NE	ENE	E	ESE	SE	SSE
Frequency	4.26	3.83	4.69	6.01	6.51	4.03	3.44	3.68
Hours of Operation	376	336	411	526	570	353	301	322

SECTOR	S	SSW	SW	WSW	W	WNW	NW	NNW
Frequency	5.86	7.98	8.92	9.60	11.00	8.25	6.81	5.10
Hours of Operation	513	699	781	841	964	723	597	447

Source: Wind rose data provided by EDP Renewables, LLC

Table A2. Sunshine Probability Data[1]

Month	JAN	FEB	MAR	APRIL	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC
Sunshine Probability[2]	0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

[1]Source: NOAA Comparative Climatic Data for the United States through 2015 – Fort Wayne, Indiana 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 Overview Reports and Calendars

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-08	695,393	4,555,358	222.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-09	693,543	4,553,744	224.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-10	695,148	4,553,817	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-10a	695,248	4,554,372	223.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-14	695,087	4,558,394	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-15	695,990	4,557,833	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-16	696,285	4,557,413	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-17	696,664	4,556,925	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-19	696,650	4,554,220	223.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-27	696,026	4,560,119	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-41	692,852	4,555,787	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-42	693,590	4,555,279	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-44	693,510	4,552,657	225.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-45	695,101	4,559,935	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-46	695,044	4,560,371	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-46a	694,816	4,560,369	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-47	694,421	4,556,942	223.3	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-48	693,276	4,557,174	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-49	694,102	4,546,865	227.4	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-49a	694,135	4,546,233	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-50	693,075	4,545,372	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-51	694,040	4,545,311	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52	693,507	4,544,751	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52a	694,135	4,544,663	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52b	694,578	4,547,672	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52c	694,579	4,544,560	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-53	695,340	4,544,198	227.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-54	693,200	4,542,930	228.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-55	694,750	4,542,980	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-56	693,612	4,541,386	228.3	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-57	694,748	4,547,677	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-58	695,265	4,547,043	226.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-59	694,658	4,545,792	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4

To be continued on next page...

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...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]
TRIV-60	694,668	4,546,454	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-61	695,358	4,545,418	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-61a	695,493	4,545,487	226.6	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-62	696,334	4,544,649	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-63	696,424	4,543,990	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-66	697,270	4,550,408	224.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-71	698,479	4,550,494	225.7	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-72	699,436	4,550,299	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-73	699,591	4,549,664	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-74	700,042	4,549,153	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-76	693,557	4,549,515	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-77	694,604	4,549,481	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-78	694,722	4,549,026	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-78a	694,072	4,547,926	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-80	693,422	4,544,051	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-82	693,450	4,542,211	228.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-84	698,608	4,549,608	224.7	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-86	696,353	4,549,622	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-87	694,736	4,554,248	223.6	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-90	695,166	4,555,096	222.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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Calculated:
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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
1	11:25	36	0:28	4:51
2	10:03	36	0:25	4:15
3	9:45	34	0:25	4:06
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	10:11	35	0:22	5:15
9	47:35	101	0:42	24:06
10	62:06	72	1:04	15:01
11	57:04	125	0:40	25:43
12	10:59	44	0:22	5:32
21	20:39	57	0:31	10:20
22	29:52	64	0:48	13:33
23	170:35	245	1:05	75:02
24	124:19	112	1:16	37:35
25	110:51	148	1:09	33:34
26	21:26	73	0:30	8:07
27	7:41	34	0:20	3:38
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	30:43	86	0:32	8:03
34	12:21	46	0:25	3:33
35	10:04	40	0:23	2:57
37	32:22	72	0:33	8:06
38	31:26	78	0:32	8:01
39	0:00	0	0:00	0:00
40	20:17	42	0:36	4:40
41	13:29	54	0:22	6:50
42	23:58	81	0:24	12:21
43	22:50	79	0:27	11:42
44	47:18	78	1:04	14:03
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	82:25	178	0:47	33:14
52	88:21	178	0:47	35:40
53	89:46	180	0:47	36:13
54	86:38	179	0:38	34:06
55	82:42	176	0:40	32:08
56	72:59	173	0:41	27:53
57	65:58	166	0:41	25:00
58	60:00	156	0:40	22:33
59	61:26	124	0:46	20:31
60	205:56	279	1:36	85:07
61	86:39	89	1:08	24:28
62	116:38	172	1:12	34:09
63	110:31	170	1:06	33:07
64	152:15	172	1:30	59:13
65	10:27	40	0:24	3:12
66	9:16	38	0:23	2:55
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	6:59	33	0:17	3:36
70	96:36	177	1:05	34:14
71	13:47	39	0:30	5:33
72	7:43	32	0:22	2:50
73	18:04	46	0:34	6:42
74	20:46	50	0:35	9:25
75	25:37	62	0:35	12:43

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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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]
76	12:33	29	0:33	3:06
77	0:00	0	0:00	0:00
78	101:11	155	1:29	45:36
79	149:06	197	1:13	68:45
80	21:23	88	0:25	9:18
81	19:46	50	0:35	7:36
82	62:11	102	0:46	18:48
83	157:33	116	1:46	75:07
84	136:42	194	1:08	54:54
85	100:03	146	1:05	43:46
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	9:40	40	0:22	4:26
92	11:36	47	0:22	5:21
93	14:45	54	0:24	6:48
94	14:08	55	0:23	6:31
95	22:33	83	0:24	10:29
96	21:15	68	0:25	9:51
97	12:56	53	0:20	5:58
98	32:30	81	0:31	15:08
99	0:19	11	0:02	0:08
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	55:37	74	0:58	23:46
103	0:00	0	0:00	0:00
104	97:12	114	0:59	45:27
105	62:15	87	0:52	29:00
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	23:02	70	0:26	11:55
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	6:30	29	0:20	2:29
129	0:00	0	0:00	0:00
130	6:46	30	0:20	2:30
131	11:21	39	0:26	4:33
132	66:29	98	1:05	20:37
133	58:12	90	0:49	15:25
134	68:08	126	0:45	20:57
135	64:08	111	0:52	19:22
136	11:59	34	0:26	3:09
137	18:32	60	0:28	5:17
138	173:47	110	1:54	49:53
139	71:08	109	0:56	19:37
140	65:50	83	1:02	24:47
141	31:46	60	0:44	14:24
142	22:01	50	0:37	9:27
144	17:43	46	0:34	6:34
145	9:03	34	0:24	3:23
147	6:45	28	0:18	1:30

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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	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]
148	107:00	129	1:18	30:31
149	157:39	126	1:40	42:59
150	120:22	132	1:06	60:16
151	118:48	121	1:07	60:15
152	38:44	90	0:38	12:19
153	25:17	54	0:39	10:03
154	31:49	62	0:43	12:19
155	55:40	94	0:50	18:32
156	37:10	110	0:32	16:58
157	0:00	0	0:00	0:00
158	15:26	43	0:32	6:35
159	103:24	216	1:00	43:21
160	82:40	140	0:57	37:20
161	85:01	131	0:54	39:08
162	19:24	74	0:25	7:38
163	18:20	57	0:33	6:06
164	6:47	30	0:20	3:04
165	36:31	101	0:32	16:23
166	32:49	93	0:32	14:08
167	45:53	109	0:33	15:29
168	62:48	126	0:43	23:27
169	159:31	196	1:21	53:22
170	143:32	155	1:15	39:38
171	185:40	171	1:27	85:56
172	87:23	132	0:52	24:04
173	57:07	89	1:04	18:16
174	84:16	163	0:54	30:30
175	188:18	228	1:31	74:57
176	11:10	36	0:27	4:46
177	12:06	39	0:28	4:51
178	12:06	39	0:28	4:51
179	13:20	42	0:29	5:19
180	11:20	40	0:27	4:28
181	12:24	41	0:28	4:48
182	13:54	45	0:29	5:14
183	15:26	47	0:30	5:43
184	48:06	120	0:43	17:56
185	8:19	49	0:22	3:23
186	89:19	129	1:04	25:54
187	55:59	114	0:47	27:11
188	93:35	128	1:05	28:18
189	9:41	37	0:24	3:26
190	0:00	0	0:00	0:00
191	66:04	94	0:49	33:59
192	34:54	59	0:47	14:02
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	55:05	78	0:56	21:25
215	44:55	73	0:50	17:14
216	55:31	81	0:54	20:33
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	39:06	96	0:34	18:14
225	15:06	51	0:27	6:57
226	16:25	53	0:27	7:34
227	27:14	67	0:37	8:28
228	27:57	81	0:36	10:46
229	30:44	87	0:38	11:42
230	36:24	98	0:36	16:01
231	37:13	99	0:36	16:36
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	72:59	146	0:43	36:00
235	75:24	150	0:42	37:14
236	74:56	150	0:41	37:02
237	9:38	40	0:22	3:07
238	82:48	132	1:03	37:29
239	82:26	123	1:04	37:37
240	30:29	93	0:30	14:11
241	34:27	86	0:31	16:03
242	33:36	92	0:31	15:39
243	28:28	82	0:31	13:14
244	28:10	84	0:27	13:07
245	25:56	86	0:26	12:04
246	24:29	84	0:25	11:24
247	16:45	61	0:24	7:44
248	11:24	36	0:28	4:50
249	22:16	53	0:35	10:02
250	37:49	60	0:47	10:33
251	39:55	62	0:47	11:15
252	20:48	73	0:29	6:26
253	12:30	46	0:25	4:01
254	46:28	62	0:56	12:52
255	32:35	68	0:37	15:05
256	0:00	0	0:00	0:00
257	41:28	148	0:26	18:45
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	104:05	83	1:39	49:26
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	50:49	86	1:04	16:30
279	158:44	196	1:19	45:57
280	124:50	126	1:10	39:26
281	96:30	124	1:05	32:45

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Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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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]
282	42:42	116	0:42	18:28
283	37:58	119	0:37	13:48
284	50:09	129	0:39	22:27
285	139:45	233	1:05	42:53
286	264:32	206	2:20	123:09
287	272:51	174	2:20	130:00
288	25:36	69	0:33	12:56
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	87:46	152	0:59	37:41
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	67:44	136	0:40	30:48
295	35:42	93	0:32	16:25
296	56:05	124	0:48	19:53
297	65:09	110	0:49	20:11
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	7:32	31	0:22	3:08
305	7:40	31	0:22	3:09
306	0:00	0	0:00	0:00
307	187:44	124	1:57	54:49
308	81:30	160	1:06	26:24
309	105:16	194	0:47	39:47
310	190:21	214	1:13	81:27
311	182:22	214	1:12	64:32
312	173:20	197	1:13	70:12
313	173:42	209	1:11	62:46
314	177:00	199	1:09	57:59
315	154:40	175	1:06	49:51
316	139:38	159	1:06	44:31
317	95:57	86	1:38	26:49
318	129:35	102	1:49	36:51
319	0:00	0	0:00	0:00
320	55:56	68	1:00	15:39
321	24:45	44	0:43	6:31
322	6:38	22	0:23	1:36
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	48:22	70	0:50	13:49
327	81:38	106	0:54	24:40
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	132:10	112	1:40	38:34
380	102:24	100	1:25	29:50
381	85:17	92	1:05	24:58
382	86:31	96	1:02	25:32
383	73:09	87	0:59	21:20
384	63:49	76	1:01	18:14
385	39:40	58	0:50	10:59
386	20:01	58	0:25	5:42
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	27:50	86	0:31	11:58
390	18:37	55	0:27	8:35
391	65:19	142	0:48	26:19
393	26:44	61	0:37	8:15
394	19:15	47	0:35	8:06
395	58:25	141	0:34	21:53
398	0:00	0	0:00	0:00
399	43:50	64	0:51	12:19
400	0:00	0	0:00	0:00
401	27:58	52	0:41	7:41
402	86:21	122	0:57	27:29
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	10:14	36	0:26	4:06
406	0:00	0	0:00	0:00
407	18:39	71	0:25	7:54
408	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]
TRIV-07	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (1)	156:53	60:23
TRIV-08	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (2)	34:07	15:19
TRIV-09	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (3)	176:03	73:32
TRIV-10	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (5)	322:43	134:15
TRIV-10a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (4)	240:41	77:05
TRIV-14	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (6)	132:00	41:14
TRIV-15	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (7)	290:03	117:38
TRIV-16	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (8)	65:15	22:50
TRIV-17	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (9)	191:06	85:48
TRIV-19	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (10)	245:07	94:07
TRIV-27	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (11)	45:50	21:20
TRIV-41	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (12)	106:09	31:12
TRIV-42	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (13)	140:59	54:20
TRIV-44	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (14)	385:30	156:23
TRIV-45	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (15)	61:15	25:46
TRIV-46	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (16)	69:32	31:29
TRIV-46a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (17)	120:25	54:20
TRIV-47	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (18)	112:51	50:35
TRIV-48	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (19)	71:34	23:00
TRIV-49	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (20)	59:31	26:09

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Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (21)	43:49	18:20
TRIV-50	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (22)	37:05	12:29
TRIV-51	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (23)	91:22	36:20
TRIV-52	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (26)	12:43	5:07
TRIV-52a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (25)	117:02	37:53
TRIV-52b	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (24)	100:04	33:38
TRIV-52c	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (27)	55:34	18:07
TRIV-53	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (28)	39:51	19:15
TRIV-54	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (29)	108:00	33:53
TRIV-55	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (30)	152:11	48:48
TRIV-56	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (31)	156:30	58:09
TRIV-57	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (32)	57:30	22:47
TRIV-58	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (33)	191:50	85:59
TRIV-59	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (34)	65:50	27:41
TRIV-60	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (35)	51:28	20:12
TRIV-61	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (36)	215:33	89:01
TRIV-61a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (37)	355:01	147:21
TRIV-62	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (38)	275:26	78:38
TRIV-63	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (39)	28:31	13:42
TRIV-66	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (40)	74:22	33:19
TRIV-71	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)	482:37	188:59
TRIV-72	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)	317:05	110:00
TRIV-73	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (43)	423:42	162:37
TRIV-74	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (44)	111:36	46:34
TRIV-76	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (45)	269:11	91:08
TRIV-77	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (46)	232:07	72:33
TRIV-78	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (47)	154:35	76:50
TRIV-78a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (48)	275:39	85:47
TRIV-80	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (49)	121:20	57:12
TRIV-82	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (50)	47:34	24:27
TRIV-84	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (51)	443:43	163:59
TRIV-86	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (52)	369:26	112:10
TRIV-87	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (53)	204:37	87:13
TRIV-90	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (54)	78:19	37:46

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.

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 23 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1057)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:05		08:27 (TRIV-17)	07:51		17:00 (TRIV-47)	07:15		07:36 (TRIV-16)	07:24			06:38		06:58 (TRIV-15)	06:09		06:44 (TRIV-15)
	17:21	9	16:54 (TRIV-47)	17:55	15	17:15 (TRIV-47)	18:29	41	08:17 (TRIV-16)	20:02			20:34	37	07:35 (TRIV-15)	21:04	65	07:49 (TRIV-15)
2	08:05		08:27 (TRIV-17)	07:50		17:03 (TRIV-47)	07:13		07:36 (TRIV-16)	07:22			06:37		06:56 (TRIV-15)	06:09		06:44 (TRIV-15)
	17:22	11	16:55 (TRIV-47)	17:56	10	17:13 (TRIV-47)	18:31	41	08:17 (TRIV-16)	20:04			20:36	40	07:36 (TRIV-15)	21:05	64	07:48 (TRIV-15)
3	08:05		08:27 (TRIV-17)	07:49			07:12		07:36 (TRIV-16)	07:20			06:35		06:55 (TRIV-15)	06:08		06:44 (TRIV-15)
	17:22	13	16:56 (TRIV-47)	17:58			18:32	40	08:16 (TRIV-16)	20:05			20:37	43	07:38 (TRIV-15)	21:06	65	07:49 (TRIV-15)
4	08:05		08:27 (TRIV-17)	07:48			07:10		07:36 (TRIV-16)	07:19			06:34		06:54 (TRIV-15)	06:08		06:45 (TRIV-15)
	17:23	15	16:57 (TRIV-47)	17:59			18:33	39	08:15 (TRIV-16)	20:06			20:38	45	07:39 (TRIV-15)	21:07	64	07:49 (TRIV-15)
5	08:05		08:27 (TRIV-17)	07:47			07:08		07:37 (TRIV-16)	07:17			06:33		06:53 (TRIV-15)	06:08		06:44 (TRIV-15)
	17:24	17	16:58 (TRIV-47)	18:00			18:34	38	08:15 (TRIV-16)	20:07			20:39	47	07:40 (TRIV-15)	21:07	64	07:48 (TRIV-15)
6	08:05		08:27 (TRIV-17)	07:46			07:07		07:37 (TRIV-16)	07:15			06:32		06:52 (TRIV-15)	06:07		06:45 (TRIV-15)
	17:25	19	16:59 (TRIV-47)	18:01			18:35	36	08:13 (TRIV-16)	20:08			20:40	49	07:41 (TRIV-15)	21:08	64	07:49 (TRIV-15)
7	08:05		08:27 (TRIV-17)	07:45			07:05		07:38 (TRIV-16)	07:14			06:30		06:50 (TRIV-15)	06:07		06:45 (TRIV-15)
	17:26	20	17:00 (TRIV-47)	18:03			18:36	35	08:13 (TRIV-16)	20:09			20:41	51	07:41 (TRIV-15)	21:09	64	07:49 (TRIV-15)
8	08:05		08:27 (TRIV-17)	07:43			08:04		08:38 (TRIV-16)	07:12			06:29		06:49 (TRIV-15)	06:07		06:46 (TRIV-15)
	17:27	23	17:02 (TRIV-47)	18:04			19:37	33	09:11 (TRIV-16)	20:10			20:42	53	07:42 (TRIV-15)	21:09	63	07:49 (TRIV-15)
9	08:04		08:26 (TRIV-17)	07:42			08:02		08:39 (TRIV-16)	07:11			06:28		06:48 (TRIV-15)	06:07		06:46 (TRIV-15)
	17:28	25	17:02 (TRIV-47)	18:05			19:39	30	09:09 (TRIV-16)	20:11			20:43	55	07:43 (TRIV-15)	21:10	64	07:50 (TRIV-15)
10	08:04		08:26 (TRIV-17)	07:41			08:00		08:41 (TRIV-16)	07:09			06:27		06:47 (TRIV-15)	06:06		06:46 (TRIV-15)
	17:29	27	17:03 (TRIV-47)	18:06			19:40	27	09:08 (TRIV-16)	20:12			20:44	57	07:44 (TRIV-15)	21:10	63	07:49 (TRIV-15)
11	08:04		08:26 (TRIV-17)	07:40			07:59		08:42 (TRIV-16)	07:07			06:26		06:46 (TRIV-15)	06:06		06:46 (TRIV-15)
	17:30	30	17:05 (TRIV-47)	18:08			19:41	24	09:06 (TRIV-16)	20:13			20:45	58	07:44 (TRIV-15)	21:11	63	07:49 (TRIV-15)
12	08:04		08:25 (TRIV-17)	07:39			07:57		08:44 (TRIV-16)	07:06			06:25		06:46 (TRIV-15)	06:06		06:46 (TRIV-15)
	17:31	31	17:05 (TRIV-47)	18:09			19:42	19	09:03 (TRIV-16)	20:14			20:46	59	07:45 (TRIV-15)	21:11	63	07:49 (TRIV-15)
13	08:03		08:25 (TRIV-17)	07:37			07:56		08:48 (TRIV-16)	07:04			06:24		06:45 (TRIV-15)	06:06		06:47 (TRIV-15)
	17:32	34	17:07 (TRIV-47)	18:10			19:43	11	08:59 (TRIV-16)	20:15			20:47	60	07:45 (TRIV-15)	21:12	62	07:49 (TRIV-15)
14	08:03		08:25 (TRIV-17)	07:36			07:54			07:03			06:23		06:45 (TRIV-15)	06:06		06:47 (TRIV-15)
	17:34	35	17:08 (TRIV-47)	18:11			19:44			20:16			20:48	60	07:45 (TRIV-15)	21:12	63	07:50 (TRIV-15)
15	08:03		08:24 (TRIV-17)	07:35		07:55 (TRIV-16)	07:52			07:01			06:22		06:44 (TRIV-15)	06:06		06:47 (TRIV-15)
	17:35	38	17:09 (TRIV-47)	18:13	8	08:03 (TRIV-16)	19:45			20:17			20:49	62	07:46 (TRIV-15)	21:13	63	07:50 (TRIV-15)
16	08:02		08:24 (TRIV-17)	07:33		07:53 (TRIV-16)	07:51			07:00			06:21		06:44 (TRIV-15)	06:06		06:47 (TRIV-15)
	17:36	39	17:10 (TRIV-47)	18:14	13	08:06 (TRIV-16)	19:46			20:18			20:50	62	07:46 (TRIV-15)	21:13	63	07:50 (TRIV-15)
17	08:02		08:23 (TRIV-17)	07:32		07:52 (TRIV-16)	07:49			06:58			06:20		06:43 (TRIV-15)	06:06		06:48 (TRIV-15)
	17:37	41	17:11 (TRIV-47)	18:15	17	08:09 (TRIV-16)	19:47			20:20			20:51	63	07:46 (TRIV-15)	21:14	62	07:50 (TRIV-15)
18	08:01		08:23 (TRIV-17)	07:31		07:50 (TRIV-16)	07:47			06:56			06:19		06:44 (TRIV-15)	06:06		06:48 (TRIV-15)
	17:38	44	17:13 (TRIV-47)	18:16	20	08:10 (TRIV-16)	19:48			20:21			20:52	63	07:47 (TRIV-15)	21:14	62	07:50 (TRIV-15)
19	08:01		08:22 (TRIV-17)	07:29		07:49 (TRIV-16)	07:46			06:55			06:18		06:44 (TRIV-15)	06:06		06:49 (TRIV-15)
	17:39	46	17:14 (TRIV-47)	18:18	23	08:12 (TRIV-16)	19:50			20:22			20:53	63	07:47 (TRIV-15)	21:14	62	07:51 (TRIV-15)
20	08:00		08:21 (TRIV-17)	07:28		07:48 (TRIV-16)	07:44			06:53			06:17		06:43 (TRIV-15)	06:06		06:49 (TRIV-15)
	17:40	48	17:15 (TRIV-47)	18:19	26	08:14 (TRIV-16)	19:51			20:23			20:54	64	07:47 (TRIV-15)	21:15	62	07:51 (TRIV-15)
21	08:00		08:21 (TRIV-17)	07:27		07:46 (TRIV-16)	07:42			06:52			06:16		06:43 (TRIV-15)	06:06		06:49 (TRIV-15)
	17:42	50	17:17 (TRIV-47)	18:20	28	08:14 (TRIV-16)	19:52			20:24			20:55	64	07:47 (TRIV-15)	21:15	62	07:51 (TRIV-15)
22	07:59		08:20 (TRIV-17)	07:25		07:45 (TRIV-16)	07:41			06:50			06:16		06:43 (TRIV-15)	06:07		06:49 (TRIV-15)
	17:43	51	17:18 (TRIV-47)	18:21	31	08:16 (TRIV-16)	19:53			20:25			20:56	64	07:47 (TRIV-15)	21:15	62	07:51 (TRIV-15)
23	07:58		08:19 (TRIV-17)	07:24		07:43 (TRIV-16)	07:39			06:49			06:15		06:43 (TRIV-15)	06:07		06:49 (TRIV-15)
	17:44	53	17:19 (TRIV-47)	18:22	33	08:16 (TRIV-16)	19:54			20:26			20:57	65	07:48 (TRIV-15)	21:15	62	07:51 (TRIV-15)
24	07:58		08:20 (TRIV-17)	07:22		07:42 (TRIV-16)	07:37			06:48			06:14		06:43 (TRIV-15)	06:07		06:50 (TRIV-15)
	17:45	51	17:20 (TRIV-47)	18:23	35	08:17 (TRIV-16)	19:55			20:27			20:58	65	07:48 (TRIV-15)	21:16	62	07:52 (TRIV-15)
25	07:57		08:21 (TRIV-17)	07:21		07:40 (TRIV-16)	07:35			06:46			06:13		06:43 (TRIV-15)	06:07		06:50 (TRIV-15)
	17:46	51	17:21 (TRIV-47)	18:25	36	08:16 (TRIV-16)	19:56			20:28			20:58	64	07:47 (TRIV-15)	21:16	62	07:52 (TRIV-15)
26	07:56		08:22 (TRIV-17)	07:19		07:39 (TRIV-16)	07:34			06:45			06:13		06:43 (TRIV-15)	06:08		06:50 (TRIV-15)
	17:48	48	17:20 (TRIV-47)	18:26	38	08:17 (TRIV-16)	19:57			20:29			20:59	65	07:48 (TRIV-15)	21:16	62	07:52 (TRIV-15)
27	07:55		08:23 (TRIV-17)	07:18		07:37 (TRIV-16)	07:32			06:43		07:10 (TRIV-15)	06:12		06:43 (TRIV-15)	06:08		06:50 (TRIV-15)
	17:49	45	17:20 (TRIV-47)	18:27	40	08:17 (TRIV-16)	19:58			20:30	14	07:24 (TRIV-15)	21:00	65	07:48 (TRIV-15)	21:16	63	07:53 (TRIV-15)
28	07:55		08:25 (TRIV-17)	07:16		07:36 (TRIV-16)	07:30			06:42		07:05 (TRIV-15)	06:11		06:44 (TRIV-15)	06:09		06:50 (TRIV-15)
	17:50	40	17:19 (TRIV-47)	18:28	41	08:17 (TRIV-16)	19:59			20:31	23	07:28 (TRIV-15)	21:01	64	07:48 (TRIV-15)	21:16	63	07:53 (TRIV-15)
29	07:54		08:26 (TRIV-17)				07:29			06:41		07:02 (TRIV-15)	06:11		06:43 (TRIV-15)	06:09		06:51 (TRIV-15)
	17:51	37	17:19 (TRIV-47)				20:00			20:32	29	07:31 (TRIV-15)	21:02	65	07:48 (TRIV-15)	21:16	62	07:53 (TRIV-15)
30	07:53		08:29 (TRIV-17)				07:27			06:39		07:00 (TRIV-15)	06:10		06:44 (TRIV-15)	06:09		06:51 (TRIV-15)
	17:53	30	17:18 (TRIV-47)				20:00			20:33	33	07:33 (TRIV-15)	21:03	65	07:49 (TRIV-15)	21:16	62	07:53 (TRIV-15)
31	07:52		16:59 (TRIV-47)				07:25						06:10		06:44 (TRIV-15)			
	17:54	18	17:17 (TRIV-47)				20:01						21:03	64	07:48 (TRIV-15)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case		1039			414			414			99			1801			1887	
Sun reduction		0.50			0.55			0.57			0.63			0.69			0.74	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.65			0.64			0.64			0.70			0.70			0.70	
Total reduction		0.33			0.35			0.36			0.44			0.48			0.51	
Total, real		338			146			151			43			863			970	

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 23 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1057)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December		
1	06:10		06:50 (TRIV-15)	06:34		06:57 (TRIV-15)	07:05			07:35		08:25 (TRIV-16)	07:09			07:44		08:08 (TRIV-17)
	21:16	63	07:53 (TRIV-15)	20:58	58	07:55 (TRIV-15)	20:15			19:22	16	08:41 (TRIV-16)	17:36			17:11	30	16:47 (TRIV-47)
2	06:10		06:51 (TRIV-15)	06:35		06:57 (TRIV-15)	07:06			07:36		08:21 (TRIV-16)	07:11			07:45		08:09 (TRIV-17)
	21:16	63	07:54 (TRIV-15)	20:56	58	07:55 (TRIV-15)	20:13			19:21	22	08:43 (TRIV-16)	17:34			17:11	27	16:46 (TRIV-47)
3	06:11		06:51 (TRIV-15)	06:36		06:58 (TRIV-15)	07:07			07:37		08:19 (TRIV-16)	07:12			07:46		08:10 (TRIV-17)
	21:16	63	07:54 (TRIV-15)	20:55	56	07:54 (TRIV-15)	20:11			19:19	26	08:45 (TRIV-16)	17:33			17:11	25	16:46 (TRIV-47)
4	06:11		06:51 (TRIV-15)	06:37		06:59 (TRIV-15)	07:08			07:38		08:17 (TRIV-16)	07:13			07:47		08:11 (TRIV-17)
	21:15	63	07:54 (TRIV-15)	20:54	54	07:53 (TRIV-15)	20:10			19:17	29	08:46 (TRIV-16)	17:32			17:11	23	16:46 (TRIV-47)
5	06:12		06:52 (TRIV-15)	06:38		07:00 (TRIV-15)	07:09			07:39		08:15 (TRIV-16)	07:14			07:48		08:12 (TRIV-17)
	21:15	63	07:55 (TRIV-15)	20:53	53	07:53 (TRIV-15)	20:08			19:16	32	08:47 (TRIV-16)	17:31			17:11	20	16:45 (TRIV-47)
6	06:13		06:51 (TRIV-15)	06:39		07:01 (TRIV-15)	07:10			07:40		08:14 (TRIV-16)	07:15			07:49		08:13 (TRIV-17)
	21:15	64	07:55 (TRIV-15)	20:52	51	07:52 (TRIV-15)	20:06			19:14	34	08:48 (TRIV-16)	17:30			17:10	19	16:45 (TRIV-47)
7	06:13		06:52 (TRIV-15)	06:40		07:02 (TRIV-15)	07:11			07:41		08:13 (TRIV-16)	07:17			07:50		08:14 (TRIV-17)
	21:15	64	07:56 (TRIV-15)	20:51	49	07:51 (TRIV-15)	20:05			19:12	36	08:49 (TRIV-16)	17:29			17:10	17	16:45 (TRIV-47)
8	06:14		06:51 (TRIV-15)	06:41		07:03 (TRIV-15)	07:12			07:42		08:12 (TRIV-16)	07:18			07:51		08:15 (TRIV-17)
	21:14	64	07:55 (TRIV-15)	20:49	47	07:50 (TRIV-15)	20:03			19:11	37	08:49 (TRIV-16)	17:28			17:10	16	16:45 (TRIV-47)
9	06:15		06:52 (TRIV-15)	06:42		07:03 (TRIV-15)	07:13			07:44		08:11 (TRIV-16)	07:19		16:34 (TRIV-47)	07:52		08:16 (TRIV-17)
	21:14	64	07:56 (TRIV-15)	20:48	44	07:47 (TRIV-15)	20:01			19:09	38	08:49 (TRIV-16)	17:27	10	16:44 (TRIV-47)	17:10	13	16:45 (TRIV-47)
10	06:15		06:52 (TRIV-15)	06:43		07:04 (TRIV-15)	07:14			07:45		08:11 (TRIV-16)	07:20		16:31 (TRIV-47)	07:53		08:17 (TRIV-17)
	21:14	64	07:56 (TRIV-15)	20:47	42	07:46 (TRIV-15)	20:00			19:08	39	08:50 (TRIV-16)	17:25	15	16:46 (TRIV-47)	17:10	11	16:45 (TRIV-47)
11	06:16		06:51 (TRIV-15)	06:44		07:05 (TRIV-15)	07:15			07:46		08:10 (TRIV-16)	07:21		16:30 (TRIV-47)	07:54		08:17 (TRIV-17)
	21:13	65	07:56 (TRIV-15)	20:46	39	07:44 (TRIV-15)	19:56			19:06	40	08:50 (TRIV-16)	17:24	19	16:49 (TRIV-47)	17:10	9	16:44 (TRIV-47)
12	06:17		06:52 (TRIV-15)	06:45		07:06 (TRIV-15)	07:16			07:47		08:10 (TRIV-16)	07:23		08:01 (TRIV-17)	07:55		08:18 (TRIV-17)
	21:13	64	07:56 (TRIV-15)	20:44	37	07:43 (TRIV-15)	19:55			19:04	40	08:50 (TRIV-16)	17:24	30	16:50 (TRIV-47)	17:11	8	16:45 (TRIV-47)
13	06:17		06:52 (TRIV-15)	06:46		07:08 (TRIV-15)	07:17			07:48		08:09 (TRIV-16)	07:24		07:58 (TRIV-17)	07:55		08:19 (TRIV-17)
	21:12	65	07:57 (TRIV-15)	20:43	32	07:40 (TRIV-15)	19:53			19:03	41	08:50 (TRIV-16)	17:23	37	16:51 (TRIV-47)	17:11	6	16:45 (TRIV-47)
14	06:18		06:53 (TRIV-15)	06:47		07:10 (TRIV-15)	07:18			07:49		08:09 (TRIV-16)	07:25		07:56 (TRIV-17)	07:56		08:20 (TRIV-17)
	21:12	64	07:57 (TRIV-15)	20:42	28	07:38 (TRIV-15)	19:51			19:01	41	08:50 (TRIV-16)	17:22	41	16:51 (TRIV-47)	17:11	5	16:45 (TRIV-47)
15	06:19		06:52 (TRIV-15)	06:48		07:13 (TRIV-15)	07:19			07:50		08:10 (TRIV-16)	07:26		07:56 (TRIV-17)	07:57		08:20 (TRIV-17)
	21:11	65	07:57 (TRIV-15)	20:40	21	07:34 (TRIV-15)	19:50			19:00	39	08:49 (TRIV-16)	17:21	45	16:53 (TRIV-47)	17:11	3	16:45 (TRIV-47)
16	06:20		06:52 (TRIV-15)	06:49		07:18 (TRIV-15)	07:20			07:51		08:11 (TRIV-16)	07:27		07:55 (TRIV-17)	07:58		08:21 (TRIV-17)
	21:11	65	07:57 (TRIV-15)	20:39	11	07:29 (TRIV-15)	19:48			18:58	38	08:49 (TRIV-16)	17:20	48	16:53 (TRIV-47)	17:11	1	08:22 (TRIV-17)
17	06:21		06:53 (TRIV-15)	06:50			07:21			07:52		08:12 (TRIV-16)	07:29		07:54 (TRIV-17)	07:58		08:22 (TRIV-17)
	21:10	65	07:58 (TRIV-15)	20:38			19:46			18:57	36	08:48 (TRIV-16)	17:19	51	16:54 (TRIV-47)	17:12	1	08:23 (TRIV-17)
18	06:21		06:53 (TRIV-15)	06:51			07:22			07:53		08:14 (TRIV-16)	07:30		07:54 (TRIV-17)	07:59		
	21:10	65	07:58 (TRIV-15)	20:36			19:44			18:55	34	08:48 (TRIV-16)	17:18	51	16:54 (TRIV-47)	17:12		
19	06:22		06:52 (TRIV-15)	06:52			07:23			07:54		08:15 (TRIV-16)	07:31		07:54 (TRIV-17)	08:00		
	21:09	65	07:57 (TRIV-15)	20:35			19:43			18:54	32	08:47 (TRIV-16)	17:18	53	16:54 (TRIV-47)	17:12		
20	06:23		06:53 (TRIV-15)	06:53			07:24			07:56		08:16 (TRIV-16)	07:32		07:55 (TRIV-17)	08:00		
	21:08	64	07:57 (TRIV-15)	20:33			19:41			18:52	30	08:46 (TRIV-16)	17:17	51	16:53 (TRIV-47)	17:13		
21	06:24		06:53 (TRIV-15)	06:54			07:25			07:57		08:17 (TRIV-16)	07:33		07:56 (TRIV-17)	08:01		
	21:08	64	07:57 (TRIV-15)	20:32			19:39			18:51	28	08:45 (TRIV-16)	17:16	50	16:52 (TRIV-47)	17:13		
22	06:25		06:53 (TRIV-15)	06:55			07:26			07:58		08:18 (TRIV-16)	07:34		07:57 (TRIV-17)	08:01		
	21:07	65	07:58 (TRIV-15)	20:30			19:38			18:49	25	08:43 (TRIV-16)	17:16	48	16:51 (TRIV-47)	17:14		
23	06:26		06:54 (TRIV-15)	06:56			07:27			07:59		08:20 (TRIV-16)	07:36		07:59 (TRIV-17)	08:02		
	21:06	64	07:58 (TRIV-15)	20:29			19:36			18:48	23	08:43 (TRIV-16)	17:15	46	16:51 (TRIV-47)	17:14		
24	06:27		06:54 (TRIV-15)	06:57			07:28			08:00		08:21 (TRIV-16)	07:37		08:00 (TRIV-17)	08:02		
	21:05	64	07:58 (TRIV-15)	20:27			19:34			18:46	20	08:41 (TRIV-16)	17:14	44	16:50 (TRIV-47)	17:15		
25	06:27		06:54 (TRIV-15)	06:58			07:29			08:01		08:22 (TRIV-16)	07:38		08:01 (TRIV-17)	08:03		
	21:04	64	07:58 (TRIV-15)	20:26			19:33			18:45	16	08:38 (TRIV-16)	17:14	41	16:49 (TRIV-47)	17:15		
26	06:28		06:54 (TRIV-15)	06:59			07:30			08:02		08:23 (TRIV-16)	07:39		08:02 (TRIV-17)	08:03		08:26 (TRIV-17)
	21:03	63	07:57 (TRIV-15)	20:24			19:31			18:44	12	08:35 (TRIV-16)	17:13	40	16:49 (TRIV-47)	17:16	1	08:27 (TRIV-17)
27	06:29		06:54 (TRIV-15)	07:00			07:31			08:04		08:24 (TRIV-16)	07:40		08:03 (TRIV-17)	08:03		08:26 (TRIV-17)
	21:02	63	07:57 (TRIV-15)	20:23			19:29			18:42	7	08:31 (TRIV-16)	17:13	38	16:48 (TRIV-47)	17:17	1	08:27 (TRIV-17)
28	06:30		06:55 (TRIV-15)	07:01			07:32			08:05			07:41		08:04 (TRIV-17)	08:04		08:27 (TRIV-17)
	21:02	61	07:56 (TRIV-15)	20:21			19:27			18:41			17:12	35	16:47 (TRIV-47)	17:17	3	16:52 (TRIV-47)
29	06:31		06:55 (TRIV-15)	07:02			07:33			08:06			07:42		08:06 (TRIV-17)	08:04		08:27 (TRIV-17)
	21:01	61	07:56 (TRIV-15)	20:19			19:26			18:39			17:12	34	16:48 (TRIV-47)	17:18	3	16:52 (TRIV-47)
30	06:32		06:56 (TRIV-15)	07:03			07:34		08:30 (TRIV-16)	08:07			07:43		08:07 (TRIV-17)	08:04		08:27 (TRIV-17)
	21:00	60	07:56 (TRIV-15)	20:18			19:24	6	08:36 (TRIV-16)	18:38			17:12	31	16:47 (TRIV-47)	17:19	6	16:53 (TRIV-47)
31	06:33		06:56 (TRIV-15)	07:04						08:08						08:04		08:27 (TRIV-17)
	20:59	60	07:56 (TRIV-15)	20:16						18:37						17:20	7	16:53 (TRIV-47)
Potential sun hours	459			428			375			345			297			287		
Total, worst case		1971			680			6			811			858			255	
Sun reduction		0.76			0.75			0.67			0.60			0.40			0.36	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.70			0.70			0.64			0.64			0.66			0.65	
Total reduction		0.53			0.52			0.43			0.38			0.26			0.23	
Total, real		1040			354			3			311			224			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 24 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1058)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March	April	May	June
1	08:05	15:25 (TRIV-14)	07:51	15:41 (TRIV-14)	07:15	07:24	06:38	06:09
	17:21	75 16:40 (TRIV-14)	17:55	65 16:46 (TRIV-14)	18:29	20:02	20:34	21:04
2	08:05	15:26 (TRIV-14)	07:50	15:42 (TRIV-14)	07:13	07:22	06:37	06:09
	17:22	74 16:40 (TRIV-14)	17:56	64 16:46 (TRIV-14)	18:31	20:04	20:36	21:05
3	08:05	15:26 (TRIV-14)	07:49	15:43 (TRIV-14)	07:12	07:20	06:35	06:08
	17:22	75 16:41 (TRIV-14)	17:58	62 16:45 (TRIV-14)	18:32	20:05	20:37	21:06
4	08:05	15:27 (TRIV-14)	07:48	15:45 (TRIV-14)	07:10	07:19	06:34	06:08
	17:23	74 16:41 (TRIV-14)	17:59	60 16:45 (TRIV-14)	18:33	20:06	20:38	21:07
5	08:05	15:27 (TRIV-14)	07:47	15:46 (TRIV-14)	07:08	07:17	06:33	06:08
	17:24	75 16:42 (TRIV-14)	18:00	58 16:44 (TRIV-14)	18:34	20:07	20:39	21:07
6	08:05	15:28 (TRIV-14)	07:46	15:47 (TRIV-14)	07:07	07:15	06:32	06:07
	17:25	75 16:43 (TRIV-14)	18:01	56 16:43 (TRIV-14)	18:35	20:08	20:40	21:08
7	08:05	15:28 (TRIV-14)	07:45	15:49 (TRIV-14)	07:05	07:14	06:30	06:07
	17:26	75 16:43 (TRIV-14)	18:03	53 16:42 (TRIV-14)	18:36	20:09	20:41	21:09
8	08:05	15:29 (TRIV-14)	07:43	15:51 (TRIV-14)	08:04	07:12	06:29	06:07
	17:27	75 16:44 (TRIV-14)	18:04	50 16:41 (TRIV-14)	19:37	20:10	20:42	21:09
9	08:05	15:28 (TRIV-14)	07:42	15:52 (TRIV-14)	08:02	07:11	06:28	06:06
	17:28	76 16:44 (TRIV-14)	18:05	47 16:39 (TRIV-14)	19:39	20:11	20:43	21:10
10	08:04	15:29 (TRIV-14)	07:41	15:54 (TRIV-14)	08:00	07:09	06:27	06:06
	17:29	75 16:44 (TRIV-14)	18:06	44 16:38 (TRIV-14)	19:40	20:12	20:44	21:10
11	08:04	15:30 (TRIV-14)	07:40	15:56 (TRIV-14)	07:59	07:07	06:26	06:06
	17:30	75 16:45 (TRIV-14)	18:08	41 16:37 (TRIV-14)	19:41	20:13	20:45	21:11
12	08:04	15:29 (TRIV-14)	07:39	15:59 (TRIV-14)	07:57	07:06	06:25	06:06
	17:31	76 16:45 (TRIV-14)	18:09	36 16:35 (TRIV-14)	19:42	20:14	20:46	21:11
13	08:04	15:30 (TRIV-14)	07:37	16:01 (TRIV-14)	07:56	07:04	06:24	06:06
	17:32	76 16:46 (TRIV-14)	18:10	31 16:32 (TRIV-14)	19:43	20:15	20:47	21:12
14	08:03	15:31 (TRIV-14)	07:36	16:05 (TRIV-14)	07:54	07:03	06:23	06:06
	17:34	75 16:46 (TRIV-14)	18:11	24 16:29 (TRIV-14)	19:44	20:16	20:48	21:12
15	08:03	15:31 (TRIV-14)	07:35	16:11 (TRIV-14)	07:52	07:01	06:22	06:06
	17:35	75 16:46 (TRIV-14)	18:13	13 16:24 (TRIV-14)	19:45	20:17	20:49	21:13
16	08:02	15:32 (TRIV-14)	07:34		07:51	07:00	06:21	06:06
	17:36	75 16:47 (TRIV-14)	18:14		19:46	20:18	20:50	21:13
17	08:02	15:32 (TRIV-14)	07:32		07:49	06:58	06:20	06:06
	17:37	75 16:47 (TRIV-14)	18:15		19:47	20:20	20:51	21:14
18	08:01	15:33 (TRIV-14)	07:31		07:47	06:56	06:19	06:06
	17:38	75 16:48 (TRIV-14)	18:16		19:48	20:21	20:52	21:14
19	08:01	15:33 (TRIV-14)	07:29		07:46	06:55	06:18	06:06
	17:39	75 16:48 (TRIV-14)	18:17		19:50	20:22	20:53	21:14
20	08:00	15:33 (TRIV-14)	07:28		07:44	06:53	06:17	06:06
	17:40	74 16:47 (TRIV-14)	18:19		19:51	20:23	20:54	21:15
21	08:00	15:34 (TRIV-14)	07:27		07:42	06:52	06:16	06:06
	17:42	74 16:48 (TRIV-14)	18:20		19:52	20:24	20:55	21:15
22	07:59	15:34 (TRIV-14)	07:25		07:41	06:50	06:15	06:07
	17:43	74 16:48 (TRIV-14)	18:21		19:53	20:25	20:56	21:15
23	07:58	15:35 (TRIV-14)	07:24		07:39	06:49	06:15	06:07
	17:44	73 16:48 (TRIV-14)	18:22		19:54	20:26	20:57	21:15
24	07:58	15:36 (TRIV-14)	07:22		07:37	06:48	06:14	06:07
	17:45	73 16:49 (TRIV-14)	18:23		19:55	20:27	20:58	21:16
25	07:57	15:36 (TRIV-14)	07:21		07:35	06:46	06:13	06:07
	17:46	72 16:48 (TRIV-14)	18:25		19:56	20:28	20:58	21:16
26	07:56	15:37 (TRIV-14)	07:19		07:34	06:45	06:13	06:08
	17:48	71 16:48 (TRIV-14)	18:26		19:57	20:29	20:59	21:16
27	07:55	15:37 (TRIV-14)	07:18		07:32	06:43	06:12	06:08
	17:49	71 16:48 (TRIV-14)	18:27		19:58	20:30	21:00	21:16
28	07:55	15:38 (TRIV-14)	07:16		07:30	06:42	06:11	06:09
	17:50	70 16:48 (TRIV-14)	18:28		19:59	20:31	21:01	21:16
29	07:54	15:39 (TRIV-14)			07:29	06:41	06:11	06:09
	17:51	68 16:47 (TRIV-14)			20:00	20:32	21:02	21:16
30	07:53	15:40 (TRIV-14)			07:27	06:39	06:10	06:09
	17:53	67 16:47 (TRIV-14)			20:00	20:33	21:03	21:16
31	07:52	15:40 (TRIV-14)			07:25		06:10	
	17:54	67 16:47 (TRIV-14)			20:01		21:04	
Potential sun hours	297		297		370	399	448	452
Total, worst case		2280		704				
Sun reduction		0.50		0.55				
Oper. time red.		1.00		1.00				
Wind dir. red.		0.69		0.69				
Total reduction		0.35		0.38				
Total, real		790		268				

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:
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217 Montgomery St., Suite 1000
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 24 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1058)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:10		15:23 (TRIV-14)	07:44		15:12 (TRIV-14)
	21:16		20:58		20:15		19:22			17:36	45	16:08 (TRIV-14)	17:11	75	16:27 (TRIV-14)
2	06:10		06:35		07:06		07:36			07:11		15:21 (TRIV-14)	07:45		15:12 (TRIV-14)
	21:16		20:56		20:13		19:21			17:34	48	16:09 (TRIV-14)	17:11	75	16:27 (TRIV-14)
3	06:11		06:36		07:07		07:37			07:12		15:19 (TRIV-14)	07:47		15:12 (TRIV-14)
	21:16		20:55		20:11		19:19			17:33	51	16:10 (TRIV-14)	17:11	76	16:28 (TRIV-14)
4	06:11		06:37		07:08		07:38			07:13		15:19 (TRIV-14)	07:48		15:13 (TRIV-14)
	21:16		20:54		20:10		19:17			17:32	53	16:12 (TRIV-14)	17:11	75	16:28 (TRIV-14)
5	06:12		06:38		07:09		07:39			07:14		15:17 (TRIV-14)	07:48		15:13 (TRIV-14)
	21:15		20:53		20:08		19:16			17:31	56	16:13 (TRIV-14)	17:11	75	16:28 (TRIV-14)
6	06:13		06:39		07:10		07:40			07:15		15:16 (TRIV-14)	07:49		15:14 (TRIV-14)
	21:15		20:52		20:07		19:14			17:30	58	16:14 (TRIV-14)	17:10	75	16:29 (TRIV-14)
7	06:13		06:40		07:11		07:41			07:17		15:14 (TRIV-14)	07:50		15:14 (TRIV-14)
	21:15		20:51		20:05		19:12			17:29	61	16:15 (TRIV-14)	17:10	75	16:29 (TRIV-14)
8	06:14		06:41		07:12		07:42			07:18		15:14 (TRIV-14)	07:51		15:15 (TRIV-14)
	21:15		20:50		20:03		19:11			17:28	62	16:16 (TRIV-14)	17:10	75	16:30 (TRIV-14)
9	06:15		06:42		07:13		07:44			07:19		15:13 (TRIV-14)	07:52		15:15 (TRIV-14)
	21:14		20:48		20:01		19:09			17:26	64	16:17 (TRIV-14)	17:10	75	16:30 (TRIV-14)
10	06:15		06:43		07:14		07:45			07:20		15:12 (TRIV-14)	07:53		15:16 (TRIV-14)
	21:14		20:47		20:00		19:08			17:25	65	16:17 (TRIV-14)	17:10	74	16:30 (TRIV-14)
11	06:16		06:44		07:15		07:46			07:21		15:12 (TRIV-14)	07:54		15:15 (TRIV-14)
	21:13		20:46		19:56		19:06			17:24	67	16:19 (TRIV-14)	17:10	75	16:30 (TRIV-14)
12	06:17		06:45		07:16		07:47			07:23		15:11 (TRIV-14)	07:55		15:16 (TRIV-14)
	21:13		20:44		19:55		19:04			17:24	68	16:19 (TRIV-14)	17:11	75	16:31 (TRIV-14)
13	06:17		06:46		07:17		07:48			07:24		15:11 (TRIV-14)	07:56		15:17 (TRIV-14)
	21:13		20:43		19:53		19:03			17:23	68	16:19 (TRIV-14)	17:11	74	16:31 (TRIV-14)
14	06:18		06:47		07:18		07:49			07:25		15:10 (TRIV-14)	07:56		15:18 (TRIV-14)
	21:12		20:42		19:51		19:01			17:22	70	16:20 (TRIV-14)	17:11	74	16:32 (TRIV-14)
15	06:19		06:48		07:19		07:50			07:26		15:10 (TRIV-14)	07:57		15:18 (TRIV-14)
	21:11		20:40		19:50		19:00			17:21	71	16:21 (TRIV-14)	17:11	74	16:32 (TRIV-14)
16	06:20		06:49		07:20		07:51			07:27		15:10 (TRIV-14)	07:58		15:18 (TRIV-14)
	21:11		20:39		19:48		18:58			17:20	71	16:21 (TRIV-14)	17:11	74	16:32 (TRIV-14)
17	06:20		06:50		07:21		07:52			07:29		15:09 (TRIV-14)	07:58		15:19 (TRIV-14)
	21:10		20:38		19:46		18:57			17:19	72	16:21 (TRIV-14)	17:12	74	16:33 (TRIV-14)
18	06:21		06:51		07:22		07:53			07:30		15:09 (TRIV-14)	07:59		15:19 (TRIV-14)
	21:10		20:36		19:44		18:55			17:18	73	16:22 (TRIV-14)	17:12	74	16:33 (TRIV-14)
19	06:22		06:52		07:23		07:54			07:31		15:10 (TRIV-14)	08:00		15:20 (TRIV-14)
	21:09		20:35		19:43		18:54			17:18	73	16:23 (TRIV-14)	17:12	74	16:34 (TRIV-14)
20	06:23		06:53		07:24		07:56			07:32		15:09 (TRIV-14)	08:00		15:21 (TRIV-14)
	21:08		20:33		19:41		18:52			17:17	74	16:23 (TRIV-14)	17:13	74	16:35 (TRIV-14)
21	06:24		06:54		07:25		07:57			07:33		15:09 (TRIV-14)	08:01		15:21 (TRIV-14)
	21:08		20:32		19:39		18:51			17:16	74	16:23 (TRIV-14)	17:13	73	16:34 (TRIV-14)
22	06:25		06:55		07:26		07:58			07:34		15:09 (TRIV-14)	08:01		15:22 (TRIV-14)
	21:07		20:30		19:38		18:49			17:16	74	16:23 (TRIV-14)	17:14	73	16:35 (TRIV-14)
23	06:26		06:56		07:27		07:59			07:36		15:10 (TRIV-14)	08:02		15:22 (TRIV-14)
	21:06		20:29		19:36		18:48			17:15	75	16:25 (TRIV-14)	17:14	73	16:35 (TRIV-14)
24	06:26		06:57		07:28		08:00			07:37		15:10 (TRIV-14)	08:02		15:22 (TRIV-14)
	21:05		20:27		19:34		18:46			17:14	75	16:25 (TRIV-14)	17:15	74	16:36 (TRIV-14)
25	06:27		06:58		07:29		08:01			07:38		15:10 (TRIV-14)	08:03		15:23 (TRIV-14)
	21:04		20:26		19:33		18:45			17:14	75	16:25 (TRIV-14)	17:15	74	16:37 (TRIV-14)
26	06:28		06:59		07:30		08:02			07:39		15:10 (TRIV-14)	08:03		15:23 (TRIV-14)
	21:03		20:24		19:31		18:43			17:13	75	16:25 (TRIV-14)	17:16	74	16:37 (TRIV-14)
27	06:29		07:00		07:31		08:04		16:39 (TRIV-14)	07:40		15:10 (TRIV-14)	08:03		15:23 (TRIV-14)
	21:03		20:23		19:29		18:42	16	16:55 (TRIV-14)	17:13	75	16:25 (TRIV-14)	17:17	74	16:37 (TRIV-14)
28	06:30		07:01		07:32		08:05		16:34 (TRIV-14)	07:41		15:11 (TRIV-14)	08:04		15:24 (TRIV-14)
	21:02		20:21		19:27		18:41	25	16:59 (TRIV-14)	17:12	76	16:27 (TRIV-14)	17:17	74	16:38 (TRIV-14)
29	06:31		07:02		07:33		08:06		16:30 (TRIV-14)	07:42		15:11 (TRIV-14)	08:04		15:25 (TRIV-14)
	21:01		20:20		19:26		18:39	32	17:02 (TRIV-14)	17:12	76	16:27 (TRIV-14)	17:18	74	16:39 (TRIV-14)
30	06:32		07:03		07:34		08:07		16:27 (TRIV-14)	07:43		15:11 (TRIV-14)	08:04		15:25 (TRIV-14)
	21:00		20:18		19:24		18:38	37	17:04 (TRIV-14)	17:12	76	16:27 (TRIV-14)	17:19	74	16:39 (TRIV-14)
31	06:33		07:04				08:08		16:26 (TRIV-14)				08:04		15:25 (TRIV-14)
	20:59		20:16				18:37	41	17:07 (TRIV-14)				17:20	74	16:39 (TRIV-14)
Potential sun hours	459		428		375		345			297			287		
Total, worst case							151				2021			2303	
Sun reduction							0.60				0.40			0.36	
Oper. time red.							1.00				1.00			1.00	
Wind dir. red.							0.69				0.69			0.69	
Total reduction							0.42				0.28			0.25	
Total, real							63				560			575	

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

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

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US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 25 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1059)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April	May	June
1	08:05	08:55 (TRIV-16)	07:51	08:17 (TRIV-15)	07:15	08:28 (TRIV-15)	07:24	06:38	06:09
	17:21	21 09:16 (TRIV-16)	17:55	64 09:21 (TRIV-15)	18:29	39 09:07 (TRIV-15)	20:02	20:34	21:04
2	08:05	08:56 (TRIV-16)	07:50	08:16 (TRIV-15)	07:13	08:30 (TRIV-15)	07:22	06:37	06:09
	17:22	20 09:16 (TRIV-16)	17:56	66 09:22 (TRIV-15)	18:31	35 09:05 (TRIV-15)	20:04	20:36	21:05
3	08:05	08:57 (TRIV-16)	07:49	08:16 (TRIV-15)	07:12	08:32 (TRIV-15)	07:20	06:35	06:08
	17:22	18 09:15 (TRIV-16)	17:58	66 09:22 (TRIV-15)	18:32	29 09:01 (TRIV-15)	20:05	20:37	21:06
4	08:05	08:58 (TRIV-16)	07:48	08:16 (TRIV-15)	07:10	08:35 (TRIV-15)	07:19	06:34	06:08
	17:23	17 09:15 (TRIV-16)	17:59	67 09:23 (TRIV-15)	18:33	22 08:57 (TRIV-15)	20:06	20:38	21:07
5	08:05	09:00 (TRIV-16)	07:47	08:16 (TRIV-15)	07:08	08:41 (TRIV-15)	07:17	06:33	06:08
	17:24	14 09:14 (TRIV-16)	18:00	67 09:23 (TRIV-15)	18:34	10 08:51 (TRIV-15)	20:07	20:39	21:07
6	08:05	09:02 (TRIV-16)	07:46	08:16 (TRIV-15)	07:07		07:15	06:32	06:07
	17:25	11 09:13 (TRIV-16)	18:01	68 09:24 (TRIV-15)	18:35		20:08	20:40	21:08
7	08:05	08:37 (TRIV-15)	07:45	08:16 (TRIV-15)	07:05		07:14	06:30	06:07
	17:26	16 09:12 (TRIV-16)	18:03	68 09:24 (TRIV-15)	18:36		20:09	20:41	21:09
8	08:05	08:35 (TRIV-15)	07:43	08:16 (TRIV-15)	08:04		07:12	06:29	06:07
	17:27	15 08:50 (TRIV-15)	18:04	68 09:24 (TRIV-15)	19:37		20:10	20:42	21:09
9	08:04	08:32 (TRIV-15)	07:42	08:15 (TRIV-15)	08:02		07:11	06:28	06:06
	17:28	20 08:52 (TRIV-15)	18:05	69 09:24 (TRIV-15)	19:39		20:11	20:43	21:10
10	08:04	08:31 (TRIV-15)	07:41	08:16 (TRIV-15)	08:00		07:09	06:27	06:06
	17:29	23 08:54 (TRIV-15)	18:06	68 09:24 (TRIV-15)	19:40		20:12	20:44	21:10
11	08:04	08:30 (TRIV-15)	07:40	08:16 (TRIV-15)	07:59		07:07	06:26	06:06
	17:30	27 08:57 (TRIV-15)	18:08	68 09:24 (TRIV-15)	19:41		20:13	20:45	21:11
12	08:04	08:28 (TRIV-15)	07:39	08:16 (TRIV-15)	07:57		07:06	06:25	06:06
	17:31	30 08:58 (TRIV-15)	18:09	68 09:24 (TRIV-15)	19:42		20:14	20:46	21:11
13	08:03	08:27 (TRIV-15)	07:37	08:16 (TRIV-15)	07:56		07:04	06:24	06:06
	17:32	33 09:00 (TRIV-15)	18:10	67 09:23 (TRIV-15)	19:43		20:15	20:47	21:12
14	08:03	08:27 (TRIV-15)	07:36	08:16 (TRIV-15)	07:54		07:03	06:23	06:06
	17:34	35 09:02 (TRIV-15)	18:11	67 09:23 (TRIV-15)	19:44		20:16	20:48	21:12
15	08:03	08:26 (TRIV-15)	07:35	08:17 (TRIV-15)	07:52		07:01	06:22	06:06
	17:35	37 09:03 (TRIV-15)	18:13	66 09:23 (TRIV-15)	19:45		20:17	20:49	21:13
16	08:02	08:25 (TRIV-15)	07:33	08:17 (TRIV-15)	07:51		07:00	06:21	06:06
	17:36	40 09:05 (TRIV-15)	18:14	65 09:22 (TRIV-15)	19:46		20:18	20:50	21:13
17	08:02	08:24 (TRIV-15)	07:32	08:17 (TRIV-15)	07:49		06:58	06:20	06:06
	17:37	42 09:06 (TRIV-15)	18:15	65 09:22 (TRIV-15)	19:47		20:20	20:51	21:14
18	08:01	08:24 (TRIV-15)	07:31	08:17 (TRIV-15)	07:47		06:56	06:19	06:06
	17:38	44 09:08 (TRIV-15)	18:16	64 09:21 (TRIV-15)	19:48		20:21	20:52	21:14
19	08:01	08:23 (TRIV-15)	07:29	08:18 (TRIV-15)	07:46		06:55	06:18	06:06
	17:39	46 09:09 (TRIV-15)	18:17	63 09:21 (TRIV-15)	19:50		20:22	20:53	21:14
20	08:00	08:22 (TRIV-15)	07:28	08:19 (TRIV-15)	07:44		06:53	06:17	06:06
	17:40	48 09:10 (TRIV-15)	18:19	61 09:20 (TRIV-15)	19:51		20:23	20:54	21:15
21	08:00	08:22 (TRIV-15)	07:27	08:19 (TRIV-15)	07:42		06:52	06:16	06:06
	17:42	50 09:12 (TRIV-15)	18:20	60 09:19 (TRIV-15)	19:52		20:24	20:55	21:15
22	07:59	08:21 (TRIV-15)	07:25	08:20 (TRIV-15)	07:40		06:50	06:15	06:07
	17:43	52 09:13 (TRIV-15)	18:21	58 09:18 (TRIV-15)	19:53		20:25	20:56	21:15
23	07:58	08:20 (TRIV-15)	07:24	08:20 (TRIV-15)	07:39		06:49	06:15	06:07
	17:44	54 09:14 (TRIV-15)	18:22	57 09:17 (TRIV-15)	19:54		20:26	20:57	21:15
24	07:58	08:19 (TRIV-15)	07:22	08:22 (TRIV-15)	07:37		06:48	06:14	06:07
	17:45	55 09:14 (TRIV-15)	18:23	54 09:16 (TRIV-15)	19:55		20:27	20:58	21:16
25	07:57	08:20 (TRIV-15)	07:21	08:22 (TRIV-15)	07:35		06:46	06:13	06:07
	17:46	56 09:16 (TRIV-15)	18:25	52 09:14 (TRIV-15)	19:56		20:28	20:58	21:16
26	07:56	08:19 (TRIV-15)	07:19	08:24 (TRIV-15)	07:34		06:45	06:13	06:08
	17:48	58 09:17 (TRIV-15)	18:26	49 09:13 (TRIV-15)	19:57		20:29	20:59	21:16
27	07:55	08:19 (TRIV-15)	07:18	08:24 (TRIV-15)	07:32		06:43	06:12	06:08
	17:49	59 09:18 (TRIV-15)	18:27	47 09:11 (TRIV-15)	19:58		20:30	21:00	21:16
28	07:55	08:18 (TRIV-15)	07:16	08:26 (TRIV-15)	07:30		06:42	06:11	06:09
	17:50	61 09:19 (TRIV-15)	18:28	43 09:09 (TRIV-15)	19:59		20:31	21:01	21:16
29	07:54	08:18 (TRIV-15)			07:29		06:41	06:11	06:09
	17:51	61 09:19 (TRIV-15)			20:00		20:32	21:02	21:16
30	07:53	08:17 (TRIV-15)			07:27		06:39	06:10	06:09
	17:53	63 09:20 (TRIV-15)			20:00		20:33	21:03	21:16
31	07:52	08:17 (TRIV-15)			07:25			06:10	
	17:54	64 09:21 (TRIV-15)			20:01			21:04	
Potential sun hours	297		297		370		399	448	452
Total, worst case		1190		1745		135			
Sun reduction		0.50		0.55		0.57			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.61		0.62		0.62			
Total reduction		0.31		0.34		0.35			
Total, real		365		590		47			

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 25 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1059)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		07:45 (TRIV-15)	07:44		08:12 (TRIV-15)
	21:16		20:58		20:15		19:22			17:36	69	08:54 (TRIV-15)	17:11	27	08:39 (TRIV-15)
2	06:10		06:35		07:06		07:36			07:11		07:45 (TRIV-15)	07:45		08:14 (TRIV-15)
	21:16		20:56		20:13		19:21			17:34	68	08:53 (TRIV-15)	17:11	24	08:38 (TRIV-15)
3	06:11		06:36		07:07		07:37			07:12		07:45 (TRIV-15)	07:46		08:16 (TRIV-15)
	21:16		20:55		20:11		19:19			17:33	68	08:53 (TRIV-15)	17:11	20	08:36 (TRIV-15)
4	06:11		06:37		07:08		07:38			07:13		07:46 (TRIV-15)	07:47		08:18 (TRIV-15)
	21:15		20:54		20:10		19:17			17:32	68	08:54 (TRIV-15)	17:11	16	08:34 (TRIV-15)
5	06:12		06:38		07:09		07:39			07:14		07:46 (TRIV-15)	07:48		08:22 (TRIV-15)
	21:15		20:53		20:08		19:16			17:31	67	08:53 (TRIV-15)	17:11	17	08:57 (TRIV-16)
6	06:13		06:39		07:10		07:40			07:15		07:46 (TRIV-15)	07:49		08:48 (TRIV-16)
	21:15		20:52		20:06		19:14			17:30	67	08:53 (TRIV-15)	17:10	11	08:59 (TRIV-16)
7	06:13		06:40		07:11		07:41			07:17		07:46 (TRIV-15)	07:50		08:47 (TRIV-16)
	21:15		20:51		20:05		19:12			17:29	67	08:53 (TRIV-15)	17:10	14	09:01 (TRIV-16)
8	06:14		06:41		07:12		07:42			07:18		07:47 (TRIV-15)	07:51		08:47 (TRIV-16)
	21:14		20:49		20:03		19:11			17:28	66	08:53 (TRIV-15)	17:10	16	09:03 (TRIV-16)
9	06:15		06:42		07:13		07:44		09:12 (TRIV-15)	07:19		07:47 (TRIV-15)	07:52		08:46 (TRIV-16)
	21:14		20:48		20:01		19:09	17	09:29 (TRIV-15)	17:27	66	08:53 (TRIV-15)	17:10	18	09:04 (TRIV-16)
10	06:15		06:43		07:14		07:45		09:09 (TRIV-15)	07:20		07:48 (TRIV-15)	07:53		08:46 (TRIV-16)
	21:14		20:47		20:00		19:08	25	09:34 (TRIV-15)	17:25	64	08:52 (TRIV-15)	17:10	20	09:06 (TRIV-16)
11	06:16		06:44		07:15		07:46		09:05 (TRIV-15)	07:21		07:49 (TRIV-15)	07:54		08:45 (TRIV-16)
	21:13		20:46		19:56		19:06	32	09:37 (TRIV-15)	17:24	63	08:52 (TRIV-15)	17:10	21	09:06 (TRIV-16)
12	06:17		06:45		07:16		07:47		09:03 (TRIV-15)	07:23		07:49 (TRIV-15)	07:55		08:45 (TRIV-16)
	21:13		20:44		19:55		19:04	36	09:39 (TRIV-15)	17:24	63	08:52 (TRIV-15)	17:11	22	09:07 (TRIV-16)
13	06:17		06:46		07:17		07:48		09:00 (TRIV-15)	07:24		07:50 (TRIV-15)	07:56		08:45 (TRIV-16)
	21:12		20:43		19:53		19:03	41	09:41 (TRIV-15)	17:23	61	08:51 (TRIV-15)	17:11	23	09:08 (TRIV-16)
14	06:18		06:47		07:18		07:49		08:58 (TRIV-15)	07:25		07:50 (TRIV-15)	07:56		08:46 (TRIV-16)
	21:12		20:42		19:51		19:01	45	09:43 (TRIV-15)	17:22	60	08:50 (TRIV-15)	17:11	23	09:09 (TRIV-16)
15	06:19		06:48		07:19		07:50		08:56 (TRIV-15)	07:26		07:52 (TRIV-15)	07:57		08:45 (TRIV-16)
	21:11		20:40		19:50		19:00	48	09:44 (TRIV-15)	17:21	59	08:51 (TRIV-15)	17:11	24	09:09 (TRIV-16)
16	06:20		06:49		07:20		07:51		08:55 (TRIV-15)	07:27		07:52 (TRIV-15)	07:58		08:46 (TRIV-16)
	21:11		20:39		19:48		18:58	50	09:45 (TRIV-15)	17:20	58	08:50 (TRIV-15)	17:11	24	09:10 (TRIV-16)
17	06:20		06:50		07:21		07:52		08:53 (TRIV-15)	07:29		07:53 (TRIV-15)	07:58		08:46 (TRIV-16)
	21:10		20:38		19:46		18:57	53	09:46 (TRIV-15)	17:19	56	08:49 (TRIV-15)	17:12	25	09:11 (TRIV-16)
18	06:21		06:51		07:22		07:53		08:53 (TRIV-15)	07:30		07:53 (TRIV-15)	07:59		08:46 (TRIV-16)
	21:10		20:36		19:44		18:55	55	09:48 (TRIV-15)	17:18	55	08:48 (TRIV-15)	17:12	25	09:11 (TRIV-16)
19	06:22		06:52		07:23		07:54		08:51 (TRIV-15)	07:31		07:55 (TRIV-15)	08:00		08:47 (TRIV-16)
	21:09		20:35		19:43		18:54	58	09:49 (TRIV-15)	17:18	54	08:49 (TRIV-15)	17:12	25	09:12 (TRIV-16)
20	06:23		06:53		07:24		07:56		08:50 (TRIV-15)	07:32		07:56 (TRIV-15)	08:00		08:48 (TRIV-16)
	21:08		20:33		19:41		18:52	59	09:49 (TRIV-15)	17:17	52	08:48 (TRIV-15)	17:13	25	09:13 (TRIV-16)
21	06:24		06:54		07:25		07:57		08:49 (TRIV-15)	07:33		07:57 (TRIV-15)	08:01		08:47 (TRIV-16)
	21:08		20:32		19:39		18:51	61	09:50 (TRIV-15)	17:16	50	08:47 (TRIV-15)	17:13	26	09:13 (TRIV-16)
22	06:25		06:55		07:26		07:58		08:48 (TRIV-15)	07:34		07:58 (TRIV-15)	08:01		08:48 (TRIV-16)
	21:07		20:30		19:38		18:49	62	09:50 (TRIV-15)	17:16	48	08:46 (TRIV-15)	17:14	26	09:14 (TRIV-16)
23	06:26		06:56		07:27		07:59		08:48 (TRIV-15)	07:36		08:00 (TRIV-15)	08:02		08:49 (TRIV-16)
	21:06		20:29		19:36		18:48	64	09:52 (TRIV-15)	17:15	46	08:46 (TRIV-15)	17:14	25	09:14 (TRIV-16)
24	06:27		06:57		07:28		08:00		08:48 (TRIV-15)	07:37		08:01 (TRIV-15)	08:02		08:49 (TRIV-16)
	21:05		20:27		19:34		18:46	64	09:52 (TRIV-15)	17:14	44	08:45 (TRIV-15)	17:15	25	09:14 (TRIV-16)
25	06:27		06:58		07:29		08:01		08:47 (TRIV-15)	07:38		08:02 (TRIV-15)	08:03		08:50 (TRIV-16)
	21:04		20:26		19:33		18:45	65	09:52 (TRIV-15)	17:14	42	08:44 (TRIV-15)	17:15	25	09:15 (TRIV-16)
26	06:28		06:59		07:30		08:02		08:46 (TRIV-15)	07:39		08:03 (TRIV-15)	08:03		08:50 (TRIV-16)
	21:03		20:24		19:31		18:43	66	09:52 (TRIV-15)	17:13	40	08:43 (TRIV-15)	17:16	25	09:15 (TRIV-16)
27	06:29		07:00		07:31		08:04		08:46 (TRIV-15)	07:40		08:05 (TRIV-15)	08:03		08:51 (TRIV-16)
	21:02		20:23		19:29		18:42	66	09:52 (TRIV-15)	17:13	37	08:42 (TRIV-15)	17:17	24	09:15 (TRIV-16)
28	06:30		07:01		07:32		08:05		08:46 (TRIV-15)	07:41		08:06 (TRIV-15)	08:04		08:52 (TRIV-16)
	21:02		20:21		19:27		18:41	67	09:53 (TRIV-15)	17:12	35	08:41 (TRIV-15)	17:17	24	09:16 (TRIV-16)
29	06:31		07:02		07:33		08:06		08:46 (TRIV-15)	07:42		08:08 (TRIV-15)	08:04		08:53 (TRIV-16)
	21:01		20:19		19:26		18:39	67	09:53 (TRIV-15)	17:12	33	08:41 (TRIV-15)	17:18	23	09:16 (TRIV-16)
30	06:32		07:03		07:34		08:07		08:45 (TRIV-15)	07:43		08:10 (TRIV-15)	08:04		08:53 (TRIV-16)
	21:00		20:18		19:24		18:38	68	09:53 (TRIV-15)	17:12	30	08:40 (TRIV-15)	17:19	23	09:16 (TRIV-16)
31	06:33		07:04				08:08		08:45 (TRIV-15)				08:04		08:54 (TRIV-16)
	20:59		20:16				18:37	68	09:53 (TRIV-15)				17:20	22	09:16 (TRIV-16)
Potential sun hours	459		428		375		345			297			287		
Total, worst case								1237			1656			688	
Sun reduction								0.60			0.40			0.36	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.62			0.62			0.60	
Total reduction								0.37			0.25			0.22	
Total, real								456			407			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)

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 51 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1082)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February	March	April			May			June		
1	08:05		16:18 (TRIV-07)	07:51	07:15	07:24			06:38		06:58 (TRIV-17)	06:09		20:09 (TRIV-47)
	17:21	35	16:53 (TRIV-07)	17:55	18:29	20:02			20:34	14	07:12 (TRIV-17)	21:04	26	20:35 (TRIV-47)
2	08:05		16:18 (TRIV-07)	07:50	07:13	07:22			06:37		06:56 (TRIV-17)	06:09		20:09 (TRIV-47)
	17:22	36	16:54 (TRIV-07)	17:56	18:31	20:04			20:35	16	07:12 (TRIV-17)	21:05	25	20:34 (TRIV-47)
3	08:05		16:19 (TRIV-07)	07:49	07:12	07:20			06:35		06:55 (TRIV-17)	06:08		20:10 (TRIV-47)
	17:22	35	16:54 (TRIV-07)	17:58	18:32	20:05			20:37	18	07:13 (TRIV-17)	21:06	24	20:34 (TRIV-47)
4	08:05		16:19 (TRIV-07)	07:48	07:10	07:19			06:34		06:54 (TRIV-17)	06:08		20:11 (TRIV-47)
	17:23	35	16:54 (TRIV-07)	17:59	18:33	20:06			20:38	20	07:14 (TRIV-17)	21:06	23	20:34 (TRIV-47)
5	08:05		16:20 (TRIV-07)	07:47	07:08	07:17			06:33		06:53 (TRIV-17)	06:08		20:11 (TRIV-47)
	17:24	35	16:55 (TRIV-07)	18:00	18:34	20:07			20:39	21	07:14 (TRIV-17)	21:07	22	20:33 (TRIV-47)
6	08:05		16:21 (TRIV-07)	07:46	07:07	07:16			06:32		06:52 (TRIV-17)	06:07		20:11 (TRIV-47)
	17:25	34	16:55 (TRIV-07)	18:01	18:35	20:08			20:40	22	07:14 (TRIV-17)	21:08	22	20:33 (TRIV-47)
7	08:05		16:21 (TRIV-07)	07:45	07:05	07:14			06:30		06:50 (TRIV-17)	06:07		20:12 (TRIV-47)
	17:26	35	16:56 (TRIV-07)	18:03	18:36	20:09			20:41	28	20:18 (TRIV-47)	21:09	21	20:33 (TRIV-47)
8	08:05		16:22 (TRIV-07)	07:43	08:04	07:12			06:29		06:49 (TRIV-17)	06:07		20:13 (TRIV-47)
	17:27	34	16:56 (TRIV-07)	18:04	19:37	20:10			20:42	32	20:19 (TRIV-47)	21:09	20	20:33 (TRIV-47)
9	08:04		16:22 (TRIV-07)	07:42	08:02	07:11			06:28		06:48 (TRIV-17)	06:07		20:14 (TRIV-47)
	17:28	34	16:56 (TRIV-07)	18:05	19:39	20:11			20:43	35	20:20 (TRIV-47)	21:10	19	20:33 (TRIV-47)
10	08:04		16:23 (TRIV-07)	07:41	08:00	07:09			06:27		06:47 (TRIV-17)	06:06		20:14 (TRIV-47)
	17:29	33	16:56 (TRIV-07)	18:06	19:40	20:12			20:44	39	20:21 (TRIV-47)	21:10	18	20:32 (TRIV-47)
11	08:04		16:24 (TRIV-07)	07:40	07:59	07:07			06:26		06:46 (TRIV-17)	06:06		20:14 (TRIV-47)
	17:30	32	16:56 (TRIV-07)	18:08	19:41	20:13			20:45	42	20:22 (TRIV-47)	21:11	18	20:32 (TRIV-47)
12	08:04		16:24 (TRIV-07)	07:39	07:57	07:06			06:25		06:45 (TRIV-17)	06:06		20:15 (TRIV-47)
	17:31	32	16:56 (TRIV-07)	18:09	19:42	20:14			20:46	43	20:23 (TRIV-47)	21:11	17	20:32 (TRIV-47)
13	08:03		16:25 (TRIV-07)	07:37	07:55	07:04			06:24		06:44 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:32	31	16:56 (TRIV-07)	18:10	19:43	20:15			20:47	46	20:24 (TRIV-47)	21:12	16	20:32 (TRIV-47)
14	08:03		16:26 (TRIV-07)	07:36	07:54	07:03			06:23		06:45 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:34	31	16:57 (TRIV-07)	18:11	19:44	20:16			20:48	47	20:25 (TRIV-47)	21:12	15	20:31 (TRIV-47)
15	08:03		16:27 (TRIV-07)	07:35	07:52	07:01			06:22		06:45 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:35	29	16:56 (TRIV-07)	18:13	19:45	20:17			20:49	46	20:25 (TRIV-47)	21:13	14	20:31 (TRIV-47)
16	08:02		16:28 (TRIV-07)	07:33	07:51	07:00			06:21		06:46 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:36	28	16:56 (TRIV-07)	18:14	19:46	20:18			20:50	46	20:26 (TRIV-47)	21:13	13	20:31 (TRIV-47)
17	08:02		16:29 (TRIV-07)	07:32	07:49	06:58			06:20		06:46 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:37	26	16:55 (TRIV-07)	18:15	19:47	20:20			20:51	47	20:27 (TRIV-47)	21:14	13	20:31 (TRIV-47)
18	08:01		16:31 (TRIV-07)	07:31	07:47	06:56			06:19		06:48 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:38	24	16:55 (TRIV-07)	18:16	19:48	20:21			20:52	46	20:29 (TRIV-47)	21:14	13	20:31 (TRIV-47)
19	08:01		16:31 (TRIV-07)	07:29	07:46	06:55			06:18		06:48 (TRIV-17)	06:06		20:20 (TRIV-47)
	17:39	23	16:54 (TRIV-07)	18:18	19:50	20:22			20:53	47	20:30 (TRIV-47)	21:14	12	20:32 (TRIV-47)
20	08:00		16:33 (TRIV-07)	07:28	07:44	06:53			06:17		06:49 (TRIV-17)	06:06		20:20 (TRIV-47)
	17:40	20	16:53 (TRIV-07)	18:19	19:51	20:23			20:54	45	20:30 (TRIV-47)	21:15	12	20:32 (TRIV-47)
21	08:00		16:35 (TRIV-07)	07:27	07:42	06:52			06:16		06:50 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:42	18	16:53 (TRIV-07)	18:20	19:52	20:24			20:55	43	20:31 (TRIV-47)	21:15	12	20:32 (TRIV-47)
22	07:59		16:37 (TRIV-07)	07:25	07:41	06:50			06:16		06:52 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:43	14	16:51 (TRIV-07)	18:21	19:53	20:25			20:56	41	20:32 (TRIV-47)	21:15	12	20:32 (TRIV-47)
23	07:58		16:40 (TRIV-07)	07:24	07:39	06:49			06:15		06:54 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:44	8	16:48 (TRIV-07)	18:22	19:54	20:26			20:57	38	20:33 (TRIV-47)	21:15	12	20:32 (TRIV-47)
24	07:58			07:22	07:37	06:48			06:14		06:56 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:45			18:24	19:55	20:27			20:58	34	20:34 (TRIV-47)	21:16	13	20:33 (TRIV-47)
25	07:57			07:21	07:35	06:46			06:13		20:05 (TRIV-47)	06:08		20:20 (TRIV-47)
	17:47			18:25	19:56	20:28			20:58	29	20:34 (TRIV-47)	21:16	13	20:33 (TRIV-47)
26	07:56			07:19	07:34	06:45			06:13		20:06 (TRIV-47)	06:08		20:20 (TRIV-47)
	17:48			18:26	19:57	20:29			20:59	29	20:35 (TRIV-47)	21:16	13	20:33 (TRIV-47)
27	07:55			07:18	07:32	06:43		07:03 (TRIV-17)	06:12		20:06 (TRIV-47)	06:08		20:20 (TRIV-47)
	17:49			18:27	19:58	20:30	2	07:05 (TRIV-17)	21:00	29	20:35 (TRIV-47)	21:16	14	20:34 (TRIV-47)
28	07:55			07:16	07:30	06:42		07:01 (TRIV-17)	06:11		20:07 (TRIV-47)	06:09		20:20 (TRIV-47)
	17:50			18:28	19:59	20:31	6	07:07 (TRIV-17)	21:01	29	20:36 (TRIV-47)	21:16	14	20:34 (TRIV-47)
29	07:54				07:29	06:41		07:00 (TRIV-17)	06:11		20:07 (TRIV-47)	06:09		20:20 (TRIV-47)
	17:51				20:00	20:32	9	07:09 (TRIV-17)	21:02	28	20:35 (TRIV-47)	21:16	16	20:36 (TRIV-47)
30	07:53				07:27	06:39		06:59 (TRIV-17)	06:10		20:08 (TRIV-47)	06:09		20:19 (TRIV-47)
	17:53				20:00	20:33	12	07:11 (TRIV-17)	21:03	27	20:35 (TRIV-47)	21:16	17	20:36 (TRIV-47)
31	07:52				07:25				06:10		20:08 (TRIV-47)			
	17:54				20:01				21:03	27	20:35 (TRIV-47)			
Potential sun hours	297			297	370	399			448			452		
Total, worst case		662					29			1054			499	
Sun reduction		0.50					0.63			0.69			0.74	
Oper. time red.		1.00					1.00			1.00			1.00	
Wind dir. red.		0.70					0.70			0.67			0.64	
Total reduction		0.35					0.44			0.46			0.47	
Total, real		232					13			488			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:
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217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 51 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1082)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November			December		
1	06:10		20:19 (TRIV-47)	06:34		06:56 (TRIV-17)	07:05	07:35	07:09			07:44		16:06 (TRIV-07)
	21:16	17	20:36 (TRIV-47)	20:57	43	20:33 (TRIV-47)	20:15	19:22	17:36			17:11	32	16:38 (TRIV-07)
2	06:10		20:19 (TRIV-47)	06:35		06:57 (TRIV-17)	07:06	07:36	07:11			07:45		16:06 (TRIV-07)
	21:16	18	20:37 (TRIV-47)	20:56	40	20:32 (TRIV-47)	20:13	19:21	17:34			17:11	33	16:39 (TRIV-07)
3	06:11		20:18 (TRIV-47)	06:36		06:58 (TRIV-17)	07:07	07:37	07:12			07:46		16:06 (TRIV-07)
	21:16	19	20:37 (TRIV-47)	20:55	38	20:31 (TRIV-47)	20:11	19:19	17:33			17:11	34	16:40 (TRIV-07)
4	06:11		20:19 (TRIV-47)	06:37		06:59 (TRIV-17)	07:08	07:38	07:13			07:47		16:06 (TRIV-07)
	21:15	19	20:38 (TRIV-47)	20:54	34	20:30 (TRIV-47)	20:10	19:17	17:32			17:11	34	16:40 (TRIV-07)
5	06:12		20:19 (TRIV-47)	06:38		07:00 (TRIV-17)	07:09	07:39	07:14			07:48		16:06 (TRIV-07)
	21:15	20	20:39 (TRIV-47)	20:53	30	20:29 (TRIV-47)	20:08	19:16	17:31			17:11	35	16:41 (TRIV-07)
6	06:13		20:18 (TRIV-47)	06:39		07:01 (TRIV-17)	07:10	07:40	07:15			07:49		16:07 (TRIV-07)
	21:15	21	20:39 (TRIV-47)	20:52	25	20:28 (TRIV-47)	20:06	19:14	17:30			17:10	34	16:41 (TRIV-07)
7	06:13		20:18 (TRIV-47)	06:40		07:02 (TRIV-17)	07:11	07:41	07:17			07:50		16:07 (TRIV-07)
	21:15	22	20:40 (TRIV-47)	20:51	22	07:24 (TRIV-17)	20:05	19:12	17:29			17:10	35	16:42 (TRIV-07)
8	06:14		20:17 (TRIV-47)	06:41		07:03 (TRIV-17)	07:12	07:42	07:18			07:51		16:07 (TRIV-07)
	21:14	23	20:40 (TRIV-47)	20:49	21	07:24 (TRIV-17)	20:03	19:11	17:28			17:10	35	16:42 (TRIV-07)
9	06:15		20:17 (TRIV-47)	06:42		07:03 (TRIV-17)	07:13	07:43	07:19			07:52		16:08 (TRIV-07)
	21:14	24	20:41 (TRIV-47)	20:48	19	07:22 (TRIV-17)	20:01	19:09	17:27			17:10	35	16:43 (TRIV-07)
10	06:15		20:17 (TRIV-47)	06:43		07:04 (TRIV-17)	07:14	07:45	07:20			07:53		16:08 (TRIV-07)
	21:14	25	20:42 (TRIV-47)	20:47	17	07:21 (TRIV-17)	20:00	19:08	17:26			17:10	36	16:44 (TRIV-07)
11	06:16		20:16 (TRIV-47)	06:44		07:05 (TRIV-17)	07:15	07:46	07:21			07:54		16:08 (TRIV-07)
	21:13	26	20:42 (TRIV-47)	20:46	16	07:21 (TRIV-17)	19:56	19:06	17:25			17:10	35	16:43 (TRIV-07)
12	06:17		20:16 (TRIV-47)	06:45		07:06 (TRIV-17)	07:16	07:47	07:23			07:55		16:08 (TRIV-07)
	21:13	27	20:43 (TRIV-47)	20:44	14	07:20 (TRIV-17)	19:55	19:04	17:24			17:11	36	16:44 (TRIV-07)
13	06:17		20:17 (TRIV-47)	06:46		07:07 (TRIV-17)	07:17	07:48	07:24			07:55		16:09 (TRIV-07)
	21:12	26	20:43 (TRIV-47)	20:43	11	07:18 (TRIV-17)	19:53	19:03	17:23			17:11	36	16:45 (TRIV-07)
14	06:18		20:17 (TRIV-47)	06:47		07:08 (TRIV-17)	07:18	07:49	07:25			07:56		16:10 (TRIV-07)
	21:12	27	20:44 (TRIV-47)	20:42	9	07:17 (TRIV-17)	19:51	19:01	17:22			17:11	35	16:45 (TRIV-07)
15	06:19		20:16 (TRIV-47)	06:48		07:09 (TRIV-17)	07:19	07:50	07:26			07:57		16:09 (TRIV-07)
	21:11	28	20:44 (TRIV-47)	20:40	6	07:15 (TRIV-17)	19:50	19:00	17:21			17:11	36	16:45 (TRIV-07)
16	06:20		20:16 (TRIV-47)	06:49		07:10 (TRIV-17)	07:20	07:51	07:27			07:58		16:10 (TRIV-07)
	21:11	28	20:44 (TRIV-47)	20:39	1	07:11 (TRIV-17)	19:48	18:58	17:20			17:11	35	16:45 (TRIV-07)
17	06:21		20:16 (TRIV-47)	06:50			07:21	07:52	07:29			07:58		16:11 (TRIV-07)
	21:10	29	20:45 (TRIV-47)	20:38			19:46	18:57	17:19			17:12	35	16:46 (TRIV-07)
18	06:21		20:16 (TRIV-47)	06:51			07:22	07:53	07:30			07:59		16:11 (TRIV-07)
	21:10	29	20:45 (TRIV-47)	20:36			19:44	18:55	17:18			17:12	35	16:46 (TRIV-07)
19	06:22		20:15 (TRIV-47)	06:52			07:23	07:54	07:31		16:15 (TRIV-07)	08:00		16:12 (TRIV-07)
	21:09	28	20:43 (TRIV-47)	20:35			19:43	18:54	17:18	8	16:23 (TRIV-07)	17:12	35	16:47 (TRIV-07)
20	06:23		07:04 (TRIV-17)	06:53			07:24	07:56	07:32		16:12 (TRIV-07)	08:00		16:13 (TRIV-07)
	21:08	37	20:43 (TRIV-47)	20:33			19:41	18:52	17:17	14	16:26 (TRIV-07)	17:13	34	16:47 (TRIV-07)
21	06:24		07:02 (TRIV-17)	06:54			07:25	07:57	07:33		16:10 (TRIV-07)	08:01		16:12 (TRIV-07)
	21:07	41	20:42 (TRIV-47)	20:32			19:39	18:51	17:16	18	16:28 (TRIV-07)	17:13	35	16:47 (TRIV-07)
22	06:25		07:01 (TRIV-17)	06:55			07:26	07:58	07:34		16:09 (TRIV-07)	08:01		16:12 (TRIV-07)
	21:07	43	20:42 (TRIV-47)	20:30			19:38	18:49	17:16	20	16:29 (TRIV-07)	17:14	35	16:47 (TRIV-07)
23	06:26		07:00 (TRIV-17)	06:56			07:27	07:59	07:36		16:09 (TRIV-07)	08:02		16:13 (TRIV-07)
	21:06	44	20:41 (TRIV-47)	20:29			19:36	18:48	17:15	22	16:31 (TRIV-07)	17:14	35	16:48 (TRIV-07)
24	06:27		06:59 (TRIV-17)	06:57			07:28	08:00	07:37		16:08 (TRIV-07)	08:02		16:14 (TRIV-07)
	21:05	45	20:40 (TRIV-47)	20:27			19:34	18:46	17:14	24	16:32 (TRIV-07)	17:15	34	16:48 (TRIV-07)
25	06:27		06:59 (TRIV-17)	06:58			07:29	08:01	07:38		16:07 (TRIV-07)	08:03		16:15 (TRIV-07)
	21:04	46	20:40 (TRIV-47)	20:26			19:33	18:45	17:14	26	16:33 (TRIV-07)	17:15	35	16:50 (TRIV-07)
26	06:28		06:57 (TRIV-17)	06:59			07:30	08:02	07:39		16:06 (TRIV-07)	08:03		16:15 (TRIV-07)
	21:03	47	20:38 (TRIV-47)	20:24			19:31	18:44	17:13	28	16:34 (TRIV-07)	17:16	35	16:50 (TRIV-07)
27	06:29		06:56 (TRIV-17)	07:00			07:31	08:04	07:40		16:06 (TRIV-07)	08:03		16:15 (TRIV-07)
	21:02	47	20:37 (TRIV-47)	20:23			19:29	18:42	17:13	29	16:35 (TRIV-07)	17:17	35	16:50 (TRIV-07)
28	06:30		06:56 (TRIV-17)	07:01			07:32	08:05	07:41		16:05 (TRIV-07)	08:04		16:16 (TRIV-07)
	21:02	47	20:37 (TRIV-47)	20:21			19:27	18:41	17:13	31	16:36 (TRIV-07)	17:17	36	16:52 (TRIV-07)
29	06:31		06:56 (TRIV-17)	07:02			07:33	08:06	07:42		16:06 (TRIV-07)	08:04		16:17 (TRIV-07)
	21:01	46	20:36 (TRIV-47)	20:19			19:26	18:39	17:12	31	16:37 (TRIV-07)	17:18	35	16:52 (TRIV-07)
30	06:32		06:55 (TRIV-17)	07:03			07:34	08:07	07:43		16:06 (TRIV-07)	08:04		16:17 (TRIV-07)
	21:00	46	20:35 (TRIV-47)	20:18			19:24	18:38	17:12	32	16:38 (TRIV-07)	17:19	36	16:53 (TRIV-07)
31	06:33		06:55 (TRIV-17)	07:04				08:08				08:04		16:17 (TRIV-07)
	20:59	45	20:34 (TRIV-47)	20:16				18:37				17:20	36	16:53 (TRIV-07)
Potential sun hours	459			428			375	345	297			287		
Total, worst case		990			346					283			1082	
Sun reduction		0.76			0.75					0.40			0.36	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.65			0.69					0.70			0.70	
Total reduction		0.50			0.52					0.28			0.25	
Total, real		494			180					79			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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 52 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1083)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February	March	April			May			June		
1	08:05		16:21 (TRIV-07)	07:51	07:15	07:24			06:38		06:58 (TRIV-17)	06:09		20:11 (TRIV-47)
	17:21	33	16:54 (TRIV-07)	17:55	18:29	20:02			20:34	7	07:05 (TRIV-17)	21:04	29	20:40 (TRIV-47)
2	08:05		16:21 (TRIV-07)	07:50	07:13	07:22			06:37		06:56 (TRIV-17)	06:09		20:10 (TRIV-47)
	17:22	34	16:55 (TRIV-07)	17:56	18:31	20:04			20:35	10	07:06 (TRIV-17)	21:05	29	20:39 (TRIV-47)
3	08:05		16:21 (TRIV-07)	07:49	07:12	07:20			06:35		06:55 (TRIV-17)	06:08		20:11 (TRIV-47)
	17:22	35	16:56 (TRIV-07)	17:58	18:32	20:05			20:37	12	07:07 (TRIV-17)	21:06	28	20:39 (TRIV-47)
4	08:05		16:22 (TRIV-07)	07:48	07:10	07:19			06:34		06:54 (TRIV-17)	06:08		20:12 (TRIV-47)
	17:23	35	16:57 (TRIV-07)	17:59	18:33	20:06			20:38	15	07:09 (TRIV-17)	21:06	28	20:40 (TRIV-47)
5	08:05		16:22 (TRIV-07)	07:47	07:08	07:17			06:33		06:53 (TRIV-17)	06:08		20:12 (TRIV-47)
	17:24	36	16:58 (TRIV-07)	18:00	18:34	20:07			20:39	16	07:09 (TRIV-17)	21:07	27	20:39 (TRIV-47)
6	08:05		16:23 (TRIV-07)	07:46	07:07	07:16			06:32		06:52 (TRIV-17)	06:07		20:12 (TRIV-47)
	17:25	36	16:59 (TRIV-07)	18:01	18:35	20:08			20:40	18	07:10 (TRIV-17)	21:08	27	20:39 (TRIV-47)
7	08:05		16:24 (TRIV-07)	07:45	07:05	07:14			06:30		06:50 (TRIV-17)	06:07		20:13 (TRIV-47)
	17:26	36	17:00 (TRIV-07)	18:03	18:36	20:09			20:41	20	07:10 (TRIV-17)	21:09	26	20:39 (TRIV-47)
8	08:05		16:24 (TRIV-07)	07:43	08:04	07:12			06:29		06:49 (TRIV-17)	06:07		20:14 (TRIV-47)
	17:27	36	17:00 (TRIV-07)	18:04	19:37	20:10			20:42	21	07:10 (TRIV-17)	21:09	25	20:39 (TRIV-47)
9	08:04		16:24 (TRIV-07)	07:42	08:02	07:11			06:28		06:48 (TRIV-17)	06:07		20:14 (TRIV-47)
	17:28	36	17:00 (TRIV-07)	18:05	19:39	20:11			20:43	22	07:10 (TRIV-17)	21:10	25	20:39 (TRIV-47)
10	08:04		16:25 (TRIV-07)	07:41	08:00	07:09			06:27		06:47 (TRIV-17)	06:06		20:14 (TRIV-47)
	17:29	35	17:00 (TRIV-07)	18:06	19:40	20:12			20:44	27	20:21 (TRIV-47)	21:10	25	20:39 (TRIV-47)
11	08:04		16:26 (TRIV-07)	07:40	07:59	07:07			06:26		06:46 (TRIV-17)	06:06		20:14 (TRIV-47)
	17:30	35	17:01 (TRIV-07)	18:08	19:41	20:13			20:45	31	20:22 (TRIV-47)	21:11	25	20:39 (TRIV-47)
12	08:04		16:26 (TRIV-07)	07:39	07:57	07:06			06:25		06:45 (TRIV-17)	06:06		20:15 (TRIV-47)
	17:31	34	17:00 (TRIV-07)	18:09	19:42	20:14			20:46	35	20:23 (TRIV-47)	21:11	24	20:39 (TRIV-47)
13	08:03		16:27 (TRIV-07)	07:37	07:55	07:04			06:24		06:44 (TRIV-17)	06:06		20:15 (TRIV-47)
	17:32	34	17:01 (TRIV-07)	18:10	19:43	20:15			20:47	38	20:24 (TRIV-47)	21:12	24	20:39 (TRIV-47)
14	08:03		16:28 (TRIV-07)	07:36	07:54	07:03			06:23		06:43 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:34	34	17:02 (TRIV-07)	18:11	19:44	20:16			20:48	40	20:25 (TRIV-47)	21:12	23	20:39 (TRIV-47)
15	08:03		16:28 (TRIV-07)	07:35	07:52	07:01			06:22		06:42 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:35	33	17:01 (TRIV-07)	18:13	19:45	20:17			20:49	42	20:25 (TRIV-47)	21:13	23	20:39 (TRIV-47)
16	08:02		16:29 (TRIV-07)	07:33	07:51	07:00			06:21		06:41 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:36	33	17:02 (TRIV-07)	18:14	19:46	20:18			20:50	45	20:26 (TRIV-47)	21:13	23	20:39 (TRIV-47)
17	08:02		16:29 (TRIV-07)	07:32	07:49	06:58			06:20		06:41 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:37	32	17:01 (TRIV-07)	18:15	19:47	20:20			20:51	45	20:27 (TRIV-47)	21:14	22	20:39 (TRIV-47)
18	08:01		16:31 (TRIV-07)	07:31	07:47	06:56			06:19		06:42 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:38	30	17:01 (TRIV-07)	18:16	19:48	20:21			20:52	47	20:29 (TRIV-47)	21:14	22	20:39 (TRIV-47)
19	08:01		16:31 (TRIV-07)	07:29	07:46	06:55			06:18		06:43 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:39	30	17:01 (TRIV-07)	18:18	19:50	20:22			20:53	47	20:30 (TRIV-47)	21:14	22	20:40 (TRIV-47)
20	08:00		16:32 (TRIV-07)	07:28	07:44	06:53			06:17		06:43 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:40	28	17:00 (TRIV-07)	18:19	19:51	20:23			20:54	46	20:30 (TRIV-47)	21:15	22	20:40 (TRIV-47)
21	08:00		16:34 (TRIV-07)	07:27	07:42	06:52			06:16		06:44 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:42	26	17:00 (TRIV-07)	18:20	19:52	20:24			20:55	46	20:31 (TRIV-47)	21:15	22	20:40 (TRIV-47)
22	07:59		16:35 (TRIV-07)	07:25	07:41	06:50			06:16		06:45 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:43	24	16:59 (TRIV-07)	18:21	19:53	20:25			20:56	46	20:32 (TRIV-47)	21:15	22	20:40 (TRIV-47)
23	07:58		16:36 (TRIV-07)	07:24	07:39	06:49			06:15		06:46 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:44	22	16:58 (TRIV-07)	18:22	19:54	20:26			20:57	45	20:33 (TRIV-47)	21:15	22	20:40 (TRIV-47)
24	07:58		16:37 (TRIV-07)	07:22	07:37	06:48			06:14		06:46 (TRIV-17)	06:07		20:19 (TRIV-47)
	17:45	20	16:57 (TRIV-07)	18:24	19:55	20:27			20:58	45	20:34 (TRIV-47)	21:16	22	20:41 (TRIV-47)
25	07:57		16:40 (TRIV-07)	07:21	07:35	06:46			06:13		06:47 (TRIV-17)	06:08		20:19 (TRIV-47)
	17:47	16	16:56 (TRIV-07)	18:25	19:56	20:28			20:58	43	20:34 (TRIV-47)	21:16	22	20:41 (TRIV-47)
26	07:56		16:43 (TRIV-07)	07:19	07:34	06:45			06:13		06:49 (TRIV-17)	06:08		20:19 (TRIV-47)
	17:48	10	16:53 (TRIV-07)	18:26	19:57	20:29			20:59	41	20:35 (TRIV-47)	21:16	22	20:41 (TRIV-47)
27	07:55			07:18	07:32	06:43			06:12		06:50 (TRIV-17)	06:08		20:19 (TRIV-47)
	17:49			18:27	19:58	20:30			21:00	39	20:36 (TRIV-47)	21:16	23	20:42 (TRIV-47)
28	07:55			07:16	07:30	06:42			06:11		06:52 (TRIV-17)	06:09		20:19 (TRIV-47)
	17:50			18:28	19:59	20:31			21:01	36	20:37 (TRIV-47)	21:16	23	20:42 (TRIV-47)
29	07:54				07:29	06:41			06:11		20:09 (TRIV-47)	06:09		20:19 (TRIV-47)
	17:51				20:00	20:32			21:02	28	20:37 (TRIV-47)	21:16	24	20:43 (TRIV-47)
30	07:53				07:27	06:39		06:59 (TRIV-17)	06:10		20:10 (TRIV-47)	06:09		20:19 (TRIV-47)
	17:53				20:00	20:33	4	07:03 (TRIV-17)	21:03	29	20:39 (TRIV-47)	21:16	24	20:43 (TRIV-47)
31	07:52				07:25				06:10		20:10 (TRIV-47)			
	17:54				20:01				21:03	29	20:39 (TRIV-47)			
Potential sun hours	297			297	370	399			448			452		
Total, worst case		793					4			1011			725	
Sun reduction		0.50					0.63			0.69			0.74	
Oper. time red.		1.00					1.00			1.00			1.00	
Wind dir. red.		0.70					0.70			0.67			0.63	
Total reduction		0.35					0.44			0.47			0.47	
Total, real		278					2			471			342	

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)

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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 52 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1083)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November			December		
1	06:10		20:19 (TRIV-47)	06:34		06:56 (TRIV-17)	07:05	07:35	07:09			07:44		16:08 (TRIV-07)
	21:16	24	20:43 (TRIV-47)	20:57	33	20:33 (TRIV-47)	20:15	19:22	17:36			17:11	35	16:43 (TRIV-07)
2	06:10		20:19 (TRIV-47)	06:35		06:57 (TRIV-17)	07:06	07:36	07:11			07:45		16:08 (TRIV-07)
	21:16	25	20:44 (TRIV-47)	20:56	29	20:32 (TRIV-47)	20:13	19:21	17:34			17:11	35	16:43 (TRIV-07)
3	06:11		20:18 (TRIV-47)	06:36		06:58 (TRIV-17)	07:07	07:37	07:12			07:46		16:08 (TRIV-07)
	21:16	25	20:43 (TRIV-47)	20:55	24	20:31 (TRIV-47)	20:11	19:19	17:33			17:11	36	16:44 (TRIV-07)
4	06:11		20:19 (TRIV-47)	06:37		06:59 (TRIV-17)	07:08	07:38	07:13			07:47		16:08 (TRIV-07)
	21:15	25	20:44 (TRIV-47)	20:54	22	07:21 (TRIV-17)	20:10	19:17	17:32			17:11	36	16:44 (TRIV-07)
5	06:12		20:19 (TRIV-47)	06:38		07:00 (TRIV-17)	07:09	07:39	07:14			07:48		16:09 (TRIV-07)
	21:15	26	20:45 (TRIV-47)	20:53	21	07:21 (TRIV-17)	20:08	19:16	17:31			17:11	36	16:45 (TRIV-07)
6	06:13		20:19 (TRIV-47)	06:39		07:01 (TRIV-17)	07:10	07:40	07:15			07:49		16:09 (TRIV-07)
	21:15	26	20:45 (TRIV-47)	20:52	19	07:20 (TRIV-17)	20:06	19:14	17:30			17:10	36	16:45 (TRIV-07)
7	06:13		20:19 (TRIV-47)	06:40		07:02 (TRIV-17)	07:11	07:41	07:17			07:50		16:10 (TRIV-07)
	21:15	27	20:46 (TRIV-47)	20:51	18	07:20 (TRIV-17)	20:05	19:12	17:29			17:10	35	16:45 (TRIV-07)
8	06:14		20:18 (TRIV-47)	06:41		07:03 (TRIV-17)	07:12	07:42	07:18			07:51		16:10 (TRIV-07)
	21:14	28	20:46 (TRIV-47)	20:49	16	07:19 (TRIV-17)	20:03	19:11	17:28			17:10	35	16:45 (TRIV-07)
9	06:15		20:18 (TRIV-47)	06:42		07:03 (TRIV-17)	07:13	07:43	07:19			07:52		16:10 (TRIV-07)
	21:14	28	20:46 (TRIV-47)	20:48	14	07:17 (TRIV-17)	20:01	19:09	17:27			17:10	35	16:45 (TRIV-07)
10	06:15		20:19 (TRIV-47)	06:43		07:04 (TRIV-17)	07:14	07:45	07:20			07:53		16:11 (TRIV-07)
	21:14	28	20:47 (TRIV-47)	20:47	12	07:16 (TRIV-17)	20:00	19:08	17:26			17:10	34	16:45 (TRIV-07)
11	06:16		20:18 (TRIV-47)	06:44		07:05 (TRIV-17)	07:15	07:46	07:21			07:54		16:11 (TRIV-07)
	21:13	29	20:47 (TRIV-47)	20:46	9	07:14 (TRIV-17)	19:56	19:06	17:25			17:10	34	16:45 (TRIV-07)
12	06:17		20:18 (TRIV-47)	06:45		07:06 (TRIV-17)	07:16	07:47	07:23			07:55		16:11 (TRIV-07)
	21:13	29	20:47 (TRIV-47)	20:44	7	07:13 (TRIV-17)	19:55	19:04	17:24			17:11	34	16:45 (TRIV-07)
13	06:17		20:18 (TRIV-47)	06:46		07:07 (TRIV-17)	07:17	07:48	07:24			07:55		16:12 (TRIV-07)
	21:12	29	20:47 (TRIV-47)	20:43	3	07:10 (TRIV-17)	19:53	19:03	17:23			17:11	33	16:45 (TRIV-07)
14	06:18		20:19 (TRIV-47)	06:47			07:18	07:49	07:25			07:56		16:13 (TRIV-07)
	21:12	28	20:47 (TRIV-47)	20:42			19:51	19:01	17:22			17:11	32	16:45 (TRIV-07)
15	06:19		07:02 (TRIV-17)	06:48			07:19	07:50	07:26			07:57		16:12 (TRIV-07)
	21:11	34	20:46 (TRIV-47)	20:40			19:50	19:00	17:21			17:11	33	16:45 (TRIV-07)
16	06:20		07:00 (TRIV-17)	06:49			07:20	07:51	07:27		16:16 (TRIV-07)	07:58		16:13 (TRIV-07)
	21:11	38	20:45 (TRIV-47)	20:39			19:48	18:58	17:20	10	16:26 (TRIV-07)	17:11	32	16:45 (TRIV-07)
17	06:21		06:59 (TRIV-17)	06:50			07:21	07:52	07:29		16:13 (TRIV-07)	07:58		16:14 (TRIV-07)
	21:10	41	20:45 (TRIV-47)	20:38			19:46	18:57	17:19	16	16:29 (TRIV-07)	17:12	32	16:46 (TRIV-07)
18	06:21		06:58 (TRIV-17)	06:51			07:22	07:53	07:30		16:11 (TRIV-07)	07:59		16:14 (TRIV-07)
	21:10	42	20:45 (TRIV-47)	20:36			19:44	18:55	17:18	20	16:31 (TRIV-07)	17:12	32	16:46 (TRIV-07)
19	06:22		06:56 (TRIV-17)	06:52			07:23	07:54	07:31		16:11 (TRIV-07)	08:00		16:15 (TRIV-07)
	21:09	44	20:43 (TRIV-47)	20:35			19:43	18:54	17:18	22	16:33 (TRIV-07)	17:12	32	16:47 (TRIV-07)
20	06:23		06:55 (TRIV-17)	06:53			07:24	07:56	07:32		16:10 (TRIV-07)	08:00		16:16 (TRIV-07)
	21:08	46	20:43 (TRIV-47)	20:33			19:41	18:52	17:17	24	16:34 (TRIV-07)	17:13	31	16:47 (TRIV-07)
21	06:24		06:55 (TRIV-17)	06:54			07:25	07:57	07:33		16:09 (TRIV-07)	08:01		16:16 (TRIV-07)
	21:07	45	20:42 (TRIV-47)	20:32			19:39	18:51	17:16	26	16:35 (TRIV-07)	17:13	31	16:47 (TRIV-07)
22	06:25		06:54 (TRIV-17)	06:55			07:26	07:58	07:34		16:08 (TRIV-07)	08:01		16:16 (TRIV-07)
	21:07	47	20:42 (TRIV-47)	20:30			19:38	18:49	17:16	28	16:36 (TRIV-07)	17:14	31	16:47 (TRIV-07)
23	06:26		06:54 (TRIV-17)	06:56			07:27	07:59	07:36		16:08 (TRIV-07)	08:02		16:17 (TRIV-07)
	21:06	47	20:41 (TRIV-47)	20:29			19:36	18:48	17:15	30	16:38 (TRIV-07)	17:14	31	16:48 (TRIV-07)
24	06:27		06:53 (TRIV-17)	06:57			07:28	08:00	07:37		16:08 (TRIV-07)	08:02		16:17 (TRIV-07)
	21:05	46	20:40 (TRIV-47)	20:27			19:34	18:46	17:14	30	16:38 (TRIV-07)	17:15	31	16:48 (TRIV-07)
25	06:27		06:53 (TRIV-17)	06:58			07:29	08:01	07:38		16:07 (TRIV-07)	08:03		16:18 (TRIV-07)
	21:04	47	20:40 (TRIV-47)	20:26			19:33	18:45	17:14	32	16:39 (TRIV-07)	17:15	32	16:50 (TRIV-07)
26	06:28		06:52 (TRIV-17)	06:59			07:30	08:02	07:39		16:07 (TRIV-07)	08:03		16:18 (TRIV-07)
	21:03	46	20:38 (TRIV-47)	20:24			19:31	18:44	17:13	33	16:40 (TRIV-07)	17:16	32	16:50 (TRIV-07)
27	06:29		06:52 (TRIV-17)	07:00			07:31	08:04	07:40		16:07 (TRIV-07)	08:03		16:18 (TRIV-07)
	21:02	45	20:37 (TRIV-47)	20:23			19:29	18:42	17:13	33	16:40 (TRIV-07)	17:17	32	16:50 (TRIV-07)
28	06:30		06:52 (TRIV-17)	07:01			07:32	08:05	07:41		16:07 (TRIV-07)	08:04		16:19 (TRIV-07)
	21:02	44	20:37 (TRIV-47)	20:21			19:27	18:41	17:13	34	16:41 (TRIV-07)	17:17	33	16:52 (TRIV-07)
29	06:31		06:53 (TRIV-17)	07:02			07:33	08:06	07:42		16:08 (TRIV-07)	08:04		16:20 (TRIV-07)
	21:01	42	20:36 (TRIV-47)	20:19			19:26	18:39	17:12	34	16:42 (TRIV-07)	17:18	32	16:52 (TRIV-07)
30	06:32		06:54 (TRIV-17)	07:03			07:34	08:07	07:43		16:08 (TRIV-07)	08:04		16:20 (TRIV-07)
	21:00	39	20:35 (TRIV-47)	20:18			19:24	18:38	17:12	34	16:42 (TRIV-07)	17:19	33	16:53 (TRIV-07)
31	06:33		06:55 (TRIV-17)	07:04				08:08				08:04		16:20 (TRIV-07)
	20:59	36	20:34 (TRIV-47)	20:16				18:37				17:20	33	16:53 (TRIV-07)
Potential sun hours	459			428			375	345	297			287		
Total, worst case		1106			227					406			1029	
Sun reduction		0.76			0.75					0.40			0.36	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.66			0.69					0.70			0.70	
Total reduction		0.50			0.52					0.28			0.25	
Total, real		555			119					114			259	

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 53 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1084)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February	March	April	May			June		
1	08:05		16:22 (TRIV-07)	07:51	07:15	07:24	06:38		06:58 (TRIV-17)	06:09		20:12 (TRIV-47)
	17:21	32	16:54 (TRIV-07)	17:55	18:29	20:02	20:34	3	07:01 (TRIV-17)	21:04	28	20:40 (TRIV-47)
2	08:05		16:23 (TRIV-07)	07:50	07:13	07:22	06:37		06:56 (TRIV-17)	06:09		20:12 (TRIV-47)
	17:22	32	16:55 (TRIV-07)	17:56	18:31	20:04	20:35	6	07:02 (TRIV-17)	21:05	28	20:40 (TRIV-47)
3	08:05		16:23 (TRIV-07)	07:49	07:12	07:20	06:35		06:55 (TRIV-17)	06:08		20:12 (TRIV-47)
	17:22	33	16:56 (TRIV-07)	17:58	18:32	20:05	20:37	9	07:04 (TRIV-17)	21:06	29	20:41 (TRIV-47)
4	08:05		16:23 (TRIV-07)	07:48	07:10	07:19	06:34		06:54 (TRIV-17)	06:08		20:13 (TRIV-47)
	17:23	34	16:57 (TRIV-07)	17:59	18:33	20:06	20:38	12	07:06 (TRIV-17)	21:06	29	20:42 (TRIV-47)
5	08:05		16:24 (TRIV-07)	07:47	07:08	07:17	06:33		06:53 (TRIV-17)	06:08		20:12 (TRIV-47)
	17:24	34	16:58 (TRIV-07)	18:00	18:34	20:07	20:39	14	07:07 (TRIV-17)	21:07	29	20:41 (TRIV-47)
6	08:05		16:24 (TRIV-07)	07:46	07:07	07:16	06:32		06:52 (TRIV-17)	06:07		20:13 (TRIV-47)
	17:25	35	16:59 (TRIV-07)	18:01	18:35	20:08	20:40	16	07:08 (TRIV-17)	21:08	28	20:41 (TRIV-47)
7	08:05		16:25 (TRIV-07)	07:45	07:05	07:14	06:30		06:50 (TRIV-17)	06:07		20:14 (TRIV-47)
	17:26	35	17:00 (TRIV-07)	18:03	18:36	20:09	20:41	17	07:07 (TRIV-17)	21:09	28	20:42 (TRIV-47)
8	08:05		16:26 (TRIV-07)	07:43	08:04	07:12	06:29		06:49 (TRIV-17)	06:07		20:14 (TRIV-47)
	17:27	36	17:02 (TRIV-07)	18:04	19:37	20:10	20:42	19	07:08 (TRIV-17)	21:09	28	20:42 (TRIV-47)
9	08:04		16:25 (TRIV-07)	07:42	08:02	07:11	06:28		06:48 (TRIV-17)	06:07		20:15 (TRIV-47)
	17:28	37	17:02 (TRIV-07)	18:05	19:39	20:11	20:43	20	07:08 (TRIV-17)	21:10	27	20:42 (TRIV-47)
10	08:04		16:26 (TRIV-07)	07:41	08:00	07:09	06:27		06:47 (TRIV-17)	06:06		20:14 (TRIV-47)
	17:29	36	17:02 (TRIV-07)	18:06	19:40	20:12	20:44	22	07:09 (TRIV-17)	21:10	27	20:41 (TRIV-47)
11	08:04		16:27 (TRIV-07)	07:40	07:59	07:07	06:26		06:46 (TRIV-17)	06:06		20:15 (TRIV-47)
	17:30	36	17:03 (TRIV-07)	18:08	19:41	20:13	20:45	23	07:09 (TRIV-17)	21:11	26	20:41 (TRIV-47)
12	08:04		16:27 (TRIV-07)	07:39	07:57	07:06	06:25		06:45 (TRIV-17)	06:06		20:15 (TRIV-47)
	17:31	35	17:02 (TRIV-07)	18:09	19:42	20:14	20:46	28	20:23 (TRIV-47)	21:11	27	20:42 (TRIV-47)
13	08:03		16:28 (TRIV-07)	07:37	07:55	07:04	06:24		06:44 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:32	35	17:03 (TRIV-07)	18:10	19:43	20:15	20:47	32	20:24 (TRIV-47)	21:12	26	20:42 (TRIV-47)
14	08:03		16:29 (TRIV-07)	07:36	07:54	07:03	06:23		06:43 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:34	35	17:04 (TRIV-07)	18:11	19:44	20:16	20:48	36	20:25 (TRIV-47)	21:12	26	20:42 (TRIV-47)
15	08:03		16:29 (TRIV-07)	07:35	07:52	07:01	06:22		06:42 (TRIV-17)	06:06		20:16 (TRIV-47)
	17:35	34	17:03 (TRIV-07)	18:13	19:45	20:17	20:49	38	20:25 (TRIV-47)	21:13	26	20:42 (TRIV-47)
16	08:02		16:30 (TRIV-07)	07:33	07:51	07:00	06:21		06:41 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:36	34	17:04 (TRIV-07)	18:14	19:46	20:18	20:50	41	20:26 (TRIV-47)	21:13	25	20:42 (TRIV-47)
17	08:02		16:30 (TRIV-07)	07:32	07:49	06:58	06:20		06:40 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:37	33	17:03 (TRIV-07)	18:15	19:47	20:20	20:51	43	20:27 (TRIV-47)	21:14	25	20:42 (TRIV-47)
18	08:01		16:31 (TRIV-07)	07:31	07:47	06:56	06:19		06:40 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:38	33	17:04 (TRIV-07)	18:16	19:48	20:21	20:52	45	20:29 (TRIV-47)	21:14	25	20:42 (TRIV-47)
19	08:01		16:32 (TRIV-07)	07:29	07:46	06:55	06:18		06:40 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:39	31	17:03 (TRIV-07)	18:18	19:50	20:22	20:53	46	20:30 (TRIV-47)	21:14	25	20:43 (TRIV-47)
20	08:00		16:32 (TRIV-07)	07:28	07:44	06:53	06:17		06:41 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:40	31	17:03 (TRIV-07)	18:19	19:51	20:23	20:54	46	20:30 (TRIV-47)	21:15	25	20:43 (TRIV-47)
21	08:00		16:34 (TRIV-07)	07:27	07:42	06:52	06:16		06:41 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:42	29	17:03 (TRIV-07)	18:20	19:52	20:24	20:55	46	20:31 (TRIV-47)	21:15	25	20:43 (TRIV-47)
22	07:59		16:35 (TRIV-07)	07:25	07:41	06:50	06:16		06:42 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:43	27	17:02 (TRIV-07)	18:21	19:53	20:25	20:56	46	20:32 (TRIV-47)	21:15	25	20:43 (TRIV-47)
23	07:58		16:36 (TRIV-07)	07:24	07:39	06:49	06:15		06:43 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:44	25	17:01 (TRIV-07)	18:22	19:54	20:26	20:57	46	20:33 (TRIV-47)	21:15	25	20:43 (TRIV-47)
24	07:58		16:37 (TRIV-07)	07:22	07:37	06:48	06:14		06:43 (TRIV-17)	06:07		20:19 (TRIV-47)
	17:45	23	17:00 (TRIV-07)	18:24	19:55	20:27	20:58	47	20:34 (TRIV-47)	21:16	25	20:44 (TRIV-47)
25	07:57		16:39 (TRIV-07)	07:21	07:35	06:46	06:13		06:44 (TRIV-17)	06:08		20:19 (TRIV-47)
	17:47	21	17:00 (TRIV-07)	18:25	19:56	20:28	20:58	45	20:34 (TRIV-47)	21:16	25	20:44 (TRIV-47)
26	07:56		16:41 (TRIV-07)	07:19	07:34	06:45	06:13		06:45 (TRIV-17)	06:08		20:19 (TRIV-47)
	17:48	18	16:59 (TRIV-07)	18:26	19:57	20:29	20:59	44	20:35 (TRIV-47)	21:16	25	20:44 (TRIV-47)
27	07:55		16:43 (TRIV-07)	07:18	07:32	06:43	06:12		06:46 (TRIV-17)	06:08		20:20 (TRIV-47)
	17:49	14	16:57 (TRIV-07)	18:27	19:58	20:30	21:00	43	20:36 (TRIV-47)	21:16	25	20:45 (TRIV-47)
28	07:55		16:47 (TRIV-07)	07:16	07:30	06:42	06:11		06:47 (TRIV-17)	06:09		20:19 (TRIV-47)
	17:50	6	16:53 (TRIV-07)	18:28	19:59	20:31	21:01	42	20:37 (TRIV-47)	21:16	26	20:45 (TRIV-47)
29	07:54				07:29	06:41	06:11		06:48 (TRIV-17)	06:09		20:20 (TRIV-47)
	17:51				20:00	20:32	21:02	39	20:37 (TRIV-47)	21:16	26	20:46 (TRIV-47)
30	07:53				07:27	06:39	06:10		06:50 (TRIV-17)	06:09		20:19 (TRIV-47)
	17:53				20:00	20:33	21:03	38	20:39 (TRIV-47)	21:16	27	20:46 (TRIV-47)
31	07:52				07:25		06:10		06:52 (TRIV-17)			
	17:54				20:01		21:03	34	20:39 (TRIV-47)			
Potential sun hours	297			297	370	399	448			452		
Total, worst case		844						986			791	
Sun reduction		0.50						0.69			0.74	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.70						0.67			0.63	
Total reduction		0.35						0.47			0.47	
Total, real		296						461			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 53 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1084)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November			December		
1	06:10		20:19 (TRIV-47)	06:34		06:56 (TRIV-17)	07:05	07:35	07:09			07:44		16:09 (TRIV-07)
	21:16	26	20:45 (TRIV-47)	20:57	27	20:33 (TRIV-47)	20:15	19:22	17:36			17:11	36	16:45 (TRIV-07)
2	06:10		20:20 (TRIV-47)	06:35		06:57 (TRIV-17)	07:06	07:36	07:11			07:45		16:09 (TRIV-07)
	21:16	26	20:46 (TRIV-47)	20:56	22	07:19 (TRIV-17)	20:13	19:21	17:34			17:11	36	16:45 (TRIV-07)
3	06:11		20:19 (TRIV-47)	06:36		06:58 (TRIV-17)	07:07	07:37	07:12			07:46		16:09 (TRIV-07)
	21:16	27	20:46 (TRIV-47)	20:55	21	07:19 (TRIV-17)	20:11	19:19	17:33			17:11	37	16:46 (TRIV-07)
4	06:11		20:20 (TRIV-47)	06:37		06:59 (TRIV-17)	07:08	07:38	07:13			07:47		16:10 (TRIV-07)
	21:15	27	20:47 (TRIV-47)	20:54	20	07:19 (TRIV-17)	20:10	19:17	17:32			17:11	36	16:46 (TRIV-07)
5	06:12		20:20 (TRIV-47)	06:38		07:00 (TRIV-17)	07:09	07:39	07:14			07:48		16:10 (TRIV-07)
	21:15	28	20:48 (TRIV-47)	20:53	18	07:18 (TRIV-17)	20:08	19:16	17:31			17:11	35	16:45 (TRIV-07)
6	06:13		20:19 (TRIV-47)	06:39		07:01 (TRIV-17)	07:10	07:40	07:15			07:49		16:10 (TRIV-07)
	21:15	29	20:48 (TRIV-47)	20:52	17	07:18 (TRIV-17)	20:06	19:14	17:30			17:10	35	16:45 (TRIV-07)
7	06:13		20:20 (TRIV-47)	06:40		07:02 (TRIV-17)	07:11	07:41	07:17			07:50		16:11 (TRIV-07)
	21:15	28	20:48 (TRIV-47)	20:51	15	07:17 (TRIV-17)	20:05	19:12	17:29			17:10	34	16:45 (TRIV-07)
8	06:14		20:19 (TRIV-47)	06:41		07:03 (TRIV-17)	07:12	07:42	07:18			07:51		16:11 (TRIV-07)
	21:14	29	20:48 (TRIV-47)	20:49	13	07:16 (TRIV-17)	20:03	19:11	17:28			17:10	34	16:45 (TRIV-07)
9	06:15		20:19 (TRIV-47)	06:42		07:03 (TRIV-17)	07:13	07:43	07:19			07:52		16:12 (TRIV-07)
	21:14	30	20:49 (TRIV-47)	20:48	11	07:14 (TRIV-17)	20:01	19:09	17:27			17:10	33	16:45 (TRIV-07)
10	06:15		20:20 (TRIV-47)	06:43		07:04 (TRIV-17)	07:14	07:45	07:20			07:53		16:13 (TRIV-07)
	21:14	29	20:49 (TRIV-47)	20:47	8	07:12 (TRIV-17)	20:00	19:08	17:26			17:10	32	16:45 (TRIV-07)
11	06:16		20:19 (TRIV-47)	06:44		07:05 (TRIV-17)	07:15	07:46	07:21			07:54		16:12 (TRIV-07)
	21:13	29	20:48 (TRIV-47)	20:46	5	07:10 (TRIV-17)	19:56	19:06	17:25			17:10	33	16:45 (TRIV-07)
12	06:17		20:19 (TRIV-47)	06:45		07:06 (TRIV-17)	07:16	07:47	07:23			07:55		16:13 (TRIV-07)
	21:13	28	20:47 (TRIV-47)	20:44	1	07:07 (TRIV-17)	19:55	19:04	17:24			17:11	32	16:45 (TRIV-07)
13	06:17		07:00 (TRIV-17)	06:46			07:17	07:48	07:24			07:55		16:14 (TRIV-07)
	21:12	35	20:47 (TRIV-47)	20:43			19:53	19:03	17:23			17:11	31	16:45 (TRIV-07)
14	06:18		06:58 (TRIV-17)	06:47			07:18	07:49	07:25		16:19 (TRIV-07)	07:56		16:14 (TRIV-07)
	21:12	39	20:47 (TRIV-47)	20:42			19:51	19:01	17:22	6	16:25 (TRIV-07)	17:11	31	16:45 (TRIV-07)
15	06:19		06:56 (TRIV-17)	06:48			07:19	07:50	07:26		16:16 (TRIV-07)	07:57		16:14 (TRIV-07)
	21:11	42	20:46 (TRIV-47)	20:40			19:50	19:00	17:21	14	16:30 (TRIV-07)	17:11	31	16:45 (TRIV-07)
16	06:20		06:55 (TRIV-17)	06:49			07:20	07:51	07:27		16:14 (TRIV-07)	07:58		16:15 (TRIV-07)
	21:11	42	20:45 (TRIV-47)	20:39			19:48	18:58	17:20	18	16:32 (TRIV-07)	17:11	30	16:45 (TRIV-07)
17	06:21		06:55 (TRIV-17)	06:50			07:21	07:52	07:29		16:12 (TRIV-07)	07:58		16:16 (TRIV-07)
	21:10	43	20:45 (TRIV-47)	20:38			19:46	18:57	17:19	21	16:33 (TRIV-07)	17:12	30	16:46 (TRIV-07)
18	06:21		06:54 (TRIV-17)	06:51			07:22	07:53	07:30		16:11 (TRIV-07)	07:59		16:16 (TRIV-07)
	21:10	46	20:45 (TRIV-47)	20:36			19:44	18:55	17:18	23	16:34 (TRIV-07)	17:12	30	16:46 (TRIV-07)
19	06:22		06:53 (TRIV-17)	06:52			07:23	07:54	07:31		16:11 (TRIV-07)	08:00		16:17 (TRIV-07)
	21:09	45	20:43 (TRIV-47)	20:35			19:43	18:54	17:18	25	16:36 (TRIV-07)	17:12	30	16:47 (TRIV-07)
20	06:23		06:52 (TRIV-17)	06:53			07:24	07:56	07:32		16:10 (TRIV-07)	08:00		16:17 (TRIV-07)
	21:08	47	20:43 (TRIV-47)	20:33			19:41	18:52	17:17	27	16:37 (TRIV-07)	17:13	30	16:47 (TRIV-07)
21	06:24		06:52 (TRIV-17)	06:54			07:25	07:57	07:33		16:09 (TRIV-07)	08:01		16:17 (TRIV-07)
	21:07	45	20:42 (TRIV-47)	20:32			19:39	18:51	17:16	29	16:38 (TRIV-07)	17:13	30	16:47 (TRIV-07)
22	06:25		06:52 (TRIV-17)	06:55			07:26	07:58	07:34		16:08 (TRIV-07)	08:01		16:17 (TRIV-07)
	21:07	46	20:42 (TRIV-47)	20:30			19:38	18:49	17:16	31	16:39 (TRIV-07)	17:14	30	16:47 (TRIV-07)
23	06:26		06:51 (TRIV-17)	06:56			07:27	07:59	07:36		16:09 (TRIV-07)	08:02		16:18 (TRIV-07)
	21:06	46	20:41 (TRIV-47)	20:29			19:36	18:48	17:15	31	16:40 (TRIV-07)	17:14	30	16:48 (TRIV-07)
24	06:27		06:51 (TRIV-17)	06:57			07:28	08:00	07:37		16:08 (TRIV-07)	08:02		16:19 (TRIV-07)
	21:05	46	20:40 (TRIV-47)	20:27			19:34	18:46	17:14	33	16:41 (TRIV-07)	17:15	29	16:48 (TRIV-07)
25	06:27		06:51 (TRIV-17)	06:58			07:29	08:01	07:38		16:08 (TRIV-07)	08:03		16:20 (TRIV-07)
	21:04	45	20:40 (TRIV-47)	20:26			19:33	18:45	17:14	33	16:41 (TRIV-07)	17:15	30	16:50 (TRIV-07)
26	06:28		06:50 (TRIV-17)	06:59			07:30	08:02	07:39		16:08 (TRIV-07)	08:03		16:20 (TRIV-07)
	21:03	45	20:38 (TRIV-47)	20:24			19:31	18:44	17:13	34	16:42 (TRIV-07)	17:16	30	16:50 (TRIV-07)
27	06:29		06:51 (TRIV-17)	07:00			07:31	08:04	07:40		16:08 (TRIV-07)	08:03		16:20 (TRIV-07)
	21:02	42	20:37 (TRIV-47)	20:23			19:29	18:42	17:13	34	16:42 (TRIV-07)	17:17	30	16:50 (TRIV-07)
28	06:30		06:52 (TRIV-17)	07:01			07:32	08:05	07:41		16:08 (TRIV-07)	08:04		16:21 (TRIV-07)
	21:02	40	20:37 (TRIV-47)	20:21			19:27	18:41	17:13	35	16:43 (TRIV-07)	17:17	31	16:52 (TRIV-07)
29	06:31		06:53 (TRIV-17)	07:02			07:33	08:06	07:42		16:09 (TRIV-07)	08:04		16:21 (TRIV-07)
	21:01	37	20:36 (TRIV-47)	20:19			19:26	18:39	17:12	35	16:44 (TRIV-07)	17:18	31	16:52 (TRIV-07)
30	06:32		06:54 (TRIV-17)	07:03			07:34	08:07	07:43		16:09 (TRIV-07)	08:04		16:21 (TRIV-07)
	21:00	35	20:35 (TRIV-47)	20:18			19:24	18:38	17:12	35	16:44 (TRIV-07)	17:19	32	16:53 (TRIV-07)
31	06:33		06:55 (TRIV-17)	07:04				08:08				08:04		16:22 (TRIV-07)
	20:59	31	20:34 (TRIV-47)	20:16				18:37				17:20	31	16:53 (TRIV-07)
Potential sun hours	459			428			375	345	297			287		
Total, worst case		1133			178					464			990	
Sun reduction		0.76			0.75					0.40			0.36	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.66			0.70					0.70			0.70	
Total reduction		0.50			0.53					0.28			0.25	
Total, real		570			94					130			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:
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217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1085)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February	March	April	May			June		
1	08:05		16:18 (TRIV-07)	07:51	07:15	07:24	06:38		06:58 (TRIV-17)	06:09		20:16 (TRIV-47)
	17:21	36	16:54 (TRIV-07)	17:55	18:29	20:02	20:34	1	06:59 (TRIV-17)	21:04	24	20:40 (TRIV-47)
2	08:05		16:19 (TRIV-07)	07:50	07:13	07:22	06:37		06:56 (TRIV-17)	06:09		20:15 (TRIV-47)
	17:22	36	16:55 (TRIV-07)	17:56	18:31	20:04	20:35	5	07:01 (TRIV-17)	21:05	25	20:40 (TRIV-47)
3	08:05		16:19 (TRIV-07)	07:49	07:12	07:20	06:35		06:55 (TRIV-17)	06:08		20:16 (TRIV-47)
	17:22	37	16:56 (TRIV-07)	17:58	18:32	20:05	20:37	8	07:03 (TRIV-17)	21:06	25	20:41 (TRIV-47)
4	08:05		16:19 (TRIV-07)	07:48	07:10	07:19	06:34		06:54 (TRIV-17)	06:08		20:16 (TRIV-47)
	17:23	38	16:57 (TRIV-07)	17:59	18:33	20:06	20:38	10	07:04 (TRIV-17)	21:06	26	20:42 (TRIV-47)
5	08:05		16:20 (TRIV-07)	07:47	07:08	07:17	06:33		06:53 (TRIV-17)	06:08		20:16 (TRIV-47)
	17:24	38	16:58 (TRIV-07)	18:00	18:34	20:07	20:39	12	07:05 (TRIV-17)	21:07	26	20:42 (TRIV-47)
6	08:05		16:21 (TRIV-07)	07:46	07:07	07:16	06:32		06:52 (TRIV-17)	06:07		20:16 (TRIV-47)
	17:25	38	16:59 (TRIV-07)	18:01	18:35	20:08	20:40	14	07:06 (TRIV-17)	21:08	27	20:43 (TRIV-47)
7	08:05		16:21 (TRIV-07)	07:45	07:05	07:14	06:30		06:50 (TRIV-17)	06:07		20:16 (TRIV-47)
	17:26	38	16:59 (TRIV-07)	18:03	18:36	20:09	20:41	16	07:06 (TRIV-17)	21:09	28	20:44 (TRIV-47)
8	08:05		16:22 (TRIV-07)	07:43	08:04	07:12	06:29		06:49 (TRIV-17)	06:07		20:17 (TRIV-47)
	17:27	38	17:00 (TRIV-07)	18:04	19:37	20:10	20:42	18	07:07 (TRIV-17)	21:09	28	20:45 (TRIV-47)
9	08:04		16:22 (TRIV-07)	07:42	08:02	07:11	06:28		06:48 (TRIV-17)	06:07		20:17 (TRIV-47)
	17:28	37	16:59 (TRIV-07)	18:05	19:39	20:11	20:43	19	07:07 (TRIV-17)	21:10	28	20:45 (TRIV-47)
10	08:04		16:22 (TRIV-07)	07:41	08:00	07:09	06:27		06:47 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:29	38	17:00 (TRIV-07)	18:06	19:40	20:12	20:44	20	07:07 (TRIV-17)	21:10	28	20:45 (TRIV-47)
11	08:04		16:23 (TRIV-07)	07:40	07:59	07:07	06:26		06:46 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:30	38	17:01 (TRIV-07)	18:08	19:41	20:13	20:45	22	07:08 (TRIV-17)	21:11	29	20:46 (TRIV-47)
12	08:04		16:23 (TRIV-07)	07:39	07:57	07:06	06:25		06:45 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:31	37	17:00 (TRIV-07)	18:09	19:42	20:14	20:46	23	07:08 (TRIV-17)	21:11	29	20:46 (TRIV-47)
13	08:03		16:24 (TRIV-07)	07:37	07:56	07:04	06:24		06:44 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:32	37	17:01 (TRIV-07)	18:10	19:43	20:15	20:47	24	07:08 (TRIV-17)	21:12	30	20:47 (TRIV-47)
14	08:03		16:25 (TRIV-07)	07:36	07:54	07:03	06:23		06:43 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:34	36	17:01 (TRIV-07)	18:11	19:44	20:16	20:48	25	07:08 (TRIV-17)	21:12	29	20:47 (TRIV-47)
15	08:03		16:25 (TRIV-07)	07:35	07:52	07:01	06:22		06:42 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:35	36	17:01 (TRIV-07)	18:13	19:45	20:17	20:49	25	07:07 (TRIV-17)	21:13	29	20:47 (TRIV-47)
16	08:02		16:26 (TRIV-07)	07:33	07:51	07:00	06:21		06:41 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:36	35	17:01 (TRIV-07)	18:14	19:46	20:18	20:50	26	07:07 (TRIV-17)	21:13	30	20:48 (TRIV-47)
17	08:02		16:27 (TRIV-07)	07:32	07:49	06:58	06:20		06:40 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:37	34	17:01 (TRIV-07)	18:15	19:47	20:20	20:51	31	20:27 (TRIV-47)	21:14	30	20:48 (TRIV-47)
18	08:01		16:28 (TRIV-07)	07:31	07:47	06:56	06:19		06:40 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:38	33	17:01 (TRIV-07)	18:16	19:48	20:21	20:52	34	20:29 (TRIV-47)	21:14	30	20:48 (TRIV-47)
19	08:01		16:28 (TRIV-07)	07:29	07:46	06:55	06:18		06:40 (TRIV-17)	06:06		20:20 (TRIV-47)
	17:39	33	17:01 (TRIV-07)	18:18	19:50	20:22	20:53	36	20:30 (TRIV-47)	21:14	29	20:49 (TRIV-47)
20	08:00		16:29 (TRIV-07)	07:28	07:44	06:53	06:17		06:41 (TRIV-17)	06:06		20:20 (TRIV-47)
	17:40	31	17:00 (TRIV-07)	18:19	19:51	20:23	20:54	36	20:30 (TRIV-47)	21:15	30	20:50 (TRIV-47)
21	08:00		16:31 (TRIV-07)	07:27	07:42	06:52	06:16		06:41 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:42	29	17:00 (TRIV-07)	18:20	19:52	20:24	20:55	37	20:31 (TRIV-47)	21:15	30	20:50 (TRIV-47)
22	07:59		16:31 (TRIV-07)	07:25	07:41	06:50	06:16		06:42 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:43	29	17:00 (TRIV-07)	18:21	19:53	20:25	20:56	38	20:32 (TRIV-47)	21:15	30	20:50 (TRIV-47)
23	07:58		16:32 (TRIV-07)	07:24	07:39	06:49	06:15		06:43 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:44	27	16:59 (TRIV-07)	18:22	19:54	20:26	20:57	38	20:33 (TRIV-47)	21:15	30	20:50 (TRIV-47)
24	07:58		16:34 (TRIV-07)	07:22	07:37	06:48	06:14		06:43 (TRIV-17)	06:07		20:21 (TRIV-47)
	17:45	24	16:58 (TRIV-07)	18:24	19:55	20:27	20:58	38	20:34 (TRIV-47)	21:16	29	20:50 (TRIV-47)
25	07:57		16:36 (TRIV-07)	07:21	07:35	06:46	06:13		06:44 (TRIV-17)	06:08		20:20 (TRIV-47)
	17:47	21	16:57 (TRIV-07)	18:25	19:56	20:28	20:58	37	20:34 (TRIV-47)	21:16	30	20:50 (TRIV-47)
26	07:56		16:38 (TRIV-07)	07:19	07:34	06:45	06:13		06:45 (TRIV-17)	06:08		20:20 (TRIV-47)
	17:48	18	16:56 (TRIV-07)	18:26	19:57	20:29	20:59	37	20:35 (TRIV-47)	21:16	30	20:50 (TRIV-47)
27	07:55		16:40 (TRIV-07)	07:18	07:32	06:43	06:12		06:46 (TRIV-17)	06:08		20:21 (TRIV-47)
	17:49	13	16:53 (TRIV-07)	18:27	19:58	20:30	21:00	35	20:36 (TRIV-47)	21:16	30	20:51 (TRIV-47)
28	07:55		16:45 (TRIV-07)	07:16	07:30	06:42	06:11		06:48 (TRIV-17)	06:09		20:21 (TRIV-47)
	17:50	4	16:49 (TRIV-07)	18:28	19:59	20:31	21:01	34	20:37 (TRIV-47)	21:16	29	20:50 (TRIV-47)
29	07:54				07:29	06:41	06:11		06:49 (TRIV-17)	06:09		20:22 (TRIV-47)
	17:51				20:00	20:32	21:02	31	20:37 (TRIV-47)	21:16	29	20:51 (TRIV-47)
30	07:53				07:27	06:39	06:10		06:53 (TRIV-17)	06:09		20:21 (TRIV-47)
	17:53				20:00	20:33	21:03	26	20:39 (TRIV-47)	21:16	29	20:50 (TRIV-47)
31	07:52				07:25		06:10		20:15 (TRIV-47)			
	17:54				20:01		21:03	24	20:39 (TRIV-47)			
Potential sun hours	297			297	370	399	448			452		
Total, worst case		889						780			856	
Sun reduction		0.50						0.69			0.74	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.70						0.68			0.63	
Total reduction		0.35						0.47			0.47	
Total, real		312						368			401	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 54 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1085)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November			December		
1	06:10		20:21 (TRIV-47)	06:34		06:56 (TRIV-17)	07:05	07:35	07:09			07:44		16:05 (TRIV-07)
	21:16	29	20:50 (TRIV-47)	20:57	22	07:18 (TRIV-17)	20:15	19:22	17:36			17:11	38	16:43 (TRIV-07)
2	06:10		20:22 (TRIV-47)	06:35		06:57 (TRIV-17)	07:06	07:36	07:11			07:45		16:05 (TRIV-07)
	21:16	28	20:50 (TRIV-47)	20:56	21	07:18 (TRIV-17)	20:13	19:21	17:34			17:11	38	16:43 (TRIV-07)
3	06:11		20:21 (TRIV-47)	06:36		06:58 (TRIV-17)	07:07	07:37	07:12			07:46		16:06 (TRIV-07)
	21:16	29	20:50 (TRIV-47)	20:55	20	07:18 (TRIV-17)	20:11	19:19	17:33			17:11	37	16:43 (TRIV-07)
4	06:12		20:22 (TRIV-47)	06:37		06:59 (TRIV-17)	07:08	07:38	07:13			07:47		16:06 (TRIV-07)
	21:15	28	20:50 (TRIV-47)	20:54	19	07:18 (TRIV-17)	20:10	19:17	17:32			17:11	38	16:44 (TRIV-07)
5	06:12		20:23 (TRIV-47)	06:38		07:00 (TRIV-17)	07:09	07:39	07:14			07:48		16:06 (TRIV-07)
	21:15	27	20:50 (TRIV-47)	20:53	17	07:17 (TRIV-17)	20:08	19:16	17:31			17:11	38	16:44 (TRIV-07)
6	06:13		20:22 (TRIV-47)	06:39		07:01 (TRIV-17)	07:10	07:40	07:15			07:49		16:07 (TRIV-07)
	21:15	27	20:49 (TRIV-47)	20:52	15	07:16 (TRIV-17)	20:06	19:14	17:30			17:10	38	16:45 (TRIV-07)
7	06:13		20:23 (TRIV-47)	06:40		07:02 (TRIV-17)	07:11	07:41	07:17			07:50		16:07 (TRIV-07)
	21:15	26	20:49 (TRIV-47)	20:51	14	07:16 (TRIV-17)	20:05	19:12	17:29			17:10	38	16:45 (TRIV-07)
8	06:14		20:22 (TRIV-47)	06:41		07:03 (TRIV-17)	07:12	07:42	07:18			07:51		16:08 (TRIV-07)
	21:14	27	20:49 (TRIV-47)	20:49	12	07:15 (TRIV-17)	20:03	19:11	17:28			17:10	37	16:45 (TRIV-07)
9	06:15		20:23 (TRIV-47)	06:42		07:03 (TRIV-17)	07:13	07:43	07:19			07:52		16:08 (TRIV-07)
	21:14	26	20:49 (TRIV-47)	20:48	9	07:12 (TRIV-17)	20:01	19:09	17:27			17:10	37	16:45 (TRIV-07)
10	06:15		20:23 (TRIV-47)	06:43		07:04 (TRIV-17)	07:14	07:45	07:20			07:53		16:09 (TRIV-07)
	21:14	26	20:49 (TRIV-47)	20:47	7	07:11 (TRIV-17)	20:00	19:08	17:26			17:10	36	16:45 (TRIV-07)
11	06:16		20:23 (TRIV-47)	06:44		07:05 (TRIV-17)	07:15	07:46	07:21			07:54		16:08 (TRIV-07)
	21:13	25	20:48 (TRIV-47)	20:46	4	07:09 (TRIV-17)	19:56	19:06	17:25			17:10	37	16:45 (TRIV-07)
12	06:17		20:23 (TRIV-47)	06:45			07:16	07:47	07:23			07:55		16:09 (TRIV-07)
	21:13	24	20:47 (TRIV-47)	20:44			19:55	19:04	17:24			17:11	36	16:45 (TRIV-07)
13	06:17		20:24 (TRIV-47)	06:46			07:17	07:48	07:24			07:55		16:10 (TRIV-07)
	21:12	23	20:47 (TRIV-47)	20:43			19:53	19:03	17:23			17:11	35	16:45 (TRIV-07)
14	06:18		07:00 (TRIV-17)	06:47			07:18	07:49	07:25		16:17 (TRIV-07)	07:56		16:10 (TRIV-07)
	21:12	29	20:47 (TRIV-47)	20:42			19:51	19:01	17:22	4	16:21 (TRIV-07)	17:11	35	16:45 (TRIV-07)
15	06:19		06:57 (TRIV-17)	06:48			07:19	07:50	07:26		16:13 (TRIV-07)	07:57		16:10 (TRIV-07)
	21:11	33	20:46 (TRIV-47)	20:40			19:50	19:00	17:21	14	16:27 (TRIV-07)	17:11	35	16:45 (TRIV-07)
16	06:20		06:56 (TRIV-17)	06:49			07:20	07:51	07:27		16:11 (TRIV-07)	07:58		16:11 (TRIV-07)
	21:11	34	20:45 (TRIV-47)	20:39			19:48	18:58	17:20	18	16:29 (TRIV-07)	17:11	34	16:45 (TRIV-07)
17	06:21		06:55 (TRIV-17)	06:50			07:21	07:52	07:29		16:09 (TRIV-07)	07:58		16:12 (TRIV-07)
	21:10	36	20:45 (TRIV-47)	20:38			19:46	18:57	17:19	21	16:30 (TRIV-07)	17:12	34	16:46 (TRIV-07)
18	06:21		06:55 (TRIV-17)	06:51			07:22	07:53	07:30		16:08 (TRIV-07)	07:59		16:12 (TRIV-07)
	21:10	37	20:45 (TRIV-47)	20:36			19:44	18:55	17:18	24	16:32 (TRIV-07)	17:12	34	16:46 (TRIV-07)
19	06:22		06:53 (TRIV-17)	06:52			07:23	07:54	07:31		16:07 (TRIV-07)	08:00		16:12 (TRIV-07)
	21:09	37	20:43 (TRIV-47)	20:35			19:43	18:54	17:18	27	16:34 (TRIV-07)	17:12	35	16:47 (TRIV-07)
20	06:23		06:53 (TRIV-17)	06:53			07:24	07:56	07:32		16:06 (TRIV-07)	08:00		16:13 (TRIV-07)
	21:08	38	20:43 (TRIV-47)	20:33			19:41	18:52	17:17	29	16:35 (TRIV-07)	17:13	34	16:47 (TRIV-07)
21	06:24		06:52 (TRIV-17)	06:54			07:25	07:57	07:33		16:06 (TRIV-07)	08:01		16:13 (TRIV-07)
	21:07	38	20:42 (TRIV-47)	20:32			19:39	18:51	17:16	29	16:35 (TRIV-07)	17:13	34	16:47 (TRIV-07)
22	06:25		06:52 (TRIV-17)	06:55			07:26	07:58	07:34		16:05 (TRIV-07)	08:01		16:13 (TRIV-07)
	21:07	38	20:42 (TRIV-47)	20:30			19:38	18:49	17:16	31	16:36 (TRIV-07)	17:14	34	16:47 (TRIV-07)
23	06:26		06:51 (TRIV-17)	06:56			07:27	07:59	07:36		16:05 (TRIV-07)	08:02		16:14 (TRIV-07)
	21:06	37	20:41 (TRIV-47)	20:29			19:36	18:48	17:15	33	16:38 (TRIV-07)	17:14	34	16:48 (TRIV-07)
24	06:27		06:51 (TRIV-17)	06:57			07:28	08:00	07:37		16:05 (TRIV-07)	08:02		16:14 (TRIV-07)
	21:05	36	20:40 (TRIV-47)	20:27			19:34	18:46	17:14	33	16:38 (TRIV-07)	17:15	34	16:48 (TRIV-07)
25	06:27		06:51 (TRIV-17)	06:58			07:29	08:01	07:38		16:05 (TRIV-07)	08:03		16:16 (TRIV-07)
	21:04	35	20:40 (TRIV-47)	20:26			19:33	18:45	17:14	34	16:39 (TRIV-07)	17:15	34	16:50 (TRIV-07)
26	06:28		06:50 (TRIV-17)	06:59			07:30	08:02	07:39		16:04 (TRIV-07)	08:03		16:16 (TRIV-07)
	21:03	33	20:38 (TRIV-47)	20:24			19:31	18:44	17:13	35	16:39 (TRIV-07)	17:16	34	16:50 (TRIV-07)
27	06:29		06:51 (TRIV-17)	07:00			07:31	08:04	07:40		16:04 (TRIV-07)	08:03		16:16 (TRIV-07)
	21:02	28	20:37 (TRIV-47)	20:23			19:29	18:42	17:13	36	16:40 (TRIV-07)	17:17	34	16:50 (TRIV-07)
28	06:30		06:52 (TRIV-17)	07:01			07:32	08:05	07:41		16:04 (TRIV-07)	08:04		16:17 (TRIV-07)
	21:02	26	07:18 (TRIV-17)	20:21			19:27	18:41	17:13	36	16:40 (TRIV-07)	17:17	35	16:52 (TRIV-07)
29	06:31		06:53 (TRIV-17)	07:02			07:33	08:06	07:42		16:05 (TRIV-07)	08:04		16:17 (TRIV-07)
	21:01	25	07:18 (TRIV-17)	20:19			19:26	18:40	17:12	37	16:42 (TRIV-07)	17:18	35	16:52 (TRIV-07)
30	06:32		06:54 (TRIV-17)	07:03			07:34	08:07	07:43		16:05 (TRIV-07)	08:04		16:17 (TRIV-07)
	21:00	24	07:18 (TRIV-17)	20:18			19:24	18:38	17:12	37	16:42 (TRIV-07)	17:19	36	16:53 (TRIV-07)
31	06:33		06:55 (TRIV-17)	07:04				08:08				08:04		16:18 (TRIV-07)
	20:59	23	07:18 (TRIV-17)	20:16				18:37				17:20	35	16:53 (TRIV-07)
Potential sun hours	459			428			375	345	297			287		
Total, worst case		932			160					478			1103	
Sun reduction		0.76			0.75					0.40			0.36	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.66			0.70					0.70			0.70	
Total reduction		0.50			0.53					0.28			0.25	
Total, real		469			85					134			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:
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217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 55 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1086)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February	March	April	May			June		
1	08:05		16:14 (TRIV-07)	07:51	07:15	07:24	06:38		06:58 (TRIV-17)	06:09		20:17 (TRIV-47)
	17:21	39	16:53 (TRIV-07)	17:55	18:29	20:02	20:34	4	07:02 (TRIV-17)	21:04	23	20:40 (TRIV-47)
2	08:05		16:15 (TRIV-07)	07:50	07:13	07:22	06:37		06:56 (TRIV-17)	06:09		20:17 (TRIV-47)
	17:22	39	16:54 (TRIV-07)	17:56	18:31	20:04	20:35	7	07:03 (TRIV-17)	21:05	23	20:40 (TRIV-47)
3	08:05		16:15 (TRIV-07)	07:49	07:12	07:20	06:35		06:55 (TRIV-17)	06:08		20:17 (TRIV-47)
	17:22	39	16:54 (TRIV-07)	17:58	18:32	20:05	20:37	10	07:05 (TRIV-17)	21:06	24	20:41 (TRIV-47)
4	08:05		16:16 (TRIV-07)	07:48	07:10	07:19	06:34		06:54 (TRIV-17)	06:08		20:17 (TRIV-47)
	17:23	39	16:55 (TRIV-07)	17:59	18:33	20:06	20:38	12	07:06 (TRIV-17)	21:06	25	20:42 (TRIV-47)
5	08:05		16:16 (TRIV-07)	07:47	07:08	07:17	06:33		06:53 (TRIV-17)	06:08		20:17 (TRIV-47)
	17:24	39	16:55 (TRIV-07)	18:00	18:34	20:07	20:39	14	07:07 (TRIV-17)	21:07	25	20:42 (TRIV-47)
6	08:05		16:17 (TRIV-07)	07:46	07:07	07:16	06:32		06:52 (TRIV-17)	06:07		20:17 (TRIV-47)
	17:25	39	16:56 (TRIV-07)	18:01	18:35	20:08	20:40	16	07:08 (TRIV-17)	21:08	26	20:43 (TRIV-47)
7	08:05		16:18 (TRIV-07)	07:45	07:05	07:14	06:30		06:50 (TRIV-17)	06:07		20:17 (TRIV-47)
	17:26	38	16:56 (TRIV-07)	18:03	18:36	20:09	20:41	17	07:07 (TRIV-17)	21:09	27	20:44 (TRIV-47)
8	08:05		16:18 (TRIV-07)	07:43	08:04	07:12	06:29		06:49 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:27	38	16:56 (TRIV-07)	18:04	19:37	20:10	20:42	19	07:08 (TRIV-17)	21:09	27	20:45 (TRIV-47)
9	08:04		16:18 (TRIV-07)	07:42	08:02	07:11	06:28		06:48 (TRIV-17)	06:07		20:18 (TRIV-47)
	17:28	38	16:56 (TRIV-07)	18:05	19:39	20:11	20:43	20	07:08 (TRIV-17)	21:10	27	20:45 (TRIV-47)
10	08:04		16:19 (TRIV-07)	07:41	08:00	07:09	06:27		06:47 (TRIV-17)	06:06		20:17 (TRIV-47)
	17:29	38	16:57 (TRIV-07)	18:06	19:40	20:12	20:44	21	07:08 (TRIV-17)	21:10	28	20:45 (TRIV-47)
11	08:04		16:20 (TRIV-07)	07:40	07:59	07:07	06:26		06:46 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:30	37	16:57 (TRIV-07)	18:08	19:41	20:13	20:45	22	07:08 (TRIV-17)	21:11	28	20:46 (TRIV-47)
12	08:04		16:20 (TRIV-07)	07:39	07:57	07:06	06:25		06:45 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:31	37	16:57 (TRIV-07)	18:09	19:42	20:14	20:46	23	07:08 (TRIV-17)	21:11	28	20:46 (TRIV-47)
13	08:03		16:21 (TRIV-07)	07:37	07:56	07:04	06:24		06:44 (TRIV-17)	06:06		20:18 (TRIV-47)
	17:32	36	16:57 (TRIV-07)	18:10	19:43	20:15	20:47	24	07:08 (TRIV-17)	21:12	29	20:47 (TRIV-47)
14	08:03		16:22 (TRIV-07)	07:36	07:54	07:03	06:23		06:43 (TRIV-17)	06:06		20:19 (TRIV-47)
	17:34	36	16:58 (TRIV-07)	18:11	19:44	20:16	20:48	25	07:08 (TRIV-17)	21:12	28	20:47 (TRIV-47)
15	08:03		16:22 (TRIV-07)	07:35	07:52	07:01	06:22		06:42 (TRIV-17)	06:06		20:19 (TRIV-47)
	17:35	35	16:57 (TRIV-07)	18:13	19:45	20:17	20:49	26	07:08 (TRIV-17)	21:13	28	20:47 (TRIV-47)
16	08:02		16:23 (TRIV-07)	07:33	07:51	07:00	06:21		06:41 (TRIV-17)	06:06		20:19 (TRIV-47)
	17:36	34	16:57 (TRIV-07)	18:14	19:46	20:18	20:50	26	07:07 (TRIV-17)	21:13	29	20:48 (TRIV-47)
17	08:02		16:24 (TRIV-07)	07:32	07:49	06:58	06:20		06:41 (TRIV-17)	06:06		20:19 (TRIV-47)
	17:37	33	16:57 (TRIV-07)	18:15	19:47	20:20	20:51	26	07:07 (TRIV-17)	21:14	29	20:48 (TRIV-47)
18	08:01		16:25 (TRIV-07)	07:31	07:47	06:56	06:19		06:42 (TRIV-17)	06:06		20:19 (TRIV-47)
	17:38	32	16:57 (TRIV-07)	18:16	19:48	20:21	20:52	26	20:29 (TRIV-47)	21:14	29	20:48 (TRIV-47)
19	08:01		16:26 (TRIV-07)	07:29	07:46	06:55	06:18		06:42 (TRIV-17)	06:06		20:20 (TRIV-47)
	17:39	30	16:56 (TRIV-07)	18:18	19:50	20:22	20:53	29	20:30 (TRIV-47)	21:14	29	20:49 (TRIV-47)
20	08:00		16:27 (TRIV-07)	07:28	07:44	06:53	06:17		06:43 (TRIV-17)	06:06		20:20 (TRIV-47)
	17:40	29	16:56 (TRIV-07)	18:19	19:51	20:23	20:54	30	20:30 (TRIV-47)	21:15	30	20:50 (TRIV-47)
21	08:00		16:29 (TRIV-07)	07:27	07:42	06:52	06:16		06:43 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:42	27	16:56 (TRIV-07)	18:20	19:52	20:24	20:55	32	20:31 (TRIV-47)	21:15	30	20:50 (TRIV-47)
22	07:59		16:30 (TRIV-07)	07:25	07:41	06:50	06:16		06:45 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:43	25	16:55 (TRIV-07)	18:21	19:53	20:25	20:56	31	20:32 (TRIV-47)	21:15	30	20:50 (TRIV-47)
23	07:58		16:31 (TRIV-07)	07:24	07:39	06:49	06:15		06:46 (TRIV-17)	06:07		20:20 (TRIV-47)
	17:44	22	16:53 (TRIV-07)	18:22	19:54	20:26	20:57	31	20:33 (TRIV-47)	21:15	30	20:50 (TRIV-47)
24	07:58		16:33 (TRIV-07)	07:22	07:37	06:48	06:14		06:46 (TRIV-17)	06:07		20:21 (TRIV-47)
	17:45	19	16:52 (TRIV-07)	18:24	19:55	20:27	20:58	31	20:34 (TRIV-47)	21:16	29	20:50 (TRIV-47)
25	07:57		16:36 (TRIV-07)	07:21	07:35	06:46	06:13		06:47 (TRIV-17)	06:08		20:21 (TRIV-47)
	17:47	15	16:51 (TRIV-07)	18:25	19:56	20:28	20:58	30	20:34 (TRIV-47)	21:16	29	20:50 (TRIV-47)
26	07:56		16:39 (TRIV-07)	07:19	07:34	06:45	06:13		06:50 (TRIV-17)	06:08		20:21 (TRIV-47)
	17:48	9	16:48 (TRIV-07)	18:26	19:57	20:29	20:59	27	20:35 (TRIV-47)	21:16	29	20:50 (TRIV-47)
27	07:55			07:18	07:32	06:43	06:12		06:52 (TRIV-17)	06:08		20:22 (TRIV-47)
	17:49			18:27	19:58	20:30	21:00	23	20:36 (TRIV-47)	21:16	29	20:51 (TRIV-47)
28	07:55			07:16	07:30	06:42	06:11		20:18 (TRIV-47)	06:09		20:22 (TRIV-47)
	17:50			18:28	19:59	20:31	21:01	19	20:37 (TRIV-47)	21:16	28	20:50 (TRIV-47)
29	07:54				07:29	06:41	06:11		20:17 (TRIV-47)	06:09		20:22 (TRIV-47)
	17:51				20:00	20:32	21:02	20	20:37 (TRIV-47)	21:16	29	20:51 (TRIV-47)
30	07:53				07:27	06:39	06:10		20:18 (TRIV-47)	06:09		20:22 (TRIV-47)
	17:53				20:00	20:33	21:03	21	20:39 (TRIV-47)	21:16	28	20:50 (TRIV-47)
31	07:52				07:25		06:10		20:17 (TRIV-47)			
	17:54				20:01		21:03	22	20:39 (TRIV-47)			
Potential sun hours	297			297	370	399	448			452		
Total, worst case		842						684			833	
Sun reduction		0.50						0.69			0.74	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.70						0.68			0.63	
Total reduction		0.35						0.47			0.47	
Total, real		295						323			390	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 55 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1086)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November			December		
1	06:10		20:22 (TRIV-47)	06:34		06:56 (TRIV-17)	07:05	07:35	07:09			07:44		16:02 (TRIV-07)
	21:16	28	20:50 (TRIV-47)	20:57	23	07:19 (TRIV-17)	20:15	19:22	17:36			17:11	37	16:39 (TRIV-07)
2	06:10		20:23 (TRIV-47)	06:35		06:57 (TRIV-17)	07:06	07:36	07:11			07:45		16:02 (TRIV-07)
	21:16	27	20:50 (TRIV-47)	20:56	22	07:19 (TRIV-17)	20:13	19:21	17:34			17:11	38	16:40 (TRIV-07)
3	06:11		20:22 (TRIV-47)	06:36		06:58 (TRIV-17)	07:07	07:37	07:12			07:46		16:02 (TRIV-07)
	21:16	28	20:50 (TRIV-47)	20:55	21	07:19 (TRIV-17)	20:11	19:19	17:33			17:11	38	16:40 (TRIV-07)
4	06:12		20:23 (TRIV-47)	06:37		06:59 (TRIV-17)	07:08	07:38	07:13			07:47		16:02 (TRIV-07)
	21:15	27	20:50 (TRIV-47)	20:54	20	07:19 (TRIV-17)	20:10	19:17	17:32			17:11	39	16:41 (TRIV-07)
5	06:12		20:24 (TRIV-47)	06:38		07:00 (TRIV-17)	07:09	07:39	07:14			07:48		16:03 (TRIV-07)
	21:15	26	20:50 (TRIV-47)	20:53	18	07:18 (TRIV-17)	20:08	19:16	17:31			17:11	38	16:41 (TRIV-07)
6	06:13		20:23 (TRIV-47)	06:39		07:01 (TRIV-17)	07:10	07:40	07:15			07:49		16:03 (TRIV-07)
	21:15	26	20:49 (TRIV-47)	20:52	17	07:18 (TRIV-17)	20:06	19:14	17:30			17:10	39	16:42 (TRIV-07)
7	06:13		20:24 (TRIV-47)	06:40		07:02 (TRIV-17)	07:11	07:41	07:17			07:50		16:03 (TRIV-07)
	21:15	25	20:49 (TRIV-47)	20:51	15	07:17 (TRIV-17)	20:05	19:12	17:29			17:10	39	16:42 (TRIV-07)
8	06:14		20:24 (TRIV-47)	06:41		07:03 (TRIV-17)	07:12	07:42	07:18			07:51		16:04 (TRIV-07)
	21:14	25	20:49 (TRIV-47)	20:49	13	07:16 (TRIV-17)	20:03	19:11	17:28			17:10	39	16:43 (TRIV-07)
9	06:15		20:24 (TRIV-47)	06:42		07:03 (TRIV-17)	07:13	07:43	07:19			07:52		16:04 (TRIV-07)
	21:14	25	20:49 (TRIV-47)	20:48	11	07:14 (TRIV-17)	20:01	19:09	17:27			17:10	39	16:43 (TRIV-07)
10	06:15		20:25 (TRIV-47)	06:43		07:04 (TRIV-17)	07:14	07:45	07:20			07:53		16:05 (TRIV-07)
	21:14	24	20:49 (TRIV-47)	20:47	9	07:13 (TRIV-17)	20:00	19:08	17:26			17:10	39	16:44 (TRIV-07)
11	06:16		20:24 (TRIV-47)	06:44		07:05 (TRIV-17)	07:15	07:46	07:21			07:54		16:04 (TRIV-07)
	21:13	24	20:48 (TRIV-47)	20:46	7	07:12 (TRIV-17)	19:56	19:06	17:25			17:10	39	16:43 (TRIV-07)
12	06:17		20:25 (TRIV-47)	06:45		07:06 (TRIV-17)	07:16	07:47	07:23			07:55		16:05 (TRIV-07)
	21:13	22	20:47 (TRIV-47)	20:44	3	07:09 (TRIV-17)	19:55	19:04	17:24			17:11	39	16:44 (TRIV-07)
13	06:17		20:26 (TRIV-47)	06:46			07:17	07:48	07:24			07:55		16:06 (TRIV-07)
	21:12	21	20:47 (TRIV-47)	20:43			19:53	19:03	17:23			17:11	39	16:45 (TRIV-07)
14	06:18		20:26 (TRIV-47)	06:47			07:18	07:49	07:25			07:56		16:06 (TRIV-07)
	21:12	21	20:47 (TRIV-47)	20:42			19:51	19:01	17:22			17:11	39	16:45 (TRIV-07)
15	06:19		20:26 (TRIV-47)	06:48			07:19	07:50	07:26			07:57		16:06 (TRIV-07)
	21:11	20	20:46 (TRIV-47)	20:40			19:50	19:00	17:21			17:11	39	16:45 (TRIV-07)
16	06:20		20:27 (TRIV-47)	06:49			07:20	07:51	07:27		16:12 (TRIV-07)	07:58		16:07 (TRIV-07)
	21:11	18	20:45 (TRIV-47)	20:39			19:48	18:58	17:20	9	16:21 (TRIV-07)	17:11	38	16:45 (TRIV-07)
17	06:21		07:00 (TRIV-17)	06:50			07:21	07:52	07:29		16:09 (TRIV-07)	07:58		16:08 (TRIV-07)
	21:10	26	20:45 (TRIV-47)	20:38			19:46	18:57	17:19	15	16:24 (TRIV-07)	17:12	38	16:46 (TRIV-07)
18	06:21		06:58 (TRIV-17)	06:51			07:22	07:53	07:30		16:07 (TRIV-07)	07:59		16:07 (TRIV-07)
	21:10	30	20:45 (TRIV-47)	20:36			19:44	18:55	17:18	19	16:26 (TRIV-07)	17:12	39	16:46 (TRIV-07)
19	06:22		06:56 (TRIV-17)	06:52			07:23	07:54	07:31		16:06 (TRIV-07)	08:00		16:08 (TRIV-07)
	21:09	30	20:43 (TRIV-47)	20:35			19:43	18:54	17:18	22	16:28 (TRIV-07)	17:12	39	16:47 (TRIV-07)
20	06:23		06:55 (TRIV-17)	06:53			07:24	07:56	07:32		16:05 (TRIV-07)	08:00		16:09 (TRIV-07)
	21:08	32	20:43 (TRIV-47)	20:33			19:41	18:52	17:17	25	16:30 (TRIV-07)	17:13	38	16:47 (TRIV-07)
21	06:24		06:55 (TRIV-17)	06:54			07:25	07:57	07:33		16:04 (TRIV-07)	08:01		16:09 (TRIV-07)
	21:07	31	20:42 (TRIV-47)	20:32			19:39	18:51	17:16	27	16:31 (TRIV-07)	17:13	38	16:47 (TRIV-07)
22	06:25		06:54 (TRIV-17)	06:55			07:26	07:58	07:34		16:03 (TRIV-07)	08:01		16:09 (TRIV-07)
	21:07	32	20:42 (TRIV-47)	20:30			19:38	18:49	17:16	29	16:32 (TRIV-07)	17:14	38	16:47 (TRIV-07)
23	06:26		06:54 (TRIV-17)	06:56			07:27	07:59	07:36		16:03 (TRIV-07)	08:02		16:10 (TRIV-07)
	21:06	30	20:41 (TRIV-47)	20:29			19:36	18:48	17:15	30	16:33 (TRIV-07)	17:14	38	16:48 (TRIV-07)
24	06:27		06:53 (TRIV-17)	06:57			07:28	08:00	07:37		16:02 (TRIV-07)	08:02		16:10 (TRIV-07)
	21:05	30	20:40 (TRIV-47)	20:27			19:34	18:46	17:14	32	16:34 (TRIV-07)	17:15	38	16:48 (TRIV-07)
25	06:27		06:53 (TRIV-17)	06:58			07:29	08:01	07:38		16:02 (TRIV-07)	08:03		16:11 (TRIV-07)
	21:04	28	20:40 (TRIV-47)	20:26			19:33	18:45	17:14	33	16:35 (TRIV-07)	17:15	39	16:50 (TRIV-07)
26	06:28		06:51 (TRIV-17)	06:59			07:30	08:02	07:39		16:02 (TRIV-07)	08:03		16:11 (TRIV-07)
	21:03	26	07:17 (TRIV-17)	20:24			19:31	18:44	17:13	33	16:35 (TRIV-07)	17:16	39	16:50 (TRIV-07)
27	06:29		06:51 (TRIV-17)	07:00			07:31	08:04	07:40		16:01 (TRIV-07)	08:03		16:12 (TRIV-07)
	21:02	27	07:18 (TRIV-17)	20:23			19:29	18:42	17:13	35	16:36 (TRIV-07)	17:17	38	16:50 (TRIV-07)
28	06:30		06:52 (TRIV-17)	07:01			07:32	08:05	07:41		16:01 (TRIV-07)	08:04		16:13 (TRIV-07)
	21:02	26	07:18 (TRIV-17)	20:21			19:27	18:41	17:13	36	16:37 (TRIV-07)	17:17	39	16:52 (TRIV-07)
29	06:31		06:53 (TRIV-17)	07:02			07:33	08:06	07:42		16:02 (TRIV-07)	08:04		16:13 (TRIV-07)
	21:01	25	07:18 (TRIV-17)	20:19			19:26	18:40	17:12	36	16:38 (TRIV-07)	17:18	39	16:52 (TRIV-07)
30	06:32		06:54 (TRIV-17)	07:03			07:34	08:07	07:43		16:02 (TRIV-07)	08:04		16:13 (TRIV-07)
	21:00	25	07:19 (TRIV-17)	20:18			19:24	18:38	17:12	37	16:39 (TRIV-07)	17:19	40	16:53 (TRIV-07)
31	06:33		06:55 (TRIV-17)	07:04				08:08				08:04		16:14 (TRIV-07)
	20:59	24	07:19 (TRIV-17)	20:16				18:37				17:20	39	16:53 (TRIV-07)
Potential sun hours	459			428			375	345	297			287		
Total, worst case		809			179					418			1197	
Sun reduction		0.76			0.75					0.40			0.36	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.66			0.70					0.70			0.70	
Total reduction		0.50			0.53					0.28			0.25	
Total, real		406			95					117			302	

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 60 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1091)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:05			07:51		16:20 (TRIV-42)	07:15		16:33 (TRIV-42)	07:24			06:38		19:43 (TRIV-41)	06:09		06:40 (TRIV-07)
	17:21			17:55	65	17:25 (TRIV-42)	18:29	42	17:15 (TRIV-42)	20:03			20:34	26	20:09 (TRIV-41)	21:04	45	07:25 (TRIV-07)
2	08:05			07:50		08:10 (TRIV-90)	07:13		16:35 (TRIV-42)	07:22			06:37		06:56 (TRIV-07)	06:09		06:41 (TRIV-07)
	17:22			17:57	71	17:26 (TRIV-42)	18:31	39	17:14 (TRIV-42)	20:04			20:36	36	20:07 (TRIV-41)	21:05	45	07:26 (TRIV-07)
3	08:05			07:49		08:09 (TRIV-90)	07:12		07:31 (TRIV-08)	07:21			06:35		06:55 (TRIV-07)	06:08		06:40 (TRIV-07)
	17:23			17:58	75	17:27 (TRIV-42)	18:32	37	17:11 (TRIV-42)	20:05			20:37	39	20:06 (TRIV-41)	21:06	45	07:25 (TRIV-07)
4	08:05			07:48		08:08 (TRIV-90)	07:10		07:29 (TRIV-08)	07:19			06:34		06:54 (TRIV-07)	06:08		06:41 (TRIV-07)
	17:23			17:59	78	17:27 (TRIV-42)	18:33	34	17:07 (TRIV-42)	20:06			20:38	40	20:05 (TRIV-41)	21:07	44	07:25 (TRIV-07)
5	08:05			07:47		08:07 (TRIV-90)	07:09		07:28 (TRIV-08)	07:17			06:33		06:53 (TRIV-07)	06:08		06:41 (TRIV-07)
	17:24			18:00	81	17:28 (TRIV-42)	18:34	29	17:04 (TRIV-42)	20:07			20:39	40	20:04 (TRIV-41)	21:07	45	07:26 (TRIV-07)
6	08:05		16:43 (TRIV-42)	07:46		08:06 (TRIV-90)	07:07		07:26 (TRIV-08)	07:16			06:32		06:52 (TRIV-07)	06:07		06:41 (TRIV-07)
	17:25	3	16:46 (TRIV-42)	18:02	83	17:28 (TRIV-42)	18:35	12	07:38 (TRIV-08)	20:08			20:40	38	20:02 (TRIV-41)	21:08	44	07:25 (TRIV-07)
7	08:05		16:39 (TRIV-42)	07:45		08:05 (TRIV-90)	07:05		07:25 (TRIV-08)	07:14			06:31		06:51 (TRIV-07)	06:07		06:42 (TRIV-07)
	17:26	13	16:52 (TRIV-42)	18:03	86	17:29 (TRIV-42)	18:36	14	07:39 (TRIV-08)	20:09			20:41	35	19:59 (TRIV-41)	21:09	43	07:25 (TRIV-07)
8	08:05		16:37 (TRIV-42)	07:43		08:04 (TRIV-90)	08:04		08:23 (TRIV-08)	07:12			06:29		06:49 (TRIV-07)	06:07		06:42 (TRIV-07)
	17:27	18	16:55 (TRIV-42)	18:04	88	17:29 (TRIV-42)	19:37	16	08:39 (TRIV-08)	20:10			20:42	30	07:19 (TRIV-07)	21:09	43	07:25 (TRIV-07)
9	08:04		16:35 (TRIV-42)	07:42		08:02 (TRIV-90)	08:02		08:21 (TRIV-08)	07:11			06:28		06:48 (TRIV-07)	06:07		06:43 (TRIV-07)
	17:28	21	16:56 (TRIV-42)	18:05	89	17:28 (TRIV-42)	19:39	17	08:38 (TRIV-08)	20:11			20:43	32	07:20 (TRIV-07)	21:10	43	07:26 (TRIV-07)
10	08:04		16:34 (TRIV-42)	07:41		08:01 (TRIV-90)	08:00		08:20 (TRIV-08)	07:09			06:27		06:47 (TRIV-07)	06:06		06:43 (TRIV-07)
	17:29	25	16:59 (TRIV-42)	18:07	91	17:29 (TRIV-42)	19:40	19	08:39 (TRIV-08)	20:12			20:44	34	07:21 (TRIV-07)	21:10	43	07:26 (TRIV-07)
11	08:04		16:33 (TRIV-42)	07:40		08:00 (TRIV-90)	07:59		08:18 (TRIV-08)	07:07			06:26		06:46 (TRIV-07)	06:06		06:43 (TRIV-07)
	17:30	28	17:01 (TRIV-42)	18:08	93	17:29 (TRIV-42)	19:41	20	08:38 (TRIV-08)	20:13			20:45	35	07:21 (TRIV-07)	21:11	42	07:25 (TRIV-07)
12	08:04		16:31 (TRIV-42)	07:39		07:59 (TRIV-90)	07:57		08:16 (TRIV-08)	07:06			06:25		06:45 (TRIV-07)	06:06		06:43 (TRIV-07)
	17:31	31	17:02 (TRIV-42)	18:09	93	17:29 (TRIV-42)	19:42	21	08:37 (TRIV-08)	20:14			20:46	37	07:22 (TRIV-07)	21:11	42	07:25 (TRIV-07)
13	08:03		16:30 (TRIV-42)	07:37		07:57 (TRIV-90)	07:56		08:15 (TRIV-08)	07:04			06:24		06:44 (TRIV-07)	06:06		06:43 (TRIV-07)
	17:33	34	17:04 (TRIV-42)	18:10	94	17:28 (TRIV-42)	19:43	22	08:37 (TRIV-08)	20:15			20:47	38	07:22 (TRIV-07)	21:12	42	07:25 (TRIV-07)
14	08:03		16:30 (TRIV-42)	07:36		07:56 (TRIV-90)	07:54		08:14 (TRIV-08)	07:03			06:23		06:43 (TRIV-07)	06:06		06:44 (TRIV-07)
	17:34	36	17:06 (TRIV-42)	18:12	96	17:29 (TRIV-42)	19:44	22	08:36 (TRIV-08)	20:16			20:48	40	07:23 (TRIV-07)	21:12	41	07:25 (TRIV-07)
15	08:03		16:28 (TRIV-42)	07:35		07:55 (TRIV-90)	07:52		08:15 (TRIV-08)	07:01		19:55 (TRIV-41)	06:22		06:42 (TRIV-07)	06:06		06:44 (TRIV-07)
	17:35	39	17:07 (TRIV-42)	18:13	95	17:29 (TRIV-42)	19:45	19	08:34 (TRIV-08)	20:17	1	19:56 (TRIV-41)	20:49	41	07:23 (TRIV-07)	21:13	41	07:25 (TRIV-07)
16	08:02		16:28 (TRIV-42)	07:34		07:55 (TRIV-90)	07:51		08:17 (TRIV-08)	07:00		19:51 (TRIV-41)	06:21		06:41 (TRIV-07)	06:06		06:44 (TRIV-07)
	17:36	41	17:09 (TRIV-42)	18:14	94	17:28 (TRIV-42)	19:46	16	08:33 (TRIV-08)	20:19	7	19:58 (TRIV-41)	20:50	42	07:23 (TRIV-07)	21:13	41	07:25 (TRIV-07)
17	08:02		16:27 (TRIV-42)	07:32		07:56 (TRIV-90)	07:49		08:19 (TRIV-08)	06:58		19:49 (TRIV-41)	06:20		06:41 (TRIV-07)	06:06		06:45 (TRIV-07)
	17:37	43	17:10 (TRIV-42)	18:15	92	17:28 (TRIV-42)	19:47	10	08:29 (TRIV-08)	20:20	9	19:58 (TRIV-41)	20:51	44	07:25 (TRIV-07)	21:14	41	07:26 (TRIV-07)
18	08:01		16:27 (TRIV-42)	07:31		07:57 (TRIV-90)	07:47			06:57		19:47 (TRIV-41)	06:19		06:40 (TRIV-07)	06:06		06:46 (TRIV-07)
	17:38	45	17:12 (TRIV-42)	18:16	89	17:28 (TRIV-42)	19:49			20:21	13	20:00 (TRIV-41)	20:52	45	07:25 (TRIV-07)	21:14	41	07:27 (TRIV-07)
19	08:01		16:26 (TRIV-42)	07:29		07:58 (TRIV-90)	07:46			06:55		19:45 (TRIV-41)	06:18		06:39 (TRIV-07)	06:06		06:46 (TRIV-07)
	17:39	47	17:13 (TRIV-42)	18:18	85	17:27 (TRIV-42)	19:50			20:22	15	20:00 (TRIV-41)	20:53	46	07:25 (TRIV-07)	21:14	41	07:27 (TRIV-07)
20	08:00		16:25 (TRIV-42)	07:28		08:00 (TRIV-90)	07:44			06:54		19:45 (TRIV-41)	06:17		06:38 (TRIV-07)	06:06		06:46 (TRIV-07)
	17:41	49	17:14 (TRIV-42)	18:19	80	17:26 (TRIV-42)	19:51			20:23	17	20:02 (TRIV-41)	20:54	47	07:25 (TRIV-07)	21:15	41	07:27 (TRIV-07)
21	08:00		16:25 (TRIV-42)	07:27		08:02 (TRIV-90)	07:42			06:52		19:43 (TRIV-41)	06:16		06:38 (TRIV-07)	06:07		06:46 (TRIV-07)
	17:42	51	17:16 (TRIV-42)	18:20	74	17:25 (TRIV-42)	19:52			20:24	19	20:02 (TRIV-41)	20:55	47	07:25 (TRIV-07)	21:15	41	07:27 (TRIV-07)
22	07:59		16:24 (TRIV-42)	07:25		16:24 (TRIV-42)	07:41			06:51		19:43 (TRIV-41)	06:16		06:39 (TRIV-07)	06:07		06:46 (TRIV-07)
	17:43	53	17:17 (TRIV-42)	18:21	61	17:25 (TRIV-42)	19:53			20:25	20	20:03 (TRIV-41)	20:56	46	07:25 (TRIV-07)	21:15	41	07:27 (TRIV-07)
23	07:58		16:23 (TRIV-42)	07:24		16:25 (TRIV-42)	07:39			06:49		19:42 (TRIV-41)	06:15		06:38 (TRIV-07)	06:07		06:47 (TRIV-07)
	17:44	55	17:18 (TRIV-42)	18:22	58	17:23 (TRIV-42)	19:54			20:26	22	20:04 (TRIV-41)	20:57	47	07:25 (TRIV-07)	21:15	41	07:28 (TRIV-07)
24	07:58		16:23 (TRIV-42)	07:22		16:26 (TRIV-42)	07:37			06:48		19:42 (TRIV-41)	06:14		06:38 (TRIV-07)	06:07		06:47 (TRIV-07)
	17:45	57	17:20 (TRIV-42)	18:24	57	17:23 (TRIV-42)	19:55			20:27	23	20:05 (TRIV-41)	20:58	47	07:25 (TRIV-07)	21:16	41	07:28 (TRIV-07)
25	07:57		16:23 (TRIV-42)	07:21		16:27 (TRIV-42)	07:36			06:46		19:42 (TRIV-41)	06:13		06:39 (TRIV-07)	06:08		06:47 (TRIV-07)
	17:47	57	17:20 (TRIV-42)	18:25	54	17:21 (TRIV-42)	19:56			20:28	25	20:07 (TRIV-41)	20:58	47	07:26 (TRIV-07)	21:16	41	07:28 (TRIV-07)
26	07:56		16:22 (TRIV-42)	07:19		16:28 (TRIV-42)	07:34			06:45		19:41 (TRIV-41)	06:13		06:38 (TRIV-07)	06:08		06:46 (TRIV-07)
	17:48	59	17:21 (TRIV-42)	18:26	52	17:20 (TRIV-42)	19:57			20:29	26	20:07 (TRIV-41)	20:59	47	07:25 (TRIV-07)	21:16	41	07:27 (TRIV-07)
27	07:55		16:22 (TRIV-42)	07:18		16:29 (TRIV-42)	07:32			06:43		19:41 (TRIV-41)	06:12		06:38 (TRIV-07)	06:08		06:47 (TRIV-07)
	17:49	60	17:22 (TRIV-42)	18:27	49	17:18 (TRIV-42)	19:58			20:30	27	20:08 (TRIV-41)	21:00	47	07:25 (TRIV-07)	21:16	41	07:28 (TRIV-07)
28	07:55		16:21 (TRIV-42)	07:16		16:31 (TRIV-42)	07:31			06:42		19:42 (TRIV-41)	06:11		06:39 (TRIV-07)	06:09		06:47 (TRIV-07)
	17:50	62	17:23 (TRIV-42)	18:28	46	17:17 (TRIV-42)	19:59			20:31	28	20:10 (TRIV-41)	21:01	47	07:26 (TRIV-07)	21:16	41	07:28 (TRIV-07)
29	07:54		16:21 (TRIV-42)				07:29			06:41		19:41 (TRIV-41)	06:11		06:39 (TRIV-07)	06:09		06:48 (TRIV-07)
	17:52	62	17:23 (TRIV-42)				20:00			20:32	29	20:10 (TRIV-41)	21:02	46	07:25 (TRIV-07)	21:16	41	07:29 (TRIV-07)
30	07:53		16:20 (TRIV-42)				07:27			06:39		19:42 (TRIV-41)	06:10		06:39 (TRIV-07)	06:10		06:47 (TRIV-07)
	17:53	64	17:24 (TRIV-42)				20:00			20:33	27	20:09 (TRIV-41)	21:03	47	07:26 (TRIV-07)	21:16	42	07:29 (TRIV-07)
31	07:52		16:20 (TRIV-42)				07:25						06:10		06:39 (TRIV-07)			
	17:54	65	17:25 (TRIV-42)				20:01						21:04	46	07:25 (TRIV-07)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case		1118			2169			389			308			1279			1264	
Sun reduction		0.50			0.55			0.57			0.63			0.69			0.74	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.69			0.68			0.67			0.64			0.69			0.70	
Total reduction		0.35			0.38			0.38			0.40			0.48			0.52	
Total, real		388			816			149			125			612			654	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 60 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1091)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December		
1	06:10		06:48 (TRIV-07)	06:34		06:56 (TRIV-07)	07:05			07:35		07:55 (TRIV-08)	07:10		07:31 (TRIV-90)	07:44		16:15 (TRIV-42)
	21:16	42	07:30 (TRIV-07)	20:58	36	07:32 (TRIV-07)	20:15			19:22	22	08:17 (TRIV-08)	17:36	90	16:58 (TRIV-42)	17:12	28	16:43 (TRIV-42)
2	06:11		06:47 (TRIV-07)	06:35		06:57 (TRIV-07)	07:06			07:36		07:56 (TRIV-08)	07:11		07:32 (TRIV-90)	07:45		16:16 (TRIV-42)
	21:16	43	07:30 (TRIV-07)	20:56	35	07:32 (TRIV-07)	20:13			19:21	21	08:17 (TRIV-08)	17:35	89	16:58 (TRIV-42)	17:11	26	16:42 (TRIV-42)
3	06:11		06:48 (TRIV-07)	06:36		06:58 (TRIV-07)	07:07			07:37		07:57 (TRIV-08)	07:12		07:33 (TRIV-90)	07:46		16:19 (TRIV-42)
	21:16	43	07:31 (TRIV-07)	20:55	33	07:31 (TRIV-07)	20:11			19:19	19	08:16 (TRIV-08)	17:33	88	16:58 (TRIV-42)	17:11	22	16:41 (TRIV-42)
4	06:12		06:47 (TRIV-07)	06:37		06:59 (TRIV-07)	07:08			07:38		07:58 (TRIV-08)	07:13		07:35 (TRIV-90)	07:47		16:21 (TRIV-42)
	21:15	44	07:31 (TRIV-07)	20:54	31	07:30 (TRIV-07)	20:10			19:17	18	08:16 (TRIV-08)	17:32	85	16:58 (TRIV-42)	17:11	18	16:39 (TRIV-42)
5	06:12		06:48 (TRIV-07)	06:38		07:00 (TRIV-07)	07:09			07:39		07:59 (TRIV-08)	07:14		07:36 (TRIV-90)	07:48		16:24 (TRIV-42)
	21:15	43	07:31 (TRIV-07)	20:53	29	07:29 (TRIV-07)	20:08			19:16	17	08:16 (TRIV-08)	17:31	83	16:58 (TRIV-42)	17:11	13	16:37 (TRIV-42)
6	06:13		06:47 (TRIV-07)	06:39		07:01 (TRIV-07)	07:10			07:40		08:00 (TRIV-08)	07:15		07:37 (TRIV-90)	07:49		16:28 (TRIV-42)
	21:15	44	07:31 (TRIV-07)	20:52	37	20:10 (TRIV-41)	20:07			19:14	15	08:15 (TRIV-08)	17:30	80	16:57 (TRIV-42)	17:11	5	16:33 (TRIV-42)
7	06:13		06:48 (TRIV-07)	06:40		07:02 (TRIV-07)	07:11			07:41		08:01 (TRIV-08)	07:17		07:38 (TRIV-90)	07:50		
	21:15	44	07:32 (TRIV-07)	20:51	39	20:12 (TRIV-41)	20:05			19:12	13	08:14 (TRIV-08)	17:29	77	16:57 (TRIV-42)	17:11		
8	06:14		06:47 (TRIV-07)	06:41		07:03 (TRIV-07)	07:12			07:42		08:02 (TRIV-08)	07:18		07:40 (TRIV-90)	07:51		
	21:15	45	07:32 (TRIV-07)	20:50	40	20:14 (TRIV-41)	20:03			19:11	25	17:36 (TRIV-42)	17:28	74	16:57 (TRIV-42)	17:10		
9	06:15		06:47 (TRIV-07)	06:42		07:04 (TRIV-07)	07:13			07:44		08:03 (TRIV-08)	07:19		07:41 (TRIV-90)	07:52		
	21:14	45	07:32 (TRIV-07)	20:48	40	20:15 (TRIV-41)	20:02			19:09	32	17:40 (TRIV-42)	17:27	71	16:57 (TRIV-42)	17:10		
10	06:15		06:48 (TRIV-07)	06:43		07:05 (TRIV-07)	07:14			07:45		08:05 (TRIV-08)	07:20		15:51 (TRIV-42)	07:53		
	21:14	45	07:33 (TRIV-07)	20:47	38	20:16 (TRIV-41)	20:00			19:08	36	17:44 (TRIV-42)	17:26	65	16:56 (TRIV-42)	17:10		
11	06:16		06:47 (TRIV-07)	06:44		07:06 (TRIV-07)	07:15			07:46		08:06 (TRIV-08)	07:21		15:52 (TRIV-42)	07:54		
	21:13	46	07:33 (TRIV-07)	20:46	34	20:16 (TRIV-41)	19:56			19:06	37	17:46 (TRIV-42)	17:25	65	16:57 (TRIV-42)	17:11		
12	06:17		06:47 (TRIV-07)	06:45		19:50 (TRIV-41)	07:16			07:47		17:08 (TRIV-42)	07:23		15:52 (TRIV-42)	07:55		
	21:13	46	07:33 (TRIV-07)	20:44	27	20:17 (TRIV-41)	19:55			19:04	40	17:48 (TRIV-42)	17:24	64	16:56 (TRIV-42)	17:11		
13	06:18		06:48 (TRIV-07)	06:46		19:50 (TRIV-41)	07:17			07:48		17:05 (TRIV-42)	07:24		15:53 (TRIV-42)	07:56		
	21:12	46	07:34 (TRIV-07)	20:43	27	20:17 (TRIV-41)	19:53			19:03	44	17:49 (TRIV-42)	17:23	62	16:55 (TRIV-42)	17:11		
14	06:18		06:48 (TRIV-07)	06:47		19:49 (TRIV-41)	07:18			07:49		17:03 (TRIV-42)	07:25		15:53 (TRIV-42)	07:56		
	21:12	46	07:34 (TRIV-07)	20:42	28	20:17 (TRIV-41)	19:51			19:01	47	17:50 (TRIV-42)	17:22	62	16:55 (TRIV-42)	17:11		
15	06:19		06:47 (TRIV-07)	06:48		19:48 (TRIV-41)	07:19			07:50		17:01 (TRIV-42)	07:26		15:55 (TRIV-42)	07:57		
	21:11	47	07:34 (TRIV-07)	20:40	28	20:16 (TRIV-41)	19:50			19:00	50	17:51 (TRIV-42)	17:21	60	16:55 (TRIV-42)	17:11		
16	06:20		06:48 (TRIV-07)	06:49		19:48 (TRIV-41)	07:20			07:51		16:59 (TRIV-42)	07:27		15:55 (TRIV-42)	07:58		
	21:11	46	07:34 (TRIV-07)	20:39	27	20:15 (TRIV-41)	19:48			18:58	53	17:52 (TRIV-42)	17:20	59	16:54 (TRIV-42)	17:12		
17	06:21		06:48 (TRIV-07)	06:50		19:48 (TRIV-41)	07:21			07:52		16:59 (TRIV-42)	07:29		15:56 (TRIV-42)	07:58		
	21:10	47	07:35 (TRIV-07)	20:38	26	20:14 (TRIV-41)	19:46			18:57	55	17:54 (TRIV-42)	17:19	57	16:53 (TRIV-42)	17:12		
18	06:21		06:48 (TRIV-07)	06:51		19:48 (TRIV-41)	07:22			07:53		16:57 (TRIV-42)	07:30		15:56 (TRIV-42)	07:59		
	21:10	47	07:35 (TRIV-07)	20:36	24	20:12 (TRIV-41)	19:45			18:55	58	17:55 (TRIV-42)	17:18	56	16:52 (TRIV-42)	17:12		
19	06:22		06:48 (TRIV-07)	06:52		19:48 (TRIV-41)	07:23			07:54		16:56 (TRIV-42)	07:31		15:58 (TRIV-42)	08:00		
	21:09	47	07:35 (TRIV-07)	20:35	23	20:11 (TRIV-41)	19:43			18:54	59	17:55 (TRIV-42)	17:18	55	16:53 (TRIV-42)	17:13		
20	06:23		06:48 (TRIV-07)	06:53		19:48 (TRIV-41)	07:24			07:56		08:35 (TRIV-90)	07:32		15:59 (TRIV-42)	08:00		
	21:08	47	07:35 (TRIV-07)	20:33	21	20:09 (TRIV-41)	19:41			18:52	68	17:56 (TRIV-42)	17:17	53	16:52 (TRIV-42)	17:13		
21	06:24		06:48 (TRIV-07)	06:54		19:48 (TRIV-41)	07:25			07:57		08:31 (TRIV-90)	07:33		16:00 (TRIV-42)	08:01		
	21:08	47	07:35 (TRIV-07)	20:32	20	20:08 (TRIV-41)	19:39			18:51	77	17:56 (TRIV-42)	17:16	51	16:51 (TRIV-42)	17:13		
22	06:25		06:48 (TRIV-07)	06:55		19:48 (TRIV-41)	07:26			07:58		08:29 (TRIV-90)	07:34		16:01 (TRIV-42)	08:01		
	21:07	47	07:35 (TRIV-07)	20:30	19	20:07 (TRIV-41)	19:38			18:49	82	17:56 (TRIV-42)	17:16	49	16:50 (TRIV-42)	17:14		
23	06:26		06:48 (TRIV-07)	06:56		19:49 (TRIV-41)	07:27			07:59		08:28 (TRIV-90)	07:36		16:03 (TRIV-42)	08:02		
	21:06	47	07:35 (TRIV-07)	20:29	16	20:05 (TRIV-41)	19:36			18:48	86	17:57 (TRIV-42)	17:15	47	16:50 (TRIV-42)	17:14		
24	06:27		06:49 (TRIV-07)	06:57		19:49 (TRIV-41)	07:28			08:00		08:27 (TRIV-90)	07:37		16:04 (TRIV-42)	08:02		
	21:05	46	07:35 (TRIV-07)	20:27	15	20:04 (TRIV-41)	19:34			18:46	89	17:57 (TRIV-42)	17:15	45	16:49 (TRIV-42)	17:15		
25	06:28		06:50 (TRIV-07)	06:58		19:50 (TRIV-41)	07:29			08:01		08:25 (TRIV-90)	07:38		16:05 (TRIV-42)	08:03		
	21:04	45	07:35 (TRIV-07)	20:26	12	20:02 (TRIV-41)	19:33			18:45	93	17:58 (TRIV-42)	17:14	43	16:48 (TRIV-42)	17:16		
26	06:28		06:51 (TRIV-07)	06:59		19:52 (TRIV-41)	07:30		08:03 (TRIV-08)	08:02		08:25 (TRIV-90)	07:39		16:06 (TRIV-42)	08:03		
	21:03	44	07:35 (TRIV-07)	20:24	9	20:01 (TRIV-41)	19:31	7	08:10 (TRIV-08)	18:44	94	17:58 (TRIV-42)	17:14	42	16:48 (TRIV-42)	17:16		
27	06:29		06:51 (TRIV-07)	07:00		19:54 (TRIV-41)	07:31		07:59 (TRIV-08)	08:04		08:25 (TRIV-90)	07:40		16:07 (TRIV-42)	08:03		
	21:03	43	07:34 (TRIV-07)	20:23	5	19:59 (TRIV-41)	19:29	14	08:13 (TRIV-08)	18:42	95	17:58 (TRIV-42)	17:13	40	16:47 (TRIV-42)	17:17		
28	06:30		06:52 (TRIV-07)	07:01		19:57 (TRIV-41)	07:32		07:57 (TRIV-08)	08:05		08:26 (TRIV-90)	07:41		16:09 (TRIV-42)	08:04		
	21:02	42	07:34 (TRIV-07)	20:21	1	19:58 (TRIV-41)	19:27	18	08:15 (TRIV-08)	18:41	94	17:58 (TRIV-42)	17:13	37	16:46 (TRIV-42)	17:18		
29	06:31		06:53 (TRIV-07)	07:02			07:33		07:55 (TRIV-08)	08:06		08:27 (TRIV-90)	07:42		16:11 (TRIV-42)	08:04		
	21:01	41	07:34 (TRIV-07)	20:20			19:26	21	08:16 (TRIV-08)	18:40	94	17:58 (TRIV-42)	17:12	34	16:45 (TRIV-42)	17:18		
30	06:32		06:54 (TRIV-07)	07:03			07:34		07:54 (TRIV-08)	08:07		08:28 (TRIV-90)	07:43		16:13 (TRIV-42)	08:04		
	21:00	39	07:33 (TRIV-07)	20:18			19:24	22	08:16 (TRIV-08)	18:38	93	17:58 (TRIV-42)	17:12	31	16:44 (TRIV-42)	17:19		
31	06:33		06:55 (TRIV-07)	07:04						08:08		08:30 (TRIV-90)				08:04		
	20:59	38	07:33 (TRIV-07)	20:16						18:37	93	17:59 (TRIV-42)				17:20		
Potential sun hours	459			428			375			345			297			288		
Total, worst case		1382			720			82			1719			1814			112	
Sun reduction		0.76			0.75			0.67			0.60			0.40			0.36	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.70			0.66			0.66			0.68			0.69			0.69	
Total reduction		0.53			0.50			0.44			0.41			0.28			0.25	
Total, real		735			359			36			704			501			28	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 62 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1093)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May			June		
1	08:05		08:54 (TRIV-10a)	07:51		09:19 (TRIV-10a)	07:15	07:24	06:38			06:09		20:16 (TRIV-42)
	17:21	71	10:05 (TRIV-10a)	17:55	37	09:56 (TRIV-10a)	18:29	20:02	20:34			21:04	24	20:40 (TRIV-42)
2	08:05		08:54 (TRIV-10a)	07:50		09:21 (TRIV-10a)	07:13	07:22	06:37			06:09		20:17 (TRIV-42)
	17:22	71	10:05 (TRIV-10a)	17:57	33	09:54 (TRIV-10a)	18:31	20:04	20:35			21:05	24	20:41 (TRIV-42)
3	08:05		08:55 (TRIV-10a)	07:49		09:24 (TRIV-10a)	07:12	07:20	06:35			06:08		20:17 (TRIV-42)
	17:23	70	10:05 (TRIV-10a)	17:58	28	09:52 (TRIV-10a)	18:32	20:05	20:37			21:06	24	20:41 (TRIV-42)
4	08:05		08:55 (TRIV-10a)	07:48		09:27 (TRIV-10a)	07:10	07:19	06:34			06:08		20:18 (TRIV-42)
	17:23	71	10:06 (TRIV-10a)	17:59	22	09:49 (TRIV-10a)	18:33	20:06	20:38			21:06	23	20:41 (TRIV-42)
5	08:05		08:56 (TRIV-10a)	07:47		09:32 (TRIV-10a)	07:08	07:17	06:33			06:08		20:18 (TRIV-42)
	17:24	70	10:06 (TRIV-10a)	18:00	12	09:44 (TRIV-10a)	18:34	20:07	20:39			21:07	23	20:41 (TRIV-42)
6	08:05		08:56 (TRIV-10a)	07:46			07:07	07:16	06:32			06:07		20:18 (TRIV-42)
	17:25	71	10:07 (TRIV-10a)	18:02			18:35	20:08	20:40			21:08	23	20:41 (TRIV-42)
7	08:05		08:57 (TRIV-10a)	07:45			07:05	07:14	06:31			06:07		20:19 (TRIV-42)
	17:26	70	10:07 (TRIV-10a)	18:03			18:36	20:09	20:41			21:08	22	20:41 (TRIV-42)
8	08:05		08:58 (TRIV-10a)	07:43			08:04	07:12	06:29			06:07		20:20 (TRIV-42)
	17:27	69	10:07 (TRIV-10a)	18:04			19:37	20:10	20:42			21:09	21	20:41 (TRIV-42)
9	08:04		08:58 (TRIV-10a)	07:42			08:02	07:11	06:28			06:07		20:20 (TRIV-42)
	17:28	69	10:07 (TRIV-10a)	18:05			19:39	20:11	20:43			21:10	21	20:41 (TRIV-42)
10	08:04		08:58 (TRIV-10a)	07:41			08:00	07:09	06:27			06:06		20:20 (TRIV-42)
	17:29	69	10:07 (TRIV-10a)	18:07			19:40	20:12	20:44			21:10	20	20:40 (TRIV-42)
11	08:04		08:59 (TRIV-10a)	07:40			07:59	07:07	06:26			06:06		20:20 (TRIV-42)
	17:30	69	10:08 (TRIV-10a)	18:08			19:41	20:13	20:45			21:11	20	20:40 (TRIV-42)
12	08:04		08:59 (TRIV-10a)	07:39			07:57	07:06	06:25			06:06		20:21 (TRIV-42)
	17:31	68	10:07 (TRIV-10a)	18:09			19:42	20:14	20:46			21:11	19	20:40 (TRIV-42)
13	08:03		09:00 (TRIV-10a)	07:37			07:56	07:04	06:24		20:21 (TRIV-42)	06:06		20:21 (TRIV-42)
	17:33	68	10:08 (TRIV-10a)	18:10			19:43	20:15	20:47	3	20:24 (TRIV-42)	21:12	19	20:40 (TRIV-42)
14	08:03		09:01 (TRIV-10a)	07:36			07:54	07:03	06:23		20:19 (TRIV-42)	06:06		20:22 (TRIV-42)
	17:34	67	10:08 (TRIV-10a)	18:11			19:44	20:16	20:48	6	20:25 (TRIV-42)	21:12	18	20:40 (TRIV-42)
15	08:03		09:01 (TRIV-10a)	07:35			07:52	07:01	06:22		20:18 (TRIV-42)	06:06		20:22 (TRIV-42)
	17:35	67	10:08 (TRIV-10a)	18:13			19:45	20:17	20:49	7	20:25 (TRIV-42)	21:13	18	20:40 (TRIV-42)
16	08:02		09:03 (TRIV-10a)	07:33			07:51	07:00	06:21		20:17 (TRIV-42)	06:06		20:23 (TRIV-42)
	17:36	65	10:08 (TRIV-10a)	18:14			19:46	20:18	20:50	9	20:26 (TRIV-42)	21:13	17	20:40 (TRIV-42)
17	08:02		09:03 (TRIV-10a)	07:32			07:49	06:58	06:20		20:17 (TRIV-42)	06:06		20:23 (TRIV-42)
	17:37	65	10:08 (TRIV-10a)	18:15			19:47	20:20	20:51	11	20:28 (TRIV-42)	21:14	17	20:40 (TRIV-42)
18	08:01		09:04 (TRIV-10a)	07:31			07:47	06:57	06:19		20:16 (TRIV-42)	06:06		20:24 (TRIV-42)
	17:38	64	10:08 (TRIV-10a)	18:16			19:49	20:21	20:52	13	20:29 (TRIV-42)	21:14	17	20:41 (TRIV-42)
19	08:01		09:04 (TRIV-10a)	07:29			07:46	06:55	06:18		20:16 (TRIV-42)	06:06		20:24 (TRIV-42)
	17:39	64	10:08 (TRIV-10a)	18:18			19:50	20:22	20:53	14	20:30 (TRIV-42)	21:14	17	20:41 (TRIV-42)
20	08:00		09:05 (TRIV-10a)	07:28			07:44	06:54	06:17		20:15 (TRIV-42)	06:06		20:24 (TRIV-42)
	17:41	62	10:07 (TRIV-10a)	18:19			19:51	20:23	20:54	15	20:30 (TRIV-42)	21:15	17	20:41 (TRIV-42)
21	08:00		09:06 (TRIV-10a)	07:27			07:42	06:52	06:16		20:15 (TRIV-42)	06:07		20:24 (TRIV-42)
	17:42	61	10:07 (TRIV-10a)	18:20			19:52	20:24	20:55	16	20:31 (TRIV-42)	21:15	17	20:41 (TRIV-42)
22	07:59		09:07 (TRIV-10a)	07:25			07:41	06:51	06:16		20:15 (TRIV-42)	06:07		20:24 (TRIV-42)
	17:43	60	10:07 (TRIV-10a)	18:21			19:53	20:25	20:56	17	20:32 (TRIV-42)	21:15	17	20:41 (TRIV-42)
23	07:58		09:08 (TRIV-10a)	07:24			07:39	06:49	06:15		20:15 (TRIV-42)	06:07		20:24 (TRIV-42)
	17:44	58	10:06 (TRIV-10a)	18:22			19:54	20:26	20:57	18	20:33 (TRIV-42)	21:15	17	20:41 (TRIV-42)
24	07:58		09:08 (TRIV-10a)	07:22			07:37	06:48	06:14		20:14 (TRIV-42)	06:07		20:25 (TRIV-42)
	17:45	57	10:05 (TRIV-10a)	18:24			19:55	20:27	20:58	19	20:33 (TRIV-42)	21:16	17	20:42 (TRIV-42)
25	07:57		09:10 (TRIV-10a)	07:21			07:36	06:46	06:13		20:15 (TRIV-42)	06:08		20:25 (TRIV-42)
	17:47	55	10:05 (TRIV-10a)	18:25			19:56	20:28	20:58	20	20:35 (TRIV-42)	21:16	17	20:42 (TRIV-42)
26	07:56		09:11 (TRIV-10a)	07:19			07:34	06:45	06:13		20:15 (TRIV-42)	06:08		20:25 (TRIV-42)
	17:48	53	10:04 (TRIV-10a)	18:26			19:57	20:29	20:59	20	20:35 (TRIV-42)	21:16	17	20:42 (TRIV-42)
27	07:55		09:12 (TRIV-10a)	07:18			07:32	06:43	06:12		20:15 (TRIV-42)	06:08		20:25 (TRIV-42)
	17:49	51	10:03 (TRIV-10a)	18:27			19:58	20:30	21:00	21	20:36 (TRIV-42)	21:16	18	20:43 (TRIV-42)
28	07:55		09:13 (TRIV-10a)	07:16			07:30	06:42	06:11		20:15 (TRIV-42)	06:09		20:25 (TRIV-42)
	17:50	49	10:02 (TRIV-10a)	18:28			19:59	20:31	21:01	22	20:37 (TRIV-42)	21:16	18	20:43 (TRIV-42)
29	07:54		09:14 (TRIV-10a)				07:29	06:41	06:11		20:15 (TRIV-42)	06:09		20:26 (TRIV-42)
	17:52	47	10:01 (TRIV-10a)				20:00	20:32	21:02	22	20:37 (TRIV-42)	21:16	18	20:44 (TRIV-42)
30	07:53		09:16 (TRIV-10a)				07:27	06:39	06:10		20:16 (TRIV-42)	06:10		20:25 (TRIV-42)
	17:53	44	10:00 (TRIV-10a)				20:00	20:33	21:03	23	20:39 (TRIV-42)	21:16	19	20:44 (TRIV-42)
31	07:52		09:17 (TRIV-10a)				07:25		06:10		20:16 (TRIV-42)			
	17:54	41	09:58 (TRIV-10a)				20:01		21:03	23	20:39 (TRIV-42)			
Potential sun hours	297			297			370	399	448			452		
Total, worst case		1936			132					299			579	
Sun reduction		0.50			0.55					0.69			0.74	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.59			0.59					0.63			0.63	
Total reduction		0.29			0.32					0.43			0.46	
Total, real		571			43					129			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)

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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 62 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1093)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August	September	October	November			December		
1	06:10		20:26 (TRIV-42)	06:34	07:05	07:35	07:09			07:44		08:41 (TRIV-10a)
	21:16	19	20:45 (TRIV-42)	20:57	20:15	19:22	17:36			17:12	69	09:50 (TRIV-10a)
2	06:11		20:25 (TRIV-42)	06:35	07:06	07:36	07:11			07:45		08:42 (TRIV-10a)
	21:16	20	20:45 (TRIV-42)	20:56	20:13	19:21	17:35			17:11	68	09:50 (TRIV-10a)
3	06:11		20:25 (TRIV-42)	06:36	07:07	07:37	07:12			07:46		08:42 (TRIV-10a)
	21:16	21	20:46 (TRIV-42)	20:55	20:11	19:19	17:33			17:11	69	09:51 (TRIV-10a)
4	06:12		20:25 (TRIV-42)	06:37	07:08	07:38	07:13			07:47		08:42 (TRIV-10a)
	21:15	21	20:46 (TRIV-42)	20:54	20:10	19:17	17:32			17:11	70	09:52 (TRIV-10a)
5	06:12		20:25 (TRIV-42)	06:38	07:09	07:39	07:14			07:48		08:42 (TRIV-10a)
	21:15	22	20:47 (TRIV-42)	20:53	20:08	19:16	17:31			17:11	70	09:52 (TRIV-10a)
6	06:13		20:24 (TRIV-42)	06:39	07:10	07:40	07:15		09:01 (TRIV-10a)	07:49		08:43 (TRIV-10a)
	21:15	23	20:47 (TRIV-42)	20:52	20:07	19:14	17:30	14	09:15 (TRIV-10a)	17:11	70	09:53 (TRIV-10a)
7	06:13		20:25 (TRIV-42)	06:40	07:11	07:41	07:17		08:57 (TRIV-10a)	07:50		08:43 (TRIV-10a)
	21:15	23	20:48 (TRIV-42)	20:51	20:05	19:12	17:29	22	09:19 (TRIV-10a)	17:10	70	09:53 (TRIV-10a)
8	06:14		20:24 (TRIV-42)	06:41	07:12	07:42	07:18		08:55 (TRIV-10a)	07:51		08:43 (TRIV-10a)
	21:14	23	20:47 (TRIV-42)	20:49	20:03	19:11	17:28	28	09:23 (TRIV-10a)	17:10	71	09:54 (TRIV-10a)
9	06:15		20:24 (TRIV-42)	06:42	07:13	07:44	07:19		08:52 (TRIV-10a)	07:52		08:44 (TRIV-10a)
	21:14	24	20:48 (TRIV-42)	20:48	20:01	19:09	17:27	34	09:26 (TRIV-10a)	17:10	70	09:54 (TRIV-10a)
10	06:15		20:25 (TRIV-42)	06:43	07:14	07:45	07:20		08:50 (TRIV-10a)	07:53		08:44 (TRIV-10a)
	21:14	24	20:49 (TRIV-42)	20:47	20:00	19:08	17:26	37	09:27 (TRIV-10a)	17:10	71	09:55 (TRIV-10a)
11	06:16		20:24 (TRIV-42)	06:44	07:15	07:46	07:21		08:49 (TRIV-10a)	07:54		08:44 (TRIV-10a)
	21:13	23	20:47 (TRIV-42)	20:46	19:56	19:06	17:25	41	09:30 (TRIV-10a)	17:11	71	09:55 (TRIV-10a)
12	06:17		20:24 (TRIV-42)	06:45	07:16	07:47	07:23		08:48 (TRIV-10a)	07:55		08:44 (TRIV-10a)
	21:13	23	20:47 (TRIV-42)	20:44	19:55	19:04	17:24	44	09:32 (TRIV-10a)	17:11	71	09:55 (TRIV-10a)
13	06:18		20:24 (TRIV-42)	06:46	07:17	07:48	07:24		08:46 (TRIV-10a)	07:55		08:45 (TRIV-10a)
	21:12	23	20:47 (TRIV-42)	20:43	19:53	19:03	17:23	47	09:33 (TRIV-10a)	17:11	71	09:56 (TRIV-10a)
14	06:18		20:24 (TRIV-42)	06:47	07:18	07:49	07:25		08:45 (TRIV-10a)	07:56		08:46 (TRIV-10a)
	21:12	23	20:47 (TRIV-42)	20:42	19:51	19:01	17:22	49	09:34 (TRIV-10a)	17:11	71	09:57 (TRIV-10a)
15	06:19		20:24 (TRIV-42)	06:48	07:19	07:50	07:26		08:45 (TRIV-10a)	07:57		08:45 (TRIV-10a)
	21:11	22	20:46 (TRIV-42)	20:40	19:50	19:00	17:21	51	09:36 (TRIV-10a)	17:11	72	09:57 (TRIV-10a)
16	06:20		20:24 (TRIV-42)	06:49	07:20	07:51	07:27		08:44 (TRIV-10a)	07:58		08:46 (TRIV-10a)
	21:11	21	20:45 (TRIV-42)	20:39	19:48	18:58	17:20	53	09:37 (TRIV-10a)	17:12	71	09:57 (TRIV-10a)
17	06:21		20:24 (TRIV-42)	06:50	07:21	07:52	07:29		08:43 (TRIV-10a)	07:58		08:47 (TRIV-10a)
	21:10	21	20:45 (TRIV-42)	20:38	19:46	18:57	17:19	55	09:38 (TRIV-10a)	17:12	71	09:58 (TRIV-10a)
18	06:21		20:25 (TRIV-42)	06:51	07:22	07:53	07:30		08:42 (TRIV-10a)	07:59		08:47 (TRIV-10a)
	21:10	20	20:45 (TRIV-42)	20:36	19:45	18:55	17:18	57	09:39 (TRIV-10a)	17:12	71	09:58 (TRIV-10a)
19	06:22		20:25 (TRIV-42)	06:52	07:23	07:54	07:31		08:43 (TRIV-10a)	08:00		08:48 (TRIV-10a)
	21:09	19	20:44 (TRIV-42)	20:35	19:43	18:54	17:18	58	09:41 (TRIV-10a)	17:13	71	09:59 (TRIV-10a)
20	06:23		20:24 (TRIV-42)	06:53	07:24	07:56	07:32		08:42 (TRIV-10a)	08:00		08:47 (TRIV-10a)
	21:08	19	20:43 (TRIV-42)	20:33	19:41	18:52	17:17	60	09:42 (TRIV-10a)	17:13	72	09:59 (TRIV-10a)
21	06:24		20:25 (TRIV-42)	06:54	07:25	07:57	07:33		08:41 (TRIV-10a)	08:01		08:48 (TRIV-10a)
	21:07	17	20:42 (TRIV-42)	20:32	19:39	18:51	17:16	61	09:42 (TRIV-10a)	17:13	72	10:00 (TRIV-10a)
22	06:25		20:25 (TRIV-42)	06:55	07:26	07:58	07:34		08:41 (TRIV-10a)	08:01		08:48 (TRIV-10a)
	21:07	17	20:42 (TRIV-42)	20:30	19:38	18:49	17:16	62	09:43 (TRIV-10a)	17:14	72	10:00 (TRIV-10a)
23	06:26		20:25 (TRIV-42)	06:56	07:27	07:59	07:36		08:41 (TRIV-10a)	08:02		08:49 (TRIV-10a)
	21:06	16	20:41 (TRIV-42)	20:29	19:36	18:48	17:15	64	09:45 (TRIV-10a)	17:14	72	10:01 (TRIV-10a)
24	06:27		20:26 (TRIV-42)	06:57	07:28	08:00	07:37		08:41 (TRIV-10a)	08:02		08:50 (TRIV-10a)
	21:05	14	20:40 (TRIV-42)	20:27	19:34	18:46	17:15	64	09:45 (TRIV-10a)	17:15	71	10:01 (TRIV-10a)
25	06:28		20:26 (TRIV-42)	06:58	07:29	08:01	07:38		08:41 (TRIV-10a)	08:03		08:51 (TRIV-10a)
	21:04	14	20:40 (TRIV-42)	20:26	19:33	18:45	17:14	65	09:46 (TRIV-10a)	17:16	71	10:02 (TRIV-10a)
26	06:28		20:27 (TRIV-42)	06:59	07:30	08:02	07:39		08:41 (TRIV-10a)	08:03		08:51 (TRIV-10a)
	21:03	12	20:39 (TRIV-42)	20:24	19:31	18:44	17:13	65	09:46 (TRIV-10a)	17:16	71	10:02 (TRIV-10a)
27	06:29		20:27 (TRIV-42)	07:00	07:31	08:04	07:40		08:40 (TRIV-10a)	08:03		08:51 (TRIV-10a)
	21:02	10	20:37 (TRIV-42)	20:23	19:29	18:42	17:13	67	09:47 (TRIV-10a)	17:17	71	10:02 (TRIV-10a)
28	06:30		20:28 (TRIV-42)	07:01	07:32	08:05	07:41		08:40 (TRIV-10a)	08:04		08:52 (TRIV-10a)
	21:02	8	20:36 (TRIV-42)	20:21	19:27	18:41	17:13	67	09:47 (TRIV-10a)	17:18	72	10:04 (TRIV-10a)
29	06:31		20:29 (TRIV-42)	07:02	07:33	08:06	07:42		08:41 (TRIV-10a)	08:04		08:53 (TRIV-10a)
	21:01	7	20:36 (TRIV-42)	20:19	19:26	18:40	17:12	68	09:49 (TRIV-10a)	17:18	71	10:04 (TRIV-10a)
30	06:32		20:30 (TRIV-42)	07:03	07:34	08:07	07:43		08:41 (TRIV-10a)	08:04		08:53 (TRIV-10a)
	21:00	5	20:35 (TRIV-42)	20:18	19:24	18:38	17:12	68	09:49 (TRIV-10a)	17:19	71	10:04 (TRIV-10a)
31	06:33		20:32 (TRIV-42)	07:04		08:08				08:04		08:53 (TRIV-10a)
	20:59	2	20:34 (TRIV-42)	20:16		18:37				17:20	71	10:04 (TRIV-10a)
Potential sun hours	459			428	375	345	298			288		
Total, worst case		556						1301			2195	
Sun reduction		0.76						0.40			0.36	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.63						0.59			0.59	
Total reduction		0.48						0.24			0.21	
Total, real		265						307			466	

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)

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217 Montgomery St., Suite 1000
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 63 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1094)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May			June		
1	08:05		08:47 (TRIV-10a)	07:51		09:12 (TRIV-10a)	07:15	07:24	06:38			06:09		20:15 (TRIV-42)
	17:21	65	09:52 (TRIV-10a)	17:55	33	09:45 (TRIV-10a)	18:29	20:02	20:34			21:04	25	20:40 (TRIV-42)
2	08:05		08:47 (TRIV-10a)	07:50		09:14 (TRIV-10a)	07:13	07:22	06:37			06:09		20:16 (TRIV-42)
	17:22	65	09:52 (TRIV-10a)	17:57	29	09:43 (TRIV-10a)	18:31	20:04	20:35			21:05	25	20:41 (TRIV-42)
3	08:05		08:48 (TRIV-10a)	07:49		09:17 (TRIV-10a)	07:12	07:20	06:35			06:08		20:16 (TRIV-42)
	17:23	65	09:53 (TRIV-10a)	17:58	23	09:40 (TRIV-10a)	18:32	20:05	20:37			21:06	25	20:41 (TRIV-42)
4	08:05		08:48 (TRIV-10a)	07:48		09:21 (TRIV-10a)	07:10	07:19	06:34			06:08		20:16 (TRIV-42)
	17:23	65	09:53 (TRIV-10a)	17:59	15	09:36 (TRIV-10a)	18:33	20:06	20:38			21:06	26	20:42 (TRIV-42)
5	08:05		08:49 (TRIV-10a)	07:47			07:08	07:17	06:33			06:08		20:17 (TRIV-42)
	17:24	64	09:53 (TRIV-10a)	18:00			18:34	20:07	20:39			21:07	25	20:42 (TRIV-42)
6	08:05		08:49 (TRIV-10a)	07:46			07:07	07:16	06:32			06:07		20:17 (TRIV-42)
	17:25	65	09:54 (TRIV-10a)	18:02			18:35	20:08	20:40			21:08	24	20:41 (TRIV-42)
7	08:05		08:50 (TRIV-10a)	07:45			07:05	07:14	06:31			06:07		20:17 (TRIV-42)
	17:26	64	09:54 (TRIV-10a)	18:03			18:36	20:09	20:41			21:08	25	20:42 (TRIV-42)
8	08:05		08:51 (TRIV-10a)	07:43			08:04	07:12	06:29			06:07		20:18 (TRIV-42)
	17:27	64	09:55 (TRIV-10a)	18:04			19:37	20:10	20:42			21:09	24	20:42 (TRIV-42)
9	08:04		08:50 (TRIV-10a)	07:42			08:02	07:11	06:28			06:07		20:19 (TRIV-42)
	17:28	64	09:54 (TRIV-10a)	18:05			19:39	20:11	20:43			21:10	23	20:42 (TRIV-42)
10	08:04		08:51 (TRIV-10a)	07:41			08:00	07:09	06:27			06:06		20:18 (TRIV-42)
	17:29	64	09:55 (TRIV-10a)	18:07			19:40	20:12	20:44			21:10	23	20:41 (TRIV-42)
11	08:04		08:52 (TRIV-10a)	07:40			07:59	07:07	06:26			06:06		20:19 (TRIV-42)
	17:30	63	09:55 (TRIV-10a)	18:08			19:41	20:13	20:45			21:11	22	20:41 (TRIV-42)
12	08:04		08:52 (TRIV-10a)	07:39			07:57	07:06	06:25			06:06		20:19 (TRIV-42)
	17:31	63	09:55 (TRIV-10a)	18:09			19:42	20:14	20:46			21:11	22	20:41 (TRIV-42)
13	08:03		08:53 (TRIV-10a)	07:37			07:56	07:04	06:24		20:20 (TRIV-42)	06:06		20:20 (TRIV-42)
	17:33	62	09:55 (TRIV-10a)	18:10			19:43	20:15	20:47	4	20:24 (TRIV-42)	21:12	21	20:41 (TRIV-42)
14	08:03		08:54 (TRIV-10a)	07:36			07:54	07:03	06:23		20:19 (TRIV-42)	06:06		20:20 (TRIV-42)
	17:34	62	09:56 (TRIV-10a)	18:11			19:44	20:16	20:48	6	20:25 (TRIV-42)	21:12	21	20:41 (TRIV-42)
15	08:03		08:54 (TRIV-10a)	07:35			07:52	07:01	06:22		20:17 (TRIV-42)	06:06		20:21 (TRIV-42)
	17:35	61	09:55 (TRIV-10a)	18:13			19:45	20:17	20:49	8	20:25 (TRIV-42)	21:13	20	20:41 (TRIV-42)
16	08:02		08:55 (TRIV-10a)	07:33			07:51	07:00	06:21		20:16 (TRIV-42)	06:06		20:21 (TRIV-42)
	17:36	61	09:56 (TRIV-10a)	18:14			19:46	20:18	20:50	10	20:26 (TRIV-42)	21:13	20	20:41 (TRIV-42)
17	08:02		08:55 (TRIV-10a)	07:32			07:49	06:58	06:20		20:17 (TRIV-42)	06:06		20:21 (TRIV-42)
	17:37	60	09:55 (TRIV-10a)	18:15			19:47	20:20	20:51	11	20:28 (TRIV-42)	21:14	20	20:41 (TRIV-42)
18	08:01		08:57 (TRIV-10a)	07:31			07:47	06:57	06:19		20:16 (TRIV-42)	06:06		20:22 (TRIV-42)
	17:38	59	09:56 (TRIV-10a)	18:16			19:49	20:21	20:52	13	20:29 (TRIV-42)	21:14	20	20:42 (TRIV-42)
19	08:01		08:57 (TRIV-10a)	07:29			07:46	06:55	06:18		20:15 (TRIV-42)	06:06		20:22 (TRIV-42)
	17:39	58	09:55 (TRIV-10a)	18:18			19:50	20:22	20:53	15	20:30 (TRIV-42)	21:14	20	20:42 (TRIV-42)
20	08:00		08:57 (TRIV-10a)	07:28			07:44	06:54	06:17		20:15 (TRIV-42)	06:06		20:23 (TRIV-42)
	17:41	58	09:55 (TRIV-10a)	18:19			19:51	20:23	20:54	15	20:30 (TRIV-42)	21:15	19	20:42 (TRIV-42)
21	08:00		08:59 (TRIV-10a)	07:27			07:42	06:52	06:16		20:14 (TRIV-42)	06:07		20:23 (TRIV-42)
	17:42	56	09:55 (TRIV-10a)	18:20			19:52	20:24	20:55	17	20:31 (TRIV-42)	21:15	19	20:42 (TRIV-42)
22	07:59		08:59 (TRIV-10a)	07:25			07:41	06:51	06:16		20:15 (TRIV-42)	06:07		20:23 (TRIV-42)
	17:43	56	09:55 (TRIV-10a)	18:21			19:53	20:25	20:56	17	20:32 (TRIV-42)	21:15	19	20:42 (TRIV-42)
23	07:58		09:00 (TRIV-10a)	07:24			07:39	06:49	06:15		20:14 (TRIV-42)	06:07		20:23 (TRIV-42)
	17:44	54	09:54 (TRIV-10a)	18:22			19:54	20:26	20:57	19	20:33 (TRIV-42)	21:15	19	20:42 (TRIV-42)
24	07:58		09:01 (TRIV-10a)	07:22			07:37	06:48	06:14		20:14 (TRIV-42)	06:07		20:23 (TRIV-42)
	17:45	52	09:53 (TRIV-10a)	18:24			19:55	20:27	20:58	19	20:33 (TRIV-42)	21:16	20	20:43 (TRIV-42)
25	07:57		09:02 (TRIV-10a)	07:21			07:36	06:46	06:13		20:14 (TRIV-42)	06:08		20:23 (TRIV-42)
	17:47	51	09:53 (TRIV-10a)	18:25			19:56	20:28	20:58	21	20:35 (TRIV-42)	21:16	20	20:43 (TRIV-42)
26	07:56		09:03 (TRIV-10a)	07:19			07:34	06:45	06:13		20:14 (TRIV-42)	06:08		20:23 (TRIV-42)
	17:48	49	09:52 (TRIV-10a)	18:26			19:57	20:29	20:59	21	20:35 (TRIV-42)	21:16	20	20:43 (TRIV-42)
27	07:55		09:04 (TRIV-10a)	07:18			07:32	06:43	06:12		20:14 (TRIV-42)	06:08		20:24 (TRIV-42)
	17:49	48	09:52 (TRIV-10a)	18:27			19:58	20:30	21:00	22	20:36 (TRIV-42)	21:16	20	20:44 (TRIV-42)
28	07:55		09:05 (TRIV-10a)	07:16			07:30	06:42	06:11		20:14 (TRIV-42)	06:09		20:23 (TRIV-42)
	17:50	45	09:50 (TRIV-10a)	18:28			19:59	20:31	21:01	23	20:37 (TRIV-42)	21:16	21	20:44 (TRIV-42)
29	07:54		09:07 (TRIV-10a)				07:29	06:41	06:11		20:14 (TRIV-42)	06:09		20:24 (TRIV-42)
	17:52	42	09:49 (TRIV-10a)				20:00	20:32	21:02	23	20:37 (TRIV-42)	21:16	21	20:45 (TRIV-42)
30	07:53		09:08 (TRIV-10a)				07:27	06:39	06:10		20:15 (TRIV-42)	06:10		20:24 (TRIV-42)
	17:53	40	09:48 (TRIV-10a)				20:00	20:33	21:03	24	20:39 (TRIV-42)	21:16	21	20:45 (TRIV-42)
31	07:52		09:10 (TRIV-10a)				07:25		06:10		20:15 (TRIV-42)			
	17:54	36	09:46 (TRIV-10a)				20:01		21:03	24	20:39 (TRIV-42)			
Potential sun hours	297			297			370	399	448			452		
Total, worst case		1781			100					312			650	
Sun reduction		0.50			0.55					0.69			0.74	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.60			0.60					0.63			0.63	
Total reduction		0.30			0.33					0.43			0.46	
Total, real		527			33					135			302	

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

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

Licensed user:
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 63 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1094)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August	September	October	November			December		
1	06:10		20:24 (TRIV-42)	06:34	07:05	07:35	07:09			07:44		08:34 (TRIV-10a)
	21:16	22	20:46 (TRIV-42)	20:57	20:15	19:22	17:36			17:12	63	09:37 (TRIV-10a)
2	06:11		20:24 (TRIV-42)	06:35	07:06	07:36	07:11			07:45		08:34 (TRIV-10a)
	21:16	22	20:46 (TRIV-42)	20:56	20:13	19:21	17:35			17:11	64	09:38 (TRIV-10a)
3	06:11		20:24 (TRIV-42)	06:36	07:07	07:37	07:12			07:46		08:34 (TRIV-10a)
	21:16	23	20:47 (TRIV-42)	20:55	20:11	19:19	17:33			17:11	64	09:38 (TRIV-10a)
4	06:12		20:23 (TRIV-42)	06:37	07:08	07:38	07:13			07:47		08:35 (TRIV-10a)
	21:15	24	20:47 (TRIV-42)	20:54	20:10	19:17	17:32			17:11	64	09:39 (TRIV-10a)
5	06:12		20:24 (TRIV-42)	06:38	07:09	07:39	07:14			07:48		08:35 (TRIV-10a)
	21:15	24	20:48 (TRIV-42)	20:53	20:08	19:16	17:31			17:11	64	09:39 (TRIV-10a)
6	06:13		20:23 (TRIV-42)	06:39	07:10	07:40	07:15			07:49		08:35 (TRIV-10a)
	21:15	24	20:47 (TRIV-42)	20:52	20:07	19:14	17:30			17:11	65	09:40 (TRIV-10a)
7	06:13		20:23 (TRIV-42)	06:40	07:11	07:41	07:17		08:50 (TRIV-10a)	07:50		08:36 (TRIV-10a)
	21:15	25	20:48 (TRIV-42)	20:51	20:05	19:12	17:29	17	09:07 (TRIV-10a)	17:10	65	09:41 (TRIV-10a)
8	06:14		20:23 (TRIV-42)	06:41	07:12	07:42	07:18		08:47 (TRIV-10a)	07:51		08:36 (TRIV-10a)
	21:14	25	20:48 (TRIV-42)	20:49	20:03	19:11	17:28	24	09:11 (TRIV-10a)	17:10	65	09:41 (TRIV-10a)
9	06:15		20:23 (TRIV-42)	06:42	07:13	07:44	07:19		08:45 (TRIV-10a)	07:52		08:37 (TRIV-10a)
	21:14	26	20:49 (TRIV-42)	20:48	20:01	19:09	17:27	29	09:14 (TRIV-10a)	17:10	65	09:42 (TRIV-10a)
10	06:15		20:23 (TRIV-42)	06:43	07:14	07:45	07:20		08:42 (TRIV-10a)	07:53		08:37 (TRIV-10a)
	21:14	26	20:49 (TRIV-42)	20:47	20:00	19:08	17:26	34	09:16 (TRIV-10a)	17:10	65	09:42 (TRIV-10a)
11	06:16		20:23 (TRIV-42)	06:44	07:15	07:46	07:21		08:42 (TRIV-10a)	07:54		08:37 (TRIV-10a)
	21:13	24	20:47 (TRIV-42)	20:46	19:56	19:06	17:25	36	09:18 (TRIV-10a)	17:11	65	09:42 (TRIV-10a)
12	06:17		20:23 (TRIV-42)	06:45	07:16	07:47	07:23		08:40 (TRIV-10a)	07:55		08:37 (TRIV-10a)
	21:13	24	20:47 (TRIV-42)	20:44	19:55	19:04	17:24	40	09:20 (TRIV-10a)	17:11	66	09:43 (TRIV-10a)
13	06:18		20:23 (TRIV-42)	06:46	07:17	07:48	07:24		08:39 (TRIV-10a)	07:55		08:38 (TRIV-10a)
	21:12	24	20:47 (TRIV-42)	20:43	19:53	19:03	17:23	42	09:21 (TRIV-10a)	17:11	65	09:43 (TRIV-10a)
14	06:18		20:24 (TRIV-42)	06:47	07:18	07:49	07:25		08:37 (TRIV-10a)	07:56		08:39 (TRIV-10a)
	21:12	23	20:47 (TRIV-42)	20:42	19:51	19:01	17:22	45	09:22 (TRIV-10a)	17:11	65	09:44 (TRIV-10a)
15	06:19		20:23 (TRIV-42)	06:48	07:19	07:50	07:26		08:37 (TRIV-10a)	07:57		08:38 (TRIV-10a)
	21:11	23	20:46 (TRIV-42)	20:40	19:50	19:00	17:21	48	09:25 (TRIV-10a)	17:11	66	09:44 (TRIV-10a)
16	06:20		20:23 (TRIV-42)	06:49	07:20	07:51	07:27		08:36 (TRIV-10a)	07:58		08:39 (TRIV-10a)
	21:11	22	20:45 (TRIV-42)	20:39	19:48	18:58	17:20	49	09:25 (TRIV-10a)	17:12	66	09:45 (TRIV-10a)
17	06:21		20:23 (TRIV-42)	06:50	07:21	07:52	07:29		08:35 (TRIV-10a)	07:58		08:40 (TRIV-10a)
	21:10	22	20:45 (TRIV-42)	20:38	19:46	18:57	17:19	51	09:26 (TRIV-10a)	17:12	65	09:45 (TRIV-10a)
18	06:21		20:24 (TRIV-42)	06:51	07:22	07:53	07:30		08:35 (TRIV-10a)	07:59		08:40 (TRIV-10a)
	21:10	21	20:45 (TRIV-42)	20:36	19:45	18:55	17:18	52	09:27 (TRIV-10a)	17:12	65	09:45 (TRIV-10a)
19	06:22		20:24 (TRIV-42)	06:52	07:23	07:54	07:31		08:35 (TRIV-10a)	08:00		08:41 (TRIV-10a)
	21:09	20	20:44 (TRIV-42)	20:35	19:43	18:54	17:18	54	09:29 (TRIV-10a)	17:13	65	09:46 (TRIV-10a)
20	06:23		20:23 (TRIV-42)	06:53	07:24	07:56	07:32		08:34 (TRIV-10a)	08:00		08:40 (TRIV-10a)
	21:08	20	20:43 (TRIV-42)	20:33	19:41	18:52	17:17	56	09:30 (TRIV-10a)	17:13	66	09:46 (TRIV-10a)
21	06:24		20:24 (TRIV-42)	06:54	07:25	07:57	07:33		08:34 (TRIV-10a)	08:01		08:41 (TRIV-10a)
	21:07	18	20:42 (TRIV-42)	20:32	19:39	18:51	17:16	56	09:30 (TRIV-10a)	17:13	66	09:47 (TRIV-10a)
22	06:25		20:24 (TRIV-42)	06:55	07:26	07:58	07:34		08:33 (TRIV-10a)	08:01		08:41 (TRIV-10a)
	21:07	18	20:42 (TRIV-42)	20:30	19:38	18:49	17:16	58	09:31 (TRIV-10a)	17:14	66	09:47 (TRIV-10a)
23	06:26		20:25 (TRIV-42)	06:56	07:27	07:59	07:36		08:34 (TRIV-10a)	08:02		08:42 (TRIV-10a)
	21:06	16	20:41 (TRIV-42)	20:29	19:36	18:48	17:15	58	09:32 (TRIV-10a)	17:14	66	09:48 (TRIV-10a)
24	06:27		20:25 (TRIV-42)	06:57	07:28	08:00	07:37		08:34 (TRIV-10a)	08:02		08:43 (TRIV-10a)
	21:05	15	20:40 (TRIV-42)	20:27	19:34	18:46	17:15	59	09:33 (TRIV-10a)	17:15	65	09:48 (TRIV-10a)
25	06:28		20:26 (TRIV-42)	06:58	07:29	08:01	07:38		08:33 (TRIV-10a)	08:03		08:44 (TRIV-10a)
	21:04	14	20:40 (TRIV-42)	20:26	19:33	18:45	17:14	61	09:34 (TRIV-10a)	17:16	65	09:49 (TRIV-10a)
26	06:28		20:27 (TRIV-42)	06:59	07:30	08:02	07:39		08:33 (TRIV-10a)	08:03		08:44 (TRIV-10a)
	21:03	12	20:39 (TRIV-42)	20:24	19:31	18:44	17:13	61	09:34 (TRIV-10a)	17:16	65	09:49 (TRIV-10a)
27	06:29		20:26 (TRIV-42)	07:00	07:31	08:04	07:40		08:33 (TRIV-10a)	08:03		08:44 (TRIV-10a)
	21:02	11	20:37 (TRIV-42)	20:23	19:29	18:42	17:13	62	09:35 (TRIV-10a)	17:17	65	09:49 (TRIV-10a)
28	06:30		20:27 (TRIV-42)	07:01	07:32	08:05	07:41		08:33 (TRIV-10a)	08:04		08:45 (TRIV-10a)
	21:02	9	20:36 (TRIV-42)	20:21	19:27	18:41	17:13	62	09:35 (TRIV-10a)	17:18	66	09:51 (TRIV-10a)
29	06:31		20:29 (TRIV-42)	07:02	07:33	08:06	07:42		08:34 (TRIV-10a)	08:04		08:45 (TRIV-10a)
	21:01	7	20:36 (TRIV-42)	20:19	19:26	18:40	17:12	62	09:36 (TRIV-10a)	17:18	66	09:51 (TRIV-10a)
30	06:32		20:30 (TRIV-42)	07:03	07:34	08:07	07:43		08:34 (TRIV-10a)	08:04		08:46 (TRIV-10a)
	21:00	5	20:35 (TRIV-42)	20:18	19:24	18:38	17:12	63	09:37 (TRIV-10a)	17:19	65	09:51 (TRIV-10a)
31	06:33		20:32 (TRIV-42)	07:04		08:08				08:04		08:46 (TRIV-10a)
	20:59	2	20:34 (TRIV-42)	20:16		18:37				17:20	65	09:51 (TRIV-10a)
Potential sun hours	459			428	375	345	298			288		
Total, worst case		591						1179			2018	
Sun reduction		0.76						0.40			0.36	
Oper. time red.		1.00						1.00			1.00	
Wind dir. red.		0.63						0.60			0.60	
Total reduction		0.48						0.24			0.21	
Total, real		282						279			430	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1095)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May			June		
1	08:05		08:27 (TRIV-10a)	07:51		08:38 (TRIV-10a)	07:15	07:24	06:38			06:09		06:31 (TRIV-90)
	17:21	41	09:08 (TRIV-10a)	17:55	36	09:14 (TRIV-10a)	18:29	20:02	20:34			21:04	74	20:40 (TRIV-42)
2	08:05		08:27 (TRIV-10a)	07:50		08:40 (TRIV-10a)	07:13	07:22	06:37			06:09		06:31 (TRIV-90)
	17:22	42	09:09 (TRIV-10a)	17:57	33	09:13 (TRIV-10a)	18:31	20:04	20:36			21:05	76	20:41 (TRIV-42)
3	08:05		08:27 (TRIV-10a)	07:49		08:41 (TRIV-10a)	07:12	07:20	06:35			06:08		06:30 (TRIV-90)
	17:23	43	09:10 (TRIV-10a)	17:58	30	09:11 (TRIV-10a)	18:32	20:05	20:37			21:06	78	20:41 (TRIV-42)
4	08:05		08:27 (TRIV-10a)	07:48		08:43 (TRIV-10a)	07:10	07:19	06:34			06:08		06:30 (TRIV-90)
	17:23	43	09:10 (TRIV-10a)	17:59	27	09:10 (TRIV-10a)	18:33	20:06	20:38			21:06	79	20:42 (TRIV-42)
5	08:05		08:27 (TRIV-10a)	07:47		08:45 (TRIV-10a)	07:08	07:17	06:33			06:08		06:30 (TRIV-90)
	17:24	44	09:11 (TRIV-10a)	18:00	23	09:08 (TRIV-10a)	18:34	20:07	20:39			21:07	81	20:43 (TRIV-42)
6	08:05		08:27 (TRIV-10a)	07:46		08:48 (TRIV-10a)	07:07	07:16	06:32			06:07		06:29 (TRIV-90)
	17:25	45	09:12 (TRIV-10a)	18:02	18	09:06 (TRIV-10a)	18:35	20:08	20:40			21:08	81	20:43 (TRIV-42)
7	08:05		08:27 (TRIV-10a)	07:45		08:52 (TRIV-10a)	07:05	07:14	06:31			06:07		06:29 (TRIV-90)
	17:26	45	09:12 (TRIV-10a)	18:03	10	09:02 (TRIV-10a)	18:36	20:09	20:41			21:09	83	20:44 (TRIV-42)
8	08:05		08:27 (TRIV-10a)	07:43			08:04	07:12	06:29			06:07		06:29 (TRIV-90)
	17:27	46	09:13 (TRIV-10a)	18:04			19:37	20:10	20:42			21:09	84	20:45 (TRIV-42)
9	08:04		08:26 (TRIV-10a)	07:42			08:02	07:11	06:28			06:07		06:29 (TRIV-90)
	17:28	47	09:13 (TRIV-10a)	18:05			19:39	20:11	20:43			21:10	84	20:45 (TRIV-42)
10	08:04		08:27 (TRIV-10a)	07:41			08:00	07:09	06:27			06:06		06:29 (TRIV-90)
	17:29	47	09:14 (TRIV-10a)	18:07			19:40	20:12	20:44			21:10	85	20:46 (TRIV-42)
11	08:04		08:27 (TRIV-10a)	07:40			07:59	07:07	06:26			06:06		06:28 (TRIV-90)
	17:30	47	09:14 (TRIV-10a)	18:08			19:41	20:13	20:45			21:11	87	20:46 (TRIV-42)
12	08:04		08:27 (TRIV-10a)	07:39			07:57	07:06	06:25			06:06		06:28 (TRIV-90)
	17:31	47	09:14 (TRIV-10a)	18:09			19:42	20:14	20:46			21:11	86	20:46 (TRIV-42)
13	08:03		08:28 (TRIV-10a)	07:37			07:56	07:04	06:24			06:06		06:28 (TRIV-90)
	17:33	47	09:15 (TRIV-10a)	18:10			19:43	20:15	20:47			21:12	88	20:47 (TRIV-42)
14	08:03		08:28 (TRIV-10a)	07:36			07:54	07:03	06:23			06:06		06:28 (TRIV-90)
	17:34	48	09:16 (TRIV-10a)	18:11			19:44	20:16	20:48			21:12	88	20:47 (TRIV-42)
15	08:03		08:28 (TRIV-10a)	07:35			07:52	07:01	06:22		06:47 (TRIV-90)	06:06		06:28 (TRIV-90)
	17:35	48	09:16 (TRIV-10a)	18:13			19:45	20:17	20:49	11	06:58 (TRIV-90)	21:13	88	20:47 (TRIV-42)
16	08:02		08:29 (TRIV-10a)	07:33			07:51	07:00	06:21		06:43 (TRIV-90)	06:06		06:28 (TRIV-90)
	17:36	48	09:17 (TRIV-10a)	18:14			19:46	20:18	20:50	19	07:02 (TRIV-90)	21:13	88	20:48 (TRIV-42)
17	08:02		08:29 (TRIV-10a)	07:32			07:49	06:58	06:20		06:42 (TRIV-90)	06:06		06:28 (TRIV-90)
	17:37	48	09:17 (TRIV-10a)	18:15			19:47	20:20	20:51	27	20:28 (TRIV-42)	21:14	89	20:48 (TRIV-42)
18	08:01		08:30 (TRIV-10a)	07:31			07:47	06:57	06:19		06:40 (TRIV-90)	06:06		06:29 (TRIV-90)
	17:38	47	09:17 (TRIV-10a)	18:16			19:49	20:21	20:52	34	20:29 (TRIV-42)	21:14	89	20:49 (TRIV-42)
19	08:01		08:30 (TRIV-10a)	07:29			07:46	06:55	06:18		06:39 (TRIV-90)	06:06		06:29 (TRIV-90)
	17:39	47	09:17 (TRIV-10a)	18:18			19:50	20:22	20:53	39	20:30 (TRIV-42)	21:14	89	20:49 (TRIV-42)
20	08:00		08:30 (TRIV-10a)	07:28			07:44	06:54	06:17		06:38 (TRIV-90)	06:06		06:29 (TRIV-90)
	17:41	47	09:17 (TRIV-10a)	18:19			19:51	20:23	20:54	43	20:30 (TRIV-42)	21:15	89	20:49 (TRIV-42)
21	08:00		08:31 (TRIV-10a)	07:27			07:42	06:52	06:16		06:37 (TRIV-90)	06:07		06:29 (TRIV-90)
	17:42	47	09:18 (TRIV-10a)	18:20			19:52	20:24	20:55	47	20:31 (TRIV-42)	21:15	90	20:50 (TRIV-42)
22	07:59		08:31 (TRIV-10a)	07:25			07:41	06:51	06:16		06:37 (TRIV-90)	06:07		06:29 (TRIV-90)
	17:43	47	09:18 (TRIV-10a)	18:21			19:53	20:25	20:56	50	20:32 (TRIV-42)	21:15	89	20:49 (TRIV-42)
23	07:58		08:31 (TRIV-10a)	07:24			07:39	06:49	06:15		06:36 (TRIV-90)	06:07		06:30 (TRIV-90)
	17:44	46	09:17 (TRIV-10a)	18:22			19:54	20:26	20:57	54	20:33 (TRIV-42)	21:15	89	20:50 (TRIV-42)
24	07:58		08:32 (TRIV-10a)	07:22			07:37	06:48	06:14		06:35 (TRIV-90)	06:07		06:30 (TRIV-90)
	17:45	45	09:17 (TRIV-10a)	18:24			19:55	20:27	20:58	57	20:33 (TRIV-42)	21:16	89	20:50 (TRIV-42)
25	07:57		08:33 (TRIV-10a)	07:21			07:36	06:46	06:13		06:35 (TRIV-90)	06:08		06:30 (TRIV-90)
	17:47	45	09:18 (TRIV-10a)	18:25			19:56	20:28	20:58	60	20:35 (TRIV-42)	21:16	89	20:50 (TRIV-42)
26	07:56		08:33 (TRIV-10a)	07:19			07:34	06:45	06:13		06:34 (TRIV-90)	06:08		06:30 (TRIV-90)
	17:48	44	09:17 (TRIV-10a)	18:26			19:57	20:29	20:59	62	20:35 (TRIV-42)	21:16	89	20:50 (TRIV-42)
27	07:55		08:34 (TRIV-10a)	07:18			07:32	06:43	06:12		06:33 (TRIV-90)	06:08		06:31 (TRIV-90)
	17:49	43	09:17 (TRIV-10a)	18:27			19:58	20:30	21:00	65	20:36 (TRIV-42)	21:16	88	20:51 (TRIV-42)
28	07:55		08:35 (TRIV-10a)	07:16			07:30	06:42	06:11		06:33 (TRIV-90)	06:09		06:31 (TRIV-90)
	17:50	42	09:17 (TRIV-10a)	18:28			19:59	20:31	21:01	67	20:37 (TRIV-42)	21:16	88	20:50 (TRIV-42)
29	07:54		08:35 (TRIV-10a)				07:29	06:41	06:11		06:32 (TRIV-90)	06:09		06:32 (TRIV-90)
	17:52	41	09:16 (TRIV-10a)				20:00	20:32	21:02	69	20:37 (TRIV-42)	21:16	88	20:51 (TRIV-42)
30	07:53		08:36 (TRIV-10a)				07:27	06:39	06:10		06:32 (TRIV-90)	06:10		06:32 (TRIV-90)
	17:53	39	09:15 (TRIV-10a)				20:00	20:33	21:03	71	20:39 (TRIV-42)	21:16	86	20:50 (TRIV-42)
31	07:52		08:37 (TRIV-10a)				07:25		06:10		06:31 (TRIV-90)			
	17:54	38	09:15 (TRIV-10a)				20:01		21:03	73	20:39 (TRIV-42)			
Potential sun hours	297			297			370	399	448			452		
Total, worst case		1394			177					848			2571	
Sun reduction		0.50			0.55					0.69			0.74	
Oper. time red.		1.00			1.00					1.00			1.00	
Wind dir. red.		0.60			0.60					0.68			0.67	
Total reduction		0.29			0.32					0.46			0.49	
Total, real		411			57					391			1264	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 64 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1095)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August		September		October		November			December		
1	06:10		06:33 (TRIV-90)	06:34		07:05		07:35		07:09			07:44		08:09 (TRIV-10a)
	21:16	86	20:51 (TRIV-42)	20:58		20:15		19:22		17:36			17:12	48	08:57 (TRIV-10a)
2	06:11		06:33 (TRIV-90)	06:35		07:06		07:36		07:11			07:45		08:10 (TRIV-10a)
	21:16	86	20:50 (TRIV-42)	20:56		20:13		19:21		17:35			17:11	47	08:57 (TRIV-10a)
3	06:11		06:34 (TRIV-90)	06:36		07:07		07:37		07:12			07:46		08:10 (TRIV-10a)
	21:16	85	20:51 (TRIV-42)	20:55		20:11		19:19		17:33			17:11	47	08:57 (TRIV-10a)
4	06:12		06:34 (TRIV-90)	06:37		07:08		07:38		07:13		08:21 (TRIV-10a)	07:47		08:11 (TRIV-10a)
	21:15	84	20:50 (TRIV-42)	20:54		20:10		19:17		17:32	12	08:33 (TRIV-10a)	17:11	46	08:57 (TRIV-10a)
5	06:12		06:35 (TRIV-90)	06:38		07:09		07:39		07:14		08:17 (TRIV-10a)	07:48		08:12 (TRIV-10a)
	21:15	83	20:50 (TRIV-42)	20:53		20:08		19:16		17:31	19	08:36 (TRIV-10a)	17:11	45	08:57 (TRIV-10a)
6	06:13		06:35 (TRIV-90)	06:39		07:10		07:40		07:15		08:15 (TRIV-10a)	07:49		08:13 (TRIV-10a)
	21:15	82	20:49 (TRIV-42)	20:52		20:07		19:14		17:30	23	08:38 (TRIV-10a)	17:11	45	08:58 (TRIV-10a)
7	06:13		06:36 (TRIV-90)	06:40		07:11		07:41		07:17		08:13 (TRIV-10a)	07:50		08:14 (TRIV-10a)
	21:15	81	20:49 (TRIV-42)	20:51		20:05		19:12		17:29	27	08:40 (TRIV-10a)	17:10	44	08:58 (TRIV-10a)
8	06:14		06:36 (TRIV-90)	06:41		07:12		07:42		07:18		08:12 (TRIV-10a)	07:51		08:15 (TRIV-10a)
	21:14	79	20:48 (TRIV-42)	20:49		20:03		19:11		17:28	31	08:43 (TRIV-10a)	17:10	43	08:58 (TRIV-10a)
9	06:15		06:37 (TRIV-90)	06:42		07:13		07:44		07:19		08:10 (TRIV-10a)	07:52		08:16 (TRIV-10a)
	21:14	78	20:49 (TRIV-42)	20:48		20:02		19:09		17:27	34	08:44 (TRIV-10a)	17:10	43	08:59 (TRIV-10a)
10	06:15		06:38 (TRIV-90)	06:43		07:14		07:45		07:20		08:09 (TRIV-10a)	07:53		08:17 (TRIV-10a)
	21:14	78	20:49 (TRIV-42)	20:47		20:00		19:08		17:26	36	08:45 (TRIV-10a)	17:10	42	08:59 (TRIV-10a)
11	06:16		06:38 (TRIV-90)	06:44		07:15		07:46		07:21		08:09 (TRIV-10a)	07:54		08:17 (TRIV-10a)
	21:13	75	20:47 (TRIV-42)	20:46		19:56		19:06		17:25	38	08:47 (TRIV-10a)	17:11	41	08:58 (TRIV-10a)
12	06:17		06:39 (TRIV-90)	06:45		07:16		07:47		07:23		08:08 (TRIV-10a)	07:55		08:18 (TRIV-10a)
	21:13	74	20:47 (TRIV-42)	20:44		19:55		19:04		17:24	39	08:47 (TRIV-10a)	17:11	41	08:59 (TRIV-10a)
13	06:18		06:40 (TRIV-90)	06:46		07:17		07:48		07:24		08:07 (TRIV-10a)	07:55		08:19 (TRIV-10a)
	21:12	72	20:47 (TRIV-42)	20:43		19:53		19:03		17:23	41	08:48 (TRIV-10a)	17:11	40	08:59 (TRIV-10a)
14	06:18		06:41 (TRIV-90)	06:47		07:18		07:49		07:25		08:07 (TRIV-10a)	07:56		08:20 (TRIV-10a)
	21:12	70	20:47 (TRIV-42)	20:42		19:51		19:01		17:22	41	08:48 (TRIV-10a)	17:11	40	09:00 (TRIV-10a)
15	06:19		06:41 (TRIV-90)	06:48		07:19		07:50		07:26		08:07 (TRIV-10a)	07:57		08:20 (TRIV-10a)
	21:11	69	20:46 (TRIV-42)	20:40		19:50		19:00		17:21	43	08:50 (TRIV-10a)	17:11	40	09:00 (TRIV-10a)
16	06:20		06:42 (TRIV-90)	06:49		07:20		07:51		07:27		08:06 (TRIV-10a)	07:58		08:21 (TRIV-10a)
	21:11	65	20:45 (TRIV-42)	20:39		19:48		18:58		17:20	44	08:50 (TRIV-10a)	17:12	39	09:00 (TRIV-10a)
17	06:21		06:43 (TRIV-90)	06:50		07:21		07:52		07:29		08:06 (TRIV-10a)	07:58		08:22 (TRIV-10a)
	21:10	63	20:45 (TRIV-42)	20:38		19:46		18:57		17:19	45	08:51 (TRIV-10a)	17:12	39	09:01 (TRIV-10a)
18	06:21		06:44 (TRIV-90)	06:51		07:22		07:53		07:30		08:06 (TRIV-10a)	07:59		08:22 (TRIV-10a)
	21:10	62	20:45 (TRIV-42)	20:36		19:45		18:55		17:18	45	08:51 (TRIV-10a)	17:12	39	09:01 (TRIV-10a)
19	06:22		06:45 (TRIV-90)	06:52		07:23		07:54		07:31		08:06 (TRIV-10a)	08:00		08:23 (TRIV-10a)
	21:09	58	20:44 (TRIV-42)	20:35		19:43		18:54		17:18	46	08:52 (TRIV-10a)	17:13	39	09:02 (TRIV-10a)
20	06:23		06:45 (TRIV-90)	06:53		07:24		07:56		07:32		08:06 (TRIV-10a)	08:00		08:23 (TRIV-10a)
	21:08	56	20:43 (TRIV-42)	20:33		19:41		18:52		17:17	47	08:53 (TRIV-10a)	17:13	38	09:01 (TRIV-10a)
21	06:24		06:46 (TRIV-90)	06:54		07:25		07:57		07:33		08:06 (TRIV-10a)	08:01		08:24 (TRIV-10a)
	21:07	52	20:42 (TRIV-42)	20:32		19:39		18:51		17:16	47	08:53 (TRIV-10a)	17:13	38	09:02 (TRIV-10a)
22	06:25		06:47 (TRIV-90)	06:55		07:26		07:58		07:34		08:06 (TRIV-10a)	08:01		08:24 (TRIV-10a)
	21:07	49	20:42 (TRIV-42)	20:30		19:38		18:49		17:16	47	08:53 (TRIV-10a)	17:14	38	09:02 (TRIV-10a)
23	06:26		06:48 (TRIV-90)	06:56		07:27		07:59		07:36		08:07 (TRIV-10a)	08:02		08:25 (TRIV-10a)
	21:06	45	20:41 (TRIV-42)	20:29		19:36		18:48		17:15	47	08:54 (TRIV-10a)	17:14	38	09:03 (TRIV-10a)
24	06:27		06:49 (TRIV-90)	06:57		07:28		08:00		07:37		08:07 (TRIV-10a)	08:02		08:25 (TRIV-10a)
	21:05	41	20:40 (TRIV-42)	20:27		19:34		18:46		17:15	47	08:54 (TRIV-10a)	17:15	39	09:04 (TRIV-10a)
25	06:28		06:50 (TRIV-90)	06:58		07:29		08:01		07:38		08:07 (TRIV-10a)	08:03		08:26 (TRIV-10a)
	21:04	37	20:40 (TRIV-42)	20:26		19:33		18:45		17:14	48	08:55 (TRIV-10a)	17:16	39	09:05 (TRIV-10a)
26	06:28		06:51 (TRIV-90)	06:59		07:30		08:02		07:39		08:07 (TRIV-10a)	08:03		08:26 (TRIV-10a)
	21:03	31	20:39 (TRIV-42)	20:24		19:31		18:44		17:13	48	08:55 (TRIV-10a)	17:16	39	09:05 (TRIV-10a)
27	06:29		06:52 (TRIV-90)	07:00		07:31		08:04		07:40		08:07 (TRIV-10a)	08:03		08:26 (TRIV-10a)
	21:02	23	20:37 (TRIV-42)	20:23		19:29		18:42		17:13	48	08:55 (TRIV-10a)	17:17	39	09:05 (TRIV-10a)
28	06:30		06:55 (TRIV-90)	07:01		07:32		08:05		07:41		08:07 (TRIV-10a)	08:04		08:27 (TRIV-10a)
	21:02	16	07:11 (TRIV-90)	20:21		19:27		18:41		17:13	48	08:55 (TRIV-10a)	17:18	39	09:06 (TRIV-10a)
29	06:31		07:01 (TRIV-90)	07:02		07:33		08:06		07:42		08:09 (TRIV-10a)	08:04		08:27 (TRIV-10a)
	21:01	4	07:05 (TRIV-90)	20:20		19:26		18:40		17:12	47	08:56 (TRIV-10a)	17:18	40	09:07 (TRIV-10a)
30	06:32			07:03		07:34		08:07		07:43		08:09 (TRIV-10a)	08:04		08:27 (TRIV-10a)
	21:00			20:18		19:24		18:38		17:12	47	08:56 (TRIV-10a)	17:19	40	09:07 (TRIV-10a)
31	06:33			07:04				08:08					08:04		08:27 (TRIV-10a)
	20:59			20:16				18:37					17:20	41	09:08 (TRIV-10a)
Potential sun hours	459			428		375		345		297			288		
Total, worst case		1784									1085			1276	
Sun reduction		0.76									0.40			0.36	
Oper. time red.		1.00									1.00			1.00	
Wind dir. red.		0.68									0.60			0.60	
Total reduction		0.51									0.24			0.21	
Total, real		904									256			271	

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

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

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EDR
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US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 70 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1101)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May	June
1	08:05		15:51 (TRIV-09)	07:51		08:11 (TRIV-10)	07:15		07:34 (TRIV-87)	07:24		07:46 (TRIV-10a)	06:38	06:09
	17:21	29	16:20 (TRIV-09)	17:55	30	08:41 (TRIV-10)	18:29	30	08:04 (TRIV-87)	20:03	28	08:14 (TRIV-10a)	20:34	21:04
2	08:05		15:52 (TRIV-09)	07:50		08:11 (TRIV-10)	07:13		07:33 (TRIV-87)	07:22		07:46 (TRIV-10a)	06:37	06:09
	17:22	28	16:20 (TRIV-09)	17:57	30	08:41 (TRIV-10)	18:31	33	08:06 (TRIV-87)	20:04	26	08:12 (TRIV-10a)	20:36	21:05
3	08:05		15:53 (TRIV-09)	07:49		08:11 (TRIV-10)	07:12		07:31 (TRIV-87)	07:21		07:47 (TRIV-10a)	06:35	06:08
	17:23	27	16:20 (TRIV-09)	17:58	30	08:41 (TRIV-10)	18:32	36	08:07 (TRIV-87)	20:05	23	08:10 (TRIV-10a)	20:37	21:06
4	08:05		15:54 (TRIV-09)	07:48		08:12 (TRIV-10)	07:10		07:29 (TRIV-87)	07:19		07:48 (TRIV-10a)	06:34	06:08
	17:24	26	16:20 (TRIV-09)	17:59	28	08:40 (TRIV-10)	18:33	39	08:08 (TRIV-87)	20:06	21	08:09 (TRIV-10a)	20:38	21:06
5	08:05		15:56 (TRIV-09)	07:47		08:13 (TRIV-10)	07:08		07:28 (TRIV-87)	07:17		07:50 (TRIV-10a)	06:33	06:08
	17:24	24	16:20 (TRIV-09)	18:00	27	08:40 (TRIV-10)	18:34	41	08:09 (TRIV-87)	20:07	17	08:07 (TRIV-10a)	20:39	21:07
6	08:05		15:57 (TRIV-09)	07:46		08:14 (TRIV-10)	07:07		07:26 (TRIV-87)	07:16		07:53 (TRIV-10a)	06:32	06:07
	17:25	22	16:19 (TRIV-09)	18:02	25	08:39 (TRIV-10)	18:35	44	08:10 (TRIV-87)	20:08	11	08:04 (TRIV-10a)	20:40	21:08
7	08:05		15:59 (TRIV-09)	07:45		08:15 (TRIV-10)	07:05		07:25 (TRIV-87)	07:14			06:31	06:07
	17:26	20	16:19 (TRIV-09)	18:03	24	08:39 (TRIV-10)	18:36	46	08:11 (TRIV-87)	20:09			20:41	21:09
8	08:05		16:01 (TRIV-09)	07:43		08:17 (TRIV-10)	08:04		08:23 (TRIV-87)	07:12			06:29	06:07
	17:27	17	16:18 (TRIV-09)	18:04	21	08:38 (TRIV-10)	19:37	48	09:11 (TRIV-87)	20:10			20:42	21:09
9	08:04		16:02 (TRIV-09)	07:42		08:18 (TRIV-10)	08:02		08:21 (TRIV-87)	07:11			06:28	06:07
	17:28	14	16:16 (TRIV-09)	18:05	17	08:35 (TRIV-10)	19:39	50	09:11 (TRIV-87)	20:11			20:43	21:10
10	08:04		16:05 (TRIV-09)	07:41		08:20 (TRIV-10)	08:00		08:21 (TRIV-87)	07:09			06:27	06:06
	17:29	10	16:15 (TRIV-09)	18:07	13	08:33 (TRIV-10)	19:40	51	09:12 (TRIV-87)	20:12			20:44	21:10
11	08:04			07:40		08:25 (TRIV-10)	07:59		08:19 (TRIV-87)	07:07			06:26	06:06
	17:30			18:08	4	08:29 (TRIV-10)	19:41	53	09:12 (TRIV-87)	20:13			20:45	21:11
12	08:04			07:39			07:57		08:19 (TRIV-87)	07:06			06:25	06:06
	17:32			18:09			19:42	52	09:11 (TRIV-87)	20:14			20:46	21:11
13	08:03			07:37			07:56		08:19 (TRIV-87)	07:04			06:24	06:06
	17:33			18:10			19:43	53	09:12 (TRIV-87)	20:15			20:47	21:12
14	08:03			07:36			07:54		08:18 (TRIV-87)	07:03			06:23	06:06
	17:34			18:12			19:44	53	09:11 (TRIV-87)	20:16			20:48	21:12
15	08:03		08:24 (TRIV-10)	07:35			07:52		08:17 (TRIV-87)	07:01			06:22	06:06
	17:35	3	08:27 (TRIV-10)	18:13			19:45	54	09:11 (TRIV-87)	20:17			20:49	21:13
16	08:02		08:24 (TRIV-10)	07:34			07:51		08:18 (TRIV-87)	07:00			06:21	06:06
	17:36	5	08:29 (TRIV-10)	18:14			19:46	53	09:11 (TRIV-87)	20:19			20:50	21:13
17	08:02		08:23 (TRIV-10)	07:32			07:49		08:17 (TRIV-87)	06:58			06:20	06:06
	17:37	8	08:31 (TRIV-10)	18:15			19:47	53	09:10 (TRIV-87)	20:20			20:51	21:14
18	08:01		08:23 (TRIV-10)	07:31			07:47		08:17 (TRIV-87)	06:57			06:19	06:06
	17:38	10	08:33 (TRIV-10)	18:16			19:49	52	09:09 (TRIV-87)	20:21			20:52	21:14
19	08:01		08:22 (TRIV-10)	07:29			07:46		08:05 (TRIV-10a)	06:55			06:18	06:06
	17:39	12	08:34 (TRIV-10)	18:18			19:50	56	09:09 (TRIV-87)	20:22			20:53	21:14
20	08:00		08:21 (TRIV-10)	07:28			07:44		08:03 (TRIV-10a)	06:54			06:17	06:06
	17:41	13	08:34 (TRIV-10)	18:19			19:51	60	09:08 (TRIV-87)	20:23			20:54	21:15
21	08:00		08:21 (TRIV-10)	07:27			07:42		08:01 (TRIV-10a)	06:52			06:16	06:07
	17:42	15	08:36 (TRIV-10)	18:20			19:52	62	09:07 (TRIV-87)	20:24			20:55	21:15
22	07:59		08:20 (TRIV-10)	07:25			07:41		08:00 (TRIV-10a)	06:51			06:16	06:07
	17:43	17	08:37 (TRIV-10)	18:21			19:53	64	09:07 (TRIV-87)	20:25			20:56	21:15
23	07:58		08:19 (TRIV-10)	07:24			07:39		07:58 (TRIV-10a)	06:49			06:15	06:07
	17:44	18	08:37 (TRIV-10)	18:22			19:54	64	09:05 (TRIV-87)	20:26			20:57	21:15
24	07:58		08:18 (TRIV-10)	07:22			07:37		07:56 (TRIV-10a)	06:48			06:14	06:07
	17:45	20	08:38 (TRIV-10)	18:24			19:55	64	09:03 (TRIV-87)	20:27			20:58	21:16
25	07:57		08:18 (TRIV-10)	07:21			07:36		07:55 (TRIV-10a)	06:46			06:13	06:08
	17:47	21	08:39 (TRIV-10)	18:25			19:56	65	09:03 (TRIV-87)	20:28			20:58	21:16
26	07:56		08:17 (TRIV-10)	07:19		07:43 (TRIV-87)	07:34		07:53 (TRIV-10a)	06:45			06:13	06:08
	17:48	23	08:40 (TRIV-10)	18:26	11	07:54 (TRIV-87)	19:57	64	09:01 (TRIV-87)	20:29			20:59	21:16
27	07:55		08:16 (TRIV-10)	07:18		07:37 (TRIV-87)	07:32		07:51 (TRIV-10a)	06:43			06:12	06:08
	17:49	24	08:40 (TRIV-10)	18:27	22	07:59 (TRIV-87)	19:58	61	08:58 (TRIV-87)	20:30			21:00	21:16
28	07:55		08:15 (TRIV-10)	07:16		07:36 (TRIV-87)	07:31		07:49 (TRIV-10a)	06:42			06:11	06:09
	17:50	25	08:40 (TRIV-10)	18:28	26	08:02 (TRIV-87)	19:59	60	08:56 (TRIV-87)	20:31			21:01	21:16
29	07:54		08:14 (TRIV-10)				07:29		07:48 (TRIV-10a)	06:41			06:11	06:09
	17:52	27	08:41 (TRIV-10)				20:00	57	08:54 (TRIV-87)	20:32			21:02	21:16
30	07:53		08:13 (TRIV-10)				07:27		07:46 (TRIV-10a)	06:39			06:10	06:10
	17:53	28	08:41 (TRIV-10)				20:00	53	08:51 (TRIV-87)	20:33			21:03	21:16
31	07:52		08:12 (TRIV-10)				07:25		07:45 (TRIV-10a)				06:10	
	17:54	29	08:41 (TRIV-10)				20:01	46	08:47 (TRIV-87)				21:03	
Potential sun hours	297			297			370			399			448	452
Total, worst case		515			308			1617			126			
Sun reduction		0.50			0.55			0.57			0.63			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.65			0.63			0.65			0.68			
Total reduction		0.33			0.34			0.37			0.43			
Total, real		167			106			603			54			

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 70 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1101)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September			October			November			December		
1	06:10		06:34		07:05			07:35		07:58 (TRIV-87)	07:10		07:49 (TRIV-10)	07:44		
	21:16		20:58		20:15			19:22	53	08:51 (TRIV-87)	17:36	15	08:04 (TRIV-10)	17:12		
2	06:11		06:35		07:06			07:36		07:58 (TRIV-87)	07:11		07:47 (TRIV-10)	07:45		15:48 (TRIV-09)
	21:16		20:56		20:13			19:21	52	08:50 (TRIV-87)	17:35	18	08:05 (TRIV-10)	17:11	10	15:58 (TRIV-09)
3	06:11		06:36		07:07			07:37		07:58 (TRIV-87)	07:12		07:45 (TRIV-10)	07:46		15:46 (TRIV-09)
	21:16		20:55		20:11			19:19	52	08:50 (TRIV-87)	17:33	22	08:07 (TRIV-10)	17:11	14	16:00 (TRIV-09)
4	06:12		06:37		07:08			07:38		07:58 (TRIV-87)	07:13		07:45 (TRIV-10)	07:47		15:45 (TRIV-09)
	21:15		20:54		20:10			19:17	51	08:49 (TRIV-87)	17:32	24	08:09 (TRIV-10)	17:11	17	16:02 (TRIV-09)
5	06:12		06:38		07:09			07:39		07:59 (TRIV-87)	07:14		07:44 (TRIV-10)	07:48		15:44 (TRIV-09)
	21:15		20:53		20:08			19:16	49	08:48 (TRIV-87)	17:31	25	08:09 (TRIV-10)	17:11	20	16:04 (TRIV-09)
6	06:13		06:39		07:10		07:48 (TRIV-10a)	07:40		08:00 (TRIV-87)	07:15		07:43 (TRIV-10)	07:49		15:43 (TRIV-09)
	21:15		20:52		20:07	11	07:59 (TRIV-10a)	19:14	47	08:47 (TRIV-87)	17:30	27	08:10 (TRIV-10)	17:11	22	16:05 (TRIV-09)
7	06:13		06:40		07:11		07:45 (TRIV-10a)	07:41		08:01 (TRIV-87)	07:17		07:42 (TRIV-10)	07:50		15:43 (TRIV-09)
	21:15		20:51		20:05	17	08:02 (TRIV-10a)	19:12	45	08:46 (TRIV-87)	17:29	28	08:10 (TRIV-10)	17:11	24	16:07 (TRIV-09)
8	06:14		06:41		07:12		07:43 (TRIV-10a)	07:42		08:02 (TRIV-87)	07:18		07:42 (TRIV-10)	07:51		15:43 (TRIV-09)
	21:14		20:49		20:03	20	08:03 (TRIV-10a)	19:11	43	08:45 (TRIV-87)	17:28	30	08:12 (TRIV-10)	17:10	25	16:08 (TRIV-09)
9	06:15		06:42		07:13		07:41 (TRIV-10a)	07:44		08:03 (TRIV-87)	07:19		07:42 (TRIV-10)	07:52		15:42 (TRIV-09)
	21:14		20:48		20:02	23	08:04 (TRIV-10a)	19:09	40	08:43 (TRIV-87)	17:27	30	08:12 (TRIV-10)	17:10	27	16:09 (TRIV-09)
10	06:15		06:43		07:14		07:39 (TRIV-10a)	07:45		08:05 (TRIV-87)	07:20		07:42 (TRIV-10)	07:53		15:42 (TRIV-09)
	21:14		20:47		20:00	26	08:05 (TRIV-10a)	19:08	37	08:42 (TRIV-87)	17:26	30	08:12 (TRIV-10)	17:11	28	16:10 (TRIV-09)
11	06:16		06:44		07:15		07:38 (TRIV-10a)	07:46		08:06 (TRIV-87)	07:21		07:44 (TRIV-10)	07:54		15:42 (TRIV-09)
	21:13		20:46		19:56	28	08:06 (TRIV-10a)	19:06	35	08:41 (TRIV-87)	17:25	29	08:13 (TRIV-10)	17:11	28	16:10 (TRIV-09)
12	06:17		06:45		07:16		07:37 (TRIV-10a)	07:47		08:07 (TRIV-87)	07:23		07:45 (TRIV-10)	07:55		15:42 (TRIV-09)
	21:13		20:44		19:55	44	08:38 (TRIV-87)	19:04	32	08:39 (TRIV-87)	17:24	28	08:13 (TRIV-10)	17:11	29	16:11 (TRIV-09)
13	06:18		06:46		07:17		07:37 (TRIV-10a)	07:48		08:08 (TRIV-87)	07:24		07:46 (TRIV-10)	07:55		15:42 (TRIV-09)
	21:12		20:43		19:53	52	08:42 (TRIV-87)	19:03	28	08:36 (TRIV-87)	17:23	27	08:13 (TRIV-10)	17:11	30	16:12 (TRIV-09)
14	06:18		06:47		07:18		07:38 (TRIV-10a)	07:49		08:09 (TRIV-87)	07:25		07:47 (TRIV-10)	07:56		15:42 (TRIV-09)
	21:12		20:42		19:51	56	08:44 (TRIV-87)	19:01	24	08:33 (TRIV-87)	17:22	25	08:12 (TRIV-10)	17:11	31	16:13 (TRIV-09)
15	06:19		06:48		07:19		07:39 (TRIV-10a)	07:50		08:11 (TRIV-87)	07:26		07:49 (TRIV-10)	07:57		15:42 (TRIV-09)
	21:11		20:40		19:50	60	08:46 (TRIV-87)	19:00	18	08:29 (TRIV-87)	17:21	24	08:13 (TRIV-10)	17:11	31	16:13 (TRIV-09)
16	06:20		06:49		07:20		07:40 (TRIV-10a)	07:51		08:18 (TRIV-87)	07:27		07:50 (TRIV-10)	07:58		15:42 (TRIV-09)
	21:11		20:39		19:48	61	08:47 (TRIV-87)	18:58	4	08:22 (TRIV-87)	17:20	23	08:13 (TRIV-10)	17:12	32	16:14 (TRIV-09)
17	06:21		06:50		07:21		07:41 (TRIV-10a)	07:52			07:29		07:51 (TRIV-10)	07:58		15:43 (TRIV-09)
	21:10		20:38		19:46	63	08:49 (TRIV-87)	18:57			17:19	21	08:12 (TRIV-10)	17:12	32	16:15 (TRIV-09)
18	06:21		06:51		07:22		07:42 (TRIV-10a)	07:53			07:30		07:52 (TRIV-10)	07:59		15:43 (TRIV-09)
	21:10		20:36		19:45	64	08:50 (TRIV-87)	18:55			17:19	20	08:12 (TRIV-10)	17:12	32	16:15 (TRIV-09)
19	06:22		06:52		07:23		07:43 (TRIV-10a)	07:54			07:31		07:54 (TRIV-10)	08:00		15:43 (TRIV-09)
	21:09		20:35		19:43	64	08:50 (TRIV-87)	18:54			17:18	18	08:12 (TRIV-10)	17:13	33	16:16 (TRIV-09)
20	06:23		06:53		07:24		07:44 (TRIV-10a)	07:56			07:32		07:55 (TRIV-10)	08:00		15:44 (TRIV-09)
	21:08		20:33		19:41	64	08:51 (TRIV-87)	18:52			17:17	17	08:12 (TRIV-10)	17:13	33	16:17 (TRIV-09)
21	06:24		06:54		07:25		07:45 (TRIV-10a)	07:57			07:33		07:56 (TRIV-10)	08:01		15:44 (TRIV-09)
	21:07		20:32		19:39	64	08:52 (TRIV-87)	18:51			17:16	15	08:11 (TRIV-10)	17:13	33	16:17 (TRIV-09)
22	06:25		06:55		07:26		07:46 (TRIV-10a)	07:58			07:34		07:57 (TRIV-10)	08:01		15:44 (TRIV-09)
	21:07		20:30		19:38	62	08:52 (TRIV-87)	18:49			17:16	13	08:10 (TRIV-10)	17:14	33	16:17 (TRIV-09)
23	06:26		06:56		07:27		07:47 (TRIV-10a)	07:59			07:36		07:59 (TRIV-10)	08:02		15:45 (TRIV-09)
	21:06		20:29		19:36	60	08:52 (TRIV-87)	18:48			17:15	12	08:11 (TRIV-10)	17:14	33	16:18 (TRIV-09)
24	06:27		06:57		07:28		07:48 (TRIV-10a)	08:00			07:37		08:00 (TRIV-10)	08:02		15:45 (TRIV-09)
	21:05		20:27		19:34	58	08:53 (TRIV-87)	18:46			17:15	10	08:10 (TRIV-10)	17:15	33	16:18 (TRIV-09)
25	06:28		06:58		07:29		08:00 (TRIV-87)	08:01			07:38		08:01 (TRIV-10)	08:03		15:47 (TRIV-09)
	21:04		20:26		19:33	53	08:53 (TRIV-87)	18:45			17:14	8	08:09 (TRIV-10)	17:16	32	16:19 (TRIV-09)
26	06:28		06:59		07:30		08:00 (TRIV-87)	08:02			07:39		08:02 (TRIV-10)	08:03		15:47 (TRIV-09)
	21:03		20:24		19:31	53	08:53 (TRIV-87)	18:44			17:14	6	08:08 (TRIV-10)	17:16	32	16:19 (TRIV-09)
27	06:29		07:00		07:31		07:59 (TRIV-87)	08:04			07:40		08:03 (TRIV-10)	08:03		15:47 (TRIV-09)
	21:02		20:23		19:29	53	08:52 (TRIV-87)	18:42			17:13	3	08:06 (TRIV-10)	17:17	32	16:19 (TRIV-09)
28	06:30		07:01		07:32		07:59 (TRIV-87)	08:05			07:41			08:04		15:49 (TRIV-09)
	21:02		20:21		19:27	53	08:52 (TRIV-87)	18:41			17:13			17:18	31	16:20 (TRIV-09)
29	06:31		07:02		07:33		07:58 (TRIV-87)	08:06			07:42			08:04		15:49 (TRIV-09)
	21:01		20:20		19:26	54	08:52 (TRIV-87)	18:40			17:12			17:18	31	16:20 (TRIV-09)
30	06:32		07:03		07:34		07:58 (TRIV-87)	08:07			07:43			08:04		15:50 (TRIV-09)
	21:00		20:18		19:24	54	08:52 (TRIV-87)	18:38			17:12			17:19	30	16:20 (TRIV-09)
31	06:33		07:04					08:08		08:53 (TRIV-10)				08:04		15:50 (TRIV-09)
	20:59		20:16					18:37	7	09:00 (TRIV-10)				17:20	30	16:20 (TRIV-09)
Potential sun hours	459		428		375			345			298			288		
Total, worst case						1217			617			548			848	
Sun reduction						0.67			0.60			0.40			0.36	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.66			0.65			0.62			0.69	
Total reduction						0.44			0.39			0.25			0.25	
Total, real						537			240			136			211	

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

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

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 78 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1109)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:05		07:51		07:15			07:24		07:53 (TRIV-10)	06:38			06:09		06:31 (TRIV-10a)
	17:21		17:55		18:29			20:03	76	19:20 (TRIV-09)	20:34			21:04	28	06:59 (TRIV-10a)
2	08:05		07:50		07:13			07:22		07:54 (TRIV-10)	06:37			06:09		06:31 (TRIV-10a)
	17:22		17:57		18:31			20:04	70	19:18 (TRIV-09)	20:36			21:05	28	06:59 (TRIV-10a)
3	08:05		07:49		07:12			07:21		07:55 (TRIV-10)	06:35			06:09		06:30 (TRIV-10a)
	17:23		17:58		18:32			20:05	65	19:16 (TRIV-09)	20:37			21:06	29	06:59 (TRIV-10a)
4	08:05		07:48		07:10			07:19		07:57 (TRIV-10)	06:34			06:08		06:30 (TRIV-10a)
	17:24		17:59		18:33			20:06	59	19:16 (TRIV-09)	20:38			21:06	29	06:59 (TRIV-10a)
5	08:05		07:47		07:08			07:17		08:00 (TRIV-10)	06:33			06:08		06:31 (TRIV-10a)
	17:24		18:00		18:34			20:07	48	19:13 (TRIV-09)	20:39			21:07	28	06:59 (TRIV-10a)
6	08:05		07:46		07:07		17:54 (TRIV-09)	07:16		18:37 (TRIV-09)	06:32			06:07		06:30 (TRIV-10a)
	17:25		18:02		18:35	16	18:10 (TRIV-09)	20:08	35	19:12 (TRIV-09)	20:40			21:08	29	06:59 (TRIV-10a)
7	08:05		07:45		07:05		17:50 (TRIV-09)	07:14		18:38 (TRIV-09)	06:31			06:07		06:31 (TRIV-10a)
	17:26		18:03		18:36	25	18:15 (TRIV-09)	20:09	32	19:10 (TRIV-09)	20:41			21:09	28	06:59 (TRIV-10a)
8	08:05		07:43		08:04		18:47 (TRIV-09)	07:12		18:40 (TRIV-09)	06:29			06:07		06:32 (TRIV-10a)
	17:27		18:04		19:37	29	19:16 (TRIV-09)	20:10	27	19:07 (TRIV-09)	20:42			21:09	27	06:59 (TRIV-10a)
9	08:04		07:42		08:02		18:44 (TRIV-09)	07:11		18:43 (TRIV-09)	06:28			06:07		06:32 (TRIV-10a)
	17:28		18:05		19:39	33	19:17 (TRIV-09)	20:11	21	19:04 (TRIV-09)	20:43			21:10	27	06:59 (TRIV-10a)
10	08:04		07:41		08:00		18:42 (TRIV-09)	07:09		18:47 (TRIV-09)	06:27			06:07		06:33 (TRIV-10a)
	17:29		18:07		19:40	37	19:19 (TRIV-09)	20:12	12	18:59 (TRIV-09)	20:44			21:10	26	06:59 (TRIV-10a)
11	08:04		07:40		07:59		18:40 (TRIV-09)	07:08			06:26			06:06		06:32 (TRIV-10a)
	17:30		18:08		19:41	39	19:19 (TRIV-09)	20:13			20:45			21:11	26	06:58 (TRIV-10a)
12	08:04		07:39		07:57		18:38 (TRIV-09)	07:06			06:25		06:45 (TRIV-10a)	06:06		06:33 (TRIV-10a)
	17:32		18:09		19:42	42	19:20 (TRIV-09)	20:14			20:46	3	06:48 (TRIV-10a)	21:11	26	06:59 (TRIV-10a)
13	08:03		07:37		07:56		18:37 (TRIV-09)	07:04			06:24		06:44 (TRIV-10a)	06:06		06:33 (TRIV-10a)
	17:33		18:10		19:43	45	19:22 (TRIV-09)	20:15			20:47	6	06:50 (TRIV-10a)	21:12	26	06:59 (TRIV-10a)
14	08:03		07:36		07:54		18:36 (TRIV-09)	07:03			06:23		06:43 (TRIV-10a)	06:06		06:33 (TRIV-10a)
	17:34		18:12		19:44	47	19:23 (TRIV-09)	20:16			20:48	9	06:52 (TRIV-10a)	21:12	26	06:59 (TRIV-10a)
15	08:03		07:35		07:52		08:11 (TRIV-10)	07:01			06:22		06:42 (TRIV-10a)	06:06		06:34 (TRIV-10a)
	17:35		18:13		19:45	55	19:24 (TRIV-09)	20:17			20:49	11	06:53 (TRIV-10a)	21:13	25	06:59 (TRIV-10a)
16	08:02		07:34		07:51		08:10 (TRIV-10)	07:00			06:21		06:41 (TRIV-10a)	06:06		06:34 (TRIV-10a)
	17:36		18:14		19:46	61	19:25 (TRIV-09)	20:18			20:50	13	06:54 (TRIV-10a)	21:13	25	06:59 (TRIV-10a)
17	08:02		07:32		07:49		08:08 (TRIV-10)	06:58			06:20		06:41 (TRIV-10a)	06:06		06:34 (TRIV-10a)
	17:37		18:15		19:47	67	19:26 (TRIV-09)	20:20			20:51	14	06:55 (TRIV-10a)	21:14	25	06:59 (TRIV-10a)
18	08:01		07:31		07:47		08:06 (TRIV-10)	06:57			06:19		06:40 (TRIV-10a)	06:06		06:35 (TRIV-10a)
	17:38		18:16		19:49	71	19:26 (TRIV-09)	20:21			20:52	16	06:56 (TRIV-10a)	21:14	25	07:00 (TRIV-10a)
19	08:01		07:29		07:46		08:05 (TRIV-10)	06:55			06:18		06:39 (TRIV-10a)	06:06		06:36 (TRIV-10a)
	17:39		18:18		19:50	75	19:27 (TRIV-09)	20:22			20:53	17	06:56 (TRIV-10a)	21:14	24	07:00 (TRIV-10a)
20	08:00		07:28		07:44		08:03 (TRIV-10)	06:54			06:17		06:38 (TRIV-10a)	06:06		06:36 (TRIV-10a)
	17:41		18:19		19:51	77	19:26 (TRIV-09)	20:23			20:54	18	06:56 (TRIV-10a)	21:15	24	07:00 (TRIV-10a)
21	08:00		07:27		07:42		08:01 (TRIV-10)	06:52			06:16		06:37 (TRIV-10a)	06:07		06:36 (TRIV-10a)
	17:42		18:20		19:52	81	19:26 (TRIV-09)	20:24			20:55	20	06:57 (TRIV-10a)	21:15	24	07:00 (TRIV-10a)
22	07:59		07:25		07:41		08:00 (TRIV-10)	06:51			06:16		06:37 (TRIV-10a)	06:07		06:36 (TRIV-10a)
	17:43		18:21		19:53	83	19:26 (TRIV-09)	20:25			20:56	21	06:58 (TRIV-10a)	21:15	24	07:00 (TRIV-10a)
23	07:58		07:24		07:39		07:58 (TRIV-10)	06:49			06:15		06:36 (TRIV-10a)	06:07		06:37 (TRIV-10a)
	17:44		18:22		19:54	84	19:26 (TRIV-09)	20:26			20:57	22	06:58 (TRIV-10a)	21:15	24	07:01 (TRIV-10a)
24	07:58		07:22		07:37		07:56 (TRIV-10)	06:48			06:14		06:35 (TRIV-10a)	06:07		06:36 (TRIV-10a)
	17:45		18:24		19:55	86	19:25 (TRIV-09)	20:27			20:58	23	06:58 (TRIV-10a)	21:16	25	07:01 (TRIV-10a)
25	07:57		07:21		07:36		07:55 (TRIV-10)	06:46			06:13		06:35 (TRIV-10a)	06:08		06:36 (TRIV-10a)
	17:47		18:25		19:56	88	19:26 (TRIV-09)	20:28			20:58	24	06:59 (TRIV-10a)	21:16	25	07:01 (TRIV-10a)
26	07:56		07:19		07:34		07:53 (TRIV-10)	06:45			06:13		06:34 (TRIV-10a)	06:08		06:36 (TRIV-10a)
	17:48		18:26		19:57	89	19:25 (TRIV-09)	20:29			20:59	24	06:58 (TRIV-10a)	21:16	25	07:01 (TRIV-10a)
27	07:55		07:18		07:32		07:51 (TRIV-10)	06:43			06:12		06:33 (TRIV-10a)	06:08		06:37 (TRIV-10a)
	17:49		18:27		19:58	89	19:24 (TRIV-09)	20:30			21:00	25	06:58 (TRIV-10a)	21:16	25	07:02 (TRIV-10a)
28	07:55		07:16		07:31		07:51 (TRIV-10)	06:42			06:12		06:33 (TRIV-10a)	06:09		06:37 (TRIV-10a)
	17:50		18:28		19:59	87	19:23 (TRIV-09)	20:31			21:01	26	06:59 (TRIV-10a)	21:16	25	07:02 (TRIV-10a)
29	07:54				07:29		07:52 (TRIV-10)	06:41			06:11		06:32 (TRIV-10a)	06:09		06:37 (TRIV-10a)
	17:52				20:00	85	19:23 (TRIV-09)	20:32			21:02	26	06:58 (TRIV-10a)	21:16	26	07:03 (TRIV-10a)
30	07:53				07:27		07:52 (TRIV-10)	06:39			06:10		06:32 (TRIV-10a)	06:10		06:37 (TRIV-10a)
	17:53				20:00	82	19:21 (TRIV-09)	20:33			21:03	27	06:59 (TRIV-10a)	21:16	26	07:03 (TRIV-10a)
31	07:52				07:26		07:52 (TRIV-10)				06:10		06:31 (TRIV-10a)			
	17:54				20:01	79	19:20 (TRIV-09)				21:03	27	06:58 (TRIV-10a)			
Potential sun hours	297		297		370			399			448			452		
Total, worst case					1652			445			372			780		
Sun reduction					0.57			0.63			0.69			0.74		
Oper. time red.					1.00			1.00			1.00			1.00		
Wind dir. red.					0.68			0.68			0.70			0.70		
Total reduction					0.39			0.43			0.48			0.52		
Total, real					639			190			180			404		

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 78 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1109)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November	December
1	06:10		06:37 (TRIV-10a)	06:34		06:56 (TRIV-10a)	07:05			07:35		18:17 (TRIV-09)	07:09	07:44
	21:16	27	07:04 (TRIV-10a)	20:58	2	06:58 (TRIV-10a)	20:15			19:22	43	19:00 (TRIV-09)	17:36	17:12
2	06:11		06:37 (TRIV-10a)	06:35			07:06		18:46 (TRIV-09)	07:36		18:18 (TRIV-09)	07:11	07:45
	21:16	26	07:03 (TRIV-10a)	20:56			20:13	12	18:58 (TRIV-09)	19:21	41	18:59 (TRIV-09)	17:35	17:11
3	06:11		06:37 (TRIV-10a)	06:36			07:07		18:41 (TRIV-09)	07:37		18:19 (TRIV-09)	07:12	07:46
	21:16	27	07:04 (TRIV-10a)	20:55			20:11	21	19:02 (TRIV-09)	19:19	38	18:57 (TRIV-09)	17:33	17:11
4	06:12		06:37 (TRIV-10a)	06:37			07:08		18:37 (TRIV-09)	07:38		18:21 (TRIV-09)	07:13	07:47
	21:15	27	07:04 (TRIV-10a)	20:54			20:10	27	19:04 (TRIV-09)	19:17	34	18:55 (TRIV-09)	17:32	17:11
5	06:12		06:37 (TRIV-10a)	06:38			07:09		18:34 (TRIV-09)	07:39		18:22 (TRIV-09)	07:14	07:48
	21:15	28	07:05 (TRIV-10a)	20:53			20:08	32	19:06 (TRIV-09)	19:16	31	18:53 (TRIV-09)	17:31	17:11
6	06:13		06:37 (TRIV-10a)	06:39			07:10		18:32 (TRIV-09)	07:40		18:24 (TRIV-09)	07:15	07:49
	21:15	28	07:05 (TRIV-10a)	20:52			20:07	35	19:07 (TRIV-09)	19:14	28	18:52 (TRIV-09)	17:30	17:11
7	06:13		06:37 (TRIV-10a)	06:40			07:11		07:56 (TRIV-10)	07:41		18:27 (TRIV-09)	07:17	07:50
	21:15	28	07:05 (TRIV-10a)	20:51			20:05	47	19:08 (TRIV-09)	19:12	21	18:48 (TRIV-09)	17:29	17:11
8	06:14		06:38 (TRIV-10a)	06:41			07:12		07:52 (TRIV-10)	07:42		18:32 (TRIV-09)	07:18	07:51
	21:14	28	07:06 (TRIV-10a)	20:49			20:03	58	19:10 (TRIV-09)	19:11	10	18:42 (TRIV-09)	17:28	17:11
9	06:15		06:37 (TRIV-10a)	06:42			07:13		07:49 (TRIV-10)	07:44			07:19	07:52
	21:14	29	07:06 (TRIV-10a)	20:48			20:02	65	19:10 (TRIV-09)	19:09			17:27	17:11
10	06:15		06:38 (TRIV-10a)	06:43			07:14		07:47 (TRIV-10)	07:45			07:20	07:53
	21:14	28	07:06 (TRIV-10a)	20:47			20:00	70	19:11 (TRIV-09)	19:08			17:26	17:11
11	06:16		06:39 (TRIV-10a)	06:44			07:15		07:46 (TRIV-10)	07:46			07:21	07:54
	21:13	28	07:07 (TRIV-10a)	20:46			19:56	74	19:12 (TRIV-09)	19:06			17:25	17:11
12	06:17		06:39 (TRIV-10a)	06:45			07:16		07:44 (TRIV-10)	07:47			07:23	07:55
	21:13	28	07:07 (TRIV-10a)	20:44			19:55	79	19:12 (TRIV-09)	19:04			17:24	17:11
13	06:18		06:40 (TRIV-10a)	06:46			07:17		07:43 (TRIV-10)	07:48			07:24	07:55
	21:12	27	07:07 (TRIV-10a)	20:43			19:53	83	19:13 (TRIV-09)	19:03			17:23	17:11
14	06:18		06:41 (TRIV-10a)	06:47			07:18		07:42 (TRIV-10)	07:49			07:25	07:56
	21:12	27	07:08 (TRIV-10a)	20:42			19:51	85	19:13 (TRIV-09)	19:01			17:22	17:11
15	06:19		06:41 (TRIV-10a)	06:48			07:19		07:41 (TRIV-10)	07:50			07:26	07:57
	21:11	26	07:07 (TRIV-10a)	20:40			19:50	87	19:13 (TRIV-09)	19:00			17:21	17:11
16	06:20		06:42 (TRIV-10a)	06:49			07:20		07:41 (TRIV-10)	07:51			07:27	07:58
	21:11	25	07:07 (TRIV-10a)	20:39			19:48	88	19:13 (TRIV-09)	18:58			17:20	17:12
17	06:21		06:43 (TRIV-10a)	06:50			07:21		07:41 (TRIV-10)	07:52			07:29	07:58
	21:10	25	07:08 (TRIV-10a)	20:38			19:46	88	19:13 (TRIV-09)	18:57			17:19	17:12
18	06:21		06:44 (TRIV-10a)	06:51			07:22		07:42 (TRIV-10)	07:53			07:30	07:59
	21:10	24	07:08 (TRIV-10a)	20:36			19:45	88	19:13 (TRIV-09)	18:55			17:19	17:12
19	06:22		06:45 (TRIV-10a)	06:52			07:23		07:43 (TRIV-10)	07:54			07:31	08:00
	21:09	23	07:08 (TRIV-10a)	20:35			19:43	86	19:13 (TRIV-09)	18:54			17:18	17:13
20	06:23		06:45 (TRIV-10a)	06:53			07:24		07:44 (TRIV-10)	07:56			07:32	08:00
	21:08	22	07:07 (TRIV-10a)	20:33			19:41	85	19:12 (TRIV-09)	18:52			17:17	17:13
21	06:24		06:46 (TRIV-10a)	06:54			07:25		07:45 (TRIV-10)	07:57			07:33	08:01
	21:07	21	07:07 (TRIV-10a)	20:32			19:39	83	19:12 (TRIV-09)	18:51			17:16	17:13
22	06:25		06:47 (TRIV-10a)	06:55			07:26		07:46 (TRIV-10)	07:58			07:34	08:01
	21:07	20	07:07 (TRIV-10a)	20:30			19:38	81	19:11 (TRIV-09)	18:49			17:16	17:14
23	06:26		06:48 (TRIV-10a)	06:56			07:27		07:47 (TRIV-10)	07:59			07:36	08:02
	21:06	19	07:07 (TRIV-10a)	20:29			19:36	79	19:11 (TRIV-09)	18:48			17:15	17:14
24	06:27		06:49 (TRIV-10a)	06:57			07:28		07:48 (TRIV-10)	08:00			07:37	08:02
	21:05	18	07:07 (TRIV-10a)	20:27			19:34	76	19:10 (TRIV-09)	18:46			17:15	17:15
25	06:28		06:50 (TRIV-10a)	06:58			07:29		07:49 (TRIV-10)	08:01			07:38	08:03
	21:04	17	07:07 (TRIV-10a)	20:26			19:33	72	19:09 (TRIV-09)	18:45			17:14	17:16
26	06:29		06:51 (TRIV-10a)	06:59			07:30		07:50 (TRIV-10)	08:02			07:39	08:03
	21:03	15	07:06 (TRIV-10a)	20:24			19:31	69	19:09 (TRIV-09)	18:44			17:14	17:16
27	06:29		06:51 (TRIV-10a)	07:00			07:31		07:51 (TRIV-10)	08:04			07:40	08:03
	21:02	14	07:05 (TRIV-10a)	20:23			19:29	64	19:07 (TRIV-09)	18:42			17:13	17:17
28	06:30		06:52 (TRIV-10a)	07:01			07:32		07:52 (TRIV-10)	08:05			07:41	08:04
	21:02	12	07:04 (TRIV-10a)	20:21			19:27	57	19:06 (TRIV-09)	18:41			17:13	17:18
29	06:31		06:53 (TRIV-10a)	07:02			07:33		18:16 (TRIV-09)	08:06			07:42	08:04
	21:01	10	07:03 (TRIV-10a)	20:20			19:26	48	19:04 (TRIV-09)	18:40			17:12	17:18
30	06:32		06:54 (TRIV-10a)	07:03			07:34		18:17 (TRIV-09)	08:07			07:43	08:04
	21:00	8	07:02 (TRIV-10a)	20:18			19:24	45	19:02 (TRIV-09)	18:38			17:12	17:19
31	06:33		06:55 (TRIV-10a)	07:04						08:08				08:04
	20:59	5	07:00 (TRIV-10a)	20:16						18:37				17:20
Potential sun hours	459			428			375			345			298	288
Total, worst case		690			2			1884			246			
Sun reduction		0.76			0.75			0.67			0.60			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.70			0.68			0.68			
Total reduction		0.53			0.52			0.45			0.41			
Total, real		367			1			856			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 79 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1110)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:05			07:51			07:15		07:34 (TRIV-10)	07:24			06:38		06:58 (TRIV-10a)	06:09		06:34 (TRIV-87)
	17:21			17:55			18:29	64	17:57 (TRIV-09)	20:03			20:34	18	07:16 (TRIV-10a)	21:04	55	07:29 (TRIV-87)
2	08:05			07:50			07:13		07:33 (TRIV-10)	07:22			06:37		06:56 (TRIV-10a)	06:09		06:35 (TRIV-87)
	17:22			17:57			18:31	67	17:57 (TRIV-09)	20:04			20:36	19	07:15 (TRIV-10a)	21:05	55	07:30 (TRIV-87)
3	08:05			07:49			07:12		07:31 (TRIV-10)	07:21			06:35		06:55 (TRIV-10a)	06:08		06:34 (TRIV-87)
	17:23			17:58			18:32	69	17:56 (TRIV-09)	20:05			20:37	21	07:16 (TRIV-10a)	21:06	56	07:30 (TRIV-87)
4	08:05			07:48			07:10		07:29 (TRIV-10)	07:19			06:34		06:54 (TRIV-10a)	06:08		06:35 (TRIV-87)
	17:24			17:59			18:33	70	17:55 (TRIV-09)	20:06			20:38	23	07:17 (TRIV-10a)	21:06	55	07:30 (TRIV-87)
5	08:05			07:47			07:08		07:28 (TRIV-10)	07:17			06:33		06:53 (TRIV-10a)	06:08		06:35 (TRIV-87)
	17:24			18:00			18:34	72	17:55 (TRIV-09)	20:07			20:39	24	07:17 (TRIV-10a)	21:07	56	07:31 (TRIV-87)
6	08:05			07:46			07:07		07:26 (TRIV-10)	07:16			06:32		06:52 (TRIV-10a)	06:07		06:34 (TRIV-87)
	17:25			18:02			18:35	72	17:53 (TRIV-09)	20:08			20:40	25	07:17 (TRIV-10a)	21:08	56	07:30 (TRIV-87)
7	08:05			07:45			07:05		07:25 (TRIV-10)	07:14			06:31		06:51 (TRIV-10a)	06:07		06:35 (TRIV-87)
	17:26			18:03			18:36	73	17:53 (TRIV-09)	20:09			20:41	26	07:17 (TRIV-10a)	21:09	56	07:31 (TRIV-87)
8	08:05			07:43		17:24 (TRIV-09)	08:04		08:23 (TRIV-10)	07:12			06:29		06:49 (TRIV-87)	06:07		06:35 (TRIV-87)
	17:27			18:04	15	17:39 (TRIV-09)	19:37	73	18:51 (TRIV-09)	20:10			20:42	27	07:16 (TRIV-10a)	21:09	56	07:31 (TRIV-87)
9	08:04			07:42		17:19 (TRIV-09)	08:02		08:21 (TRIV-10)	07:11			06:28		06:48 (TRIV-87)	06:07		06:36 (TRIV-87)
	17:28			18:05	23	17:42 (TRIV-09)	19:39	72	18:50 (TRIV-09)	20:11			20:43	28	07:16 (TRIV-10a)	21:10	55	07:31 (TRIV-87)
10	08:04			07:41		17:17 (TRIV-09)	08:00		08:20 (TRIV-10)	07:09			06:27		06:47 (TRIV-87)	06:07		06:36 (TRIV-87)
	17:29			18:07	26	17:43 (TRIV-09)	19:40	71	18:49 (TRIV-09)	20:12			20:44	30	07:17 (TRIV-87)	21:10	56	07:32 (TRIV-87)
11	08:04			07:40		17:15 (TRIV-09)	07:59		08:18 (TRIV-10)	07:08			06:26		06:46 (TRIV-87)	06:06		06:35 (TRIV-87)
	17:30			18:08	30	17:45 (TRIV-09)	19:41	69	18:47 (TRIV-09)	20:13			20:45	32	07:18 (TRIV-87)	21:11	56	07:31 (TRIV-87)
12	08:04			07:39		17:14 (TRIV-09)	07:57		08:16 (TRIV-10)	07:06			06:25		06:45 (TRIV-87)	06:06		06:35 (TRIV-87)
	17:32			18:09	32	17:46 (TRIV-09)	19:42	66	18:44 (TRIV-09)	20:14			20:46	34	07:19 (TRIV-87)	21:11	56	07:31 (TRIV-87)
13	08:03			07:37		17:12 (TRIV-09)	07:56		08:17 (TRIV-10)	07:04			06:24		06:44 (TRIV-87)	06:06		06:36 (TRIV-87)
	17:33			18:10	35	17:47 (TRIV-09)	19:43	62	18:43 (TRIV-09)	20:15			20:47	36	07:20 (TRIV-87)	21:12	55	07:31 (TRIV-87)
14	08:03			07:36		17:11 (TRIV-09)	07:54		08:17 (TRIV-10)	07:03			06:23		06:43 (TRIV-87)	06:06		06:36 (TRIV-87)
	17:34			18:12	38	17:49 (TRIV-09)	19:44	55	18:40 (TRIV-09)	20:16			20:48	38	07:21 (TRIV-87)	21:12	56	07:32 (TRIV-87)
15	08:03			07:35		17:10 (TRIV-09)	07:52		08:17 (TRIV-10)	07:01			06:22		06:42 (TRIV-87)	06:06		06:36 (TRIV-87)
	17:35			18:13	40	17:50 (TRIV-09)	19:45	46	18:35 (TRIV-09)	20:17			20:49	40	07:22 (TRIV-87)	21:13	56	07:32 (TRIV-87)
16	08:02			07:34		17:08 (TRIV-09)	07:51		08:18 (TRIV-10)	07:00			06:21		06:41 (TRIV-87)	06:06		06:36 (TRIV-87)
	17:36			18:14	43	17:51 (TRIV-09)	19:46	29	08:47 (TRIV-10)	20:18			20:50	42	07:23 (TRIV-87)	21:13	56	07:32 (TRIV-87)
17	08:02			07:32		17:08 (TRIV-09)	07:49		08:19 (TRIV-10)	06:58			06:20		06:41 (TRIV-87)	06:06		06:36 (TRIV-87)
	17:37			18:15	45	17:53 (TRIV-09)	19:47	26	08:45 (TRIV-10)	20:20			20:51	43	07:24 (TRIV-87)	21:14	56	07:32 (TRIV-87)
18	08:01			07:31		17:07 (TRIV-09)	07:47		08:20 (TRIV-10)	06:57			06:19		06:40 (TRIV-87)	06:06		06:38 (TRIV-87)
	17:38			18:16	47	17:54 (TRIV-09)	19:49	23	08:43 (TRIV-10)	20:21			20:52	45	07:25 (TRIV-87)	21:14	55	07:33 (TRIV-87)
19	08:01			07:29		17:06 (TRIV-09)	07:46		08:22 (TRIV-10)	06:55			06:18		06:39 (TRIV-87)	06:06		06:38 (TRIV-87)
	17:39			18:18	49	17:55 (TRIV-09)	19:50	19	08:41 (TRIV-10)	20:22			20:53	46	07:25 (TRIV-87)	21:14	55	07:33 (TRIV-87)
20	08:00			07:28		17:06 (TRIV-09)	07:44		08:24 (TRIV-10)	06:54			06:17		06:38 (TRIV-87)	06:06		06:38 (TRIV-87)
	17:41			18:19	51	17:57 (TRIV-09)	19:51	14	08:38 (TRIV-10)	20:23			20:54	47	07:25 (TRIV-87)	21:15	55	07:33 (TRIV-87)
21	08:00			07:27		17:05 (TRIV-09)	07:42			06:52			06:16		06:37 (TRIV-87)	06:07		06:38 (TRIV-87)
	17:42			18:20	52	17:57 (TRIV-09)	19:52			20:24			20:55	49	07:26 (TRIV-87)	21:15	55	07:33 (TRIV-87)
22	07:59			07:25		17:05 (TRIV-09)	07:41			06:51			06:16		06:37 (TRIV-87)	06:07		06:38 (TRIV-87)
	17:43			18:21	53	17:58 (TRIV-09)	19:53			20:25			20:56	50	07:27 (TRIV-87)	21:15	55	07:33 (TRIV-87)
23	07:58			07:24		17:04 (TRIV-09)	07:39			06:49			06:15		06:36 (TRIV-87)	06:07		06:39 (TRIV-87)
	17:44			18:22	53	17:57 (TRIV-09)	19:54			20:26			20:57	51	07:27 (TRIV-87)	21:15	55	07:34 (TRIV-87)
24	07:58			07:22		17:04 (TRIV-09)	07:37			06:48			06:14		06:35 (TRIV-87)	06:07		06:39 (TRIV-87)
	17:45			18:24	54	17:58 (TRIV-09)	19:55			20:27			20:58	52	07:27 (TRIV-87)	21:16	55	07:34 (TRIV-87)
25	07:57			07:21		17:03 (TRIV-09)	07:36			06:46			06:13		06:35 (TRIV-87)	06:08		06:39 (TRIV-87)
	17:47			18:25	54	17:57 (TRIV-09)	19:56			20:28			20:58	53	07:28 (TRIV-87)	21:16	55	07:34 (TRIV-87)
26	07:56			07:19		17:03 (TRIV-09)	07:34			06:45		07:04 (TRIV-10a)	06:13		06:34 (TRIV-87)	06:08		06:38 (TRIV-87)
	17:48			18:26	55	17:58 (TRIV-09)	19:57			20:29	5	07:09 (TRIV-10a)	20:59	54	07:28 (TRIV-87)	21:16	56	07:34 (TRIV-87)
27	07:55			07:18		17:03 (TRIV-09)	07:32			06:43		07:03 (TRIV-10a)	06:12		06:34 (TRIV-87)	06:08		06:39 (TRIV-87)
	17:49			18:27	54	17:57 (TRIV-09)	19:58			20:30	8	07:11 (TRIV-10a)	21:00	54	07:28 (TRIV-87)	21:16	56	07:35 (TRIV-87)
28	07:55			07:16		07:36 (TRIV-10)	07:31			06:42		07:02 (TRIV-10a)	06:12		06:34 (TRIV-87)	06:09		06:39 (TRIV-87)
	17:50			18:28	60	17:58 (TRIV-09)	19:59			20:31	11	07:13 (TRIV-10a)	21:01	55	07:29 (TRIV-87)	21:16	56	07:35 (TRIV-87)
29	07:54						07:29			06:41		07:00 (TRIV-10a)	06:11		06:34 (TRIV-87)	06:09		06:40 (TRIV-87)
	17:52						20:00			20:32	14	07:14 (TRIV-10a)	21:02	54	07:28 (TRIV-87)	21:16	55	07:35 (TRIV-87)
30	07:53						07:27			06:39		06:59 (TRIV-10a)	06:10		06:34 (TRIV-87)	06:10		06:40 (TRIV-87)
	17:53						20:00			20:33	16	07:15 (TRIV-10a)	21:03	55	07:29 (TRIV-87)	21:16	55	07:35 (TRIV-87)
31	07:52						07:26						06:10		06:34 (TRIV-87)			
	17:54						20:01						21:03	55	07:29 (TRIV-87)			
Potential sun hours	297			297			370			399			448			452		
Total, worst case			909					1112			54			1226			1665	
Sun reduction			0.55					0.57			0.63			0.69			0.74	
Oper. time red.			1.00					1.00			1.00			1.00			1.00	
Wind dir. red.			0.70					0.68			0.70			0.70			0.70	
Total reduction			0.38					0.39			0.44			0.48			0.52	
Total, real			349					429			24			591			862	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 79 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1110)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December
1	06:10		06:40 (TRIV-87)	06:34		06:56 (TRIV-87)	07:05			07:35		07:56 (TRIV-10)	07:09		16:47 (TRIV-09)	07:44
	21:16	56	07:36 (TRIV-87)	20:58	33	07:29 (TRIV-87)	20:15			19:22	65	18:23 (TRIV-09)	17:36	26	17:13 (TRIV-09)	17:12
2	06:11		06:40 (TRIV-87)	06:35		06:57 (TRIV-87)	07:06			07:36		07:56 (TRIV-10)	07:11		16:50 (TRIV-09)	07:45
	21:16	56	07:36 (TRIV-87)	20:56	31	07:28 (TRIV-87)	20:13			19:21	69	18:25 (TRIV-09)	17:35	21	17:11 (TRIV-09)	17:11
3	06:11		06:41 (TRIV-87)	06:36		06:58 (TRIV-87)	07:07			07:37		07:57 (TRIV-10)	07:12		16:53 (TRIV-09)	07:46
	21:16	55	07:36 (TRIV-87)	20:55	29	07:27 (TRIV-87)	20:11			19:19	71	18:26 (TRIV-09)	17:33	14	17:07 (TRIV-09)	17:11
4	06:12		06:40 (TRIV-87)	06:37		06:59 (TRIV-87)	07:08			07:38		07:58 (TRIV-10)	07:13			07:47
	21:15	56	07:36 (TRIV-87)	20:54	28	07:27 (TRIV-10a)	20:10			19:17	72	18:27 (TRIV-09)	17:32			17:11
5	06:12		06:41 (TRIV-87)	06:38		07:00 (TRIV-87)	07:09			07:39		07:59 (TRIV-10)	07:14			07:48
	21:15	56	07:37 (TRIV-87)	20:53	27	07:27 (TRIV-10a)	20:08			19:16	73	18:28 (TRIV-09)	17:31			17:11
6	06:13		06:41 (TRIV-87)	06:39		07:01 (TRIV-10a)	07:10			07:40		08:00 (TRIV-10)	07:15			07:49
	21:15	55	07:36 (TRIV-87)	20:52	26	07:27 (TRIV-10a)	20:07			19:14	73	18:28 (TRIV-09)	17:30			17:11
7	06:13		06:41 (TRIV-87)	06:40		07:02 (TRIV-10a)	07:11			07:41		08:01 (TRIV-10)	07:17			07:50
	21:15	56	07:37 (TRIV-87)	20:51	25	07:27 (TRIV-10a)	20:05			19:12	73	18:29 (TRIV-09)	17:29			17:11
8	06:14		06:42 (TRIV-87)	06:41		07:03 (TRIV-10a)	07:12			07:42		08:02 (TRIV-10)	07:18			07:51
	21:14	55	07:37 (TRIV-87)	20:49	23	07:26 (TRIV-10a)	20:03			19:11	72	18:29 (TRIV-09)	17:28			17:11
9	06:15		06:41 (TRIV-87)	06:42		07:04 (TRIV-10a)	07:13			07:44		08:03 (TRIV-10)	07:19			07:52
	21:14	56	07:37 (TRIV-87)	20:48	22	07:26 (TRIV-10a)	20:02			19:09	71	18:29 (TRIV-09)	17:27			17:10
10	06:15		06:42 (TRIV-87)	06:43		07:05 (TRIV-10a)	07:14			07:45		08:05 (TRIV-10)	07:20			07:53
	21:14	55	07:37 (TRIV-87)	20:47	21	07:26 (TRIV-10a)	20:00			19:08	69	18:30 (TRIV-09)	17:26			17:11
11	06:16		06:42 (TRIV-87)	06:44		07:06 (TRIV-10a)	07:15			07:46		08:06 (TRIV-10)	07:21			07:54
	21:13	56	07:38 (TRIV-87)	20:46	19	07:25 (TRIV-10a)	19:56			19:06	67	18:30 (TRIV-09)	17:25			17:11
12	06:17		06:42 (TRIV-87)	06:45		07:06 (TRIV-10a)	07:16			07:47		08:07 (TRIV-10)	07:23			07:55
	21:13	55	07:37 (TRIV-87)	20:44	17	07:23 (TRIV-10a)	19:55			19:04	65	18:30 (TRIV-09)	17:24			17:11
13	06:18		06:42 (TRIV-87)	06:46		07:07 (TRIV-10a)	07:17			07:48		08:08 (TRIV-10)	07:24			07:55
	21:12	55	07:37 (TRIV-87)	20:43	15	07:22 (TRIV-10a)	19:53			19:03	62	18:30 (TRIV-09)	17:23			17:11
14	06:18		06:43 (TRIV-87)	06:47		07:08 (TRIV-10a)	07:18			07:49		08:09 (TRIV-10)	07:25			07:56
	21:12	55	07:38 (TRIV-87)	20:42	13	07:21 (TRIV-10a)	19:51			19:01	56	18:30 (TRIV-09)	17:22			17:11
15	06:19		06:43 (TRIV-87)	06:48		07:09 (TRIV-10a)	07:19			07:50		17:35 (TRIV-09)	07:26			07:57
	21:11	54	07:37 (TRIV-87)	20:40	11	07:20 (TRIV-10a)	19:50			19:00	55	18:30 (TRIV-09)	17:21			17:11
16	06:20		06:43 (TRIV-87)	06:49		07:10 (TRIV-10a)	07:20			07:51		17:35 (TRIV-09)	07:27			07:58
	21:11	54	07:37 (TRIV-87)	20:39	8	07:18 (TRIV-10a)	19:48			18:58	54	18:29 (TRIV-09)	17:20			17:12
17	06:21		06:44 (TRIV-87)	06:50		07:11 (TRIV-10a)	07:21			07:52		17:35 (TRIV-09)	07:29			07:58
	21:10	53	07:37 (TRIV-87)	20:38	4	07:15 (TRIV-10a)	19:46			18:57	54	18:29 (TRIV-09)	17:19			17:12
18	06:21		06:44 (TRIV-87)	06:51			07:22			07:53		17:35 (TRIV-09)	07:30			07:59
	21:10	53	07:37 (TRIV-87)	20:36			19:45			18:55	54	18:29 (TRIV-09)	17:19			17:12
19	06:22		06:45 (TRIV-87)	06:52			07:23			07:54		17:35 (TRIV-09)	07:31			08:00
	21:09	52	07:37 (TRIV-87)	20:35			19:43			18:54	54	18:29 (TRIV-09)	17:18			17:13
20	06:23		06:45 (TRIV-87)	06:53			07:24			07:56		17:35 (TRIV-09)	07:32			08:00
	21:08	51	07:36 (TRIV-87)	20:33			19:41			18:52	53	18:28 (TRIV-09)	17:17			17:13
21	06:24		06:46 (TRIV-87)	06:54			07:25			07:57		17:35 (TRIV-09)	07:33			08:01
	21:07	50	07:36 (TRIV-87)	20:32			19:39			18:51	52	18:27 (TRIV-09)	17:16			17:13
22	06:25		06:47 (TRIV-87)	06:55			07:26			07:58		17:35 (TRIV-09)	07:34			08:01
	21:07	49	07:36 (TRIV-87)	20:30			19:38			18:49	51	18:26 (TRIV-09)	17:16			17:14
23	06:26		06:48 (TRIV-87)	06:56			07:27		08:10 (TRIV-10)	07:59		17:37 (TRIV-09)	07:36			08:02
	21:06	48	07:36 (TRIV-87)	20:29			19:36	11	08:21 (TRIV-10)	18:48	48	18:25 (TRIV-09)	17:15			17:14
24	06:27		06:49 (TRIV-87)	06:57			07:28		08:06 (TRIV-10)	08:00		17:37 (TRIV-09)	07:37			08:02
	21:05	47	07:36 (TRIV-87)	20:27			19:34	18	08:24 (TRIV-10)	18:46	47	18:24 (TRIV-09)	17:15			17:15
25	06:28		06:50 (TRIV-87)	06:58			07:29		08:04 (TRIV-10)	08:01		17:37 (TRIV-09)	07:38			08:03
	21:04	45	07:35 (TRIV-87)	20:26			19:33	22	08:26 (TRIV-10)	18:45	45	18:22 (TRIV-09)	17:14			17:16
26	06:29		06:51 (TRIV-87)	06:59			07:30		08:02 (TRIV-10)	08:02		17:38 (TRIV-09)	07:39			08:03
	21:03	44	07:35 (TRIV-87)	20:24			19:31	25	08:27 (TRIV-10)	18:44	42	18:20 (TRIV-09)	17:14			17:16
27	06:29		06:51 (TRIV-87)	07:00			07:31		08:00 (TRIV-10)	08:04		17:39 (TRIV-09)	07:40			08:03
	21:02	43	07:34 (TRIV-87)	20:23			19:29	28	08:28 (TRIV-10)	18:42	40	18:19 (TRIV-09)	17:13			17:17
28	06:30		06:52 (TRIV-87)	07:01			07:32		07:59 (TRIV-10)	08:05		17:41 (TRIV-09)	07:41			08:04
	21:02	41	07:33 (TRIV-87)	20:21			19:27	41	18:15 (TRIV-09)	18:41	37	18:18 (TRIV-09)	17:13			17:18
29	06:31		06:53 (TRIV-87)	07:02			07:33		07:58 (TRIV-10)	08:06		17:42 (TRIV-09)	07:42			08:04
	21:01	39	07:32 (TRIV-87)	20:20			19:26	52	18:19 (TRIV-09)	18:40	34	18:16 (TRIV-09)	17:12			17:18
30	06:32		06:54 (TRIV-87)	07:03			07:34		07:57 (TRIV-10)	08:07		17:43 (TRIV-09)	07:43			08:04
	21:00	37	07:31 (TRIV-87)	20:18			19:24	59	18:21 (TRIV-09)	18:38	32	18:15 (TRIV-09)	17:12			17:19
31	06:33		06:55 (TRIV-87)	07:04						08:08		17:44 (TRIV-09)				08:04
	20:59	35	07:30 (TRIV-87)	20:16						18:37	29	18:13 (TRIV-09)				17:20
Potential sun hours	459			428			375			345			298			288
Total, worst case		1572			352			256			1739			61		
Sun reduction		0.76			0.75			0.67			0.60			0.40		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.70			0.70			0.66			0.69			0.70		
Total reduction		0.53			0.52			0.44			0.41			0.28		
Total, real		836			184			114			720			17		

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 83 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1114)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April			May			June		
1	08:05		07:51		07:15		07:24			06:38		19:23 (TRIV-10)	06:09		06:31 (TRIV-19)
	17:21		17:55		18:29		20:02			20:34	47	20:10 (TRIV-10)	21:04	100	20:25 (TRIV-10)
2	08:05		07:50		07:13		07:22			06:37		19:20 (TRIV-10)	06:09		06:31 (TRIV-19)
	17:22		17:57		18:31		20:04			20:35	51	20:11 (TRIV-10)	21:05	102	20:26 (TRIV-10)
3	08:05		07:49		07:12		07:20			06:35		19:19 (TRIV-10)	06:08		06:30 (TRIV-19)
	17:23		17:58		18:32		20:05			20:36	53	20:12 (TRIV-10)	21:06	101	20:25 (TRIV-10)
4	08:05		07:48		07:10		07:19			06:34		19:18 (TRIV-10)	06:08		06:30 (TRIV-19)
	17:23		17:59		18:33		20:06			20:38	56	20:14 (TRIV-10)	21:06	103	20:26 (TRIV-10)
5	08:05		07:47		07:08		07:17			06:33		19:17 (TRIV-10)	06:08		06:30 (TRIV-19)
	17:24		18:00		18:34		20:07			20:39	58	20:15 (TRIV-10)	21:07	102	20:26 (TRIV-10)
6	08:05		07:46		07:07		07:16			06:32		19:16 (TRIV-10)	06:07		06:29 (TRIV-19)
	17:25		18:02		18:35		20:08			20:40	60	20:16 (TRIV-10)	21:08	104	20:26 (TRIV-10)
7	08:05		07:45		07:05		07:14			06:31		19:14 (TRIV-10)	06:07		06:29 (TRIV-19)
	17:26		18:03		18:36		20:09			20:41	62	20:16 (TRIV-10)	21:08	103	20:26 (TRIV-10)
8	08:05		07:43		08:04		07:12			06:29		19:14 (TRIV-10)	06:07		06:29 (TRIV-19)
	17:27		18:04		19:37		20:10			20:42	63	20:17 (TRIV-10)	21:09	104	20:26 (TRIV-10)
9	08:04		07:42		08:02		07:11			06:28		19:13 (TRIV-10)	06:07		06:29 (TRIV-19)
	17:28		18:05		19:39		20:11			20:43	65	20:18 (TRIV-10)	21:10	104	20:27 (TRIV-10)
10	08:04		07:41		08:00		07:09			06:27		19:12 (TRIV-10)	06:06		06:28 (TRIV-19)
	17:29		18:07		19:40		20:12			20:44	66	20:18 (TRIV-10)	21:10	104	20:26 (TRIV-10)
11	08:04		07:40		07:59		07:07			06:26		19:12 (TRIV-10)	06:06		06:28 (TRIV-19)
	17:30		18:08		19:41		20:13			20:45	67	20:19 (TRIV-10)	21:11	105	20:26 (TRIV-10)
12	08:04		07:39		07:57		07:06			06:25		19:11 (TRIV-10)	06:06		06:28 (TRIV-19)
	17:31		18:09		19:42		20:14			20:46	68	20:19 (TRIV-10)	21:11	104	20:26 (TRIV-10)
13	08:03		07:37		07:55		07:04			06:24		19:11 (TRIV-10)	06:06		06:28 (TRIV-19)
	17:33		18:10		19:43		20:15			20:47	69	20:20 (TRIV-10)	21:12	105	20:27 (TRIV-10)
14	08:03		07:36		07:54		07:03			06:23		19:10 (TRIV-10)	06:06		06:28 (TRIV-19)
	17:34		18:11		19:44		20:16			20:48	70	20:20 (TRIV-10)	21:12	105	20:27 (TRIV-10)
15	08:03		07:35		07:52		07:01			06:22		19:10 (TRIV-10)	06:06		06:28 (TRIV-19)
	17:35		18:13		19:45		20:17			20:49	71	20:21 (TRIV-10)	21:13	104	20:27 (TRIV-10)
16	08:02		07:33		07:51		07:00			06:21		06:41 (TRIV-19)	06:06		06:28 (TRIV-19)
	17:36		18:14		19:46		20:18			20:50	74	20:21 (TRIV-10)	21:13	104	20:27 (TRIV-10)
17	08:02		07:32		07:49		06:58			06:20		06:41 (TRIV-19)	06:06		06:28 (TRIV-19)
	17:37		18:15		19:47		20:19			20:51	77	20:22 (TRIV-10)	21:14	105	20:27 (TRIV-10)
18	08:01		07:31		07:47		06:57			06:19		06:40 (TRIV-19)	06:06		06:28 (TRIV-19)
	17:38		18:16		19:48		20:21			20:52	80	20:22 (TRIV-10)	21:14	105	20:27 (TRIV-10)
19	08:01		07:29		07:46		06:55			06:18		06:39 (TRIV-19)	06:06		06:29 (TRIV-19)
	17:39		18:18		19:50		20:22			20:53	83	20:22 (TRIV-10)	21:14	105	20:28 (TRIV-10)
20	08:00		07:28		07:44		06:53			06:17		06:38 (TRIV-19)	06:06		06:29 (TRIV-19)
	17:41		18:19		19:51		20:23			20:54	86	20:23 (TRIV-10)	21:15	105	20:28 (TRIV-10)
21	08:00		07:27		07:42		06:52			06:16		06:37 (TRIV-19)	06:07		06:29 (TRIV-19)
	17:42		18:20		19:52		20:24			20:55	89	20:23 (TRIV-10)	21:15	106	20:29 (TRIV-10)
22	07:59		07:25		07:41		06:51			06:16		06:37 (TRIV-19)	06:07		06:29 (TRIV-19)
	17:43		18:21		19:53		20:25			20:56	90	20:24 (TRIV-10)	21:15	106	20:29 (TRIV-10)
23	07:58		07:24		07:39		06:49			06:15		06:36 (TRIV-19)	06:07		06:29 (TRIV-19)
	17:44		18:22		19:54		20:26			20:57	91	20:23 (TRIV-10)	21:15	105	20:28 (TRIV-10)
24	07:58		07:22		07:37		06:48			06:14		06:35 (TRIV-19)	06:07		06:30 (TRIV-19)
	17:45		18:24		19:55		20:27			20:57	93	20:23 (TRIV-10)	21:15	105	20:29 (TRIV-10)
25	07:57		07:21		07:35		06:46		19:41 (TRIV-10)	06:13		06:35 (TRIV-19)	06:08		06:30 (TRIV-19)
	17:47		18:25		19:56		20:28	14	19:55 (TRIV-10)	20:58	94	20:24 (TRIV-10)	21:16	105	20:29 (TRIV-10)
26	07:56		07:19		07:34		06:45		19:35 (TRIV-10)	06:13		06:34 (TRIV-19)	06:08		06:30 (TRIV-19)
	17:48		18:26		19:57		20:29	24	19:59 (TRIV-10)	20:59	95	20:24 (TRIV-10)	21:16	104	20:29 (TRIV-10)
27	07:55		07:18		07:32		06:43		19:31 (TRIV-10)	06:12		06:33 (TRIV-19)	06:08		06:31 (TRIV-19)
	17:49		18:27		19:58		20:30	32	20:03 (TRIV-10)	21:00	97	20:24 (TRIV-10)	21:16	104	20:30 (TRIV-10)
28	07:54		07:16		07:30		06:42		19:29 (TRIV-10)	06:11		06:33 (TRIV-19)	06:09		06:31 (TRIV-19)
	17:50		18:28		19:59		20:31	36	20:05 (TRIV-10)	21:01	98	20:25 (TRIV-10)	21:16	105	20:30 (TRIV-10)
29	07:54				07:29		06:41		19:26 (TRIV-10)	06:11		06:32 (TRIV-19)	06:09		06:32 (TRIV-19)
	17:52				20:00		20:32	41	20:07 (TRIV-10)	21:02	98	20:24 (TRIV-10)	21:16	105	20:31 (TRIV-10)
30	07:53				07:27		06:39		19:24 (TRIV-10)	06:10		06:32 (TRIV-19)	06:10		06:32 (TRIV-19)
	17:53				20:00		20:33	45	20:09 (TRIV-10)	21:03	100	20:25 (TRIV-10)	21:16	105	20:31 (TRIV-10)
31	07:52				07:25					06:10		06:31 (TRIV-19)			
	17:54				20:01					21:03	100	20:25 (TRIV-10)			
Potential sun hours	297		297		370		399			448			452		
Total, worst case							192			2371			3124		
Sun reduction							0.63			0.69			0.74		
Oper. time red.							1.00			1.00			1.00		
Wind dir. red.							0.64			0.65			0.66		
Total reduction							0.40			0.45			0.49		
Total, real							77			1058			1519		

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 83 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1114)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September	October	November	December
1	06:10		06:33 (TRIV-19)	06:34	19:22 (TRIV-10)	07:05	07:35	07:09	07:44
	21:16	104	20:31 (TRIV-10)	20:57	68	20:30 (TRIV-10)	20:15	19:22	17:36	17:12
2	06:11		06:33 (TRIV-19)	06:35	19:22 (TRIV-10)	07:06	07:36	07:11	07:45
	21:16	104	20:31 (TRIV-10)	20:56	67	20:29 (TRIV-10)	20:13	19:21	17:34	17:11
3	06:11		06:34 (TRIV-19)	06:36	19:23 (TRIV-10)	07:07	07:37	07:12	07:46
	21:16	104	20:32 (TRIV-10)	20:55	66	20:29 (TRIV-10)	20:11	19:19	17:33	17:11
4	06:12		06:34 (TRIV-19)	06:37	19:24 (TRIV-10)	07:08	07:38	07:13	07:47
	21:15	104	20:31 (TRIV-10)	20:54	64	20:28 (TRIV-10)	20:10	19:17	17:32	17:11
5	06:12		06:35 (TRIV-19)	06:38	19:24 (TRIV-10)	07:09	07:39	07:14	07:48
	21:15	103	20:32 (TRIV-10)	20:53	63	20:27 (TRIV-10)	20:08	19:16	17:31	17:11
6	06:13		06:35 (TRIV-19)	06:39	19:25 (TRIV-10)	07:10	07:40	07:15	07:49
	21:15	103	20:32 (TRIV-10)	20:52	61	20:26 (TRIV-10)	20:06	19:14	17:30	17:11
7	06:13		06:36 (TRIV-19)	06:40	19:26 (TRIV-10)	07:11	07:41	07:17	07:50
	21:15	103	20:32 (TRIV-10)	20:51	59	20:25 (TRIV-10)	20:05	19:12	17:29	17:10
8	06:14		06:36 (TRIV-19)	06:41	19:27 (TRIV-10)	07:12	07:42	07:18	07:51
	21:14	102	20:32 (TRIV-10)	20:49	57	20:24 (TRIV-10)	20:03	19:11	17:28	17:10
9	06:15		06:37 (TRIV-19)	06:42	19:28 (TRIV-10)	07:13	07:43	07:19	07:52
	21:14	102	20:32 (TRIV-10)	20:48	55	20:23 (TRIV-10)	20:01	19:09	17:27	17:10
10	06:15		06:38 (TRIV-19)	06:43	19:28 (TRIV-10)	07:14	07:45	07:20	07:53
	21:14	102	20:33 (TRIV-10)	20:47	53	20:21 (TRIV-10)	20:00	19:08	17:26	17:10
11	06:16		06:38 (TRIV-19)	06:44	19:29 (TRIV-10)	07:15	07:46	07:21	07:54
	21:13	100	20:32 (TRIV-10)	20:46	50	20:19 (TRIV-10)	19:56	19:06	17:25	17:11
12	06:17		06:39 (TRIV-19)	06:45	19:31 (TRIV-10)	07:16	07:47	07:23	07:55
	21:13	101	20:33 (TRIV-10)	20:44	47	20:18 (TRIV-10)	19:55	19:04	17:24	17:11
13	06:17		06:40 (TRIV-19)	06:46	19:32 (TRIV-10)	07:17	07:48	07:24	07:55
	21:12	99	20:33 (TRIV-10)	20:43	44	20:16 (TRIV-10)	19:53	19:03	17:23	17:11
14	06:18		06:41 (TRIV-19)	06:47	19:34 (TRIV-10)	07:18	07:49	07:25	07:56
	21:12	99	20:34 (TRIV-10)	20:42	40	20:14 (TRIV-10)	19:51	19:01	17:22	17:11
15	06:19		06:41 (TRIV-19)	06:48	19:36 (TRIV-10)	07:19	07:50	07:26	07:57
	21:11	98	20:33 (TRIV-10)	20:40	35	20:11 (TRIV-10)	19:50	19:00	17:21	17:11
16	06:20		06:42 (TRIV-19)	06:49	19:39 (TRIV-10)	07:20	07:51	07:27	07:58
	21:11	97	20:33 (TRIV-10)	20:39	30	20:09 (TRIV-10)	19:48	18:58	17:20	17:11
17	06:21		06:43 (TRIV-19)	06:50	19:42 (TRIV-10)	07:21	07:52	07:29	07:58
	21:10	96	20:33 (TRIV-10)	20:37	23	20:05 (TRIV-10)	19:46	18:57	17:19	17:12
18	06:21		06:44 (TRIV-19)	06:51	19:48 (TRIV-10)	07:22	07:53	07:30	07:59
	21:10	96	20:34 (TRIV-10)	20:36	11	19:59 (TRIV-10)	19:44	18:55	17:18	17:12
19	06:22		06:45 (TRIV-19)	06:52		07:23	07:54	07:31	08:00
	21:09	93	20:34 (TRIV-10)	20:35		19:43	18:54	17:18	17:13
20	06:23		06:45 (TRIV-19)	06:53		07:24	07:56	07:32	08:00
	21:08	92	20:33 (TRIV-10)	20:33		19:41	18:52	17:17	17:13
21	06:24		06:46 (TRIV-19)	06:54		07:25	07:57	07:33	08:01
	21:07	91	20:33 (TRIV-10)	20:32		19:39	18:51	17:16	17:13
22	06:25		06:47 (TRIV-19)	06:55		07:26	07:58	07:34	08:01
	21:07	89	20:33 (TRIV-10)	20:30		19:38	18:49	17:16	17:14
23	06:26		06:48 (TRIV-19)	06:56		07:27	07:59	07:36	08:02
	21:06	87	20:33 (TRIV-10)	20:29		19:36	18:48	17:15	17:14
24	06:27		06:49 (TRIV-19)	06:57		07:28	08:00	07:37	08:02
	21:05	85	20:33 (TRIV-10)	20:27		19:34	18:46	17:15	17:15
25	06:28		06:50 (TRIV-19)	06:58		07:29	08:01	07:38	08:03
	21:04	82	20:33 (TRIV-10)	20:26		19:33	18:45	17:14	17:16
26	06:28		06:51 (TRIV-19)	06:59		07:30	08:02	07:39	08:03
	21:03	80	20:33 (TRIV-10)	20:24		19:31	18:44	17:13	17:16
27	06:29		06:51 (TRIV-19)	07:00		07:31	08:04	07:40	08:03
	21:02	76	20:32 (TRIV-10)	20:23		19:29	18:42	17:13	17:17
28	06:30		19:20 (TRIV-10)	07:01		07:32	08:05	07:41	08:04
	21:01	71	20:31 (TRIV-10)	20:21		19:27	18:41	17:13	17:18
29	06:31		19:20 (TRIV-10)	07:02		07:33	08:06	07:42	08:04
	21:00	71	20:31 (TRIV-10)	20:19		19:26	18:40	17:12	17:18
30	06:32		19:21 (TRIV-10)	07:03		07:34	08:07	07:43	08:04
	20:59	70	20:31 (TRIV-10)	20:18		19:24	18:38	17:12	17:19
31	06:33		19:21 (TRIV-10)	07:04			08:08		08:04
	20:58	69	20:30 (TRIV-10)	20:16			18:37		17:20
Potential sun hours	459			428		375	345	298	288
Total, worst case		2873			893				
Sun reduction		0.76			0.75				
Oper. time red.		1.00			1.00				
Wind dir. red.		0.65			0.64				
Total reduction		0.50			0.48				
Total, real		1424			429				

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:
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 84 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1115)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June
1	08:05			07:51		16:34 (TRIV-10)	07:15		16:37 (TRIV-10)	07:24			06:38		19:30 (TRIV-87)	06:09
	17:21			17:55	56	17:30 (TRIV-10)	18:29	52	17:29 (TRIV-10)	20:02			20:34	40	20:10 (TRIV-87)	21:04
2	08:05			07:50		16:34 (TRIV-10)	07:13		16:38 (TRIV-10)	07:22		07:41 (TRIV-19)	06:37		19:30 (TRIV-87)	06:09
	17:22			17:56	57	17:31 (TRIV-10)	18:31	51	17:29 (TRIV-10)	20:04	7	07:48 (TRIV-19)	20:35	39	20:09 (TRIV-87)	21:05
3	08:05			07:49		16:33 (TRIV-10)	07:12		16:39 (TRIV-10)	07:20		07:39 (TRIV-19)	06:35		19:30 (TRIV-87)	06:08
	17:23			17:58	59	17:32 (TRIV-10)	18:32	48	17:27 (TRIV-10)	20:05	11	07:50 (TRIV-19)	20:37	39	20:09 (TRIV-87)	21:06
4	08:05			07:48		16:33 (TRIV-10)	07:10		16:40 (TRIV-10)	07:19		07:38 (TRIV-19)	06:34		19:31 (TRIV-87)	06:08
	17:23			17:59	60	17:33 (TRIV-10)	18:33	45	17:25 (TRIV-10)	20:06	14	07:52 (TRIV-19)	20:38	38	20:09 (TRIV-87)	21:06
5	08:05			07:47		16:32 (TRIV-10)	07:08		16:43 (TRIV-10)	07:17		07:36 (TRIV-19)	06:33		19:31 (TRIV-87)	06:08
	17:24			18:00	62	17:34 (TRIV-10)	18:34	40	17:23 (TRIV-10)	20:07	17	07:53 (TRIV-19)	20:39	38	20:09 (TRIV-87)	21:07
6	08:05			07:46		16:32 (TRIV-10)	07:07		16:44 (TRIV-10)	07:16		07:34 (TRIV-19)	06:32		19:32 (TRIV-87)	06:07
	17:25			18:02	62	17:34 (TRIV-10)	18:35	37	17:21 (TRIV-10)	20:08	20	07:54 (TRIV-19)	20:40	36	20:08 (TRIV-87)	21:08
7	08:05			07:45		16:32 (TRIV-10)	07:05		16:47 (TRIV-10)	07:14		07:33 (TRIV-19)	06:30		19:32 (TRIV-87)	06:07
	17:26			18:03	63	17:35 (TRIV-10)	18:36	32	17:19 (TRIV-10)	20:09	22	07:55 (TRIV-19)	20:41	35	20:07 (TRIV-87)	21:08
8	08:05			07:43		16:31 (TRIV-10)	08:04		17:50 (TRIV-10)	07:12		07:31 (TRIV-19)	06:29		19:32 (TRIV-87)	06:07
	17:27			18:04	64	17:35 (TRIV-10)	19:37	25	18:15 (TRIV-10)	20:10	24	07:55 (TRIV-19)	20:42	34	20:06 (TRIV-87)	21:09
9	08:04			07:42		16:31 (TRIV-10)	08:02		17:54 (TRIV-10)	07:11		07:30 (TRIV-19)	06:28		19:33 (TRIV-87)	06:07
	17:28			18:05	65	17:36 (TRIV-10)	19:39	16	18:10 (TRIV-10)	20:11	26	07:56 (TRIV-19)	20:43	32	20:05 (TRIV-87)	21:10
10	08:04			07:41		16:30 (TRIV-10)	08:00			07:09		07:28 (TRIV-19)	06:27		19:34 (TRIV-87)	06:06
	17:29			18:07	66	17:36 (TRIV-10)	19:40			20:12	27	07:55 (TRIV-19)	20:44	30	20:04 (TRIV-87)	21:10
11	08:04			07:40		16:31 (TRIV-10)	07:59			07:07		07:26 (TRIV-19)	06:26		19:35 (TRIV-87)	06:06
	17:30			18:08	66	17:37 (TRIV-10)	19:41			20:13	29	07:55 (TRIV-19)	20:45	28	20:03 (TRIV-87)	21:11
12	08:04			07:39		16:30 (TRIV-10)	07:57			07:06		07:25 (TRIV-19)	06:25		19:36 (TRIV-87)	06:06
	17:31			18:09	66	17:36 (TRIV-10)	19:42			20:14	30	07:55 (TRIV-19)	20:46	26	20:02 (TRIV-87)	21:11
13	08:03			07:37		16:30 (TRIV-10)	07:55			07:04		07:23 (TRIV-19)	06:24		19:38 (TRIV-87)	06:06
	17:33			18:10	67	17:37 (TRIV-10)	19:43			20:15	31	07:54 (TRIV-19)	20:47	23	20:01 (TRIV-87)	21:12
14	08:03			07:36		16:30 (TRIV-10)	07:54			07:03		07:22 (TRIV-19)	06:23		19:39 (TRIV-87)	06:06
	17:34			18:11	67	17:37 (TRIV-10)	19:44			20:16	32	07:54 (TRIV-19)	20:48	20	19:59 (TRIV-87)	21:12
15	08:03			07:35		16:30 (TRIV-10)	07:52			07:01		07:22 (TRIV-19)	06:22		19:41 (TRIV-87)	06:06
	17:35			18:13	68	17:38 (TRIV-10)	19:45			20:17	40	19:56 (TRIV-87)	20:49	16	19:57 (TRIV-87)	21:13
16	08:02			07:33		16:30 (TRIV-10)	07:51			07:00		07:22 (TRIV-19)	06:21		19:44 (TRIV-87)	06:06
	17:36			18:14	67	17:37 (TRIV-10)	19:46			20:18	45	19:58 (TRIV-87)	20:50	10	19:54 (TRIV-87)	21:13
17	08:02			07:32		16:30 (TRIV-10)	07:49			06:58		07:22 (TRIV-19)	06:20			06:06
	17:37			18:15	67	17:37 (TRIV-10)	19:47			20:19	47	19:58 (TRIV-87)	20:51			21:14
18	08:01		16:54 (TRIV-10)	07:31		16:30 (TRIV-10)	07:47			06:56		07:23 (TRIV-19)	06:19			06:06
	17:38	8	17:02 (TRIV-10)	18:16	67	17:37 (TRIV-10)	19:48			20:21	49	20:00 (TRIV-87)	20:52			21:14
19	08:01		16:51 (TRIV-10)	07:29		16:30 (TRIV-10)	07:46			06:55		07:24 (TRIV-19)	06:18			06:06
	17:39	17	17:08 (TRIV-10)	18:18	67	17:37 (TRIV-10)	19:50			20:22	48	20:00 (TRIV-87)	20:53			21:14
20	08:00		16:48 (TRIV-10)	07:28		16:31 (TRIV-10)	07:44			06:53		07:25 (TRIV-19)	06:17			06:06
	17:41	23	17:11 (TRIV-10)	18:19	66	17:37 (TRIV-10)	19:51			20:23	49	20:02 (TRIV-87)	20:54			21:15
21	08:00		16:46 (TRIV-10)	07:27		16:31 (TRIV-10)	07:42			06:52		07:26 (TRIV-19)	06:16			06:07
	17:42	28	17:14 (TRIV-10)	18:20	65	17:36 (TRIV-10)	19:52			20:24	48	20:02 (TRIV-87)	20:55			21:15
22	07:59		16:44 (TRIV-10)	07:25		16:32 (TRIV-10)	07:41			06:51		07:28 (TRIV-19)	06:16			06:07
	17:43	32	17:16 (TRIV-10)	18:21	64	17:36 (TRIV-10)	19:53			20:25	45	20:03 (TRIV-87)	20:56			21:15
23	07:58		16:43 (TRIV-10)	07:24		16:32 (TRIV-10)	07:39			06:49		07:31 (TRIV-19)	06:15			06:07
	17:44	35	17:18 (TRIV-10)	18:22	63	17:35 (TRIV-10)	19:54			20:26	41	20:04 (TRIV-87)	20:57			21:15
24	07:58		16:41 (TRIV-10)	07:22		16:33 (TRIV-10)	07:37			06:48		19:32 (TRIV-87)	06:14			06:07
	17:45	38	17:19 (TRIV-10)	18:24	62	17:35 (TRIV-10)	19:55			20:27	33	20:05 (TRIV-87)	20:57			21:15
25	07:57		16:41 (TRIV-10)	07:21		16:33 (TRIV-10)	07:35			06:46		19:32 (TRIV-87)	06:13			06:08
	17:47	41	17:22 (TRIV-10)	18:25	60	17:33 (TRIV-10)	19:56			20:28	35	20:07 (TRIV-87)	20:58			21:16
26	07:56		16:39 (TRIV-10)	07:19		16:34 (TRIV-10)	07:34			06:45		19:31 (TRIV-87)	06:13			06:08
	17:48	44	17:23 (TRIV-10)	18:26	59	17:33 (TRIV-10)	19:57			20:29	36	20:07 (TRIV-87)	20:59			21:16
27	07:55		16:38 (TRIV-10)	07:18		16:35 (TRIV-10)	07:32			06:43		19:31 (TRIV-87)	06:12			06:08
	17:49	46	17:24 (TRIV-10)	18:27	57	17:32 (TRIV-10)	19:58			20:30	37	20:08 (TRIV-87)	21:00			21:16
28	07:54		16:37 (TRIV-10)	07:16		16:36 (TRIV-10)	07:30			06:42		19:31 (TRIV-87)	06:11			06:09
	17:50	49	17:26 (TRIV-10)	18:28	55	17:31 (TRIV-10)	19:59			20:31	39	20:10 (TRIV-87)	21:01			21:16
29	07:54		16:36 (TRIV-10)				07:29			06:41		19:30 (TRIV-87)	06:11			06:09
	17:51	51	17:27 (TRIV-10)				20:00			20:32	40	20:10 (TRIV-87)	21:02			21:16
30	07:53		16:36 (TRIV-10)				07:27			06:39		19:30 (TRIV-87)	06:10			06:10
	17:53	52	17:28 (TRIV-10)				20:00			20:33	40	20:10 (TRIV-87)	21:03			21:16
31	07:52		16:35 (TRIV-10)				07:25						06:10			
	17:54	54	17:29 (TRIV-10)				20:01						21:03			
Potential sun hours	297			297			370			399			448			452
Total, worst case		518			1767			346			962			484		
Sun reduction		0.50			0.55			0.57			0.63			0.69		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.70			0.70			0.70			0.66			0.64		
Total reduction		0.35			0.39			0.40			0.42			0.45		
Total, real		182			682			138			403			216		

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 84 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1115)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December
1	06:10			06:34		19:46 (TRIV-87)	07:05		07:26 (TRIV-19)	07:35			07:09		16:00 (TRIV-10)	07:44
	21:16			20:57	27	20:13 (TRIV-87)	20:15	29	07:55 (TRIV-19)	19:22			17:36	66	17:06 (TRIV-10)	17:12
2	06:11			06:35		19:45 (TRIV-87)	07:06		07:26 (TRIV-19)	07:36			07:11		16:00 (TRIV-10)	07:45
	21:16			20:56	29	20:14 (TRIV-87)	20:13	27	07:53 (TRIV-19)	19:21			17:34	65	17:05 (TRIV-10)	17:11
3	06:11			06:36		19:44 (TRIV-87)	07:07		07:27 (TRIV-19)	07:37			07:12		16:00 (TRIV-10)	07:46
	21:16			20:55	31	20:15 (TRIV-87)	20:11	26	07:53 (TRIV-19)	19:19			17:33	65	17:05 (TRIV-10)	17:11
4	06:12			06:37		19:44 (TRIV-87)	07:08		07:28 (TRIV-19)	07:38		17:34 (TRIV-10)	07:13		16:01 (TRIV-10)	07:47
	21:15			20:54	32	20:16 (TRIV-87)	20:10	24	07:52 (TRIV-19)	19:17	11	17:45 (TRIV-10)	17:32	63	17:04 (TRIV-10)	17:11
5	06:12			06:38		19:43 (TRIV-87)	07:09		07:29 (TRIV-19)	07:39		17:28 (TRIV-10)	07:14		16:02 (TRIV-10)	07:48
	21:15			20:53	34	20:17 (TRIV-87)	20:08	22	07:51 (TRIV-19)	19:16	22	17:50 (TRIV-10)	17:31	62	17:04 (TRIV-10)	17:11
6	06:13			06:39		19:42 (TRIV-87)	07:10		07:30 (TRIV-19)	07:40		17:24 (TRIV-10)	07:15		16:02 (TRIV-10)	07:49
	21:15			20:52	35	20:17 (TRIV-87)	20:06	20	07:50 (TRIV-19)	19:14	29	17:53 (TRIV-10)	17:30	61	17:03 (TRIV-10)	17:11
7	06:13			06:40		19:41 (TRIV-87)	07:11		07:31 (TRIV-19)	07:41		17:21 (TRIV-10)	07:17		16:03 (TRIV-10)	07:50
	21:15			20:51	37	20:18 (TRIV-87)	20:05	17	07:48 (TRIV-19)	19:12	34	17:55 (TRIV-10)	17:29	60	17:03 (TRIV-10)	17:10
8	06:14			06:41		19:41 (TRIV-87)	07:12		07:32 (TRIV-19)	07:42		17:18 (TRIV-10)	07:18		16:04 (TRIV-10)	07:51
	21:14			20:49	37	20:18 (TRIV-87)	20:03	15	07:47 (TRIV-19)	19:11	39	17:57 (TRIV-10)	17:28	59	17:03 (TRIV-10)	17:10
9	06:15			06:42		19:40 (TRIV-87)	07:13		07:33 (TRIV-19)	07:43		17:16 (TRIV-10)	07:19		16:05 (TRIV-10)	07:52
	21:14			20:48	39	20:19 (TRIV-87)	20:01	11	07:44 (TRIV-19)	19:09	43	17:59 (TRIV-10)	17:27	57	17:02 (TRIV-10)	17:10
10	06:15			06:43		19:39 (TRIV-87)	07:14		07:34 (TRIV-19)	07:45		17:14 (TRIV-10)	07:20		16:05 (TRIV-10)	07:53
	21:14			20:47	39	20:18 (TRIV-87)	20:00	7	07:41 (TRIV-19)	19:08	46	18:00 (TRIV-10)	17:26	56	17:01 (TRIV-10)	17:10
11	06:16			06:44		19:38 (TRIV-87)	07:15			07:46		17:13 (TRIV-10)	07:21		16:06 (TRIV-10)	07:54
	21:13			20:46	40	20:18 (TRIV-87)	19:56			19:06	49	18:02 (TRIV-10)	17:25	54	17:00 (TRIV-10)	17:11
12	06:17			06:45		19:38 (TRIV-87)	07:16			07:47		17:11 (TRIV-10)	07:23		16:08 (TRIV-10)	07:55
	21:13			20:44	40	20:18 (TRIV-87)	19:55			19:04	52	18:03 (TRIV-10)	17:24	52	17:00 (TRIV-10)	17:11
13	06:17			06:46		19:38 (TRIV-87)	07:17			07:48		17:09 (TRIV-10)	07:24		16:08 (TRIV-10)	07:55
	21:12			20:43	40	20:18 (TRIV-87)	19:53			19:03	54	18:03 (TRIV-10)	17:23	51	16:59 (TRIV-10)	17:11
14	06:18			06:47		19:38 (TRIV-87)	07:18			07:49		17:08 (TRIV-10)	07:25		16:09 (TRIV-10)	07:56
	21:12			20:42	39	20:17 (TRIV-87)	19:51			19:01	56	18:04 (TRIV-10)	17:22	48	16:57 (TRIV-10)	17:11
15	06:19			06:48		19:38 (TRIV-87)	07:19			07:50		17:07 (TRIV-10)	07:26		16:11 (TRIV-10)	07:57
	21:11			20:40	38	20:16 (TRIV-87)	19:50			19:00	57	18:04 (TRIV-10)	17:21	46	16:57 (TRIV-10)	17:11
16	06:20			06:49		19:38 (TRIV-87)	07:20			07:51		17:05 (TRIV-10)	07:27		16:12 (TRIV-10)	07:58
	21:11			20:39	37	20:15 (TRIV-87)	19:48			18:58	60	18:05 (TRIV-10)	17:20	44	16:56 (TRIV-10)	17:11
17	06:21			06:50		19:38 (TRIV-87)	07:21			07:52		17:04 (TRIV-10)	07:29		16:14 (TRIV-10)	07:58
	21:10			20:37	36	20:14 (TRIV-87)	19:46			18:57	61	18:05 (TRIV-10)	17:19	41	16:55 (TRIV-10)	17:12
18	06:21			06:51		19:38 (TRIV-87)	07:22			07:53		17:04 (TRIV-10)	07:30		16:15 (TRIV-10)	07:59
	21:10			20:36	34	20:12 (TRIV-87)	19:44			18:55	62	18:06 (TRIV-10)	17:18	38	16:53 (TRIV-10)	17:12
19	06:22			06:52		19:38 (TRIV-87)	07:23			07:54		17:03 (TRIV-10)	07:31		16:18 (TRIV-10)	08:00
	21:09			20:35	33	20:11 (TRIV-87)	19:43			18:54	63	18:06 (TRIV-10)	17:18	35	16:53 (TRIV-10)	17:13
20	06:23			06:53		07:36 (TRIV-19)	07:24			07:56		17:02 (TRIV-10)	07:32		16:19 (TRIV-10)	08:00
	21:08			20:33	41	20:09 (TRIV-87)	19:41			18:52	65	18:07 (TRIV-10)	17:17	32	16:51 (TRIV-10)	17:13
21	06:24			06:54		07:33 (TRIV-19)	07:25			07:57		17:01 (TRIV-10)	07:33		16:21 (TRIV-10)	08:01
	21:07			20:32	45	20:08 (TRIV-87)	19:39			18:51	66	18:07 (TRIV-10)	17:16	28	16:49 (TRIV-10)	17:13
22	06:25			06:55		07:31 (TRIV-19)	07:26			07:58		17:01 (TRIV-10)	07:34		16:24 (TRIV-10)	08:01
	21:07			20:30	48	20:07 (TRIV-87)	19:38			18:49	65	18:06 (TRIV-10)	17:16	23	16:47 (TRIV-10)	17:14
23	06:26			06:56		07:29 (TRIV-19)	07:27			07:59		17:01 (TRIV-10)	07:36		16:28 (TRIV-10)	08:02
	21:06			20:29	48	20:05 (TRIV-87)	19:36			18:48	66	18:07 (TRIV-10)	17:15	17	16:45 (TRIV-10)	17:14
24	06:27			06:57		07:27 (TRIV-19)	07:28			08:00		17:00 (TRIV-10)	07:37		16:32 (TRIV-10)	08:02
	21:05			20:27	49	20:04 (TRIV-87)	19:34			18:46	67	18:07 (TRIV-10)	17:15	8	16:40 (TRIV-10)	17:15
25	06:28			06:58		07:26 (TRIV-19)	07:29			08:01		17:00 (TRIV-10)	07:38			08:03
	21:04			20:26	48	20:02 (TRIV-87)	19:33			18:45	67	18:07 (TRIV-10)	17:14			17:16
26	06:28			06:59		07:25 (TRIV-19)	07:30			08:02		16:59 (TRIV-10)	07:39			08:03
	21:03			20:24	46	20:01 (TRIV-87)	19:31			18:44	68	18:07 (TRIV-10)	17:13			17:16
27	06:29		19:57 (TRIV-87)	07:00		07:24 (TRIV-19)	07:31			08:04		16:59 (TRIV-10)	07:40			08:03
	21:02	5	20:02 (TRIV-87)	20:23	44	19:59 (TRIV-87)	19:29			18:42	67	18:06 (TRIV-10)	17:13			17:17
28	06:30		19:53 (TRIV-87)	07:01		07:24 (TRIV-19)	07:32			08:05		17:00 (TRIV-10)	07:41			08:04
	21:01	13	20:06 (TRIV-87)	20:21	40	19:58 (TRIV-87)	19:27			18:41	67	18:07 (TRIV-10)	17:13			17:18
29	06:31		19:51 (TRIV-87)	07:02		07:23 (TRIV-19)	07:33			08:06		17:00 (TRIV-10)	07:42			08:04
	21:00	18	20:09 (TRIV-87)	20:19	32	07:55 (TRIV-19)	19:26			18:40	67	18:07 (TRIV-10)	17:12			17:18
30	06:32		19:49 (TRIV-87)	07:03		07:24 (TRIV-19)	07:34			08:07		16:59 (TRIV-10)	07:43			08:04
	21:00	21	20:10 (TRIV-87)	20:18	31	07:55 (TRIV-19)	19:24			18:38	67	18:06 (TRIV-10)	17:12			17:19
31	06:33		19:48 (TRIV-87)	07:04		07:25 (TRIV-19)				08:08		16:59 (TRIV-10)				08:04
	20:58	24	20:12 (TRIV-87)	20:16	30	07:55 (TRIV-19)				18:37	66	18:05 (TRIV-10)				17:20
Potential sun hours	459			428			375			345			298			288
Total, worst case		81			1179			198			1536			1131		
Sun reduction		0.76			0.75			0.67			0.60			0.40		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.64			0.65			0.68			0.70			0.70		
Total reduction		0.49			0.49			0.46			0.42			0.28		
Total, real		40			580			91			646			317		

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:
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 85 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1116)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February			March			April			May			June	
1	08:05		07:51			07:15		17:10 (TRIV-10)	07:24			06:38		07:10 (TRIV-19)	06:09	
	17:21		17:55			18:29	54	18:04 (TRIV-10)	20:02			20:34	63	20:13 (TRIV-87)	21:04	
2	08:05		07:50			07:13		17:10 (TRIV-10)	07:22			06:37		07:10 (TRIV-19)	06:09	
	17:22		17:56			18:31	55	18:05 (TRIV-10)	20:04			20:35	63	20:13 (TRIV-87)	21:05	
3	08:05		07:49			07:12		17:09 (TRIV-10)	07:20			06:35		07:11 (TRIV-19)	06:08	
	17:23		17:58			18:32	56	18:05 (TRIV-10)	20:05			20:36	61	20:13 (TRIV-87)	21:06	
4	08:05		07:48			07:10		17:09 (TRIV-10)	07:19			06:34		07:13 (TRIV-19)	06:08	
	17:23		17:59			18:33	55	18:04 (TRIV-10)	20:06			20:38	56	20:13 (TRIV-87)	21:06	
5	08:05		07:47			07:08		17:09 (TRIV-10)	07:17			06:33		07:14 (TRIV-19)	06:08	
	17:24		18:00			18:34	55	18:04 (TRIV-10)	20:07			20:39	54	20:13 (TRIV-87)	21:07	
6	08:05		07:46			07:07		17:09 (TRIV-10)	07:16			06:32		07:16 (TRIV-19)	06:07	
	17:25		18:02			18:35	55	18:04 (TRIV-10)	20:08			20:40	48	20:12 (TRIV-87)	21:08	
7	08:05		07:45			07:05		17:09 (TRIV-10)	07:14			06:30		07:18 (TRIV-19)	06:07	
	17:26		18:03			18:36	55	18:04 (TRIV-10)	20:09			20:41	42	20:11 (TRIV-87)	21:08	
8	08:05		07:43			08:04		18:09 (TRIV-10)	07:12			06:29		19:41 (TRIV-87)	06:07	
	17:27		18:04			19:37	54	19:03 (TRIV-10)	20:10			20:42	29	20:10 (TRIV-87)	21:09	
9	08:04		07:42			08:02		18:09 (TRIV-10)	07:11			06:28		19:42 (TRIV-87)	06:07	
	17:28		18:05			19:39	53	19:02 (TRIV-10)	20:11			20:43	28	20:10 (TRIV-87)	21:10	
10	08:04		07:41			08:00		18:10 (TRIV-10)	07:09		07:28 (TRIV-19)	06:27		19:43 (TRIV-87)	06:06	
	17:29		18:07			19:40	52	19:02 (TRIV-10)	20:12	5	07:33 (TRIV-19)	20:44	26	20:09 (TRIV-87)	21:10	
11	08:04		07:40			07:59		18:10 (TRIV-10)	07:07		07:26 (TRIV-19)	06:26		19:44 (TRIV-87)	06:06	
	17:30		18:08			19:41	51	19:01 (TRIV-10)	20:13	11	07:37 (TRIV-19)	20:45	24	20:08 (TRIV-87)	21:11	
12	08:04		07:39			07:57		18:10 (TRIV-10)	07:06		07:25 (TRIV-19)	06:25		19:45 (TRIV-87)	06:06	
	17:31		18:09			19:42	49	18:59 (TRIV-10)	20:14	15	07:40 (TRIV-19)	20:46	21	20:06 (TRIV-87)	21:11	
13	08:03		07:37			07:55		18:12 (TRIV-10)	07:04		07:23 (TRIV-19)	06:24		19:46 (TRIV-87)	06:06	
	17:33		18:10			19:43	47	18:59 (TRIV-10)	20:15	18	07:41 (TRIV-19)	20:47	19	20:05 (TRIV-87)	21:12	
14	08:03		07:36		17:31 (TRIV-10)	07:54		18:12 (TRIV-10)	07:03		07:22 (TRIV-19)	06:23		19:48 (TRIV-87)	06:06	
	17:34		18:11	15	17:46 (TRIV-10)	19:44	45	18:57 (TRIV-10)	20:16	21	07:43 (TRIV-19)	20:48	15	20:03 (TRIV-87)	21:12	
15	08:03		07:35		17:28 (TRIV-10)	07:52		18:13 (TRIV-10)	07:01		07:20 (TRIV-19)	06:22		19:51 (TRIV-87)	06:06	
	17:35		18:13	22	17:50 (TRIV-10)	19:45	43	18:56 (TRIV-10)	20:17	23	07:43 (TRIV-19)	20:49	9	20:00 (TRIV-87)	21:13	
16	08:02		07:33		17:24 (TRIV-10)	07:51		18:15 (TRIV-10)	07:00		07:19 (TRIV-19)	06:21			06:06	
	17:36		18:14	27	17:51 (TRIV-10)	19:46	40	18:55 (TRIV-10)	20:18	26	07:45 (TRIV-19)	20:50			21:13	
17	08:02		07:32		17:22 (TRIV-10)	07:49		18:16 (TRIV-10)	06:58		07:17 (TRIV-19)	06:20			06:06	
	17:37		18:15	31	17:53 (TRIV-10)	19:47	37	18:53 (TRIV-10)	20:19	28	07:45 (TRIV-19)	20:51			21:14	
18	08:01		07:31		17:20 (TRIV-10)	07:47		18:17 (TRIV-10)	06:56		07:16 (TRIV-19)	06:19			06:06	
	17:38		18:16	33	17:53 (TRIV-10)	19:48	33	18:50 (TRIV-10)	20:21	35	20:00 (TRIV-87)	20:52			21:14	
19	08:01		07:29		17:19 (TRIV-10)	07:46		18:19 (TRIV-10)	06:55		07:14 (TRIV-19)	06:18			06:06	
	17:39		18:18	36	17:55 (TRIV-10)	19:50	29	18:48 (TRIV-10)	20:22	41	20:00 (TRIV-87)	20:53			21:14	
20	08:00		07:28		17:18 (TRIV-10)	07:44		18:22 (TRIV-10)	06:53		07:13 (TRIV-19)	06:17			06:06	
	17:41		18:19	39	17:57 (TRIV-10)	19:51	23	18:45 (TRIV-10)	20:23	47	20:02 (TRIV-87)	20:54			21:15	
21	08:00		07:27		17:16 (TRIV-10)	07:42		18:25 (TRIV-10)	06:52		07:11 (TRIV-19)	06:16			06:07	
	17:42		18:20	41	17:57 (TRIV-10)	19:52	15	18:40 (TRIV-10)	20:24	50	20:02 (TRIV-87)	20:55			21:15	
22	07:59		07:25		17:15 (TRIV-10)	07:40			06:51		07:10 (TRIV-19)	06:16			06:07	
	17:43		18:21	44	17:59 (TRIV-10)	19:53			20:25	54	20:03 (TRIV-87)	20:56			21:15	
23	07:58		07:24		17:14 (TRIV-10)	07:39			06:49		07:08 (TRIV-19)	06:15			06:07	
	17:44		18:22	46	18:00 (TRIV-10)	19:54			20:26	58	20:04 (TRIV-87)	20:57			21:15	
24	07:58		07:22		17:13 (TRIV-10)	07:37			06:48		07:08 (TRIV-19)	06:14			06:07	
	17:45		18:24	49	18:02 (TRIV-10)	19:55			20:27	60	20:05 (TRIV-87)	20:57			21:15	
25	07:57		07:21		17:12 (TRIV-10)	07:35			06:46		07:08 (TRIV-19)	06:13			06:08	
	17:47		18:25	50	18:02 (TRIV-10)	19:56			20:28	62	20:07 (TRIV-87)	20:58			21:16	
26	07:56		07:19		17:12 (TRIV-10)	07:34			06:45		07:07 (TRIV-19)	06:13			06:08	
	17:48		18:26	52	18:04 (TRIV-10)	19:57			20:29	63	20:07 (TRIV-87)	20:59			21:16	
27	07:55		07:18		17:11 (TRIV-10)	07:32			06:43		07:08 (TRIV-19)	06:12			06:08	
	17:49		18:27	53	18:04 (TRIV-10)	19:58			20:30	64	20:08 (TRIV-87)	21:00			21:16	
28	07:54		07:16		17:11 (TRIV-10)	07:30			06:42		07:08 (TRIV-19)	06:11			06:09	
	17:50		18:28	54	18:05 (TRIV-10)	19:59			20:31	65	20:10 (TRIV-87)	21:01			21:16	
29	07:54					07:29			06:41		07:08 (TRIV-19)	06:11			06:09	
	17:51					20:00			20:32	65	20:10 (TRIV-87)	21:02			21:16	
30	07:53					07:27			06:39		07:09 (TRIV-19)	06:10			06:10	
	17:53					20:00			20:33	64	20:11 (TRIV-87)	21:03			21:16	
31	07:52					07:25						06:10				
	17:54					20:01						21:03				
Potential sun hours	297		297			370			399			448			452	
Total, worst case			592			956			875			558				
Sun reduction			0.55			0.57			0.63			0.69				
Oper. time red.			1.00			1.00			1.00			1.00				
Wind dir. red.			0.70			0.70			0.67			0.65				
Total reduction			0.38			0.40			0.42			0.45				
Total, real			227			380			371			252				

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 85 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1116)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November	December
1	06:10			06:34		19:55 (TRIV-87)	07:05		07:26 (TRIV-19)	07:35		17:50 (TRIV-10)	07:09	07:44
	21:16			20:57	22	20:17 (TRIV-87)	20:15	11	07:37 (TRIV-19)	19:22	49	18:39 (TRIV-10)	17:36	17:12
2	06:10			06:35		19:54 (TRIV-87)	07:06		07:26 (TRIV-19)	07:36		17:49 (TRIV-10)	07:11	07:45
	21:16			20:56	25	20:19 (TRIV-87)	20:13	5	07:31 (TRIV-19)	19:21	50	18:39 (TRIV-10)	17:34	17:11
3	06:11			06:36		19:53 (TRIV-87)	07:07			07:37		17:48 (TRIV-10)	07:12	07:46
	21:16			20:55	27	20:20 (TRIV-87)	20:11			19:19	51	18:39 (TRIV-10)	17:33	17:11
4	06:12			06:37		19:52 (TRIV-87)	07:08			07:38		17:47 (TRIV-10)	07:13	07:47
	21:15			20:54	28	20:20 (TRIV-87)	20:10			19:17	52	18:39 (TRIV-10)	17:32	17:11
5	06:12			06:38		07:33 (TRIV-19)	07:09			07:39		17:46 (TRIV-10)	07:14	07:48
	21:15			20:53	33	20:21 (TRIV-87)	20:08			19:16	53	18:39 (TRIV-10)	17:31	17:11
6	06:13			06:39		07:28 (TRIV-19)	07:10			07:40		17:45 (TRIV-10)	07:15	07:49
	21:15			20:52	44	20:22 (TRIV-87)	20:06			19:14	54	18:39 (TRIV-10)	17:30	17:11
7	06:13			06:40		07:25 (TRIV-19)	07:11			07:41		17:45 (TRIV-10)	07:17	07:50
	21:15			20:51	50	20:22 (TRIV-87)	20:05			19:12	54	18:39 (TRIV-10)	17:29	17:10
8	06:14			06:41		07:23 (TRIV-19)	07:12			07:42		17:44 (TRIV-10)	07:18	07:51
	21:14			20:49	55	20:23 (TRIV-87)	20:03			19:11	55	18:39 (TRIV-10)	17:28	17:10
9	06:15			06:42		07:22 (TRIV-19)	07:13			07:43		17:43 (TRIV-10)	07:19	07:52
	21:14			20:48	58	20:23 (TRIV-87)	20:01			19:09	56	18:39 (TRIV-10)	17:27	17:10
10	06:15			06:43		07:20 (TRIV-19)	07:14			07:45		17:43 (TRIV-10)	07:20	07:53
	21:14			20:47	61	20:22 (TRIV-87)	20:00			19:08	55	18:38 (TRIV-10)	17:26	17:10
11	06:16			06:44		07:18 (TRIV-19)	07:15			07:46		17:44 (TRIV-10)	07:21	07:54
	21:13			20:46	64	20:21 (TRIV-87)	19:56			19:06	55	18:39 (TRIV-10)	17:25	17:11
12	06:17			06:45		07:17 (TRIV-19)	07:16			07:47		17:43 (TRIV-10)	07:23	07:55
	21:13			20:44	64	20:20 (TRIV-87)	19:55			19:04	55	18:38 (TRIV-10)	17:24	17:11
13	06:17			06:46		07:17 (TRIV-19)	07:17			07:48		17:43 (TRIV-10)	07:24	07:55
	21:12			20:43	64	20:19 (TRIV-87)	19:53			19:03	55	18:38 (TRIV-10)	17:23	17:11
14	06:18			06:47		07:16 (TRIV-19)	07:18			07:49		17:43 (TRIV-10)	07:25	07:56
	21:12			20:42	64	20:17 (TRIV-87)	19:51			19:01	54	18:37 (TRIV-10)	17:22	17:11
15	06:19			06:48		07:15 (TRIV-19)	07:19			07:50		17:43 (TRIV-10)	07:26	07:57
	21:11			20:40	64	20:16 (TRIV-87)	19:50			19:00	53	18:36 (TRIV-10)	17:21	17:11
16	06:20			06:49		07:15 (TRIV-19)	07:20			07:51		17:43 (TRIV-10)	07:27	07:58
	21:11			20:39	63	20:15 (TRIV-87)	19:48			18:58	52	18:35 (TRIV-10)	17:20	17:11
17	06:21			06:50		07:14 (TRIV-19)	07:21			07:52		17:44 (TRIV-10)	07:29	07:58
	21:10			20:37	64	20:14 (TRIV-87)	19:46			18:57	49	18:33 (TRIV-10)	17:19	17:12
18	06:21			06:51		07:14 (TRIV-19)	07:22			07:53		17:45 (TRIV-10)	07:30	07:59
	21:10			20:36	61	20:12 (TRIV-87)	19:44			18:55	48	18:33 (TRIV-10)	17:18	17:12
19	06:22			06:52		07:13 (TRIV-19)	07:23			07:54		17:45 (TRIV-10)	07:31	08:00
	21:09			20:35	61	20:11 (TRIV-87)	19:43			18:54	46	18:31 (TRIV-10)	17:18	17:13
20	06:23			06:53		07:14 (TRIV-19)	07:24			07:56		17:46 (TRIV-10)	07:32	08:00
	21:08			20:33	57	20:09 (TRIV-87)	19:41			18:52	43	18:29 (TRIV-10)	17:17	17:13
21	06:24			06:54		07:15 (TRIV-19)	07:25			07:57		17:47 (TRIV-10)	07:33	08:01
	21:07			20:32	53	20:08 (TRIV-87)	19:39			18:51	41	18:28 (TRIV-10)	17:16	17:13
22	06:25			06:55		07:16 (TRIV-19)	07:26		18:12 (TRIV-10)	07:58		17:48 (TRIV-10)	07:34	08:01
	21:07			20:30	50	20:07 (TRIV-87)	19:38	12	18:24 (TRIV-10)	18:49	38	18:26 (TRIV-10)	17:16	17:14
23	06:26			06:56		07:17 (TRIV-19)	07:27		18:07 (TRIV-10)	07:59		17:50 (TRIV-10)	07:36	08:02
	21:06			20:29	46	20:05 (TRIV-87)	19:36	21	18:28 (TRIV-10)	18:48	35	18:25 (TRIV-10)	17:15	17:14
24	06:27			06:57		07:18 (TRIV-19)	07:28		18:04 (TRIV-10)	08:00		17:51 (TRIV-10)	07:37	08:02
	21:05			20:27	41	20:04 (TRIV-87)	19:34	27	18:31 (TRIV-10)	18:46	33	18:24 (TRIV-10)	17:15	17:15
25	06:28			06:58		07:19 (TRIV-19)	07:29		18:01 (TRIV-10)	08:01		17:53 (TRIV-10)	07:38	08:03
	21:04			20:26	34	20:02 (TRIV-87)	19:33	32	18:33 (TRIV-10)	18:45	29	18:22 (TRIV-10)	17:14	17:16
26	06:28			06:59		07:20 (TRIV-19)	07:30		17:59 (TRIV-10)	08:02		17:54 (TRIV-10)	07:39	08:03
	21:03			20:24	27	07:47 (TRIV-19)	19:31	35	18:34 (TRIV-10)	18:44	26	18:20 (TRIV-10)	17:13	17:16
27	06:29			07:00		07:21 (TRIV-19)	07:31		17:57 (TRIV-10)	08:04		17:57 (TRIV-10)	07:40	08:03
	21:02			20:23	25	07:46 (TRIV-19)	19:29	39	18:36 (TRIV-10)	18:42	21	18:18 (TRIV-10)	17:13	17:17
28	06:30		20:04 (TRIV-87)	07:01		07:22 (TRIV-19)	07:32		17:55 (TRIV-10)	08:05		18:02 (TRIV-10)	07:41	08:04
	21:01	4	20:08 (TRIV-87)	20:21	23	07:45 (TRIV-19)	19:27	42	18:37 (TRIV-10)	18:41	12	18:14 (TRIV-10)	17:13	17:18
29	06:31		20:00 (TRIV-87)	07:02		07:23 (TRIV-19)	07:33		17:53 (TRIV-10)	08:06			07:42	08:04
	21:00	12	20:12 (TRIV-87)	20:19	21	07:44 (TRIV-19)	19:26	44	18:37 (TRIV-10)	18:40			17:12	17:18
30	06:32		19:58 (TRIV-87)	07:03		07:24 (TRIV-19)	07:34		17:52 (TRIV-10)	08:07			07:43	08:04
	20:59	16	20:14 (TRIV-87)	20:18	18	07:42 (TRIV-19)	19:24	46	18:38 (TRIV-10)	18:38			17:12	17:19
31	06:33		19:56 (TRIV-87)	07:04		07:25 (TRIV-19)				08:08				08:04
	20:58	20	20:16 (TRIV-87)	20:16	15	07:40 (TRIV-19)				18:37				17:20
Potential sun hours	459			428			375			345			298	288
Total, worst case		52			1382			314			1274			
Sun reduction		0.76			0.75			0.67			0.60			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.66			0.70			0.70			
Total reduction		0.49			0.50			0.47			0.42			
Total, real		25			691			147			533			

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 104 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1133)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April			May			June		
1	08:05		07:51		07:15		07:24			06:38		19:36 (TRIV-44)	06:09		19:28 (TRIV-44)
	17:21		17:55		18:29		20:03			20:34	37	20:13 (TRIV-44)	21:04	56	20:24 (TRIV-44)
2	08:05		07:50		07:13		07:22			06:37		19:34 (TRIV-44)	06:09		19:29 (TRIV-44)
	17:22		17:57		18:31		20:04			20:35	39	20:13 (TRIV-44)	21:05	56	20:25 (TRIV-44)
3	08:05		07:49		07:12		07:21			06:36		19:33 (TRIV-44)	06:09		19:28 (TRIV-44)
	17:23		17:58		18:32		20:05			20:37	41	20:14 (TRIV-44)	21:06	56	20:24 (TRIV-44)
4	08:05		07:48		07:10		07:19			06:34		19:32 (TRIV-44)	06:08		19:29 (TRIV-44)
	17:24		17:59		18:33		20:06			20:38	43	20:15 (TRIV-44)	21:06	55	20:24 (TRIV-44)
5	08:05		07:47		07:08		07:17			06:33		19:31 (TRIV-44)	06:08		19:30 (TRIV-44)
	17:24		18:00		18:34		20:07			20:39	45	20:16 (TRIV-44)	21:07	55	20:25 (TRIV-44)
6	08:05		07:46		07:07		07:16			06:32		19:30 (TRIV-44)	06:07		19:29 (TRIV-44)
	17:25		18:02		18:35		20:08			20:40	47	20:17 (TRIV-44)	21:08	55	20:24 (TRIV-44)
7	08:05		07:45		07:05		07:14			06:31		19:30 (TRIV-44)	06:07		19:30 (TRIV-44)
	17:26		18:03		18:36		20:09			20:41	49	20:19 (TRIV-44)	21:08	54	20:24 (TRIV-44)
8	08:05		07:43		08:04		07:12			06:29		19:28 (TRIV-44)	06:07		19:31 (TRIV-44)
	17:27		18:04		19:37		20:10			20:42	51	20:19 (TRIV-44)	21:09	53	20:24 (TRIV-44)
9	08:04		07:42		08:02		07:11			06:28		19:27 (TRIV-44)	06:07		19:31 (TRIV-44)
	17:28		18:05		19:39		20:11			20:43	53	20:20 (TRIV-44)	21:10	54	20:25 (TRIV-44)
10	08:04		07:41		08:00		07:09			06:27		19:27 (TRIV-44)	06:07		19:32 (TRIV-44)
	17:29		18:07		19:40		20:12			20:44	54	20:21 (TRIV-44)	21:10	53	20:25 (TRIV-44)
11	08:04		07:40		07:59		07:08			06:26		19:27 (TRIV-44)	06:06		19:31 (TRIV-44)
	17:30		18:08		19:41		20:13			20:45	55	20:22 (TRIV-44)	21:11	53	20:24 (TRIV-44)
12	08:04		07:39		07:57		07:06			06:25		19:26 (TRIV-44)	06:06		19:32 (TRIV-44)
	17:32		18:09		19:42		20:14			20:46	56	20:22 (TRIV-44)	21:11	52	20:24 (TRIV-44)
13	08:03		07:37		07:56		07:04			06:24		19:26 (TRIV-44)	06:06		19:32 (TRIV-44)
	17:33		18:10		19:43		20:15			20:47	56	20:22 (TRIV-44)	21:12	52	20:24 (TRIV-44)
14	08:03		07:36		07:54		07:03			06:23		19:26 (TRIV-44)	06:06		19:32 (TRIV-44)
	17:34		18:12		19:44		20:16			20:48	57	20:23 (TRIV-44)	21:12	52	20:24 (TRIV-44)
15	08:03		07:35		07:52		07:01			06:22		19:25 (TRIV-44)	06:06		19:33 (TRIV-44)
	17:35		18:13		19:45		20:17			20:49	58	20:23 (TRIV-44)	21:13	52	20:25 (TRIV-44)
16	08:02		07:33		07:51		07:00			06:21		19:25 (TRIV-44)	06:06		19:33 (TRIV-44)
	17:36		18:14		19:46		20:18			20:50	58	20:23 (TRIV-44)	21:13	52	20:25 (TRIV-44)
17	08:02		07:32		07:49		06:58			06:20		19:26 (TRIV-44)	06:06		19:33 (TRIV-44)
	17:37		18:15		19:47		20:20			20:51	58	20:24 (TRIV-44)	21:14	52	20:25 (TRIV-44)
18	08:01		07:31		07:47		06:57			06:19		19:26 (TRIV-44)	06:06		19:34 (TRIV-44)
	17:38		18:16		19:49		20:21			20:52	58	20:24 (TRIV-44)	21:14	52	20:26 (TRIV-44)
19	08:01		07:29		07:46		06:55			06:18		19:25 (TRIV-44)	06:06		19:34 (TRIV-44)
	17:39		18:18		19:50		20:22			20:53	59	20:24 (TRIV-44)	21:14	52	20:26 (TRIV-44)
20	08:00		07:28		07:44		06:54			06:17		19:25 (TRIV-44)	06:07		19:34 (TRIV-44)
	17:41		18:19		19:51		20:23			20:54	59	20:24 (TRIV-44)	21:15	52	20:26 (TRIV-44)
21	08:00		07:27		07:42		06:52			06:17		19:25 (TRIV-44)	06:07		19:34 (TRIV-44)
	17:42		18:20		19:52		20:24			20:55	59	20:24 (TRIV-44)	21:15	52	20:26 (TRIV-44)
22	07:59		07:25		07:41		06:51			06:16		19:26 (TRIV-44)	06:07		19:34 (TRIV-44)
	17:43		18:21		19:53		20:25			20:56	58	20:24 (TRIV-44)	21:15	52	20:26 (TRIV-44)
23	07:58		07:24		07:39		06:49			06:15		19:26 (TRIV-44)	06:07		19:35 (TRIV-44)
	17:44		18:22		19:54		20:26			20:57	58	20:24 (TRIV-44)	21:15	52	20:27 (TRIV-44)
24	07:58		07:22		07:37		06:48			06:14		19:26 (TRIV-44)	06:07		19:35 (TRIV-44)
	17:45		18:24		19:55		20:27			20:57	58	20:24 (TRIV-44)	21:15	52	20:27 (TRIV-44)
25	07:57		07:21		07:36		06:46			06:13		19:26 (TRIV-44)	06:08		19:35 (TRIV-44)
	17:47		18:25		19:56		20:28			20:58	59	20:25 (TRIV-44)	21:16	52	20:27 (TRIV-44)
26	07:56		07:19		07:34		06:45		19:48 (TRIV-44)	06:13		19:26 (TRIV-44)	06:08		19:36 (TRIV-44)
	17:48		18:26		19:57		20:29	16	20:04 (TRIV-44)	20:59	58	20:24 (TRIV-44)	21:16	52	20:28 (TRIV-44)
27	07:55		07:18		07:32		06:43		19:44 (TRIV-44)	06:12		19:26 (TRIV-44)	06:08		19:36 (TRIV-44)
	17:49		18:27		19:58		20:30	24	20:08 (TRIV-44)	21:00	58	20:24 (TRIV-44)	21:16	52	20:28 (TRIV-44)
28	07:54		07:16		07:31		06:42		19:42 (TRIV-44)	06:12		19:27 (TRIV-44)	06:09		19:35 (TRIV-44)
	17:50		18:28		19:59		20:31	28	20:10 (TRIV-44)	21:01	57	20:24 (TRIV-44)	21:16	52	20:27 (TRIV-44)
29	07:54				07:29		06:41		19:39 (TRIV-44)	06:11		19:27 (TRIV-44)	06:09		19:36 (TRIV-44)
	17:52				20:00		20:32	31	20:10 (TRIV-44)	21:02	57	20:24 (TRIV-44)	21:16	52	20:28 (TRIV-44)
30	07:53				07:27		06:39		19:37 (TRIV-44)	06:10		19:28 (TRIV-44)	06:10		19:36 (TRIV-44)
	17:53				20:00		20:33	34	20:11 (TRIV-44)	21:03	56	20:24 (TRIV-44)	21:16	52	20:28 (TRIV-44)
31	07:52				07:26					06:10		19:27 (TRIV-44)			
	17:54				20:01					21:03	57	20:24 (TRIV-44)			
Potential sun hours	297		297		370		399			448			452		
Total, worst case							133			1668			1588		
Sun reduction							0.63			0.69			0.74		
Oper. time red.							1.00			1.00			1.00		
Wind dir. red.							0.64			0.64			0.64		
Total reduction							0.40			0.44			0.47		
Total, real							54			737			753		

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 104 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1133)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November	December
1	06:10		19:36 (TRIV-44)	06:34		19:37 (TRIV-44)	07:05	07:35	07:09	07:44
	21:16	53	20:29 (TRIV-44)	20:57	56	20:33 (TRIV-44)	20:15	19:22	17:36	17:12
2	06:11		19:36 (TRIV-44)	06:35		19:37 (TRIV-44)	07:06	07:36	07:11	07:45
	21:16	53	20:29 (TRIV-44)	20:56	55	20:32 (TRIV-44)	20:13	19:21	17:35	17:11
3	06:11		19:36 (TRIV-44)	06:36		19:38 (TRIV-44)	07:07	07:37	07:12	07:46
	21:16	54	20:30 (TRIV-44)	20:55	53	20:31 (TRIV-44)	20:11	19:19	17:33	17:11
4	06:12		19:36 (TRIV-44)	06:37		19:38 (TRIV-44)	07:08	07:38	07:13	07:47
	21:15	54	20:30 (TRIV-44)	20:54	52	20:30 (TRIV-44)	20:10	19:17	17:32	17:11
5	06:12		19:36 (TRIV-44)	06:38		19:39 (TRIV-44)	07:09	07:39	07:14	07:48
	21:15	54	20:30 (TRIV-44)	20:53	50	20:29 (TRIV-44)	20:08	19:16	17:31	17:11
6	06:13		19:36 (TRIV-44)	06:39		19:39 (TRIV-44)	07:10	07:40	07:15	07:49
	21:15	54	20:30 (TRIV-44)	20:52	49	20:28 (TRIV-44)	20:07	19:14	17:30	17:11
7	06:13		19:36 (TRIV-44)	06:40		19:40 (TRIV-44)	07:11	07:41	07:17	07:50
	21:15	55	20:31 (TRIV-44)	20:51	47	20:27 (TRIV-44)	20:05	19:12	17:29	17:11
8	06:14		19:36 (TRIV-44)	06:41		19:41 (TRIV-44)	07:12	07:42	07:18	07:51
	21:14	56	20:32 (TRIV-44)	20:49	45	20:26 (TRIV-44)	20:03	19:11	17:28	17:11
9	06:15		19:36 (TRIV-44)	06:42		19:42 (TRIV-44)	07:13	07:44	07:19	07:52
	21:14	55	20:31 (TRIV-44)	20:48	42	20:24 (TRIV-44)	20:02	19:09	17:27	17:11
10	06:15		19:36 (TRIV-44)	06:43		19:43 (TRIV-44)	07:14	07:45	07:20	07:53
	21:14	56	20:32 (TRIV-44)	20:47	40	20:23 (TRIV-44)	20:00	19:08	17:26	17:11
11	06:16		19:36 (TRIV-44)	06:44		19:44 (TRIV-44)	07:15	07:46	07:21	07:54
	21:13	56	20:32 (TRIV-44)	20:46	38	20:22 (TRIV-44)	19:56	19:06	17:25	17:11
12	06:17		19:36 (TRIV-44)	06:45		19:44 (TRIV-44)	07:16	07:47	07:23	07:55
	21:13	56	20:32 (TRIV-44)	20:44	36	20:20 (TRIV-44)	19:55	19:04	17:24	17:11
13	06:18		19:36 (TRIV-44)	06:46		19:45 (TRIV-44)	07:17	07:48	07:24	07:55
	21:12	57	20:33 (TRIV-44)	20:43	34	20:19 (TRIV-44)	19:53	19:03	17:23	17:11
14	06:18		19:36 (TRIV-44)	06:47		19:47 (TRIV-44)	07:18	07:49	07:25	07:56
	21:12	57	20:33 (TRIV-44)	20:42	30	20:17 (TRIV-44)	19:51	19:01	17:22	17:11
15	06:19		19:35 (TRIV-44)	06:48		19:49 (TRIV-44)	07:19	07:50	07:26	07:57
	21:11	58	20:33 (TRIV-44)	20:40	27	20:16 (TRIV-44)	19:50	19:00	17:21	17:11
16	06:20		19:36 (TRIV-44)	06:49		19:52 (TRIV-44)	07:20	07:51	07:27	07:58
	21:11	57	20:33 (TRIV-44)	20:39	22	20:14 (TRIV-44)	19:48	18:58	17:20	17:12
17	06:21		19:36 (TRIV-44)	06:50		19:56 (TRIV-44)	07:21	07:52	07:29	07:58
	21:10	58	20:34 (TRIV-44)	20:38	13	20:09 (TRIV-44)	19:46	18:57	17:19	17:12
18	06:22		19:36 (TRIV-44)	06:51			07:22	07:53	07:30	07:59
	21:10	58	20:34 (TRIV-44)	20:36			19:45	18:55	17:19	17:12
19	06:22		19:36 (TRIV-44)	06:52			07:23	07:54	07:31	08:00
	21:09	58	20:34 (TRIV-44)	20:35			19:43	18:54	17:18	17:13
20	06:23		19:35 (TRIV-44)	06:53			07:24	07:56	07:32	08:00
	21:08	59	20:34 (TRIV-44)	20:33			19:41	18:52	17:17	17:13
21	06:24		19:35 (TRIV-44)	06:54			07:25	07:57	07:33	08:01
	21:07	59	20:34 (TRIV-44)	20:32			19:39	18:51	17:16	17:14
22	06:25		19:36 (TRIV-44)	06:55			07:26	07:58	07:34	08:01
	21:07	58	20:34 (TRIV-44)	20:30			19:38	18:49	17:16	17:14
23	06:26		19:36 (TRIV-44)	06:56			07:27	07:59	07:36	08:02
	21:06	58	20:34 (TRIV-44)	20:29			19:36	18:48	17:15	17:15
24	06:27		19:36 (TRIV-44)	06:57			07:28	08:00	07:37	08:02
	21:05	58	20:34 (TRIV-44)	20:27			19:34	18:46	17:15	17:15
25	06:28		19:36 (TRIV-44)	06:58			07:29	08:01	07:38	08:03
	21:04	59	20:35 (TRIV-44)	20:26			19:33	18:45	17:14	17:16
26	06:29		19:36 (TRIV-44)	06:59			07:30	08:02	07:39	08:03
	21:03	59	20:35 (TRIV-44)	20:24			19:31	18:44	17:14	17:16
27	06:29		19:37 (TRIV-44)	07:00			07:31	08:04	07:40	08:03
	21:02	58	20:35 (TRIV-44)	20:23			19:29	18:42	17:13	17:17
28	06:30		19:36 (TRIV-44)	07:01			07:32	08:05	07:41	08:04
	21:01	57	20:33 (TRIV-44)	20:21			19:27	18:41	17:13	17:18
29	06:31		19:36 (TRIV-44)	07:02			07:33	08:06	07:42	08:04
	21:01	57	20:33 (TRIV-44)	20:20			19:26	18:40	17:12	17:18
30	06:32		19:36 (TRIV-44)	07:03			07:34	08:07	07:43	08:04
	21:00	57	20:33 (TRIV-44)	20:18			19:24	18:38	17:12	17:19
31	06:33		19:37 (TRIV-44)	07:04				08:08		08:04
	20:59	56	20:33 (TRIV-44)	20:16				18:37		17:20
Potential sun hours	459			428			375	345	298	288
Total, worst case		1754			689					
Sun reduction		0.76			0.75					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.64			0.64					
Total reduction		0.49			0.48					
Total, real		854			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 138 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1163)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March	April	May	June
1	08:05		08:27 (TRIV-77)	07:51	08:29 (TRIV-77)	07:15	07:24	06:38	06:09
	17:21	96	16:51 (TRIV-76)	17:55	101	16:59 (TRIV-76)	18:29	20:03	20:34	21:04
2	08:05		08:27 (TRIV-77)	07:50	08:30 (TRIV-77)	07:13	07:22	06:37	06:09
	17:22	96	16:51 (TRIV-76)	17:57	99	16:59 (TRIV-76)	18:31	20:04	20:35	21:05
3	08:05		08:27 (TRIV-77)	07:49	08:31 (TRIV-77)	07:12	07:21	06:36	06:09
	17:23	97	16:52 (TRIV-76)	17:58	95	16:58 (TRIV-76)	18:32	20:05	20:37	21:06
4	08:05		08:27 (TRIV-77)	07:48	08:32 (TRIV-77)	07:10	07:19	06:34	06:08
	17:24	98	16:52 (TRIV-76)	17:59	93	16:58 (TRIV-76)	18:33	20:06	20:38	21:06
5	08:05		08:27 (TRIV-77)	07:47	08:33 (TRIV-77)	07:08	07:17	06:33	06:08
	17:25	100	16:53 (TRIV-76)	18:00	89	16:57 (TRIV-76)	18:34	20:07	20:39	21:07
6	08:05		08:27 (TRIV-77)	07:46	08:34 (TRIV-77)	07:07	07:16	06:32	06:08
	17:26	101	16:54 (TRIV-76)	18:02	85	16:56 (TRIV-76)	18:35	20:08	20:40	21:08
7	08:05		08:27 (TRIV-77)	07:45	08:36 (TRIV-77)	07:05	07:14	06:31	06:07
	17:26	101	16:54 (TRIV-76)	18:03	80	16:56 (TRIV-76)	18:36	20:09	20:41	21:08
8	08:05		08:26 (TRIV-77)	07:43	08:36 (TRIV-77)	08:04	07:12	06:29	06:07
	17:27	102	16:54 (TRIV-76)	18:04	75	16:54 (TRIV-76)	19:37	20:10	20:42	21:09
9	08:04		08:26 (TRIV-77)	07:42	08:38 (TRIV-77)	08:02	07:11	06:28	06:07
	17:28	104	16:55 (TRIV-76)	18:05	69	16:53 (TRIV-76)	19:39	20:11	20:43	21:10
10	08:04		08:26 (TRIV-77)	07:41	08:41 (TRIV-77)	08:00	07:09	06:27	06:07
	17:30	105	16:56 (TRIV-76)	18:07	59	16:51 (TRIV-76)	19:40	20:12	20:44	21:10
11	08:04		08:26 (TRIV-77)	07:40	08:44 (TRIV-77)	07:59	07:08	06:26	06:06
	17:31	107	16:57 (TRIV-76)	18:08	51	16:50 (TRIV-76)	19:41	20:13	20:45	21:11
12	08:04		08:25 (TRIV-77)	07:39	08:48 (TRIV-77)	07:57	07:06	06:25	06:06
	17:32	107	16:56 (TRIV-76)	18:09	36	16:46 (TRIV-76)	19:42	20:14	20:46	21:11
13	08:03		08:25 (TRIV-77)	07:37	16:22 (TRIV-76)	07:56	07:04	06:24	06:06
	17:33	108	16:57 (TRIV-76)	18:10	22	16:44 (TRIV-76)	19:43	20:15	20:47	21:12
14	08:03		08:24 (TRIV-77)	07:36	16:28 (TRIV-76)	07:54	07:03	06:23	06:06
	17:34	110	16:57 (TRIV-76)	18:12	11	16:39 (TRIV-76)	19:44	20:16	20:48	21:12
15	08:03		08:24 (TRIV-77)	07:35			07:52	07:01	06:22	06:06
	17:35	111	16:58 (TRIV-76)	18:13			19:45	20:17	20:49	21:13
16	08:02		08:24 (TRIV-77)	07:33			07:51	07:00	06:21	06:06
	17:36	113	16:59 (TRIV-76)	18:14			19:46	20:18	20:50	21:13
17	08:02		08:24 (TRIV-77)	07:32			07:49	06:58	06:20	06:06
	17:37	113	16:59 (TRIV-76)	18:15			19:47	20:20	20:51	21:14
18	08:01		08:24 (TRIV-77)	07:31			07:47	06:57	06:19	06:06
	17:38	113	16:59 (TRIV-76)	18:16			19:49	20:21	20:52	21:14
19	08:01		08:25 (TRIV-77)	07:29			07:46	06:55	06:18	06:06
	17:40	113	17:00 (TRIV-76)	18:18			19:50	20:22	20:53	21:14
20	08:00		08:24 (TRIV-77)	07:28			07:44	06:54	06:17	06:07
	17:41	114	17:00 (TRIV-76)	18:19			19:51	20:23	20:54	21:15
21	08:00		08:25 (TRIV-77)	07:27			07:42	06:52	06:17	06:07
	17:42	114	17:01 (TRIV-76)	18:20			19:52	20:24	20:55	21:15
22	07:59		08:25 (TRIV-77)	07:25			07:41	06:51	06:16	06:07
	17:43	113	17:00 (TRIV-76)	18:21			19:53	20:25	20:56	21:15
23	07:58		08:25 (TRIV-77)	07:24			07:39	06:49	06:15	06:07
	17:44	113	17:00 (TRIV-76)	18:22			19:54	20:26	20:57	21:15
24	07:58		08:25 (TRIV-77)	07:22			07:37	06:48	06:14	06:08
	17:46	113	17:00 (TRIV-76)	18:24			19:55	20:27	20:57	21:15
25	07:57		08:26 (TRIV-77)	07:21			07:36	06:46	06:14	06:08
	17:47	112	17:01 (TRIV-76)	18:25			19:56	20:28	20:58	21:16
26	07:56		08:27 (TRIV-77)	07:19			07:34	06:45	06:13	06:08
	17:48	111	17:01 (TRIV-76)	18:26			19:57	20:29	20:59	21:16
27	07:55		08:27 (TRIV-77)	07:18			07:32	06:44	06:12	06:08
	17:49	111	17:01 (TRIV-76)	18:27			19:58	20:30	21:00	21:16
28	07:54		08:27 (TRIV-77)	07:16			07:31	06:42	06:12	06:09
	17:50	109	17:01 (TRIV-76)	18:28			19:59	20:31	21:01	21:16
29	07:54		08:28 (TRIV-77)				07:29	06:41	06:11	06:09
	17:52	106	17:00 (TRIV-76)				20:00	20:32	21:02	21:16
30	07:53		08:28 (TRIV-77)				07:27	06:39	06:10	06:10
	17:53	106	17:00 (TRIV-76)				20:00	20:33	21:03	21:16
31	07:52		08:29 (TRIV-77)				07:26		06:10	
	17:54	104	17:00 (TRIV-76)				20:01		21:03	
Potential sun hours	298			297			370	399	448	452
Total, worst case		3321			965					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.66			0.66					
Total reduction		0.33			0.36					
Total, real		1089			349					

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 138 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1163)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		08:10 (TRIV-77)	07:44		08:08 (TRIV-77)
	21:16		20:57		20:15		19:22			17:36	62	16:21 (TRIV-76)	17:12	107	16:39 (TRIV-76)
2	06:11		06:35		07:06		07:36			07:11		08:08 (TRIV-77)	07:45		08:09 (TRIV-77)
	21:16		20:56		20:13		19:21			17:35	69	16:23 (TRIV-76)	17:11	105	16:39 (TRIV-76)
3	06:11		06:36		07:07		07:37			07:12		08:06 (TRIV-77)	07:46		08:10 (TRIV-77)
	21:15		20:55		20:11		19:19			17:33	76	16:24 (TRIV-76)	17:11	104	16:39 (TRIV-76)
4	06:12		06:37		07:08		07:38			07:13		08:04 (TRIV-77)	07:47		08:11 (TRIV-77)
	21:15		20:54		20:10		19:17			17:32	81	16:25 (TRIV-76)	17:11	102	16:39 (TRIV-76)
5	06:12		06:38		07:09		07:39			07:14		08:04 (TRIV-77)	07:48		08:12 (TRIV-77)
	21:15		20:53		20:08		19:16			17:31	85	16:26 (TRIV-76)	17:11	103	16:40 (TRIV-76)
6	06:13		06:39		07:10		07:40			07:15		08:03 (TRIV-77)	07:49		08:13 (TRIV-77)
	21:15		20:52		20:07		19:14			17:30	89	16:27 (TRIV-76)	17:11	101	16:40 (TRIV-76)
7	06:14		06:40		07:11		07:41			07:17		08:02 (TRIV-77)	07:50		08:14 (TRIV-77)
	21:15		20:51		20:05		19:13			17:29	93	16:28 (TRIV-76)	17:11	100	16:40 (TRIV-76)
8	06:14		06:41		07:12		07:42			07:18		08:02 (TRIV-77)	07:51		08:15 (TRIV-77)
	21:14		20:49		20:03		19:11			17:28	96	16:29 (TRIV-76)	17:11	98	16:40 (TRIV-76)
9	06:15		06:42		07:13		07:44			07:19		08:01 (TRIV-77)	07:52		08:16 (TRIV-77)
	21:14		20:48		20:02		19:09			17:27	100	16:30 (TRIV-76)	17:11	97	16:41 (TRIV-76)
10	06:16		06:43		07:14		07:45			07:20		08:00 (TRIV-77)	07:53		08:16 (TRIV-77)
	21:14		20:47		20:00		19:08			17:26	101	16:30 (TRIV-76)	17:11	96	16:40 (TRIV-76)
11	06:16		06:44		07:15		07:46			07:21		08:00 (TRIV-77)	07:54		08:17 (TRIV-77)
	21:13		20:46		19:56		19:06			17:25	104	16:31 (TRIV-76)	17:11	96	16:41 (TRIV-76)
12	06:17		06:45		07:16		07:47			07:23		08:00 (TRIV-77)	07:55		08:18 (TRIV-77)
	21:13		20:44		19:55		19:04			17:24	106	16:32 (TRIV-76)	17:11	94	16:41 (TRIV-76)
13	06:18		06:46		07:17		07:48			07:24		08:00 (TRIV-77)	07:55		08:19 (TRIV-77)
	21:12		20:43		19:53		19:03			17:23	107	16:32 (TRIV-76)	17:11	94	16:42 (TRIV-76)
14	06:18		06:47		07:18		07:49			07:25		07:59 (TRIV-77)	07:56		08:20 (TRIV-77)
	21:12		20:42		19:51		19:01			17:22	109	16:33 (TRIV-76)	17:11	93	16:42 (TRIV-76)
15	06:19		06:48		07:19		07:50			07:26		08:00 (TRIV-77)	07:57		08:20 (TRIV-77)
	21:11		20:40		19:50		19:00			17:21	110	16:34 (TRIV-76)	17:11	93	16:42 (TRIV-76)
16	06:20		06:49		07:20		07:51			07:27		08:00 (TRIV-77)	07:58		08:21 (TRIV-77)
	21:11		20:39		19:48		18:58			17:20	111	16:34 (TRIV-76)	17:12	92	16:43 (TRIV-76)
17	06:21		06:50		07:21		07:52			07:29		07:59 (TRIV-77)	07:58		08:22 (TRIV-77)
	21:10		20:38		19:46		18:57			17:19	112	16:34 (TRIV-76)	17:12	91	16:43 (TRIV-76)
18	06:22		06:51		07:22		07:53			07:30		07:59 (TRIV-77)	07:59		08:22 (TRIV-77)
	21:09		20:36		19:45		18:55			17:19	113	16:34 (TRIV-76)	17:12	90	16:43 (TRIV-76)
19	06:22		06:52		07:23		07:54			07:31		08:00 (TRIV-77)	08:00		08:23 (TRIV-77)
	21:09		20:35		19:43		18:54			17:18	113	16:35 (TRIV-76)	17:13	90	16:44 (TRIV-76)
20	06:23		06:53		07:24		07:56			07:32		08:00 (TRIV-77)	08:00		08:23 (TRIV-77)
	21:08		20:33		19:41		18:52			17:17	114	16:36 (TRIV-76)	17:13	90	16:44 (TRIV-76)
21	06:24		06:54		07:25		07:57			07:33		08:00 (TRIV-77)	08:01		08:24 (TRIV-77)
	21:07		20:32		19:39		18:51			17:17	114	16:36 (TRIV-76)	17:14	90	16:45 (TRIV-76)
22	06:25		06:55		07:26		07:58			07:34		08:00 (TRIV-77)	08:01		08:24 (TRIV-77)
	21:07		20:30		19:38		18:49			17:16	114	16:36 (TRIV-76)	17:14	90	16:45 (TRIV-76)
23	06:26		06:56		07:27		07:59			07:36		08:01 (TRIV-77)	08:02		08:25 (TRIV-77)
	21:06		20:29		19:36		18:48			17:15	113	16:36 (TRIV-76)	17:15	90	16:46 (TRIV-76)
24	06:27		06:57		07:28		08:00			07:37		08:02 (TRIV-77)	08:02		08:25 (TRIV-77)
	21:05		20:27		19:34		18:46			17:15	113	16:37 (TRIV-76)	17:15	90	16:46 (TRIV-76)
25	06:28		06:58		07:29		08:01			07:38		08:02 (TRIV-77)	08:03		08:26 (TRIV-77)
	21:04		20:26		19:33		18:45			17:14	113	16:37 (TRIV-76)	17:16	90	16:47 (TRIV-76)
26	06:29		06:59		07:30		08:02			07:39		08:02 (TRIV-77)	08:03		08:26 (TRIV-77)
	21:03		20:24		19:31		18:44			17:14	113	16:37 (TRIV-76)	17:16	91	16:47 (TRIV-76)
27	06:30		07:00		07:31		08:04			07:40		08:03 (TRIV-77)	08:03		08:26 (TRIV-77)
	21:02		20:23		19:29		18:42			17:13	112	16:37 (TRIV-76)	17:17	92	16:48 (TRIV-76)
28	06:30		07:01		07:32		08:05		16:56 (TRIV-76)	07:41		08:04 (TRIV-77)	08:04		08:26 (TRIV-77)
	21:01		20:21		19:28		18:41	14	17:10 (TRIV-76)	17:13	110	16:37 (TRIV-76)	17:18	92	16:48 (TRIV-76)
29	06:31		07:02		07:33		08:06		16:51 (TRIV-76)	07:42		08:05 (TRIV-77)	08:04		08:27 (TRIV-77)
	21:00		20:19		19:26		18:40	23	17:14 (TRIV-76)	17:12	108	16:37 (TRIV-76)	17:18	93	16:49 (TRIV-76)
30	06:32		07:03		07:34		08:07		09:16 (TRIV-77)	07:43		08:07 (TRIV-77)	08:04		08:27 (TRIV-77)
	20:59		20:18		19:24		18:38	41	17:17 (TRIV-76)	17:12	108	16:39 (TRIV-76)	17:19	93	16:50 (TRIV-76)
31	06:33		07:04				08:08		09:12 (TRIV-77)				08:04		08:27 (TRIV-77)
	20:58		20:16				18:37	53	17:19 (TRIV-76)				17:20	94	16:50 (TRIV-76)
Potential sun hours	459		428		375		345			298			288		
Total, worst case								131			3069			2941	
Sun reduction								0.60			0.40			0.36	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.67			0.65			0.66	
Total reduction								0.40			0.26			0.24	
Total, real								53			803			700	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 148 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1171)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May	June
1	08:04		08:27 (TRIV-78a)	07:51		08:11 (TRIV-57)	07:15	07:24	06:38	06:10
	17:21	33	09:00 (TRIV-78a)	17:55	72	09:23 (TRIV-78a)	18:30	20:03	20:34	21:04
2	08:05		08:27 (TRIV-78a)	07:50		08:10 (TRIV-57)	07:13	07:22	06:37	06:09
	17:22	34	09:01 (TRIV-78a)	17:57	73	09:23 (TRIV-78a)	18:31	20:04	20:35	21:05
3	08:05		08:27 (TRIV-78a)	07:49		08:09 (TRIV-57)	07:12	07:21	06:36	06:09
	17:23	35	09:02 (TRIV-78a)	17:58	74	09:23 (TRIV-78a)	18:32	20:05	20:37	21:06
4	08:05		08:27 (TRIV-78a)	07:48		08:08 (TRIV-57)	07:10	07:19	06:34	06:08
	17:24	36	09:03 (TRIV-78a)	17:59	76	09:24 (TRIV-78a)	18:33	20:06	20:38	21:06
5	08:05		08:27 (TRIV-78a)	07:47		08:07 (TRIV-57)	07:08	07:17	06:33	06:08
	17:25	37	09:04 (TRIV-78a)	18:00	77	09:24 (TRIV-78a)	18:34	20:07	20:39	21:07
6	08:05		08:27 (TRIV-78a)	07:46		08:06 (TRIV-57)	07:07	07:16	06:32	06:08
	17:26	38	09:05 (TRIV-78a)	18:02	78	09:24 (TRIV-78a)	18:35	20:08	20:40	21:08
7	08:05		08:27 (TRIV-78a)	07:45		08:07 (TRIV-57)	07:05	07:14	06:31	06:07
	17:27	39	09:06 (TRIV-78a)	18:03	76	09:23 (TRIV-78a)	18:36	20:09	20:41	21:08
8	08:04		08:26 (TRIV-78a)	07:43		08:07 (TRIV-57)	08:04	07:12	06:30	06:07
	17:28	40	09:06 (TRIV-78a)	18:04	75	09:22 (TRIV-78a)	19:38	20:10	20:42	21:09
9	08:04		08:26 (TRIV-78a)	07:42		08:08 (TRIV-57)	08:02	07:11	06:28	06:07
	17:29	42	09:08 (TRIV-78a)	18:05	74	09:22 (TRIV-78a)	19:39	20:11	20:43	21:10
10	08:04		08:26 (TRIV-78a)	07:41		08:09 (TRIV-57)	08:00	07:09	06:27	06:07
	17:30	43	09:09 (TRIV-78a)	18:07	73	09:22 (TRIV-78a)	19:40	20:12	20:44	21:10
11	08:04		08:26 (TRIV-78a)	07:40		08:11 (TRIV-57)	07:59	07:08	06:26	06:07
	17:31	44	09:10 (TRIV-78a)	18:08	70	09:21 (TRIV-78a)	19:41	20:13	20:45	21:11
12	08:04		08:25 (TRIV-78a)	07:39		08:12 (TRIV-57)	07:57	07:06	06:25	06:06
	17:32	45	09:10 (TRIV-78a)	18:09	67	09:20 (TRIV-78a)	19:42	20:14	20:46	21:11
13	08:03		08:25 (TRIV-78a)	07:37		08:16 (TRIV-57)	07:56	07:04	06:24	06:06
	17:33	47	09:12 (TRIV-78a)	18:10	59	09:20 (TRIV-78a)	19:43	20:15	20:47	21:12
14	08:03		08:24 (TRIV-78a)	07:36		08:28 (TRIV-78a)	07:54	07:03	06:23	06:06
	17:34	48	09:12 (TRIV-78a)	18:12	51	09:19 (TRIV-78a)	19:44	20:16	20:48	21:12
15	08:03		08:24 (TRIV-78a)	07:35		08:29 (TRIV-78a)	07:52	07:01	06:22	06:06
	17:35	50	09:14 (TRIV-78a)	18:13	49	09:18 (TRIV-78a)	19:45	20:17	20:49	21:13
16	08:02		08:24 (TRIV-78a)	07:33		08:29 (TRIV-78a)	07:51	07:00	06:21	06:06
	17:36	51	09:15 (TRIV-78a)	18:14	47	09:16 (TRIV-78a)	19:46	20:18	20:50	21:13
17	08:02		08:23 (TRIV-78a)	07:32		08:31 (TRIV-78a)	07:49	06:58	06:20	06:06
	17:37	52	09:15 (TRIV-78a)	18:15	44	09:15 (TRIV-78a)	19:47	20:20	20:51	21:14
18	08:01		08:22 (TRIV-78a)	07:31		08:32 (TRIV-78a)	07:47	06:57	06:19	06:06
	17:38	54	09:16 (TRIV-78a)	18:17	41	09:13 (TRIV-78a)	19:49	20:21	20:52	21:14
19	08:01		08:22 (TRIV-52b)	07:29		08:34 (TRIV-78a)	07:46	06:55	06:18	06:07
	17:40	55	09:17 (TRIV-78a)	18:18	38	09:12 (TRIV-78a)	19:50	20:22	20:53	21:14
20	08:00		08:21 (TRIV-52b)	07:28		08:36 (TRIV-78a)	07:44	06:54	06:17	06:07
	17:41	57	09:18 (TRIV-78a)	18:19	34	09:10 (TRIV-78a)	19:51	20:23	20:54	21:15
21	08:00		08:21 (TRIV-52b)	07:27		08:37 (TRIV-78a)	07:42	06:52	06:17	06:07
	17:42	58	09:19 (TRIV-78a)	18:20	30	09:07 (TRIV-78a)	19:52	20:24	20:55	21:15
22	07:59		08:20 (TRIV-57)	07:25		08:40 (TRIV-78a)	07:41	06:51	06:16	06:07
	17:43	59	09:19 (TRIV-78a)	18:21	25	09:05 (TRIV-78a)	19:53	20:25	20:56	21:15
23	07:58		08:19 (TRIV-57)	07:24		08:44 (TRIV-78a)	07:39	06:49	06:15	06:07
	17:44	61	09:20 (TRIV-78a)	18:23	16	09:00 (TRIV-78a)	19:54	20:26	20:56	21:15
24	07:58		08:18 (TRIV-57)	07:22			07:37	06:48	06:14	06:08
	17:46	62	09:20 (TRIV-78a)	18:24			19:55	20:27	20:57	21:15
25	07:57		08:18 (TRIV-57)	07:21			07:36	06:46	06:14	06:08
	17:47	63	09:21 (TRIV-78a)	18:25			19:56	20:28	20:58	21:16
26	07:56		08:17 (TRIV-57)	07:19			07:34	06:45	06:13	06:08
	17:48	65	09:22 (TRIV-78a)	18:26			19:57	20:29	20:59	21:16
27	07:55		08:16 (TRIV-57)	07:18			07:32	06:44	06:12	06:09
	17:49	66	09:22 (TRIV-78a)	18:27			19:58	20:30	21:00	21:16
28	07:54		08:15 (TRIV-57)	07:16			07:31	06:42	06:12	06:09
	17:50	67	09:22 (TRIV-78a)	18:28			19:59	20:31	21:01	21:16
29	07:54		08:14 (TRIV-57)				07:29	06:41	06:11	06:09
	17:52	69	09:23 (TRIV-78a)				20:00	20:32	21:02	21:16
30	07:53		08:13 (TRIV-57)				07:27	06:40	06:11	06:10
	17:53	70	09:23 (TRIV-78a)				20:00	20:33	21:03	21:16
31	07:52		08:12 (TRIV-57)				07:26		06:10	
	17:54	71	09:23 (TRIV-78a)				20:01		21:03	
Potential sun hours	298			297			370	398	448	452
Total, worst case		1591			1319					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.61			0.61					
Total reduction		0.30			0.34					
Total, real		485			443					

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 148 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1171)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		07:39 (TRIV-57)	07:44		08:08 (TRIV-78a)
	21:16		20:57		20:15		19:22			17:36	73	08:52 (TRIV-78a)	17:12	44	08:52 (TRIV-78a)
2	06:11		06:35		07:06		07:36			07:11		07:37 (TRIV-57)	07:45		08:09 (TRIV-78a)
	21:16		20:56		20:13		19:21			17:35	75	08:52 (TRIV-78a)	17:12	43	08:52 (TRIV-78a)
3	06:11		06:36		07:07		07:37			07:12		07:36 (TRIV-57)	07:46		08:10 (TRIV-78a)
	21:15		20:55		20:11		19:19			17:33	76	08:52 (TRIV-78a)	17:11	42	08:52 (TRIV-78a)
4	06:12		06:37		07:08		07:38			07:13		07:35 (TRIV-57)	07:47		08:11 (TRIV-78a)
	21:15		20:54		20:10		19:17			17:32	77	08:52 (TRIV-78a)	17:11	40	08:51 (TRIV-78a)
5	06:12		06:38		07:09		07:39			07:14		07:36 (TRIV-57)	07:48		08:12 (TRIV-78a)
	21:15		20:53		20:08		19:16			17:31	77	08:53 (TRIV-78a)	17:11	39	08:51 (TRIV-78a)
6	06:13		06:39		07:10		07:40			07:15		07:37 (TRIV-57)	07:49		08:13 (TRIV-78a)
	21:15		20:52		20:07		19:14			17:30	76	08:53 (TRIV-78a)	17:11	38	08:51 (TRIV-78a)
7	06:14		06:40		07:11		07:41			07:17		07:38 (TRIV-57)	07:50		08:14 (TRIV-78a)
	21:15		20:51		20:05		19:13			17:29	75	08:53 (TRIV-78a)	17:11	37	08:51 (TRIV-78a)
8	06:14		06:41		07:12		07:42			07:18		07:40 (TRIV-57)	07:51		08:15 (TRIV-78a)
	21:14		20:49		20:03		19:11			17:28	74	08:54 (TRIV-78a)	17:11	36	08:51 (TRIV-78a)
9	06:15		06:42		07:13		07:44			07:19		07:41 (TRIV-57)	07:52		08:15 (TRIV-78a)
	21:14		20:48		20:02		19:09			17:27	73	08:54 (TRIV-78a)	17:11	35	08:50 (TRIV-78a)
10	06:16		06:43		07:14		07:45			07:20		07:42 (TRIV-57)	07:53		08:16 (TRIV-78a)
	21:14		20:47		20:00		19:08			17:26	72	08:54 (TRIV-78a)	17:11	34	08:50 (TRIV-78a)
11	06:16		06:44		07:15		07:46			07:21		07:43 (TRIV-57)	07:54		08:17 (TRIV-78a)
	21:13		20:46		19:56		19:06			17:25	71	08:54 (TRIV-78a)	17:11	33	08:50 (TRIV-78a)
12	06:17		06:45		07:16		07:47			07:23		07:45 (TRIV-57)	07:55		08:18 (TRIV-78a)
	21:13		20:44		19:55		19:04			17:24	70	08:55 (TRIV-78a)	17:11	32	08:50 (TRIV-78a)
13	06:18		06:46		07:17		07:48			07:24		07:46 (TRIV-57)	07:55		08:19 (TRIV-78a)
	21:12		20:43		19:53		19:03			17:23	69	08:55 (TRIV-78a)	17:11	31	08:50 (TRIV-78a)
14	06:19		06:47		07:18		07:49			07:25		07:47 (TRIV-57)	07:56		08:20 (TRIV-78a)
	21:12		20:42		19:51		19:01			17:22	67	08:54 (TRIV-78a)	17:11	30	08:50 (TRIV-78a)
15	06:19		06:48		07:19		07:50			07:26		07:49 (TRIV-57)	07:57		08:20 (TRIV-78a)
	21:11		20:40		19:50		19:00			17:21	66	08:55 (TRIV-78a)	17:11	29	08:49 (TRIV-78a)
16	06:20		06:49		07:20		07:51			07:27		07:50 (TRIV-57)	07:58		08:21 (TRIV-78a)
	21:11		20:39		19:48		18:58			17:20	65	08:55 (TRIV-78a)	17:12	29	08:50 (TRIV-78a)
17	06:21		06:50		07:21		07:52			07:29		07:51 (TRIV-57)	07:58		08:22 (TRIV-78a)
	21:10		20:37		19:46		18:57			17:19	63	08:54 (TRIV-78a)	17:12	28	08:50 (TRIV-78a)
18	06:22		06:51		07:22		07:53		09:20 (TRIV-78a)	07:30		07:52 (TRIV-57)	07:59		08:22 (TRIV-78a)
	21:09		20:36		19:45		18:55	7	09:27 (TRIV-78a)	17:19	62	08:54 (TRIV-78a)	17:12	28	08:50 (TRIV-78a)
19	06:23		06:52		07:23		07:54		09:14 (TRIV-78a)	07:31		07:54 (TRIV-57)	07:59		08:23 (TRIV-78a)
	21:09		20:35		19:43		18:54	19	09:33 (TRIV-78a)	17:18	61	08:55 (TRIV-78a)	17:13	28	08:51 (TRIV-78a)
20	06:23		06:53		07:24		07:56		09:10 (TRIV-78a)	07:32		07:55 (TRIV-57)	08:00		08:23 (TRIV-78a)
	21:08		20:33		19:41		18:52	26	09:36 (TRIV-78a)	17:17	59	08:54 (TRIV-78a)	17:13	27	08:50 (TRIV-78a)
21	06:24		06:54		07:25		07:57		09:07 (TRIV-78a)	07:33		07:56 (TRIV-52b)	08:01		08:24 (TRIV-78a)
	21:07		20:32		19:39		18:51	32	09:39 (TRIV-78a)	17:17	58	08:54 (TRIV-78a)	17:14	27	08:51 (TRIV-78a)
22	06:25		06:55		07:26		07:58		09:05 (TRIV-78a)	07:34		07:57 (TRIV-52b)	08:01		08:24 (TRIV-78a)
	21:07		20:30		19:38		18:49	35	09:40 (TRIV-78a)	17:16	57	08:54 (TRIV-78a)	17:14	27	08:51 (TRIV-78a)
23	06:26		06:56		07:27		07:59		09:04 (TRIV-78a)	07:35		07:58 (TRIV-52b)	08:02		08:25 (TRIV-78a)
	21:06		20:29		19:36		18:48	39	09:43 (TRIV-78a)	17:15	55	08:53 (TRIV-78a)	17:15	27	08:52 (TRIV-78a)
24	06:27		06:57		07:28		08:00		09:02 (TRIV-78a)	07:37		08:00 (TRIV-78a)	08:02		08:25 (TRIV-78a)
	21:05		20:27		19:34		18:46	42	09:44 (TRIV-78a)	17:15	54	08:54 (TRIV-78a)	17:15	27	08:52 (TRIV-78a)
25	06:28		06:58		07:29		08:01		09:00 (TRIV-78a)	07:38		08:01 (TRIV-78a)	08:03		08:26 (TRIV-78a)
	21:04		20:26		19:33		18:45	45	09:45 (TRIV-78a)	17:14	52	08:53 (TRIV-78a)	17:16	28	08:54 (TRIV-78a)
26	06:29		06:59		07:30		08:02		08:59 (TRIV-78a)	07:39		08:02 (TRIV-78a)	08:03		08:26 (TRIV-78a)
	21:03		20:24		19:31		18:44	47	09:46 (TRIV-78a)	17:14	51	08:53 (TRIV-78a)	17:16	28	08:54 (TRIV-78a)
27	06:30		07:00		07:31		08:04		08:58 (TRIV-78a)	07:40		08:03 (TRIV-78a)	08:03		08:26 (TRIV-78a)
	21:02		20:23		19:29		18:42	49	09:47 (TRIV-78a)	17:13	50	08:53 (TRIV-78a)	17:17	29	08:55 (TRIV-78a)
28	06:31		07:01		07:32		08:05		08:57 (TRIV-78a)	07:41		08:04 (TRIV-78a)	08:04		08:26 (TRIV-78a)
	21:01		20:21		19:28		18:41	52	09:49 (TRIV-78a)	17:13	48	08:52 (TRIV-78a)	17:18	29	08:55 (TRIV-78a)
29	06:31		07:02		07:33		08:06		08:45 (TRIV-57)	07:42		08:05 (TRIV-78a)	08:04		08:27 (TRIV-78a)
	21:00		20:19		19:26		18:40	61	09:49 (TRIV-78a)	17:12	47	08:52 (TRIV-78a)	17:19	30	08:57 (TRIV-78a)
30	06:32		07:03		07:34		08:07		08:41 (TRIV-57)	07:43		08:07 (TRIV-78a)	08:04		08:27 (TRIV-78a)
	20:59		20:18		19:24		18:38	69	09:50 (TRIV-78a)	17:12	46	08:53 (TRIV-78a)	17:19	31	08:58 (TRIV-78a)
31	06:33		07:04				08:08		08:39 (TRIV-57)				08:04		08:27 (TRIV-78a)
	20:58		20:16				18:37	71	09:50 (TRIV-78a)				17:20	31	08:58 (TRIV-78a)
Potential sun hours	459		428		375		345			298			288		
Total, worst case							594			1919			997		
Sun reduction							0.60			0.40			0.36		
Oper. time red.							1.00			1.00			1.00		
Wind dir. red.							0.61			0.61			0.61		
Total reduction							0.36			0.24			0.22		
Total, real							217			469			218		

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 149 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1172)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May	June
1	08:04		08:27 (TRIV-52b)	07:51		08:11 (TRIV-57)	07:15	07:24	06:38	06:10
	17:21	70	09:37 (TRIV-78a)	17:55	99	09:50 (TRIV-78a)	18:30	20:03	20:34	21:04
2	08:05		08:27 (TRIV-52b)	07:50		08:10 (TRIV-57)	07:13	07:22	06:37	06:09
	17:22	71	09:38 (TRIV-78a)	17:57	100	09:50 (TRIV-78a)	18:31	20:04	20:35	21:05
3	08:05		08:27 (TRIV-52b)	07:49		08:10 (TRIV-57)	07:12	07:21	06:36	06:09
	17:23	71	09:38 (TRIV-78a)	17:58	100	09:50 (TRIV-78a)	18:32	20:05	20:36	21:06
4	08:05		08:27 (TRIV-52b)	07:48		08:10 (TRIV-57)	07:10	07:19	06:34	06:08
	17:24	72	09:39 (TRIV-78a)	17:59	100	09:50 (TRIV-78a)	18:33	20:06	20:38	21:06
5	08:05		08:27 (TRIV-52b)	07:47		08:11 (TRIV-57)	07:08	07:17	06:33	06:08
	17:25	73	09:40 (TRIV-78a)	18:00	98	09:49 (TRIV-78a)	18:34	20:07	20:39	21:07
6	08:05		08:27 (TRIV-52b)	07:46		08:12 (TRIV-57)	07:07	07:16	06:32	06:08
	17:26	74	09:41 (TRIV-78a)	18:02	94	09:49 (TRIV-78a)	18:35	20:08	20:40	21:08
7	08:05		08:27 (TRIV-52b)	07:45		08:13 (TRIV-57)	07:05	07:14	06:31	06:07
	17:27	74	09:41 (TRIV-78a)	18:03	91	09:49 (TRIV-78a)	18:36	20:09	20:41	21:08
8	08:04		08:26 (TRIV-52b)	07:43		08:14 (TRIV-57)	08:04	07:12	06:30	06:07
	17:28	75	09:41 (TRIV-78a)	18:04	87	09:47 (TRIV-78a)	19:38	20:10	20:42	21:09
9	08:04		08:26 (TRIV-52b)	07:42		08:15 (TRIV-57)	08:02	07:11	06:28	06:07
	17:29	76	09:42 (TRIV-78a)	18:05	82	09:46 (TRIV-78a)	19:39	20:11	20:43	21:10
10	08:04		08:26 (TRIV-52b)	07:41		08:17 (TRIV-57)	08:00	07:09	06:27	06:07
	17:30	77	09:43 (TRIV-78a)	18:07	78	09:46 (TRIV-78a)	19:40	20:12	20:44	21:10
11	08:04		08:26 (TRIV-52b)	07:40		08:20 (TRIV-57)	07:59	07:08	06:26	06:07
	17:31	78	09:44 (TRIV-78a)	18:08	70	09:45 (TRIV-78a)	19:41	20:13	20:45	21:11
12	08:04		08:25 (TRIV-52b)	07:39		08:45 (TRIV-78a)	07:57	07:06	06:25	06:06
	17:32	79	09:44 (TRIV-78a)	18:09	58	09:43 (TRIV-78a)	19:42	20:14	20:46	21:11
13	08:03		08:25 (TRIV-52b)	07:37		08:46 (TRIV-78a)	07:56	07:04	06:24	06:06
	17:33	80	09:45 (TRIV-78a)	18:10	57	09:43 (TRIV-78a)	19:43	20:15	20:47	21:12
14	08:03		08:24 (TRIV-52b)	07:36		08:48 (TRIV-78a)	07:54	07:03	06:23	06:06
	17:34	81	09:45 (TRIV-78a)	18:12	53	09:41 (TRIV-78a)	19:44	20:16	20:48	21:12
15	08:03		08:24 (TRIV-52b)	07:35		08:49 (TRIV-78a)	07:52	07:01	06:22	06:06
	17:35	82	09:46 (TRIV-78a)	18:13	51	09:40 (TRIV-78a)	19:45	20:17	20:49	21:13
16	08:02		08:24 (TRIV-57)	07:33		08:50 (TRIV-78a)	07:51	07:00	06:21	06:06
	17:36	83	09:47 (TRIV-78a)	18:14	48	09:38 (TRIV-78a)	19:46	20:18	20:50	21:13
17	08:02		08:23 (TRIV-57)	07:32		08:52 (TRIV-78a)	07:49	06:58	06:20	06:06
	17:37	84	09:47 (TRIV-78a)	18:15	45	09:37 (TRIV-78a)	19:47	20:20	20:51	21:14
18	08:01		08:22 (TRIV-57)	07:31		08:53 (TRIV-78a)	07:47	06:57	06:19	06:06
	17:38	85	09:47 (TRIV-78a)	18:17	41	09:34 (TRIV-78a)	19:49	20:21	20:52	21:14
19	08:01		08:22 (TRIV-57)	07:29		08:55 (TRIV-78a)	07:46	06:55	06:18	06:07
	17:40	86	09:48 (TRIV-78a)	18:18	37	09:32 (TRIV-78a)	19:50	20:22	20:53	21:14
20	08:00		08:21 (TRIV-57)	07:28		08:58 (TRIV-78a)	07:44	06:54	06:17	06:07
	17:41	87	09:48 (TRIV-78a)	18:19	31	09:29 (TRIV-78a)	19:51	20:23	20:54	21:14
21	08:00		08:21 (TRIV-57)	07:27		09:01 (TRIV-78a)	07:42	06:52	06:17	06:07
	17:42	88	09:49 (TRIV-78a)	18:20	24	09:25 (TRIV-78a)	19:52	20:24	20:55	21:15
22	07:59		08:20 (TRIV-57)	07:25		09:06 (TRIV-78a)	07:41	06:51	06:16	06:07
	17:43	89	09:49 (TRIV-78a)	18:21	14	09:20 (TRIV-78a)	19:53	20:25	20:56	21:15
23	07:58		08:19 (TRIV-57)	07:24			07:39	06:49	06:15	06:07
	17:44	90	09:49 (TRIV-78a)	18:22			19:54	20:26	20:56	21:15
24	07:58		08:18 (TRIV-57)	07:22			07:37	06:48	06:14	06:08
	17:46	91	09:49 (TRIV-78a)	18:24			19:55	20:27	20:57	21:15
25	07:57		08:18 (TRIV-57)	07:21			07:36	06:46	06:14	06:08
	17:47	92	09:50 (TRIV-78a)	18:25			19:56	20:28	20:58	21:16
26	07:56		08:17 (TRIV-57)	07:19			07:34	06:45	06:13	06:08
	17:48	94	09:51 (TRIV-78a)	18:26			19:57	20:29	20:59	21:16
27	07:55		08:16 (TRIV-57)	07:18			07:32	06:44	06:12	06:09
	17:49	95	09:51 (TRIV-78a)	18:27			19:58	20:30	21:00	21:16
28	07:54		08:15 (TRIV-57)	07:16			07:31	06:42	06:12	06:09
	17:50	96	09:51 (TRIV-78a)	18:28			19:59	20:31	21:01	21:16
29	07:54		08:14 (TRIV-57)				07:29	06:41	06:11	06:09
	17:52	96	09:50 (TRIV-78a)				20:00	20:32	21:02	21:16
30	07:53		08:13 (TRIV-57)				07:27	06:40	06:11	06:10
	17:53	97	09:50 (TRIV-78a)				20:00	20:33	21:03	21:16
31	07:52		08:12 (TRIV-57)				07:26		06:10	
	17:54	98	09:50 (TRIV-78a)				20:01		21:03	
Potential sun hours	298			297			370	398	448	452
Total, worst case		2584			1458					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.60			0.60					
Total reduction		0.30			0.33					
Total, real		778			483					

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

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

Licensed user:
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 149 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1172)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October			November			December		
1	06:10	06:34	07:05	07:35			07:09		07:47 (TRIV-57)	07:44		08:08 (TRIV-52b)
	21:16	20:57	20:15	19:22			17:36	79	09:16 (TRIV-78a)	17:12	78	09:26 (TRIV-78a)
2	06:11	06:35	07:06	07:36			07:11		07:45 (TRIV-57)	07:45		08:09 (TRIV-52b)
	21:16	20:56	20:13	19:21			17:35	83	09:16 (TRIV-78a)	17:12	77	09:26 (TRIV-78a)
3	06:11	06:36	07:07	07:37			07:12		07:43 (TRIV-57)	07:46		08:10 (TRIV-52b)
	21:15	20:55	20:11	19:19			17:33	89	09:17 (TRIV-78a)	17:11	76	09:26 (TRIV-78a)
4	06:12	06:37	07:08	07:38			07:13		07:42 (TRIV-57)	07:47		08:11 (TRIV-52b)
	21:15	20:54	20:10	19:17			17:32	90	09:17 (TRIV-78a)	17:11	75	09:26 (TRIV-78a)
5	06:12	06:38	07:09	07:39			07:14		07:42 (TRIV-57)	07:48		08:12 (TRIV-52b)
	21:15	20:53	20:08	19:16			17:31	94	09:19 (TRIV-78a)	17:11	75	09:27 (TRIV-78a)
6	06:13	06:39	07:10	07:40			07:15		07:41 (TRIV-57)	07:49		08:13 (TRIV-52b)
	21:15	20:52	20:07	19:14			17:30	98	09:19 (TRIV-78a)	17:11	74	09:27 (TRIV-78a)
7	06:14	06:40	07:11	07:41			07:17		07:40 (TRIV-57)	07:50		08:14 (TRIV-52b)
	21:15	20:51	20:05	19:13			17:29	99	09:19 (TRIV-78a)	17:11	73	09:27 (TRIV-78a)
8	06:14	06:41	07:12	07:42			07:18		07:41 (TRIV-57)	07:51		08:15 (TRIV-52b)
	21:14	20:49	20:03	19:11			17:28	100	09:21 (TRIV-78a)	17:11	72	09:27 (TRIV-78a)
9	06:15	06:42	07:13	07:44			07:19		07:41 (TRIV-57)	07:52		08:15 (TRIV-52b)
	21:14	20:48	20:02	19:09			17:27	100	09:21 (TRIV-78a)	17:11	71	09:26 (TRIV-78a)
10	06:16	06:43	07:14	07:45			07:20		07:42 (TRIV-57)	07:53		08:16 (TRIV-52b)
	21:14	20:47	20:00	19:08			17:26	99	09:21 (TRIV-78a)	17:11	71	09:27 (TRIV-78a)
11	06:16	06:44	07:15	07:46			07:21		07:43 (TRIV-57)	07:54		08:17 (TRIV-52b)
	21:13	20:46	19:56	19:06			17:25	98	09:21 (TRIV-78a)	17:11	70	09:27 (TRIV-78a)
12	06:17	06:45	07:16	07:47			07:23		07:45 (TRIV-57)	07:55		08:18 (TRIV-52b)
	21:13	20:44	19:55	19:04			17:24	97	09:22 (TRIV-78a)	17:11	70	09:28 (TRIV-78a)
13	06:18	06:46	07:17	07:48			07:24		07:46 (TRIV-57)	07:55		08:19 (TRIV-52b)
	21:12	20:43	19:53	19:03			17:23	96	09:22 (TRIV-78a)	17:11	69	09:28 (TRIV-78a)
14	06:19	06:47	07:18	07:49			07:25		07:47 (TRIV-57)	07:56		08:20 (TRIV-52b)
	21:12	20:42	19:51	19:01			17:22	95	09:22 (TRIV-78a)	17:11	69	09:29 (TRIV-78a)
15	06:19	06:48	07:19	07:50			07:26		07:49 (TRIV-57)	07:57		08:20 (TRIV-52b)
	21:11	20:40	19:50	19:00			17:21	94	09:23 (TRIV-78a)	17:11	68	09:28 (TRIV-78a)
16	06:20	06:49	07:20	07:51			07:27		07:50 (TRIV-57)	07:58		08:21 (TRIV-52b)
	21:11	20:39	19:48	18:58			17:20	93	09:23 (TRIV-78a)	17:12	68	09:29 (TRIV-78a)
17	06:21	06:50	07:21	07:52			07:28		07:51 (TRIV-57)	07:58		08:22 (TRIV-52b)
	21:10	20:37	19:46	18:57			17:19	92	09:23 (TRIV-78a)	17:12	68	09:30 (TRIV-78a)
18	06:22	06:51	07:22	07:53			07:30		07:52 (TRIV-57)	07:59		08:22 (TRIV-52b)
	21:09	20:36	19:45	18:55			17:19	91	09:23 (TRIV-78a)	17:12	67	09:29 (TRIV-78a)
19	06:23	06:52	07:23	07:54			07:31		07:54 (TRIV-57)	07:59		08:23 (TRIV-52b)
	21:09	20:35	19:43	18:54			17:18	90	09:24 (TRIV-78a)	17:13	67	09:30 (TRIV-78a)
20	06:23	06:53	07:24	07:56		09:35 (TRIV-78a)	07:32		07:55 (TRIV-57)	08:00		08:23 (TRIV-52b)
	21:08	20:33	19:41	18:52	18	09:53 (TRIV-78a)	17:17	89	09:24 (TRIV-78a)	17:13	67	09:30 (TRIV-78a)
21	06:24	06:54	07:25	07:57		09:30 (TRIV-78a)	07:33		07:56 (TRIV-57)	08:01		08:24 (TRIV-52b)
	21:07	20:32	19:39	18:51	27	09:57 (TRIV-78a)	17:17	88	09:24 (TRIV-78a)	17:14	67	09:31 (TRIV-78a)
22	06:25	06:55	07:26	07:58		09:27 (TRIV-78a)	07:34		07:57 (TRIV-57)	08:01		08:24 (TRIV-52b)
	21:07	20:30	19:38	18:49	33	10:00 (TRIV-78a)	17:16	87	09:24 (TRIV-78a)	17:14	67	09:31 (TRIV-78a)
23	06:26	06:56	07:27	07:59		09:25 (TRIV-78a)	07:35		07:58 (TRIV-57)	08:02		08:25 (TRIV-52b)
	21:06	20:29	19:36	18:48	38	10:03 (TRIV-78a)	17:15	86	09:24 (TRIV-78a)	17:15	67	09:32 (TRIV-78a)
24	06:27	06:57	07:28	08:00		09:23 (TRIV-78a)	07:37		08:00 (TRIV-57)	08:02		08:25 (TRIV-52b)
	21:05	20:27	19:34	18:46	42	10:05 (TRIV-78a)	17:15	85	09:25 (TRIV-78a)	17:15	67	09:32 (TRIV-78a)
25	06:28	06:58	07:29	08:01		09:21 (TRIV-78a)	07:38		08:01 (TRIV-57)	08:02		08:25 (TRIV-52b)
	21:04	20:26	19:33	18:45	46	10:07 (TRIV-78a)	17:14	84	09:25 (TRIV-78a)	17:16	67	09:32 (TRIV-78a)
26	06:29	06:59	07:30	08:02		09:19 (TRIV-78a)	07:39		08:02 (TRIV-57)	08:03		08:26 (TRIV-52b)
	21:03	20:24	19:31	18:44	49	10:08 (TRIV-78a)	17:14	83	09:25 (TRIV-78a)	17:16	67	09:33 (TRIV-78a)
27	06:30	07:00	07:31	08:04		09:18 (TRIV-78a)	07:40		08:03 (TRIV-52b)	08:03		08:26 (TRIV-52b)
	21:02	20:23	19:29	18:42	51	10:09 (TRIV-78a)	17:13	82	09:25 (TRIV-78a)	17:17	68	09:34 (TRIV-78a)
28	06:31	07:01	07:32	08:05		09:17 (TRIV-78a)	07:41		08:04 (TRIV-52b)	08:04		08:26 (TRIV-52b)
	21:01	20:21	19:28	18:41	55	10:12 (TRIV-78a)	17:13	81	09:25 (TRIV-78a)	17:18	68	09:34 (TRIV-78a)
29	06:31	07:02	07:33	08:06		09:16 (TRIV-78a)	07:42		08:05 (TRIV-52b)	08:04		08:27 (TRIV-52b)
	21:00	20:19	19:26	18:40	56	10:12 (TRIV-78a)	17:12	80	09:25 (TRIV-78a)	17:19	69	09:36 (TRIV-78a)
30	06:32	07:03	07:34	08:07		09:14 (TRIV-78a)	07:43		08:07 (TRIV-52b)	08:04		08:27 (TRIV-52b)
	20:59	20:18	19:24	18:38	59	10:13 (TRIV-78a)	17:12	79	09:26 (TRIV-78a)	17:19	69	09:36 (TRIV-78a)
31	06:33	07:04		08:08		08:49 (TRIV-57)				08:04		08:27 (TRIV-52b)
	20:58	20:16		18:37	72	10:14 (TRIV-78a)				17:20	69	09:36 (TRIV-78a)
Potential sun hours	459	428	375	345			298			288		
Total, worst case					546			2701			2170	
Sun reduction					0.60			0.40			0.36	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.60			0.60			0.60	
Total reduction					0.36			0.24			0.22	
Total, real					196			653			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 150 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1173)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April			May			June		
1	08:04	07:51	07:15	07:24			06:38		07:00 (TRIV-78)	06:10		07:02 (TRIV-78)
	17:21	17:55	18:29	20:02			20:34	61	08:01 (TRIV-78)	21:04	55	07:57 (TRIV-78)
2	08:05	07:50	07:13	07:22			06:37		07:00 (TRIV-78)	06:09		07:03 (TRIV-78)
	17:22	17:57	18:31	20:04			20:35	61	08:01 (TRIV-78)	21:05	55	07:58 (TRIV-78)
3	08:05	07:49	07:12	07:21			06:36		06:58 (TRIV-78)	06:09		07:03 (TRIV-78)
	17:23	17:58	18:32	20:05			20:36	63	08:01 (TRIV-78)	21:06	54	07:57 (TRIV-78)
4	08:05	07:48	07:10	07:19			06:34		06:58 (TRIV-78)	06:08		07:03 (TRIV-78)
	17:24	17:59	18:33	20:06			20:38	63	08:01 (TRIV-78)	21:06	54	07:57 (TRIV-78)
5	08:05	07:47	07:08	07:17			06:33		06:58 (TRIV-78)	06:08		07:04 (TRIV-78)
	17:25	18:00	18:34	20:07			20:39	64	08:02 (TRIV-78)	21:07	53	07:57 (TRIV-78)
6	08:05	07:46	07:07	07:16			06:32		06:58 (TRIV-78)	06:08		07:04 (TRIV-78)
	17:26	18:02	18:35	20:08			20:40	64	08:02 (TRIV-78)	21:08	52	07:56 (TRIV-78)
7	08:05	07:45	07:05	07:14			06:31		06:57 (TRIV-78)	06:07		07:05 (TRIV-78)
	17:27	18:03	18:36	20:09			20:41	65	08:02 (TRIV-78)	21:08	51	07:56 (TRIV-78)
8	08:04	07:43	08:04	07:12			06:30		06:57 (TRIV-78)	06:07		07:05 (TRIV-78)
	17:27	18:04	19:37	20:10			20:42	65	08:02 (TRIV-78)	21:09	51	07:56 (TRIV-78)
9	08:04	07:42	08:02	07:11			06:28		06:56 (TRIV-78)	06:07		07:06 (TRIV-78)
	17:29	18:05	19:39	20:11			20:43	65	08:01 (TRIV-78)	21:10	50	07:56 (TRIV-78)
10	08:04	07:41	08:00	07:09			06:27		06:56 (TRIV-78)	06:07		07:07 (TRIV-78)
	17:30	18:07	19:40	20:12			20:44	65	08:01 (TRIV-78)	21:10	49	07:56 (TRIV-78)
11	08:04	07:40	07:59	07:08			06:26		06:56 (TRIV-78)	06:07		07:07 (TRIV-78)
	17:31	18:08	19:41	20:13			20:45	65	08:01 (TRIV-78)	21:11	49	07:56 (TRIV-78)
12	08:04	07:39	07:57	07:06			06:25		06:56 (TRIV-78)	06:06		07:07 (TRIV-78)
	17:32	18:09	19:42	20:14			20:46	65	08:01 (TRIV-78)	21:11	48	07:55 (TRIV-78)
13	08:03	07:37	07:56	07:04			06:24		06:56 (TRIV-78)	06:06		07:07 (TRIV-78)
	17:33	18:10	19:43	20:15			20:47	65	08:01 (TRIV-78)	21:12	48	07:55 (TRIV-78)
14	08:03	07:36	07:54	07:03			06:23		06:56 (TRIV-78)	06:06		07:08 (TRIV-78)
	17:34	18:12	19:44	20:16			20:48	65	08:01 (TRIV-78)	21:12	47	07:55 (TRIV-78)
15	08:03	07:35	07:52	07:01			06:22		06:56 (TRIV-78)	06:06		07:08 (TRIV-78)
	17:35	18:13	19:45	20:17			20:49	65	08:01 (TRIV-78)	21:13	47	07:55 (TRIV-78)
16	08:02	07:33	07:51	07:00			06:21		06:57 (TRIV-78)	06:06		07:09 (TRIV-78)
	17:36	18:14	19:46	20:18			20:50	65	08:02 (TRIV-78)	21:13	47	07:56 (TRIV-78)
17	08:02	07:32	07:49	06:58		07:23 (TRIV-78)	06:20		06:57 (TRIV-78)	06:06		07:10 (TRIV-78)
	17:37	18:15	19:47	20:20	19	07:42 (TRIV-78)	20:51	64	08:01 (TRIV-78)	21:14	46	07:56 (TRIV-78)
18	08:01	07:31	07:47	06:57		07:20 (TRIV-78)	06:19		06:57 (TRIV-78)	06:06		07:10 (TRIV-78)
	17:38	18:16	19:49	20:21	26	07:46 (TRIV-78)	20:52	64	08:01 (TRIV-78)	21:14	46	07:56 (TRIV-78)
19	08:01	07:29	07:46	06:55		07:16 (TRIV-78)	06:18		06:57 (TRIV-78)	06:06		07:10 (TRIV-78)
	17:40	18:18	19:50	20:22	32	07:48 (TRIV-78)	20:53	64	08:01 (TRIV-78)	21:14	46	07:56 (TRIV-78)
20	08:00	07:28	07:44	06:54		07:14 (TRIV-78)	06:17		06:57 (TRIV-78)	06:07		07:10 (TRIV-78)
	17:41	18:19	19:51	20:23	37	07:51 (TRIV-78)	20:54	63	08:00 (TRIV-78)	21:14	46	07:56 (TRIV-78)
21	08:00	07:27	07:42	06:52		07:11 (TRIV-78)	06:17		06:57 (TRIV-78)	06:07		07:10 (TRIV-78)
	17:42	18:20	19:52	20:24	41	07:52 (TRIV-78)	20:55	63	08:00 (TRIV-78)	21:15	46	07:56 (TRIV-78)
22	07:59	07:25	07:41	06:51		07:10 (TRIV-78)	06:16		06:58 (TRIV-78)	06:07		07:10 (TRIV-78)
	17:43	18:21	19:53	20:25	44	07:54 (TRIV-78)	20:56	62	08:00 (TRIV-78)	21:15	46	07:56 (TRIV-78)
23	07:58	07:24	07:39	06:49		07:08 (TRIV-78)	06:15		06:58 (TRIV-78)	06:07		07:11 (TRIV-78)
	17:44	18:22	19:54	20:26	47	07:55 (TRIV-78)	20:56	62	08:00 (TRIV-78)	21:15	46	07:57 (TRIV-78)
24	07:58	07:22	07:37	06:48		07:07 (TRIV-78)	06:14		06:58 (TRIV-78)	06:08		07:11 (TRIV-78)
	17:46	18:24	19:55	20:27	49	07:56 (TRIV-78)	20:57	61	07:59 (TRIV-78)	21:15	46	07:57 (TRIV-78)
25	07:57	07:21	07:36	06:46		07:06 (TRIV-78)	06:14		06:59 (TRIV-78)	06:08		07:11 (TRIV-78)
	17:47	18:25	19:56	20:28	51	07:57 (TRIV-78)	20:58	60	07:59 (TRIV-78)	21:16	46	07:57 (TRIV-78)
26	07:56	07:19	07:34	06:45		07:04 (TRIV-78)	06:13		06:59 (TRIV-78)	06:08		07:11 (TRIV-78)
	17:48	18:26	19:57	20:29	54	07:58 (TRIV-78)	20:59	60	07:59 (TRIV-78)	21:16	47	07:58 (TRIV-78)
27	07:55	07:18	07:32	06:44		07:03 (TRIV-78)	06:12		07:00 (TRIV-78)	06:09		07:11 (TRIV-78)
	17:49	18:27	19:58	20:30	56	07:59 (TRIV-78)	21:00	59	07:59 (TRIV-78)	21:16	47	07:58 (TRIV-78)
28	07:54	07:16	07:31	06:42		07:02 (TRIV-78)	06:12		07:00 (TRIV-78)	06:09		07:11 (TRIV-78)
	17:50	18:28	19:59	20:31	58	08:00 (TRIV-78)	21:01	58	07:58 (TRIV-78)	21:16	47	07:58 (TRIV-78)
29	07:54		07:29	06:41		07:01 (TRIV-78)	06:11		07:00 (TRIV-78)	06:09		07:11 (TRIV-78)
	17:52		20:00	20:32	58	07:59 (TRIV-78)	21:02	58	07:58 (TRIV-78)	21:16	48	07:59 (TRIV-78)
30	07:53		07:27	06:39		07:00 (TRIV-78)	06:11		07:01 (TRIV-78)	06:10		07:11 (TRIV-78)
	17:53		20:00	20:33	60	08:00 (TRIV-78)	21:03	57	07:58 (TRIV-78)	21:16	48	07:59 (TRIV-78)
31	07:52		07:26				06:10		07:02 (TRIV-78)			
	17:54		20:01				21:03	56	07:58 (TRIV-78)			
Potential sun hours	298	297	370	399			448			452		
Total, worst case				632			1937			1461		
Sun reduction				0.63			0.69			0.74		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.69			0.69			0.69		
Total reduction				0.44			0.48			0.51		
Total, real				275			925			748		

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)

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 150 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1173)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September	October	November	December
1	06:10		07:11 (TRIV-78)	06:34		07:07 (TRIV-78)	07:05	07:35	07:09	07:44
	21:16	49	08:00 (TRIV-78)	20:57	65	08:12 (TRIV-78)	20:15	19:22	17:36	17:12
2	06:11		07:11 (TRIV-78)	06:35		07:07 (TRIV-78)	07:06	07:36	07:11	07:45
	21:16	49	08:00 (TRIV-78)	20:56	65	08:12 (TRIV-78)	20:13	19:21	17:35	17:11
3	06:11		07:11 (TRIV-78)	06:36		07:07 (TRIV-78)	07:07	07:37	07:12	07:46
	21:15	50	08:01 (TRIV-78)	20:55	65	08:12 (TRIV-78)	20:11	19:19	17:33	17:11
4	06:12		07:11 (TRIV-78)	06:37		07:07 (TRIV-78)	07:08	07:38	07:13	07:47
	21:15	50	08:01 (TRIV-78)	20:54	65	08:12 (TRIV-78)	20:10	19:17	17:32	17:11
5	06:12		07:11 (TRIV-78)	06:38		07:07 (TRIV-78)	07:09	07:39	07:14	07:48
	21:15	51	08:02 (TRIV-78)	20:53	65	08:12 (TRIV-78)	20:08	19:16	17:31	17:11
6	06:13		07:10 (TRIV-78)	06:39		07:07 (TRIV-78)	07:10	07:40	07:15	07:49
	21:15	52	08:02 (TRIV-78)	20:52	65	08:12 (TRIV-78)	20:06	19:14	17:30	17:11
7	06:14		07:11 (TRIV-78)	06:40		07:07 (TRIV-78)	07:11	07:41	07:17	07:50
	21:15	52	08:03 (TRIV-78)	20:51	64	08:11 (TRIV-78)	20:05	19:13	17:29	17:11
8	06:14		07:11 (TRIV-78)	06:41		07:07 (TRIV-78)	07:12	07:42	07:18	07:51
	21:14	53	08:04 (TRIV-78)	20:49	64	08:11 (TRIV-78)	20:03	19:11	17:28	17:11
9	06:15		07:10 (TRIV-78)	06:42		07:08 (TRIV-78)	07:13	07:44	07:19	07:52
	21:14	54	08:04 (TRIV-78)	20:48	63	08:11 (TRIV-78)	20:01	19:09	17:27	17:11
10	06:16		07:10 (TRIV-78)	06:43		07:08 (TRIV-78)	07:14	07:45	07:20	07:53
	21:14	55	08:05 (TRIV-78)	20:47	62	08:10 (TRIV-78)	20:00	19:08	17:26	17:11
11	06:16		07:10 (TRIV-78)	06:44		07:08 (TRIV-78)	07:15	07:46	07:21	07:54
	21:13	55	08:05 (TRIV-78)	20:46	62	08:10 (TRIV-78)	19:56	19:06	17:25	17:11
12	06:17		07:09 (TRIV-78)	06:45		07:09 (TRIV-78)	07:16	07:47	07:23	07:55
	21:13	56	08:05 (TRIV-78)	20:44	60	08:09 (TRIV-78)	19:55	19:04	17:24	17:11
13	06:18		07:09 (TRIV-78)	06:46		07:08 (TRIV-78)	07:17	07:48	07:24	07:55
	21:12	57	08:06 (TRIV-78)	20:43	60	08:08 (TRIV-78)	19:53	19:03	17:23	17:11
14	06:18		07:09 (TRIV-78)	06:47		07:09 (TRIV-78)	07:18	07:49	07:25	07:56
	21:12	58	08:07 (TRIV-78)	20:42	58	08:07 (TRIV-78)	19:51	19:01	17:22	17:11
15	06:19		07:10 (TRIV-78)	06:48		07:09 (TRIV-78)	07:19	07:50	07:26	07:57
	21:11	58	08:08 (TRIV-78)	20:40	57	08:06 (TRIV-78)	19:50	19:00	17:21	17:11
16	06:20		07:09 (TRIV-78)	06:49		07:10 (TRIV-78)	07:20	07:51	07:27	07:58
	21:11	58	08:07 (TRIV-78)	20:39	55	08:05 (TRIV-78)	19:48	18:58	17:20	17:12
17	06:21		07:09 (TRIV-78)	06:50		07:11 (TRIV-78)	07:21	07:52	07:28	07:58
	21:10	59	08:08 (TRIV-78)	20:37	53	08:04 (TRIV-78)	19:46	18:57	17:19	17:12
18	06:22		07:09 (TRIV-78)	06:51		07:12 (TRIV-78)	07:22	07:53	07:30	07:59
	21:09	60	08:09 (TRIV-78)	20:36	51	08:03 (TRIV-78)	19:45	18:55	17:19	17:12
19	06:22		07:09 (TRIV-78)	06:52		07:13 (TRIV-78)	07:23	07:54	07:31	07:59
	21:09	60	08:09 (TRIV-78)	20:35	49	08:02 (TRIV-78)	19:43	18:54	17:18	17:13
20	06:23		07:09 (TRIV-78)	06:53		07:14 (TRIV-78)	07:24	07:56	07:32	08:00
	21:08	61	08:10 (TRIV-78)	20:33	46	08:00 (TRIV-78)	19:41	18:52	17:17	17:13
21	06:24		07:08 (TRIV-78)	06:54		07:15 (TRIV-78)	07:25	07:57	07:33	08:01
	21:07	61	08:09 (TRIV-78)	20:32	43	07:58 (TRIV-78)	19:39	18:51	17:17	17:14
22	06:25		07:08 (TRIV-78)	06:55		07:16 (TRIV-78)	07:26	07:58	07:34	08:01
	21:07	62	08:10 (TRIV-78)	20:30	41	07:57 (TRIV-78)	19:38	18:49	17:16	17:14
23	06:26		07:08 (TRIV-78)	06:56		07:18 (TRIV-78)	07:27	07:59	07:35	08:02
	21:06	62	08:10 (TRIV-78)	20:29	36	07:54 (TRIV-78)	19:36	18:48	17:15	17:15
24	06:27		07:08 (TRIV-78)	06:57		07:20 (TRIV-78)	07:28	08:00	07:37	08:02
	21:05	63	08:11 (TRIV-78)	20:27	32	07:52 (TRIV-78)	19:34	18:46	17:15	17:15
25	06:28		07:07 (TRIV-78)	06:58		07:23 (TRIV-78)	07:29	08:01	07:38	08:02
	21:04	64	08:11 (TRIV-78)	20:26	26	07:49 (TRIV-78)	19:33	18:45	17:14	17:16
26	06:29		07:07 (TRIV-78)	06:59		07:27 (TRIV-78)	07:30	08:02	07:39	08:03
	21:03	65	08:12 (TRIV-78)	20:24	18	07:45 (TRIV-78)	19:31	18:44	17:14	17:16
27	06:30		07:07 (TRIV-78)	07:00			07:31	08:04	07:40	08:03
	21:02	65	08:12 (TRIV-78)	20:23			19:29	18:42	17:13	17:17
28	06:30		07:06 (TRIV-78)	07:01			07:32	08:05	07:41	08:04
	21:01	65	08:11 (TRIV-78)	20:21			19:27	18:41	17:13	17:18
29	06:31		07:06 (TRIV-78)	07:02			07:33	08:06	07:42	08:04
	21:00	66	08:12 (TRIV-78)	20:19			19:26	18:40	17:12	17:18
30	06:32		07:06 (TRIV-78)	07:03			07:34	08:07	07:43	08:04
	20:59	66	08:12 (TRIV-78)	20:18			19:24	18:38	17:12	17:19
31	06:33		07:06 (TRIV-78)	07:04				08:08		08:04
	20:58	66	08:12 (TRIV-78)	20:16				18:37		17:20
Potential sun hours	459			428			375	345	298	288
Total, worst case		1802			1390					
Sun reduction		0.76			0.75					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.69			0.69					
Total reduction		0.53			0.52					
Total, real		947			721					

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 151 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1174)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April			May			June		
1	08:04	07:51	07:15	07:24			06:38		06:58 (TRIV-78)	06:10		06:51 (TRIV-78)
	17:21	17:55	18:29	20:02			20:34	51	07:49 (TRIV-78)	21:04	64	07:55 (TRIV-78)
2	08:05	07:50	07:13	07:22			06:37		06:57 (TRIV-78)	06:09		06:51 (TRIV-78)
	17:22	17:57	18:31	20:04			20:35	53	07:50 (TRIV-78)	21:05	65	07:56 (TRIV-78)
3	08:05	07:49	07:12	07:21			06:36		06:55 (TRIV-78)	06:09		06:51 (TRIV-78)
	17:23	17:58	18:32	20:05			20:36	55	07:50 (TRIV-78)	21:06	64	07:55 (TRIV-78)
4	08:05	07:48	07:10	07:19			06:34		06:54 (TRIV-78)	06:08		06:52 (TRIV-78)
	17:24	17:59	18:33	20:06			20:38	57	07:51 (TRIV-78)	21:06	63	07:55 (TRIV-78)
5	08:05	07:47	07:08	07:17			06:33		06:54 (TRIV-78)	06:08		06:52 (TRIV-78)
	17:25	18:00	18:34	20:07			20:39	58	07:52 (TRIV-78)	21:07	64	07:56 (TRIV-78)
6	08:05	07:46	07:07	07:16			06:32		06:53 (TRIV-78)	06:08		06:52 (TRIV-78)
	17:26	18:02	18:35	20:08			20:40	60	07:53 (TRIV-78)	21:08	63	07:55 (TRIV-78)
7	08:05	07:45	07:05	07:14			06:31		06:53 (TRIV-78)	06:07		06:52 (TRIV-78)
	17:27	18:03	18:36	20:09			20:41	60	07:53 (TRIV-78)	21:08	63	07:55 (TRIV-78)
8	08:04	07:43	08:04	07:12			06:30		06:52 (TRIV-78)	06:07		06:53 (TRIV-78)
	17:27	18:04	19:37	20:10			20:42	62	07:54 (TRIV-78)	21:09	62	07:55 (TRIV-78)
9	08:04	07:42	08:02	07:11			06:28		06:51 (TRIV-78)	06:07		06:53 (TRIV-78)
	17:29	18:05	19:39	20:11			20:43	62	07:53 (TRIV-78)	21:10	63	07:56 (TRIV-78)
10	08:04	07:41	08:00	07:09			06:27		06:50 (TRIV-78)	06:07		06:54 (TRIV-78)
	17:30	18:07	19:40	20:12			20:44	64	07:54 (TRIV-78)	21:10	62	07:56 (TRIV-78)
11	08:04	07:40	07:59	07:08			06:26		06:50 (TRIV-78)	06:07		06:54 (TRIV-78)
	17:31	18:08	19:41	20:13			20:45	64	07:54 (TRIV-78)	21:11	62	07:56 (TRIV-78)
12	08:04	07:39	07:57	07:06			06:25		06:49 (TRIV-78)	06:06		06:54 (TRIV-78)
	17:32	18:09	19:42	20:14			20:46	65	07:54 (TRIV-78)	21:11	61	07:55 (TRIV-78)
13	08:03	07:37	07:56	07:04			06:24		06:49 (TRIV-78)	06:06		06:54 (TRIV-78)
	17:33	18:10	19:43	20:15			20:47	65	07:54 (TRIV-78)	21:12	61	07:55 (TRIV-78)
14	08:03	07:36	07:54	07:03			06:23		06:49 (TRIV-78)	06:06		06:54 (TRIV-78)
	17:34	18:12	19:44	20:16			20:48	66	07:55 (TRIV-78)	21:12	61	07:55 (TRIV-78)
15	08:03	07:35	07:52	07:01			06:22		06:49 (TRIV-78)	06:06		06:54 (TRIV-78)
	17:35	18:13	19:45	20:17			20:49	66	07:55 (TRIV-78)	21:13	61	07:55 (TRIV-78)
16	08:02	07:33	07:51	07:00			06:21		06:49 (TRIV-78)	06:06		06:56 (TRIV-78)
	17:36	18:14	19:46	20:18			20:50	67	07:56 (TRIV-78)	21:13	60	07:56 (TRIV-78)
17	08:02	07:32	07:49	06:58			06:20		06:49 (TRIV-78)	06:06		06:56 (TRIV-78)
	17:37	18:15	19:47	20:20			20:51	67	07:56 (TRIV-78)	21:14	61	07:57 (TRIV-78)
18	08:01	07:31	07:47	06:57			06:19		06:49 (TRIV-78)	06:06		06:56 (TRIV-78)
	17:38	18:16	19:49	20:21			20:52	67	07:56 (TRIV-78)	21:14	61	07:57 (TRIV-78)
19	08:01	07:29	07:46	06:55			06:18		06:49 (TRIV-78)	06:06		06:56 (TRIV-78)
	17:40	18:18	19:50	20:22			20:53	66	07:55 (TRIV-78)	21:14	61	07:57 (TRIV-78)
20	08:00	07:28	07:44	06:54			06:17		06:48 (TRIV-78)	06:07		06:56 (TRIV-78)
	17:41	18:19	19:51	20:23			20:54	67	07:55 (TRIV-78)	21:14	61	07:57 (TRIV-78)
21	08:00	07:27	07:42	06:52			06:17		06:48 (TRIV-78)	06:07		06:56 (TRIV-78)
	17:42	18:20	19:52	20:24			20:55	67	07:55 (TRIV-78)	21:15	61	07:57 (TRIV-78)
22	07:59	07:25	07:41	06:51		07:24 (TRIV-78)	06:16		06:49 (TRIV-78)	06:07		06:56 (TRIV-78)
	17:43	18:21	19:53	20:25	2	07:26 (TRIV-78)	20:56	67	07:56 (TRIV-78)	21:15	61	07:57 (TRIV-78)
23	07:58	07:24	07:39	06:49		07:15 (TRIV-78)	06:15		06:49 (TRIV-78)	06:07		06:57 (TRIV-78)
	17:44	18:22	19:54	20:26	19	07:34 (TRIV-78)	20:56	67	07:56 (TRIV-78)	21:15	61	07:58 (TRIV-78)
24	07:58	07:22	07:37	06:48		07:11 (TRIV-78)	06:14		06:49 (TRIV-78)	06:08		06:57 (TRIV-78)
	17:46	18:24	19:55	20:27	27	07:38 (TRIV-78)	20:57	66	07:55 (TRIV-78)	21:15	61	07:58 (TRIV-78)
25	07:57	07:21	07:36	06:46		07:08 (TRIV-78)	06:14		06:49 (TRIV-78)	06:08		06:57 (TRIV-78)
	17:47	18:25	19:56	20:28	33	07:41 (TRIV-78)	20:58	67	07:56 (TRIV-78)	21:16	61	07:58 (TRIV-78)
26	07:56	07:19	07:34	06:45		07:05 (TRIV-78)	06:13		06:49 (TRIV-78)	06:08		06:58 (TRIV-78)
	17:48	18:26	19:57	20:29	37	07:42 (TRIV-78)	20:59	66	07:55 (TRIV-78)	21:16	61	07:59 (TRIV-78)
27	07:55	07:18	07:32	06:44		07:04 (TRIV-78)	06:12		06:50 (TRIV-78)	06:09		06:58 (TRIV-78)
	17:49	18:27	19:58	20:30	40	07:44 (TRIV-78)	21:00	66	07:56 (TRIV-78)	21:16	60	07:58 (TRIV-78)
28	07:54	07:16	07:31	06:42		07:02 (TRIV-78)	06:12		06:50 (TRIV-78)	06:09		06:57 (TRIV-78)
	17:50	18:28	19:59	20:31	44	07:46 (TRIV-78)	21:01	65	07:55 (TRIV-78)	21:16	61	07:58 (TRIV-78)
29	07:54		07:29	06:41		07:00 (TRIV-78)	06:11		06:49 (TRIV-78)	06:09		06:58 (TRIV-78)
	17:52		20:00	20:32	46	07:46 (TRIV-78)	21:02	66	07:55 (TRIV-78)	21:16	61	07:59 (TRIV-78)
30	07:53		07:27	06:39		06:59 (TRIV-78)	06:11		06:50 (TRIV-78)	06:10		06:58 (TRIV-78)
	17:53		20:00	20:33	49	07:48 (TRIV-78)	21:03	65	07:55 (TRIV-78)	21:16	61	07:59 (TRIV-78)
31	07:52		07:26				06:10		06:51 (TRIV-78)			
	17:54		20:01				21:03	65	07:56 (TRIV-78)			
Potential sun hours	298	297	370	399			448			452		
Total, worst case				297			1969			1852		
Sun reduction				0.63			0.69			0.74		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.70			0.70			0.70		
Total reduction				0.44			0.48			0.52		
Total, real				130			946			954		

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 151 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1174)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November	December
1	06:10		06:58 (TRIV-78)	06:34		07:00 (TRIV-78)	07:05	07:35	07:09	07:44
	21:16	62	08:00 (TRIV-78)	20:57	65	08:05 (TRIV-78)	20:15	19:22	17:36	17:12
2	06:11		06:58 (TRIV-78)	06:35		07:01 (TRIV-78)	07:06	07:36	07:11	07:45
	21:16	62	08:00 (TRIV-78)	20:56	63	08:04 (TRIV-78)	20:13	19:21	17:35	17:11
3	06:11		06:58 (TRIV-78)	06:36		07:01 (TRIV-78)	07:07	07:37	07:12	07:46
	21:15	63	08:01 (TRIV-78)	20:55	63	08:04 (TRIV-78)	20:11	19:19	17:33	17:11
4	06:12		06:58 (TRIV-78)	06:37		07:01 (TRIV-78)	07:08	07:38	07:13	07:47
	21:15	62	08:00 (TRIV-78)	20:54	63	08:04 (TRIV-78)	20:10	19:17	17:32	17:11
5	06:12		06:58 (TRIV-78)	06:38		07:02 (TRIV-78)	07:09	07:39	07:14	07:48
	21:15	63	08:01 (TRIV-78)	20:53	61	08:03 (TRIV-78)	20:08	19:16	17:31	17:11
6	06:13		06:58 (TRIV-78)	06:39		07:02 (TRIV-78)	07:10	07:40	07:15	07:49
	21:15	63	08:01 (TRIV-78)	20:52	61	08:03 (TRIV-78)	20:06	19:14	17:30	17:11
7	06:14		06:58 (TRIV-78)	06:40		07:03 (TRIV-78)	07:11	07:41	07:17	07:50
	21:15	64	08:02 (TRIV-78)	20:51	59	08:02 (TRIV-78)	20:05	19:13	17:29	17:11
8	06:14		06:59 (TRIV-78)	06:41		07:04 (TRIV-78)	07:12	07:42	07:18	07:51
	21:14	63	08:02 (TRIV-78)	20:49	57	08:01 (TRIV-78)	20:03	19:11	17:28	17:11
9	06:15		06:58 (TRIV-78)	06:42		07:04 (TRIV-78)	07:13	07:44	07:19	07:52
	21:14	64	08:02 (TRIV-78)	20:48	57	08:01 (TRIV-78)	20:01	19:09	17:27	17:11
10	06:16		06:59 (TRIV-78)	06:43		07:05 (TRIV-78)	07:14	07:45	07:20	07:53
	21:14	64	08:03 (TRIV-78)	20:47	55	08:00 (TRIV-78)	20:00	19:08	17:26	17:11
11	06:16		06:59 (TRIV-78)	06:44		07:06 (TRIV-78)	07:15	07:46	07:21	07:54
	21:13	64	08:03 (TRIV-78)	20:46	53	07:59 (TRIV-78)	19:56	19:06	17:25	17:11
12	06:17		06:58 (TRIV-78)	06:45		07:07 (TRIV-78)	07:16	07:47	07:23	07:55
	21:13	65	08:03 (TRIV-78)	20:44	51	07:58 (TRIV-78)	19:55	19:04	17:24	17:11
13	06:18		06:58 (TRIV-78)	06:46		07:07 (TRIV-78)	07:17	07:48	07:24	07:55
	21:12	66	08:04 (TRIV-78)	20:43	48	07:55 (TRIV-78)	19:53	19:03	17:23	17:11
14	06:18		06:59 (TRIV-78)	06:47		07:08 (TRIV-78)	07:18	07:49	07:25	07:56
	21:12	65	08:04 (TRIV-78)	20:42	46	07:54 (TRIV-78)	19:51	19:01	17:22	17:11
15	06:19		06:59 (TRIV-78)	06:48		07:09 (TRIV-78)	07:19	07:50	07:26	07:57
	21:11	66	08:05 (TRIV-78)	20:40	43	07:52 (TRIV-78)	19:50	19:00	17:21	17:11
16	06:20		06:58 (TRIV-78)	06:49		07:11 (TRIV-78)	07:20	07:51	07:27	07:58
	21:11	66	08:04 (TRIV-78)	20:39	39	07:50 (TRIV-78)	19:48	18:58	17:20	17:12
17	06:21		06:59 (TRIV-78)	06:50		07:13 (TRIV-78)	07:21	07:52	07:28	07:58
	21:10	66	08:05 (TRIV-78)	20:37	35	07:48 (TRIV-78)	19:46	18:57	17:19	17:12
18	06:22		06:59 (TRIV-78)	06:51		07:15 (TRIV-78)	07:22	07:53	07:30	07:59
	21:09	66	08:05 (TRIV-78)	20:36	31	07:46 (TRIV-78)	19:45	18:55	17:19	17:12
19	06:22		06:59 (TRIV-78)	06:52		07:17 (TRIV-78)	07:23	07:54	07:31	07:59
	21:09	67	08:06 (TRIV-78)	20:35	26	07:43 (TRIV-78)	19:43	18:54	17:18	17:13
20	06:23		06:59 (TRIV-78)	06:53		07:21 (TRIV-78)	07:24	07:56	07:32	08:00
	21:08	67	08:06 (TRIV-78)	20:33	18	07:39 (TRIV-78)	19:41	18:52	17:17	17:13
21	06:24		06:58 (TRIV-78)	06:54			07:25	07:57	07:33	08:01
	21:07	67	08:05 (TRIV-78)	20:32			19:39	18:51	17:17	17:14
22	06:25		06:59 (TRIV-78)	06:55			07:26	07:58	07:34	08:01
	21:07	66	08:05 (TRIV-78)	20:30			19:38	18:49	17:16	17:14
23	06:26		06:59 (TRIV-78)	06:56			07:27	07:59	07:35	08:02
	21:06	67	08:06 (TRIV-78)	20:29			19:36	18:48	17:15	17:15
24	06:27		06:59 (TRIV-78)	06:57			07:28	08:00	07:37	08:02
	21:05	67	08:06 (TRIV-78)	20:27			19:34	18:46	17:15	17:15
25	06:28		06:59 (TRIV-78)	06:58			07:29	08:01	07:38	08:02
	21:04	67	08:06 (TRIV-78)	20:26			19:33	18:45	17:14	17:16
26	06:29		07:00 (TRIV-78)	06:59			07:30	08:02	07:39	08:03
	21:03	66	08:06 (TRIV-78)	20:24			19:31	18:44	17:14	17:16
27	06:30		07:00 (TRIV-78)	07:00			07:31	08:04	07:40	08:03
	21:02	66	08:06 (TRIV-78)	20:23			19:29	18:42	17:13	17:17
28	06:30		06:59 (TRIV-78)	07:01			07:32	08:05	07:41	08:04
	21:01	66	08:05 (TRIV-78)	20:21			19:27	18:41	17:13	17:18
29	06:31		06:59 (TRIV-78)	07:02			07:33	08:06	07:42	08:04
	21:00	66	08:05 (TRIV-78)	20:19			19:26	18:40	17:12	17:18
30	06:32		07:00 (TRIV-78)	07:03			07:34	08:07	07:43	08:04
	20:59	65	08:05 (TRIV-78)	20:18			19:24	18:38	17:12	17:19
31	06:33		07:00 (TRIV-78)	07:04				08:08		08:04
	20:58	65	08:05 (TRIV-78)	20:16				18:37		17:20
Potential sun hours	459			428			375	345	298	288
Total, worst case		2016			994					
Sun reduction		0.76			0.75					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.70			0.70					
Total reduction		0.53			0.52					
Total, real		1067			519					

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:
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217 Montgomery St., Suite 1000
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 159 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1182)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:04			07:51		17:04 (TRIV-60)	07:15		17:35 (TRIV-58)	07:24		18:27 (TRIV-58)	06:38			06:09		20:14 (TRIV-52b)
	17:21			17:55	21	17:25 (TRIV-60)	18:29	33	18:08 (TRIV-58)	20:02	34	19:01 (TRIV-58)	20:34			21:04	26	20:40 (TRIV-57)
2	08:04			07:50		17:06 (TRIV-60)	07:13		17:32 (TRIV-58)	07:22		18:29 (TRIV-58)	06:37			06:09		20:15 (TRIV-52b)
	17:22			17:57	18	17:24 (TRIV-60)	18:31	36	18:08 (TRIV-58)	20:03	29	18:58 (TRIV-58)	20:35			21:05	26	20:41 (TRIV-57)
3	08:05			07:49		17:07 (TRIV-60)	07:12		17:31 (TRIV-58)	07:20		18:31 (TRIV-58)	06:36			06:09		20:14 (TRIV-52b)
	17:23			17:58	16	17:23 (TRIV-60)	18:32	39	18:10 (TRIV-58)	20:05	24	18:55 (TRIV-58)	20:36			21:05	27	20:41 (TRIV-57)
4	08:05			07:48		17:10 (TRIV-60)	07:10		17:29 (TRIV-58)	07:19		18:36 (TRIV-58)	06:34			06:08		20:15 (TRIV-52b)
	17:24			17:59	11	17:21 (TRIV-60)	18:33	42	18:11 (TRIV-58)	20:06	15	18:51 (TRIV-58)	20:37			21:06	27	20:42 (TRIV-57)
5	08:05			07:47		17:14 (TRIV-60)	07:08		17:28 (TRIV-58)	07:17			06:33			06:08		20:16 (TRIV-52b)
	17:25			18:00	4	17:18 (TRIV-60)	18:34	45	18:13 (TRIV-58)	20:07			20:38			21:07	27	20:43 (TRIV-57)
6	08:05			07:46			07:07		17:26 (TRIV-58)	07:16			06:32			06:08		20:16 (TRIV-52b)
	17:26			18:02			18:35	48	18:14 (TRIV-58)	20:08			20:40			21:08	27	20:43 (TRIV-57)
7	08:04			07:44			07:05		17:24 (TRIV-58)	07:14			06:31			06:07		20:17 (TRIV-52b)
	17:26			18:03			18:36	50	18:14 (TRIV-58)	20:09			20:41			21:08	26	20:43 (TRIV-57)
8	08:04			07:43			08:04		18:24 (TRIV-58)	07:12			06:29			06:07		20:18 (TRIV-52b)
	17:27			18:04			19:37	52	19:16 (TRIV-58)	20:10			20:42			21:09	26	20:44 (TRIV-57)
9	08:04			07:42			08:02		18:22 (TRIV-58)	07:11			06:28			06:07		20:18 (TRIV-52b)
	17:28			18:05			19:39	55	19:17 (TRIV-58)	20:11			20:43			21:09	27	20:45 (TRIV-57)
10	08:04		17:03 (TRIV-60)	07:41			08:00		18:22 (TRIV-58)	07:09			06:27		20:19 (TRIV-52b)	06:07		20:19 (TRIV-52b)
	17:30	1	17:04 (TRIV-60)	18:07			19:40	56	19:18 (TRIV-58)	20:12			20:44	2	20:21 (TRIV-52b)	21:10	27	20:46 (TRIV-57)
11	08:04		17:01 (TRIV-60)	07:40			07:59		18:21 (TRIV-58)	07:07			06:26		20:17 (TRIV-52b)	06:06		20:20 (TRIV-57)
	17:31	3	17:04 (TRIV-60)	18:08			19:41	57	19:18 (TRIV-58)	20:13			20:45	5	20:22 (TRIV-52b)	21:11	26	20:46 (TRIV-57)
12	08:04		17:01 (TRIV-60)	07:38			07:57		18:20 (TRIV-58)	07:06			06:25		20:15 (TRIV-52b)	06:06		20:19 (TRIV-57)
	17:32	5	17:06 (TRIV-60)	18:09			19:42	57	19:17 (TRIV-58)	20:14			20:46	7	20:22 (TRIV-52b)	21:11	27	20:46 (TRIV-57)
13	08:03		17:01 (TRIV-60)	07:37			07:55		18:20 (TRIV-58)	07:04			06:24		20:14 (TRIV-52b)	06:06		20:20 (TRIV-57)
	17:33	6	17:07 (TRIV-60)	18:10			19:43	58	19:18 (TRIV-58)	20:15			20:47	9	20:23 (TRIV-52b)	21:12	26	20:46 (TRIV-57)
14	08:03		17:00 (TRIV-60)	07:36			07:54		18:19 (TRIV-58)	07:03			06:23		20:13 (TRIV-52b)	06:06		20:20 (TRIV-57)
	17:34	8	17:08 (TRIV-60)	18:12			19:44	59	19:18 (TRIV-58)	20:16			20:48	11	20:24 (TRIV-52b)	21:12	27	20:47 (TRIV-57)
15	08:02		17:00 (TRIV-60)	07:35			07:52		18:19 (TRIV-58)	07:01			06:22		20:12 (TRIV-52b)	06:06		20:20 (TRIV-57)
	17:35	9	17:09 (TRIV-60)	18:13			19:45	58	19:17 (TRIV-58)	20:17			20:49	13	20:25 (TRIV-52b)	21:13	27	20:47 (TRIV-57)
16	08:02		16:59 (TRIV-60)	07:33			07:51		18:19 (TRIV-58)	07:00			06:21		20:13 (TRIV-52b)	06:06		20:20 (TRIV-57)
	17:36	11	17:10 (TRIV-60)	18:14			19:46	59	19:18 (TRIV-58)	20:18			20:50	14	20:27 (TRIV-52b)	21:13	27	20:47 (TRIV-57)
17	08:02		17:00 (TRIV-60)	07:32			07:49		18:18 (TRIV-58)	06:58			06:20		20:12 (TRIV-52b)	06:06		20:21 (TRIV-57)
	17:37	12	17:12 (TRIV-60)	18:15			19:47	59	19:17 (TRIV-58)	20:19			20:51	16	20:28 (TRIV-52b)	21:13	28	20:49 (TRIV-57)
18	08:01		16:59 (TRIV-60)	07:31			07:47		18:18 (TRIV-58)	06:57			06:19		20:12 (TRIV-52b)	06:06		20:22 (TRIV-57)
	17:38	14	17:13 (TRIV-60)	18:16			19:48	59	19:17 (TRIV-58)	20:20			20:52	16	20:28 (TRIV-52b)	21:14	27	20:49 (TRIV-57)
19	08:01		17:00 (TRIV-60)	07:29			07:46		18:19 (TRIV-58)	06:55			06:18		20:11 (TRIV-52b)	06:06		20:22 (TRIV-57)
	17:40	14	17:14 (TRIV-60)	18:18			19:50	58	19:17 (TRIV-58)	20:22			20:53	18	20:29 (TRIV-52b)	21:14	27	20:49 (TRIV-57)
20	08:00		16:59 (TRIV-60)	07:28			07:44		18:18 (TRIV-58)	06:54			06:17		20:11 (TRIV-52b)	06:07		20:22 (TRIV-57)
	17:41	16	17:15 (TRIV-60)	18:19			19:51	58	19:16 (TRIV-58)	20:23			20:54	19	20:30 (TRIV-57)	21:14	27	20:49 (TRIV-57)
21	07:59		16:59 (TRIV-60)	07:26			07:42		18:18 (TRIV-58)	06:52			06:17		20:11 (TRIV-52b)	06:07		20:22 (TRIV-57)
	17:42	17	17:16 (TRIV-60)	18:20			19:52	57	19:15 (TRIV-58)	20:24			20:55	19	20:30 (TRIV-57)	21:15	27	20:49 (TRIV-57)
22	07:59		17:00 (TRIV-60)	07:25			07:41		18:19 (TRIV-58)	06:51			06:16		20:11 (TRIV-52b)	06:07		20:22 (TRIV-57)
	17:43	18	17:18 (TRIV-60)	18:21			19:53	56	19:15 (TRIV-58)	20:25			20:55	21	20:32 (TRIV-57)	21:15	27	20:49 (TRIV-57)
23	07:58		16:59 (TRIV-60)	07:24			07:39		18:19 (TRIV-58)	06:49			06:15		20:11 (TRIV-52b)	06:07		20:23 (TRIV-57)
	17:44	20	17:19 (TRIV-60)	18:22			19:54	55	19:14 (TRIV-58)	20:26			20:56	22	20:33 (TRIV-57)	21:15	27	20:50 (TRIV-57)
24	07:57		16:59 (TRIV-60)	07:22			07:37		18:19 (TRIV-58)	06:48			06:14		20:11 (TRIV-52b)	06:08		20:23 (TRIV-57)
	17:45	21	17:20 (TRIV-60)	18:24			19:55	54	19:13 (TRIV-58)	20:27			20:57	22	20:33 (TRIV-57)	21:15	27	20:50 (TRIV-57)
25	07:57		16:59 (TRIV-60)	07:21			07:35		18:19 (TRIV-58)	06:46			06:14		20:12 (TRIV-52b)	06:08		20:22 (TRIV-57)
	17:47	22	17:21 (TRIV-60)	18:25			19:56	52	19:11 (TRIV-58)	20:28			20:58	23	20:35 (TRIV-57)	21:15	28	20:50 (TRIV-57)
26	07:56		17:01 (TRIV-60)	07:19		17:47 (TRIV-58)	07:34		18:20 (TRIV-58)	06:45			06:13		20:12 (TRIV-52b)	06:08		20:23 (TRIV-57)
	17:48	23	17:24 (TRIV-60)	18:26	11	17:58 (TRIV-58)	19:57	51	19:11 (TRIV-58)	20:29			20:59	23	20:35 (TRIV-57)	21:15	27	20:50 (TRIV-57)
27	07:55		17:01 (TRIV-60)	07:18		17:41 (TRIV-58)	07:32		18:21 (TRIV-58)	06:43			06:12		20:11 (TRIV-52b)	06:08		20:23 (TRIV-57)
	17:49	24	17:25 (TRIV-60)	18:27	21	18:02 (TRIV-58)	19:58	48	19:09 (TRIV-58)	20:30			21:00	24	20:35 (TRIV-57)	21:16	27	20:50 (TRIV-57)
28	07:54		17:01 (TRIV-60)	07:16		17:38 (TRIV-58)	07:30		18:21 (TRIV-58)	06:42			06:12		20:12 (TRIV-52b)	06:09		20:23 (TRIV-57)
	17:50	25	17:26 (TRIV-60)	18:28	28	18:06 (TRIV-58)	19:59	47	19:08 (TRIV-58)	20:31			21:01	25	20:37 (TRIV-57)	21:16	27	20:50 (TRIV-57)
29	07:53		17:02 (TRIV-60)				07:29		18:23 (TRIV-58)	06:41			06:11		20:12 (TRIV-52b)	06:09		20:24 (TRIV-57)
	17:52	25	17:27 (TRIV-60)				20:00	44	19:07 (TRIV-58)	20:32			21:02	25	20:37 (TRIV-57)	21:16	26	20:50 (TRIV-57)
30	07:53		17:03 (TRIV-60)				07:27		18:24 (TRIV-58)	06:39			06:10		20:13 (TRIV-52b)	06:10		20:24 (TRIV-57)
	17:53	23	17:26 (TRIV-60)				20:00	41	19:05 (TRIV-58)	20:33			21:02	25	20:38 (TRIV-57)	21:16	26	20:50 (TRIV-57)
31	07:52		17:03 (TRIV-60)				07:25		18:25 (TRIV-58)				06:10		20:13 (TRIV-52b)			
	17:54	23	17:26 (TRIV-60)				20:01	38	19:03 (TRIV-58)				21:03	25	20:38 (TRIV-57)			
Potential sun hours	298			297			370			398			448			452		
Total, worst case		340			130			1581			102			384			804	
Sun reduction		0.50			0.55			0.57			0.63			0.69			0.74	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.70			0.69			0.68			0.68			0.63			0.63	
Total reduction		0.35			0.38			0.39			0.43			0.44			0.47	
Total, real		119			50			619			44			168			376	

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 159 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1182)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December		
1	06:10		20:24 (TRIV-57)	06:34		20:26 (TRIV-52b)	07:05			07:35		18:00 (TRIV-58)	07:09			07:44		16:43 (TRIV-60)
	21:16	26	20:50 (TRIV-57)	20:57	7	20:33 (TRIV-52b)	20:15			19:22	57	18:57 (TRIV-58)	17:36			17:12	3	16:46 (TRIV-60)
2	06:11		20:23 (TRIV-52b)	06:35		20:28 (TRIV-52b)	07:06			07:36		18:00 (TRIV-58)	07:11			07:45		16:46 (TRIV-60)
	21:15	27	20:50 (TRIV-57)	20:56	4	20:32 (TRIV-52b)	20:13			19:21	56	18:56 (TRIV-58)	17:35			17:11	1	16:47 (TRIV-60)
3	06:11		20:24 (TRIV-52b)	06:36		20:30 (TRIV-52b)	07:07			07:37		18:00 (TRIV-58)	07:12			07:46		
	21:15	26	20:50 (TRIV-57)	20:55	1	20:31 (TRIV-52b)	20:11			19:19	56	18:56 (TRIV-58)	17:33			17:11		
4	06:12		20:23 (TRIV-52b)	06:37			07:08			07:38		18:00 (TRIV-58)	07:13			07:47		
	21:15	26	20:49 (TRIV-57)	20:54			20:10			19:17	55	18:55 (TRIV-58)	17:32			17:11		
5	06:12		20:23 (TRIV-52b)	06:38			07:09			07:39		18:00 (TRIV-58)	07:14			07:48		
	21:15	27	20:50 (TRIV-57)	20:53			20:08			19:16	53	18:53 (TRIV-58)	17:31			17:11		
6	06:13		20:22 (TRIV-52b)	06:39			07:10			07:40		18:01 (TRIV-58)	07:15		16:43 (TRIV-60)	07:49		
	21:15	27	20:49 (TRIV-57)	20:52			20:06			19:14	51	18:52 (TRIV-58)	17:30	5	16:48 (TRIV-60)	17:11		
7	06:14		20:23 (TRIV-52b)	06:40			07:11			07:41		18:01 (TRIV-58)	07:16		16:39 (TRIV-60)	07:50		
	21:14	26	20:49 (TRIV-57)	20:50			20:05			19:12	49	18:50 (TRIV-58)	17:29	13	16:52 (TRIV-60)	17:11		
8	06:14		20:23 (TRIV-52b)	06:41			07:12		18:31 (TRIV-58)	07:42		18:02 (TRIV-58)	07:18		16:37 (TRIV-60)	07:51		
	21:14	26	20:49 (TRIV-57)	20:49			20:03	13	18:44 (TRIV-58)	19:11	46	18:48 (TRIV-58)	17:28	16	16:53 (TRIV-60)	17:11		
9	06:15		20:22 (TRIV-52b)	06:42			07:13		18:26 (TRIV-58)	07:43		18:03 (TRIV-58)	07:19		16:36 (TRIV-60)	07:52		
	21:14	26	20:48 (TRIV-57)	20:48			20:01	22	18:48 (TRIV-58)	19:09	43	18:46 (TRIV-58)	17:27	19	16:55 (TRIV-60)	17:11		
10	06:16		20:22 (TRIV-52b)	06:43			07:14		18:23 (TRIV-58)	07:45		18:04 (TRIV-58)	07:20		16:35 (TRIV-60)	07:53		
	21:13	26	20:48 (TRIV-57)	20:47			20:00	28	18:51 (TRIV-58)	19:08	41	18:45 (TRIV-58)	17:26	21	16:56 (TRIV-60)	17:11		
11	06:16		20:22 (TRIV-52b)	06:44			07:15		18:20 (TRIV-58)	07:46		18:06 (TRIV-58)	07:21		16:34 (TRIV-60)	07:54		
	21:13	26	20:48 (TRIV-57)	20:45			19:56	33	18:53 (TRIV-58)	19:06	38	18:44 (TRIV-58)	17:25	23	16:57 (TRIV-60)	17:11		
12	06:17		20:21 (TRIV-52b)	06:45			07:16		18:17 (TRIV-58)	07:47		18:07 (TRIV-58)	07:22		16:34 (TRIV-60)	07:54		
	21:13	26	20:47 (TRIV-57)	20:44			19:55	38	18:55 (TRIV-58)	19:04	35	18:42 (TRIV-58)	17:24	24	16:58 (TRIV-60)	17:11		
13	06:18		20:21 (TRIV-52b)	06:46			07:17		18:15 (TRIV-58)	07:48		18:09 (TRIV-58)	07:24		16:34 (TRIV-60)	07:55		
	21:12	26	20:47 (TRIV-57)	20:43			19:53	41	18:56 (TRIV-58)	19:03	31	18:40 (TRIV-58)	17:23	25	16:59 (TRIV-60)	17:11		
14	06:18		20:22 (TRIV-52b)	06:47			07:18		18:14 (TRIV-58)	07:49		18:12 (TRIV-58)	07:25		16:33 (TRIV-60)	07:56		
	21:12	25	20:47 (TRIV-57)	20:42			19:51	43	18:57 (TRIV-58)	19:01	25	18:37 (TRIV-58)	17:22	25	16:58 (TRIV-60)	17:11		
15	06:19		20:22 (TRIV-52b)	06:48			07:19		18:12 (TRIV-58)	07:50		18:15 (TRIV-58)	07:26		16:33 (TRIV-60)	07:57		
	21:11	24	20:46 (TRIV-57)	20:40			19:50	46	18:58 (TRIV-58)	19:00	18	18:33 (TRIV-58)	17:21	24	16:57 (TRIV-60)	17:11		
16	06:20		20:21 (TRIV-52b)	06:49			07:20		18:10 (TRIV-58)	07:51			07:27		16:34 (TRIV-60)	07:57		
	21:11	24	20:45 (TRIV-57)	20:39			19:48	49	18:59 (TRIV-58)	18:58			17:20	23	16:57 (TRIV-60)	17:12		
17	06:21		20:21 (TRIV-52b)	06:50			07:21		18:09 (TRIV-58)	07:52			07:28		16:33 (TRIV-60)	07:58		
	21:10	24	20:45 (TRIV-57)	20:37			19:46	50	18:59 (TRIV-58)	18:57			17:19	22	16:55 (TRIV-60)	17:12		
18	06:22		20:21 (TRIV-52b)	06:51			07:22		18:08 (TRIV-58)	07:53			07:30		16:33 (TRIV-60)	07:59		
	21:09	23	20:44 (TRIV-57)	20:36			19:44	52	19:00 (TRIV-58)	18:55			17:19	21	16:54 (TRIV-60)	17:12		
19	06:22		20:21 (TRIV-52b)	06:52			07:23		18:06 (TRIV-58)	07:54			07:31		16:33 (TRIV-60)	07:59		
	21:09	23	20:44 (TRIV-57)	20:35			19:43	54	19:00 (TRIV-58)	18:54			17:18	20	16:53 (TRIV-60)	17:13		
20	06:23		20:21 (TRIV-52b)	06:53			07:24		18:05 (TRIV-58)	07:55			07:32		16:35 (TRIV-60)	08:00		
	21:08	21	20:42 (TRIV-57)	20:33			19:41	55	19:00 (TRIV-58)	18:52			17:17	18	16:53 (TRIV-60)	17:13		
21	06:24		20:21 (TRIV-52b)	06:54			07:25		18:04 (TRIV-58)	07:57			07:33		16:35 (TRIV-60)	08:00		
	21:07	21	20:42 (TRIV-57)	20:32			19:39	56	19:00 (TRIV-58)	18:51			17:16	17	16:52 (TRIV-60)	17:14		
22	06:25		20:21 (TRIV-52b)	06:55			07:26		18:04 (TRIV-58)	07:58			07:34		16:35 (TRIV-60)	08:01		
	21:06	20	20:41 (TRIV-57)	20:30			19:38	56	19:00 (TRIV-58)	18:49			17:16	16	16:51 (TRIV-60)	17:14		
23	06:26		20:21 (TRIV-52b)	06:56			07:27		18:03 (TRIV-58)	07:59			07:35		16:36 (TRIV-60)	08:01		
	21:06	20	20:41 (TRIV-57)	20:29			19:36	57	19:00 (TRIV-58)	18:48			17:15	14	16:50 (TRIV-60)	17:15		
24	06:27		20:22 (TRIV-52b)	06:57			07:28		18:02 (TRIV-58)	08:00			07:36		16:37 (TRIV-60)	08:02		
	21:05	18	20:40 (TRIV-57)	20:27			19:34	58	19:00 (TRIV-58)	18:46			17:15	14	16:51 (TRIV-60)	17:15		
25	06:28		20:22 (TRIV-52b)	06:58			07:29		18:01 (TRIV-58)	08:01			07:38		16:38 (TRIV-60)	08:02		
	21:04	17	20:39 (TRIV-52b)	20:26			19:33	59	19:00 (TRIV-58)	18:45			17:14	12	16:50 (TRIV-60)	17:16		
26	06:29		20:23 (TRIV-52b)	06:59			07:30		18:01 (TRIV-58)	08:02			07:39		16:38 (TRIV-60)	08:03		
	21:03	16	20:39 (TRIV-52b)	20:24			19:31	59	19:00 (TRIV-58)	18:44			17:14	11	16:49 (TRIV-60)	17:16		
27	06:30		20:23 (TRIV-52b)	07:00			07:31		18:00 (TRIV-58)	08:03			07:40		16:39 (TRIV-60)	08:03		
	21:02	15	20:38 (TRIV-52b)	20:22			19:29	60	19:00 (TRIV-58)	18:42			17:13	9	16:48 (TRIV-60)	17:17		
28	06:30		20:23 (TRIV-52b)	07:01			07:32		18:00 (TRIV-58)	08:05			07:41		16:40 (TRIV-60)	08:03		
	21:01	13	20:36 (TRIV-52b)	20:21			19:27	59	18:59 (TRIV-58)	18:41			17:13	8	16:48 (TRIV-60)	17:18		
29	06:31		20:23 (TRIV-52b)	07:02			07:33		18:00 (TRIV-58)	08:06			07:42		16:41 (TRIV-60)	08:04		
	21:00	12	20:35 (TRIV-52b)	20:19			19:26	59	18:59 (TRIV-58)	18:40			17:12	6	16:47 (TRIV-60)	17:18		
30	06:32		20:24 (TRIV-52b)	07:03			07:34		18:00 (TRIV-58)	08:07			07:43		16:42 (TRIV-60)	08:04		
	20:59	11	20:35 (TRIV-52b)	20:18			19:24	58	18:58 (TRIV-58)	18:38			17:12	5	16:47 (TRIV-60)	17:19		
31	06:33		20:25 (TRIV-52b)	07:04						08:08						08:04		
	20:58	9	20:34 (TRIV-52b)	20:16						18:37						17:20		
Potential sun hours	459			428			375			345			298			288		
Total, worst case		677			12			1105			654			411			4	
Sun reduction		0.76			0.75			0.67			0.60			0.40			0.36	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.63			0.63			0.68			0.68			0.70			0.70	
Total reduction		0.48			0.48			0.46			0.41			0.28			0.25	
Total, real		326			6			509			270			115			1	

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 160 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1183)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February			March		April			May			June		
1	08:04		07:51			07:15		07:24			06:38		19:12 (TRIV-58)	06:09		19:34 (TRIV-58)
	17:21		17:55			18:29		20:02			20:34	56	20:08 (TRIV-58)	21:04	13	19:47 (TRIV-58)
2	08:04		07:50			07:13		07:22			06:37		19:12 (TRIV-58)	06:09		19:37 (TRIV-58)
	17:22		17:57			18:31		20:03			20:35	56	20:08 (TRIV-58)	21:05	8	19:45 (TRIV-58)
3	08:05		07:49			07:12		07:20			06:36		19:11 (TRIV-58)	06:09		
	17:23		17:58			18:32		20:05			20:36	56	20:07 (TRIV-58)	21:05		
4	08:05		07:48			07:10		07:19			06:34		19:11 (TRIV-58)	06:08		
	17:24		17:59			18:33		20:06			20:37	56	20:07 (TRIV-58)	21:06		
5	08:05		07:47			07:08		07:17			06:33		19:11 (TRIV-58)	06:08		
	17:25		18:00			18:34		20:07			20:38	56	20:07 (TRIV-58)	21:07		
6	08:05		07:46			07:07		07:16			06:32		19:12 (TRIV-58)	06:08		
	17:26		18:02			18:35		20:08			20:40	55	20:07 (TRIV-58)	21:08		
7	08:04		07:44			07:05		07:14			06:31		19:12 (TRIV-58)	06:07		
	17:26		18:03			18:36		20:09			20:41	55	20:07 (TRIV-58)	21:08		
8	08:04		07:43			08:04		07:12			06:29		19:11 (TRIV-58)	06:07		
	17:27		18:04			19:37		20:10			20:42	55	20:06 (TRIV-58)	21:09		
9	08:04		07:42		17:41 (TRIV-60)	08:02		07:11			06:28		19:12 (TRIV-58)	06:07		
	17:28		18:05	1	17:42 (TRIV-60)	19:39		20:11			20:43	53	20:05 (TRIV-58)	21:09		
10	08:04		07:41		17:39 (TRIV-60)	08:00		07:09			06:27		19:12 (TRIV-58)	06:07		
	17:30		18:07	4	17:43 (TRIV-60)	19:40		20:12			20:44	53	20:05 (TRIV-58)	21:10		
11	08:04		07:40		17:37 (TRIV-60)	07:59		07:07			06:26		19:12 (TRIV-58)	06:06		
	17:31		18:08	8	17:45 (TRIV-60)	19:41		20:13			20:45	53	20:05 (TRIV-58)	21:11		
12	08:04		07:38		17:35 (TRIV-60)	07:57		07:06			06:25		19:13 (TRIV-58)	06:06		
	17:32		18:09	11	17:46 (TRIV-60)	19:42		20:14			20:46	51	20:04 (TRIV-58)	21:11		
13	08:03		07:37		17:35 (TRIV-60)	07:55		07:04		19:34 (TRIV-58)	06:24		19:13 (TRIV-58)	06:06		
	17:33		18:10	12	17:47 (TRIV-60)	19:43		20:15	18	19:52 (TRIV-58)	20:47	51	20:04 (TRIV-58)	21:12		
14	08:03		07:36		17:34 (TRIV-60)	07:54		07:03		19:30 (TRIV-58)	06:23		19:14 (TRIV-58)	06:06		
	17:34		18:12	15	17:49 (TRIV-60)	19:44		20:16	25	19:55 (TRIV-58)	20:48	49	20:03 (TRIV-58)	21:12		
15	08:02		07:35		17:33 (TRIV-60)	07:52		07:01		19:27 (TRIV-58)	06:22		19:14 (TRIV-58)	06:06		
	17:35		18:13	17	17:50 (TRIV-60)	19:45		20:17	29	19:56 (TRIV-58)	20:49	49	20:03 (TRIV-58)	21:13		
16	08:02		07:33		17:33 (TRIV-60)	07:51		07:00		19:25 (TRIV-58)	06:21		19:16 (TRIV-58)	06:06		
	17:36		18:14	18	17:51 (TRIV-60)	19:46		20:18	32	19:57 (TRIV-58)	20:50	47	20:03 (TRIV-58)	21:13		
17	08:02		07:32		17:33 (TRIV-60)	07:49		06:58		19:23 (TRIV-58)	06:20		19:16 (TRIV-58)	06:06		
	17:37		18:15	20	17:53 (TRIV-60)	19:47		20:19	35	19:58 (TRIV-58)	20:51	46	20:02 (TRIV-58)	21:13		
18	08:01		07:31		17:32 (TRIV-60)	07:47		06:57		19:22 (TRIV-58)	06:19		19:17 (TRIV-58)	06:06		
	17:38		18:16	22	17:54 (TRIV-60)	19:48		20:20	37	19:59 (TRIV-58)	20:52	45	20:02 (TRIV-58)	21:14		
19	08:01		07:29		17:32 (TRIV-60)	07:46		06:55		19:20 (TRIV-58)	06:18		19:18 (TRIV-58)	06:06		
	17:40		18:18	23	17:55 (TRIV-60)	19:50		20:22	40	20:00 (TRIV-58)	20:53	43	20:01 (TRIV-58)	21:14		
20	08:00		07:28		17:32 (TRIV-60)	07:44		06:54		19:19 (TRIV-58)	06:17		19:18 (TRIV-58)	06:07		
	17:41		18:19	24	17:56 (TRIV-60)	19:51		20:23	42	20:01 (TRIV-58)	20:54	42	20:00 (TRIV-58)	21:14		
21	07:59		07:26		17:33 (TRIV-60)	07:42		06:52		19:17 (TRIV-58)	06:17		19:19 (TRIV-58)	06:07		
	17:42		18:20	25	17:58 (TRIV-60)	19:52		20:24	45	20:02 (TRIV-58)	20:55	40	19:59 (TRIV-58)	21:15		
22	07:59		07:25		17:34 (TRIV-60)	07:41		06:51		19:16 (TRIV-58)	06:16		19:20 (TRIV-58)	06:07		
	17:43		18:21	24	17:58 (TRIV-60)	19:53		20:25	47	20:03 (TRIV-58)	20:55	39	19:59 (TRIV-58)	21:15		
23	07:58		07:24		17:34 (TRIV-60)	07:39		06:49		19:15 (TRIV-58)	06:15		19:21 (TRIV-58)	06:07		
	17:44		18:22	23	17:57 (TRIV-60)	19:54		20:26	49	20:04 (TRIV-58)	20:56	37	19:58 (TRIV-58)	21:15		
24	07:57		07:22		17:35 (TRIV-60)	07:37		06:48		19:15 (TRIV-58)	06:14		19:22 (TRIV-58)	06:08		
	17:45		18:24	21	17:56 (TRIV-60)	19:55		20:27	50	20:05 (TRIV-58)	20:57	35	19:57 (TRIV-58)	21:15		
25	07:57		07:21		17:36 (TRIV-60)	07:35		06:46		19:14 (TRIV-58)	06:14		19:23 (TRIV-58)	06:08		
	17:47		18:25	18	17:54 (TRIV-60)	19:56		20:28	52	20:06 (TRIV-58)	20:58	33	19:56 (TRIV-58)	21:15		
26	07:56		07:19		17:38 (TRIV-60)	07:34		06:45		19:13 (TRIV-58)	06:13		19:24 (TRIV-58)	06:08		
	17:48		18:26	15	17:53 (TRIV-60)	19:57		20:29	54	20:07 (TRIV-58)	20:59	31	19:55 (TRIV-58)	21:15		
27	07:55		07:18		17:41 (TRIV-60)	07:32		06:43		19:13 (TRIV-58)	06:12		19:26 (TRIV-58)	06:09		
	17:49		18:27	8	17:49 (TRIV-60)	19:58		20:30	54	20:07 (TRIV-58)	21:00	29	19:55 (TRIV-58)	21:16		
28	07:54		07:16			07:30		06:42		19:13 (TRIV-58)	06:12		19:27 (TRIV-58)	06:09		
	17:50		18:28			19:59		20:31	55	20:08 (TRIV-58)	21:01	26	19:53 (TRIV-58)	21:16		
29	07:53					07:29		06:41		19:12 (TRIV-58)	06:11		19:28 (TRIV-58)	06:09		
	17:52					20:00		20:32	55	20:07 (TRIV-58)	21:02	24	19:52 (TRIV-58)	21:16		
30	07:53					07:27		06:39		19:12 (TRIV-58)	06:10		19:30 (TRIV-58)	06:10		
	17:53					20:00		20:33	55	20:07 (TRIV-58)	21:02	21	19:51 (TRIV-58)	21:16		
31	07:52					07:25					06:10		19:31 (TRIV-58)			
	17:54					20:01					21:03	18	19:49 (TRIV-58)			
Potential sun hours	298		297			370		398			448			452		
Total, worst case			309					774			1360			21		
Sun reduction			0.55					0.63			0.69			0.74		
Oper. time red.			1.00					1.00			1.00			1.00		
Wind dir. red.			0.70					0.64			0.64			0.64		
Total reduction			0.38					0.41			0.45			0.48		
Total, real			119					315			605			10		

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

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

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 160 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1183)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October			November			December
1	06:10			06:34		19:23 (TRIV-58)	07:05	07:35			07:09		17:09 (TRIV-60)	07:44
	21:16			20:57	52	20:15 (TRIV-58)	20:15	19:22			17:36	4	17:13 (TRIV-60)	17:12
2	06:11			06:35		19:23 (TRIV-58)	07:06	07:36			07:10			07:45
	21:15			20:56	53	20:16 (TRIV-58)	20:13	19:21			17:35			17:11
3	06:11			06:36		19:22 (TRIV-58)	07:07	07:37			07:12			07:46
	21:15			20:55	54	20:16 (TRIV-58)	20:11	19:19			17:33			17:11
4	06:12			06:37		19:22 (TRIV-58)	07:08	07:38			07:13			07:47
	21:15			20:54	54	20:16 (TRIV-58)	20:10	19:17			17:32			17:11
5	06:12			06:38		19:22 (TRIV-58)	07:09	07:39			07:14			07:48
	21:15			20:53	54	20:16 (TRIV-58)	20:08	19:16			17:31			17:11
6	06:13			06:39		19:21 (TRIV-58)	07:10	07:40			07:15			07:49
	21:15			20:52	56	20:17 (TRIV-58)	20:06	19:14			17:30			17:11
7	06:14			06:40		19:21 (TRIV-58)	07:11	07:41			07:16			07:50
	21:14			20:50	56	20:17 (TRIV-58)	20:05	19:12			17:29			17:11
8	06:14			06:41		19:21 (TRIV-58)	07:12	07:42			07:18			07:51
	21:14			20:49	56	20:17 (TRIV-58)	20:03	19:11			17:28			17:11
9	06:15			06:42		19:21 (TRIV-58)	07:13	07:43			07:19			07:52
	21:14			20:48	56	20:17 (TRIV-58)	20:01	19:09			17:27			17:11
10	06:16		19:47 (TRIV-58)	06:43		19:21 (TRIV-58)	07:14	07:45			07:20			07:53
	21:13	3	19:50 (TRIV-58)	20:47	56	20:17 (TRIV-58)	20:00	19:08			17:26			17:11
11	06:16		19:43 (TRIV-58)	06:44		19:20 (TRIV-58)	07:15	07:46			07:21			07:54
	21:13	12	19:55 (TRIV-58)	20:45	57	20:17 (TRIV-58)	19:56	19:06			17:25			17:11
12	06:17		19:40 (TRIV-58)	06:45		19:19 (TRIV-58)	07:16	07:47			07:22			07:54
	21:13	16	19:56 (TRIV-58)	20:44	56	20:15 (TRIV-58)	19:55	19:04			17:24			17:11
13	06:18		19:39 (TRIV-58)	06:46		19:19 (TRIV-58)	07:17	07:48			07:24			07:55
	21:12	19	19:58 (TRIV-58)	20:43	56	20:15 (TRIV-58)	19:53	19:03			17:23			17:11
14	06:18		19:38 (TRIV-58)	06:47		19:19 (TRIV-58)	07:18	07:49			07:25			07:56
	21:12	22	20:00 (TRIV-58)	20:42	56	20:15 (TRIV-58)	19:51	19:01			17:22			17:11
15	06:19		19:37 (TRIV-58)	06:48		19:19 (TRIV-58)	07:19	07:50		18:12 (TRIV-60)	07:26			07:57
	21:11	25	20:02 (TRIV-58)	20:40	55	20:14 (TRIV-58)	19:50	19:00	11	18:23 (TRIV-60)	17:21			17:11
16	06:20		19:35 (TRIV-58)	06:49		19:20 (TRIV-58)	07:20	07:51		18:09 (TRIV-60)	07:27			07:57
	21:11	27	20:02 (TRIV-58)	20:39	54	20:14 (TRIV-58)	19:48	18:58	16	18:25 (TRIV-60)	17:20			17:12
17	06:21		19:34 (TRIV-58)	06:50		19:20 (TRIV-58)	07:21	07:52		18:07 (TRIV-60)	07:28			07:58
	21:10	30	20:04 (TRIV-58)	20:37	53	20:13 (TRIV-58)	19:46	18:57	19	18:26 (TRIV-60)	17:19			17:12
18	06:22		19:33 (TRIV-58)	06:51		19:20 (TRIV-58)	07:22	07:53		18:05 (TRIV-60)	07:30			07:59
	21:09	32	20:05 (TRIV-58)	20:36	52	20:12 (TRIV-58)	19:44	18:55	22	18:27 (TRIV-60)	17:19			17:12
19	06:22		19:33 (TRIV-58)	06:52		19:20 (TRIV-58)	07:23	07:54		18:05 (TRIV-60)	07:31			07:59
	21:09	34	20:07 (TRIV-58)	20:35	51	20:11 (TRIV-58)	19:43	18:54	24	18:29 (TRIV-60)	17:18			17:13
20	06:23		19:31 (TRIV-58)	06:53		19:21 (TRIV-58)	07:24	07:55		18:04 (TRIV-60)	07:32			08:00
	21:08	36	20:07 (TRIV-58)	20:33	48	20:09 (TRIV-58)	19:41	18:52	25	18:29 (TRIV-60)	17:17			17:13
21	06:24		19:30 (TRIV-58)	06:54		19:21 (TRIV-58)	07:25	07:57		18:03 (TRIV-60)	07:33			08:00
	21:07	38	20:08 (TRIV-58)	20:32	47	20:08 (TRIV-58)	19:39	18:51	25	18:28 (TRIV-60)	17:16			17:14
22	06:25		19:30 (TRIV-58)	06:55		19:22 (TRIV-58)	07:26	07:58		18:02 (TRIV-60)	07:34			08:01
	21:06	39	20:09 (TRIV-58)	20:30	44	20:06 (TRIV-58)	19:38	18:49	24	18:26 (TRIV-60)	17:16			17:14
23	06:26		19:29 (TRIV-58)	06:56		19:23 (TRIV-58)	07:27	07:59		18:02 (TRIV-60)	07:35			08:01
	21:06	41	20:10 (TRIV-58)	20:29	42	20:05 (TRIV-58)	19:36	18:48	22	18:24 (TRIV-60)	17:15			17:15
24	06:27		19:28 (TRIV-58)	06:57		19:24 (TRIV-58)	07:28	08:00		18:03 (TRIV-60)	07:36			08:02
	21:05	43	20:11 (TRIV-58)	20:27	40	20:04 (TRIV-58)	19:34	18:46	21	18:24 (TRIV-60)	17:15			17:15
25	06:28		19:28 (TRIV-58)	06:58		19:25 (TRIV-58)	07:29	08:01		18:02 (TRIV-60)	07:38			08:02
	21:04	44	20:12 (TRIV-58)	20:26	37	20:02 (TRIV-58)	19:33	18:45	20	18:22 (TRIV-60)	17:14			17:16
26	06:29		19:27 (TRIV-58)	06:59		19:26 (TRIV-58)	07:30	08:02		18:02 (TRIV-60)	07:39			08:03
	21:03	46	20:13 (TRIV-58)	20:24	35	20:01 (TRIV-58)	19:31	18:44	19	18:21 (TRIV-60)	17:14			17:16
27	06:30		19:27 (TRIV-58)	07:00		19:27 (TRIV-58)	07:31	08:03		18:03 (TRIV-60)	07:40			08:03
	21:02	46	20:13 (TRIV-58)	20:22	32	19:59 (TRIV-58)	19:29	18:42	16	18:19 (TRIV-60)	17:13			17:17
28	06:30		19:25 (TRIV-58)	07:01		19:29 (TRIV-58)	07:32	08:05		18:04 (TRIV-60)	07:41			08:03
	21:01	48	20:13 (TRIV-58)	20:21	29	19:58 (TRIV-58)	19:27	18:41	14	18:18 (TRIV-60)	17:13			17:18
29	06:31		19:25 (TRIV-58)	07:02		19:32 (TRIV-58)	07:33	08:06		18:04 (TRIV-60)	07:42			08:04
	21:00	49	20:14 (TRIV-58)	20:19	24	19:56 (TRIV-58)	19:26	18:40	13	18:17 (TRIV-60)	17:12			17:18
30	06:32		19:24 (TRIV-58)	07:03		19:35 (TRIV-58)	07:34	08:07		18:05 (TRIV-60)	07:43			08:04
	20:59	50	20:14 (TRIV-58)	20:18	17	19:52 (TRIV-58)	19:24	18:38	10	18:15 (TRIV-60)	17:12			17:19
31	06:33		19:24 (TRIV-58)	07:04				08:08		18:06 (TRIV-60)				08:04
	20:58	51	20:15 (TRIV-58)	20:16				18:37	8	18:14 (TRIV-60)				17:20
Potential sun hours	459			428			375	345			298			288
Total, worst case		751			1432				309			4		
Sun reduction		0.76			0.75				0.60			0.40		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.64			0.64				0.70			0.70		
Total reduction		0.49			0.48				0.42			0.28		
Total, real		368			693				130			1		

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 161 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1184)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February			March			April		May			June		
1	08:04	07:51				07:15		17:46 (TRIV-60)	07:24		06:38			06:09		19:41 (TRIV-58)
	17:21	17:55				18:29	22	18:08 (TRIV-60)	20:02		20:34			21:04	54	20:35 (TRIV-58)
2	08:04	07:50				07:13		17:45 (TRIV-60)	07:22		06:37			06:09		19:42 (TRIV-58)
	17:22	17:57				18:31	23	18:08 (TRIV-60)	20:03		20:35			21:05	54	20:36 (TRIV-58)
3	08:05	07:49				07:12		17:46 (TRIV-60)	07:20		06:36			06:09		19:42 (TRIV-58)
	17:23	17:58				18:32	24	18:10 (TRIV-60)	20:05		20:36			21:05	54	20:36 (TRIV-58)
4	08:05	07:48				07:10		17:46 (TRIV-60)	07:19		06:34			06:08		19:42 (TRIV-58)
	17:24	17:59				18:33	25	18:11 (TRIV-60)	20:06		20:37			21:06	54	20:36 (TRIV-58)
5	08:05	07:47				07:08		17:47 (TRIV-60)	07:17		06:33		20:00 (TRIV-58)	06:08		19:43 (TRIV-58)
	17:25	18:00				18:34	24	18:11 (TRIV-60)	20:07		20:38	15	20:15 (TRIV-58)	21:07	54	20:37 (TRIV-58)
6	08:05	07:46				07:07		17:47 (TRIV-60)	07:16		06:32		19:57 (TRIV-58)	06:08		19:42 (TRIV-58)
	17:26	18:02				18:35	22	18:09 (TRIV-60)	20:08		20:40	20	20:17 (TRIV-58)	21:08	54	20:36 (TRIV-58)
7	08:04	07:44				07:05		17:48 (TRIV-60)	07:14		06:31		19:54 (TRIV-58)	06:07		19:42 (TRIV-58)
	17:26	18:03				18:36	20	18:08 (TRIV-60)	20:09		20:41	24	20:18 (TRIV-58)	21:08	54	20:36 (TRIV-58)
8	08:04	07:43				08:04		18:50 (TRIV-60)	07:12		06:29		19:52 (TRIV-58)	06:07		19:43 (TRIV-58)
	17:27	18:04				19:37	16	19:06 (TRIV-60)	20:10		20:42	26	20:18 (TRIV-58)	21:09	54	20:37 (TRIV-58)
9	08:04	07:42				08:02		18:52 (TRIV-60)	07:11		06:28		19:50 (TRIV-58)	06:07		19:43 (TRIV-58)
	17:28	18:05				19:39	11	19:03 (TRIV-60)	20:11		20:43	29	20:19 (TRIV-58)	21:09	54	20:37 (TRIV-58)
10	08:04	07:41				08:00			07:09		06:27		19:49 (TRIV-58)	06:07		19:44 (TRIV-58)
	17:30	18:07				19:40			20:12		20:44	32	20:21 (TRIV-58)	21:10	53	20:37 (TRIV-58)
11	08:04	07:40				07:59			07:07		06:26		19:48 (TRIV-58)	06:06		19:44 (TRIV-58)
	17:31	18:08				19:41			20:13		20:45	33	20:21 (TRIV-58)	21:11	54	20:38 (TRIV-58)
12	08:03	07:38				07:57			07:06		06:25		19:47 (TRIV-58)	06:06		19:43 (TRIV-58)
	17:32	18:09				19:42			20:14		20:46	35	20:22 (TRIV-58)	21:11	54	20:37 (TRIV-58)
13	08:03	07:37				07:55			07:04		06:24		19:46 (TRIV-58)	06:06		19:44 (TRIV-58)
	17:33	18:10				19:43			20:15		20:47	37	20:23 (TRIV-58)	21:12	53	20:37 (TRIV-58)
14	08:03	07:36				07:54			07:03		06:23		19:45 (TRIV-58)	06:06		19:44 (TRIV-58)
	17:34	18:12				19:44			20:16		20:48	39	20:24 (TRIV-58)	21:12	53	20:37 (TRIV-58)
15	08:02	07:35				07:52			07:01		06:22		19:44 (TRIV-58)	06:06		19:44 (TRIV-58)
	17:35	18:13				19:45			20:17		20:49	41	20:25 (TRIV-58)	21:13	53	20:37 (TRIV-58)
16	08:02	07:33				07:51			07:00		06:21		19:44 (TRIV-58)	06:06		19:44 (TRIV-58)
	17:36	18:14				19:46			20:18		20:50	43	20:27 (TRIV-58)	21:13	54	20:38 (TRIV-58)
17	08:02	07:32				07:49			06:58		06:20		19:44 (TRIV-58)	06:06		19:45 (TRIV-58)
	17:37	18:15				19:47			20:19		20:51	44	20:28 (TRIV-58)	21:13	54	20:39 (TRIV-58)
18	08:01	07:31				07:47			06:57		06:19		19:43 (TRIV-58)	06:06		19:46 (TRIV-58)
	17:38	18:16				19:48			20:20		20:52	45	20:28 (TRIV-58)	21:14	53	20:39 (TRIV-58)
19	08:01	07:29				07:46			06:55		06:18		19:42 (TRIV-58)	06:06		19:46 (TRIV-58)
	17:40	18:18				19:50			20:22		20:53	47	20:29 (TRIV-58)	21:14	53	20:39 (TRIV-58)
20	08:00	07:28				07:44			06:54		06:17		19:42 (TRIV-58)	06:07		19:46 (TRIV-58)
	17:41	18:19				19:51			20:23		20:54	48	20:30 (TRIV-58)	21:14	53	20:39 (TRIV-58)
21	07:59	07:26		17:54 (TRIV-60)		07:42			06:52		06:17		19:41 (TRIV-58)	06:07		19:46 (TRIV-58)
	17:42	18:20	4	17:58 (TRIV-60)		19:52			20:24		20:55	49	20:30 (TRIV-58)	21:15	53	20:39 (TRIV-58)
22	07:59	07:25		17:52 (TRIV-60)		07:41			06:51		06:16		19:42 (TRIV-58)	06:07		19:46 (TRIV-58)
	17:43	18:21	7	17:59 (TRIV-60)		19:53			20:25		20:55	50	20:32 (TRIV-58)	21:15	53	20:39 (TRIV-58)
23	07:58	07:24		17:50 (TRIV-60)		07:39			06:49		06:15		19:41 (TRIV-58)	06:07		19:47 (TRIV-58)
	17:44	18:22	10	18:00 (TRIV-60)		19:54			20:26		20:56	52	20:33 (TRIV-58)	21:15	53	20:40 (TRIV-58)
24	07:57	07:22		17:49 (TRIV-60)		07:37			06:48		06:14		19:41 (TRIV-58)	06:08		19:47 (TRIV-58)
	17:45	18:24	13	18:02 (TRIV-60)		19:55			20:27		20:57	52	20:33 (TRIV-58)	21:15	53	20:40 (TRIV-58)
25	07:57	07:21		17:48 (TRIV-60)		07:35			06:46		06:14		19:42 (TRIV-58)	06:08		19:47 (TRIV-58)
	17:47	18:25	15	18:03 (TRIV-60)		19:56			20:28		20:58	52	20:34 (TRIV-58)	21:15	53	20:40 (TRIV-58)
26	07:56	07:19		17:47 (TRIV-60)		07:34			06:45		06:13		19:41 (TRIV-58)	06:08		19:47 (TRIV-58)
	17:48	18:26	17	18:04 (TRIV-60)		19:57			20:29		20:59	53	20:34 (TRIV-58)	21:15	54	20:41 (TRIV-58)
27	07:55	07:18		17:46 (TRIV-60)		07:32			06:43		06:12		19:42 (TRIV-58)	06:09		19:47 (TRIV-58)
	17:49	18:27	19	18:05 (TRIV-60)		19:58			20:30		21:00	53	20:35 (TRIV-58)	21:16	53	20:40 (TRIV-58)
28	07:54	07:16		17:46 (TRIV-60)		07:30			06:42		06:12		19:41 (TRIV-58)	06:09		19:47 (TRIV-58)
	17:50	18:28	21	18:07 (TRIV-60)		19:59			20:31		21:01	54	20:35 (TRIV-58)	21:16	53	20:40 (TRIV-58)
29	07:53					07:29			06:41		06:11		19:41 (TRIV-58)	06:09		19:48 (TRIV-58)
	17:52					20:00			20:32		21:02	53	20:34 (TRIV-58)	21:16	53	20:41 (TRIV-58)
30	07:53					07:27			06:39		06:10		19:41 (TRIV-58)	06:10		19:47 (TRIV-58)
	17:53					20:00			20:33		21:02	54	20:35 (TRIV-58)	21:16	54	20:41 (TRIV-58)
31	07:52					07:25					06:10		19:41 (TRIV-58)			
	17:54					20:01					21:03	54	20:35 (TRIV-58)			
Potential sun hours		298		297			370			398		448			452	
Total, worst case				106			187					1134			1605	
Sun reduction				0.55			0.57					0.69			0.74	
Oper. time red.				1.00			1.00					1.00			1.00	
Wind dir. red.				0.69			0.69					0.64			0.64	
Total reduction				0.38			0.39					0.44			0.47	
Total, real				40			74					498			757	

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

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

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 161 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1184)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October			November	December
1	06:10		19:48 (TRIV-58)	06:34		19:58 (TRIV-58)	07:05	07:35			07:09	07:44
	21:16	54	20:42 (TRIV-58)	20:57	35	20:33 (TRIV-58)	20:15	19:22			17:36	17:12
2	06:11		19:48 (TRIV-58)	06:35		19:59 (TRIV-58)	07:06	07:36			07:10	07:45
	21:15	53	20:41 (TRIV-58)	20:56	33	20:32 (TRIV-58)	20:13	19:21			17:35	17:11
3	06:11		19:48 (TRIV-58)	06:36		20:00 (TRIV-58)	07:07	07:37			07:12	07:46
	21:15	54	20:42 (TRIV-58)	20:55	31	20:31 (TRIV-58)	20:11	19:19			17:33	17:11
4	06:12		19:48 (TRIV-58)	06:37		20:01 (TRIV-58)	07:08	07:38		18:32 (TRIV-60)	07:13	07:47
	21:15	54	20:42 (TRIV-58)	20:54	29	20:30 (TRIV-58)	20:10	19:17	7	18:39 (TRIV-60)	17:32	17:11
5	06:12		19:49 (TRIV-58)	06:38		20:03 (TRIV-58)	07:09	07:39		18:28 (TRIV-60)	07:14	07:48
	21:15	53	20:42 (TRIV-58)	20:53	26	20:29 (TRIV-58)	20:08	19:16	14	18:42 (TRIV-60)	17:31	17:11
6	06:13		19:48 (TRIV-58)	06:39		20:05 (TRIV-58)	07:10	07:40		18:25 (TRIV-60)	07:15	07:49
	21:15	54	20:42 (TRIV-58)	20:52	23	20:28 (TRIV-58)	20:06	19:14	18	18:43 (TRIV-60)	17:30	17:11
7	06:14		19:49 (TRIV-58)	06:40		20:07 (TRIV-58)	07:11	07:41		18:23 (TRIV-60)	07:16	07:50
	21:14	54	20:43 (TRIV-58)	20:50	20	20:27 (TRIV-58)	20:05	19:12	22	18:45 (TRIV-60)	17:29	17:11
8	06:14		19:49 (TRIV-58)	06:41		20:11 (TRIV-58)	07:12	07:42		18:22 (TRIV-60)	07:18	07:51
	21:14	54	20:43 (TRIV-58)	20:49	12	20:23 (TRIV-58)	20:03	19:11	23	18:45 (TRIV-60)	17:28	17:11
9	06:15		19:49 (TRIV-58)	06:42			07:13	07:43		18:21 (TRIV-60)	07:19	07:52
	21:14	54	20:43 (TRIV-58)	20:48			20:01	19:09	25	18:46 (TRIV-60)	17:27	17:11
10	06:16		19:49 (TRIV-58)	06:43			07:14	07:44		18:20 (TRIV-60)	07:20	07:53
	21:13	54	20:43 (TRIV-58)	20:47			20:00	19:08	25	18:45 (TRIV-60)	17:26	17:11
11	06:16		19:50 (TRIV-58)	06:44			07:15	07:46		18:20 (TRIV-60)	07:21	07:54
	21:13	54	20:44 (TRIV-58)	20:45			19:56	19:06	24	18:44 (TRIV-60)	17:25	17:11
12	06:17		19:49 (TRIV-58)	06:45			07:16	07:47		18:20 (TRIV-60)	07:22	07:54
	21:13	54	20:43 (TRIV-58)	20:44			19:55	19:04	22	18:42 (TRIV-60)	17:24	17:11
13	06:18		19:50 (TRIV-58)	06:46			07:17	07:48		18:19 (TRIV-60)	07:24	07:55
	21:12	53	20:43 (TRIV-58)	20:43			19:53	19:03	22	18:41 (TRIV-60)	17:23	17:11
14	06:18		19:50 (TRIV-58)	06:47			07:18	07:49		18:19 (TRIV-60)	07:25	07:56
	21:12	54	20:44 (TRIV-58)	20:42			19:51	19:01	20	18:39 (TRIV-60)	17:22	17:11
15	06:19		19:50 (TRIV-58)	06:48			07:19	07:50		18:19 (TRIV-60)	07:26	07:57
	21:11	54	20:44 (TRIV-58)	20:40			19:50	19:00	18	18:37 (TRIV-60)	17:21	17:11
16	06:20		19:50 (TRIV-58)	06:49			07:20	07:51		18:19 (TRIV-60)	07:27	07:57
	21:11	53	20:43 (TRIV-58)	20:39			19:48	18:58	16	18:35 (TRIV-60)	17:20	17:12
17	06:21		19:50 (TRIV-58)	06:50			07:21	07:52		18:19 (TRIV-60)	07:28	07:58
	21:10	54	20:44 (TRIV-58)	20:37			19:46	18:57	15	18:34 (TRIV-60)	17:19	17:12
18	06:22		19:51 (TRIV-58)	06:51			07:22	07:53		18:20 (TRIV-60)	07:30	07:59
	21:09	53	20:44 (TRIV-58)	20:36			19:44	18:55	12	18:32 (TRIV-60)	17:19	17:12
19	06:22		19:51 (TRIV-58)	06:52			07:23	07:54		18:22 (TRIV-60)	07:31	07:59
	21:09	53	20:44 (TRIV-58)	20:35			19:43	18:54	9	18:31 (TRIV-60)	17:18	17:13
20	06:23		19:52 (TRIV-58)	06:53			07:24	07:55		18:23 (TRIV-60)	07:32	08:00
	21:08	51	20:43 (TRIV-58)	20:33			19:41	18:52	7	18:30 (TRIV-60)	17:17	17:13
21	06:24		19:51 (TRIV-58)	06:54			07:25	07:57		18:26 (TRIV-60)	07:33	08:00
	21:07	51	20:42 (TRIV-58)	20:32			19:39	18:51	2	18:28 (TRIV-60)	17:16	17:14
22	06:25		19:52 (TRIV-58)	06:55			07:26	07:58			07:34	08:01
	21:06	49	20:41 (TRIV-58)	20:30			19:38	18:49			17:16	17:14
23	06:26		19:52 (TRIV-58)	06:56			07:27	07:59			07:35	08:01
	21:06	49	20:41 (TRIV-58)	20:29			19:36	18:48			17:15	17:15
24	06:27		19:53 (TRIV-58)	06:57			07:28	08:00			07:36	08:02
	21:05	47	20:40 (TRIV-58)	20:27			19:34	18:46			17:15	17:15
25	06:28		19:53 (TRIV-58)	06:58			07:29	08:01			07:38	08:02
	21:04	46	20:39 (TRIV-58)	20:26			19:33	18:45			17:14	17:16
26	06:29		19:54 (TRIV-58)	06:59			07:30	08:02			07:39	08:03
	21:03	45	20:39 (TRIV-58)	20:24			19:31	18:44			17:14	17:16
27	06:30		19:54 (TRIV-58)	07:00			07:31	08:03			07:40	08:03
	21:02	44	20:38 (TRIV-58)	20:22			19:29	18:42			17:13	17:17
28	06:30		19:54 (TRIV-58)	07:01			07:32	08:05			07:41	08:03
	21:01	42	20:36 (TRIV-58)	20:21			19:27	18:41			17:13	17:18
29	06:31		19:55 (TRIV-58)	07:02			07:33	08:06			07:42	08:04
	21:00	40	20:35 (TRIV-58)	20:19			19:26	18:40			17:12	17:18
30	06:32		19:56 (TRIV-58)	07:03			07:34	08:07			07:43	08:04
	20:59	38	20:34 (TRIV-58)	20:18			19:24	18:38			17:12	17:19
31	06:33		19:57 (TRIV-58)	07:04				08:08				08:04
	20:58	37	20:34 (TRIV-58)	20:16				18:37				17:20
Potential sun hours	459			428			375	345			298	288
Total, worst case		1559			209				301			
Sun reduction		0.76			0.75				0.60			
Oper. time red.		1.00			1.00				1.00			
Wind dir. red.		0.64			0.64				0.69			
Total reduction		0.48			0.48				0.42			
Total, real		755			100				125			

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 169 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1192)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May	June		
1	08:04		16:02 (TRIV-61a)	07:51		16:01 (TRIV-61a)	07:15			07:24		19:21 (TRIV-59)	06:38	06:10		
	17:21	53	16:55 (TRIV-61)	17:55	81	17:22 (TRIV-61)	18:29			20:02	21	19:42 (TRIV-59)	20:34	21:04		
2	08:04		16:02 (TRIV-61a)	07:50		16:01 (TRIV-61a)	07:13			07:22		19:20 (TRIV-59)	06:37	06:09		
	17:22	54	16:56 (TRIV-61)	17:57	81	17:22 (TRIV-61)	18:31			20:03	23	19:43 (TRIV-59)	20:35	21:05		
3	08:05		16:02 (TRIV-61a)	07:49		16:02 (TRIV-61a)	07:12			07:21		19:19 (TRIV-59)	06:36	06:09		
	17:23	55	16:57 (TRIV-61)	17:58	80	17:22 (TRIV-61)	18:32			20:05	25	19:44 (TRIV-59)	20:36	21:05		
4	08:05		16:02 (TRIV-61a)	07:48		16:02 (TRIV-61a)	07:10			07:19		19:20 (TRIV-59)	06:34	06:08		
	17:24	56	16:58 (TRIV-61)	17:59	80	17:22 (TRIV-61)	18:33			20:06	25	19:45 (TRIV-59)	20:37	21:06		
5	08:05		16:02 (TRIV-61a)	07:47		16:02 (TRIV-61a)	07:08			07:17		19:20 (TRIV-59)	06:33	06:08		
	17:25	57	16:59 (TRIV-61)	18:00	80	17:22 (TRIV-61)	18:34			20:07	26	19:46 (TRIV-59)	20:38	21:07		
6	08:05		16:02 (TRIV-61a)	07:46		16:03 (TRIV-61a)	07:07			07:16		19:20 (TRIV-59)	06:32	06:08		
	17:26	58	17:00 (TRIV-61)	18:02	79	17:22 (TRIV-61)	18:35			20:08	27	19:47 (TRIV-59)	20:39	21:08		
7	08:04		16:02 (TRIV-61a)	07:44		16:02 (TRIV-61a)	07:05			07:14		19:20 (TRIV-59)	06:31	06:07		
	17:27	58	17:00 (TRIV-61)	18:03	79	17:21 (TRIV-61)	18:36			20:09	26	19:46 (TRIV-59)	20:41	21:08		
8	08:04		16:02 (TRIV-61a)	07:43		16:03 (TRIV-61a)	08:04			07:12		19:21 (TRIV-59)	06:29	06:07		
	17:28	59	17:01 (TRIV-61)	18:04	78	17:21 (TRIV-61)	19:37			20:10	23	19:44 (TRIV-59)	20:42	21:09		
9	08:04		16:02 (TRIV-61a)	07:42		16:03 (TRIV-61a)	08:02			07:11		19:22 (TRIV-59)	06:28	06:07		
	17:29	61	17:03 (TRIV-61)	18:05	78	17:21 (TRIV-61)	19:39			20:11	21	19:43 (TRIV-59)	20:43	21:09		
10	08:04		16:02 (TRIV-61a)	07:41		16:04 (TRIV-61a)	08:00			07:09		19:23 (TRIV-59)	06:27	06:07		
	17:30	62	17:04 (TRIV-61)	18:07	76	17:20 (TRIV-61)	19:40			20:12	18	19:41 (TRIV-59)	20:44	21:10		
11	08:04		16:01 (TRIV-61a)	07:40		16:05 (TRIV-61a)	07:59			07:08		19:24 (TRIV-59)	06:26	06:07		
	17:31	63	17:04 (TRIV-61)	18:08	75	17:20 (TRIV-61)	19:41			20:13	14	19:38 (TRIV-59)	20:45	21:11		
12	08:03		16:02 (TRIV-61a)	07:38		16:05 (TRIV-61a)	07:57			07:06		19:28 (TRIV-59)	06:25	06:06		20:46 (TRIV-60)
	17:32	64	17:06 (TRIV-61)	18:09	74	17:19 (TRIV-61)	19:42			20:14	7	19:35 (TRIV-59)	20:46	21:11	1	20:47 (TRIV-60)
13	08:03		16:02 (TRIV-61a)	07:37		16:06 (TRIV-61a)	07:55			07:04			06:24	06:06		20:45 (TRIV-60)
	17:33	65	17:07 (TRIV-61)	18:10	72	17:18 (TRIV-61)	19:43			20:15			20:47	21:12	1	20:46 (TRIV-60)
14	08:03		16:01 (TRIV-61a)	07:36		16:07 (TRIV-61a)	07:54			07:03			06:23	06:06		20:44 (TRIV-60)
	17:34	67	17:08 (TRIV-61)	18:12	70	17:17 (TRIV-61)	19:44			20:16			20:48	21:12	3	20:47 (TRIV-60)
15	08:02		16:01 (TRIV-61a)	07:35		16:07 (TRIV-61a)	07:52			07:01			06:22	06:06		20:44 (TRIV-60)
	17:35	68	17:09 (TRIV-61)	18:13	69	17:16 (TRIV-61)	19:45			20:17			20:49	21:13	3	20:47 (TRIV-60)
16	08:02		16:01 (TRIV-61a)	07:33		16:08 (TRIV-61a)	07:51			07:00			06:21	06:06		20:45 (TRIV-60)
	17:36	69	17:10 (TRIV-61)	18:14	67	17:15 (TRIV-61)	19:46			20:18			20:50	21:13	3	20:48 (TRIV-60)
17	08:02		16:01 (TRIV-61a)	07:32		16:09 (TRIV-61a)	07:49			06:58			06:20	06:06		20:45 (TRIV-60)
	17:37	71	17:12 (TRIV-61)	18:15	64	17:13 (TRIV-61)	19:47			20:19			20:51	21:13	4	20:49 (TRIV-60)
18	08:01		16:01 (TRIV-61a)	07:31		16:10 (TRIV-61a)	07:47			06:57			06:19	06:06		20:45 (TRIV-60)
	17:38	72	17:13 (TRIV-61)	18:16	61	17:11 (TRIV-61)	19:48			20:20			20:52	21:14	4	20:49 (TRIV-60)
19	08:01		16:01 (TRIV-61a)	07:29		16:11 (TRIV-61a)	07:46			06:55			06:18	06:07		20:45 (TRIV-60)
	17:40	74	17:15 (TRIV-61)	18:18	58	17:09 (TRIV-61a)	19:50			20:22			20:53	21:14	4	20:49 (TRIV-60)
20	08:00		16:01 (TRIV-61a)	07:28		16:12 (TRIV-61a)	07:44			06:54			06:17	06:07		20:45 (TRIV-60)
	17:41	74	17:15 (TRIV-61)	18:19	56	17:08 (TRIV-61a)	19:51			20:23			20:54	21:14	4	20:49 (TRIV-60)
21	07:59		16:00 (TRIV-61a)	07:26		16:14 (TRIV-61a)	07:42			06:52			06:17	06:07		20:45 (TRIV-60)
	17:42	76	17:16 (TRIV-61)	18:20	53	17:07 (TRIV-61a)	19:52			20:24			20:54	21:15	4	20:49 (TRIV-60)
22	07:59		16:01 (TRIV-61a)	07:25		16:16 (TRIV-61a)	07:41			06:51			06:16	06:07		20:45 (TRIV-60)
	17:43	77	17:18 (TRIV-61)	18:21	50	17:06 (TRIV-61a)	19:53			20:25			20:55	21:15	4	20:49 (TRIV-60)
23	07:58		16:01 (TRIV-61a)	07:24		16:17 (TRIV-61a)	07:39			06:49			06:15	06:07		20:46 (TRIV-60)
	17:44	77	17:18 (TRIV-61)	18:22	47	17:04 (TRIV-61a)	19:54			20:26			20:56	21:15	4	20:50 (TRIV-60)
24	07:57		16:00 (TRIV-61a)	07:22		16:19 (TRIV-61a)	07:37			06:48			06:14	06:08		20:46 (TRIV-60)
	17:46	79	17:19 (TRIV-61)	18:24	43	17:02 (TRIV-61a)	19:55			20:27			20:57	21:15	4	20:50 (TRIV-60)
25	07:57		16:00 (TRIV-61a)	07:21		16:21 (TRIV-61a)	07:35		19:33 (TRIV-59)	06:46			06:14	06:08		20:46 (TRIV-60)
	17:47	79	17:19 (TRIV-61)	18:25	39	17:00 (TRIV-61a)	19:56	1	19:34 (TRIV-59)	20:28			20:58	21:15	4	20:50 (TRIV-60)
26	07:56		16:01 (TRIV-61a)	07:19		16:24 (TRIV-61a)	07:34		19:30 (TRIV-59)	06:45			06:13	06:08		20:47 (TRIV-60)
	17:48	79	17:20 (TRIV-61)	18:26	34	16:58 (TRIV-61a)	19:57	6	19:36 (TRIV-59)	20:29			20:59	21:15	3	20:50 (TRIV-60)
27	07:55		16:01 (TRIV-61a)	07:18		16:27 (TRIV-61a)	07:32		19:27 (TRIV-59)	06:44			06:12	06:09		20:47 (TRIV-60)
	17:49	80	17:21 (TRIV-61)	18:27	27	16:54 (TRIV-61a)	19:58	10	19:37 (TRIV-59)	20:30			21:00	21:16	3	20:50 (TRIV-60)
28	07:54		16:01 (TRIV-61a)	07:16		16:31 (TRIV-61a)	07:30		19:25 (TRIV-59)	06:42			06:12	06:09		20:47 (TRIV-60)
	17:50	80	17:21 (TRIV-61)	18:28	19	16:50 (TRIV-61a)	19:59	12	19:37 (TRIV-59)	20:31			21:01	21:16	3	20:50 (TRIV-60)
29	07:53		16:01 (TRIV-61a)				07:29		19:24 (TRIV-59)	06:41			06:11	06:09		20:48 (TRIV-60)
	17:52	80	17:21 (TRIV-61)				20:00	15	19:39 (TRIV-59)	20:32			21:02	21:16	2	20:50 (TRIV-60)
30	07:53		16:01 (TRIV-61a)				07:27		19:22 (TRIV-59)	06:39			06:11	06:10		20:49 (TRIV-60)
	17:53	80	17:21 (TRIV-61)				20:00	18	19:40 (TRIV-59)	20:33			21:02	21:16	1	20:50 (TRIV-60)
31	07:52		16:01 (TRIV-61a)				07:25		19:21 (TRIV-59)				06:10			
	17:54	81	17:22 (TRIV-61)				20:01	20	19:41 (TRIV-59)				21:03			
Potential sun hours	298			297			370			398			448	452		
Total, worst case		2128			1770			82			256				59	
Sun reduction		0.50			0.55			0.57			0.63				0.74	
Oper. time red.		1.00			1.00			1.00			1.00				1.00	
Wind dir. red.		0.69			0.69			0.67			0.67				0.61	
Total reduction		0.35			0.38			0.38			0.42				0.45	
Total, real		739			676			31			109				27	

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 169 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1192)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August			September			October			November			December		
1	06:10		06:34			07:05		19:24 (TRIV-59)	07:35			07:09		15:34 (TRIV-61a)	07:44		15:43 (TRIV-61a)
	21:15		20:57			20:15	14	19:38 (TRIV-59)	19:22			17:36	76	16:50 (TRIV-61)	17:12	63	16:46 (TRIV-61)
2	06:11		06:35			07:06		19:22 (TRIV-59)	07:36			07:10		15:33 (TRIV-61a)	07:45		15:45 (TRIV-61a)
	21:15		20:56			20:13	18	19:40 (TRIV-59)	19:21			17:35	77	16:50 (TRIV-61)	17:11	62	16:47 (TRIV-61)
3	06:11		06:36			07:07		19:19 (TRIV-59)	07:37			07:12		15:32 (TRIV-61a)	07:46		15:46 (TRIV-61a)
	21:15		20:55			20:11	21	19:40 (TRIV-59)	19:19			17:33	79	16:51 (TRIV-61)	17:11	61	16:47 (TRIV-61)
4	06:12		06:37			07:08		19:18 (TRIV-59)	07:38			07:13		15:32 (TRIV-61a)	07:47		15:47 (TRIV-61a)
	21:15		20:54			20:10	23	19:41 (TRIV-59)	19:17			17:32	79	16:51 (TRIV-61)	17:11	59	16:46 (TRIV-61)
5	06:12		06:38			07:09		19:16 (TRIV-59)	07:39			07:14		15:32 (TRIV-61a)	07:48		15:48 (TRIV-61a)
	21:15		20:53			20:08	26	19:42 (TRIV-59)	19:16			17:31	80	16:52 (TRIV-61)	17:11	58	16:46 (TRIV-61)
6	06:13		06:39			07:10		19:15 (TRIV-59)	07:40			07:15		15:32 (TRIV-61a)	07:49		15:49 (TRIV-61a)
	21:15		20:52			20:06	27	19:42 (TRIV-59)	19:14			17:30	80	16:52 (TRIV-61)	17:11	57	16:46 (TRIV-61)
7	06:14		06:40			07:11		19:15 (TRIV-59)	07:41			07:16		15:32 (TRIV-61a)	07:50		15:48 (TRIV-61a)
	21:14		20:50			20:05	26	19:41 (TRIV-59)	19:12			17:29	80	16:52 (TRIV-61)	17:11	57	16:45 (TRIV-61)
8	06:14		06:41			07:12		19:14 (TRIV-59)	07:42			07:18		15:31 (TRIV-61a)	07:51		15:49 (TRIV-61a)
	21:14		20:49			20:03	25	19:39 (TRIV-59)	19:11			17:28	81	16:52 (TRIV-61)	17:11	56	16:45 (TRIV-61)
9	06:15		06:42			07:13		19:14 (TRIV-59)	07:43			07:19		15:32 (TRIV-61a)	07:52		15:50 (TRIV-61a)
	21:14		20:48			20:01	24	19:38 (TRIV-59)	19:09			17:27	81	16:53 (TRIV-61)	17:11	55	16:45 (TRIV-61)
10	06:16		06:43			07:14		19:13 (TRIV-59)	07:44			07:20		15:32 (TRIV-61a)	07:53		15:51 (TRIV-61a)
	21:13		20:47			20:00	23	19:36 (TRIV-59)	19:08			17:26	81	16:53 (TRIV-61)	17:11	54	16:45 (TRIV-61)
11	06:16		06:44			07:15		19:13 (TRIV-59)	07:46			07:21		15:32 (TRIV-61a)	07:54		15:52 (TRIV-61a)
	21:13		20:45			19:56	22	19:35 (TRIV-59)	19:06			17:25	80	16:52 (TRIV-61)	17:11	53	16:45 (TRIV-61)
12	06:17		06:45			07:16		19:13 (TRIV-59)	07:47			07:22		15:33 (TRIV-61a)	07:54		15:53 (TRIV-61a)
	21:13		20:44			19:55	20	19:33 (TRIV-59)	19:04			17:24	80	16:53 (TRIV-61)	17:11	52	16:45 (TRIV-61)
13	06:18		06:46			07:17		19:13 (TRIV-59)	07:48		17:08 (TRIV-61a)	07:24		15:33 (TRIV-61a)	07:55		15:54 (TRIV-61a)
	21:12		20:43			19:53	18	19:31 (TRIV-59)	19:03	11	17:19 (TRIV-61a)	17:23	80	16:53 (TRIV-61)	17:11	52	16:46 (TRIV-61)
14	06:18		06:47			07:18		19:14 (TRIV-59)	07:49		17:02 (TRIV-61a)	07:25		15:33 (TRIV-61a)	07:56		15:54 (TRIV-61a)
	21:12		20:41			19:51	16	19:30 (TRIV-59)	19:01	22	17:24 (TRIV-61a)	17:22	80	16:53 (TRIV-61)	17:11	51	16:45 (TRIV-61)
15	06:19		06:48			07:19		19:15 (TRIV-59)	07:50		16:58 (TRIV-61a)	07:26		15:33 (TRIV-61a)	07:57		15:55 (TRIV-61a)
	21:11		20:40			19:50	13	19:28 (TRIV-59)	19:00	30	17:28 (TRIV-61a)	17:21	79	16:52 (TRIV-61)	17:11	51	16:46 (TRIV-61)
16	06:20		06:49			07:20		19:16 (TRIV-59)	07:51		16:54 (TRIV-61a)	07:27		15:34 (TRIV-61a)	07:57		15:56 (TRIV-61a)
	21:11		20:39			19:48	10	19:26 (TRIV-59)	18:58	36	17:30 (TRIV-61a)	17:20	79	16:53 (TRIV-61)	17:12	50	16:46 (TRIV-61)
17	06:21		06:50			07:21		19:17 (TRIV-59)	07:52		16:52 (TRIV-61a)	07:28		15:34 (TRIV-61a)	07:58		15:56 (TRIV-61a)
	21:10		20:37			19:46	8	19:25 (TRIV-59)	18:57	40	17:32 (TRIV-61a)	17:19	79	16:53 (TRIV-61)	17:12	50	16:46 (TRIV-61)
18	06:22		06:51			07:22		19:20 (TRIV-59)	07:53		16:49 (TRIV-61a)	07:30		15:34 (TRIV-61a)	07:59		15:57 (TRIV-61a)
	21:09		20:36			19:44	3	19:23 (TRIV-59)	18:55	44	17:33 (TRIV-61a)	17:19	78	16:52 (TRIV-61)	17:12	49	16:46 (TRIV-61)
19	06:22		06:52			07:23			07:54		16:48 (TRIV-61a)	07:31		15:35 (TRIV-61a)	07:59		15:58 (TRIV-61a)
	21:09		20:34			19:43			18:54	48	17:36 (TRIV-61a)	17:18	77	16:52 (TRIV-61)	17:13	49	16:47 (TRIV-61)
20	06:23		06:53			07:24			07:55		16:46 (TRIV-61a)	07:32		15:36 (TRIV-61a)	08:00		15:58 (TRIV-61a)
	21:08		20:33			19:41			18:52	51	17:37 (TRIV-61a)	17:17	77	16:53 (TRIV-61)	17:13	49	16:47 (TRIV-61)
21	06:24		06:54			07:25			07:57		16:44 (TRIV-61a)	07:33		15:36 (TRIV-61a)	08:00		15:59 (TRIV-61a)
	21:07		20:32			19:39			18:51	54	17:38 (TRIV-61a)	17:17	76	16:52 (TRIV-61)	17:14	49	16:48 (TRIV-61)
22	06:25		06:55			07:26			07:58		16:42 (TRIV-61a)	07:34		15:37 (TRIV-61a)	08:01		15:59 (TRIV-61a)
	21:06		20:30			19:38			18:49	57	17:39 (TRIV-61a)	17:16	74	16:51 (TRIV-61)	17:14	49	16:48 (TRIV-61)
23	06:26		06:56			07:27			07:59		16:41 (TRIV-61a)	07:35		15:37 (TRIV-61a)	08:01		16:00 (TRIV-61a)
	21:06		20:29			19:36			18:48	59	17:40 (TRIV-61)	17:15	74	16:51 (TRIV-61)	17:15	49	16:49 (TRIV-61)
24	06:27		06:57			07:28			08:00		16:40 (TRIV-61a)	07:36		15:38 (TRIV-61a)	08:02		16:00 (TRIV-61a)
	21:05		20:27			19:34			18:46	62	17:42 (TRIV-61)	17:15	72	16:50 (TRIV-61)	17:15	49	16:49 (TRIV-61)
25	06:28		06:58			07:29			08:01		16:39 (TRIV-61a)	07:38		15:39 (TRIV-61a)	08:02		16:00 (TRIV-61a)
	21:04		20:26			19:33			18:45	65	17:44 (TRIV-61)	17:14	71	16:50 (TRIV-61)	17:16	49	16:49 (TRIV-61)
26	06:29		06:59			07:30			08:02		16:37 (TRIV-61a)	07:39		15:40 (TRIV-61a)	08:03		16:01 (TRIV-61a)
	21:03		20:24			19:31			18:44	68	17:45 (TRIV-61)	17:14	69	16:49 (TRIV-61)	17:16	50	16:51 (TRIV-61)
27	06:30		07:00			07:31			08:03		16:36 (TRIV-61a)	07:40		15:40 (TRIV-61a)	08:03		16:01 (TRIV-61a)
	21:02		20:22			19:29			18:42	70	17:46 (TRIV-61)	17:13	69	16:49 (TRIV-61)	17:17	50	16:51 (TRIV-61)
28	06:30		07:01			07:32			08:05		16:36 (TRIV-61a)	07:41		15:41 (TRIV-61a)	08:03		16:01 (TRIV-61a)
	21:01		20:21			19:27			18:41	71	17:47 (TRIV-61)	17:13	67	16:48 (TRIV-61)	17:18	50	16:51 (TRIV-61)
29	06:31		07:02			07:33			08:06		16:35 (TRIV-61a)	07:42		15:42 (TRIV-61a)	08:04		16:01 (TRIV-61a)
	21:00		20:19			19:26			18:40	73	17:48 (TRIV-61)	17:12	65	16:47 (TRIV-61)	17:18	51	16:52 (TRIV-61)
30	06:32		07:03			07:34			08:07		16:34 (TRIV-61a)	07:43		15:43 (TRIV-61a)	08:04		16:02 (TRIV-61a)
	20:59		20:18			19:24			18:38	74	17:48 (TRIV-61)	17:12	64	16:47 (TRIV-61)	17:19	52	16:54 (TRIV-61)
31	06:33		07:04		19:28 (TRIV-59)				08:08		16:34 (TRIV-61a)				08:04		16:02 (TRIV-61a)
	20:58		20:16	7	19:35 (TRIV-59)				18:37	75	17:49 (TRIV-61)				17:20	52	16:54 (TRIV-61)
Potential sun hours	459		428			375			345			298			288		
Total, worst case				7			337			1010			2284			1638	
Sun reduction				0.75			0.67			0.60			0.40			0.36	
Oper. time red.				1.00			1.00			1.00			1.00			1.00	
Wind dir. red.				0.67			0.67			0.69			0.69			0.69	
Total reduction				0.50			0.45			0.42			0.28			0.25	
Total, real				4			152			421			634			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 170 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1193)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April		May	June
1	08:04		08:33 (TRIV-62)	07:51		08:41 (TRIV-62)	07:15		17:49 (TRIV-52c)	07:24		06:38	06:10
	17:21	68	09:41 (TRIV-62)	17:55	72	09:53 (TRIV-62)	18:29	19	18:08 (TRIV-52c)	20:02		20:34	21:04
2	08:04		08:34 (TRIV-62)	07:50		08:41 (TRIV-62)	07:13		17:49 (TRIV-52c)	07:22		06:37	06:09
	17:22	68	09:42 (TRIV-62)	17:57	72	09:53 (TRIV-62)	18:31	19	18:08 (TRIV-52c)	20:03		20:35	21:05
3	08:04		08:34 (TRIV-62)	07:49		08:42 (TRIV-62)	07:11		17:50 (TRIV-52c)	07:21		06:36	06:09
	17:23	68	09:42 (TRIV-62)	17:58	70	09:52 (TRIV-62)	18:32	20	18:10 (TRIV-52c)	20:05		20:36	21:05
4	08:05		08:34 (TRIV-62)	07:48		08:42 (TRIV-62)	07:10		17:50 (TRIV-52c)	07:19		06:34	06:08
	17:24	69	09:43 (TRIV-62)	17:59	70	09:52 (TRIV-62)	18:33	21	18:11 (TRIV-52c)	20:06		20:37	21:06
5	08:05		08:35 (TRIV-62)	07:47		08:43 (TRIV-62)	07:08		17:51 (TRIV-52c)	07:17		06:33	06:08
	17:25	69	09:44 (TRIV-62)	18:00	69	09:52 (TRIV-62)	18:34	21	18:12 (TRIV-52c)	20:07		20:38	21:07
6	08:04		08:35 (TRIV-62)	07:45		08:44 (TRIV-62)	07:07		17:51 (TRIV-52c)	07:16		06:32	06:08
	17:26	69	09:44 (TRIV-62)	18:02	67	09:51 (TRIV-62)	18:35	19	18:10 (TRIV-52c)	20:08		20:39	21:08
7	08:04		08:34 (TRIV-62)	07:44		08:43 (TRIV-62)	07:05		17:52 (TRIV-52c)	07:14		06:31	06:07
	17:27	70	09:44 (TRIV-62)	18:03	67	09:50 (TRIV-62)	18:36	16	18:08 (TRIV-52c)	20:09		20:41	21:08
8	08:04		08:35 (TRIV-62)	07:43		08:44 (TRIV-62)	08:04		18:55 (TRIV-52c)	07:12		06:30	06:07
	17:28	70	09:45 (TRIV-62)	18:04	65	09:49 (TRIV-62)	19:37	11	19:06 (TRIV-52c)	20:10		20:42	21:09
9	08:04		08:35 (TRIV-62)	07:42		08:45 (TRIV-62)	08:02			07:11		06:28	06:07
	17:29	71	09:46 (TRIV-62)	18:05	64	09:49 (TRIV-62)	19:39			20:11		20:43	21:09
10	08:04		08:35 (TRIV-62)	07:41		08:46 (TRIV-62)	08:00			07:09		06:27	06:07
	17:30	72	09:47 (TRIV-62)	18:07	62	09:48 (TRIV-62)	19:40			20:12		20:44	21:10
11	08:04		08:35 (TRIV-62)	07:40		08:48 (TRIV-62)	07:59			07:08		06:26	06:07
	17:31	72	09:47 (TRIV-62)	18:08	59	09:47 (TRIV-62)	19:41			20:13		20:45	21:11
12	08:03		08:35 (TRIV-62)	07:38		08:48 (TRIV-62)	07:57			07:06		06:25	06:06
	17:32	73	09:48 (TRIV-62)	18:09	58	09:46 (TRIV-62)	19:42			20:14		20:46	21:11
13	08:03		08:36 (TRIV-62)	07:37		08:49 (TRIV-62)	07:55			07:04		06:24	06:06
	17:33	73	09:49 (TRIV-62)	18:10	56	09:45 (TRIV-62)	19:43			20:15		20:47	21:12
14	08:03		08:36 (TRIV-62)	07:36		08:51 (TRIV-62)	07:54			07:03		06:23	06:06
	17:34	73	09:49 (TRIV-62)	18:12	52	09:43 (TRIV-62)	19:44			20:16		20:48	21:12
15	08:02		08:36 (TRIV-62)	07:35		08:51 (TRIV-62)	07:52			07:01		06:22	06:06
	17:35	73	09:49 (TRIV-62)	18:13	50	09:41 (TRIV-62)	19:45			20:17		20:49	21:12
16	08:02		08:36 (TRIV-62)	07:33		08:53 (TRIV-62)	07:51			07:00		06:21	06:06
	17:36	73	09:49 (TRIV-62)	18:14	47	09:40 (TRIV-62)	19:46			20:18		20:50	21:13
17	08:02		08:37 (TRIV-62)	07:32		08:55 (TRIV-62)	07:49			06:58		06:20	06:06
	17:37	73	09:50 (TRIV-62)	18:15	43	09:38 (TRIV-62)	19:47			20:19		20:51	21:13
18	08:01		08:36 (TRIV-62)	07:31		08:57 (TRIV-62)	07:47			06:57		06:19	06:06
	17:38	75	09:51 (TRIV-62)	18:16	38	09:35 (TRIV-62)	19:48			20:20		20:52	21:14
19	08:01		08:37 (TRIV-62)	07:29		08:59 (TRIV-62)	07:46			06:55		06:18	06:07
	17:40	75	09:52 (TRIV-62)	18:18	34	09:33 (TRIV-62)	19:50			20:22		20:53	21:14
20	08:00		08:37 (TRIV-62)	07:28		09:02 (TRIV-62)	07:44			06:54		06:17	06:07
	17:41	75	09:52 (TRIV-62)	18:19	27	09:29 (TRIV-62)	19:51			20:23		20:54	21:14
21	07:59		08:37 (TRIV-62)	07:26		09:06 (TRIV-62)	07:42			06:52		06:17	06:07
	17:42	75	09:52 (TRIV-62)	18:20	19	09:25 (TRIV-62)	19:52			20:24		20:54	21:15
22	07:59		08:38 (TRIV-62)	07:25		17:57 (TRIV-52c)	07:41			06:51		06:16	06:07
	17:43	75	09:53 (TRIV-62)	18:21	2	17:59 (TRIV-52c)	19:53			20:25		20:55	21:15
23	07:58		08:38 (TRIV-62)	07:24		17:54 (TRIV-52c)	07:39			06:49		06:15	06:07
	17:44	75	09:53 (TRIV-62)	18:22	6	18:00 (TRIV-52c)	19:54			20:26		20:56	21:15
24	07:57		08:38 (TRIV-62)	07:22		17:53 (TRIV-52c)	07:37			06:48		06:14	06:08
	17:46	75	09:53 (TRIV-62)	18:24	9	18:02 (TRIV-52c)	19:55			20:27		20:57	21:15
25	07:57		08:38 (TRIV-62)	07:21		17:52 (TRIV-52c)	07:35			06:46		06:14	06:08
	17:47	75	09:53 (TRIV-62)	18:25	11	18:03 (TRIV-52c)	19:56			20:28		20:58	21:15
26	07:56		08:39 (TRIV-62)	07:19		17:51 (TRIV-52c)	07:34			06:45		06:13	06:08
	17:48	75	09:54 (TRIV-62)	18:26	13	18:04 (TRIV-52c)	19:57			20:29		20:59	21:15
27	07:55		08:39 (TRIV-62)	07:18		17:50 (TRIV-52c)	07:32			06:44		06:12	06:09
	17:49	75	09:54 (TRIV-62)	18:27	15	18:05 (TRIV-52c)	19:58			20:30		21:00	21:16
28	07:54		08:39 (TRIV-62)	07:16		17:50 (TRIV-52c)	07:30			06:42		06:12	06:09
	17:50	74	09:53 (TRIV-62)	18:28	17	18:07 (TRIV-52c)	19:59			20:31		21:01	21:16
29	07:53		08:40 (TRIV-62)				07:29			06:41		06:11	06:09
	17:52	73	09:53 (TRIV-62)				20:00			20:32		21:02	21:16
30	07:53		08:40 (TRIV-62)				07:27			06:39		06:11	06:10
	17:53	73	09:53 (TRIV-62)				20:00			20:33		21:02	21:16
31	07:52		08:40 (TRIV-62)				07:25					06:10	
	17:54	73	09:53 (TRIV-62)				20:01					21:03	
Potential sun hours	298			297			370			398		448	452
Total, worst case		2247			1234			146					
Sun reduction		0.50			0.55			0.57					
Oper. time red.		1.00			1.00			1.00					
Wind dir. red.		0.60			0.60			0.69					
Total reduction		0.30			0.33			0.39					
Total, real		671			409			57					

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:
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217 Montgomery St., Suite 1000
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 170 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1193)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		08:16 (TRIV-62)	07:44		08:17 (TRIV-62)
	21:15		20:57		20:15		19:22			17:36	62	09:18 (TRIV-62)	17:12	72	09:29 (TRIV-62)
2	06:11		06:35		07:06		07:36			07:10		08:15 (TRIV-62)	07:45		08:17 (TRIV-62)
	21:15		20:56		20:13		19:21			17:35	64	09:19 (TRIV-62)	17:12	72	09:29 (TRIV-62)
3	06:11		06:36		07:07		07:37			07:12		08:14 (TRIV-62)	07:46		08:19 (TRIV-62)
	21:15		20:55		20:11		19:19			17:33	65	09:19 (TRIV-62)	17:11	71	09:30 (TRIV-62)
4	06:12		06:37		07:08		07:38			07:13		08:13 (TRIV-62)	07:47		08:20 (TRIV-62)
	21:15		20:54		20:10		19:17			17:32	67	09:20 (TRIV-62)	17:11	70	09:30 (TRIV-62)
5	06:12		06:38		07:09		07:39		18:33 (TRIV-52c)	07:14		08:13 (TRIV-62)	07:48		08:20 (TRIV-62)
	21:15		20:53		20:08		19:16	8	18:41 (TRIV-52c)	17:31	68	09:21 (TRIV-62)	17:11	70	09:30 (TRIV-62)
6	06:13		06:39		07:10		07:40		18:30 (TRIV-52c)	07:15		08:13 (TRIV-62)	07:49		08:21 (TRIV-62)
	21:15		20:52		20:06		19:14	14	18:44 (TRIV-52c)	17:30	69	09:22 (TRIV-62)	17:11	69	09:30 (TRIV-62)
7	06:14		06:40		07:11		07:41		18:28 (TRIV-52c)	07:16		08:12 (TRIV-62)	07:50		08:21 (TRIV-62)
	21:14		20:50		20:05		19:12	17	18:45 (TRIV-52c)	17:29	70	09:22 (TRIV-62)	17:11	69	09:30 (TRIV-62)
8	06:14		06:41		07:12		07:42		18:26 (TRIV-52c)	07:18		08:11 (TRIV-62)	07:51		08:21 (TRIV-62)
	21:14		20:49		20:03		19:11	20	18:46 (TRIV-52c)	17:28	71	09:22 (TRIV-62)	17:11	69	09:30 (TRIV-62)
9	06:15		06:42		07:13		07:43		18:25 (TRIV-52c)	07:19		08:12 (TRIV-62)	07:52		08:22 (TRIV-62)
	21:14		20:48		20:01		19:09	21	18:46 (TRIV-52c)	17:27	72	09:24 (TRIV-62)	17:11	68	09:30 (TRIV-62)
10	06:16		06:43		07:14		07:44		18:24 (TRIV-52c)	07:20		08:11 (TRIV-62)	07:53		08:23 (TRIV-62)
	21:13		20:47		20:00		19:08	21	18:45 (TRIV-52c)	17:26	73	09:24 (TRIV-62)	17:11	68	09:31 (TRIV-62)
11	06:16		06:44		07:15		07:46		18:24 (TRIV-52c)	07:21		08:11 (TRIV-62)	07:54		08:23 (TRIV-62)
	21:13		20:45		19:56		19:06	20	18:44 (TRIV-52c)	17:25	73	09:24 (TRIV-62)	17:11	68	09:31 (TRIV-62)
12	06:17		06:45		07:16		07:47		18:23 (TRIV-52c)	07:22		08:12 (TRIV-62)	07:54		08:24 (TRIV-62)
	21:13		20:44		19:55		19:04	19	18:42 (TRIV-52c)	17:24	73	09:25 (TRIV-62)	17:11	68	09:32 (TRIV-62)
13	06:18		06:46		07:17		07:48		18:23 (TRIV-52c)	07:24		08:11 (TRIV-62)	07:55		08:25 (TRIV-62)
	21:12		20:43		19:53		19:03	18	18:41 (TRIV-52c)	17:23	74	09:25 (TRIV-62)	17:11	67	09:32 (TRIV-62)
14	06:18		06:47		07:18		07:49		18:23 (TRIV-52c)	07:25		08:11 (TRIV-62)	07:56		08:25 (TRIV-62)
	21:12		20:41		19:51		19:01	16	18:39 (TRIV-52c)	17:22	74	09:25 (TRIV-62)	17:11	67	09:32 (TRIV-62)
15	06:19		06:48		07:19		07:50		18:23 (TRIV-52c)	07:26		08:11 (TRIV-62)	07:57		08:26 (TRIV-62)
	21:11		20:40		19:50		19:00	14	18:37 (TRIV-52c)	17:21	74	09:25 (TRIV-62)	17:11	66	09:32 (TRIV-62)
16	06:20		06:49		07:20		07:51		18:23 (TRIV-52c)	07:27		08:12 (TRIV-62)	07:57		08:27 (TRIV-62)
	21:10		20:39		19:48		18:58	12	18:35 (TRIV-52c)	17:20	75	09:27 (TRIV-62)	17:12	66	09:33 (TRIV-62)
17	06:21		06:50		07:21		07:52		18:23 (TRIV-52c)	07:28		08:12 (TRIV-62)	07:58		08:27 (TRIV-62)
	21:10		20:37		19:46		18:57	11	18:34 (TRIV-52c)	17:19	75	09:27 (TRIV-62)	17:12	66	09:33 (TRIV-62)
18	06:22		06:51		07:22		07:53		18:24 (TRIV-52c)	07:29		08:12 (TRIV-62)	07:59		08:27 (TRIV-62)
	21:09		20:36		19:44		18:55	8	18:32 (TRIV-52c)	17:19	75	09:27 (TRIV-62)	17:12	66	09:33 (TRIV-62)
19	06:22		06:52		07:23		07:54		18:26 (TRIV-52c)	07:31		08:12 (TRIV-62)	07:59		08:28 (TRIV-62)
	21:09		20:34		19:43		18:54	5	18:31 (TRIV-52c)	17:18	75	09:27 (TRIV-62)	17:13	66	09:34 (TRIV-62)
20	06:23		06:53		07:24		07:55		09:41 (TRIV-62)	07:32		08:13 (TRIV-62)	08:00		08:28 (TRIV-62)
	21:08		20:33		19:41		18:52	11	18:30 (TRIV-52c)	17:17	75	09:28 (TRIV-62)	17:13	66	09:34 (TRIV-62)
21	06:24		06:54		07:25		07:57		09:35 (TRIV-62)	07:33		08:13 (TRIV-62)	08:00		08:29 (TRIV-62)
	21:07		20:32		19:39		18:51	22	09:57 (TRIV-62)	17:17	75	09:28 (TRIV-62)	17:14	66	09:35 (TRIV-62)
22	06:25		06:55		07:26		07:58		09:31 (TRIV-62)	07:34		08:13 (TRIV-62)	08:01		08:29 (TRIV-62)
	21:06		20:30		19:38		18:49	30	10:01 (TRIV-62)	17:16	75	09:28 (TRIV-62)	17:14	66	09:35 (TRIV-62)
23	06:26		06:56		07:27		07:59		09:28 (TRIV-62)	07:35		08:13 (TRIV-62)	08:01		08:30 (TRIV-62)
	21:06		20:29		19:36		18:48	35	10:03 (TRIV-62)	17:15	75	09:28 (TRIV-62)	17:15	66	09:36 (TRIV-62)
24	06:27		06:57		07:28		08:00		09:27 (TRIV-62)	07:36		08:13 (TRIV-62)	08:02		08:30 (TRIV-62)
	21:05		20:27		19:34		18:46	39	10:06 (TRIV-62)	17:15	75	09:28 (TRIV-62)	17:15	66	09:36 (TRIV-62)
25	06:28		06:58		07:29		08:01		09:24 (TRIV-62)	07:38		08:15 (TRIV-62)	08:02		08:30 (TRIV-62)
	21:04		20:26		19:33		18:45	44	10:08 (TRIV-62)	17:14	74	09:29 (TRIV-62)	17:16	66	09:36 (TRIV-62)
26	06:29		06:59		07:30		08:02		09:23 (TRIV-62)	07:39		08:15 (TRIV-62)	08:03		08:32 (TRIV-62)
	21:03		20:24		19:31		18:44	47	10:10 (TRIV-62)	17:14	74	09:29 (TRIV-62)	17:16	66	09:38 (TRIV-62)
27	06:30		07:00		07:31		08:03		09:21 (TRIV-62)	07:40		08:15 (TRIV-62)	08:03		08:32 (TRIV-62)
	21:02		20:22		19:29		18:42	50	10:11 (TRIV-62)	17:13	74	09:29 (TRIV-62)	17:17	66	09:38 (TRIV-62)
28	06:31		07:01		07:32		08:05		09:20 (TRIV-62)	07:41		08:16 (TRIV-62)	08:03		08:32 (TRIV-62)
	21:01		20:21		19:27		18:41	53	10:13 (TRIV-62)	17:13	73	09:29 (TRIV-62)	17:18	66	09:38 (TRIV-62)
29	06:31		07:02		07:33		08:06		09:19 (TRIV-62)	07:42		08:16 (TRIV-62)	08:04		08:32 (TRIV-62)
	21:00		20:19		19:26		18:40	56	10:15 (TRIV-62)	17:12	73	09:29 (TRIV-62)	17:19	66	09:38 (TRIV-62)
30	06:32		07:03		07:34		08:07		09:17 (TRIV-62)	07:43		08:17 (TRIV-62)	08:04		08:33 (TRIV-62)
	20:59		20:18		19:24		18:38	58	10:15 (TRIV-62)	17:12	72	09:29 (TRIV-62)	17:19	67	09:40 (TRIV-62)
31	06:33		07:04				08:08		09:16 (TRIV-62)				08:04		08:33 (TRIV-62)
	20:58		20:16				18:37	60	10:16 (TRIV-62)				17:20	67	09:40 (TRIV-62)
Potential sun hours	459		428		375		345			298			288		
Total, worst case								729			2164			2092	
Sun reduction								0.60			0.40			0.36	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.63			0.60			0.60	
Total reduction								0.38			0.24			0.22	
Total, real								274			517			450	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 171 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1194)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:04		07:51		07:15			07:24		19:08 (TRIV-61)	06:38		18:59 (TRIV-61)	06:10		19:02 (TRIV-61a)
	17:21		17:55		18:29			20:02	34	19:42 (TRIV-61)	20:34	73	20:12 (TRIV-59)	21:04	67	20:09 (TRIV-61a)
2	08:04		07:50		07:13			07:22		19:06 (TRIV-61)	06:37		19:00 (TRIV-61a)	06:09		19:03 (TRIV-61a)
	17:22		17:57		18:31			20:03	37	19:43 (TRIV-61)	20:35	74	20:14 (TRIV-59)	21:05	67	20:10 (TRIV-61a)
3	08:04		07:49		07:11			07:21		19:03 (TRIV-61)	06:36		18:59 (TRIV-61a)	06:09		19:03 (TRIV-61a)
	17:23		17:58		18:32			20:05	41	19:44 (TRIV-61)	20:36	75	20:14 (TRIV-59)	21:05	66	20:09 (TRIV-61a)
4	08:05		07:48		07:10			07:19		19:02 (TRIV-61)	06:34		18:59 (TRIV-61a)	06:08		19:03 (TRIV-61a)
	17:24		17:59		18:33			20:06	43	19:45 (TRIV-61)	20:37	76	20:15 (TRIV-59)	21:06	66	20:09 (TRIV-61a)
5	08:05		07:47		07:08			07:17		19:01 (TRIV-61)	06:33		18:58 (TRIV-61a)	06:08		19:04 (TRIV-61a)
	17:25		18:00		18:34			20:07	45	19:46 (TRIV-61)	20:38	78	20:16 (TRIV-59)	21:07	66	20:10 (TRIV-61a)
6	08:04		07:45		07:07			07:16		19:00 (TRIV-61)	06:32		18:58 (TRIV-61a)	06:08		19:04 (TRIV-61a)
	17:26		18:02		18:35			20:08	48	19:48 (TRIV-61)	20:39	79	20:17 (TRIV-59)	21:08	65	20:09 (TRIV-61a)
7	08:04		07:44		07:05			07:14		18:58 (TRIV-61)	06:31		18:58 (TRIV-61a)	06:07		19:04 (TRIV-61a)
	17:27		18:03		18:36			20:09	50	19:48 (TRIV-61)	20:41	80	20:18 (TRIV-59)	21:08	65	20:09 (TRIV-61a)
8	08:04		07:43		08:04			07:12		18:57 (TRIV-61)	06:29		18:58 (TRIV-61a)	06:07		19:05 (TRIV-61a)
	17:28		18:04		19:37			20:10	52	19:49 (TRIV-61)	20:42	81	20:19 (TRIV-59)	21:09	64	20:09 (TRIV-61a)
9	08:04		07:42		08:02			07:11		18:57 (TRIV-61)	06:28		18:57 (TRIV-61a)	06:07		19:06 (TRIV-61a)
	17:29		18:05		19:39			20:11	53	19:50 (TRIV-61)	20:43	82	20:19 (TRIV-59)	21:09	63	20:09 (TRIV-61a)
10	08:04		07:41		08:00			07:09		18:56 (TRIV-61)	06:27		18:57 (TRIV-61a)	06:07		19:06 (TRIV-61a)
	17:30		18:07		19:40			20:12	54	19:50 (TRIV-61)	20:44	83	20:20 (TRIV-59)	21:10	64	20:10 (TRIV-61a)
11	08:04		07:40		07:59			07:08		18:54 (TRIV-61)	06:26		18:57 (TRIV-61a)	06:07		19:07 (TRIV-61a)
	17:31		18:08		19:41			20:13	56	19:50 (TRIV-61)	20:45	84	20:21 (TRIV-59)	21:11	63	20:10 (TRIV-61a)
12	08:03		07:38		07:57			07:06		18:54 (TRIV-61)	06:25		18:57 (TRIV-61a)	06:06		19:07 (TRIV-61a)
	17:32		18:09		19:42			20:14	57	19:51 (TRIV-61)	20:46	85	20:22 (TRIV-59)	21:11	63	20:10 (TRIV-61a)
13	08:03		07:37		07:55			07:04		18:53 (TRIV-61)	06:24		18:57 (TRIV-61a)	06:06		19:07 (TRIV-61a)
	17:33		18:10		19:43			20:15	57	19:50 (TRIV-61)	20:47	86	20:23 (TRIV-59)	21:12	62	20:09 (TRIV-61a)
14	08:03		07:36		07:54			07:03		18:54 (TRIV-61)	06:23		18:57 (TRIV-61a)	06:06		19:07 (TRIV-61a)
	17:34		18:12		19:44			20:16	57	19:51 (TRIV-61)	20:48	86	20:23 (TRIV-59)	21:12	62	20:09 (TRIV-61a)
15	08:02		07:35		07:52			07:01		18:53 (TRIV-61)	06:22		18:57 (TRIV-61a)	06:06		19:07 (TRIV-61a)
	17:35		18:13		19:45			20:17	57	19:50 (TRIV-61)	20:49	85	20:22 (TRIV-59)	21:13	62	20:09 (TRIV-61a)
16	08:02		07:33		07:51			07:00		18:53 (TRIV-61)	06:21		18:58 (TRIV-61a)	06:06		19:09 (TRIV-61a)
	17:36		18:14		19:46			20:18	57	19:50 (TRIV-61)	20:50	85	20:23 (TRIV-59)	21:13	61	20:10 (TRIV-61a)
17	08:02		07:32		07:49			06:58		18:52 (TRIV-61)	06:20		18:58 (TRIV-61a)	06:06		19:09 (TRIV-61a)
	17:37		18:15		19:47			20:19	59	19:51 (TRIV-61a)	20:51	84	20:22 (TRIV-59)	21:13	61	20:10 (TRIV-61a)
18	08:01		07:31		07:47			06:57		18:53 (TRIV-61)	06:19		18:58 (TRIV-61a)	06:06		19:09 (TRIV-61a)
	17:38		18:16		19:48			20:20	62	19:55 (TRIV-61a)	20:52	83	20:21 (TRIV-59)	21:14	61	20:10 (TRIV-61a)
19	08:01		07:29		07:46			06:55		18:52 (TRIV-61)	06:18		18:58 (TRIV-61a)	06:07		19:09 (TRIV-61a)
	17:40		18:18		19:50			20:22	64	19:56 (TRIV-61a)	20:53	81	20:19 (TRIV-59)	21:14	61	20:10 (TRIV-61a)
20	08:00		07:28		07:44			06:54		18:53 (TRIV-61)	06:17		18:58 (TRIV-61a)	06:07		19:09 (TRIV-61a)
	17:41		18:19		19:51			20:23	66	19:59 (TRIV-61a)	20:54	80	20:18 (TRIV-59)	21:14	61	20:10 (TRIV-61a)
21	07:59		07:26		07:42			06:52		18:52 (TRIV-61)	06:17		18:58 (TRIV-61a)	06:07		19:09 (TRIV-61a)
	17:42		18:20		19:52			20:24	68	20:00 (TRIV-61a)	20:54	78	20:16 (TRIV-59)	21:15	61	20:10 (TRIV-61a)
22	07:59		07:25		07:41			06:51		18:53 (TRIV-61)	06:16		18:59 (TRIV-61a)	06:07		19:09 (TRIV-61a)
	17:43		18:21		19:53			20:25	68	20:01 (TRIV-61a)	20:55	72	20:11 (TRIV-61a)	21:15	61	20:10 (TRIV-61a)
23	07:58		07:24		07:39			06:49		18:53 (TRIV-61)	06:15		18:59 (TRIV-61a)	06:07		19:10 (TRIV-61a)
	17:44		18:22		19:54			20:26	69	20:02 (TRIV-61a)	20:56	71	20:10 (TRIV-61a)	21:15	61	20:11 (TRIV-61a)
24	07:57		07:22		07:37			06:48		18:54 (TRIV-61)	06:14		18:59 (TRIV-61a)	06:08		19:10 (TRIV-61a)
	17:46		18:24		19:55			20:27	69	20:03 (TRIV-61a)	20:57	71	20:10 (TRIV-61a)	21:15	61	20:11 (TRIV-61a)
25	07:57		07:21		07:35			06:46		18:55 (TRIV-61)	06:14		19:00 (TRIV-61a)	06:08		19:10 (TRIV-61a)
	17:47		18:25		19:56			20:28	70	20:05 (TRIV-61a)	20:58	70	20:10 (TRIV-61a)	21:15	61	20:11 (TRIV-61a)
26	07:56		07:19		07:34			06:45		18:54 (TRIV-61)	06:13		19:00 (TRIV-61a)	06:08		19:11 (TRIV-61a)
	17:48		18:26		19:57			20:29	71	20:05 (TRIV-61a)	20:59	70	20:10 (TRIV-61a)	21:15	61	20:12 (TRIV-61a)
27	07:55		07:18		07:32			06:44		18:55 (TRIV-61)	06:12		19:00 (TRIV-61a)	06:09		19:10 (TRIV-61a)
	17:49		18:27		19:58			20:30	71	20:06 (TRIV-61a)	21:00	70	20:10 (TRIV-61a)	21:16	62	20:12 (TRIV-61a)
28	07:54		07:16		07:30			06:42		18:57 (TRIV-61)	06:12		19:00 (TRIV-61a)	06:09		19:10 (TRIV-61a)
	17:50		18:28		19:59			20:31	70	20:07 (TRIV-61a)	21:01	70	20:10 (TRIV-61a)	21:16	62	20:12 (TRIV-61a)
29	07:53				07:29		19:18 (TRIV-61)	06:41		18:57 (TRIV-61)	06:11		19:00 (TRIV-61a)	06:09		19:11 (TRIV-61a)
	17:52				20:00	18	19:36 (TRIV-61)	20:32	73	20:10 (TRIV-59)	21:02	69	20:09 (TRIV-61a)	21:16	62	20:13 (TRIV-61a)
30	07:53				07:27		19:13 (TRIV-61)	06:39		18:58 (TRIV-61)	06:11		19:01 (TRIV-61a)	06:10		19:10 (TRIV-61a)
	17:53				20:00	26	19:39 (TRIV-61)	20:33	73	20:11 (TRIV-59)	21:02	69	20:10 (TRIV-61a)	21:16	63	20:13 (TRIV-61a)
31	07:52				07:25		19:10 (TRIV-61)				06:10		19:02 (TRIV-61a)			
	17:54				20:01	31	19:41 (TRIV-61)				21:03	68	20:10 (TRIV-61a)			
Potential sun hours	298		297		370			398			448			452		
Total, worst case						75			1751			2398			1885	
Sun reduction						0.57			0.63			0.69			0.74	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.67			0.66			0.64			0.64	
Total reduction						0.38			0.42			0.44			0.48	
Total, real						29			729			1066			897	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 171 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1194)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October	November	December
1	06:10	19:11 (TRIV-61a)	06:34	19:07 (TRIV-61a)	07:05	18:54 (TRIV-61)	07:35	07:09	07:44
	21:15	63 20:14 (TRIV-61a)	20:57	86 20:33 (TRIV-59)	20:15	56 19:50 (TRIV-61)	19:22	17:36	17:12
2	06:11	19:10 (TRIV-61a)	06:35	19:07 (TRIV-61a)	07:06	18:55 (TRIV-61)	07:36	07:10	07:45
	21:15	64 20:14 (TRIV-61a)	20:56	85 20:32 (TRIV-59)	20:13	54 19:49 (TRIV-61)	19:21	17:35	17:11
3	06:11	19:11 (TRIV-61a)	06:36	19:07 (TRIV-61a)	07:07	18:54 (TRIV-61)	07:37	07:12	07:46
	21:15	63 20:14 (TRIV-61a)	20:55	84 20:31 (TRIV-59)	20:11	53 19:47 (TRIV-61)	19:19	17:33	17:11
4	06:12	19:10 (TRIV-61a)	06:37	19:07 (TRIV-61a)	07:08	18:54 (TRIV-61)	07:38	07:13	07:47
	21:15	64 20:14 (TRIV-61a)	20:54	83 20:30 (TRIV-59)	20:10	52 19:46 (TRIV-61)	19:17	17:32	17:11
5	06:12	19:11 (TRIV-61a)	06:38	19:08 (TRIV-61a)	07:09	18:54 (TRIV-61)	07:39	07:14	07:48
	21:15	64 20:15 (TRIV-61a)	20:53	81 20:29 (TRIV-59)	20:08	50 19:44 (TRIV-61)	19:16	17:31	17:11
6	06:13	19:10 (TRIV-61a)	06:39	19:08 (TRIV-61a)	07:10	18:55 (TRIV-61)	07:40	07:15	07:49
	21:15	65 20:15 (TRIV-61a)	20:52	80 20:28 (TRIV-59)	20:06	48 19:43 (TRIV-61)	19:14	17:30	17:11
7	06:14	19:10 (TRIV-61a)	06:40	19:08 (TRIV-61a)	07:11	18:56 (TRIV-61)	07:41	07:16	07:50
	21:14	66 20:16 (TRIV-61a)	20:50	79 20:27 (TRIV-59)	20:05	45 19:41 (TRIV-61)	19:12	17:29	17:11
8	06:14	19:11 (TRIV-61a)	06:41	19:08 (TRIV-61a)	07:12	18:56 (TRIV-61)	07:42	07:18	07:51
	21:14	65 20:16 (TRIV-61a)	20:49	77 20:25 (TRIV-59)	20:03	43 19:39 (TRIV-61)	19:11	17:28	17:11
9	06:15	19:10 (TRIV-61a)	06:42	19:08 (TRIV-61a)	07:13	18:57 (TRIV-61)	07:43	07:19	07:52
	21:14	66 20:16 (TRIV-61a)	20:48	76 20:24 (TRIV-59)	20:01	41 19:38 (TRIV-61)	19:09	17:27	17:11
10	06:16	19:10 (TRIV-61a)	06:43	19:09 (TRIV-61a)	07:14	18:59 (TRIV-61)	07:44	07:20	07:53
	21:13	67 20:17 (TRIV-61a)	20:47	74 20:23 (TRIV-59)	20:00	37 19:36 (TRIV-61)	19:08	17:26	17:11
11	06:16	19:10 (TRIV-61a)	06:44	19:09 (TRIV-61a)	07:15	19:00 (TRIV-61)	07:46	07:21	07:54
	21:13	68 20:18 (TRIV-61a)	20:45	73 20:22 (TRIV-59)	19:56	35 19:35 (TRIV-61)	19:06	17:25	17:11
12	06:17	19:10 (TRIV-61a)	06:45	19:08 (TRIV-61)	07:16	19:02 (TRIV-61)	07:47	07:22	07:54
	21:13	67 20:17 (TRIV-61a)	20:44	73 20:21 (TRIV-59)	19:55	31 19:33 (TRIV-61)	19:04	17:24	17:11
13	06:18	19:10 (TRIV-61a)	06:46	19:05 (TRIV-61)	07:17	19:04 (TRIV-61)	07:48	07:24	07:55
	21:12	68 20:18 (TRIV-61a)	20:43	73 20:18 (TRIV-59)	19:53	27 19:31 (TRIV-61)	19:03	17:23	17:11
14	06:18	19:10 (TRIV-61a)	06:47	19:04 (TRIV-61)	07:18	19:07 (TRIV-61)	07:49	07:25	07:56
	21:12	69 20:19 (TRIV-61a)	20:41	73 20:17 (TRIV-59)	19:51	20 19:27 (TRIV-61)	19:01	17:22	17:11
15	06:19	19:10 (TRIV-61a)	06:48	19:03 (TRIV-61)	07:19	19:14 (TRIV-61)	07:50	07:26	07:57
	21:11	69 20:19 (TRIV-61a)	20:40	71 20:14 (TRIV-61a)	19:50	5 19:19 (TRIV-61)	19:00	17:21	17:11
16	06:20	19:09 (TRIV-61a)	06:49	19:02 (TRIV-61)	07:20		07:51	07:27	07:57
	21:11	70 20:19 (TRIV-61a)	20:39	71 20:13 (TRIV-61a)	19:48		18:58	17:20	17:12
17	06:21	19:09 (TRIV-61a)	06:50	19:01 (TRIV-61)	07:21		07:52	07:28	07:58
	21:10	70 20:19 (TRIV-61a)	20:37	70 20:11 (TRIV-61a)	19:46		18:57	17:19	17:12
18	06:22	19:09 (TRIV-61a)	06:51	19:00 (TRIV-61)	07:22		07:53	07:30	07:59
	21:09	71 20:20 (TRIV-61a)	20:36	70 20:10 (TRIV-61a)	19:44		18:55	17:19	17:12
19	06:22	19:09 (TRIV-61a)	06:52	18:59 (TRIV-61)	07:23		07:54	07:31	07:59
	21:09	71 20:20 (TRIV-61a)	20:34	70 20:09 (TRIV-61a)	19:43		18:54	17:18	17:13
20	06:23	19:09 (TRIV-61a)	06:53	18:59 (TRIV-61)	07:24		07:55	07:32	08:00
	21:08	72 20:21 (TRIV-61a)	20:33	68 20:07 (TRIV-61a)	19:41		18:52	17:17	17:13
21	06:24	19:08 (TRIV-61a)	06:54	18:58 (TRIV-61)	07:25		07:57	07:33	08:00
	21:07	72 20:20 (TRIV-61a)	20:32	68 20:06 (TRIV-61a)	19:39		18:51	17:17	17:14
22	06:25	19:08 (TRIV-61a)	06:55	18:57 (TRIV-61)	07:26		07:58	07:34	08:01
	21:06	76 20:24 (TRIV-59)	20:30	67 20:04 (TRIV-61a)	19:38		18:49	17:16	17:14
23	06:26	19:08 (TRIV-61a)	06:56	18:57 (TRIV-61)	07:27		07:59	07:35	08:01
	21:06	79 20:27 (TRIV-59)	20:29	65 20:02 (TRIV-61a)	19:36		18:48	17:15	17:15
24	06:27	19:08 (TRIV-61a)	06:57	18:56 (TRIV-61)	07:28		08:00	07:36	08:02
	21:05	81 20:29 (TRIV-59)	20:27	64 20:00 (TRIV-61a)	19:34		18:46	17:15	17:15
25	06:28	19:08 (TRIV-61a)	06:58	18:56 (TRIV-61)	07:29		08:01	07:38	08:02
	21:04	83 20:31 (TRIV-59)	20:26	61 19:57 (TRIV-61a)	19:33		18:45	17:14	17:16
26	06:29	19:08 (TRIV-61a)	06:59	18:55 (TRIV-61)	07:30		08:02	07:39	08:03
	21:03	84 20:32 (TRIV-59)	20:24	59 19:54 (TRIV-61a)	19:31		18:44	17:14	17:16
27	06:30	19:08 (TRIV-61a)	07:00	18:55 (TRIV-61)	07:31		08:03	07:40	08:03
	21:02	85 20:33 (TRIV-59)	20:22	57 19:52 (TRIV-61)	19:29		18:42	17:13	17:17
28	06:30	19:07 (TRIV-61a)	07:01	18:55 (TRIV-61)	07:32		08:05	07:41	08:03
	21:01	86 20:33 (TRIV-59)	20:21	57 19:52 (TRIV-61)	19:27		18:41	17:13	17:18
29	06:31	19:07 (TRIV-61a)	07:02	18:55 (TRIV-61)	07:33		08:06	07:42	08:04
	21:00	86 20:33 (TRIV-59)	20:19	57 19:52 (TRIV-61)	19:26		18:40	17:12	17:18
30	06:32	19:07 (TRIV-61a)	07:03	18:54 (TRIV-61)	07:34		08:07	07:43	08:04
	20:59	87 20:34 (TRIV-59)	20:18	57 19:51 (TRIV-61)	19:24		18:38	17:12	17:19
31	06:33	19:07 (TRIV-61a)	07:04	18:54 (TRIV-61)			08:08		08:04
	20:58	87 20:34 (TRIV-59)	20:16	57 19:51 (TRIV-61)			18:37		17:20
Potential sun hours	459		428		375		345	298	288
Total, worst case		2248		2186		597			
Sun reduction		0.76		0.75		0.67			
Oper. time red.		1.00		1.00		1.00			
Wind dir. red.		0.64		0.65		0.67			
Total reduction		0.49		0.49		0.45			
Total, real		1098		1071		267			

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 174 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1197)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April			May			June
1	08:04		15:35 (TRIV-52c)	07:51		17:20 (TRIV-52a)	07:15	07:24			06:38		19:39 (TRIV-51)	06:10
	17:21	41	16:16 (TRIV-52c)	17:55	11	17:31 (TRIV-52a)	18:29	20:02			20:34	33	20:12 (TRIV-51)	21:04
2	08:04		15:36 (TRIV-52c)	07:50		17:18 (TRIV-52a)	07:13	07:22			06:37		19:39 (TRIV-51)	06:09
	17:22	40	16:16 (TRIV-52c)	17:57	15	17:33 (TRIV-52a)	18:31	20:03			20:35	35	20:14 (TRIV-51)	21:05
3	08:05		15:36 (TRIV-52c)	07:49		17:17 (TRIV-52a)	07:12	07:21			06:36		19:38 (TRIV-51)	06:09
	17:23	40	16:16 (TRIV-52c)	17:58	17	17:34 (TRIV-52a)	18:32	20:05			20:36	34	20:12 (TRIV-51)	21:05
4	08:05		15:37 (TRIV-52c)	07:48		17:16 (TRIV-52a)	07:10	07:19			06:34		19:39 (TRIV-51)	06:08
	17:24	39	16:16 (TRIV-52c)	17:59	19	17:35 (TRIV-52a)	18:33	20:06			20:37	33	20:12 (TRIV-51)	21:06
5	08:05		15:38 (TRIV-52c)	07:47		17:16 (TRIV-52a)	07:08	07:17			06:33		19:39 (TRIV-51)	06:08
	17:25	38	16:16 (TRIV-52c)	18:00	21	17:37 (TRIV-52a)	18:34	20:07			20:38	33	20:12 (TRIV-51)	21:07
6	08:05		15:40 (TRIV-52c)	07:46		17:15 (TRIV-52a)	07:07	07:16			06:32		19:40 (TRIV-51)	06:08
	17:26	36	16:16 (TRIV-52c)	18:02	23	17:38 (TRIV-52a)	18:35	20:08			20:40	31	20:11 (TRIV-51)	21:08
7	08:04		15:40 (TRIV-52c)	07:44		17:14 (TRIV-52a)	07:05	07:14			06:31		19:40 (TRIV-51)	06:07
	17:27	35	16:15 (TRIV-52c)	18:03	25	17:39 (TRIV-52a)	18:36	20:09			20:41	31	20:11 (TRIV-51)	21:08
8	08:04		15:41 (TRIV-52c)	07:43		17:13 (TRIV-52a)	08:04	07:12			06:30		19:41 (TRIV-51)	06:07
	17:28	34	16:15 (TRIV-52c)	18:04	27	17:40 (TRIV-52a)	19:37	20:10			20:42	29	20:10 (TRIV-51)	21:09
9	08:04		15:43 (TRIV-52c)	07:42		08:02 (TRIV-62)	08:02	07:11			06:28		19:41 (TRIV-51)	06:07
	17:29	32	16:15 (TRIV-52c)	18:05	32	17:42 (TRIV-52a)	19:39	20:11			20:43	28	20:09 (TRIV-51)	21:09
10	08:04		15:44 (TRIV-52c)	07:41		08:01 (TRIV-62)	08:00	07:09			06:27		19:42 (TRIV-51)	06:07
	17:30	31	16:15 (TRIV-52c)	18:07	37	17:44 (TRIV-52a)	19:40	20:12			20:44	26	20:08 (TRIV-51)	21:10
11	08:04		15:45 (TRIV-52c)	07:40		08:00 (TRIV-62)	07:59	07:08			06:26		19:43 (TRIV-51)	06:07
	17:31	28	16:13 (TRIV-52c)	18:08	41	17:45 (TRIV-52a)	19:41	20:13			20:45	23	20:06 (TRIV-51)	21:11
12	08:03		15:47 (TRIV-52c)	07:38		07:58 (TRIV-62)	07:57	07:06			06:25		19:44 (TRIV-51)	06:06
	17:32	26	16:13 (TRIV-52c)	18:09	45	17:46 (TRIV-52a)	19:42	20:14			20:46	21	20:05 (TRIV-51)	21:11
13	08:03		15:49 (TRIV-52c)	07:37		07:57 (TRIV-62)	07:56	07:04			06:24		19:46 (TRIV-51)	06:06
	17:33	23	16:12 (TRIV-52c)	18:10	47	17:47 (TRIV-52a)	19:43	20:15			20:47	18	20:04 (TRIV-51)	21:12
14	08:03		15:51 (TRIV-52c)	07:36		07:56 (TRIV-62)	07:54	07:03			06:23		19:48 (TRIV-51)	06:06
	17:34	19	16:10 (TRIV-52c)	18:12	51	17:49 (TRIV-52a)	19:44	20:16			20:48	14	20:02 (TRIV-51)	21:12
15	08:02		15:54 (TRIV-52c)	07:35		07:54 (TRIV-62)	07:52	07:01			06:22		19:52 (TRIV-51)	06:06
	17:35	15	16:09 (TRIV-52c)	18:13	52	17:48 (TRIV-52a)	19:45	20:17			20:49	7	19:59 (TRIV-51)	21:13
16	08:02		15:58 (TRIV-52c)	07:33		07:53 (TRIV-62)	07:51	07:00			06:21			06:06
	17:36	7	16:05 (TRIV-52c)	18:14	53	17:48 (TRIV-52a)	19:46	20:18			20:50			21:13
17	08:02			07:32		07:52 (TRIV-62)	07:49	06:58			06:20			06:06
	17:37			18:15	54	17:48 (TRIV-52a)	19:47	20:19			20:51			21:13
18	08:01			07:31		07:50 (TRIV-62)	07:47	06:57		19:52 (TRIV-51)	06:19			06:06
	17:38			18:16	54	17:47 (TRIV-52a)	19:49	20:20	7	19:59 (TRIV-51)	20:52			21:14
19	08:01			07:29		07:49 (TRIV-62)	07:46	06:55		19:48 (TRIV-51)	06:18			06:07
	17:40			18:18	53	17:46 (TRIV-52a)	19:50	20:22	12	20:00 (TRIV-51)	20:53			21:14
20	08:00			07:28		07:48 (TRIV-62)	07:44	06:54		19:47 (TRIV-51)	06:17			06:07
	17:41			18:19	52	17:46 (TRIV-52a)	19:51	20:23	14	20:01 (TRIV-51)	20:54			21:14
21	07:59			07:26		07:47 (TRIV-62)	07:42	06:52		19:45 (TRIV-51)	06:17			06:07
	17:42			18:20	50	17:44 (TRIV-52a)	19:52	20:24	17	20:02 (TRIV-51)	20:55			21:15
22	07:59			07:25		07:48 (TRIV-62)	07:41	06:51		19:44 (TRIV-51)	06:16			06:07
	17:43			18:21	45	17:43 (TRIV-52a)	19:53	20:25	19	20:03 (TRIV-51)	20:55			21:15
23	07:58			07:24		07:49 (TRIV-62)	07:39	06:49		19:43 (TRIV-51)	06:15			06:07
	17:44			18:22	38	17:40 (TRIV-52a)	19:54	20:26	22	20:05 (TRIV-51)	20:56			21:15
24	07:57			07:22		07:51 (TRIV-62)	07:37	06:48		19:41 (TRIV-51)	06:14			06:08
	17:46			18:24	30	17:38 (TRIV-52a)	19:55	20:27	24	20:05 (TRIV-51)	20:57			21:15
25	07:57			07:21		07:53 (TRIV-62)	07:36	06:46		19:41 (TRIV-51)	06:14			06:08
	17:47			18:25	14	17:32 (TRIV-52a)	19:56	20:28	25	20:06 (TRIV-51)	20:58			21:15
26	07:56			07:19			07:34	06:45		19:40 (TRIV-51)	06:13			06:08
	17:48			18:26			19:57	20:29	27	20:07 (TRIV-51)	20:59			21:15
27	07:55			07:18			07:32	06:44		19:39 (TRIV-51)	06:12			06:09
	17:49			18:27			19:58	20:30	29	20:08 (TRIV-51)	21:00			21:16
28	07:54			07:16			07:31	06:42		19:39 (TRIV-51)	06:12			06:09
	17:50			18:28			19:59	20:31	30	20:09 (TRIV-51)	21:01			21:16
29	07:53						07:29	06:41		19:38 (TRIV-51)	06:11			06:09
	17:52						20:00	20:32	32	20:10 (TRIV-51)	21:02			21:16
30	07:53		17:25 (TRIV-52a)				07:27	06:40		19:38 (TRIV-51)	06:11			06:10
	17:53	4	17:29 (TRIV-52a)				20:00	20:33	33	20:11 (TRIV-51)	21:02			21:16
31	07:52		17:22 (TRIV-52a)				07:26				06:10			
	17:54	8	17:30 (TRIV-52a)				20:01				21:03			
Potential sun hours	298			297			370	398			448			452
Total, worst case		496			906				291			396		
Sun reduction		0.50			0.55				0.63			0.69		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.69			0.68				0.64			0.64		
Total reduction		0.34			0.38				0.41			0.45		
Total, real		171			342				119			177		

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 174 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1197)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September		October			November			December		
1	06:10			06:34		19:54 (TRIV-51)	07:05		07:35			07:09		07:31 (TRIV-62)	07:44		15:27 (TRIV-52c)
	21:16			20:57	22	20:16 (TRIV-51)	20:15		19:22			17:36	36	17:13 (TRIV-52a)	17:12	28	15:55 (TRIV-52c)
2	06:11			06:35		19:53 (TRIV-51)	07:06		07:36			07:11		07:32 (TRIV-62)	07:45		15:27 (TRIV-52c)
	21:15			20:56	25	20:18 (TRIV-51)	20:13		19:21			17:35	32	17:12 (TRIV-52a)	17:12	31	15:58 (TRIV-52c)
3	06:11			06:36		19:52 (TRIV-51)	07:07		07:37			07:12		16:43 (TRIV-52a)	07:46		15:27 (TRIV-52c)
	21:15			20:55	27	20:19 (TRIV-51)	20:11		19:19			17:33	27	17:10 (TRIV-52a)	17:11	32	15:59 (TRIV-52c)
4	06:12			06:37		19:51 (TRIV-51)	07:08		07:38			07:13		16:44 (TRIV-52a)	07:47		15:26 (TRIV-52c)
	21:15			20:54	28	20:19 (TRIV-51)	20:10		19:17			17:32	25	17:09 (TRIV-52a)	17:11	34	16:00 (TRIV-52c)
5	06:12			06:38		19:51 (TRIV-51)	07:09		07:39			07:14		16:45 (TRIV-52a)	07:48		15:26 (TRIV-52c)
	21:15			20:53	29	20:20 (TRIV-51)	20:08		19:16			17:31	23	17:08 (TRIV-52a)	17:11	35	16:01 (TRIV-52c)
6	06:13			06:39		19:50 (TRIV-51)	07:10		07:40			07:15		16:46 (TRIV-52a)	07:49		15:26 (TRIV-52c)
	21:15			20:52	31	20:21 (TRIV-51)	20:06		19:14			17:30	21	17:07 (TRIV-52a)	17:11	36	16:02 (TRIV-52c)
7	06:14			06:40		19:49 (TRIV-51)	07:11		07:41			07:16		16:46 (TRIV-52a)	07:50		15:26 (TRIV-52c)
	21:14			20:50	32	20:21 (TRIV-51)	20:05		19:12			17:29	19	17:05 (TRIV-52a)	17:11	37	16:03 (TRIV-52c)
8	06:14			06:41		19:49 (TRIV-51)	07:12		07:42			07:18		16:47 (TRIV-52a)	07:51		15:25 (TRIV-52c)
	21:14			20:49	33	20:22 (TRIV-51)	20:03		19:11			17:28	17	17:04 (TRIV-52a)	17:11	38	16:03 (TRIV-52c)
9	06:15			06:42		19:48 (TRIV-51)	07:13		07:43			07:19		16:49 (TRIV-52a)	07:52		15:25 (TRIV-52c)
	21:14			20:48	34	20:22 (TRIV-51)	20:01		19:09			17:27	14	17:03 (TRIV-52a)	17:11	39	16:04 (TRIV-52c)
10	06:16			06:43		19:48 (TRIV-51)	07:14		07:45			07:20		16:51 (TRIV-52a)	07:53		15:25 (TRIV-52c)
	21:13			20:47	34	20:22 (TRIV-51)	20:00		19:08			17:26	11	17:02 (TRIV-52a)	17:11	40	16:05 (TRIV-52c)
11	06:16			06:44		19:48 (TRIV-51)	07:15		07:46			07:21		16:53 (TRIV-52a)	07:54		15:25 (TRIV-52c)
	21:13			20:45	34	20:22 (TRIV-51)	19:56		19:06			17:25	8	17:01 (TRIV-52a)	17:11	41	16:06 (TRIV-52c)
12	06:17			06:45		19:47 (TRIV-51)	07:16		07:47			07:22		16:57 (TRIV-52a)	07:54		15:25 (TRIV-52c)
	21:13			20:44	34	20:21 (TRIV-51)	19:55		19:04			17:24	3	17:00 (TRIV-52a)	17:11	42	16:07 (TRIV-52c)
13	06:18			06:46		19:47 (TRIV-51)	07:17		07:48			07:24			07:55		15:26 (TRIV-52c)
	21:12			20:43	32	20:19 (TRIV-51)	19:53		19:03			17:23			17:11	42	16:08 (TRIV-52c)
14	06:19			06:47		19:46 (TRIV-51)	07:18		07:49			07:25			07:56		15:25 (TRIV-52c)
	21:12			20:42	31	20:17 (TRIV-51)	19:51		19:01			17:22			17:11	43	16:08 (TRIV-52c)
15	06:19			06:48		19:46 (TRIV-51)	07:19		07:50			07:26			07:57		15:26 (TRIV-52c)
	21:11			20:40	30	20:16 (TRIV-51)	19:50		19:00			17:21			17:12	43	16:09 (TRIV-52c)
16	06:20			06:49		19:46 (TRIV-51)	07:20		07:51		08:28 (TRIV-62)	07:27			07:57		15:26 (TRIV-52c)
	21:11			20:39	29	20:15 (TRIV-51)	19:48		18:58	3	08:31 (TRIV-62)	17:20			17:12	43	16:09 (TRIV-52c)
17	06:21			06:50		19:46 (TRIV-51)	07:21		07:52		08:23 (TRIV-62)	07:28			07:58		15:26 (TRIV-52c)
	21:10			20:37	27	20:13 (TRIV-51)	19:46		18:57	21	18:06 (TRIV-52a)	17:19			17:12	43	16:09 (TRIV-52c)
18	06:22			06:51		19:47 (TRIV-51)	07:22		07:53		08:22 (TRIV-62)	07:30			07:59		15:27 (TRIV-52c)
	21:09			20:36	25	20:12 (TRIV-51)	19:44		18:55	33	18:11 (TRIV-52a)	17:19			17:12	43	16:10 (TRIV-52c)
19	06:23			06:52		19:47 (TRIV-51)	07:23		07:54		08:20 (TRIV-62)	07:31			07:59		15:27 (TRIV-52c)
	21:09			20:35	24	20:11 (TRIV-51)	19:43		18:54	40	18:12 (TRIV-52a)	17:18			17:13	44	16:11 (TRIV-52c)
20	06:23			06:53		19:48 (TRIV-51)	07:24		07:55		08:18 (TRIV-62)	07:32			08:00		15:27 (TRIV-52c)
	21:08			20:33	21	20:09 (TRIV-51)	19:41		18:52	47	18:14 (TRIV-52a)	17:17			17:13	44	16:11 (TRIV-52c)
21	06:24			06:54		19:49 (TRIV-51)	07:25		07:57		08:17 (TRIV-62)	07:33			08:00		15:28 (TRIV-52c)
	21:07			20:32	19	20:08 (TRIV-51)	19:39		18:51	51	18:15 (TRIV-52a)	17:17			17:14	44	16:12 (TRIV-52c)
22	06:25			06:55		19:50 (TRIV-51)	07:26		07:58		08:18 (TRIV-62)	07:34			08:01		15:28 (TRIV-52c)
	21:06			20:30	16	20:06 (TRIV-51)	19:38		18:49	52	18:15 (TRIV-52a)	17:16			17:14	44	16:12 (TRIV-52c)
23	06:26			06:56		19:51 (TRIV-51)	07:27		07:59		08:19 (TRIV-62)	07:35			08:01		15:29 (TRIV-52c)
	21:06			20:29	14	20:05 (TRIV-51)	19:36		18:48	53	18:16 (TRIV-52a)	17:15			17:15	44	16:13 (TRIV-52c)
24	06:27			06:57		19:53 (TRIV-51)	07:28		08:00		08:21 (TRIV-62)	07:36			08:02		15:29 (TRIV-52c)
	21:05			20:27	11	20:04 (TRIV-51)	19:34		18:46	53	18:17 (TRIV-52a)	17:15			17:15	44	16:13 (TRIV-52c)
25	06:28			06:58		19:55 (TRIV-51)	07:29		08:01		08:22 (TRIV-62)	07:38			08:02		15:29 (TRIV-52c)
	21:04			20:26	7	20:02 (TRIV-51)	19:33		18:45	53	18:18 (TRIV-52a)	17:14			17:16	44	16:13 (TRIV-52c)
26	06:29			06:59			07:30		08:02		08:23 (TRIV-62)	07:39		15:37 (TRIV-52c)	08:03		15:31 (TRIV-52c)
	21:03			20:24			19:31		18:44	53	18:18 (TRIV-52a)	17:14	6	15:43 (TRIV-52c)	17:16	43	16:14 (TRIV-52c)
27	06:30			07:00			07:31		08:03		08:24 (TRIV-62)	07:40		15:33 (TRIV-52c)	08:03		15:31 (TRIV-52c)
	21:02			20:23			19:29		18:42	52	18:18 (TRIV-52a)	17:13	15	15:48 (TRIV-52c)	17:17	43	16:14 (TRIV-52c)
28	06:31			07:01			07:32		08:05		08:26 (TRIV-62)	07:41		15:31 (TRIV-52c)	08:03		15:31 (TRIV-52c)
	21:01			20:21			19:27		18:41	50	18:18 (TRIV-52a)	17:13	19	15:50 (TRIV-52c)	17:18	43	16:14 (TRIV-52c)
29	06:31		20:00 (TRIV-51)	07:02			07:33		08:06		08:27 (TRIV-62)	07:42		15:29 (TRIV-52c)	08:04		15:32 (TRIV-52c)
	21:00	11	20:11 (TRIV-51)	20:19			19:26		18:40	48	18:17 (TRIV-52a)	17:12	23	15:52 (TRIV-52c)	17:19	43	16:15 (TRIV-52c)
30	06:32		19:58 (TRIV-51)	07:03			07:34		08:07		08:28 (TRIV-62)	07:43		15:28 (TRIV-52c)	08:04		15:33 (TRIV-52c)
	20:59	15	20:13 (TRIV-51)	20:18			19:24		18:38	44	18:15 (TRIV-52a)	17:12	26	15:54 (TRIV-52c)	17:19	43	16:16 (TRIV-52c)
31	06:33		19:56 (TRIV-51)	07:04					08:08		08:29 (TRIV-62)				08:04		15:34 (TRIV-52c)
	20:58	19	20:15 (TRIV-51)	20:16					18:37	40	18:14 (TRIV-52a)				17:20	42	16:16 (TRIV-52c)
Potential sun hours	459			428			375		345			298			288		
Total, worst case		45			649					693			325			1255	
Sun reduction		0.76			0.75					0.60			0.40			0.36	
Oper. time red.		1.00			1.00					1.00			1.00			1.00	
Wind dir. red.		0.64			0.64					0.68			0.69			0.69	
Total reduction		0.49			0.48					0.41			0.28			0.25	
Total, real		22			315					283			91			311	

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:
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 175 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1198)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:04		16:11 (TRIV-52a)	07:51		16:16 (TRIV-52a)	07:15		17:50 (TRIV-52)	07:24			06:38			06:10		06:31 (TRIV-61a)
	17:21	44	16:55 (TRIV-52a)	17:55	57	17:13 (TRIV-52a)	18:30	18	18:08 (TRIV-52)	20:02			20:34			21:04	72	20:39 (TRIV-51)
2	08:04		16:11 (TRIV-52a)	07:50		16:17 (TRIV-52a)	07:13		17:48 (TRIV-52)	07:22			06:37			06:09		06:31 (TRIV-61a)
	17:22	45	16:56 (TRIV-52a)	17:57	56	17:13 (TRIV-52a)	18:31	20	18:08 (TRIV-52)	20:04			20:35			21:05	74	20:41 (TRIV-51)
3	08:05		16:11 (TRIV-52a)	07:49		16:17 (TRIV-52a)	07:12		17:48 (TRIV-52)	07:21			06:36			06:09		06:30 (TRIV-61a)
	17:23	46	16:57 (TRIV-52a)	17:58	56	17:13 (TRIV-52a)	18:32	22	18:10 (TRIV-52)	20:05			20:36			21:05	76	20:41 (TRIV-51)
4	08:05		16:12 (TRIV-52a)	07:48		16:18 (TRIV-52a)	07:10		17:47 (TRIV-52)	07:19			06:34			06:08		06:30 (TRIV-61a)
	17:24	46	16:58 (TRIV-52a)	17:59	55	17:13 (TRIV-52a)	18:33	24	18:11 (TRIV-52)	20:06			20:37			21:06	78	20:42 (TRIV-51)
5	08:05		16:12 (TRIV-52a)	07:47		16:19 (TRIV-52a)	07:08		17:48 (TRIV-52)	07:17			06:33			06:08		06:30 (TRIV-61a)
	17:25	47	16:59 (TRIV-52a)	18:00	54	17:13 (TRIV-52a)	18:34	25	18:13 (TRIV-52)	20:07			20:38			21:07	80	20:43 (TRIV-51)
6	08:05		16:12 (TRIV-52a)	07:46		16:20 (TRIV-52a)	07:07		17:47 (TRIV-52)	07:16			06:32			06:08		06:30 (TRIV-61a)
	17:26	48	17:00 (TRIV-52a)	18:02	52	17:12 (TRIV-52a)	18:35	27	18:14 (TRIV-52)	20:08			20:40			21:08	80	20:43 (TRIV-51)
7	08:04		16:11 (TRIV-52a)	07:44		16:20 (TRIV-52a)	07:05		17:47 (TRIV-52)	07:14			06:31			06:07		06:29 (TRIV-61a)
	17:27	49	17:00 (TRIV-52a)	18:03	51	17:11 (TRIV-52a)	18:36	28	18:15 (TRIV-52)	20:09			20:41			21:08	82	20:43 (TRIV-51)
8	08:04		16:11 (TRIV-52a)	07:43		16:21 (TRIV-52a)	08:04		18:47 (TRIV-52)	07:12			06:30			06:07		06:29 (TRIV-61a)
	17:28	50	17:01 (TRIV-52a)	18:04	49	17:10 (TRIV-52a)	19:37	29	19:16 (TRIV-52)	20:10			20:42			21:09	83	20:44 (TRIV-51)
9	08:04		16:12 (TRIV-52a)	07:42		16:22 (TRIV-52a)	08:02		18:47 (TRIV-52)	07:11			06:28			06:07		06:29 (TRIV-61a)
	17:29	51	17:03 (TRIV-52a)	18:05	48	17:10 (TRIV-52a)	19:39	28	19:15 (TRIV-52)	20:11			20:43			21:09	85	20:45 (TRIV-51)
10	08:04		16:12 (TRIV-52a)	07:41		16:23 (TRIV-52a)	08:00		18:48 (TRIV-52)	07:09			06:27			06:07		06:29 (TRIV-61a)
	17:30	52	17:04 (TRIV-52a)	18:07	46	17:09 (TRIV-52a)	19:40	27	19:15 (TRIV-52)	20:12			20:44			21:10	85	20:45 (TRIV-51)
11	08:04		16:11 (TRIV-52a)	07:40		16:25 (TRIV-52a)	07:59		18:49 (TRIV-52)	07:08			06:26			06:07		06:29 (TRIV-61a)
	17:31	53	17:04 (TRIV-52a)	18:08	43	17:08 (TRIV-52a)	19:41	24	19:13 (TRIV-52)	20:13			20:45			21:11	87	20:46 (TRIV-51)
12	08:04		16:12 (TRIV-52a)	07:39		16:26 (TRIV-52a)	07:57		18:49 (TRIV-52)	07:06			06:25			06:06		06:29 (TRIV-61a)
	17:32	53	17:05 (TRIV-52a)	18:09	40	17:06 (TRIV-52a)	19:42	22	19:11 (TRIV-52)	20:14			20:46			21:11	88	20:47 (TRIV-51)
13	08:03		16:12 (TRIV-52a)	07:37		16:28 (TRIV-52a)	07:56		18:51 (TRIV-52)	07:04			06:24			06:06		06:29 (TRIV-61a)
	17:33	55	17:07 (TRIV-52a)	18:10	37	17:05 (TRIV-52a)	19:43	19	19:10 (TRIV-52)	20:15			20:47			21:12	87	20:47 (TRIV-51)
14	08:03		16:12 (TRIV-52a)	07:36		16:30 (TRIV-52a)	07:54		18:53 (TRIV-52)	07:03			06:23			06:06		06:29 (TRIV-61a)
	17:34	55	17:07 (TRIV-52a)	18:12	34	17:04 (TRIV-52a)	19:44	14	19:07 (TRIV-52)	20:16			20:48			21:12	89	20:48 (TRIV-51)
15	08:02		16:12 (TRIV-52a)	07:35		16:31 (TRIV-52a)	07:52		18:57 (TRIV-52)	07:01			06:22			06:06		06:29 (TRIV-61a)
	17:35	56	17:08 (TRIV-52a)	18:13	30	17:01 (TRIV-52a)	19:45	5	19:02 (TRIV-52)	20:17			20:49			21:13	89	20:48 (TRIV-51)
16	08:02		16:12 (TRIV-52a)	07:33		16:34 (TRIV-52a)	07:51			07:00			06:21			06:06		06:29 (TRIV-61a)
	17:36	56	17:08 (TRIV-52a)	18:14	25	16:59 (TRIV-52a)	19:46			20:18			20:50			21:13	89	20:48 (TRIV-51)
17	08:02		16:12 (TRIV-52a)	07:32		16:38 (TRIV-52a)	07:49			06:58			06:20		06:41 (TRIV-61a)	06:06		06:29 (TRIV-61a)
	17:37	57	17:09 (TRIV-52a)	18:15	18	16:56 (TRIV-52a)	19:47			20:19			20:51	3	06:44 (TRIV-61a)	21:13	89	20:48 (TRIV-51)
18	08:01		16:12 (TRIV-52a)	07:31		16:46 (TRIV-52a)	07:47			06:57			06:19		06:40 (TRIV-61a)	06:06		06:29 (TRIV-61a)
	17:38	57	17:09 (TRIV-52a)	18:17	1	16:47 (TRIV-52a)	19:49			20:21			20:52	10	06:50 (TRIV-61)	21:14	90	20:49 (TRIV-51)
19	08:01		16:13 (TRIV-52a)	07:29			07:46			06:55			06:18		06:39 (TRIV-61a)	06:07		06:29 (TRIV-61a)
	17:40	57	17:10 (TRIV-52a)	18:18			19:50			20:22			20:53	13	06:52 (TRIV-61)	21:14	91	20:49 (TRIV-51)
20	08:00		16:13 (TRIV-52a)	07:28			07:44			06:54			06:18		06:38 (TRIV-61a)	06:07		06:29 (TRIV-61a)
	17:41	57	17:10 (TRIV-52a)	18:19			19:51			20:23			20:54	23	20:24 (TRIV-51)	21:14	91	20:49 (TRIV-51)
21	07:59		16:12 (TRIV-52a)	07:26			07:42			06:52			06:17		06:38 (TRIV-61a)	06:07		06:29 (TRIV-61a)
	17:42	59	17:11 (TRIV-52a)	18:20			19:52			20:24			20:55	34	20:29 (TRIV-51)	21:15	91	20:49 (TRIV-51)
22	07:59		16:13 (TRIV-52a)	07:25			07:41			06:51			06:16		06:37 (TRIV-61a)	06:07		06:30 (TRIV-61a)
	17:43	59	17:12 (TRIV-52a)	18:21			19:53			20:25			20:55	41	20:32 (TRIV-51)	21:15	91	20:50 (TRIV-51)
23	07:58		16:13 (TRIV-52a)	07:24			07:39			06:49			06:15		06:36 (TRIV-61a)	06:07		06:30 (TRIV-61a)
	17:44	59	17:12 (TRIV-52a)	18:22			19:54			20:26			20:56	47	20:33 (TRIV-51)	21:15	91	20:50 (TRIV-51)
24	07:57		16:13 (TRIV-52a)	07:22		18:00 (TRIV-52)	07:37			06:48			06:14		06:35 (TRIV-61a)	06:08		06:30 (TRIV-61a)
	17:46	59	17:12 (TRIV-52a)	18:24	2	18:02 (TRIV-52)	19:55			20:27			20:57	50	20:33 (TRIV-51)	21:15	91	20:50 (TRIV-51)
25	07:57		16:13 (TRIV-52a)	07:21		17:56 (TRIV-52)	07:36			06:46			06:14		06:35 (TRIV-61a)	06:08		06:30 (TRIV-61a)
	17:47	59	17:12 (TRIV-52a)	18:25	7	18:03 (TRIV-52)	19:56			20:28			20:58	53	20:34 (TRIV-51)	21:15	90	20:50 (TRIV-51)
26	07:56		16:14 (TRIV-52a)	07:19		17:54 (TRIV-52)	07:34			06:45			06:13		06:34 (TRIV-61a)	06:08		06:31 (TRIV-61a)
	17:48	59	17:13 (TRIV-52a)	18:26	10	18:04 (TRIV-52)	19:57			20:29			20:59	57	20:35 (TRIV-51)	21:15	89	20:50 (TRIV-51)
27	07:55		16:14 (TRIV-52a)	07:18		17:52 (TRIV-52)	07:32			06:44			06:12		06:34 (TRIV-61a)	06:09		06:31 (TRIV-61a)
	17:49	59	17:13 (TRIV-52a)	18:27	13	18:05 (TRIV-52)	19:58			20:30			21:00	60	20:36 (TRIV-51)	21:16	89	20:50 (TRIV-51)
28	07:54		16:15 (TRIV-52a)	07:16		17:51 (TRIV-52)	07:31			06:42			06:12		06:33 (TRIV-61a)	06:09		06:31 (TRIV-61a)
	17:51	58	17:13 (TRIV-52a)	18:28	16	18:07 (TRIV-52)	19:59			20:31			21:01	63	20:37 (TRIV-51)	21:16	89	20:50 (TRIV-51)
29	07:53		16:15 (TRIV-52a)				07:29			06:41			06:11		06:33 (TRIV-61a)	06:09		06:32 (TRIV-61a)
	17:52	58	17:13 (TRIV-52a)				20:00			20:32			21:02	66	20:38 (TRIV-51)	21:16	88	20:50 (TRIV-51)
30	07:53		16:15 (TRIV-52a)				07:27			06:40			06:11		06:32 (TRIV-61a)	06:10		06:32 (TRIV-61a)
	17:53	58	17:13 (TRIV-52a)				20:00			20:33			21:02	68	20:38 (TRIV-51)	21:16	87	20:50 (TRIV-51)
31	07:52		16:16 (TRIV-52a)				07:26						06:10		06:32 (TRIV-61a)			
	17:54	57	17:13 (TRIV-52a)				20:01						21:03	70	20:39 (TRIV-51)			
Potential sun hours	298			297			370			398			448			452		
Total, worst case		1678			800			332						658			2581	
Sun reduction		0.50			0.55			0.57						0.69			0.74	
Oper. time red.		1.00			1.00			1.00						1.00			1.00	
Wind dir. red.		0.69			0.69			0.69						0.67			0.67	
Total reduction		0.35			0.38			0.39						0.47			0.50	
Total, real		585			307			131						307			1285	

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:
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217 Montgomery St., Suite 1000
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 175 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1198)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August	September			October			November			December		
1	06:10		06:33 (TRIV-61a)	06:34	07:05			07:35		18:30 (TRIV-52)	07:09		15:53 (TRIV-52a)	07:44		15:53 (TRIV-52a)
	21:16	87	20:50 (TRIV-51)	20:57	20:15			19:22	20	18:50 (TRIV-52)	17:36	46	16:39 (TRIV-52a)	17:12	53	16:46 (TRIV-52a)
2	06:11		06:33 (TRIV-61a)	06:35	07:06			07:36		18:28 (TRIV-52)	07:11		15:52 (TRIV-52a)	07:45		15:55 (TRIV-52a)
	21:15	87	20:50 (TRIV-51)	20:56	20:13			19:21	23	18:51 (TRIV-52)	17:35	48	16:40 (TRIV-52a)	17:12	52	16:47 (TRIV-52a)
3	06:11		06:34 (TRIV-61a)	06:36	07:07			07:37		18:26 (TRIV-52)	07:12		15:50 (TRIV-52a)	07:46		15:56 (TRIV-52a)
	21:15	85	20:50 (TRIV-51)	20:55	20:11			19:19	26	18:52 (TRIV-52)	17:33	50	16:40 (TRIV-52a)	17:11	51	16:47 (TRIV-52a)
4	06:12		06:34 (TRIV-61a)	06:37	07:08			07:38		18:25 (TRIV-52)	07:13		15:49 (TRIV-52a)	07:47		15:56 (TRIV-52a)
	21:15	84	20:49 (TRIV-51)	20:54	20:10			19:17	28	18:53 (TRIV-52)	17:32	52	16:41 (TRIV-52a)	17:11	50	16:46 (TRIV-52a)
5	06:12		06:35 (TRIV-61a)	06:38	07:09			07:39		18:24 (TRIV-52)	07:14		15:49 (TRIV-52a)	07:48		15:57 (TRIV-52a)
	21:15	83	20:50 (TRIV-51)	20:53	20:08			19:16	29	18:53 (TRIV-52)	17:31	53	16:42 (TRIV-52a)	17:11	49	16:46 (TRIV-52a)
6	06:13		06:36 (TRIV-61a)	06:39	07:10			07:40		18:23 (TRIV-52)	07:15		15:49 (TRIV-52a)	07:49		15:58 (TRIV-52a)
	21:15	82	20:50 (TRIV-51)	20:52	20:06			19:14	29	18:52 (TRIV-52)	17:30	53	16:42 (TRIV-52a)	17:11	48	16:46 (TRIV-52a)
7	06:14		06:36 (TRIV-61a)	06:40	07:11			07:41		18:23 (TRIV-52)	07:16		15:48 (TRIV-52a)	07:50		15:59 (TRIV-52a)
	21:14	80	20:49 (TRIV-51)	20:51	20:05			19:13	27	18:50 (TRIV-52)	17:29	55	16:43 (TRIV-52a)	17:11	47	16:46 (TRIV-52a)
8	06:14		06:37 (TRIV-61a)	06:41	07:12			07:42		18:22 (TRIV-52)	07:18		15:47 (TRIV-52a)	07:51		15:59 (TRIV-52a)
	21:14	78	20:49 (TRIV-51)	20:49	20:03			19:11	26	18:48 (TRIV-52)	17:28	56	16:43 (TRIV-52a)	17:11	46	16:45 (TRIV-52a)
9	06:15		06:37 (TRIV-61a)	06:42	07:13			07:43		18:22 (TRIV-52)	07:19		15:47 (TRIV-52a)	07:52		15:59 (TRIV-52a)
	21:14	77	20:48 (TRIV-51)	20:48	20:01			19:09	24	18:46 (TRIV-52)	17:27	57	16:44 (TRIV-52a)	17:11	46	16:45 (TRIV-52a)
10	06:16		06:38 (TRIV-61a)	06:43	07:14			07:45		18:22 (TRIV-52)	07:20		15:47 (TRIV-52a)	07:53		16:00 (TRIV-52a)
	21:13	75	20:48 (TRIV-51)	20:47	20:00			19:08	23	18:45 (TRIV-52)	17:26	57	16:44 (TRIV-52a)	17:11	45	16:45 (TRIV-52a)
11	06:16		06:39 (TRIV-61a)	06:44	07:15			07:46		18:23 (TRIV-52)	07:21		15:46 (TRIV-52a)	07:54		16:01 (TRIV-52a)
	21:13	73	20:48 (TRIV-51)	20:46	19:56			19:06	21	18:44 (TRIV-52)	17:25	58	16:44 (TRIV-52a)	17:11	44	16:45 (TRIV-52a)
12	06:17		06:39 (TRIV-61a)	06:45	07:16			07:47		18:23 (TRIV-52)	07:22		15:47 (TRIV-52a)	07:54		16:02 (TRIV-52a)
	21:13	71	20:47 (TRIV-51)	20:44	19:55			19:04	19	18:42 (TRIV-52)	17:24	58	16:45 (TRIV-52a)	17:11	44	16:46 (TRIV-52a)
13	06:18		06:40 (TRIV-61a)	06:46	07:17			07:48		18:23 (TRIV-52)	07:24		15:47 (TRIV-52a)	07:55		16:03 (TRIV-52a)
	21:12	69	20:47 (TRIV-51)	20:43	19:53			19:03	18	18:41 (TRIV-52)	17:23	58	16:45 (TRIV-52a)	17:11	43	16:46 (TRIV-52a)
14	06:19		06:41 (TRIV-61a)	06:47	07:18			07:49		18:24 (TRIV-52)	07:25		15:46 (TRIV-52a)	07:56		16:03 (TRIV-52a)
	21:12	67	20:47 (TRIV-51)	20:42	19:51			19:01	15	18:39 (TRIV-52)	17:22	59	16:45 (TRIV-52a)	17:11	42	16:45 (TRIV-52a)
15	06:19		06:42 (TRIV-61a)	06:48	07:19			07:50		18:25 (TRIV-52)	07:26		15:46 (TRIV-52a)	07:57		16:04 (TRIV-52a)
	21:11	64	20:46 (TRIV-51)	20:40	19:50			19:00	12	18:37 (TRIV-52)	17:21	59	16:45 (TRIV-52a)	17:12	42	16:46 (TRIV-52a)
16	06:20		06:42 (TRIV-61a)	06:49	07:20			07:51		18:26 (TRIV-52)	07:27		15:47 (TRIV-52a)	07:57		16:05 (TRIV-52a)
	21:11	62	20:45 (TRIV-51)	20:39	19:48			18:58	9	18:35 (TRIV-52)	17:20	59	16:46 (TRIV-52a)	17:12	41	16:46 (TRIV-52a)
17	06:21		06:43 (TRIV-61a)	06:50	07:21			07:52		18:29 (TRIV-52)	07:28		15:47 (TRIV-52a)	07:58		16:05 (TRIV-52a)
	21:10	60	20:45 (TRIV-51)	20:37	19:46			18:57	5	18:34 (TRIV-52)	17:19	59	16:46 (TRIV-52a)	17:12	41	16:46 (TRIV-52a)
18	06:22		06:44 (TRIV-61a)	06:51	07:22			07:53			07:30		15:47 (TRIV-52a)	07:59		16:06 (TRIV-52a)
	21:09	55	20:44 (TRIV-51)	20:36	19:45			18:55			17:19	59	16:46 (TRIV-52a)	17:12	41	16:47 (TRIV-52a)
19	06:23		06:45 (TRIV-61a)	06:52	07:23			07:54			07:31		15:47 (TRIV-52a)	07:59		16:07 (TRIV-52a)
	21:09	53	20:44 (TRIV-51)	20:35	19:43			18:54			17:18	59	16:46 (TRIV-52a)	17:13	40	16:47 (TRIV-52a)
20	06:23		06:46 (TRIV-61a)	06:53	07:24			07:55			07:32		15:48 (TRIV-52a)	08:00		16:07 (TRIV-52a)
	21:08	48	20:43 (TRIV-51)	20:33	19:41			18:52			17:17	59	16:47 (TRIV-52a)	17:13	40	16:47 (TRIV-52a)
21	06:24		06:46 (TRIV-61a)	06:54	07:25			07:57			07:33		15:48 (TRIV-52a)	08:00		16:08 (TRIV-52a)
	21:07	44	20:42 (TRIV-51)	20:32	19:39			18:51			17:17	59	16:47 (TRIV-52a)	17:14	40	16:48 (TRIV-52a)
22	06:25		06:47 (TRIV-61a)	06:55	07:26			07:58			07:34		15:49 (TRIV-52a)	08:01		16:08 (TRIV-52a)
	21:06	38	20:40 (TRIV-51)	20:30	19:38			18:49			17:16	58	16:47 (TRIV-52a)	17:14	40	16:48 (TRIV-52a)
23	06:26		06:48 (TRIV-61a)	06:56	07:27			07:59			07:35		15:49 (TRIV-52a)	08:01		16:09 (TRIV-52a)
	21:06	29	20:37 (TRIV-51)	20:29	19:36			18:48			17:15	57	16:46 (TRIV-52a)	17:15	40	16:49 (TRIV-52a)
24	06:27		06:49 (TRIV-61a)	06:57	07:28			08:00		17:12 (TRIV-52a)	07:37		15:50 (TRIV-52a)	08:02		16:09 (TRIV-52a)
	21:05	15	07:04 (TRIV-61)	20:27	19:34			18:46	10	17:22 (TRIV-52a)	17:15	57	16:47 (TRIV-52a)	17:15	40	16:49 (TRIV-52a)
25	06:28		06:50 (TRIV-61a)	06:58	07:29			08:01		17:07 (TRIV-52a)	07:38		15:50 (TRIV-52a)	08:02		16:09 (TRIV-52a)
	21:04	12	07:02 (TRIV-61)	20:26	19:33			18:45	20	17:27 (TRIV-52a)	17:14	57	16:47 (TRIV-52a)	17:16	40	16:49 (TRIV-52a)
26	06:29		06:51 (TRIV-61a)	06:59	07:30			08:02		17:03 (TRIV-52a)	07:39		15:51 (TRIV-52a)	08:03		16:10 (TRIV-52a)
	21:03	8	06:59 (TRIV-61)	20:24	19:31			18:44	26	17:29 (TRIV-52a)	17:14	56	16:47 (TRIV-52a)	17:16	41	16:51 (TRIV-52a)
27	06:30			07:00	07:31			08:03		17:00 (TRIV-52a)	07:40		15:51 (TRIV-52a)	08:03		16:10 (TRIV-52a)
	21:02			20:23	19:29			18:42	31	17:31 (TRIV-52a)	17:13	56	16:47 (TRIV-52a)	17:17	41	16:51 (TRIV-52a)
28	06:31			07:01	07:32			08:05		16:59 (TRIV-52a)	07:41		15:52 (TRIV-52a)	08:03		16:10 (TRIV-52a)
	21:01			20:21	19:27			18:41	35	17:34 (TRIV-52a)	17:13	55	16:47 (TRIV-52a)	17:18	42	16:52 (TRIV-52a)
29	06:32			07:02	07:33		18:35 (TRIV-52)	08:06		16:57 (TRIV-52a)	07:42		15:52 (TRIV-52a)	08:04		16:10 (TRIV-52a)
	21:00			20:19	19:26	12	18:47 (TRIV-52)	18:40	38	17:35 (TRIV-52a)	17:12	55	16:47 (TRIV-52a)	17:19	42	16:52 (TRIV-52a)
30	06:32			07:03	07:34		18:32 (TRIV-52)	08:07		16:55 (TRIV-52a)	07:43		15:53 (TRIV-52a)	08:04		16:11 (TRIV-52a)
	20:59			20:18	19:24	17	18:49 (TRIV-52)	18:38	41	17:36 (TRIV-52a)	17:12	54	16:47 (TRIV-52a)	17:19	43	16:54 (TRIV-52a)
31	06:33			07:04				08:08		16:53 (TRIV-52a)				08:04		16:11 (TRIV-52a)
	20:58			20:16				18:37	44	17:37 (TRIV-52a)				17:20	43	16:54 (TRIV-52a)
Potential sun hours	459			428	375			345			298			288		
Total, worst case		1586				29			599			1678			1357	
Sun reduction		0.76				0.67			0.60			0.40			0.36	
Oper. time red.		1.00				1.00			1.00			1.00			1.00	
Wind dir. red.		0.67				0.69			0.69			0.69			0.69	
Total reduction		0.51				0.46			0.42			0.28			0.25	
Total, real		812				13			249			468			341	

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 191 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1214)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May		June		July		August		September	October	November	December
1	08:04	07:51	07:15	07:24	06:38		06:10		06:35 (TRIV-80)	06:10	06:41 (TRIV-80)	06:34	06:56 (TRIV-80)	07:05	07:35	07:09	07:44
	17:21	17:56	18:30	20:03	20:34		21:04	48	07:23 (TRIV-80)	21:16	48	07:29 (TRIV-80)	20:57	30	07:26 (TRIV-80)	20:15	19:23	17:36	17:12
2	08:05	07:50	07:13	07:22	06:37		06:09		06:35 (TRIV-80)	06:11		06:41 (TRIV-80)	06:35		06:57 (TRIV-80)	07:06	07:36	07:11	07:45
	17:22	17:57	18:31	20:04	20:35		21:05	49	07:24 (TRIV-80)	21:16	48	07:29 (TRIV-80)	20:56	28	07:25 (TRIV-80)	20:13	19:21	17:35	17:12
3	08:05	07:49	07:12	07:21	06:36		06:09		06:36 (TRIV-80)	06:11		06:42 (TRIV-80)	06:36		06:58 (TRIV-80)	07:07	07:37	07:12	07:46
	17:23	17:58	18:32	20:05	20:36		21:06	48	07:24 (TRIV-80)	21:15	48	07:30 (TRIV-80)	20:55	25	07:23 (TRIV-80)	20:11	19:19	17:34	17:11
4	08:05	07:48	07:10	07:19	06:34		06:08		06:35 (TRIV-80)	06:12		06:41 (TRIV-80)	06:37		06:59 (TRIV-80)	07:08	07:38	07:13	07:47
	17:24	17:59	18:33	20:06	20:38		21:06	49	07:24 (TRIV-80)	21:15	48	07:29 (TRIV-80)	20:54	23	07:22 (TRIV-80)	20:10	19:18	17:32	17:11
5	08:05	07:47	07:09	07:17	06:33		06:08		06:36 (TRIV-80)	06:13		06:42 (TRIV-80)	06:38		07:00 (TRIV-80)	07:09	07:39	07:14	07:48
	17:25	18:01	18:34	20:07	20:39		21:07	48	07:24 (TRIV-80)	21:15	48	07:30 (TRIV-80)	20:53	20	07:20 (TRIV-80)	20:08	19:16	17:31	17:11
6	08:05	07:46	07:07	07:16	06:32	06:52 (TRIV-80)	06:08		06:36 (TRIV-80)	06:13		06:42 (TRIV-80)	06:39		07:01 (TRIV-80)	07:10	07:40	07:15	07:49
	17:26	18:02	18:35	20:08	20:40	14 07:06 (TRIV-80)	21:08	49	07:25 (TRIV-80)	21:15	49	07:31 (TRIV-80)	20:52	17	07:18 (TRIV-80)	20:07	19:14	17:30	17:11
7	08:05	07:45	07:05	07:14	06:31	06:51 (TRIV-80)	06:08		06:36 (TRIV-80)	06:14		06:42 (TRIV-80)	06:40		07:02 (TRIV-80)	07:11	07:41	07:17	07:50
	17:27	18:03	18:36	20:09	20:41	18 07:09 (TRIV-80)	21:08	48	07:24 (TRIV-80)	21:15	48	07:30 (TRIV-80)	20:51	12	07:14 (TRIV-80)	20:05	19:13	17:29	17:11
8	08:04	07:43	08:04	07:12	06:30	06:50 (TRIV-80)	06:07		06:36 (TRIV-80)	06:14		06:42 (TRIV-80)	06:41			07:12	07:43	07:18	07:51
	17:28	18:04	19:38	20:10	20:42	21 07:11 (TRIV-80)	21:09	48	07:24 (TRIV-80)	21:14	49	07:31 (TRIV-80)	20:49			20:03	19:11	17:28	17:11
9	08:04	07:42	08:02	07:11	06:29	06:49 (TRIV-80)	06:07		06:37 (TRIV-80)	06:15		06:43 (TRIV-80)	06:42			07:13	07:44	07:19	07:52
	17:29	18:06	19:39	20:11	20:43	24 07:13 (TRIV-80)	21:10	48	07:25 (TRIV-80)	21:14	49	07:32 (TRIV-80)	20:48			20:02	19:09	17:27	17:11
10	08:04	07:41	08:01	07:09	06:27	06:48 (TRIV-80)	06:07		06:37 (TRIV-80)	06:16		06:42 (TRIV-80)	06:43			07:14	07:45	07:20	07:53
	17:30	18:07	19:40	20:12	20:44	26 07:14 (TRIV-80)	21:10	48	07:25 (TRIV-80)	21:14	49	07:31 (TRIV-80)	20:47			20:00	19:08	17:26	17:11
11	08:04	07:40	07:59	07:08	06:26	06:47 (TRIV-80)	06:07		06:37 (TRIV-80)	06:16		06:43 (TRIV-80)	06:44			07:15	07:46	07:21	07:54
	17:31	18:08	19:41	20:13	20:45	28 07:15 (TRIV-80)	21:11	48	07:25 (TRIV-80)	21:13	49	07:32 (TRIV-80)	20:46			19:56	19:06	17:25	17:11
12	08:04	07:39	07:57	07:06	06:25	06:46 (TRIV-80)	06:07		06:38 (TRIV-80)	06:17		06:43 (TRIV-80)	06:45			07:16	07:47	07:23	07:54
	17:32	18:09	19:42	20:14	20:46	31 07:17 (TRIV-80)	21:11	47	07:25 (TRIV-80)	21:13	49	07:32 (TRIV-80)	20:44			19:55	19:05	17:24	17:11
13	08:03	07:37	07:56	07:05	06:24	06:45 (TRIV-80)	06:07		06:38 (TRIV-80)	06:18		06:43 (TRIV-80)	06:46			07:17	07:48	07:24	07:55
	17:33	18:11	19:43	20:15	20:47	32 07:17 (TRIV-80)	21:12	47	07:25 (TRIV-80)	21:12	48	07:31 (TRIV-80)	20:43			19:53	19:03	17:23	17:11
14	08:03	07:36	07:54	07:03	06:23	06:44 (TRIV-80)	06:06		06:38 (TRIV-80)	06:19		06:43 (TRIV-80)	06:47			07:18	07:49	07:25	07:56
	17:34	18:12	19:44	20:16	20:48	34 07:18 (TRIV-80)	21:12	48	07:26 (TRIV-80)	21:12	49	07:32 (TRIV-80)	20:42			19:51	19:01	17:22	17:11
15	08:03	07:35	07:52	07:01	06:22	06:43 (TRIV-80)	06:06		06:38 (TRIV-80)	06:19		06:44 (TRIV-80)	06:48			07:19	07:50	07:26	07:57
	17:35	18:13	19:45	20:17	20:49	36 07:19 (TRIV-80)	21:13	48	07:26 (TRIV-80)	21:11	48	07:32 (TRIV-80)	20:40			19:50	19:00	17:21	17:12
16	08:02	07:33	07:51	07:00	06:21	06:42 (TRIV-80)	06:06		06:39 (TRIV-80)	06:20		06:44 (TRIV-80)	06:49			07:20	07:51	07:27	07:57
	17:36	18:14	19:46	20:18	20:50	37 07:19 (TRIV-80)	21:13	47	07:26 (TRIV-80)	21:11	48	07:32 (TRIV-80)	20:39			19:48	18:58	17:20	17:12
17	08:02	07:32	07:49	06:58	06:20	06:41 (TRIV-80)	06:07		06:39 (TRIV-80)	06:21		06:43 (TRIV-80)	06:50			07:21	07:52	07:28	07:58
	17:37	18:15	19:48	20:20	20:51	39 07:20 (TRIV-80)	21:13	47	07:26 (TRIV-80)	21:10	49	07:32 (TRIV-80)	20:37			19:46	18:57	17:20	17:12
18	08:01	07:31	07:47	06:57	06:19	06:40 (TRIV-80)	06:07		06:39 (TRIV-80)	06:22		06:44 (TRIV-80)	06:51			07:22	07:53	07:30	07:59
	17:39	18:17	19:49	20:21	20:52	40 07:20 (TRIV-80)	21:14	47	07:26 (TRIV-80)	21:09	48	07:32 (TRIV-80)	20:36			19:45	18:55	17:19	17:13
19	08:01	07:29	07:46	06:55	06:18	06:39 (TRIV-80)	06:07		06:39 (TRIV-80)	06:23		06:45 (TRIV-80)	06:52			07:23	07:54	07:31	07:59
	17:40	18:18	19:50	20:22	20:53	41 07:20 (TRIV-80)	21:14	47	07:26 (TRIV-80)	21:08	47	07:32 (TRIV-80)	20:35			19:43	18:54	17:18	17:13
20	08:00	07:28	07:44	06:54	06:18	06:38 (TRIV-80)	06:07		06:39 (TRIV-80)	06:24		06:46 (TRIV-80)	06:53			07:24	07:56	07:32	08:00
	17:41	18:19	19:51	20:23	20:54	43 07:21 (TRIV-80)	21:14	47	07:26 (TRIV-80)	21:08	46	07:32 (TRIV-80)	20:33			19:41	18:52	17:17	17:13
21	07:59	07:27	07:42	06:52	06:17	06:38 (TRIV-80)	06:07		06:39 (TRIV-80)	06:24		06:47 (TRIV-80)	06:54			07:25	07:57	07:33	08:01
	17:42	18:20	19:52	20:24	20:55	44 07:22 (TRIV-80)	21:15	47	07:26 (TRIV-80)	21:07	45	07:32 (TRIV-80)	20:32			19:39	18:51	17:17	17:14
22	07:59	07:25	07:41	06:51	06:16	06:37 (TRIV-80)	06:07		06:40 (TRIV-80)	06:25		06:47 (TRIV-80)	06:55			07:26	07:58	07:34	08:01
	17:43	18:21	19:53	20:25	20:56	45 07:22 (TRIV-80)	21:15	47	07:27 (TRIV-80)	21:07	44	07:31 (TRIV-80)	20:30			19:38	18:49	17:16	17:14
23	07:58	07:24	07:39	06:49	06:15	06:36 (TRIV-80)	06:07		06:40 (TRIV-80)	06:26		06:48 (TRIV-80)	06:56			07:27	07:59	07:35	08:02
	17:45	18:23	19:54	20:26	20:56	46 07:22 (TRIV-80)	21:15	47	07:27 (TRIV-80)	21:06	43	07:31 (TRIV-80)	20:29			19:36	18:48	17:15	17:15
24	07:58	07:22	07:37	06:48	06:14	06:36 (TRIV-80)	06:08		06:40 (TRIV-80)	06:27		06:49 (TRIV-80)	06:57			07:28	08:00	07:37	08:02
	17:46	18:24	19:55	20:27	20:57	47 07:23 (TRIV-80)	21:15	47	07:27 (TRIV-80)	21:05	42	07:31 (TRIV-80)	20:27			19:34	18:47	17:15	17:15
25	07:57	07:21	07:36	06:46	06:14	06:35 (TRIV-80)	06:08		06:40 (TRIV-80)	06:28		06:50 (TRIV-80)	06:58			07:29	08:01	07:38	08:02
	17:47	18:25	19:56	20:28	20:58	48 07:23 (TRIV-80)	21:15	47	07:27 (TRIV-80)	21:04	41	07:31 (TRIV-80)	20:26			19:33	18:45	17:14	17:16
26	07:56	07:19	07:34	06:45	06:13	06:34 (TRIV-80)	06:08		06:41 (TRIV-80)	06:29		06:51 (TRIV-80)	06:59			07:30	08:02	07:39	08:03
	17:48	18:26	19:57	20:29	20:59	48 07:22 (TRIV-80)	21:16	47	07:28 (TRIV-80)	21:03	39	07:30 (TRIV-80)	20:24			19:31	18:44	17:14	17:17
27	07:55	07:18	07:32	06:44	06:12	06:35 (TRIV-80)	06:09		06:40 (TRIV-80)	06:30		06:52 (TRIV-80)	07:00			07:31	08:04	07:40	08:03
	17:49	18:27	19:58	20:30	21:00	48 07:23 (TRIV-80)	21:16	48	07:28 (TRIV-80)	21:02	38	07:30 (TRIV-80)	20:23			19:29	18:42	17:13	17:17
28	07:54	07:16	07:31	06:42	06:12	06:34 (TRIV-80)	06:09		06:41 (TRIV-80)	06:31		06:53 (TRIV-80)	07:01			07:32	08:05	07:41	08:03
	17:51	18:28	19:59	20:31	21:01	49 07:23 (TRIV-80)	21:16	48	07:29 (TRIV-80)	21:01	37	07:30 (TRIV-80)	20:21			19:28	18:41	17:13	17:18
29	07:54		07:29	06:41	06:11	06:35 (TRIV-80)	06:10		06:41 (TRIV-80)	06:32		06:54 (TRIV-80)	07:02			07:33	08:06	07:42	08:04
	17:52		20:00	20:32	21:02	49 07:24 (TRIV-80)	21:16	48	07:29 (TRIV-80)	21:00	35	07:29 (TRIV-80)	20:19			19:26	18:40	17:13	17:19
30	07:53		07:27	06:40	06:11	06:34 (TRIV-80)	06:10		06:41 (TRIV-80)	06:33		06:54 (TRIV-80)	07:03			07:34	08:07	07:43	08:04
	17:53		20:00	20:33	21:02	49 07:23 (TRIV-80)	21:16	47	07:28 (TRIV-80)	20:59	33	07:27 (TRIV-80)	20:18			19:24	18:39	17:12	17:19
31	07:52		07:26		06:10	06:35 (TRIV-80)				06:34		06:55 (TRIV-80)	07:04				08:08		08:04
	17:54		20:01		21:03	49 07:24 (TRIV-80)				20:58	32	07:27 (TRIV-80)	20:16				18:37		17:20
Potential sun hours	298	298	370	398	448		452		459		428		375	345	298	288
Total, worst case					986		1429		1394		155					
Sun reduction					0.69		0.74		0.76		0.75					
Oper. time red.					1.00		1.00		1.00		1.00					
Wind dir. red.					0.70		0.70		0.70		0.70					
Total reduction					0.48		0.52		0.53		0.53					
Total, real					476		740		742		81					

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 234 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1251)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:05		07:51		07:15			07:24		08:00 (TRIV-45)	06:38		06:58 (TRIV-46)	06:09		06:31 (TRIV-46a)
	17:21		17:55		18:29			20:03	16	08:16 (TRIV-45)	20:35	7	07:05 (TRIV-46)	21:04	37	07:08 (TRIV-46a)
2	08:05		07:50		07:13			07:22		08:03 (TRIV-45)	06:37		06:56 (TRIV-46)	06:09		06:30 (TRIV-46a)
	17:22		17:56		18:31			20:04	9	08:12 (TRIV-45)	20:36	11	07:07 (TRIV-46)	21:05	37	07:07 (TRIV-46a)
3	08:05		07:49		07:12			07:20			06:35		06:55 (TRIV-46)	06:08		06:30 (TRIV-46a)
	17:22		17:58		18:32			20:05			20:37	13	07:08 (TRIV-46)	21:06	38	07:08 (TRIV-46a)
4	08:05		07:48		07:10			07:19			06:34		06:54 (TRIV-46)	06:08		06:30 (TRIV-46a)
	17:23		17:59		18:33			20:06			20:38	16	07:10 (TRIV-46)	21:07	39	07:09 (TRIV-46a)
5	08:05		07:47		07:09			07:17			06:33		06:53 (TRIV-46)	06:08		06:29 (TRIV-46a)
	17:24		18:00		18:34			20:07			20:39	18	07:11 (TRIV-46)	21:07	39	07:08 (TRIV-46a)
6	08:05		07:46		07:07			07:16			06:32		06:52 (TRIV-46)	06:07		06:29 (TRIV-46a)
	17:25		18:01		18:35			20:08			20:40	20	07:12 (TRIV-46)	21:08	40	07:09 (TRIV-46a)
7	08:05		07:45		07:05			07:14			06:30		06:50 (TRIV-46)	06:07		06:29 (TRIV-46a)
	17:26		18:03		18:36			20:09			20:41	22	07:12 (TRIV-46)	21:09	40	07:09 (TRIV-46a)
8	08:05		07:44		08:04			07:12			06:29		06:49 (TRIV-46)	06:07		06:29 (TRIV-46a)
	17:27		18:04		19:37			20:10			20:42	23	07:12 (TRIV-46)	21:09	41	07:10 (TRIV-46a)
9	08:05		07:42		08:02			07:11			06:28		06:48 (TRIV-46)	06:07		06:29 (TRIV-46a)
	17:28		18:05		19:39			20:11			20:43	25	07:13 (TRIV-46)	21:10	41	07:10 (TRIV-46a)
10	08:04		07:41		08:00			07:09			06:27		06:47 (TRIV-46)	06:06		06:28 (TRIV-46a)
	17:29		18:06		19:40			20:12			20:44	26	07:13 (TRIV-46)	21:11	41	07:09 (TRIV-46a)
11	08:04		07:40		07:59			07:07			06:26		06:46 (TRIV-46)	06:06		06:28 (TRIV-46a)
	17:30		18:08		19:41			20:13			20:45	27	07:13 (TRIV-46)	21:11	42	07:10 (TRIV-46a)
12	08:04		07:39		07:57			07:06			06:25		06:45 (TRIV-46)	06:06		06:28 (TRIV-46a)
	17:31		18:09		19:42			20:14			20:46	28	07:13 (TRIV-46)	21:12	42	07:10 (TRIV-46a)
13	08:04		07:37		07:56			07:04			06:24		06:44 (TRIV-46)	06:06		06:28 (TRIV-46a)
	17:32		18:10		19:43			20:15			20:47	29	07:13 (TRIV-46)	21:12	42	07:10 (TRIV-46a)
14	08:03		07:36		07:54		08:13 (TRIV-45)	07:03			06:23		06:43 (TRIV-46)	06:06		06:28 (TRIV-46a)
	17:34		18:11		19:44	7	08:20 (TRIV-45)	20:16			20:48	30	07:13 (TRIV-46)	21:13	43	07:11 (TRIV-46a)
15	08:03		07:35		07:52		08:11 (TRIV-45)	07:01			06:22		06:42 (TRIV-46)	06:06		06:28 (TRIV-46a)
	17:35		18:13		19:45	11	08:22 (TRIV-45)	20:17			20:49	31	07:13 (TRIV-46)	21:13	43	07:11 (TRIV-46a)
16	08:02		07:34		07:51		08:10 (TRIV-45)	07:00			06:21		06:41 (TRIV-46)	06:06		06:29 (TRIV-46a)
	17:36		18:14		19:46	15	08:25 (TRIV-45)	20:19			20:50	32	07:13 (TRIV-46)	21:13	42	07:11 (TRIV-46a)
17	08:02		07:32		07:49		08:08 (TRIV-45)	06:58			06:20		06:40 (TRIV-46)	06:06		06:29 (TRIV-46a)
	17:37		18:15		19:47	17	08:25 (TRIV-45)	20:20			20:51	33	07:13 (TRIV-46)	21:14	42	07:11 (TRIV-46a)
18	08:01		07:31		07:47		08:06 (TRIV-45)	06:56			06:19		06:40 (TRIV-46a)	06:06		06:29 (TRIV-46a)
	17:38		18:16		19:49	20	08:26 (TRIV-45)	20:21			20:52	33	07:13 (TRIV-46)	21:14	42	07:11 (TRIV-46a)
19	08:01		07:29		07:46		08:05 (TRIV-45)	06:55			06:18		06:39 (TRIV-46a)	06:06		06:30 (TRIV-46a)
	17:39		18:18		19:50	22	08:27 (TRIV-45)	20:22			20:53	34	07:13 (TRIV-46)	21:15	42	07:12 (TRIV-46a)
20	08:00		07:28		07:44		08:03 (TRIV-45)	06:53			06:17		06:38 (TRIV-46a)	06:06		06:30 (TRIV-46a)
	17:40		18:19		19:51	24	08:27 (TRIV-45)	20:23			20:54	35	07:13 (TRIV-46)	21:15	42	07:12 (TRIV-46a)
21	08:00		07:27		07:42		08:01 (TRIV-45)	06:52			06:16		06:37 (TRIV-46a)	06:06		06:30 (TRIV-46a)
	17:42		18:20		19:52	26	08:27 (TRIV-45)	20:24			20:55	35	07:12 (TRIV-46)	21:15	42	07:12 (TRIV-46a)
22	07:59		07:25		07:41		08:00 (TRIV-45)	06:50			06:16		06:36 (TRIV-46a)	06:07		06:30 (TRIV-46a)
	17:43		18:21		19:53	28	08:28 (TRIV-45)	20:25			20:56	35	07:11 (TRIV-46)	21:15	42	07:12 (TRIV-46a)
23	07:58		07:24		07:39		07:58 (TRIV-45)	06:49			06:15		06:36 (TRIV-46a)	06:07		06:30 (TRIV-46a)
	17:44		18:22		19:54	29	08:27 (TRIV-45)	20:26			20:57	36	07:12 (TRIV-46)	21:16	42	07:12 (TRIV-46a)
24	07:58		07:22		07:37		07:56 (TRIV-45)	06:48			06:14		06:35 (TRIV-46a)	06:07		06:31 (TRIV-46a)
	17:45		18:24		19:55	30	08:26 (TRIV-45)	20:27			20:58	36	07:11 (TRIV-46)	21:16	42	07:13 (TRIV-46a)
25	07:57		07:21		07:36		07:55 (TRIV-45)	06:46			06:13		06:34 (TRIV-46a)	06:07		06:31 (TRIV-46a)
	17:46		18:25		19:56	32	08:27 (TRIV-45)	20:28			20:59	36	07:10 (TRIV-46)	21:16	42	07:13 (TRIV-46a)
26	07:56		07:19		07:34		07:55 (TRIV-45)	06:45			06:13		06:34 (TRIV-46a)	06:08		06:31 (TRIV-46a)
	17:48		18:26		19:57	30	08:25 (TRIV-45)	20:29			20:59	36	07:10 (TRIV-46)	21:16	42	07:13 (TRIV-46a)
27	07:55		07:18		07:32		07:55 (TRIV-45)	06:43			06:12		06:33 (TRIV-46a)	06:08		06:31 (TRIV-46a)
	17:49		18:27		19:58	29	08:24 (TRIV-45)	20:30			21:00	36	07:09 (TRIV-46)	21:16	43	07:14 (TRIV-46a)
28	07:55		07:16		07:30		07:55 (TRIV-45)	06:42			06:11		06:33 (TRIV-46a)	06:09		06:31 (TRIV-46a)
	17:50		18:28		19:59	28	08:23 (TRIV-45)	20:31			21:01	36	07:09 (TRIV-46)	21:16	43	07:14 (TRIV-46a)
29	07:54				07:29		07:56 (TRIV-45)	06:41			06:11		06:32 (TRIV-46a)	06:09		06:32 (TRIV-46a)
	17:51				20:00	26	08:22 (TRIV-45)	20:32			21:02	36	07:08 (TRIV-46)	21:16	42	07:14 (TRIV-46a)
30	07:53				07:27		07:56 (TRIV-45)	06:39		06:59 (TRIV-46)	06:10		06:32 (TRIV-46a)	06:09		06:32 (TRIV-46a)
	17:53				20:00	24	08:20 (TRIV-45)	20:34	3	07:02 (TRIV-46)	21:03	36	07:08 (TRIV-46)	21:16	42	07:14 (TRIV-46a)
31	07:52				07:25		07:57 (TRIV-45)				06:10		06:31 (TRIV-46a)			
	17:54				20:01	21	08:18 (TRIV-45)				21:04	36	07:07 (TRIV-46)			
Potential sun hours	297		297		370			399			448			453		
Total, worst case						419			28			887			1237	
Sun reduction						0.57			0.63			0.69			0.74	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.67			0.67			0.70			0.70	
Total reduction						0.38			0.42			0.48			0.52	
Total, real						160			12			428			640	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 234 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1251)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October	November	December
1	06:10		06:32 (TRIV-46a)	06:34		06:56 (TRIV-46)	07:05			07:35	07:10	07:45
	21:16	42	07:14 (TRIV-46a)	20:58	28	07:24 (TRIV-46)	20:15			19:22	17:36	17:11
2	06:10		06:33 (TRIV-46a)	06:35		06:57 (TRIV-46)	07:06			07:36	07:11	07:46
	21:16	42	07:15 (TRIV-46a)	20:57	27	07:24 (TRIV-46)	20:13			19:21	17:34	17:11
3	06:11		06:33 (TRIV-46a)	06:36		06:58 (TRIV-46)	07:07			07:37	07:12	07:47
	21:16	41	07:14 (TRIV-46a)	20:55	25	07:23 (TRIV-46)	20:12			19:19	17:33	17:11
4	06:11		06:34 (TRIV-46a)	06:37		06:59 (TRIV-46)	07:08			07:38	07:13	07:48
	21:16	41	07:15 (TRIV-46a)	20:54	24	07:23 (TRIV-46)	20:10			19:17	17:32	17:11
5	06:12		06:35 (TRIV-46a)	06:38		07:00 (TRIV-46)	07:09			07:39	07:14	07:49
	21:15	40	07:15 (TRIV-46a)	20:53	23	07:23 (TRIV-46)	20:08			19:16	17:31	17:11
6	06:13		06:35 (TRIV-46a)	06:39		07:01 (TRIV-46)	07:10			07:40	07:16	07:50
	21:15	40	07:15 (TRIV-46a)	20:52	21	07:22 (TRIV-46)	20:07			19:14	17:30	17:10
7	06:13		06:36 (TRIV-46a)	06:40		07:02 (TRIV-46)	07:11			07:41	07:17	07:50
	21:15	39	07:15 (TRIV-46a)	20:51	19	07:21 (TRIV-46)	20:05			19:12	17:29	17:10
8	06:14		06:36 (TRIV-46a)	06:41		07:03 (TRIV-46)	07:12			07:43	07:18	07:51
	21:15	39	07:15 (TRIV-46a)	20:50	17	07:20 (TRIV-46)	20:03			19:11	17:28	17:10
9	06:15		06:37 (TRIV-46a)	06:42		07:03 (TRIV-46)	07:13			07:44	07:19	07:52
	21:14	38	07:15 (TRIV-46a)	20:48	15	07:18 (TRIV-46)	20:02			19:09	17:27	17:10
10	06:15		06:38 (TRIV-46a)	06:43		07:04 (TRIV-46)	07:14		07:56 (TRIV-45)	07:45	07:20	07:53
	21:14	38	07:16 (TRIV-46a)	20:47	13	07:17 (TRIV-46)	20:00	9	08:05 (TRIV-45)	19:08	17:26	17:10
11	06:16		06:38 (TRIV-46a)	06:44		07:05 (TRIV-46)	07:15		07:52 (TRIV-45)	07:46	07:22	07:54
	21:14	37	07:15 (TRIV-46a)	20:46	10	07:15 (TRIV-46)	19:57	16	08:08 (TRIV-45)	19:06	17:25	17:10
12	06:17		06:39 (TRIV-46a)	06:45		07:06 (TRIV-46)	07:16		07:50 (TRIV-45)	07:47	07:23	07:55
	21:13	36	07:15 (TRIV-46)	20:44	6	07:12 (TRIV-46)	19:55	20	08:10 (TRIV-45)	19:04	17:24	17:11
13	06:17		06:40 (TRIV-46a)	06:46			07:17		07:48 (TRIV-45)	07:48	07:24	07:56
	21:13	36	07:16 (TRIV-46)	20:43			19:53	23	08:11 (TRIV-45)	19:03	17:23	17:11
14	06:18		06:41 (TRIV-46a)	06:47			07:18		07:46 (TRIV-45)	07:49	07:25	07:56
	21:12	36	07:17 (TRIV-46)	20:42			19:51	26	08:12 (TRIV-45)	19:01	17:22	17:11
15	06:19		06:41 (TRIV-46a)	06:48			07:19		07:45 (TRIV-45)	07:50	07:26	07:57
	21:12	36	07:17 (TRIV-46)	20:40			19:50	28	08:13 (TRIV-45)	19:00	17:21	17:11
16	06:20		06:42 (TRIV-46a)	06:49			07:20		07:44 (TRIV-45)	07:51	07:28	07:58
	21:11	36	07:18 (TRIV-46)	20:39			19:48	29	08:13 (TRIV-45)	18:58	17:20	17:11
17	06:21		06:43 (TRIV-46a)	06:50			07:21		07:43 (TRIV-45)	07:52	07:29	07:59
	21:10	36	07:19 (TRIV-46)	20:38			19:46	31	08:14 (TRIV-45)	18:57	17:19	17:12
18	06:21		06:44 (TRIV-46a)	06:51			07:22		07:42 (TRIV-45)	07:53	07:30	07:59
	21:10	36	07:20 (TRIV-46)	20:36			19:45	32	08:14 (TRIV-45)	18:55	17:18	17:12
19	06:22		06:44 (TRIV-46a)	06:52			07:23		07:43 (TRIV-45)	07:55	07:31	08:00
	21:09	36	07:20 (TRIV-46)	20:35			19:43	31	08:14 (TRIV-45)	18:54	17:18	17:12
20	06:23		06:45 (TRIV-46a)	06:53			07:24		07:44 (TRIV-45)	07:56	07:32	08:00
	21:08	36	07:21 (TRIV-46)	20:33			19:41	29	08:13 (TRIV-45)	18:52	17:17	17:13
21	06:24		06:46 (TRIV-46a)	06:54			07:25		07:45 (TRIV-45)	07:57	07:33	08:01
	21:08	36	07:22 (TRIV-46)	20:32			19:39	28	08:13 (TRIV-45)	18:51	17:16	17:13
22	06:25		06:47 (TRIV-46a)	06:55			07:26		07:46 (TRIV-45)	07:58	07:35	08:01
	21:07	35	07:22 (TRIV-46)	20:30			19:38	26	08:12 (TRIV-45)	18:49	17:16	17:14
23	06:26		06:48 (TRIV-46a)	06:56			07:27		07:47 (TRIV-45)	07:59	07:36	08:02
	21:06	35	07:23 (TRIV-46)	20:29			19:36	25	08:12 (TRIV-45)	18:48	17:15	17:14
24	06:27		06:49 (TRIV-46a)	06:57			07:28		07:48 (TRIV-45)	08:00	07:37	08:02
	21:05	34	07:23 (TRIV-46)	20:27			19:34	23	08:11 (TRIV-45)	18:46	17:14	17:15
25	06:27		06:50 (TRIV-46a)	06:58			07:29		07:49 (TRIV-45)	08:01	07:38	08:03
	21:04	34	07:24 (TRIV-46)	20:26			19:33	21	08:10 (TRIV-45)	18:45	17:14	17:15
26	06:28		06:50 (TRIV-46a)	06:59			07:30		07:50 (TRIV-45)	08:03	07:39	08:03
	21:04	33	07:23 (TRIV-46)	20:24			19:31	18	08:08 (TRIV-45)	18:44	17:13	17:16
27	06:29		06:51 (TRIV-46)	07:00			07:31		07:51 (TRIV-45)	08:04	07:40	08:04
	21:03	33	07:24 (TRIV-46)	20:23			19:29	16	08:07 (TRIV-45)	18:42	17:13	17:17
28	06:30		06:52 (TRIV-46)	07:01			07:32		07:52 (TRIV-45)	08:05	07:41	08:04
	21:02	32	07:24 (TRIV-46)	20:21			19:27	13	08:05 (TRIV-45)	18:41	17:13	17:17
29	06:31		06:53 (TRIV-46)	07:02			07:33		07:53 (TRIV-45)	08:06	07:42	08:04
	21:01	31	07:24 (TRIV-46)	20:20			19:26	9	08:02 (TRIV-45)	18:40	17:12	17:18
30	06:32		06:54 (TRIV-46)	07:03			07:34		07:54 (TRIV-45)	08:07	07:43	08:04
	21:00	30	07:24 (TRIV-46)	20:18			19:24	4	07:58 (TRIV-45)	18:38	17:12	17:19
31	06:33		06:55 (TRIV-46)	07:04						08:08		08:05
	20:59	29	07:24 (TRIV-46)	20:16						18:37		17:20
Potential sun hours	459			429			375			345	297	287
Total, worst case		1123			228			457				
Sun reduction		0.76			0.75			0.67				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.70			0.70			0.67				
Total reduction		0.53			0.52			0.45				
Total, real		596			119			205				

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

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

Licensed user:
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US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 235 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1252)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:05		07:51		07:15			07:24		08:06 (TRIV-45)	06:38		06:58 (TRIV-46)	06:09		06:31 (TRIV-46a)
	17:21		17:55		18:29			20:03	6	08:12 (TRIV-45)	20:35	13	07:11 (TRIV-46)	21:04	40	07:11 (TRIV-46a)
2	08:05		07:50		07:13			07:22			06:37		06:56 (TRIV-46)	06:09		06:30 (TRIV-46a)
	17:22		17:56		18:31			20:04			20:36	16	07:12 (TRIV-46)	21:05	40	07:10 (TRIV-46a)
3	08:05		07:49		07:12			07:20			06:35		06:55 (TRIV-46)	06:08		06:30 (TRIV-46a)
	17:22		17:58		18:32			20:05			20:37	18	07:13 (TRIV-46)	21:06	41	07:11 (TRIV-46a)
4	08:05		07:48		07:10			07:19			06:34		06:54 (TRIV-46)	06:08		06:30 (TRIV-46a)
	17:23		17:59		18:33			20:06			20:38	20	07:14 (TRIV-46)	21:07	42	07:12 (TRIV-46a)
5	08:05		07:47		07:09			07:17			06:33		06:53 (TRIV-46)	06:08		06:29 (TRIV-46a)
	17:24		18:00		18:34			20:07			20:39	21	07:14 (TRIV-46)	21:07	42	07:11 (TRIV-46a)
6	08:05		07:46		07:07			07:16			06:32		06:52 (TRIV-46)	06:07		06:30 (TRIV-46a)
	17:25		18:01		18:35			20:08			20:40	23	07:15 (TRIV-46)	21:08	41	07:11 (TRIV-46a)
7	08:05		07:45		07:05			07:14			06:30		06:50 (TRIV-46)	06:07		06:30 (TRIV-46a)
	17:26		18:03		18:36			20:09			20:41	24	07:14 (TRIV-46)	21:09	42	07:12 (TRIV-46a)
8	08:05		07:44		08:04			07:12			06:29		06:49 (TRIV-46)	06:07		06:30 (TRIV-46a)
	17:27		18:04		19:37			20:10			20:42	26	07:15 (TRIV-46)	21:09	42	07:12 (TRIV-46a)
9	08:05		07:42		08:02			07:11			06:28		06:48 (TRIV-46)	06:07		06:31 (TRIV-46a)
	17:28		18:05		19:39			20:11			20:43	27	07:15 (TRIV-46)	21:10	42	07:13 (TRIV-46a)
10	08:04		07:41		08:00			07:09			06:27		06:47 (TRIV-46)	06:06		06:30 (TRIV-46a)
	17:29		18:06		19:40			20:12			20:44	28	07:15 (TRIV-46)	21:11	42	07:12 (TRIV-46a)
11	08:04		07:40		07:59			07:07			06:26		06:46 (TRIV-46)	06:06		06:31 (TRIV-46a)
	17:30		18:08		19:41			20:13			20:45	29	07:15 (TRIV-46)	21:11	41	07:12 (TRIV-46a)
12	08:04		07:39		07:57			07:06			06:25		06:45 (TRIV-46)	06:06		06:31 (TRIV-46a)
	17:31		18:09		19:42			20:14			20:46	30	07:15 (TRIV-46)	21:12	41	07:12 (TRIV-46a)
13	08:04		07:37		07:56		08:15 (TRIV-45)	07:04			06:24		06:44 (TRIV-46)	06:06		06:31 (TRIV-46a)
	17:32		18:10		19:43	7	08:22 (TRIV-45)	20:15			20:47	31	07:15 (TRIV-46)	21:12	42	07:13 (TRIV-46a)
14	08:03		07:36		07:54		08:13 (TRIV-45)	07:03			06:23		06:43 (TRIV-46)	06:06		06:31 (TRIV-46a)
	17:34		18:11		19:44	11	08:24 (TRIV-45)	20:16			20:48	32	07:15 (TRIV-46)	21:13	42	07:13 (TRIV-46a)
15	08:03		07:35		07:52		08:11 (TRIV-45)	07:01			06:22		06:42 (TRIV-46a)	06:06		06:32 (TRIV-46a)
	17:35		18:13		19:45	14	08:25 (TRIV-45)	20:18			20:49	33	07:15 (TRIV-46)	21:13	41	07:13 (TRIV-46a)
16	08:02		07:34		07:51		08:10 (TRIV-45)	07:00			06:21		06:41 (TRIV-46a)	06:06		06:32 (TRIV-46a)
	17:36		18:14		19:46	17	08:27 (TRIV-45)	20:19			20:50	33	07:14 (TRIV-46)	21:13	41	07:13 (TRIV-46a)
17	08:02		07:32		07:49		08:08 (TRIV-45)	06:58			06:20		06:40 (TRIV-46a)	06:06		06:32 (TRIV-46a)
	17:37		18:15		19:47	20	08:28 (TRIV-45)	20:20			20:51	34	07:14 (TRIV-46)	21:14	41	07:13 (TRIV-46a)
18	08:01		07:31		07:47		08:06 (TRIV-45)	06:56			06:19		06:40 (TRIV-46a)	06:06		06:32 (TRIV-46a)
	17:38		18:16		19:49	22	08:28 (TRIV-45)	20:21			20:52	34	07:14 (TRIV-46)	21:14	41	07:13 (TRIV-46a)
19	08:01		07:29		07:46		08:05 (TRIV-45)	06:55			06:18		06:39 (TRIV-46a)	06:06		06:33 (TRIV-46a)
	17:39		18:18		19:50	24	08:29 (TRIV-45)	20:22			20:53	35	07:14 (TRIV-46)	21:15	41	07:14 (TRIV-46a)
20	08:00		07:28		07:44		08:03 (TRIV-45)	06:53			06:17		06:38 (TRIV-46a)	06:06		06:33 (TRIV-46a)
	17:40		18:19		19:51	26	08:29 (TRIV-45)	20:23			20:54	35	07:13 (TRIV-46)	21:15	41	07:14 (TRIV-46a)
21	08:00		07:27		07:42		08:01 (TRIV-45)	06:52			06:16		06:37 (TRIV-46a)	06:06		06:33 (TRIV-46a)
	17:42		18:20		19:52	27	08:28 (TRIV-45)	20:24			20:55	36	07:13 (TRIV-46)	21:15	41	07:14 (TRIV-46a)
22	07:59		07:25		07:41		08:00 (TRIV-45)	06:50			06:16		06:36 (TRIV-46a)	06:07		06:33 (TRIV-46a)
	17:43		18:21		19:53	29	08:29 (TRIV-45)	20:25			20:56	36	07:12 (TRIV-46)	21:15	41	07:14 (TRIV-46a)
23	07:58		07:24		07:39		07:58 (TRIV-45)	06:49			06:15		06:36 (TRIV-46a)	06:07		06:33 (TRIV-46a)
	17:44		18:22		19:54	30	08:28 (TRIV-45)	20:26			20:57	36	07:12 (TRIV-46)	21:16	41	07:14 (TRIV-46a)
24	07:58		07:22		07:37		07:56 (TRIV-45)	06:48			06:14		06:35 (TRIV-46a)	06:07		06:34 (TRIV-46a)
	17:45		18:24		19:55	31	08:27 (TRIV-45)	20:27			20:58	36	07:11 (TRIV-46)	21:16	41	07:15 (TRIV-46a)
25	07:57		07:21		07:36		07:57 (TRIV-45)	06:46			06:13		06:34 (TRIV-46a)	06:07		06:34 (TRIV-46a)
	17:46		18:25		19:56	30	08:27 (TRIV-45)	20:28			20:59	36	07:10 (TRIV-46)	21:16	41	07:15 (TRIV-46a)
26	07:56		07:19		07:34		07:57 (TRIV-45)	06:45			06:13		06:34 (TRIV-46a)	06:08		06:34 (TRIV-46a)
	17:48		18:26		19:57	29	08:26 (TRIV-45)	20:29			20:59	36	07:10 (TRIV-46)	21:16	41	07:15 (TRIV-46a)
27	07:55		07:18		07:32		07:57 (TRIV-45)	06:43			06:12		06:33 (TRIV-46a)	06:08		06:35 (TRIV-46a)
	17:49		18:27		19:58	27	08:24 (TRIV-45)	20:30			21:00	36	07:09 (TRIV-46a)	21:16	41	07:16 (TRIV-46a)
28	07:55		07:16		07:30		07:57 (TRIV-45)	06:42		07:02 (TRIV-46)	06:11		06:33 (TRIV-46a)	06:09		06:34 (TRIV-46a)
	17:50		18:28		19:59	26	08:23 (TRIV-45)	20:31	2	07:04 (TRIV-46)	21:01	37	07:10 (TRIV-46a)	21:16	42	07:16 (TRIV-46a)
29	07:54				07:29		07:59 (TRIV-45)	06:41		07:00 (TRIV-46)	06:11		06:32 (TRIV-46a)	06:09		06:35 (TRIV-46a)
	17:51				20:00	23	08:22 (TRIV-45)	20:32	7	07:07 (TRIV-46)	21:02	38	07:10 (TRIV-46a)	21:16	42	07:17 (TRIV-46a)
30	07:53				07:27		08:00 (TRIV-45)	06:39		06:59 (TRIV-46)	06:10		06:32 (TRIV-46a)	06:09		06:35 (TRIV-46a)
	17:53				20:00	19	08:19 (TRIV-45)	20:34	10	07:09 (TRIV-46)	21:03	38	07:10 (TRIV-46a)	21:16	41	07:16 (TRIV-46a)
31	07:52				07:25		08:02 (TRIV-45)				06:10		06:31 (TRIV-46a)			
	17:54				20:01	14	08:16 (TRIV-45)				21:04	39	07:10 (TRIV-46a)			
Potential sun hours	297		297		370			399			448			453		
Total, worst case						426			25			946			1238	
Sun reduction						0.57			0.63			0.69			0.74	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.67			0.69			0.70			0.70	
Total reduction						0.38			0.44			0.48			0.52	
Total, real						162			11			456			641	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 235 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1252)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November	December
1	06:10		06:35 (TRIV-46a)	06:34		06:56 (TRIV-46)	07:05			07:35		07:55 (TRIV-45)	07:10	07:45
	21:16	41	07:16 (TRIV-46a)	20:58	30	07:26 (TRIV-46)	20:15			19:22	4	07:59 (TRIV-45)	17:36	17:11
2	06:10		06:35 (TRIV-46a)	06:35		06:57 (TRIV-46)	07:06			07:36			07:11	07:46
	21:16	42	07:17 (TRIV-46a)	20:57	29	07:26 (TRIV-46)	20:13			19:21			17:34	17:11
3	06:11		06:35 (TRIV-46a)	06:36		06:58 (TRIV-46)	07:07			07:37			07:12	07:47
	21:16	42	07:17 (TRIV-46a)	20:55	28	07:26 (TRIV-46)	20:12			19:19			17:33	17:11
4	06:11		06:36 (TRIV-46a)	06:37		06:59 (TRIV-46)	07:08			07:38			07:13	07:48
	21:16	41	07:17 (TRIV-46a)	20:54	27	07:26 (TRIV-46)	20:10			19:17			17:32	17:11
5	06:12		06:36 (TRIV-46a)	06:38		07:00 (TRIV-46)	07:09			07:39			07:14	07:49
	21:15	42	07:18 (TRIV-46a)	20:53	25	07:25 (TRIV-46)	20:08			19:16			17:31	17:11
6	06:13		06:36 (TRIV-46a)	06:39		07:01 (TRIV-46)	07:10			07:40			07:16	07:50
	21:15	42	07:18 (TRIV-46a)	20:52	24	07:25 (TRIV-46)	20:07			19:14			17:30	17:10
7	06:13		06:36 (TRIV-46a)	06:40		07:02 (TRIV-46)	07:11			07:41			07:17	07:50
	21:15	42	07:18 (TRIV-46a)	20:51	22	07:24 (TRIV-46)	20:05			19:12			17:29	17:10
8	06:14		06:36 (TRIV-46a)	06:41		07:03 (TRIV-46)	07:12			07:43			07:18	07:51
	21:15	42	07:18 (TRIV-46a)	20:50	21	07:24 (TRIV-46)	20:03			19:11			17:28	17:10
9	06:15		06:37 (TRIV-46a)	06:42		07:03 (TRIV-46)	07:13			07:44			07:19	07:52
	21:14	41	07:18 (TRIV-46a)	20:48	19	07:22 (TRIV-46)	20:02			19:09			17:27	17:10
10	06:15		06:38 (TRIV-46a)	06:43		07:04 (TRIV-46)	07:14			07:45			07:20	07:53
	21:14	41	07:19 (TRIV-46a)	20:47	17	07:21 (TRIV-46)	20:00			19:08			17:26	17:10
11	06:16		06:38 (TRIV-46a)	06:44		07:05 (TRIV-46)	07:15		08:00 (TRIV-45)	07:46			07:22	07:54
	21:14	40	07:18 (TRIV-46a)	20:46	15	07:20 (TRIV-46)	19:57	3	08:03 (TRIV-45)	19:06			17:25	17:10
12	06:17		06:39 (TRIV-46a)	06:45		07:06 (TRIV-46)	07:16		07:54 (TRIV-45)	07:47			07:23	07:55
	21:13	39	07:18 (TRIV-46a)	20:44	12	07:18 (TRIV-46)	19:55	14	08:08 (TRIV-45)	19:04			17:24	17:11
13	06:17		06:40 (TRIV-46a)	06:46		07:07 (TRIV-46)	07:17		07:51 (TRIV-45)	07:48			07:24	07:56
	21:13	39	07:19 (TRIV-46a)	20:43	10	07:17 (TRIV-46)	19:53	19	08:10 (TRIV-45)	19:03			17:23	17:11
14	06:18		06:41 (TRIV-46a)	06:47		07:08 (TRIV-46)	07:18		07:49 (TRIV-45)	07:49			07:25	07:56
	21:12	38	07:19 (TRIV-46a)	20:42	6	07:14 (TRIV-46)	19:51	23	08:12 (TRIV-45)	19:01			17:22	17:11
15	06:19		06:41 (TRIV-46a)	06:48			07:19		07:48 (TRIV-45)	07:50			07:26	07:57
	21:12	37	07:18 (TRIV-46a)	20:40			19:50	25	08:13 (TRIV-45)	19:00			17:21	17:11
16	06:20		06:42 (TRIV-46a)	06:49			07:20		07:46 (TRIV-45)	07:51			07:28	07:58
	21:11	37	07:19 (TRIV-46a)	20:39			19:48	27	08:13 (TRIV-45)	18:58			17:20	17:11
17	06:21		06:43 (TRIV-46a)	06:50			07:21		07:45 (TRIV-45)	07:52			07:29	07:59
	21:10	36	07:19 (TRIV-46a)	20:38			19:46	29	08:14 (TRIV-45)	18:57			17:19	17:12
18	06:21		06:44 (TRIV-46a)	06:51			07:22		07:44 (TRIV-45)	07:53			07:30	07:59
	21:10	36	07:20 (TRIV-46)	20:36			19:45	30	08:14 (TRIV-45)	18:55			17:18	17:12
19	06:22		06:44 (TRIV-46a)	06:52			07:23		07:43 (TRIV-45)	07:55			07:31	08:00
	21:09	36	07:20 (TRIV-46)	20:35			19:43	31	08:14 (TRIV-45)	18:54			17:18	17:12
20	06:23		06:45 (TRIV-46a)	06:53			07:24		07:44 (TRIV-45)	07:56			07:32	08:00
	21:08	36	07:21 (TRIV-46)	20:33			19:41	30	08:14 (TRIV-45)	18:52			17:17	17:13
21	06:24		06:46 (TRIV-46a)	06:54			07:25		07:45 (TRIV-45)	07:57			07:33	08:01
	21:08	36	07:22 (TRIV-46)	20:32			19:39	29	08:14 (TRIV-45)	18:51			17:16	17:13
22	06:25		06:47 (TRIV-46a)	06:55			07:26		07:46 (TRIV-45)	07:58			07:35	08:01
	21:07	36	07:23 (TRIV-46)	20:30			19:38	28	08:14 (TRIV-45)	18:49			17:16	17:14
23	06:26		06:48 (TRIV-46a)	06:56			07:27		07:47 (TRIV-45)	07:59			07:36	08:02
	21:06	35	07:23 (TRIV-46)	20:29			19:36	26	08:13 (TRIV-45)	18:48			17:15	17:14
24	06:27		06:49 (TRIV-46a)	06:57			07:28		07:48 (TRIV-45)	08:00			07:37	08:02
	21:05	35	07:24 (TRIV-46)	20:27			19:34	24	08:12 (TRIV-45)	18:46			17:14	17:15
25	06:27		06:50 (TRIV-46a)	06:58			07:29		07:49 (TRIV-45)	08:01			07:38	08:03
	21:04	35	07:25 (TRIV-46)	20:26			19:33	23	08:12 (TRIV-45)	18:45			17:14	17:15
26	06:28		06:50 (TRIV-46a)	06:59			07:30		07:50 (TRIV-45)	08:03			07:39	08:03
	21:04	34	07:24 (TRIV-46)	20:24			19:31	20	08:10 (TRIV-45)	18:44			17:13	17:16
27	06:29		06:51 (TRIV-46a)	07:00			07:31		07:51 (TRIV-45)	08:04			07:40	08:04
	21:03	34	07:25 (TRIV-46)	20:23			19:29	18	08:09 (TRIV-45)	18:42			17:13	17:17
28	06:30		06:52 (TRIV-46a)	07:01			07:32		07:52 (TRIV-45)	08:05			07:41	08:04
	21:02	33	07:25 (TRIV-46)	20:21			19:27	16	08:08 (TRIV-45)	18:41			17:13	17:17
29	06:31		06:53 (TRIV-46)	07:02			07:33		07:53 (TRIV-45)	08:06			07:42	08:04
	21:01	32	07:25 (TRIV-46)	20:20			19:26	13	08:06 (TRIV-45)	18:40			17:12	17:18
30	06:32		06:54 (TRIV-46)	07:03			07:34		07:54 (TRIV-45)	08:07			07:43	08:04
	21:00	32	07:26 (TRIV-46)	20:18			19:24	9	08:03 (TRIV-45)	18:38			17:12	17:19
31	06:33		06:55 (TRIV-46)	07:04						08:08				08:05
	20:59	31	07:26 (TRIV-46)	20:16						18:37				17:20
Potential sun hours	459			429			375			345			297	287
Total, worst case		1163			285			437			4			
Sun reduction		0.76			0.75			0.67			0.60			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.70			0.67			0.67			
Total reduction		0.53			0.52			0.45			0.40			
Total, real		618			149			196			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:
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217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 236 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1253)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:05		07:51		07:15			07:24			06:38		06:58 (TRIV-46)	06:09		06:31 (TRIV-46a)
	17:21		17:55		18:29			20:03			20:35	15	07:13 (TRIV-46)	21:04	41	07:12 (TRIV-46a)
2	08:05		07:50		07:13			07:22			06:37		06:56 (TRIV-46)	06:09		06:31 (TRIV-46a)
	17:22		17:56		18:31			20:04			20:36	17	07:13 (TRIV-46)	21:05	40	07:11 (TRIV-46a)
3	08:05		07:49		07:12			07:20			06:35		06:55 (TRIV-46)	06:08		06:31 (TRIV-46a)
	17:22		17:58		18:32			20:05			20:37	19	07:14 (TRIV-46)	21:06	41	07:12 (TRIV-46a)
4	08:05		07:48		07:10			07:19			06:34		06:54 (TRIV-46)	06:08		06:32 (TRIV-46a)
	17:23		17:59		18:33			20:06			20:38	21	07:15 (TRIV-46)	21:07	40	07:12 (TRIV-46a)
5	08:05		07:47		07:09			07:17			06:33		06:53 (TRIV-46)	06:08		06:31 (TRIV-46a)
	17:24		18:00		18:34			20:07			20:39	23	07:16 (TRIV-46)	21:07	41	07:12 (TRIV-46a)
6	08:05		07:46		07:07			07:16			06:32		06:52 (TRIV-46)	06:07		06:32 (TRIV-46a)
	17:25		18:01		18:35			20:08			20:40	24	07:16 (TRIV-46)	21:08	40	07:12 (TRIV-46a)
7	08:05		07:45		07:05			07:14			06:30		06:50 (TRIV-46)	06:07		06:32 (TRIV-46a)
	17:26		18:03		18:36			20:09			20:41	25	07:15 (TRIV-46)	21:09	41	07:13 (TRIV-46a)
8	08:05		07:44		08:04			07:12			06:29		06:49 (TRIV-46)	06:07		06:32 (TRIV-46a)
	17:27		18:04		19:37			20:10			20:42	27	07:16 (TRIV-46)	21:09	41	07:13 (TRIV-46a)
9	08:05		07:42		08:02			07:11			06:28		06:48 (TRIV-46)	06:07		06:33 (TRIV-46a)
	17:28		18:05		19:39			20:11			20:43	28	07:16 (TRIV-46)	21:10	40	07:13 (TRIV-46a)
10	08:04		07:41		08:00			07:09			06:27		06:47 (TRIV-46)	06:06		06:32 (TRIV-46a)
	17:29		18:06		19:40			20:12			20:44	29	07:16 (TRIV-46)	21:11	40	07:12 (TRIV-46a)
11	08:04		07:40		07:59			07:07			06:26		06:46 (TRIV-46)	06:06		06:33 (TRIV-46a)
	17:30		18:08		19:41			20:13			20:45	30	07:16 (TRIV-46)	21:11	40	07:13 (TRIV-46a)
12	08:04		07:39		07:57			07:06			06:25		06:45 (TRIV-46)	06:06		06:33 (TRIV-46a)
	17:31		18:09		19:42			20:14			20:46	31	07:16 (TRIV-46)	21:12	40	07:13 (TRIV-46a)
13	08:04		07:37		07:56		08:15 (TRIV-45)	07:04			06:24		06:44 (TRIV-46)	06:06		06:33 (TRIV-46a)
	17:32		18:10		19:43	7	08:22 (TRIV-45)	20:15			20:47	32	07:16 (TRIV-46)	21:12	40	07:13 (TRIV-46a)
14	08:03		07:36		07:54		08:13 (TRIV-45)	07:03			06:23		06:43 (TRIV-46a)	06:06		06:34 (TRIV-46a)
	17:34		18:11		19:44	11	08:24 (TRIV-45)	20:16			20:48	32	07:15 (TRIV-46)	21:13	39	07:13 (TRIV-46a)
15	08:03		07:35		07:52		08:11 (TRIV-45)	07:01			06:22		06:42 (TRIV-46a)	06:06		06:34 (TRIV-46a)
	17:35		18:13		19:45	14	08:25 (TRIV-45)	20:18			20:49	33	07:15 (TRIV-46)	21:13	39	07:13 (TRIV-46a)
16	08:02		07:34		07:51		08:10 (TRIV-45)	07:00			06:21		06:41 (TRIV-46a)	06:06		06:34 (TRIV-46a)
	17:36		18:14		19:46	17	08:27 (TRIV-45)	20:19			20:50	33	07:14 (TRIV-46)	21:13	39	07:13 (TRIV-46a)
17	08:02		07:32		07:49		08:08 (TRIV-45)	06:58			06:20		06:40 (TRIV-46a)	06:06		06:34 (TRIV-46a)
	17:37		18:15		19:47	19	08:27 (TRIV-45)	20:20			20:51	34	07:14 (TRIV-46)	21:14	40	07:14 (TRIV-46a)
18	08:01		07:31		07:47		08:06 (TRIV-45)	06:56			06:19		06:40 (TRIV-46a)	06:06		06:34 (TRIV-46a)
	17:38		18:16		19:49	22	08:28 (TRIV-45)	20:21			20:52	34	07:14 (TRIV-46)	21:14	40	07:14 (TRIV-46a)
19	08:01		07:29		07:46		08:05 (TRIV-45)	06:55			06:18		06:39 (TRIV-46a)	06:06		06:35 (TRIV-46a)
	17:39		18:18		19:50	23	08:28 (TRIV-45)	20:22			20:53	35	07:14 (TRIV-46)	21:15	40	07:15 (TRIV-46a)
20	08:00		07:28		07:44		08:03 (TRIV-45)	06:53			06:17		06:38 (TRIV-46a)	06:06		06:35 (TRIV-46a)
	17:40		18:19		19:51	25	08:28 (TRIV-45)	20:23			20:54	35	07:13 (TRIV-46)	21:15	40	07:15 (TRIV-46a)
21	08:00		07:27		07:42		08:01 (TRIV-45)	06:52			06:16		06:37 (TRIV-46a)	06:06		06:36 (TRIV-46a)
	17:42		18:20		19:52	27	08:28 (TRIV-45)	20:24			20:55	35	07:12 (TRIV-46)	21:15	39	07:15 (TRIV-46a)
22	07:59		07:25		07:41		08:00 (TRIV-45)	06:50			06:16		06:36 (TRIV-46a)	06:07		06:36 (TRIV-46a)
	17:43		18:21		19:53	28	08:28 (TRIV-45)	20:25			20:56	35	07:11 (TRIV-46)	21:15	39	07:15 (TRIV-46a)
23	07:58		07:24		07:39		07:58 (TRIV-45)	06:49			06:15		06:36 (TRIV-46a)	06:07		06:35 (TRIV-46a)
	17:44		18:22		19:54	29	08:27 (TRIV-45)	20:26			20:57	35	07:11 (TRIV-46)	21:16	40	07:15 (TRIV-46a)
24	07:58		07:22		07:37		07:56 (TRIV-45)	06:48			06:14		06:35 (TRIV-46a)	06:07		06:36 (TRIV-46a)
	17:45		18:24		19:55	31	08:27 (TRIV-45)	20:27			20:58	35	07:10 (TRIV-46)	21:16	40	07:16 (TRIV-46a)
25	07:57		07:21		07:36		07:57 (TRIV-45)	06:46			06:13		06:34 (TRIV-46a)	06:07		06:36 (TRIV-46a)
	17:46		18:25		19:56	29	08:26 (TRIV-45)	20:28			20:59	36	07:10 (TRIV-46a)	21:16	40	07:16 (TRIV-46a)
26	07:56		07:19		07:34		07:57 (TRIV-45)	06:45			06:13		06:34 (TRIV-46a)	06:08		06:36 (TRIV-46a)
	17:48		18:26		19:57	28	08:25 (TRIV-45)	20:29			20:59	37	07:11 (TRIV-46a)	21:16	40	07:16 (TRIV-46a)
27	07:55		07:18		07:32		07:57 (TRIV-45)	06:43		07:03 (TRIV-46)	06:12		06:33 (TRIV-46a)	06:08		06:37 (TRIV-46a)
	17:49		18:27		19:58	27	08:24 (TRIV-45)	20:30	1	07:04 (TRIV-46)	21:00	37	07:10 (TRIV-46a)	21:16	39	07:16 (TRIV-46a)
28	07:55		07:16		07:30		07:58 (TRIV-45)	06:42		07:02 (TRIV-46)	06:11		06:33 (TRIV-46a)	06:09		06:37 (TRIV-46a)
	17:50		18:28		19:59	24	08:22 (TRIV-45)	20:31	6	07:08 (TRIV-46)	21:01	38	07:11 (TRIV-46a)	21:16	39	07:16 (TRIV-46a)
29	07:54				07:29		07:59 (TRIV-45)	06:41		07:00 (TRIV-46)	06:11		06:32 (TRIV-46a)	06:09		06:37 (TRIV-46a)
	17:51				20:00	22	08:21 (TRIV-45)	20:32	10	07:10 (TRIV-46)	21:02	39	07:11 (TRIV-46a)	21:16	40	07:17 (TRIV-46a)
30	07:53				07:27		08:01 (TRIV-45)	06:39		06:59 (TRIV-46)	06:10		06:32 (TRIV-46a)	06:09		06:37 (TRIV-46a)
	17:53				20:00	17	08:18 (TRIV-45)	20:34	13	07:12 (TRIV-46)	21:03	40	07:12 (TRIV-46a)	21:16	40	07:17 (TRIV-46a)
31	07:52				07:25		08:03 (TRIV-45)				06:10		06:31 (TRIV-46a)			
	17:54				20:01	12	08:15 (TRIV-45)				21:04	40	07:11 (TRIV-46a)			
Potential sun hours	297		297		370			399			448			453		
Total, worst case						412			30			964			1198	
Sun reduction						0.57			0.63			0.69			0.74	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.67			0.70			0.70			0.70	
Total reduction						0.38			0.44			0.48			0.52	
Total, real						157			13			465			620	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 236 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1253)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November	December
1	06:10		06:37 (TRIV-46a)	06:34		06:56 (TRIV-46)	07:05			07:35		07:55 (TRIV-45)	07:10	07:45
	21:16	40	07:17 (TRIV-46a)	20:58	30	07:26 (TRIV-46)	20:15			19:22	4	07:59 (TRIV-45)	17:36	17:11
2	06:10		06:37 (TRIV-46a)	06:35		06:57 (TRIV-46)	07:06			07:36			07:11	07:46
	21:16	41	07:18 (TRIV-46a)	20:57	30	07:27 (TRIV-46)	20:13			19:21			17:34	17:11
3	06:11		06:37 (TRIV-46a)	06:36		06:58 (TRIV-46)	07:07			07:37			07:12	07:47
	21:16	40	07:17 (TRIV-46a)	20:55	29	07:27 (TRIV-46)	20:12			19:19			17:33	17:11
4	06:11		06:38 (TRIV-46a)	06:37		06:59 (TRIV-46)	07:08			07:38			07:13	07:48
	21:16	40	07:18 (TRIV-46a)	20:54	27	07:26 (TRIV-46)	20:10			19:17			17:32	17:11
5	06:12		06:38 (TRIV-46a)	06:38		07:00 (TRIV-46)	07:09			07:39			07:14	07:49
	21:15	41	07:19 (TRIV-46a)	20:53	26	07:26 (TRIV-46)	20:08			19:16			17:31	17:11
6	06:13		06:38 (TRIV-46a)	06:39		07:01 (TRIV-46)	07:10			07:40			07:16	07:50
	21:15	40	07:18 (TRIV-46a)	20:52	25	07:26 (TRIV-46)	20:07			19:14			17:30	17:10
7	06:13		06:38 (TRIV-46a)	06:40		07:02 (TRIV-46)	07:11			07:41			07:17	07:50
	21:15	41	07:19 (TRIV-46a)	20:51	24	07:26 (TRIV-46)	20:05			19:12			17:29	17:10
8	06:14		06:38 (TRIV-46a)	06:41		07:03 (TRIV-46)	07:12			07:43			07:18	07:51
	21:15	41	07:19 (TRIV-46a)	20:50	22	07:25 (TRIV-46)	20:03			19:11			17:28	17:10
9	06:15		06:38 (TRIV-46a)	06:42		07:03 (TRIV-46)	07:13			07:44			07:19	07:52
	21:14	41	07:19 (TRIV-46a)	20:48	20	07:23 (TRIV-46)	20:02			19:09			17:27	17:10
10	06:15		06:39 (TRIV-46a)	06:43		07:04 (TRIV-46)	07:14			07:45			07:20	07:53
	21:14	41	07:20 (TRIV-46a)	20:47	19	07:23 (TRIV-46)	20:00			19:08			17:26	17:10
11	06:16		06:38 (TRIV-46a)	06:44		07:05 (TRIV-46)	07:15			07:46			07:22	07:54
	21:14	41	07:19 (TRIV-46a)	20:46	17	07:22 (TRIV-46)	19:57			19:06			17:25	17:10
12	06:17		06:39 (TRIV-46a)	06:45		07:06 (TRIV-46)	07:16		07:55 (TRIV-45)	07:47			07:23	07:55
	21:13	41	07:20 (TRIV-46a)	20:44	15	07:21 (TRIV-46)	19:55	12	08:07 (TRIV-45)	19:04			17:24	17:11
13	06:17		06:40 (TRIV-46a)	06:46		07:07 (TRIV-46)	07:17		07:52 (TRIV-45)	07:48			07:24	07:56
	21:13	40	07:20 (TRIV-46a)	20:43	12	07:19 (TRIV-46)	19:53	17	08:09 (TRIV-45)	19:03			17:23	17:11
14	06:18		06:41 (TRIV-46a)	06:47		07:08 (TRIV-46)	07:18		07:50 (TRIV-45)	07:49			07:25	07:56
	21:12	39	07:20 (TRIV-46a)	20:42	9	07:17 (TRIV-46)	19:51	21	08:11 (TRIV-45)	19:01			17:22	17:11
15	06:19		06:41 (TRIV-46a)	06:48		07:09 (TRIV-46)	07:19		07:48 (TRIV-45)	07:50			07:26	07:57
	21:12	39	07:20 (TRIV-46a)	20:40	5	07:14 (TRIV-46)	19:50	24	08:12 (TRIV-45)	19:00			17:21	17:11
16	06:20		06:42 (TRIV-46a)	06:49			07:20		07:47 (TRIV-45)	07:51			07:28	07:58
	21:11	38	07:20 (TRIV-46a)	20:39			19:48	26	08:13 (TRIV-45)	18:58			17:20	17:11
17	06:21		06:43 (TRIV-46a)	06:50			07:21		07:45 (TRIV-45)	07:52			07:29	07:59
	21:10	37	07:20 (TRIV-46a)	20:38			19:46	28	08:13 (TRIV-45)	18:57			17:19	17:12
18	06:21		06:44 (TRIV-46a)	06:51			07:22		07:44 (TRIV-45)	07:53			07:30	07:59
	21:10	36	07:20 (TRIV-46a)	20:36			19:45	30	08:14 (TRIV-45)	18:55			17:18	17:12
19	06:22		06:44 (TRIV-46a)	06:52			07:23		07:44 (TRIV-45)	07:55			07:31	08:00
	21:09	35	07:19 (TRIV-46a)	20:35			19:43	30	08:14 (TRIV-45)	18:54			17:18	17:12
20	06:23		06:45 (TRIV-46a)	06:53			07:24		07:44 (TRIV-45)	07:56			07:32	08:00
	21:08	35	07:20 (TRIV-46)	20:33			19:41	30	08:14 (TRIV-45)	18:52			17:17	17:13
21	06:24		06:46 (TRIV-46a)	06:54			07:25		07:45 (TRIV-45)	07:57			07:33	08:01
	21:08	35	07:21 (TRIV-46)	20:32			19:39	29	08:14 (TRIV-45)	18:51			17:16	17:13
22	06:25		06:47 (TRIV-46a)	06:55			07:26		07:46 (TRIV-45)	07:58			07:35	08:01
	21:07	35	07:22 (TRIV-46)	20:30			19:38	27	08:13 (TRIV-45)	18:49			17:16	17:14
23	06:26		06:48 (TRIV-46a)	06:56			07:27		07:47 (TRIV-45)	07:59			07:36	08:02
	21:06	35	07:23 (TRIV-46)	20:29			19:36	26	08:13 (TRIV-45)	18:48			17:15	17:14
24	06:27		06:49 (TRIV-46a)	06:57			07:28		07:48 (TRIV-45)	08:00			07:37	08:02
	21:05	35	07:24 (TRIV-46)	20:27			19:34	24	08:12 (TRIV-45)	18:46			17:14	17:15
25	06:27		06:50 (TRIV-46a)	06:58			07:29		07:49 (TRIV-45)	08:01			07:38	08:03
	21:04	34	07:24 (TRIV-46)	20:26			19:33	22	08:11 (TRIV-45)	18:45			17:14	17:15
26	06:28		06:50 (TRIV-46a)	06:59			07:30		07:50 (TRIV-45)	08:03			07:39	08:03
	21:04	34	07:24 (TRIV-46)	20:24			19:31	20	08:10 (TRIV-45)	18:44			17:13	17:16
27	06:29		06:51 (TRIV-46a)	07:00			07:31		07:51 (TRIV-45)	08:04			07:40	08:04
	21:03	34	07:25 (TRIV-46)	20:23			19:29	18	08:09 (TRIV-45)	18:42			17:13	17:17
28	06:30		06:52 (TRIV-46a)	07:01			07:32		07:52 (TRIV-45)	08:05			07:41	08:04
	21:02	33	07:25 (TRIV-46)	20:21			19:27	15	08:07 (TRIV-45)	18:41			17:13	17:17
29	06:31		06:53 (TRIV-46a)	07:02			07:33		07:53 (TRIV-45)	08:06			07:42	08:04
	21:01	33	07:26 (TRIV-46)	20:20			19:26	12	08:05 (TRIV-45)	18:40			17:12	17:18
30	06:32		06:54 (TRIV-46)	07:03			07:34		07:54 (TRIV-45)	08:07			07:43	08:04
	21:00	32	07:26 (TRIV-46)	20:18			19:24	9	08:03 (TRIV-45)	18:38			17:12	17:19
31	06:33		06:55 (TRIV-46)	07:04						08:08				08:05
	20:59	31	07:26 (TRIV-46)	20:16						18:37				17:20
Potential sun hours	460			429			375			345			297	287
Total, worst case		1158			310			420			4			
Sun reduction		0.76			0.75			0.67			0.60			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.70			0.70			0.67			0.67			
Total reduction		0.53			0.52			0.45			0.40			
Total, real		615			162			188			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:
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217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 238 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1255)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:05		07:51		07:15			07:24		18:50 (TRIV-17)	06:38		18:52 (TRIV-17)	06:09		20:35 (TRIV-16)
	17:21		17:55		18:29			20:02	52	19:42 (TRIV-17)	20:34	37	19:29 (TRIV-17)	21:04	5	20:40 (TRIV-16)
2	08:05		07:50		07:13			07:22		18:49 (TRIV-17)	06:37		18:53 (TRIV-17)	06:09		20:33 (TRIV-16)
	17:22		17:56		18:30			20:03	54	19:43 (TRIV-17)	20:35	34	19:27 (TRIV-17)	21:05	7	20:40 (TRIV-16)
3	08:05		07:49		07:12			07:20		18:47 (TRIV-17)	06:35		18:55 (TRIV-17)	06:08		20:32 (TRIV-16)
	17:22		17:58		18:32			20:05	56	19:43 (TRIV-17)	20:36	30	19:25 (TRIV-17)	21:06	9	20:41 (TRIV-16)
4	08:05		07:48		07:10			07:19		18:47 (TRIV-17)	06:34		18:57 (TRIV-17)	06:08		20:32 (TRIV-16)
	17:23		17:59		18:33			20:06	57	19:44 (TRIV-17)	20:38	26	19:23 (TRIV-17)	21:06	10	20:42 (TRIV-16)
5	08:05		07:47		07:08			07:17		18:46 (TRIV-17)	06:33		19:00 (TRIV-17)	06:08		20:31 (TRIV-16)
	17:24		18:00		18:34			20:07	58	19:44 (TRIV-17)	20:39	20	19:20 (TRIV-17)	21:07	11	20:42 (TRIV-16)
6	08:05		07:46		07:07			07:15		18:45 (TRIV-17)	06:32		19:04 (TRIV-17)	06:07		20:30 (TRIV-16)
	17:25		18:01		18:35			20:08	59	19:44 (TRIV-17)	20:40	11	19:15 (TRIV-17)	21:08	13	20:43 (TRIV-16)
7	08:05		07:45		07:05			07:14		18:44 (TRIV-17)	06:30			06:07		20:30 (TRIV-16)
	17:26		18:03		18:36			20:09	61	19:45 (TRIV-17)	20:41			21:08	14	20:44 (TRIV-16)
8	08:05		07:43		08:04			07:12		18:43 (TRIV-17)	06:29			06:07		20:30 (TRIV-16)
	17:27		18:04		19:37			20:10	62	19:45 (TRIV-17)	20:42			21:09	15	20:45 (TRIV-16)
9	08:04		07:42		08:02			07:11		18:44 (TRIV-17)	06:28			06:06		20:29 (TRIV-16)
	17:28		18:05		19:38			20:11	62	19:46 (TRIV-17)	20:43			21:10	15	20:44 (TRIV-16)
10	08:04		07:41		08:00			07:09		18:43 (TRIV-17)	06:27			06:06		20:29 (TRIV-16)
	17:29		18:06		19:40			20:12	62	19:45 (TRIV-17)	20:44			21:10	16	20:45 (TRIV-16)
11	08:04		07:40		07:59			07:07		18:42 (TRIV-17)	06:26			06:06		20:29 (TRIV-16)
	17:30		18:08		19:41			20:13	63	19:45 (TRIV-17)	20:45			21:11	17	20:46 (TRIV-16)
12	08:04		07:39		07:57			07:06		18:42 (TRIV-17)	06:25			06:06		20:29 (TRIV-16)
	17:31		18:09		19:42			20:14	63	19:45 (TRIV-17)	20:46			21:11	17	20:46 (TRIV-16)
13	08:03		07:37		07:55			07:04		18:42 (TRIV-17)	06:24			06:06		20:29 (TRIV-16)
	17:32		18:10		19:43			20:15	62	19:44 (TRIV-17)	20:47			21:12	18	20:47 (TRIV-16)
14	08:03		07:36		07:54			07:03		18:42 (TRIV-17)	06:23			06:06		20:29 (TRIV-16)
	17:33		18:11		19:44			20:16	62	19:44 (TRIV-17)	20:48			21:12	18	20:47 (TRIV-16)
15	08:03		07:35		07:52			07:01		18:41 (TRIV-17)	06:22			06:06		20:29 (TRIV-16)
	17:35		18:13		19:45			20:17	63	19:44 (TRIV-17)	20:49			21:13	19	20:48 (TRIV-16)
16	08:02		07:33		07:50			06:59		18:42 (TRIV-17)	06:21			06:06		20:29 (TRIV-16)
	17:36		18:14		19:46			20:18	62	19:44 (TRIV-17)	20:50			21:13	19	20:48 (TRIV-16)
17	08:02		07:32		07:49			06:58		18:42 (TRIV-17)	06:20			06:06		20:29 (TRIV-16)
	17:37		18:15		19:47			20:19	61	19:43 (TRIV-17)	20:51			21:14	19	20:48 (TRIV-16)
18	08:01		07:31		07:47			06:56		18:42 (TRIV-17)	06:19			06:06		20:29 (TRIV-16)
	17:38		18:16		19:48			20:21	61	19:43 (TRIV-17)	20:52			21:14	19	20:48 (TRIV-16)
19	08:01		07:29		07:45			06:55		18:42 (TRIV-17)	06:18			06:06		20:29 (TRIV-16)
	17:39		18:17		19:49			20:22	60	19:42 (TRIV-17)	20:53			21:14	19	20:48 (TRIV-16)
20	08:00		07:28		07:44			06:53		18:43 (TRIV-17)	06:17			06:06		20:30 (TRIV-16)
	17:40		18:19		19:51			20:23	58	19:41 (TRIV-17)	20:54			21:15	20	20:50 (TRIV-16)
21	08:00		07:26		07:42			06:52		18:43 (TRIV-17)	06:16			06:06		20:30 (TRIV-16)
	17:42		18:20		19:52			20:24	57	19:40 (TRIV-17)	20:55			21:15	20	20:50 (TRIV-16)
22	07:59		07:25		07:40			06:50		18:43 (TRIV-17)	06:15			06:07		20:30 (TRIV-16)
	17:43		18:21		19:53			20:25	57	19:40 (TRIV-17)	20:56			21:15	20	20:50 (TRIV-16)
23	07:58		07:24		07:39			06:49		18:43 (TRIV-17)	06:15			06:07		20:30 (TRIV-16)
	17:44		18:22		19:54			20:26	55	19:38 (TRIV-17)	20:57			21:15	20	20:50 (TRIV-16)
24	07:58		07:22		07:37		19:10 (TRIV-17)	06:47		18:44 (TRIV-17)	06:14			06:07		20:31 (TRIV-16)
	17:45		18:23		19:55	18	19:28 (TRIV-17)	20:27	54	19:38 (TRIV-17)	20:57			21:15	19	20:50 (TRIV-16)
25	07:57		07:21		07:35		19:05 (TRIV-17)	06:46		18:45 (TRIV-17)	06:13			06:07		20:31 (TRIV-16)
	17:46		18:25		19:56	26	19:31 (TRIV-17)	20:28	51	19:36 (TRIV-17)	20:58			21:16	19	20:50 (TRIV-16)
26	07:56		07:19		07:34		19:02 (TRIV-17)	06:45		18:46 (TRIV-17)	06:13			06:08		20:31 (TRIV-16)
	17:48		18:26		19:57	33	19:35 (TRIV-17)	20:29	49	19:35 (TRIV-17)	20:59			21:16	19	20:50 (TRIV-16)
27	07:55		07:18		07:32		18:59 (TRIV-17)	06:43		18:47 (TRIV-17)	06:12			06:08		20:32 (TRIV-16)
	17:49		18:27		19:58	37	19:36 (TRIV-17)	20:30	48	19:35 (TRIV-17)	21:00			21:16	19	20:51 (TRIV-16)
28	07:54		07:16		07:30		18:57 (TRIV-17)	06:42		18:47 (TRIV-17)	06:11			06:09		20:32 (TRIV-16)
	17:50		18:28		19:59	40	19:37 (TRIV-17)	20:31	46	19:33 (TRIV-17)	21:01			21:16	18	20:50 (TRIV-16)
29	07:54				07:29		18:55 (TRIV-17)	06:41		18:49 (TRIV-17)	06:11			06:09		20:32 (TRIV-16)
	17:51				20:00	44	19:39 (TRIV-17)	20:32	43	19:32 (TRIV-17)	21:02			21:16	18	20:50 (TRIV-16)
30	07:53				07:27		18:53 (TRIV-17)	06:39		18:50 (TRIV-17)	06:10			06:09		20:33 (TRIV-16)
	17:53				20:00	47	19:40 (TRIV-17)	20:33	40	19:30 (TRIV-17)	21:03			21:16	17	20:50 (TRIV-16)
31	07:52				07:25		18:51 (TRIV-17)				06:10		20:37 (TRIV-16)			
	17:54				20:01	50	19:41 (TRIV-17)				21:03	2	20:39 (TRIV-16)			
Potential sun hours	297		297		370			399			448			452		
Total, worst case						295			1698			160			489	
Sun reduction						0.57			0.63			0.69			0.74	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.67			0.67			0.67			0.62	
Total reduction						0.38			0.42			0.46			0.46	
Total, real						113			720			74			224	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 238 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1255)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October	November	December
1	06:10		20:33 (TRIV-16)	06:34			07:05		18:41 (TRIV-17)	07:35	07:09	07:44
	21:16	17	20:50 (TRIV-16)	20:57			20:15	62	19:43 (TRIV-17)	19:22	17:36	17:11
2	06:10		20:34 (TRIV-16)	06:35			07:06		18:41 (TRIV-17)	07:36	07:11	07:45
	21:16	16	20:50 (TRIV-16)	20:56			20:13	62	19:43 (TRIV-17)	19:21	17:34	17:11
3	06:11		20:34 (TRIV-16)	06:36			07:07		18:41 (TRIV-17)	07:37	07:12	07:46
	21:16	16	20:50 (TRIV-16)	20:55			20:11	62	19:43 (TRIV-17)	19:19	17:33	17:11
4	06:11		20:35 (TRIV-16)	06:37			07:08		18:40 (TRIV-17)	07:38	07:13	07:47
	21:15	15	20:50 (TRIV-16)	20:54			20:10	62	19:42 (TRIV-17)	19:17	17:32	17:11
5	06:12		20:35 (TRIV-16)	06:38			07:09		18:40 (TRIV-17)	07:39	07:14	07:48
	21:15	14	20:49 (TRIV-16)	20:53			20:08	61	19:41 (TRIV-17)	19:16	17:31	17:11
6	06:13		20:36 (TRIV-16)	06:39			07:10		18:41 (TRIV-17)	07:40	07:15	07:49
	21:15	13	20:49 (TRIV-16)	20:52			20:06	59	19:40 (TRIV-17)	19:14	17:30	17:10
7	06:13		20:38 (TRIV-16)	06:40		19:12 (TRIV-17)	07:11		18:41 (TRIV-17)	07:41	07:17	07:50
	21:15	12	20:50 (TRIV-16)	20:51	14	19:26 (TRIV-17)	20:05	59	19:40 (TRIV-17)	19:12	17:29	17:10
8	06:14		20:38 (TRIV-16)	06:41		19:08 (TRIV-17)	07:12		18:41 (TRIV-17)	07:42	07:18	07:51
	21:14	11	20:49 (TRIV-16)	20:49	22	19:30 (TRIV-17)	20:03	58	19:39 (TRIV-17)	19:11	17:27	17:10
9	06:14		20:39 (TRIV-16)	06:42		19:05 (TRIV-17)	07:13		18:41 (TRIV-17)	07:43	07:19	07:52
	21:14	10	20:49 (TRIV-16)	20:48	27	19:32 (TRIV-17)	20:01	57	19:38 (TRIV-17)	19:09	17:26	17:10
10	06:15		20:41 (TRIV-16)	06:43		19:03 (TRIV-17)	07:14		18:42 (TRIV-17)	07:44	07:20	07:53
	21:14	8	20:49 (TRIV-16)	20:47	31	19:34 (TRIV-17)	20:00	54	19:36 (TRIV-17)	19:07	17:25	17:10
11	06:16		20:42 (TRIV-16)	06:44		19:01 (TRIV-17)	07:15		18:43 (TRIV-17)	07:46	07:21	07:54
	21:13	6	20:48 (TRIV-16)	20:46	35	19:36 (TRIV-17)	19:56	52	19:35 (TRIV-17)	19:06	17:24	17:10
12	06:17		20:44 (TRIV-16)	06:45		18:59 (TRIV-17)	07:16		18:43 (TRIV-17)	07:47	07:23	07:55
	21:13	3	20:47 (TRIV-16)	20:44	38	19:37 (TRIV-17)	19:55	50	19:33 (TRIV-17)	19:04	17:23	17:10
13	06:17			06:46		18:58 (TRIV-17)	07:17		18:44 (TRIV-17)	07:48	07:24	07:55
	21:12			20:43	41	19:39 (TRIV-17)	19:53	47	19:31 (TRIV-17)	19:03	17:23	17:11
14	06:18			06:47		18:56 (TRIV-17)	07:18		18:45 (TRIV-17)	07:49	07:25	07:56
	21:12			20:42	44	19:40 (TRIV-17)	19:51	45	19:30 (TRIV-17)	19:01	17:22	17:11
15	06:19			06:48		18:55 (TRIV-17)	07:19		18:47 (TRIV-17)	07:50	07:26	07:57
	21:11			20:40	46	19:41 (TRIV-17)	19:50	41	19:28 (TRIV-17)	19:00	17:21	17:11
16	06:20			06:49		18:53 (TRIV-17)	07:20		18:48 (TRIV-17)	07:51	07:27	07:58
	21:11			20:39	49	19:42 (TRIV-17)	19:48	38	19:26 (TRIV-17)	18:58	17:20	17:11
17	06:20			06:50		18:52 (TRIV-17)	07:21		18:50 (TRIV-17)	07:52	07:29	07:58
	21:10			20:37	50	19:42 (TRIV-17)	19:46	34	19:24 (TRIV-17)	18:56	17:19	17:12
18	06:21			06:51		18:51 (TRIV-17)	07:22		18:52 (TRIV-17)	07:53	07:30	07:59
	21:10			20:36	52	19:43 (TRIV-17)	19:44	28	19:20 (TRIV-17)	18:55	17:18	17:12
19	06:22			06:52		18:50 (TRIV-17)	07:23		18:56 (TRIV-17)	07:54	07:31	08:00
	21:09			20:35	54	19:44 (TRIV-17)	19:43	20	19:16 (TRIV-17)	18:53	17:18	17:12
20	06:23			06:53		18:49 (TRIV-17)	07:24		19:02 (TRIV-17)	07:55	07:32	08:00
	21:08			20:33	55	19:44 (TRIV-17)	19:41	7	19:09 (TRIV-17)	18:52	17:17	17:13
21	06:24			06:54		18:48 (TRIV-17)	07:25			07:57	07:33	08:01
	21:07			20:32	57	19:45 (TRIV-17)	19:39			18:51	17:16	17:13
22	06:25			06:55		18:47 (TRIV-17)	07:26			07:58	07:34	08:01
	21:07			20:30	58	19:45 (TRIV-17)	19:38			18:49	17:16	17:14
23	06:26			06:56		18:46 (TRIV-17)	07:27			07:59	07:36	08:02
	21:06			20:29	59	19:45 (TRIV-17)	19:36			18:48	17:15	17:14
24	06:26			06:57		18:46 (TRIV-17)	07:28			08:00	07:37	08:02
	21:05			20:27	59	19:45 (TRIV-17)	19:34			18:46	17:14	17:15
25	06:27			06:58		18:45 (TRIV-17)	07:29			08:01	07:38	08:03
	21:04			20:26	61	19:46 (TRIV-17)	19:32			18:45	17:14	17:15
26	06:28			06:59		18:44 (TRIV-17)	07:30			08:02	07:39	08:03
	21:03			20:24	62	19:46 (TRIV-17)	19:31			18:43	17:13	17:16
27	06:29			07:00		18:44 (TRIV-17)	07:31			08:04	07:40	08:03
	21:02			20:23	62	19:46 (TRIV-17)	19:29			18:42	17:13	17:17
28	06:30			07:01		18:43 (TRIV-17)	07:32			08:05	07:41	08:04
	21:01			20:21	63	19:46 (TRIV-17)	19:27			18:41	17:12	17:17
29	06:31			07:02		18:43 (TRIV-17)	07:33			08:06	07:42	08:04
	21:00			20:19	62	19:45 (TRIV-17)	19:26			18:39	17:12	17:18
30	06:32			07:03		18:42 (TRIV-17)	07:34			08:07	07:43	08:04
	20:59			20:18	63	19:45 (TRIV-17)	19:24			18:38	17:12	17:19
31	06:33			07:04		18:41 (TRIV-17)				08:08		08:04
	20:58			20:16	63	19:44 (TRIV-17)				18:37		17:20
Potential sun hours	459			428			375			345	297	287
Total, worst case		141			1227			958				
Sun reduction		0.76			0.75			0.67				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.62			0.67			0.67				
Total reduction		0.47			0.51			0.45				
Total, real		66			620			432				

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 239 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1256)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March			April			May			June		
1	08:05		07:51		07:15			07:24		19:01 (TRIV-17)	06:38		18:49 (TRIV-17)	06:09		
	17:21		17:55		18:29			20:02	41	19:42 (TRIV-17)	20:34	53	19:42 (TRIV-17)	21:04		
2	08:05		07:50		07:13			07:22		18:59 (TRIV-17)	06:37		18:49 (TRIV-17)	06:09		
	17:22		17:56		18:30			20:03	44	19:43 (TRIV-17)	20:35	51	19:40 (TRIV-17)	21:05		
3	08:05		07:49		07:12			07:20		18:57 (TRIV-17)	06:35		18:51 (TRIV-17)	06:08		
	17:22		17:58		18:32			20:05	47	19:44 (TRIV-17)	20:36	48	19:39 (TRIV-17)	21:06		
4	08:05		07:48		07:10			07:19		18:56 (TRIV-17)	06:34		18:52 (TRIV-17)	06:08		
	17:23		17:59		18:33			20:06	49	19:45 (TRIV-17)	20:38	46	19:38 (TRIV-17)	21:06		
5	08:05		07:47		07:08			07:17		18:54 (TRIV-17)	06:33		18:53 (TRIV-17)	06:08		
	17:24		18:00		18:34			20:07	52	19:46 (TRIV-17)	20:39	44	19:37 (TRIV-17)	21:07		
6	08:05		07:46		07:07			07:15		18:52 (TRIV-17)	06:32		18:53 (TRIV-17)	06:07		
	17:25		18:01		18:35			20:08	55	19:47 (TRIV-17)	20:40	42	19:35 (TRIV-17)	21:08		
7	08:05		07:45		07:05			07:14		18:52 (TRIV-17)	06:30		18:55 (TRIV-17)	06:07		20:43 (TRIV-16)
	17:26		18:03		18:36			20:09	56	19:48 (TRIV-17)	20:41	39	19:34 (TRIV-17)	21:08	1	20:44 (TRIV-16)
8	08:05		07:43		08:04			07:12		18:50 (TRIV-17)	06:29		18:56 (TRIV-17)	06:07		20:41 (TRIV-16)
	17:27		18:04		19:37			20:10	58	19:48 (TRIV-17)	20:42	36	19:32 (TRIV-17)	21:09	4	20:45 (TRIV-16)
9	08:04		07:42		08:02			07:11		18:50 (TRIV-17)	06:28		18:58 (TRIV-17)	06:06		20:39 (TRIV-16)
	17:28		18:05		19:38			20:11	59	19:49 (TRIV-17)	20:43	33	19:31 (TRIV-17)	21:10	5	20:44 (TRIV-16)
10	08:04		07:41		08:00			07:09		18:49 (TRIV-17)	06:27		19:00 (TRIV-17)	06:06		20:39 (TRIV-16)
	17:29		18:06		19:40			20:12	60	19:49 (TRIV-17)	20:44	29	19:29 (TRIV-17)	21:10	6	20:45 (TRIV-16)
11	08:04		07:40		07:59			07:07		18:48 (TRIV-17)	06:26		19:02 (TRIV-17)	06:06		20:38 (TRIV-16)
	17:30		18:08		19:41			20:13	61	19:49 (TRIV-17)	20:45	25	19:27 (TRIV-17)	21:11	8	20:46 (TRIV-16)
12	08:04		07:39		07:57			07:06		18:47 (TRIV-17)	06:25		19:05 (TRIV-17)	06:06		20:38 (TRIV-16)
	17:31		18:09		19:42			20:14	63	19:50 (TRIV-17)	20:46	19	19:24 (TRIV-17)	21:11	8	20:46 (TRIV-16)
13	08:03		07:37		07:55			07:04		18:46 (TRIV-17)	06:24		19:09 (TRIV-17)	06:06		20:38 (TRIV-16)
	17:32		18:10		19:43			20:15	63	19:49 (TRIV-17)	20:47	11	19:20 (TRIV-17)	21:12	9	20:47 (TRIV-16)
14	08:03		07:36		07:54			07:03		18:47 (TRIV-17)	06:23			06:06		20:37 (TRIV-16)
	17:33		18:11		19:44			20:16	63	19:50 (TRIV-17)	20:48			21:12	10	20:47 (TRIV-16)
15	08:03		07:35		07:52			07:01		18:46 (TRIV-17)	06:22			06:06		20:37 (TRIV-16)
	17:35		18:13		19:45			20:17	63	19:49 (TRIV-17)	20:49			21:13	11	20:48 (TRIV-16)
16	08:02		07:33		07:50			06:59		18:46 (TRIV-17)	06:21			06:06		20:37 (TRIV-16)
	17:36		18:14		19:46			20:18	64	19:50 (TRIV-17)	20:50			21:13	11	20:48 (TRIV-16)
17	08:02		07:32		07:49			06:58		18:45 (TRIV-17)	06:20			06:06		20:37 (TRIV-16)
	17:37		18:15		19:47			20:19	64	19:49 (TRIV-17)	20:51			21:14	11	20:48 (TRIV-16)
18	08:01		07:31		07:47			06:56		18:45 (TRIV-17)	06:19			06:06		20:37 (TRIV-16)
	17:38		18:16		19:48			20:21	64	19:49 (TRIV-17)	20:52			21:14	11	20:48 (TRIV-16)
19	08:01		07:29		07:45			06:55		18:45 (TRIV-17)	06:18			06:06		20:37 (TRIV-16)
	17:39		18:17		19:49			20:22	64	19:49 (TRIV-17)	20:53			21:14	11	20:48 (TRIV-16)
20	08:00		07:28		07:44			06:53		18:45 (TRIV-17)	06:17			06:06		20:38 (TRIV-16)
	17:40		18:19		19:51			20:23	64	19:49 (TRIV-17)	20:54			21:15	12	20:50 (TRIV-16)
21	08:00		07:26		07:42			06:52		18:45 (TRIV-17)	06:16			06:06		20:38 (TRIV-16)
	17:42		18:20		19:52			20:24	63	19:48 (TRIV-17)	20:55			21:15	12	20:50 (TRIV-16)
22	07:59		07:25		07:40			06:50		18:45 (TRIV-17)	06:15			06:07		20:38 (TRIV-16)
	17:43		18:21		19:53			20:25	63	19:48 (TRIV-17)	20:56			21:15	12	20:50 (TRIV-16)
23	07:58		07:24		07:39			06:49		18:45 (TRIV-17)	06:15			06:07		20:38 (TRIV-16)
	17:44		18:22		19:54			20:26	62	19:47 (TRIV-17)	20:57			21:15	12	20:50 (TRIV-16)
24	07:58		07:22		07:37			06:47		18:45 (TRIV-17)	06:14			06:07		20:39 (TRIV-16)
	17:45		18:23		19:55			20:27	62	19:47 (TRIV-17)	20:57			21:15	11	20:50 (TRIV-16)
25	07:57		07:21		07:35			06:46		18:45 (TRIV-17)	06:13			06:07		20:39 (TRIV-16)
	17:46		18:25		19:56			20:28	60	19:45 (TRIV-17)	20:58			21:16	11	20:50 (TRIV-16)
26	07:56		07:19		07:34			06:45		18:46 (TRIV-17)	06:13			06:08		20:39 (TRIV-16)
	17:48		18:26		19:57			20:29	59	19:45 (TRIV-17)	20:59			21:16	11	20:50 (TRIV-16)
27	07:55		07:18		07:32			06:43		18:47 (TRIV-17)	06:12			06:08		20:40 (TRIV-16)
	17:49		18:27		19:58			20:30	58	19:45 (TRIV-17)	21:00			21:16	11	20:51 (TRIV-16)
28	07:54		07:16		07:30		19:14 (TRIV-17)	06:42		18:47 (TRIV-17)	06:11			06:09		20:40 (TRIV-16)
	17:50		18:28		19:59	17	19:31 (TRIV-17)	20:31	56	19:43 (TRIV-17)	21:01			21:16	10	20:50 (TRIV-16)
29	07:54				07:29		19:10 (TRIV-17)	06:41		18:47 (TRIV-17)	06:11			06:09		20:41 (TRIV-16)
	17:51				20:00	26	19:36 (TRIV-17)	20:32	56	19:43 (TRIV-17)	21:02			21:16	9	20:50 (TRIV-16)
30	07:53				07:27		19:06 (TRIV-17)	06:39		18:48 (TRIV-17)	06:10			06:09		20:42 (TRIV-16)
	17:53				20:00	32	19:38 (TRIV-17)	20:33	54	19:42 (TRIV-17)	21:03			21:16	8	20:50 (TRIV-16)
31	07:52				07:25		19:03 (TRIV-17)				06:10					
	17:54				20:01	37	19:40 (TRIV-17)				21:03					
Potential sun hours	297		297		370			399			448			452		
Total, worst case						112			1747			476			225	
Sun reduction						0.57			0.63			0.69			0.74	
Oper. time red.						1.00			1.00			1.00			1.00	
Wind dir. red.						0.67			0.67			0.67			0.61	
Total reduction						0.38			0.42			0.46			0.45	
Total, real						43			736			220			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)

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 239 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1256)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October	November	December
1	06:10		20:42 (TRIV-16)	06:34		19:14 (TRIV-17)	07:05		18:46 (TRIV-17)	07:35	07:09	07:44
	21:16	8	20:50 (TRIV-16)	20:57	22	19:36 (TRIV-17)	20:15	62	19:48 (TRIV-17)	19:22	17:36	17:11
2	06:10		20:43 (TRIV-16)	06:35		19:12 (TRIV-17)	07:06		18:47 (TRIV-17)	07:36	07:11	07:45
	21:16	7	20:50 (TRIV-16)	20:56	26	19:38 (TRIV-17)	20:13	60	19:47 (TRIV-17)	19:21	17:34	17:11
3	06:11		20:44 (TRIV-16)	06:36		19:10 (TRIV-17)	07:07		18:47 (TRIV-17)	07:37	07:12	07:46
	21:16	6	20:50 (TRIV-16)	20:55	30	19:40 (TRIV-17)	20:11	59	19:46 (TRIV-17)	19:19	17:33	17:11
4	06:11		20:46 (TRIV-16)	06:37		19:08 (TRIV-17)	07:08		18:47 (TRIV-17)	07:38	07:13	07:47
	21:15	4	20:50 (TRIV-16)	20:54	34	19:42 (TRIV-17)	20:10	58	19:45 (TRIV-17)	19:17	17:32	17:11
5	06:12		20:47 (TRIV-16)	06:38		19:06 (TRIV-17)	07:09		18:48 (TRIV-17)	07:39	07:14	07:48
	21:15	2	20:49 (TRIV-16)	20:53	38	19:44 (TRIV-17)	20:08	56	19:44 (TRIV-17)	19:16	17:31	17:11
6	06:13			06:39		19:05 (TRIV-17)	07:10		18:48 (TRIV-17)	07:40	07:15	07:49
	21:15			20:52	40	19:45 (TRIV-17)	20:06	55	19:43 (TRIV-17)	19:14	17:30	17:10
7	06:13			06:40		19:03 (TRIV-17)	07:11		18:49 (TRIV-17)	07:41	07:17	07:50
	21:15			20:51	42	19:45 (TRIV-17)	20:05	52	19:41 (TRIV-17)	19:12	17:29	17:10
8	06:14			06:41		19:01 (TRIV-17)	07:12		18:50 (TRIV-17)	07:42	07:18	07:51
	21:14			20:49	45	19:46 (TRIV-17)	20:03	50	19:40 (TRIV-17)	19:11	17:28	17:10
9	06:14			06:42		19:00 (TRIV-17)	07:13		18:51 (TRIV-17)	07:43	07:19	07:52
	21:14			20:48	47	19:47 (TRIV-17)	20:01	47	19:38 (TRIV-17)	19:09	17:26	17:10
10	06:15			06:43		18:59 (TRIV-17)	07:14		18:52 (TRIV-17)	07:44	07:20	07:53
	21:14			20:47	49	19:48 (TRIV-17)	20:00	44	19:36 (TRIV-17)	19:07	17:25	17:10
11	06:16			06:44		18:58 (TRIV-17)	07:15		18:53 (TRIV-17)	07:46	07:21	07:54
	21:13			20:46	51	19:49 (TRIV-17)	19:56	42	19:35 (TRIV-17)	19:06	17:24	17:10
12	06:17			06:45		18:57 (TRIV-17)	07:16		18:55 (TRIV-17)	07:47	07:23	07:55
	21:13			20:44	53	19:50 (TRIV-17)	19:55	37	19:32 (TRIV-17)	19:04	17:23	17:10
13	06:17			06:46		18:56 (TRIV-17)	07:17		18:57 (TRIV-17)	07:48	07:24	07:55
	21:12			20:43	54	19:50 (TRIV-17)	19:53	33	19:30 (TRIV-17)	19:03	17:23	17:11
14	06:18			06:47		18:55 (TRIV-17)	07:18		19:00 (TRIV-17)	07:49	07:25	07:56
	21:12			20:42	56	19:51 (TRIV-17)	19:51	26	19:26 (TRIV-17)	19:01	17:22	17:11
15	06:19			06:48		18:54 (TRIV-17)	07:19		19:03 (TRIV-17)	07:50	07:26	07:57
	21:11			20:40	57	19:51 (TRIV-17)	19:50	19	19:22 (TRIV-17)	19:00	17:21	17:11
16	06:20			06:49		18:53 (TRIV-17)	07:20			07:51	07:27	07:58
	21:11			20:39	59	19:52 (TRIV-17)	19:48			18:58	17:20	17:11
17	06:20			06:50		18:53 (TRIV-17)	07:21			07:52	07:29	07:58
	21:10			20:37	59	19:52 (TRIV-17)	19:46			18:56	17:19	17:12
18	06:21			06:51		18:52 (TRIV-17)	07:22			07:53	07:30	07:59
	21:10			20:36	60	19:52 (TRIV-17)	19:44			18:55	17:18	17:12
19	06:22			06:52		18:51 (TRIV-17)	07:23			07:54	07:31	08:00
	21:09			20:35	61	19:52 (TRIV-17)	19:43			18:53	17:18	17:12
20	06:23			06:53		18:51 (TRIV-17)	07:24			07:55	07:32	08:00
	21:08			20:33	62	19:53 (TRIV-17)	19:41			18:52	17:17	17:13
21	06:24			06:54		18:50 (TRIV-17)	07:25			07:57	07:33	08:01
	21:07			20:32	63	19:53 (TRIV-17)	19:39			18:51	17:16	17:13
22	06:25			06:55		18:49 (TRIV-17)	07:26			07:58	07:34	08:01
	21:07			20:30	64	19:53 (TRIV-17)	19:38			18:49	17:16	17:14
23	06:26			06:56		18:49 (TRIV-17)	07:27			07:59	07:36	08:02
	21:06			20:29	64	19:53 (TRIV-17)	19:36			18:48	17:15	17:14
24	06:26			06:57		18:49 (TRIV-17)	07:28			08:00	07:37	08:02
	21:05			20:27	63	19:52 (TRIV-17)	19:34			18:46	17:14	17:15
25	06:27			06:58		18:48 (TRIV-17)	07:29			08:01	07:38	08:03
	21:04			20:26	64	19:52 (TRIV-17)	19:32			18:45	17:14	17:15
26	06:28			06:59		18:48 (TRIV-17)	07:30			08:02	07:39	08:03
	21:03			20:24	64	19:52 (TRIV-17)	19:31			18:43	17:13	17:16
27	06:29			07:00		18:48 (TRIV-17)	07:31			08:04	07:40	08:03
	21:02			20:23	64	19:52 (TRIV-17)	19:29			18:42	17:13	17:17
28	06:30			07:01		18:48 (TRIV-17)	07:32			08:05	07:41	08:04
	21:01			20:21	63	19:51 (TRIV-17)	19:27			18:41	17:12	17:17
29	06:31			07:02		18:47 (TRIV-17)	07:33			08:06	07:42	08:04
	21:00			20:19	64	19:51 (TRIV-17)	19:26			18:39	17:12	17:18
30	06:32			07:03		18:47 (TRIV-17)	07:34			08:07	07:43	08:04
	20:59			20:18	63	19:50 (TRIV-17)	19:24			18:38	17:12	17:19
31	06:33		19:18 (TRIV-17)	07:04		18:46 (TRIV-17)				08:08		08:04
	20:58	15	19:33 (TRIV-17)	20:16	63	19:49 (TRIV-17)				18:37		17:20
Potential sun hours	459			428			375			345	297	287
Total, worst case		42			1644			700				
Sun reduction		0.76			0.75			0.67				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.63			0.67			0.67				
Total reduction		0.48			0.50			0.45				
Total, real		20			824			313				

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 275 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1292)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April	May			June		July		August		September	October	November	December
1	08:05	07:51	07:15	07:24	06:38			06:09		06:31 (TRIV-19)	06:10	06:33 (TRIV-19)	06:34	20:04 (TRIV-10)	07:05	07:35	07:09	07:44
	17:21	17:55	18:29	20:02	20:34			21:04	86	20:37 (TRIV-10)	21:16	96	20:46 (TRIV-10)	20:57	17	20:21 (TRIV-10)	20:15	19:22	17:36	17:12
2	08:05	07:50	07:13	07:22	06:37			06:09		06:31 (TRIV-19)	06:11	06:33 (TRIV-19)	06:35		07:06	07:36	07:11	07:45
	17:22	17:57	18:31	20:04	20:35			21:05	87	20:38 (TRIV-10)	21:16	96	20:46 (TRIV-10)	20:56			20:13	19:21	17:34	17:11
3	08:05	07:49	07:12	07:20	06:35			06:08		06:30 (TRIV-19)	06:11	06:34 (TRIV-19)	06:36		07:07	07:37	07:12	07:46
	17:23	17:58	18:32	20:05	20:37			21:06	89	20:38 (TRIV-10)	21:16	95	20:46 (TRIV-10)	20:55			20:11	19:19	17:33	17:11
4	08:05	07:48	07:10	07:19	06:34			06:08		06:30 (TRIV-19)	06:12	06:34 (TRIV-19)	06:37		07:08	07:38	07:13	07:47
	17:23	17:59	18:33	20:06	20:38			21:06	90	20:39 (TRIV-10)	21:15	94	20:46 (TRIV-10)	20:54			20:10	19:17	17:32	17:11
5	08:05	07:47	07:08	07:17	06:33			06:08		06:30 (TRIV-19)	06:12	06:35 (TRIV-19)	06:38		07:09	07:39	07:14	07:48
	17:24	18:00	18:34	20:07	20:39			21:07	92	20:40 (TRIV-10)	21:15	94	20:46 (TRIV-10)	20:53			20:08	19:16	17:31	17:11
6	08:05	07:46	07:07	07:16	06:32			06:07		06:29 (TRIV-19)	06:13	06:35 (TRIV-19)	06:39		07:10	07:40	07:15	07:49
	17:25	18:02	18:35	20:08	20:40			21:08	92	20:39 (TRIV-10)	21:15	93	20:46 (TRIV-10)	20:52			20:06	19:14	17:30	17:11
7	08:05	07:45	07:05	07:14	06:31			06:07		06:29 (TRIV-19)	06:13	06:36 (TRIV-19)	06:40		07:11	07:41	07:17	07:50
	17:26	18:03	18:36	20:09	20:41			21:08	94	20:40 (TRIV-10)	21:15	92	20:46 (TRIV-10)	20:51			20:05	19:12	17:29	17:10
8	08:05	07:43	08:04	07:12	06:29			06:07		06:29 (TRIV-19)	06:14	06:36 (TRIV-19)	06:41		07:12	07:42	07:18	07:51
	17:27	18:04	19:37	20:10	20:42			21:09	95	20:41 (TRIV-10)	21:14	90	20:45 (TRIV-10)	20:49			20:03	19:11	17:28	17:10
9	08:04	07:42	08:02	07:11	06:28			06:07		06:29 (TRIV-19)	06:15	06:37 (TRIV-19)	06:42		07:13	07:43	07:19	07:52
	17:28	18:05	19:39	20:11	20:43			21:10	95	20:41 (TRIV-10)	21:14	89	20:45 (TRIV-10)	20:48			20:01	19:09	17:27	17:10
10	08:04	07:41	08:00	07:09	06:27			06:06		06:28 (TRIV-19)	06:15	06:38 (TRIV-19)	06:43		07:14	07:45	07:20	07:53
	17:29	18:07	19:40	20:12	20:44			21:10	96	20:41 (TRIV-10)	21:14	89	20:46 (TRIV-10)	20:47			20:00	19:08	17:26	17:10
11	08:04	07:40	07:59	07:07	06:26		19:57 (TRIV-10)	06:06		06:28 (TRIV-19)	06:16	06:38 (TRIV-19)	06:44		07:15	07:46	07:21	07:54
	17:30	18:08	19:41	20:13	20:45	10	20:07 (TRIV-10)	21:11	96	20:41 (TRIV-10)	21:13	87	20:45 (TRIV-10)	20:46			19:56	19:06	17:25	17:11
12	08:04	07:39	07:57	07:06	06:25		19:52 (TRIV-10)	06:06		06:28 (TRIV-19)	06:17	06:39 (TRIV-19)	06:45		07:16	07:47	07:23	07:55
	17:31	18:09	19:42	20:14	20:46	21	20:13 (TRIV-10)	21:11	98	20:42 (TRIV-10)	21:13	85	20:45 (TRIV-10)	20:44			19:55	19:04	17:24	17:11
13	08:03	07:37	07:55	07:04	06:24		19:48 (TRIV-10)	06:06		06:28 (TRIV-19)	06:18	06:40 (TRIV-19)	06:46		07:17	07:48	07:24	07:55
	17:33	18:10	19:43	20:15	20:47	28	20:16 (TRIV-10)	21:12	98	20:42 (TRIV-10)	21:12	83	20:45 (TRIV-10)	20:43			19:53	19:03	17:23	17:11
14	08:03	07:36	07:54	07:03	06:23		19:46 (TRIV-10)	06:06		06:28 (TRIV-19)	06:18	06:41 (TRIV-19)	06:47		07:18	07:49	07:25	07:56
	17:34	18:11	19:44	20:16	20:48	32	20:18 (TRIV-10)	21:12	98	20:42 (TRIV-10)	21:12	81	20:45 (TRIV-10)	20:42			19:51	19:01	17:22	17:11
15	08:03	07:35	07:52	07:01	06:22		19:43 (TRIV-10)	06:06		06:28 (TRIV-19)	06:19	06:41 (TRIV-19)	06:48		07:19	07:50	07:26	07:57
	17:35	18:13	19:45	20:17	20:49	37	20:20 (TRIV-10)	21:13	99	20:43 (TRIV-10)	21:11	79	20:44 (TRIV-10)	20:40			19:50	19:00	17:21	17:11
16	08:02	07:33	07:51	07:00	06:21		19:42 (TRIV-10)	06:06		06:28 (TRIV-19)	06:20	06:42 (TRIV-19)	06:49		07:20	07:51	07:27	07:58
	17:36	18:14	19:46	20:18	20:50	40	20:22 (TRIV-10)	21:13	98	20:43 (TRIV-10)	21:11	77	20:43 (TRIV-10)	20:39			19:48	18:58	17:20	17:12
17	08:02	07:32	07:49	06:58	06:20		19:41 (TRIV-10)	06:06		06:28 (TRIV-19)	06:21	06:43 (TRIV-19)	06:50		07:21	07:52	07:29	07:58
	17:37	18:15	19:47	20:19	20:51	44	20:25 (TRIV-10)	21:14	99	20:43 (TRIV-10)	21:10	75	20:43 (TRIV-10)	20:37			19:46	18:57	17:19	17:12
18	08:01	07:31	07:47	06:57	06:19		19:39 (TRIV-10)	06:06		06:28 (TRIV-19)	06:21	06:44 (TRIV-19)	06:51		07:22	07:53	07:30	07:59
	17:38	18:16	19:48	20:21	20:52	47	20:26 (TRIV-10)	21:14	99	20:43 (TRIV-10)	21:10	72	20:43 (TRIV-10)	20:36			19:44	18:55	17:18	17:12
19	08:01	07:29	07:46	06:55	06:18		19:38 (TRIV-10)	06:06		06:29 (TRIV-19)	06:22	06:45 (TRIV-19)	06:52		07:23	07:54	07:31	08:00
	17:39	18:18	19:50	20:22	20:53	49	20:27 (TRIV-10)	21:14	99	20:44 (TRIV-10)	21:09	69	20:42 (TRIV-10)	20:35			19:43	18:54	17:18	17:13
20	08:00	07:28	07:44	06:53	06:17		19:37 (TRIV-10)	06:06		06:29 (TRIV-19)	06:23	06:45 (TRIV-19)	06:53		07:24	07:56	07:32	08:00
	17:41	18:19	19:51	20:23	20:54	51	20:28 (TRIV-10)	21:15	99	20:44 (TRIV-10)	21:08	66	20:41 (TRIV-10)	20:33			19:41	18:52	17:17	17:13
21	08:00	07:27	07:42	06:52	06:16		06:37 (TRIV-19)	06:07		06:29 (TRIV-19)	06:24	06:46 (TRIV-19)	06:54		07:25	07:57	07:33	08:01
	17:42	18:20	19:52	20:24	20:55	56	20:29 (TRIV-10)	21:15	99	20:44 (TRIV-10)	21:07	62	20:40 (TRIV-10)	20:32			19:39	18:51	17:16	17:13
22	07:59	07:25	07:41	06:51	06:16		06:37 (TRIV-19)	06:07		06:29 (TRIV-19)	06:25	06:47 (TRIV-19)	06:55		07:26	07:58	07:34	08:01
	17:43	18:21	19:53	20:25	20:56	60	20:30 (TRIV-10)	21:15	99	20:44 (TRIV-10)	21:07	59	20:40 (TRIV-10)	20:30			19:38	18:49	17:16	17:14
23	07:58	07:24	07:39	06:49	06:15		06:36 (TRIV-19)	06:07		06:29 (TRIV-19)	06:26	19:47 (TRIV-10)	06:56		07:27	07:59	07:36	08:02
	17:44	18:22	19:54	20:26	20:57	64	20:31 (TRIV-10)	21:15	99	20:44 (TRIV-10)	21:06	52	20:39 (TRIV-10)	20:29			19:36	18:48	17:15	17:14
24	07:58	07:22	07:37	06:48	06:14		06:35 (TRIV-19)	06:07		06:30 (TRIV-19)	06:27	19:48 (TRIV-10)	06:57		07:28	08:00	07:37	08:02
	17:45	18:24	19:55	20:27	20:57	68	20:32 (TRIV-10)	21:15	99	20:45 (TRIV-10)	21:05	50	20:38 (TRIV-10)	20:27			19:34	18:46	17:15	17:15
25	07:57	07:21	07:35	06:46	06:13		06:35 (TRIV-19)	06:08		06:30 (TRIV-19)	06:28	19:49 (TRIV-10)	06:58		07:29	08:01	07:38	08:03
	17:47	18:25	19:56	20:28	20:58	71	20:33 (TRIV-10)	21:16	99	20:45 (TRIV-10)	21:04	48	20:37 (TRIV-10)	20:26			19:33	18:45	17:14	17:16
26	07:56	07:19	07:34	06:45	06:13		06:34 (TRIV-19)	06:08		06:30 (TRIV-19)	06:28	19:51 (TRIV-10)	06:59		07:30	08:02	07:39	08:03
	17:48	18:26	19:57	20:29	20:59	73	20:33 (TRIV-10)	21:16	99	20:45 (TRIV-10)	21:03	45	20:36 (TRIV-10)	20:24			19:31	18:44	17:13	17:16
27	07:55	07:18	07:32	06:43	06:12		06:33 (TRIV-19)	06:08		06:31 (TRIV-19)	06:29	19:51 (TRIV-10)	07:00		07:31	08:04	07:40	08:03
	17:49	18:27	19:58	20:30	21:00	76	20:34 (TRIV-10)	21:16	98	20:46 (TRIV-10)	21:02	43	20:34 (TRIV-10)	20:23			19:29	18:42	17:13	17:17
28	07:54	07:16	07:30	06:42	06:11		06:33 (TRIV-19)	06:09		06:31 (TRIV-19)	06:30	19:53 (TRIV-10)	07:01		07:32	08:05	07:41	08:04
	17:50	18:28	19:59	20:31	21:01	79	20:35 (TRIV-10)	21:16	98	20:45 (TRIV-10)	21:01	39	20:32 (TRIV-10)	20:21			19:27	18:41	17:13	17:18
29	07:54		07:29	06:41	06:11		06:32 (TRIV-19)	06:09		06:32 (TRIV-19)	06:31	19:55 (TRIV-10)	07:02		07:33	08:06	07:42	08:04
	17:52		20:00	20:32	21:02	80	20:35 (TRIV-10)	21:16	98	20:46 (TRIV-10)	21:00	35	20:30 (TRIV-10)	20:19			19:26	18:40	17:12	17:18
30	07:53		07:27	06:39	06:10		06:32 (TRIV-19)	06:10		06:32 (TRIV-19)	06:32	19:57 (TRIV-10)	07:03		07:34	08:07	07:43	08:04
	17:53		20:00	20:33	21:03	82	20:36 (TRIV-10)	21:16	98	20:46 (TRIV-10)	20:59	31	20:28 (TRIV-10)	20:18			19:24	18:38	17:12	17:19
31	07:52		07:25		06:10		06:31 (TRIV-19)				06:33	20:00 (TRIV-10)	07:04			08:08		08:04
	17:54		20:01		21:03	84	20:36 (TRIV-10)				20:58	25	20:25 (TRIV-10)	20:16				18:37		17:20
Potential sun hours	297	297	370	399	448			452		459		428		375	345	298	288
Total, worst case						1152			2885		2191		17				
Sun reduction						0.69			0.74		0.76		0.75				
Oper. time red.						1.00			1.00		1.00		1.00				
Wind dir. red.						0.64			0.65		0.64		0.63				
Total reduction						0.44			0.48		0.49		0.47				
Total, real						507			1382		1069		8				

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 279 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1296)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June
1	08:04		08:39 (TRIV-86)	07:51		08:50 (TRIV-86)	07:15		17:47 (TRIV-77)	07:24			06:38		06:58 (TRIV-66)	06:09
	17:21	76	09:55 (TRIV-86)	17:55	72	10:02 (TRIV-86)	18:29	20	18:07 (TRIV-77)	20:02			20:34	6	07:04 (TRIV-66)	21:04
2	08:05		08:40 (TRIV-86)	07:50		08:51 (TRIV-86)	07:13		17:47 (TRIV-77)	07:22			06:37		06:56 (TRIV-66)	06:09
	17:22	75	09:55 (TRIV-86)	17:57	71	10:02 (TRIV-86)	18:31	18	18:05 (TRIV-77)	20:03			20:35	9	07:05 (TRIV-66)	21:05
3	08:05		08:40 (TRIV-86)	07:49		08:51 (TRIV-86)	07:12		17:49 (TRIV-77)	07:20			06:35		06:55 (TRIV-66)	06:09
	17:23	76	09:56 (TRIV-86)	17:58	71	10:02 (TRIV-86)	18:32	15	18:04 (TRIV-77)	20:05			20:36	11	07:06 (TRIV-66)	21:06
4	08:05		08:40 (TRIV-86)	07:48		08:52 (TRIV-86)	07:10		17:51 (TRIV-77)	07:19			06:34		06:54 (TRIV-66)	06:08
	17:24	76	09:56 (TRIV-86)	17:59	69	10:01 (TRIV-86)	18:33	10	18:01 (TRIV-77)	20:06			20:37	13	07:07 (TRIV-66)	21:06
5	08:05		08:41 (TRIV-86)	07:47		08:53 (TRIV-86)	07:08			07:17			06:33		06:53 (TRIV-66)	06:08
	17:24	76	09:57 (TRIV-86)	18:00	68	10:01 (TRIV-86)	18:34			20:07			20:39	14	07:07 (TRIV-66)	21:07
6	08:05		08:41 (TRIV-86)	07:46		08:54 (TRIV-86)	07:07			07:16			06:32		06:52 (TRIV-66)	06:07
	17:25	76	09:57 (TRIV-86)	18:02	66	10:00 (TRIV-86)	18:35			20:08			20:40	16	07:08 (TRIV-66)	21:08
7	08:05		08:42 (TRIV-86)	07:44		08:55 (TRIV-86)	07:05			07:14			06:31		06:51 (TRIV-66)	06:07
	17:26	76	09:58 (TRIV-86)	18:03	64	09:59 (TRIV-86)	18:36			20:09			20:41	17	07:08 (TRIV-66)	21:08
8	08:04		08:41 (TRIV-86)	07:43		08:55 (TRIV-86)	08:04			07:12			06:29		06:49 (TRIV-66)	06:07
	17:27	77	09:58 (TRIV-86)	18:04	62	09:57 (TRIV-86)	19:37			20:10			20:42	19	07:08 (TRIV-66)	21:09
9	08:04		08:42 (TRIV-86)	07:42		08:56 (TRIV-86)	08:02			07:11			06:28		06:48 (TRIV-66)	06:07
	17:28	77	09:59 (TRIV-86)	18:05	61	09:57 (TRIV-86)	19:39			20:11			20:43	20	07:08 (TRIV-66)	21:10
10	08:04		08:42 (TRIV-86)	07:41		08:58 (TRIV-86)	08:00			07:09			06:27		06:47 (TRIV-66)	06:07
	17:29	77	09:59 (TRIV-86)	18:07	58	09:56 (TRIV-86)	19:40			20:12			20:44	21	07:08 (TRIV-66)	21:10
11	08:04		08:43 (TRIV-86)	07:40		08:59 (TRIV-86)	07:59			07:07			06:26		06:46 (TRIV-66)	06:06
	17:30	77	10:00 (TRIV-86)	18:08	55	09:54 (TRIV-86)	19:41			20:13			20:45	22	07:08 (TRIV-66)	21:11
12	08:04		08:42 (TRIV-86)	07:39		09:00 (TRIV-86)	07:57			07:06			06:25		06:45 (TRIV-66)	06:06
	17:32	78	10:00 (TRIV-86)	18:09	52	09:52 (TRIV-86)	19:42			20:14			20:46	23	07:08 (TRIV-66)	21:11
13	08:03		08:43 (TRIV-86)	07:37		09:01 (TRIV-86)	07:55			07:04			06:24		06:44 (TRIV-66)	06:06
	17:33	78	10:01 (TRIV-86)	18:10	50	09:51 (TRIV-86)	19:43			20:15			20:47	23	07:07 (TRIV-66)	21:12
14	08:03		08:43 (TRIV-86)	07:36		09:03 (TRIV-86)	07:54			07:03			06:23		06:43 (TRIV-66)	06:06
	17:34	78	10:01 (TRIV-86)	18:12	46	09:49 (TRIV-86)	19:44			20:16			20:48	24	07:07 (TRIV-66)	21:12
15	08:03		08:43 (TRIV-86)	07:35		09:04 (TRIV-86)	07:52			07:01			06:22		06:42 (TRIV-66)	06:06
	17:35	79	10:02 (TRIV-86)	18:13	43	09:47 (TRIV-86)	19:45			20:17			20:49	24	07:06 (TRIV-66)	21:13
16	08:02		08:43 (TRIV-86)	07:33		09:07 (TRIV-86)	07:51			07:00			06:21		06:42 (TRIV-66)	06:06
	17:36	78	10:01 (TRIV-86)	18:14	37	09:44 (TRIV-86)	19:46			20:18			20:50	24	07:06 (TRIV-66)	21:13
17	08:02		08:44 (TRIV-86)	07:32		09:10 (TRIV-86)	07:49			06:58			06:20		06:44 (TRIV-66)	06:06
	17:37	78	10:02 (TRIV-86)	18:15	32	09:42 (TRIV-86)	19:47			20:19			20:51	22	07:06 (TRIV-66)	21:13
18	08:01		08:44 (TRIV-86)	07:31		09:12 (TRIV-86)	07:47			06:57			06:19		06:45 (TRIV-66)	06:06
	17:38	78	10:02 (TRIV-86)	18:16	27	17:53 (TRIV-77)	19:48			20:20			20:52	20	07:05 (TRIV-66)	21:14
19	08:01		08:45 (TRIV-86)	07:29		09:17 (TRIV-86)	07:46			06:55			06:18		06:45 (TRIV-66)	06:06
	17:39	78	10:03 (TRIV-86)	18:18	21	17:55 (TRIV-77)	19:50			20:22			20:53	19	07:04 (TRIV-66)	21:14
20	08:00		08:45 (TRIV-86)	07:28		17:49 (TRIV-77)	07:44			06:54			06:17		06:46 (TRIV-66)	06:07
	17:41	78	10:03 (TRIV-86)	18:19	8	17:57 (TRIV-77)	19:51			20:23			20:54	17	07:03 (TRIV-66)	21:14
21	07:59		08:45 (TRIV-86)	07:26		17:47 (TRIV-77)	07:42			06:52			06:16		06:47 (TRIV-66)	06:07
	17:42	78	10:03 (TRIV-86)	18:20	11	17:58 (TRIV-77)	19:52			20:24			20:55	15	07:02 (TRIV-66)	21:15
22	07:59		08:46 (TRIV-86)	07:25		17:47 (TRIV-77)	07:40			06:51			06:16		06:49 (TRIV-66)	06:07
	17:43	78	10:04 (TRIV-86)	18:21	12	17:59 (TRIV-77)	19:53			20:25			20:56	12	07:01 (TRIV-66)	21:15
23	07:58		08:46 (TRIV-86)	07:24		17:46 (TRIV-77)	07:39			06:49			06:15		06:51 (TRIV-66)	06:07
	17:44	78	10:04 (TRIV-86)	18:22	14	18:00 (TRIV-77)	19:54			20:26			20:56	8	06:59 (TRIV-66)	21:15
24	07:57		08:46 (TRIV-86)	07:22		17:46 (TRIV-77)	07:37			06:48			06:14			06:07
	17:45	77	10:03 (TRIV-86)	18:24	16	18:02 (TRIV-77)	19:55			20:27			20:57			21:15
25	07:57		08:46 (TRIV-86)	07:21		17:45 (TRIV-77)	07:35			06:46			06:13			06:08
	17:47	77	10:03 (TRIV-86)	18:25	18	18:03 (TRIV-77)	19:56			20:28			20:58			21:15
26	07:56		08:47 (TRIV-86)	07:19		17:46 (TRIV-77)	07:34			06:45			06:13			06:08
	17:48	77	10:04 (TRIV-86)	18:26	18	18:04 (TRIV-77)	19:57			20:29			20:59			21:16
27	07:55		08:48 (TRIV-86)	07:18		17:46 (TRIV-77)	07:32			06:43			06:12			06:08
	17:49	76	10:04 (TRIV-86)	18:27	19	18:05 (TRIV-77)	19:58			20:30			21:00			21:16
28	07:54		08:48 (TRIV-86)	07:16		17:46 (TRIV-77)	07:30			06:42			06:12			06:09
	17:50	76	10:04 (TRIV-86)	18:28	21	18:07 (TRIV-77)	19:59			20:31			21:01			21:16
29	07:53		08:48 (TRIV-86)				07:29			06:41			06:11			06:09
	17:52	75	10:03 (TRIV-86)				20:00			20:32			21:02			21:16
30	07:53		08:49 (TRIV-86)				07:27			06:39		06:59 (TRIV-66)	06:10			06:10
	17:53	74	10:03 (TRIV-86)				20:00			20:33	3	07:02 (TRIV-66)	21:02			21:16
31	07:52		08:49 (TRIV-86)				07:25						06:10			
	17:54	74	10:03 (TRIV-86)				20:01						21:03			
Potential sun hours	298			297			370			399			448			452
Total, worst case		2382			1162			63			3			399		
Sun reduction		0.50			0.55			0.57			0.63			0.69		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.60			0.61			0.69			0.70			0.70		
Total reduction		0.30			0.33			0.39			0.44			0.48		
Total, real		706			386			25			1			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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 279 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1296)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October			November			December		
1	06:10			06:34		06:56 (TRIV-66)	07:05	07:35			07:09		08:27 (TRIV-86)	07:44		08:25 (TRIV-86)
	21:16			20:57	22	07:18 (TRIV-66)	20:15	19:22			17:36	59	09:26 (TRIV-86)	17:12	77	09:42 (TRIV-86)
2	06:11			06:35		06:57 (TRIV-66)	07:06	07:36			07:11		08:26 (TRIV-86)	07:45		08:25 (TRIV-86)
	21:16			20:56	21	07:18 (TRIV-66)	20:13	19:21			17:35	61	09:27 (TRIV-86)	17:11	77	09:42 (TRIV-86)
3	06:11			06:36		06:58 (TRIV-66)	07:07	07:37			07:12		08:25 (TRIV-86)	07:46		08:26 (TRIV-86)
	21:15			20:55	20	07:18 (TRIV-66)	20:11	19:19			17:33	62	09:27 (TRIV-86)	17:11	77	09:43 (TRIV-86)
4	06:12			06:37		06:59 (TRIV-66)	07:08	07:38			07:13		08:24 (TRIV-86)	07:47		08:26 (TRIV-86)
	21:15			20:54	19	07:18 (TRIV-66)	20:10	19:17			17:32	64	09:28 (TRIV-86)	17:11	77	09:43 (TRIV-86)
5	06:12			06:38		07:00 (TRIV-66)	07:09	07:39			07:14		08:24 (TRIV-86)	07:48		08:27 (TRIV-86)
	21:15			20:53	18	07:18 (TRIV-66)	20:08	19:16			17:31	66	09:30 (TRIV-86)	17:11	76	09:43 (TRIV-86)
6	06:13			06:39		07:01 (TRIV-66)	07:10	07:40			07:15		08:23 (TRIV-86)	07:49		08:27 (TRIV-86)
	21:15			20:52	17	07:18 (TRIV-66)	20:06	19:14			17:30	68	09:31 (TRIV-86)	17:11	77	09:44 (TRIV-86)
7	06:13			06:40		07:02 (TRIV-66)	07:11	07:41			07:16		08:22 (TRIV-86)	07:50		08:28 (TRIV-86)
	21:15			20:51	15	07:17 (TRIV-66)	20:05	19:12			17:29	69	09:31 (TRIV-86)	17:11	76	09:44 (TRIV-86)
8	06:14			06:41		07:03 (TRIV-66)	07:12	07:42			07:18		08:22 (TRIV-86)	07:51		08:28 (TRIV-86)
	21:14			20:49	14	07:17 (TRIV-66)	20:03	19:11			17:28	71	09:33 (TRIV-86)	17:11	76	09:44 (TRIV-86)
9	06:15			06:42		07:04 (TRIV-66)	07:13	07:43		18:28 (TRIV-77)	07:19		08:22 (TRIV-86)	07:52		08:28 (TRIV-86)
	21:14			20:48	12	07:16 (TRIV-66)	20:01	19:09	6	18:34 (TRIV-77)	17:27	71	09:33 (TRIV-86)	17:11	76	09:44 (TRIV-86)
10	06:15			06:43		07:05 (TRIV-66)	07:14	07:45		18:24 (TRIV-77)	07:20		08:21 (TRIV-86)	07:53		08:29 (TRIV-86)
	21:14			20:47	10	07:15 (TRIV-66)	20:00	19:08	13	18:37 (TRIV-77)	17:26	72	09:33 (TRIV-86)	17:11	75	09:44 (TRIV-86)
11	06:16			06:44		07:05 (TRIV-66)	07:15	07:46		18:23 (TRIV-77)	07:21		08:20 (TRIV-86)	07:54		08:29 (TRIV-86)
	21:13			20:46	8	07:13 (TRIV-66)	19:56	19:06	16	18:39 (TRIV-77)	17:25	74	09:34 (TRIV-86)	17:11	76	09:45 (TRIV-86)
12	06:17			06:45		07:06 (TRIV-66)	07:16	07:47		18:21 (TRIV-77)	07:22		08:21 (TRIV-86)	07:54		08:30 (TRIV-86)
	21:13			20:44	5	07:11 (TRIV-66)	19:55	19:04	19	18:40 (TRIV-77)	17:24	74	09:35 (TRIV-86)	17:11	75	09:45 (TRIV-86)
13	06:18			06:46		07:07 (TRIV-66)	07:17	07:48		18:20 (TRIV-77)	07:24		08:20 (TRIV-86)	07:55		08:31 (TRIV-86)
	21:12			20:43	2	07:09 (TRIV-66)	19:53	19:03	20	18:40 (TRIV-77)	17:23	75	09:35 (TRIV-86)	17:11	75	09:46 (TRIV-86)
14	06:18			06:47			07:18	07:49		18:19 (TRIV-77)	07:25		08:20 (TRIV-86)	07:56		08:31 (TRIV-86)
	21:12			20:42			19:51	19:01	20	18:39 (TRIV-77)	17:22	76	09:36 (TRIV-86)	17:11	74	09:45 (TRIV-86)
15	06:19			06:48			07:19	07:50		18:18 (TRIV-77)	07:26		08:20 (TRIV-86)	07:57		08:31 (TRIV-86)
	21:11			20:40			19:50	19:00	19	18:37 (TRIV-77)	17:21	76	09:36 (TRIV-86)	17:11	75	09:46 (TRIV-86)
16	06:20			06:49			07:20	07:51		18:17 (TRIV-77)	07:27		08:20 (TRIV-86)	07:57		08:32 (TRIV-86)
	21:11			20:39			19:48	18:58	18	18:35 (TRIV-77)	17:20	77	09:37 (TRIV-86)	17:12	75	09:47 (TRIV-86)
17	06:21			06:50			07:21	07:52		18:17 (TRIV-77)	07:28		08:20 (TRIV-86)	07:58		08:33 (TRIV-86)
	21:10			20:37			19:46	18:57	17	18:34 (TRIV-77)	17:19	77	09:37 (TRIV-86)	17:12	74	09:47 (TRIV-86)
18	06:22			06:51			07:22	07:53		18:18 (TRIV-77)	07:30		08:20 (TRIV-86)	07:59		08:33 (TRIV-86)
	21:09			20:36			19:44	18:55	15	18:33 (TRIV-77)	17:19	77	09:37 (TRIV-86)	17:12	74	09:47 (TRIV-86)
19	06:22			06:52			07:23	07:54		18:18 (TRIV-77)	07:31		08:20 (TRIV-86)	07:59		08:34 (TRIV-86)
	21:09			20:35			19:43	18:54	13	18:31 (TRIV-77)	17:18	78	09:38 (TRIV-86)	17:13	74	09:48 (TRIV-86)
20	06:23		07:02 (TRIV-66)	06:53			07:24	07:55		18:18 (TRIV-77)	07:32		08:21 (TRIV-86)	08:00		08:34 (TRIV-86)
	21:08	5	07:07 (TRIV-66)	20:33			19:41	18:52	11	18:29 (TRIV-77)	17:17	78	09:39 (TRIV-86)	17:13	74	09:48 (TRIV-86)
21	06:24		06:59 (TRIV-66)	06:54			07:25	07:57		18:18 (TRIV-77)	07:33		08:21 (TRIV-86)	08:01		08:35 (TRIV-86)
	21:07	11	07:10 (TRIV-66)	20:32			19:39	18:51	10	18:28 (TRIV-77)	17:16	78	09:39 (TRIV-86)	17:13	74	09:49 (TRIV-86)
22	06:25		06:58 (TRIV-66)	06:55			07:26	07:58		18:19 (TRIV-77)	07:34		08:21 (TRIV-86)	08:01		08:35 (TRIV-86)
	21:07	14	07:12 (TRIV-66)	20:30			19:38	18:49	7	18:26 (TRIV-77)	17:16	78	09:39 (TRIV-86)	17:14	74	09:49 (TRIV-86)
23	06:26		06:57 (TRIV-66)	06:56			07:27	07:59		09:45 (TRIV-86)	07:35		08:21 (TRIV-86)	08:02		08:36 (TRIV-86)
	21:06	16	07:13 (TRIV-66)	20:29			19:36	18:48	23	18:24 (TRIV-77)	17:15	78	09:39 (TRIV-86)	17:15	74	09:50 (TRIV-86)
24	06:27		06:56 (TRIV-66)	06:57			07:28	08:00		09:42 (TRIV-86)	07:37		08:22 (TRIV-86)	08:02		08:36 (TRIV-86)
	21:05	18	07:14 (TRIV-66)	20:27			19:34	18:46	28	18:24 (TRIV-77)	17:15	78	09:40 (TRIV-86)	17:15	74	09:50 (TRIV-86)
25	06:28		06:55 (TRIV-66)	06:58			07:29	08:01		09:39 (TRIV-86)	07:38		08:22 (TRIV-86)	08:02		08:36 (TRIV-86)
	21:04	20	07:15 (TRIV-66)	20:26			19:32	18:45	33	10:12 (TRIV-86)	17:14	78	09:40 (TRIV-86)	17:16	74	09:50 (TRIV-86)
26	06:29		06:55 (TRIV-66)	06:59			07:30	08:02		09:36 (TRIV-86)	07:39		08:22 (TRIV-86)	08:03		08:37 (TRIV-86)
	21:03	21	07:16 (TRIV-66)	20:24			19:31	18:44	39	10:15 (TRIV-86)	17:14	78	09:40 (TRIV-86)	17:16	74	09:51 (TRIV-86)
27	06:29		06:53 (TRIV-66)	07:00			07:31	08:03		09:34 (TRIV-86)	07:40		08:22 (TRIV-86)	08:03		08:37 (TRIV-86)
	21:02	23	07:16 (TRIV-66)	20:23			19:29	18:42	43	10:17 (TRIV-86)	17:13	79	09:41 (TRIV-86)	17:17	75	09:52 (TRIV-86)
28	06:30		06:53 (TRIV-66)	07:01			07:32	08:05		09:33 (TRIV-86)	07:41		08:23 (TRIV-86)	08:03		08:37 (TRIV-86)
	21:01	24	07:17 (TRIV-66)	20:21			19:27	18:41	46	10:19 (TRIV-86)	17:13	78	09:41 (TRIV-86)	17:18	75	09:52 (TRIV-86)
29	06:31		06:53 (TRIV-66)	07:02			07:33	08:06		09:31 (TRIV-86)	07:42		08:23 (TRIV-86)	08:04		08:38 (TRIV-86)
	21:00	24	07:17 (TRIV-66)	20:19			19:26	18:40	50	10:21 (TRIV-86)	17:12	78	09:41 (TRIV-86)	17:18	74	09:52 (TRIV-86)
30	06:32		06:54 (TRIV-66)	07:03			07:34	08:07		09:29 (TRIV-86)	07:43		08:23 (TRIV-86)	08:04		08:39 (TRIV-86)
	20:59	24	07:18 (TRIV-66)	20:18			19:24	18:38	53	10:22 (TRIV-86)	17:12	78	09:41 (TRIV-86)	17:19	75	09:54 (TRIV-86)
31	06:33		06:55 (TRIV-66)	07:04				08:08		09:28 (TRIV-86)				08:04		08:39 (TRIV-86)
	20:58	23	07:18 (TRIV-66)	20:16				18:37	56	10:24 (TRIV-86)				17:20	75	09:54 (TRIV-86)
Potential sun hours	459			428			375	345			298			288		
Total, worst case		223			183				575			2206			2328	
Sun reduction		0.76			0.75				0.60			0.40			0.36	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.70			0.70				0.63			0.60			0.60	
Total reduction		0.53			0.52				0.38			0.24			0.21	
Total, real		117			95				216			523			497	

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 280 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1297)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May	June
1	08:04		15:55 (TRIV-86)	07:51		16:00 (TRIV-86)	07:15	07:24	06:38	06:09
	17:21	58	16:53 (TRIV-86)	17:55	69	17:09 (TRIV-86)	18:29	20:02	20:34	21:04
2	08:04		15:55 (TRIV-86)	07:50		16:01 (TRIV-86)	07:13	07:22	06:37	06:09
	17:22	59	16:54 (TRIV-86)	17:57	68	17:09 (TRIV-86)	18:31	20:03	20:35	21:05
3	08:05		15:56 (TRIV-86)	07:49		16:01 (TRIV-86)	07:11	07:20	06:35	06:08
	17:23	58	16:54 (TRIV-86)	17:58	68	17:09 (TRIV-86)	18:32	20:05	20:36	21:06
4	08:05		15:56 (TRIV-86)	07:48		16:02 (TRIV-86)	07:10	07:19	06:34	06:08
	17:24	59	16:55 (TRIV-86)	17:59	67	17:09 (TRIV-86)	18:33	20:06	20:37	21:06
5	08:05		15:56 (TRIV-86)	07:47		16:03 (TRIV-86)	07:08	07:17	06:33	06:08
	17:24	60	16:56 (TRIV-86)	18:00	66	17:09 (TRIV-86)	18:34	20:07	20:38	21:07
6	08:05		15:56 (TRIV-86)	07:46		16:03 (TRIV-86)	07:07	07:16	06:32	06:07
	17:25	61	16:57 (TRIV-86)	18:02	65	17:08 (TRIV-86)	18:35	20:08	20:40	21:08
7	08:04		15:57 (TRIV-86)	07:44		16:03 (TRIV-86)	07:05	07:14	06:31	06:07
	17:26	61	16:58 (TRIV-86)	18:03	64	17:07 (TRIV-86)	18:36	20:09	20:41	21:08
8	08:04		15:56 (TRIV-86)	07:43		16:04 (TRIV-86)	08:04	07:12	06:29	06:07
	17:27	62	16:58 (TRIV-86)	18:04	63	17:07 (TRIV-86)	19:37	20:10	20:42	21:09
9	08:04		15:56 (TRIV-86)	07:42		16:05 (TRIV-86)	08:02	07:11	06:28	06:07
	17:28	63	16:59 (TRIV-86)	18:05	62	17:07 (TRIV-86)	19:38	20:11	20:43	21:10
10	08:04		15:57 (TRIV-86)	07:41		16:06 (TRIV-86)	08:00	07:09	06:27	06:07
	17:29	63	17:00 (TRIV-86)	18:07	60	17:06 (TRIV-86)	19:40	20:12	20:44	21:10
11	08:04		15:57 (TRIV-86)	07:40		16:08 (TRIV-86)	07:59	07:07	06:26	06:06
	17:30	64	17:01 (TRIV-86)	18:08	58	17:06 (TRIV-86)	19:41	20:13	20:45	21:11
12	08:04		15:56 (TRIV-86)	07:38		16:08 (TRIV-86)	07:57	07:06	06:25	06:06
	17:32	65	17:01 (TRIV-86)	18:09	56	17:04 (TRIV-86)	19:42	20:14	20:46	21:11
13	08:03		15:57 (TRIV-86)	07:37		16:09 (TRIV-86)	07:55	07:04	06:24	06:06
	17:33	65	17:02 (TRIV-86)	18:10	55	17:04 (TRIV-86)	19:43	20:15	20:47	21:12
14	08:03		15:56 (TRIV-86)	07:36		16:11 (TRIV-86)	07:54	07:03	06:23	06:06
	17:34	66	17:02 (TRIV-86)	18:11	52	17:03 (TRIV-86)	19:44	20:16	20:48	21:12
15	08:03		15:57 (TRIV-86)	07:35		16:12 (TRIV-86)	07:52	07:01	06:22	06:06
	17:35	66	17:03 (TRIV-86)	18:13	49	17:01 (TRIV-86)	19:45	20:17	20:49	21:13
16	08:02		15:57 (TRIV-86)	07:33		16:14 (TRIV-86)	07:50	07:00	06:21	06:06
	17:36	66	17:03 (TRIV-86)	18:14	46	17:00 (TRIV-86)	19:46	20:18	20:50	21:13
17	08:02		15:57 (TRIV-86)	07:32		16:16 (TRIV-86)	07:49	06:58	06:20	06:06
	17:37	67	17:04 (TRIV-86)	18:15	43	16:59 (TRIV-86)	19:47	20:19	20:51	21:13
18	08:01		15:57 (TRIV-86)	07:31		16:17 (TRIV-86)	07:47	06:57	06:19	06:06
	17:38	67	17:04 (TRIV-86)	18:16	39	16:56 (TRIV-86)	19:48	20:20	20:52	21:14
19	08:01		15:58 (TRIV-86)	07:29		16:20 (TRIV-86)	07:45	06:55	06:18	06:06
	17:39	67	17:05 (TRIV-86)	18:18	35	16:55 (TRIV-86)	19:50	20:22	20:53	21:14
20	08:00		15:57 (TRIV-86)	07:28		16:22 (TRIV-86)	07:44	06:53	06:17	06:06
	17:41	69	17:06 (TRIV-86)	18:19	29	16:51 (TRIV-86)	19:51	20:23	20:54	21:14
21	07:59		15:57 (TRIV-86)	07:26		16:25 (TRIV-86)	07:42	06:52	06:16	06:07
	17:42	69	17:06 (TRIV-86)	18:20	24	16:49 (TRIV-86)	19:52	20:24	20:55	21:15
22	07:59		15:58 (TRIV-86)	07:25		16:31 (TRIV-86)	07:40	06:51	06:16	06:07
	17:43	69	17:07 (TRIV-86)	18:21	13	16:44 (TRIV-86)	19:53	20:25	20:55	21:15
23	07:58		15:58 (TRIV-86)	07:24			07:39	06:49	06:15	06:07
	17:44	69	17:07 (TRIV-86)	18:22			19:54	20:26	20:56	21:15
24	07:57		15:58 (TRIV-86)	07:22			07:37	06:48	06:14	06:07
	17:45	69	17:07 (TRIV-86)	18:24			19:55	20:27	20:57	21:15
25	07:57		15:58 (TRIV-86)	07:21			07:35	06:46	06:13	06:08
	17:47	69	17:07 (TRIV-86)	18:25			19:56	20:28	20:58	21:15
26	07:56		15:59 (TRIV-86)	07:19			07:34	06:45	06:13	06:08
	17:48	69	17:08 (TRIV-86)	18:26			19:57	20:29	20:59	21:16
27	07:55		15:59 (TRIV-86)	07:18			07:32	06:43	06:12	06:08
	17:49	70	17:09 (TRIV-86)	18:27			19:58	20:30	21:00	21:16
28	07:54		15:59 (TRIV-86)	07:16			07:30	06:42	06:11	06:09
	17:50	70	17:09 (TRIV-86)	18:28			19:59	20:31	21:01	21:16
29	07:53		15:59 (TRIV-86)				07:29	06:41	06:11	06:09
	17:52	70	17:09 (TRIV-86)				20:00	20:32	21:02	21:16
30	07:53		16:00 (TRIV-86)				07:27	06:39	06:10	06:10
	17:53	69	17:09 (TRIV-86)				20:00	20:33	21:02	21:16
31	07:52		16:00 (TRIV-86)				07:25		06:10	
	17:54	69	17:09 (TRIV-86)				20:01		21:03	
Potential sun hours	298			297			370	399	448	452
Total, worst case		2028			1151					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.70			0.70					
Total reduction		0.35			0.38					
Total, real		705			440					

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:
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US-SYRACUSE, NY 13202
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 280 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1297)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		15:36 (TRIV-86)	07:44		15:39 (TRIV-86)
	21:16		20:57		20:15		19:22			17:36	60	16:36 (TRIV-86)	17:12	64	16:43 (TRIV-86)
2	06:11		06:35		07:06		07:36			07:10		15:35 (TRIV-86)	07:45		15:40 (TRIV-86)
	21:15		20:56		20:13		19:21			17:35	62	16:37 (TRIV-86)	17:11	63	16:43 (TRIV-86)
3	06:11		06:36		07:07		07:37			07:12		15:34 (TRIV-86)	07:46		15:40 (TRIV-86)
	21:15		20:55		20:11		19:19			17:33	63	16:37 (TRIV-86)	17:11	63	16:43 (TRIV-86)
4	06:12		06:37		07:08		07:38			07:13		15:33 (TRIV-86)	07:47		15:41 (TRIV-86)
	21:15		20:54		20:10		19:17			17:32	64	16:37 (TRIV-86)	17:11	62	16:43 (TRIV-86)
5	06:12		06:38		07:09		07:39			07:14		15:33 (TRIV-86)	07:48		15:42 (TRIV-86)
	21:15		20:53		20:08		19:16			17:31	65	16:38 (TRIV-86)	17:11	61	16:43 (TRIV-86)
6	06:13		06:39		07:10		07:40			07:15		15:33 (TRIV-86)	07:49		15:42 (TRIV-86)
	21:15		20:52		20:06		19:14			17:30	66	16:39 (TRIV-86)	17:11	61	16:43 (TRIV-86)
7	06:13		06:40		07:11		07:41			07:16		15:32 (TRIV-86)	07:50		15:43 (TRIV-86)
	21:15		20:50		20:05		19:12			17:29	67	16:39 (TRIV-86)	17:11	60	16:43 (TRIV-86)
8	06:14		06:41		07:12		07:42			07:18		15:31 (TRIV-86)	07:51		15:43 (TRIV-86)
	21:14		20:49		20:03		19:11			17:28	68	16:39 (TRIV-86)	17:10	59	16:42 (TRIV-86)
9	06:15		06:42		07:13		07:43			07:19		15:32 (TRIV-86)	07:52		15:44 (TRIV-86)
	21:14		20:48		20:01		19:09			17:27	68	16:40 (TRIV-86)	17:10	59	16:43 (TRIV-86)
10	06:15		06:43		07:14		07:44			07:20		15:31 (TRIV-86)	07:53		15:44 (TRIV-86)
	21:14		20:47		20:00		19:08			17:26	69	16:40 (TRIV-86)	17:11	59	16:43 (TRIV-86)
11	06:16		06:44		07:15		07:46			07:21		15:31 (TRIV-86)	07:54		15:45 (TRIV-86)
	21:13		20:45		19:56		19:06			17:25	69	16:40 (TRIV-86)	17:11	58	16:43 (TRIV-86)
12	06:17		06:45		07:16		07:47			07:22		15:32 (TRIV-86)	07:54		15:46 (TRIV-86)
	21:13		20:44		19:55		19:04			17:24	69	16:41 (TRIV-86)	17:11	58	16:44 (TRIV-86)
13	06:18		06:46		07:17		07:48			07:24		15:31 (TRIV-86)	07:55		15:47 (TRIV-86)
	21:12		20:43		19:53		19:03			17:23	70	16:41 (TRIV-86)	17:11	57	16:44 (TRIV-86)
14	06:18		06:47		07:18		07:49			07:25		15:31 (TRIV-86)	07:56		15:47 (TRIV-86)
	21:12		20:42		19:51		19:01			17:22	70	16:41 (TRIV-86)	17:11	56	16:43 (TRIV-86)
15	06:19		06:48		07:19		07:50			07:26		15:31 (TRIV-86)	07:57		15:48 (TRIV-86)
	21:11		20:40		19:50		19:00			17:21	70	16:41 (TRIV-86)	17:11	56	16:44 (TRIV-86)
16	06:20		06:49		07:20		07:51			07:27		15:32 (TRIV-86)	07:57		15:49 (TRIV-86)
	21:11		20:39		19:48		18:58			17:20	69	16:41 (TRIV-86)	17:12	56	16:45 (TRIV-86)
17	06:21		06:50		07:21		07:52			07:28		15:32 (TRIV-86)	07:58		15:49 (TRIV-86)
	21:10		20:37		19:46		18:57			17:19	69	16:41 (TRIV-86)	17:12	55	16:44 (TRIV-86)
18	06:21		06:51		07:22		07:53			07:30		15:32 (TRIV-86)	07:59		15:50 (TRIV-86)
	21:09		20:36		19:44		18:55			17:18	69	16:41 (TRIV-86)	17:12	55	16:45 (TRIV-86)
19	06:22		06:52		07:23		07:54			07:31		15:32 (TRIV-86)	07:59		15:51 (TRIV-86)
	21:09		20:35		19:43		18:54			17:18	69	16:41 (TRIV-86)	17:13	55	16:46 (TRIV-86)
20	06:23		06:53		07:24		07:55		17:00 (TRIV-86)	07:32		15:33 (TRIV-86)	08:00		15:51 (TRIV-86)
	21:08		20:33		19:41		18:52	16	17:16 (TRIV-86)	17:17	69	16:42 (TRIV-86)	17:13	55	16:46 (TRIV-86)
21	06:24		06:54		07:25		07:57		16:55 (TRIV-86)	07:33		15:33 (TRIV-86)	08:01		15:52 (TRIV-86)
	21:07		20:32		19:39		18:51	25	17:20 (TRIV-86)	17:16	69	16:42 (TRIV-86)	17:13	55	16:47 (TRIV-86)
22	06:25		06:55		07:26		07:58		16:51 (TRIV-86)	07:34		15:33 (TRIV-86)	08:01		15:52 (TRIV-86)
	21:06		20:30		19:38		18:49	32	17:23 (TRIV-86)	17:16	69	16:42 (TRIV-86)	17:14	55	16:47 (TRIV-86)
23	06:26		06:56		07:27		07:59		16:48 (TRIV-86)	07:35		15:34 (TRIV-86)	08:02		15:53 (TRIV-86)
	21:06		20:29		19:36		18:48	37	17:25 (TRIV-86)	17:15	67	16:41 (TRIV-86)	17:14	55	16:48 (TRIV-86)
24	06:27		06:57		07:28		08:00		16:47 (TRIV-86)	07:37		15:35 (TRIV-86)	08:02		15:53 (TRIV-86)
	21:05		20:27		19:34		18:46	40	17:27 (TRIV-86)	17:15	67	16:42 (TRIV-86)	17:15	55	16:48 (TRIV-86)
25	06:28		06:58		07:29		08:01		16:45 (TRIV-86)	07:38		15:35 (TRIV-86)	08:02		15:53 (TRIV-86)
	21:04		20:26		19:32		18:45	44	17:29 (TRIV-86)	17:14	67	16:42 (TRIV-86)	17:16	55	16:48 (TRIV-86)
26	06:28		06:59		07:30		08:02		16:43 (TRIV-86)	07:39		15:36 (TRIV-86)	08:03		15:54 (TRIV-86)
	21:03		20:24		19:31		18:44	47	17:30 (TRIV-86)	17:14	66	16:42 (TRIV-86)	17:16	55	16:49 (TRIV-86)
27	06:29		07:00		07:31		08:03		16:41 (TRIV-86)	07:40		15:36 (TRIV-86)	08:03		15:54 (TRIV-86)
	21:02		20:22		19:29		18:42	50	17:31 (TRIV-86)	17:13	66	16:42 (TRIV-86)	17:17	56	16:50 (TRIV-86)
28	06:30		07:01		07:32		08:05		16:40 (TRIV-86)	07:41		15:36 (TRIV-86)	08:03		15:54 (TRIV-86)
	21:01		20:21		19:27		18:41	53	17:33 (TRIV-86)	17:13	66	16:42 (TRIV-86)	17:18	56	16:50 (TRIV-86)
29	06:31		07:02		07:33		08:06		16:39 (TRIV-86)	07:42		15:37 (TRIV-86)	08:04		15:54 (TRIV-86)
	21:00		20:19		19:26		18:40	55	17:34 (TRIV-86)	17:12	65	16:42 (TRIV-86)	17:18	56	16:50 (TRIV-86)
30	06:32		07:03		07:34		08:07		16:37 (TRIV-86)	07:43		15:37 (TRIV-86)	08:04		15:55 (TRIV-86)
	20:59		20:18		19:24		18:38	57	17:34 (TRIV-86)	17:12	65	16:42 (TRIV-86)	17:19	57	16:52 (TRIV-86)
31	06:33		07:04				08:08		16:36 (TRIV-86)				08:04		15:55 (TRIV-86)
	20:58		20:16				18:37	59	17:35 (TRIV-86)				17:20	57	16:52 (TRIV-86)
Potential sun hours	459		428		375		345			298			288		
Total, worst case							515				2012			1784	
Sun reduction							0.60				0.40			0.36	
Oper. time red.							1.00				1.00			1.00	
Wind dir. red.							0.70				0.70			0.70	
Total reduction							0.42				0.28			0.25	
Total, real							215				560			447	

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 281 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1298)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May	June
1	08:04		16:34 (TRIV-86)	07:51		16:20 (TRIV-86)	07:15	07:24	06:38	06:09
	17:21	16	16:50 (TRIV-86)	17:55	64	17:24 (TRIV-86)	18:29	20:02	20:34	21:04
2	08:04		16:33 (TRIV-86)	07:50		16:20 (TRIV-86)	07:13	07:22	06:37	06:09
	17:22	19	16:52 (TRIV-86)	17:57	64	17:24 (TRIV-86)	18:31	20:03	20:35	21:05
3	08:05		16:32 (TRIV-86)	07:49		16:21 (TRIV-86)	07:11	07:20	06:35	06:08
	17:23	21	16:53 (TRIV-86)	17:58	64	17:25 (TRIV-86)	18:32	20:04	20:36	21:06
4	08:05		16:31 (TRIV-86)	07:48		16:21 (TRIV-86)	07:10	07:19	06:34	06:08
	17:24	24	16:55 (TRIV-86)	17:59	64	17:25 (TRIV-86)	18:33	20:06	20:37	21:06
5	08:05		16:31 (TRIV-86)	07:47		16:21 (TRIV-86)	07:08	07:17	06:33	06:08
	17:24	26	16:57 (TRIV-86)	18:00	64	17:25 (TRIV-86)	18:34	20:07	20:38	21:07
6	08:05		16:30 (TRIV-86)	07:46		16:21 (TRIV-86)	07:07	07:15	06:32	06:07
	17:25	28	16:58 (TRIV-86)	18:02	65	17:26 (TRIV-86)	18:35	20:08	20:40	21:08
7	08:04		16:30 (TRIV-86)	07:44		16:20 (TRIV-86)	07:05	07:14	06:31	06:07
	17:26	30	17:00 (TRIV-86)	18:03	65	17:25 (TRIV-86)	18:36	20:09	20:41	21:08
8	08:04		16:28 (TRIV-86)	07:43		16:21 (TRIV-86)	08:04	07:12	06:29	06:07
	17:27	33	17:01 (TRIV-86)	18:04	64	17:25 (TRIV-86)	19:37	20:10	20:42	21:09
9	08:04		16:28 (TRIV-86)	07:42		16:21 (TRIV-86)	08:02	07:11	06:28	06:07
	17:28	34	17:02 (TRIV-86)	18:05	64	17:25 (TRIV-86)	19:38	20:11	20:43	21:10
10	08:04		16:28 (TRIV-86)	07:41		16:22 (TRIV-86)	08:00	07:09	06:27	06:07
	17:29	36	17:04 (TRIV-86)	18:07	63	17:25 (TRIV-86)	19:40	20:12	20:44	21:10
11	08:04		16:26 (TRIV-86)	07:40		16:23 (TRIV-86)	07:59	07:07	06:26	06:06
	17:30	38	17:04 (TRIV-86)	18:08	62	17:25 (TRIV-86)	19:41	20:13	20:45	21:11
12	08:04		16:26 (TRIV-86)	07:38		16:22 (TRIV-86)	07:57	07:06	06:25	06:06
	17:32	39	17:05 (TRIV-86)	18:09	62	17:24 (TRIV-86)	19:42	20:14	20:46	21:11
13	08:03		16:26 (TRIV-86)	07:37		16:23 (TRIV-86)	07:55	07:04	06:24	06:06
	17:33	41	17:07 (TRIV-86)	18:10	61	17:24 (TRIV-86)	19:43	20:15	20:47	21:12
14	08:03		16:25 (TRIV-86)	07:36		16:24 (TRIV-86)	07:54	07:03	06:23	06:06
	17:34	43	17:08 (TRIV-86)	18:11	60	17:24 (TRIV-86)	19:44	20:16	20:48	21:12
15	08:02		16:25 (TRIV-86)	07:35		16:24 (TRIV-86)	07:52	07:01	06:22	06:06
	17:35	44	17:09 (TRIV-86)	18:13	59	17:23 (TRIV-86)	19:45	20:17	20:49	21:13
16	08:02		16:24 (TRIV-86)	07:33		16:25 (TRIV-86)	07:50	07:00	06:21	06:06
	17:36	46	17:10 (TRIV-86)	18:14	58	17:23 (TRIV-86)	19:46	20:18	20:50	21:13
17	08:02		16:24 (TRIV-86)	07:32		16:26 (TRIV-86)	07:49	06:58	06:20	06:06
	17:37	48	17:12 (TRIV-86)	18:15	56	17:22 (TRIV-86)	19:47	20:19	20:51	21:13
18	08:01		16:23 (TRIV-86)	07:31		16:26 (TRIV-86)	07:47	06:56	06:19	06:06
	17:38	49	17:12 (TRIV-86)	18:16	55	17:21 (TRIV-86)	19:48	20:20	20:52	21:14
19	08:01		16:24 (TRIV-86)	07:29		16:28 (TRIV-86)	07:45	06:55	06:18	06:06
	17:39	50	17:14 (TRIV-86)	18:18	52	17:20 (TRIV-86)	19:50	20:22	20:53	21:14
20	08:00		16:23 (TRIV-86)	07:28		16:28 (TRIV-86)	07:44	06:53	06:17	06:06
	17:41	52	17:15 (TRIV-86)	18:19	51	17:19 (TRIV-86)	19:51	20:23	20:54	21:14
21	07:59		16:22 (TRIV-86)	07:26		16:30 (TRIV-86)	07:42	06:52	06:16	06:07
	17:42	54	17:16 (TRIV-86)	18:20	48	17:18 (TRIV-86)	19:52	20:24	20:55	21:15
22	07:59		16:23 (TRIV-86)	07:25		16:32 (TRIV-86)	07:40	06:51	06:16	06:07
	17:43	55	17:18 (TRIV-86)	18:21	45	17:17 (TRIV-86)	19:53	20:25	20:55	21:15
23	07:58		16:22 (TRIV-86)	07:24		16:33 (TRIV-86)	07:39	06:49	06:15	06:07
	17:44	56	17:18 (TRIV-86)	18:22	42	17:15 (TRIV-86)	19:54	20:26	20:56	21:15
24	07:57		16:22 (TRIV-86)	07:22		16:35 (TRIV-86)	07:37	06:48	06:14	06:07
	17:45	57	17:19 (TRIV-86)	18:24	39	17:14 (TRIV-86)	19:55	20:27	20:57	21:15
25	07:57		16:21 (TRIV-86)	07:21		16:36 (TRIV-86)	07:35	06:46	06:13	06:08
	17:47	58	17:19 (TRIV-86)	18:25	35	17:11 (TRIV-86)	19:56	20:28	20:58	21:15
26	07:56		16:22 (TRIV-86)	07:19		16:39 (TRIV-86)	07:34	06:45	06:13	06:08
	17:48	59	17:21 (TRIV-86)	18:26	30	17:09 (TRIV-86)	19:57	20:29	20:59	21:16
27	07:55		16:21 (TRIV-86)	07:18		16:42 (TRIV-86)	07:32	06:43	06:12	06:08
	17:49	60	17:21 (TRIV-86)	18:27	23	17:05 (TRIV-86)	19:58	20:30	21:00	21:16
28	07:54		16:21 (TRIV-86)	07:16		16:47 (TRIV-86)	07:30	06:42	06:11	06:09
	17:50	61	17:22 (TRIV-86)	18:28	14	17:01 (TRIV-86)	19:59	20:31	21:01	21:16
29	07:53		16:21 (TRIV-86)				07:29	06:41	06:11	06:09
	17:52	61	17:22 (TRIV-86)				20:00	20:32	21:02	21:16
30	07:53		16:21 (TRIV-86)				07:27	06:39	06:10	06:10
	17:53	62	17:23 (TRIV-86)				20:00	20:33	21:02	21:16
31	07:52		16:20 (TRIV-86)				07:25		06:10	
	17:54	63	17:23 (TRIV-86)				20:01		21:03	
Potential sun hours	298			297			370	399	448	452
Total, worst case		1363			1493					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.69			0.69					
Total reduction		0.35			0.38					
Total, real		472			569					

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)

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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 281 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1298)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		15:52 (TRIV-86)	07:44		16:09 (TRIV-86)
	21:16		20:57		20:15		19:22			17:36	63	16:55 (TRIV-86)	17:12	38	16:47 (TRIV-86)
2	06:11		06:35		07:06		07:36			07:10		15:51 (TRIV-86)	07:45		16:11 (TRIV-86)
	21:15		20:56		20:13		19:21			17:35	64	16:55 (TRIV-86)	17:11	36	16:47 (TRIV-86)
3	06:11		06:36		07:07		07:37			07:12		15:51 (TRIV-86)	07:46		16:12 (TRIV-86)
	21:15		20:55		20:11		19:19			17:33	64	16:55 (TRIV-86)	17:11	34	16:46 (TRIV-86)
4	06:12		06:37		07:08		07:38			07:13		15:50 (TRIV-86)	07:47		16:13 (TRIV-86)
	21:15		20:54		20:10		19:17			17:32	65	16:55 (TRIV-86)	17:11	33	16:46 (TRIV-86)
5	06:12		06:38		07:09		07:39			07:14		15:51 (TRIV-86)	07:48		16:15 (TRIV-86)
	21:15		20:53		20:08		19:16			17:31	64	16:55 (TRIV-86)	17:11	30	16:45 (TRIV-86)
6	06:13		06:39		07:10		07:40			07:15		15:51 (TRIV-86)	07:49		16:16 (TRIV-86)
	21:15		20:52		20:06		19:14			17:30	64	16:55 (TRIV-86)	17:11	29	16:45 (TRIV-86)
7	06:13		06:40		07:11		07:41			07:16		15:51 (TRIV-86)	07:50		16:18 (TRIV-86)
	21:15		20:50		20:05		19:12			17:29	64	16:55 (TRIV-86)	17:11	26	16:44 (TRIV-86)
8	06:14		06:41		07:12		07:42			07:18		15:50 (TRIV-86)	07:51		16:18 (TRIV-86)
	21:14		20:49		20:03		19:11			17:28	64	16:54 (TRIV-86)	17:10	24	16:42 (TRIV-86)
9	06:15		06:42		07:13		07:43			07:19		15:51 (TRIV-86)	07:52		16:20 (TRIV-86)
	21:14		20:48		20:01		19:09			17:27	64	16:55 (TRIV-86)	17:10	22	16:42 (TRIV-86)
10	06:15		06:43		07:14		07:44			07:20		15:51 (TRIV-86)	07:53		16:22 (TRIV-86)
	21:14		20:47		20:00		19:08			17:26	64	16:55 (TRIV-86)	17:11	19	16:41 (TRIV-86)
11	06:16		06:44		07:15		07:46			07:21		15:51 (TRIV-86)	07:54		16:24 (TRIV-86)
	21:13		20:45		19:56		19:06			17:25	63	16:54 (TRIV-86)	17:11	16	16:40 (TRIV-86)
12	06:17		06:45		07:16		07:47			07:22		15:53 (TRIV-86)	07:54		16:26 (TRIV-86)
	21:13		20:44		19:55		19:04			17:24	62	16:55 (TRIV-86)	17:11	13	16:39 (TRIV-86)
13	06:18		06:46		07:17		07:48			07:24		15:53 (TRIV-86)	07:55		16:28 (TRIV-86)
	21:12		20:43		19:53		19:03			17:23	61	16:54 (TRIV-86)	17:11	10	16:38 (TRIV-86)
14	06:18		06:47		07:18		07:49		17:17 (TRIV-86)	07:25		15:53 (TRIV-86)	07:56		16:30 (TRIV-86)
	21:12		20:42		19:51		19:01	19	17:36 (TRIV-86)	17:22	61	16:54 (TRIV-86)	17:11	6	16:36 (TRIV-86)
15	06:19		06:48		07:19		07:50		17:13 (TRIV-86)	07:26		15:53 (TRIV-86)	07:57		
	21:11		20:40		19:50		19:00	26	17:39 (TRIV-86)	17:21	60	16:53 (TRIV-86)	17:11		
16	06:20		06:49		07:20		07:51		17:10 (TRIV-86)	07:27		15:55 (TRIV-86)	07:57		
	21:11		20:39		19:48		18:58	31	17:41 (TRIV-86)	17:20	59	16:54 (TRIV-86)	17:12		
17	06:21		06:50		07:21		07:52		17:07 (TRIV-86)	07:28		15:55 (TRIV-86)	07:58		
	21:10		20:37		19:46		18:57	36	17:43 (TRIV-86)	17:19	58	16:53 (TRIV-86)	17:12		
18	06:21		06:51		07:22		07:53		17:05 (TRIV-86)	07:30		15:56 (TRIV-86)	07:59		
	21:09		20:36		19:44		18:55	40	17:45 (TRIV-86)	17:18	57	16:53 (TRIV-86)	17:12		
19	06:22		06:52		07:23		07:54		17:04 (TRIV-86)	07:31		15:56 (TRIV-86)	07:59		
	21:09		20:35		19:43		18:54	43	17:47 (TRIV-86)	17:18	56	16:52 (TRIV-86)	17:13		
20	06:23		06:53		07:24		07:55		17:02 (TRIV-86)	07:32		15:58 (TRIV-86)	08:00		
	21:08		20:33		19:41		18:52	46	17:48 (TRIV-86)	17:17	55	16:53 (TRIV-86)	17:13		
21	06:24		06:54		07:25		07:57		17:00 (TRIV-86)	07:33		15:58 (TRIV-86)	08:01		
	21:07		20:32		19:39		18:51	49	17:49 (TRIV-86)	17:16	54	16:52 (TRIV-86)	17:13		
22	06:25		06:55		07:26		07:58		16:58 (TRIV-86)	07:34		15:59 (TRIV-86)	08:01		
	21:06		20:30		19:38		18:49	52	17:50 (TRIV-86)	17:16	52	16:51 (TRIV-86)	17:14		
23	06:26		06:56		07:27		07:59		16:57 (TRIV-86)	07:35		16:00 (TRIV-86)	08:02		
	21:06		20:29		19:36		18:48	53	17:50 (TRIV-86)	17:15	50	16:50 (TRIV-86)	17:14		
24	06:27		06:57		07:28		08:00		16:57 (TRIV-86)	07:37		16:01 (TRIV-86)	08:02		
	21:05		20:27		19:34		18:46	55	17:52 (TRIV-86)	17:15	50	16:51 (TRIV-86)	17:15		
25	06:28		06:58		07:29		08:01		16:55 (TRIV-86)	07:38		16:02 (TRIV-86)	08:02		
	21:04		20:26		19:32		18:45	57	17:52 (TRIV-86)	17:14	48	16:50 (TRIV-86)	17:16		
26	06:28		06:59		07:30		08:02		16:54 (TRIV-86)	07:39		16:03 (TRIV-86)	08:03		
	21:03		20:24		19:31		18:44	58	17:52 (TRIV-86)	17:14	46	16:49 (TRIV-86)	17:16		
27	06:29		07:00		07:31		08:03		16:53 (TRIV-86)	07:40		16:04 (TRIV-86)	08:03		
	21:02		20:22		19:29		18:42	60	17:53 (TRIV-86)	17:13	44	16:48 (TRIV-86)	17:17		
28	06:30		07:01		07:32		08:05		16:53 (TRIV-86)	07:41		16:05 (TRIV-86)	08:03		
	21:01		20:21		19:27		18:41	61	17:54 (TRIV-86)	17:13	43	16:48 (TRIV-86)	17:18		
29	06:31		07:02		07:33		08:06		16:53 (TRIV-86)	07:42		16:06 (TRIV-86)	08:04		16:38 (TRIV-86)
	21:00		20:19		19:26		18:40	61	17:54 (TRIV-86)	17:12	41	16:47 (TRIV-86)	17:18	4	16:42 (TRIV-86)
30	06:32		07:03		07:34		08:07		16:52 (TRIV-86)	07:43		16:07 (TRIV-86)	08:04		16:37 (TRIV-86)
	20:59		20:18		19:24		18:38	62	17:54 (TRIV-86)	17:12	40	16:47 (TRIV-86)	17:19	9	16:46 (TRIV-86)
31	06:33		07:04				08:08		16:51 (TRIV-86)				08:04		16:35 (TRIV-86)
	20:58		20:16				18:37	63	17:54 (TRIV-86)				17:20	13	16:48 (TRIV-86)
Potential sun hours	459		428		375		345			298			288		
Total, worst case							872				1700			362	
Sun reduction							0.60				0.40			0.36	
Oper. time red.							1.00				1.00			1.00	
Wind dir. red.							0.69				0.69			0.69	
Total reduction							0.42				0.28			0.25	
Total, real							363				471			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:
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217 Montgomery St., Suite 1000
US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 285 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1302)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:04		08:32 (TRIV-84)	07:51		08:43 (TRIV-84)	07:15		07:34 (TRIV-73)	07:24			06:38		07:01 (TRIV-72)	06:09		20:24 (TRIV-66)
	17:21	61	09:33 (TRIV-84)	17:55	57	09:40 (TRIV-84)	18:29	15	07:49 (TRIV-73)	20:02			20:34	22	07:23 (TRIV-72)	21:04	16	20:40 (TRIV-66)
2	08:04		08:32 (TRIV-84)	07:50		08:44 (TRIV-84)	07:13		07:32 (TRIV-73)	07:22			06:37		07:01 (TRIV-72)	06:09		20:23 (TRIV-66)
	17:22	61	09:33 (TRIV-84)	17:56	56	09:40 (TRIV-84)	18:30	16	07:48 (TRIV-73)	20:03			20:35	21	07:22 (TRIV-72)	21:05	17	20:40 (TRIV-66)
3	08:05		08:32 (TRIV-84)	07:49		08:45 (TRIV-84)	07:11		07:31 (TRIV-73)	07:20			06:35		07:03 (TRIV-72)	06:08		20:23 (TRIV-66)
	17:23	62	09:34 (TRIV-84)	17:58	54	09:39 (TRIV-84)	18:32	18	07:49 (TRIV-73)	20:04			20:36	18	07:21 (TRIV-72)	21:05	18	20:41 (TRIV-66)
4	08:05		08:33 (TRIV-84)	07:48		08:46 (TRIV-84)	07:10		07:29 (TRIV-73)	07:19			06:34		07:04 (TRIV-72)	06:08		20:23 (TRIV-66)
	17:23	61	09:34 (TRIV-84)	17:59	52	09:38 (TRIV-84)	18:33	19	07:48 (TRIV-73)	20:05			20:37	15	07:19 (TRIV-72)	21:06	19	20:42 (TRIV-66)
5	08:05		08:33 (TRIV-84)	07:47		08:47 (TRIV-84)	07:08		07:28 (TRIV-73)	07:17			06:33		07:06 (TRIV-72)	06:08		20:22 (TRIV-66)
	17:24	62	09:35 (TRIV-84)	18:00	50	09:37 (TRIV-84)	18:34	20	07:48 (TRIV-73)	20:07			20:38	11	07:17 (TRIV-72)	21:07	20	20:42 (TRIV-66)
6	08:05		08:33 (TRIV-84)	07:45		08:48 (TRIV-84)	07:07		07:26 (TRIV-73)	07:15			06:32			06:07		20:22 (TRIV-66)
	17:25	63	09:36 (TRIV-84)	18:01	49	09:37 (TRIV-84)	18:35	21	07:47 (TRIV-73)	20:08			20:39			21:08	21	20:43 (TRIV-66)
7	08:04		08:33 (TRIV-84)	07:44		08:49 (TRIV-84)	07:05		07:26 (TRIV-73)	07:14			06:30			06:07		20:22 (TRIV-66)
	17:26	62	09:35 (TRIV-84)	18:03	46	09:35 (TRIV-84)	18:36	19	07:45 (TRIV-73)	20:09			20:41			21:08	21	20:43 (TRIV-66)
8	08:04		08:33 (TRIV-84)	07:43		08:50 (TRIV-84)	08:03		08:27 (TRIV-73)	07:12			06:29			06:07		20:22 (TRIV-66)
	17:27	63	09:36 (TRIV-84)	18:04	43	09:33 (TRIV-84)	19:37	17	08:44 (TRIV-73)	20:10			20:42			21:09	22	20:44 (TRIV-66)
9	08:04		08:34 (TRIV-84)	07:42		08:52 (TRIV-84)	08:02		08:29 (TRIV-73)	07:11			06:28			06:07		20:23 (TRIV-66)
	17:28	63	09:37 (TRIV-84)	18:05	40	09:32 (TRIV-84)	19:38	13	08:42 (TRIV-73)	20:11			20:43			21:09	22	20:45 (TRIV-66)
10	08:04		08:34 (TRIV-84)	07:41		08:54 (TRIV-84)	08:00		08:32 (TRIV-73)	07:09			06:27			06:06		20:22 (TRIV-66)
	17:29	64	09:38 (TRIV-84)	18:06	36	09:30 (TRIV-84)	19:40	6	08:38 (TRIV-73)	20:12			20:44			21:10	23	20:45 (TRIV-66)
11	08:04		08:34 (TRIV-84)	07:40		08:56 (TRIV-84)	07:59			07:07			06:26			06:06		20:22 (TRIV-66)
	17:30	64	09:38 (TRIV-84)	18:08	33	09:29 (TRIV-84)	19:41			20:13			20:45			21:11	23	20:45 (TRIV-66)
12	08:03		08:34 (TRIV-84)	07:38		08:58 (TRIV-84)	07:57			07:06			06:25			06:06		20:22 (TRIV-66)
	17:31	64	09:38 (TRIV-84)	18:09	27	09:25 (TRIV-84)	19:42			20:14			20:46			21:11	24	20:46 (TRIV-66)
13	08:03		08:35 (TRIV-84)	07:37		09:01 (TRIV-84)	07:55			07:04			06:24			06:06		20:22 (TRIV-66)
	17:33	64	09:39 (TRIV-84)	18:10	21	09:22 (TRIV-84)	19:43			20:15			20:47			21:12	24	20:46 (TRIV-66)
14	08:03		08:35 (TRIV-84)	07:36		09:07 (TRIV-84)	07:54			07:03			06:23			06:06		20:22 (TRIV-66)
	17:34	64	09:39 (TRIV-84)	18:11	10	09:17 (TRIV-84)	19:44			20:16			20:48			21:12	25	20:47 (TRIV-66)
15	08:02		08:36 (TRIV-84)	07:35			07:52			07:01			06:22			06:06		20:22 (TRIV-66)
	17:35	64	09:40 (TRIV-84)	18:13			19:45			20:17			20:49			21:13	25	20:47 (TRIV-66)
16	08:02		08:35 (TRIV-84)	07:33			07:50			06:59			06:21			06:06		20:22 (TRIV-66)
	17:36	65	09:40 (TRIV-84)	18:14			19:46			20:18			20:50			21:13	25	20:47 (TRIV-66)
17	08:02		08:36 (TRIV-84)	07:32			07:49			06:58		07:17 (TRIV-72)	06:20			06:06		20:22 (TRIV-66)
	17:37	65	09:41 (TRIV-84)	18:15			19:47			20:19	5	07:22 (TRIV-72)	20:51			21:13	26	20:48 (TRIV-66)
18	08:01		08:36 (TRIV-84)	07:31			07:47			06:56		07:16 (TRIV-72)	06:19			06:06		20:22 (TRIV-66)
	17:38	65	09:41 (TRIV-84)	18:16			19:48			20:20	8	07:24 (TRIV-72)	20:52			21:14	26	20:48 (TRIV-66)
19	08:01		08:37 (TRIV-84)	07:29			07:45			06:55		07:14 (TRIV-72)	06:18			06:06		20:23 (TRIV-66)
	17:39	64	09:41 (TRIV-84)	18:17			19:49			20:21	10	07:24 (TRIV-72)	20:53			21:14	26	20:49 (TRIV-66)
20	08:00		08:37 (TRIV-84)	07:28			07:44			06:53		07:13 (TRIV-72)	06:17			06:06		20:23 (TRIV-66)
	17:41	64	09:41 (TRIV-84)	18:19			19:51			20:23	13	07:26 (TRIV-72)	20:54			21:14	26	20:49 (TRIV-66)
21	07:59		08:37 (TRIV-84)	07:26			07:42			06:52		07:11 (TRIV-72)	06:16			06:07		20:23 (TRIV-66)
	17:42	64	09:41 (TRIV-84)	18:20			19:52			20:24	15	07:26 (TRIV-72)	20:54			21:15	26	20:49 (TRIV-66)
22	07:59		08:38 (TRIV-84)	07:25			07:40			06:50		07:10 (TRIV-72)	06:16			06:07		20:23 (TRIV-66)
	17:43	64	09:42 (TRIV-84)	18:21			19:53			20:25	17	07:27 (TRIV-72)	20:55			21:15	26	20:49 (TRIV-66)
23	07:58		08:38 (TRIV-84)	07:23			07:39			06:49		07:08 (TRIV-72)	06:15			06:07		20:23 (TRIV-66)
	17:44	64	09:42 (TRIV-84)	18:22			19:54			20:26	18	07:26 (TRIV-72)	20:56			21:15	26	20:49 (TRIV-66)
24	07:57		08:38 (TRIV-84)	07:22		07:42 (TRIV-73)	07:37			06:48		07:07 (TRIV-72)	06:14			06:07		20:24 (TRIV-66)
	17:45	64	09:42 (TRIV-84)	18:23	3	07:45 (TRIV-73)	19:55			20:27	20	07:27 (TRIV-72)	20:57			21:15	26	20:50 (TRIV-66)
25	07:57		08:39 (TRIV-84)	07:21		07:40 (TRIV-73)	07:35			06:46		07:06 (TRIV-72)	06:13			06:08		20:24 (TRIV-66)
	17:47	62	09:41 (TRIV-84)	18:25	6	07:46 (TRIV-73)	19:56			20:28	21	07:27 (TRIV-72)	20:58			21:15	26	20:50 (TRIV-66)
26	07:56		08:40 (TRIV-84)	07:19		07:39 (TRIV-73)	07:34			06:45		07:04 (TRIV-72)	06:13		20:31 (TRIV-66)	06:08		20:24 (TRIV-66)
	17:48	62	09:42 (TRIV-84)	18:26	9	07:48 (TRIV-73)	19:57			20:29	22	07:26 (TRIV-72)	20:59	4	20:35 (TRIV-66)	21:15	26	20:50 (TRIV-66)
27	07:55		08:40 (TRIV-84)	07:18		07:37 (TRIV-73)	07:32			06:43		07:03 (TRIV-72)	06:12		20:29 (TRIV-66)	06:08		20:25 (TRIV-66)
	17:49	62	09:42 (TRIV-84)	18:27	11	07:48 (TRIV-73)	19:58			20:30	23	07:26 (TRIV-72)	21:00	7	20:36 (TRIV-66)	21:16	25	20:50 (TRIV-66)
28	07:54		08:41 (TRIV-84)	07:16		07:35 (TRIV-73)	07:30			06:42		07:01 (TRIV-72)	06:11		20:28 (TRIV-66)	06:09		20:25 (TRIV-66)
	17:50	61	09:42 (TRIV-84)	18:28	13	07:48 (TRIV-73)	19:59			20:31	24	07:25 (TRIV-72)	21:01	9	20:37 (TRIV-66)	21:16	25	20:50 (TRIV-66)
29	07:53		08:41 (TRIV-84)				07:29			06:41		07:00 (TRIV-72)	06:11		20:26 (TRIV-66)	06:09		20:26 (TRIV-66)
	17:51	60	09:41 (TRIV-84)				20:00			20:32	25	07:25 (TRIV-72)	21:02	11	20:37 (TRIV-66)	21:16	25	20:51 (TRIV-66)
30	07:52		08:42 (TRIV-84)				07:27			06:39		07:00 (TRIV-72)	06:10		20:26 (TRIV-66)	06:10		20:26 (TRIV-66)
	17:53	59	09:41 (TRIV-84)				20:00			20:33	24	07:24 (TRIV-72)	21:02	12	20:38 (TRIV-66)	21:16	24	20:50 (TRIV-66)
31	07:52		08:43 (TRIV-84)				07:25						06:10		20:24 (TRIV-66)			
	17:54	58	09:41 (TRIV-84)				20:01						21:03	15	20:39 (TRIV-66)			
Potential sun hours	298			297			370			399			448			452		
Total, worst case		1945			616			164			245			145			704	
Sun reduction		0.50			0.55			0.57			0.63			0.69			0.74	
Oper. time red.		1.00			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.		0.60			0.60			0.64			0.69			0.66			0.62	
Total reduction		0.30			0.33			0.36			0.43			0.45			0.46	
Total, real		578			202			60			106			66			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)

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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 285 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1302)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October			November			December		
1	06:10		20:27 (TRIV-66)	06:34			07:05	07:35			07:09		08:22 (TRIV-84)	07:44		08:16 (TRIV-84)
	21:16	23	20:50 (TRIV-66)	20:57			20:14	19:22			17:36	38	09:00 (TRIV-84)	17:12	64	09:20 (TRIV-84)
2	06:11		20:27 (TRIV-66)	06:35			07:06	07:36			07:10		08:21 (TRIV-84)	07:45		08:17 (TRIV-84)
	21:15	23	20:50 (TRIV-66)	20:56			20:13	19:21			17:34	41	09:02 (TRIV-84)	17:11	64	09:21 (TRIV-84)
3	06:11		20:28 (TRIV-66)	06:36			07:07	07:37			07:12		08:20 (TRIV-84)	07:46		08:18 (TRIV-84)
	21:15	22	20:50 (TRIV-66)	20:55			20:11	19:19			17:33	43	09:03 (TRIV-84)	17:11	63	09:21 (TRIV-84)
4	06:12		20:27 (TRIV-66)	06:37			07:08	07:38		08:08 (TRIV-73)	07:13		08:18 (TRIV-84)	07:47		08:18 (TRIV-84)
	21:15	23	20:50 (TRIV-66)	20:54			20:10	19:17	10	08:18 (TRIV-73)	17:32	47	09:05 (TRIV-84)	17:11	63	09:21 (TRIV-84)
5	06:12		20:28 (TRIV-66)	06:38			07:09	07:39		08:05 (TRIV-73)	07:14		08:18 (TRIV-84)	07:48		08:19 (TRIV-84)
	21:15	22	20:50 (TRIV-66)	20:53			20:08	19:16	15	08:20 (TRIV-73)	17:31	49	09:07 (TRIV-84)	17:11	63	09:22 (TRIV-84)
6	06:13		20:28 (TRIV-66)	06:39			07:10	07:40		08:03 (TRIV-73)	07:15		08:17 (TRIV-84)	07:49		08:19 (TRIV-84)
	21:15	21	20:49 (TRIV-66)	20:52			20:06	19:14	18	08:21 (TRIV-73)	17:30	50	09:07 (TRIV-84)	17:11	63	09:22 (TRIV-84)
7	06:13		20:29 (TRIV-66)	06:40		07:19 (TRIV-72)	07:11	07:41		08:02 (TRIV-73)	07:16		08:16 (TRIV-84)	07:50		08:20 (TRIV-84)
	21:14	20	20:49 (TRIV-66)	20:50	5	07:24 (TRIV-72)	20:05	19:12	20	08:22 (TRIV-73)	17:29	52	09:08 (TRIV-84)	17:10	62	09:22 (TRIV-84)
8	06:14		20:29 (TRIV-66)	06:41		07:15 (TRIV-72)	07:12	07:42		08:02 (TRIV-73)	07:18		08:15 (TRIV-84)	07:51		08:20 (TRIV-84)
	21:14	19	20:48 (TRIV-66)	20:49	12	07:27 (TRIV-72)	20:03	19:11	20	08:22 (TRIV-73)	17:28	54	09:09 (TRIV-84)	17:10	62	09:22 (TRIV-84)
9	06:15		20:30 (TRIV-66)	06:42		07:12 (TRIV-72)	07:13	07:43		08:03 (TRIV-73)	07:19		08:15 (TRIV-84)	07:52		08:20 (TRIV-84)
	21:14	18	20:48 (TRIV-66)	20:48	16	07:28 (TRIV-72)	20:01	19:09	20	08:23 (TRIV-73)	17:27	55	09:10 (TRIV-84)	17:10	62	09:22 (TRIV-84)
10	06:15		20:31 (TRIV-66)	06:43		07:11 (TRIV-72)	07:14	07:44		08:04 (TRIV-73)	07:20		08:14 (TRIV-84)	07:53		08:21 (TRIV-84)
	21:13	17	20:48 (TRIV-66)	20:47	19	07:30 (TRIV-72)	20:00	19:07	19	08:23 (TRIV-73)	17:26	57	09:11 (TRIV-84)	17:10	61	09:22 (TRIV-84)
11	06:16		20:31 (TRIV-66)	06:44		07:10 (TRIV-72)	07:15	07:45		08:05 (TRIV-73)	07:21		08:13 (TRIV-84)	07:54		08:22 (TRIV-84)
	21:13	16	20:47 (TRIV-66)	20:45	21	07:31 (TRIV-72)	19:56	19:06	17	08:22 (TRIV-73)	17:25	59	09:12 (TRIV-84)	17:11	61	09:23 (TRIV-84)
12	06:17		20:32 (TRIV-66)	06:45		07:09 (TRIV-72)	07:16	07:47		08:07 (TRIV-73)	07:22		08:14 (TRIV-84)	07:54		08:22 (TRIV-84)
	21:13	15	20:47 (TRIV-66)	20:44	22	07:31 (TRIV-72)	19:55	19:04	16	08:23 (TRIV-73)	17:24	59	09:13 (TRIV-84)	17:11	61	09:23 (TRIV-84)
13	06:17		20:34 (TRIV-66)	06:46		07:08 (TRIV-72)	07:17	07:48		08:08 (TRIV-73)	07:24		08:13 (TRIV-84)	07:55		08:23 (TRIV-84)
	21:12	13	20:47 (TRIV-66)	20:43	24	07:32 (TRIV-72)	19:53	19:03	14	08:22 (TRIV-73)	17:23	60	09:13 (TRIV-84)	17:11	61	09:24 (TRIV-84)
14	06:18		20:35 (TRIV-66)	06:47		07:08 (TRIV-72)	07:18	07:49		08:09 (TRIV-73)	07:25		08:13 (TRIV-84)	07:56		08:23 (TRIV-84)
	21:12	12	20:47 (TRIV-66)	20:41	24	07:32 (TRIV-72)	19:51	19:01	12	08:21 (TRIV-73)	17:22	61	09:14 (TRIV-84)	17:11	60	09:23 (TRIV-84)
15	06:19		20:35 (TRIV-66)	06:48		07:09 (TRIV-72)	07:19	07:50		08:10 (TRIV-73)	07:26		08:12 (TRIV-84)	07:57		08:24 (TRIV-84)
	21:11	10	20:45 (TRIV-66)	20:40	24	07:33 (TRIV-72)	19:49	19:00	10	08:20 (TRIV-73)	17:21	62	09:14 (TRIV-84)	17:11	60	09:24 (TRIV-84)
16	06:20		20:37 (TRIV-66)	06:49		07:10 (TRIV-72)	07:20	07:51		08:11 (TRIV-73)	07:27		08:13 (TRIV-84)	07:57		08:25 (TRIV-84)
	21:11	8	20:45 (TRIV-66)	20:39	23	07:33 (TRIV-72)	19:48	18:58	8	08:19 (TRIV-73)	17:20	62	09:15 (TRIV-84)	17:11	60	09:25 (TRIV-84)
17	06:21		20:39 (TRIV-66)	06:50		07:11 (TRIV-72)	07:21	07:52		08:12 (TRIV-73)	07:28		08:13 (TRIV-84)	07:58		08:24 (TRIV-84)
	21:10	6	20:45 (TRIV-66)	20:37	22	07:33 (TRIV-72)	19:46	18:57	5	08:17 (TRIV-73)	17:19	62	09:15 (TRIV-84)	17:12	61	09:25 (TRIV-84)
18	06:21		20:43 (TRIV-66)	06:51		07:12 (TRIV-72)	07:22	07:53		08:13 (TRIV-73)	07:29		08:12 (TRIV-84)	07:59		08:25 (TRIV-84)
	21:09	1	20:44 (TRIV-66)	20:36	21	07:33 (TRIV-72)	19:44	18:55	1	08:14 (TRIV-73)	17:18	64	09:16 (TRIV-84)	17:12	60	09:25 (TRIV-84)
19	06:22			06:52		07:13 (TRIV-72)	07:23	07:54			07:31		08:12 (TRIV-84)	07:59		08:26 (TRIV-84)
	21:09			20:34	19	07:32 (TRIV-72)	19:43	18:53			17:18	64	09:16 (TRIV-84)	17:13	60	09:26 (TRIV-84)
20	06:23			06:53		07:14 (TRIV-72)	07:24	07:55			07:32		08:13 (TRIV-84)	08:00		08:26 (TRIV-84)
	21:08			20:33	18	07:32 (TRIV-72)	19:41	18:52			17:17	64	09:17 (TRIV-84)	17:13	60	09:26 (TRIV-84)
21	06:24			06:54		07:15 (TRIV-72)	07:25	07:56			07:33		08:13 (TRIV-84)	08:00		08:27 (TRIV-84)
	21:07			20:32	16	07:31 (TRIV-72)	19:39	18:51			17:16	64	09:17 (TRIV-84)	17:13	60	09:27 (TRIV-84)
22	06:25			06:55		07:16 (TRIV-72)	07:26	07:58			07:34		08:13 (TRIV-84)	08:01		08:27 (TRIV-84)
	21:06			20:30	14	07:30 (TRIV-72)	19:38	18:49			17:16	64	09:17 (TRIV-84)	17:14	60	09:27 (TRIV-84)
23	06:26			06:56		07:17 (TRIV-72)	07:27	07:59			07:35		08:13 (TRIV-84)	08:01		08:28 (TRIV-84)
	21:06			20:29	12	07:29 (TRIV-72)	19:36	18:48			17:15	64	09:17 (TRIV-84)	17:14	60	09:28 (TRIV-84)
24	06:27			06:57		07:18 (TRIV-72)	07:28	08:00			07:36		08:13 (TRIV-84)	08:02		08:28 (TRIV-84)
	21:05			20:27	10	07:28 (TRIV-72)	19:34	18:46			17:14	65	09:18 (TRIV-84)	17:15	60	09:28 (TRIV-84)
25	06:28			06:58		07:19 (TRIV-72)	07:29	08:01			07:38		08:14 (TRIV-84)	08:02		08:28 (TRIV-84)
	21:04			20:26	7	07:26 (TRIV-72)	19:32	18:45			17:14	65	09:19 (TRIV-84)	17:16	60	09:28 (TRIV-84)
26	06:28			06:59		07:20 (TRIV-72)	07:30	08:02			07:39		08:14 (TRIV-84)	08:03		08:29 (TRIV-84)
	21:03			20:24	4	07:24 (TRIV-72)	19:31	18:43			17:13	65	09:19 (TRIV-84)	17:16	60	09:29 (TRIV-84)
27	06:29			07:00			07:31	08:03			07:40		08:15 (TRIV-84)	08:03		08:30 (TRIV-84)
	21:02			20:22			19:29	18:42			17:13	64	09:19 (TRIV-84)	17:17	60	09:30 (TRIV-84)
28	06:30			07:01			07:32	08:05		09:34 (TRIV-84)	07:41		08:15 (TRIV-84)	08:03		08:30 (TRIV-84)
	21:01			20:21			19:27	18:41	14	09:48 (TRIV-84)	17:13	64	09:19 (TRIV-84)	17:18	60	09:30 (TRIV-84)
29	06:31			07:02			07:33	08:06		09:30 (TRIV-84)	07:42		08:15 (TRIV-84)	08:04		08:30 (TRIV-84)
	21:00			20:19			19:26	18:39	23	09:53 (TRIV-84)	17:12	64	09:19 (TRIV-84)	17:18	60	09:30 (TRIV-84)
30	06:32			07:03			07:34	08:07		09:27 (TRIV-84)	07:43		08:15 (TRIV-84)	08:04		08:31 (TRIV-84)
	20:59			20:18			19:24	18:38	29	09:56 (TRIV-84)	17:12	64	09:19 (TRIV-84)	17:19	61	09:32 (TRIV-84)
31	06:33			07:04				08:08		09:24 (TRIV-84)				08:04		08:31 (TRIV-84)
	20:58			20:16				18:37	34	09:58 (TRIV-84)				17:20	61	09:32 (TRIV-84)
Potential sun hours	459			428			375	345			298			288		
Total, worst case		289			333				305			1746			1893	
Sun reduction		0.76			0.75				0.60			0.40			0.36	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.62			0.69				0.63			0.60			0.60	
Total reduction		0.47			0.51				0.37			0.24			0.21	
Total, real		135			171				114			415			405	

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 286 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1303)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April			May			June		
1	08:04			07:51		08:11 (TRIV-74)	07:14	07:24			06:38		07:08 (TRIV-73)	06:09		07:23 (TRIV-73)
	17:21			17:55	10	08:21 (TRIV-74)	18:29	20:02			20:34	139	19:58 (TRIV-84)	21:04	80	19:46 (TRIV-84)
2	08:04			07:50		08:10 (TRIV-74)	07:13	07:22			06:37		07:07 (TRIV-73)	06:09		07:24 (TRIV-73)
	17:22			17:56	13	08:23 (TRIV-74)	18:30	20:03			20:35	139	19:57 (TRIV-84)	21:05	77	19:45 (TRIV-84)
3	08:04			07:49		08:09 (TRIV-74)	07:11	07:20			06:35		07:07 (TRIV-73)	06:08		07:25 (TRIV-73)
	17:23			17:58	15	08:24 (TRIV-74)	18:32	20:04			20:36	138	19:57 (TRIV-84)	21:05	73	19:45 (TRIV-84)
4	08:04			07:48		08:08 (TRIV-74)	07:10	07:19			06:34		07:07 (TRIV-73)	06:08		07:27 (TRIV-73)
	17:23			17:59	17	08:25 (TRIV-74)	18:33	20:05			20:37	138	19:57 (TRIV-84)	21:06	70	19:45 (TRIV-84)
5	08:04			07:46		08:07 (TRIV-74)	07:08	07:17		19:21 (TRIV-84)	06:33		07:07 (TRIV-73)	06:08		07:27 (TRIV-73)
	17:24			18:00	20	08:27 (TRIV-74)	18:34	20:07	10	19:31 (TRIV-84)	20:38	138	19:57 (TRIV-84)	21:07	67	19:44 (TRIV-84)
6	08:04			07:45		08:06 (TRIV-74)	07:07	07:15		19:13 (TRIV-84)	06:32		07:07 (TRIV-73)	06:07		07:29 (TRIV-73)
	17:25			18:01	22	08:28 (TRIV-74)	18:35	20:08	24	19:37 (TRIV-84)	20:39	138	19:57 (TRIV-84)	21:07	62	19:43 (TRIV-84)
7	08:04			07:44		08:04 (TRIV-74)	07:05	07:14		19:10 (TRIV-84)	06:30		07:06 (TRIV-73)	06:07		07:30 (TRIV-73)
	17:26			18:03	24	08:28 (TRIV-74)	18:36	20:09	31	19:41 (TRIV-84)	20:40	137	19:56 (TRIV-84)	21:08	59	19:43 (TRIV-84)
8	08:04			07:43		08:03 (TRIV-74)	08:03	07:12		19:06 (TRIV-84)	06:29		07:07 (TRIV-73)	06:07		07:32 (TRIV-73)
	17:27			18:04	25	08:28 (TRIV-74)	19:37	20:10	37	19:43 (TRIV-84)	20:41	136	19:56 (TRIV-84)	21:09	55	19:43 (TRIV-84)
9	08:04			07:42		08:02 (TRIV-74)	08:02	07:11		07:37 (TRIV-73)	06:28		07:07 (TRIV-73)	06:07		07:34 (TRIV-73)
	17:28			18:05	27	08:29 (TRIV-74)	19:38	20:11	56	19:45 (TRIV-84)	20:43	135	19:56 (TRIV-84)	21:09	51	19:43 (TRIV-84)
10	08:04			07:41		08:01 (TRIV-74)	08:00	07:09		07:33 (TRIV-73)	06:27		07:07 (TRIV-73)	06:06		07:35 (TRIV-73)
	17:29			18:06	29	08:30 (TRIV-74)	19:40	20:12	71	19:48 (TRIV-84)	20:44	134	19:56 (TRIV-84)	21:10	47	19:42 (TRIV-84)
11	08:04			07:40		08:00 (TRIV-74)	07:59	07:07		07:29 (TRIV-73)	06:26		07:08 (TRIV-73)	06:06		07:38 (TRIV-73)
	17:30			18:08	30	08:30 (TRIV-74)	19:41	20:13	80	19:49 (TRIV-84)	20:45	132	19:55 (TRIV-84)	21:11	40	19:41 (TRIV-84)
12	08:03			07:38		07:58 (TRIV-74)	07:57	07:06		07:27 (TRIV-73)	06:25		07:08 (TRIV-73)	06:06		19:07 (TRIV-84)
	17:31			18:09	31	08:29 (TRIV-74)	19:42	20:14	89	19:51 (TRIV-84)	20:46	130	19:55 (TRIV-84)	21:11	34	19:41 (TRIV-84)
13	08:03			07:37		07:57 (TRIV-74)	07:55	07:04		07:24 (TRIV-73)	06:24		07:08 (TRIV-73)	06:06		19:07 (TRIV-84)
	17:32			18:10	33	08:30 (TRIV-74)	19:43	20:15	95	19:51 (TRIV-84)	20:47	130	19:55 (TRIV-84)	21:12	34	19:41 (TRIV-84)
14	08:03			07:36		07:57 (TRIV-74)	07:54	07:03		07:22 (TRIV-73)	06:23		07:09 (TRIV-73)	06:06		19:08 (TRIV-84)
	17:34			18:11	33	08:30 (TRIV-74)	19:44	20:16	102	19:53 (TRIV-84)	20:48	127	19:54 (TRIV-84)	21:12	33	19:41 (TRIV-84)
15	08:02			07:35		07:56 (TRIV-74)	07:52	07:01		07:20 (TRIV-73)	06:22		07:09 (TRIV-73)	06:06		19:08 (TRIV-84)
	17:35			18:13	33	08:29 (TRIV-74)	19:45	20:17	107	19:53 (TRIV-84)	20:49	125	19:54 (TRIV-84)	21:12	33	19:41 (TRIV-84)
16	08:02			07:33		07:57 (TRIV-74)	07:50	06:59		07:19 (TRIV-73)	06:21		07:10 (TRIV-73)	06:06		19:09 (TRIV-84)
	17:36			18:14	32	08:29 (TRIV-74)	19:46	20:18	112	19:55 (TRIV-84)	20:50	123	19:53 (TRIV-84)	21:13	31	19:40 (TRIV-84)
17	08:02			07:32		07:58 (TRIV-74)	07:49	06:58		07:17 (TRIV-73)	06:20		07:10 (TRIV-73)	06:06		19:09 (TRIV-84)
	17:37			18:15	30	08:28 (TRIV-74)	19:47	20:19	116	19:55 (TRIV-84)	20:51	121	19:53 (TRIV-84)	21:13	31	19:40 (TRIV-84)
18	08:01			07:31		07:58 (TRIV-74)	07:47	06:56		07:16 (TRIV-73)	06:19		07:11 (TRIV-73)	06:06		19:10 (TRIV-84)
	17:38			18:16	29	08:27 (TRIV-74)	19:48	20:20	121	19:56 (TRIV-84)	20:52	119	19:53 (TRIV-84)	21:14	30	19:40 (TRIV-84)
19	08:00			07:29		07:59 (TRIV-74)	07:45	06:55		07:14 (TRIV-73)	06:18		07:12 (TRIV-73)	06:06		19:11 (TRIV-84)
	17:39			18:17	27	08:26 (TRIV-74)	19:49	20:21	124	19:56 (TRIV-84)	20:53	116	19:52 (TRIV-84)	21:14	30	19:41 (TRIV-84)
20	08:00			07:28		08:00 (TRIV-74)	07:44	06:53		07:14 (TRIV-73)	06:17		07:12 (TRIV-73)	06:06		19:11 (TRIV-84)
	17:40			18:19	25	08:25 (TRIV-74)	19:50	20:22	126	19:57 (TRIV-84)	20:53	115	19:52 (TRIV-84)	21:14	30	19:41 (TRIV-84)
21	07:59			07:26		08:02 (TRIV-74)	07:42	06:52		07:12 (TRIV-73)	06:16		07:13 (TRIV-73)	06:07		19:11 (TRIV-84)
	17:42			18:20	21	08:23 (TRIV-74)	19:52	20:24	130	19:57 (TRIV-84)	20:54	112	19:51 (TRIV-84)	21:15	30	19:41 (TRIV-84)
22	07:59			07:25		08:03 (TRIV-74)	07:40	06:50		07:12 (TRIV-73)	06:16		07:13 (TRIV-73)	06:07		19:11 (TRIV-84)
	17:43			18:21	18	08:21 (TRIV-74)	19:53	20:25	131	19:57 (TRIV-84)	20:55	109	19:50 (TRIV-84)	21:15	30	19:41 (TRIV-84)
23	07:58			07:23		08:06 (TRIV-74)	07:39	06:49		07:10 (TRIV-73)	06:15		07:15 (TRIV-73)	06:07		19:11 (TRIV-84)
	17:44			18:22	12	08:18 (TRIV-74)	19:54	20:26	133	19:57 (TRIV-84)	20:56	107	19:51 (TRIV-84)	21:15	30	19:41 (TRIV-84)
24	07:57			07:22			07:37	06:48		07:10 (TRIV-73)	06:14		07:15 (TRIV-73)	06:07		19:12 (TRIV-84)
	17:45			18:23			19:55	20:27	135	19:58 (TRIV-84)	20:57	104	19:50 (TRIV-84)	21:15	30	19:42 (TRIV-84)
25	07:57			07:21			07:35	06:46		07:09 (TRIV-73)	06:13		07:16 (TRIV-73)	06:08		19:12 (TRIV-84)
	17:47			18:25			19:56	20:28	135	19:57 (TRIV-84)	20:58	101	19:49 (TRIV-84)	21:15	30	19:42 (TRIV-84)
26	07:56			07:19			07:34	06:45		07:09 (TRIV-73)	06:13		07:17 (TRIV-73)	06:08		19:11 (TRIV-84)
	17:48			18:26			19:57	20:29	137	19:58 (TRIV-84)	20:59	99	19:49 (TRIV-84)	21:15	31	19:42 (TRIV-84)
27	07:55			07:18			07:32	06:43		07:09 (TRIV-73)	06:12		07:18 (TRIV-73)	06:08		19:12 (TRIV-84)
	17:49			18:27			19:58	20:30	137	19:58 (TRIV-84)	21:00	95	19:48 (TRIV-84)	21:15	32	19:44 (TRIV-84)
28	07:54			07:16			07:30	06:42		07:07 (TRIV-73)	06:11		07:19 (TRIV-73)	06:09		19:11 (TRIV-84)
	17:50			18:28			19:59	20:31	139	19:57 (TRIV-84)	21:01	92	19:48 (TRIV-84)	21:16	33	19:44 (TRIV-84)
29	07:53						07:29	06:41		07:07 (TRIV-73)	06:11		07:20 (TRIV-73)	06:09		19:12 (TRIV-84)
	17:51						20:00	20:32	140	19:58 (TRIV-84)	21:01	89	19:47 (TRIV-84)	21:16	33	19:45 (TRIV-84)
30	07:52		08:13 (TRIV-74)				07:27	06:39		07:07 (TRIV-73)	06:10		07:21 (TRIV-73)	06:10		19:11 (TRIV-84)
	17:53	1	08:14 (TRIV-74)				20:00	20:33	140	19:58 (TRIV-84)	21:02	86	19:47 (TRIV-84)	21:16	34	19:45 (TRIV-84)
31	07:52		08:12 (TRIV-74)				07:25				06:10		07:22 (TRIV-73)			
	17:54	6	08:18 (TRIV-74)				20:01				21:03	82	19:46 (TRIV-84)			
Potential sun hours	298			297			370	399			448			452		
Total, worst case		7			556				2658			3686			1280	
Sun reduction		0.50			0.55				0.63			0.69			0.74	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.63			0.63				0.67			0.67			0.66	
Total reduction		0.32			0.35				0.42			0.46			0.49	
Total, real		2			194				1117			1698			625	

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 286 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1303)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October		November		December
1	06:10	19:10 (TRIV-84)	06:34	07:18 (TRIV-73)	07:05	07:28 (TRIV-73)	07:35		07:09	07:30 (TRIV-74)	07:44
	21:15	35 19:45 (TRIV-84)	20:57	132 20:06 (TRIV-84)	20:14	80 19:48 (TRIV-84)	19:22		17:36	28 07:58 (TRIV-74)	17:11
2	06:10	07:41 (TRIV-73)	06:35	07:18 (TRIV-73)	07:06	07:31 (TRIV-73)	07:36		07:10	07:32 (TRIV-74)	07:45
	21:15	45 19:47 (TRIV-84)	20:56	132 20:06 (TRIV-84)	20:13	70 19:46 (TRIV-84)	19:21		17:34	27 07:59 (TRIV-74)	17:11
3	06:11	07:39 (TRIV-73)	06:36	07:18 (TRIV-73)	07:07	07:35 (TRIV-73)	07:37		07:12	07:33 (TRIV-74)	07:46
	21:15	50 19:47 (TRIV-84)	20:55	134 20:06 (TRIV-84)	20:11	56 19:43 (TRIV-84)	19:19		17:33	25 07:58 (TRIV-74)	17:11
4	06:12	07:38 (TRIV-73)	06:37	07:18 (TRIV-73)	07:08	19:03 (TRIV-84)	07:38		07:13	07:34 (TRIV-74)	07:47
	21:15	54 19:48 (TRIV-84)	20:54	135 20:07 (TRIV-84)	20:10	38 19:41 (TRIV-84)	19:17		17:32	23 07:57 (TRIV-74)	17:11
5	06:12	07:37 (TRIV-73)	06:38	07:17 (TRIV-73)	07:09	19:06 (TRIV-84)	07:39		07:14	07:36 (TRIV-74)	07:48
	21:15	58 19:49 (TRIV-84)	20:53	136 20:07 (TRIV-84)	20:08	31 19:37 (TRIV-84)	19:16		17:31	21 07:57 (TRIV-74)	17:11
6	06:13	07:35 (TRIV-73)	06:39	07:17 (TRIV-73)	07:10	19:09 (TRIV-84)	07:40		07:15	07:37 (TRIV-74)	07:49
	21:15	62 19:49 (TRIV-84)	20:52	138 20:07 (TRIV-84)	20:06	24 19:33 (TRIV-84)	19:14		17:30	19 07:56 (TRIV-74)	17:11
7	06:13	07:35 (TRIV-73)	06:40	07:17 (TRIV-73)	07:11	19:15 (TRIV-84)	07:41		07:16	07:38 (TRIV-74)	07:50
	21:14	65 19:50 (TRIV-84)	20:50	138 20:07 (TRIV-84)	20:05	12 19:27 (TRIV-84)	19:12		17:29	17 07:55 (TRIV-74)	17:10
8	06:14	07:33 (TRIV-73)	06:41	07:16 (TRIV-73)	07:12		07:42		07:18	07:39 (TRIV-74)	07:51
	21:14	69 19:51 (TRIV-84)	20:49	138 20:06 (TRIV-84)	20:03		19:11		17:28	15 07:54 (TRIV-74)	17:10
9	06:15	07:33 (TRIV-73)	06:42	07:15 (TRIV-73)	07:13		07:43		07:19	07:41 (TRIV-74)	07:52
	21:14	72 19:52 (TRIV-84)	20:48	140 20:06 (TRIV-84)	20:01		19:09		17:27	12 07:53 (TRIV-74)	17:10
10	06:15	07:32 (TRIV-73)	06:43	07:15 (TRIV-73)	07:14		07:44		07:20	07:42 (TRIV-74)	07:53
	21:13	75 19:53 (TRIV-84)	20:47	140 20:06 (TRIV-84)	20:00		19:07		17:25	9 07:51 (TRIV-74)	17:10
11	06:16	07:31 (TRIV-73)	06:44	07:15 (TRIV-73)	07:15		07:45		07:21	07:43 (TRIV-74)	07:53
	21:13	78 19:53 (TRIV-84)	20:45	140 20:06 (TRIV-84)	19:56		19:06		17:24	6 07:49 (TRIV-74)	17:11
12	06:17	07:30 (TRIV-73)	06:45	07:15 (TRIV-73)	07:16		07:47		07:22		07:54
	21:13	81 19:54 (TRIV-84)	20:44	140 20:06 (TRIV-84)	19:55		19:04		17:24		17:11
13	06:17	07:30 (TRIV-73)	06:46	07:15 (TRIV-73)	07:17		07:48		07:24		07:55
	21:12	85 19:55 (TRIV-84)	20:43	140 20:06 (TRIV-84)	19:53		19:03		17:23		17:11
14	06:18	07:29 (TRIV-73)	06:47	07:15 (TRIV-73)	07:18		07:49		07:25		07:56
	21:12	88 19:56 (TRIV-84)	20:41	139 20:05 (TRIV-84)	19:51		19:01		17:22		17:11
15	06:19	07:28 (TRIV-73)	06:48	07:15 (TRIV-73)	07:19		07:50		07:26		07:57
	21:11	90 19:56 (TRIV-84)	20:40	138 20:05 (TRIV-84)	19:49		19:00		17:21		17:11
16	06:20	07:27 (TRIV-73)	06:49	07:15 (TRIV-73)	07:20		07:51		07:27		07:57
	21:10	94 19:57 (TRIV-84)	20:39	139 20:05 (TRIV-84)	19:48		18:58		17:20		17:11
17	06:21	07:27 (TRIV-73)	06:50	07:16 (TRIV-73)	07:21		07:52		07:28		07:58
	21:10	97 19:58 (TRIV-84)	20:37	137 20:04 (TRIV-84)	19:46		18:56		17:19		17:12
18	06:21	07:26 (TRIV-73)	06:51	07:16 (TRIV-73)	07:22		07:53	08:40 (TRIV-74)	07:29		07:59
	21:09	100 19:59 (TRIV-84)	20:36	135 20:04 (TRIV-84)	19:44		18:55	6 08:46 (TRIV-74)	17:18		17:12
19	06:22	07:25 (TRIV-73)	06:52	07:16 (TRIV-73)	07:23		07:54	08:36 (TRIV-74)	07:31		07:59
	21:09	103 19:59 (TRIV-84)	20:34	134 20:03 (TRIV-84)	19:43		18:53	15 08:51 (TRIV-74)	17:18		17:12
20	06:23	07:24 (TRIV-73)	06:53	07:16 (TRIV-73)	07:24		07:55	08:34 (TRIV-74)	07:32		08:00
	21:08	106 20:00 (TRIV-84)	20:33	133 20:03 (TRIV-84)	19:41		18:52	19 08:53 (TRIV-74)	17:17		17:13
21	06:24	07:24 (TRIV-73)	06:54	07:17 (TRIV-73)	07:25		07:56	08:32 (TRIV-74)	07:33		08:00
	21:07	107 20:00 (TRIV-84)	20:31	130 20:02 (TRIV-84)	19:39		18:51	23 08:55 (TRIV-74)	17:16		17:13
22	06:25	07:23 (TRIV-73)	06:55	07:17 (TRIV-73)	07:26		07:58	08:30 (TRIV-74)	07:34		08:01
	21:06	111 20:01 (TRIV-84)	20:30	128 20:01 (TRIV-84)	19:37		18:49	26 08:56 (TRIV-74)	17:16		17:14
23	06:26	07:23 (TRIV-73)	06:56	07:18 (TRIV-73)	07:27		07:59	08:28 (TRIV-74)	07:35		08:01
	21:06	113 20:02 (TRIV-84)	20:28	125 20:01 (TRIV-84)	19:36		18:48	28 08:56 (TRIV-74)	17:15		17:14
24	06:27	07:23 (TRIV-73)	06:57	07:18 (TRIV-73)	07:28		08:00	08:28 (TRIV-74)	07:36		08:02
	21:05	116 20:03 (TRIV-84)	20:27	123 20:00 (TRIV-84)	19:34		18:46	30 08:58 (TRIV-74)	17:14		17:15
25	06:27	07:22 (TRIV-73)	06:58	07:19 (TRIV-73)	07:29		08:01	08:27 (TRIV-74)	07:38		08:02
	21:04	117 20:03 (TRIV-84)	20:25	120 19:59 (TRIV-84)	19:32		18:45	31 08:58 (TRIV-74)	17:14		17:16
26	06:28	07:21 (TRIV-73)	06:59	07:20 (TRIV-73)	07:30		08:02	08:26 (TRIV-74)	07:39		08:03
	21:03	119 20:03 (TRIV-84)	20:24	116 19:58 (TRIV-84)	19:31		18:43	32 08:58 (TRIV-74)	17:13		17:16
27	06:29	07:20 (TRIV-73)	07:00	07:21 (TRIV-73)	07:31		08:03	08:26 (TRIV-74)	07:40		08:03
	21:02	122 20:03 (TRIV-84)	20:22	111 19:56 (TRIV-84)	19:29		18:42	33 08:59 (TRIV-74)	17:13		17:17
28	06:30	07:20 (TRIV-73)	07:01	07:22 (TRIV-73)	07:32		08:04	08:25 (TRIV-74)	07:41		08:03
	21:01	124 20:04 (TRIV-84)	20:21	107 19:55 (TRIV-84)	19:27		18:41	34 08:59 (TRIV-74)	17:13		17:17
29	06:31	07:20 (TRIV-73)	07:02	07:23 (TRIV-73)	07:33		08:06	08:27 (TRIV-74)	07:42		08:04
	21:00	126 20:05 (TRIV-84)	20:19	102 19:54 (TRIV-84)	19:26		18:39	32 08:59 (TRIV-74)	17:12		17:18
30	06:32	07:19 (TRIV-73)	07:03	07:25 (TRIV-73)	07:34		08:07	08:28 (TRIV-74)	07:43		08:04
	20:59	128 20:05 (TRIV-84)	20:18	95 19:52 (TRIV-84)	19:24		18:38	31 08:59 (TRIV-74)	17:12		17:19
31	06:33	07:19 (TRIV-73)	07:04	07:26 (TRIV-73)			08:08	08:29 (TRIV-74)			08:04
	20:58	129 20:05 (TRIV-84)	20:16	88 19:49 (TRIV-84)			18:37	30 08:59 (TRIV-74)			17:20
Potential sun hours	459		428		375		345		298		288
Total, worst case		2819		3983		311		370		202	
Sun reduction		0.76		0.75		0.67		0.60		0.40	
Oper. time red.		1.00		1.00		1.00		1.00		1.00	
Wind dir. red.		0.67		0.67		0.66		0.63		0.63	
Total reduction		0.51		0.50		0.44		0.38		0.25	
Total, real		1428		1995		138		140		51	

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 287 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1304)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February			March			April			May			June		
1	08:04		07:51			07:14		07:56 (TRIV-74)	07:24			06:38		06:58 (TRIV-73)	06:09		06:52 (TRIV-73)
	17:21		17:55			18:29	14	08:10 (TRIV-74)	20:02			20:34	111	20:10 (TRIV-84)	21:04	135	20:18 (TRIV-84)
2	08:04		07:50			07:13		08:00 (TRIV-74)	07:22			06:37		06:56 (TRIV-73)	06:09		06:51 (TRIV-73)
	17:22		17:56			18:30	4	08:04 (TRIV-74)	20:03			20:35	115	20:10 (TRIV-84)	21:05	135	20:17 (TRIV-84)
3	08:04		07:49			07:11			07:20			06:35		06:55 (TRIV-73)	06:08		06:52 (TRIV-73)
	17:23		17:58			18:32			20:04			20:36	119	20:11 (TRIV-84)	21:05	134	20:18 (TRIV-84)
4	08:04		07:48			07:10			07:19			06:34		06:54 (TRIV-73)	06:08		06:53 (TRIV-73)
	17:23		17:59			18:33			20:05			20:37	122	20:12 (TRIV-84)	21:06	133	20:18 (TRIV-84)
5	08:04		07:46			07:08			07:17			06:33		06:54 (TRIV-73)	06:08		06:52 (TRIV-73)
	17:24		18:00			18:34			20:07			20:38	124	20:13 (TRIV-84)	21:07	133	20:17 (TRIV-84)
6	08:04		07:45			07:07			07:15			06:32		06:53 (TRIV-73)	06:07		06:53 (TRIV-73)
	17:25		18:01			18:35			20:08			20:39	127	20:14 (TRIV-84)	21:07	133	20:18 (TRIV-84)
7	08:04		07:44		08:04 (TRIV-74)	07:05			07:14			06:30		06:52 (TRIV-73)	06:07		06:54 (TRIV-73)
	17:26		18:03	5	08:09 (TRIV-74)	18:36			20:09			20:40	129	20:13 (TRIV-84)	21:08	131	20:18 (TRIV-84)
8	08:04		07:43		08:03 (TRIV-74)	08:03			07:12			06:29		06:51 (TRIV-73)	06:07		06:54 (TRIV-73)
	17:27		18:04	10	08:13 (TRIV-74)	19:37			20:10			20:41	131	20:14 (TRIV-84)	21:09	130	20:18 (TRIV-84)
9	08:04		07:42		08:02 (TRIV-74)	08:02			07:11			06:28		06:51 (TRIV-73)	06:07		06:55 (TRIV-73)
	17:28		18:05	13	08:15 (TRIV-74)	19:38			20:11			20:43	132	20:14 (TRIV-84)	21:09	130	20:19 (TRIV-84)
10	08:04		07:41		08:01 (TRIV-74)	08:00			07:09			06:27		06:50 (TRIV-73)	06:06		06:54 (TRIV-73)
	17:29		18:06	16	08:17 (TRIV-74)	19:40			20:12			20:44	135	20:15 (TRIV-84)	21:10	131	20:18 (TRIV-84)
11	08:04		07:40		08:00 (TRIV-74)	07:59			07:07			06:26		06:50 (TRIV-73)	06:06		06:55 (TRIV-73)
	17:30		18:08	18	08:18 (TRIV-74)	19:41			20:13			20:45	135	20:15 (TRIV-84)	21:11	129	20:18 (TRIV-84)
12	08:03		07:38		07:58 (TRIV-74)	07:57			07:06			06:25		06:50 (TRIV-73)	06:06		06:55 (TRIV-73)
	17:31		18:09	20	08:18 (TRIV-74)	19:42			20:14			20:46	136	20:15 (TRIV-84)	21:11	129	20:18 (TRIV-84)
13	08:03		07:37		07:57 (TRIV-74)	07:55			07:04			06:24		06:50 (TRIV-73)	06:06		06:55 (TRIV-73)
	17:32		18:10	23	08:20 (TRIV-74)	19:43			20:15			20:47	136	20:15 (TRIV-84)	21:12	128	20:18 (TRIV-84)
14	08:03		07:36		07:56 (TRIV-74)	07:54			07:03			06:23		06:49 (TRIV-73)	06:06		06:56 (TRIV-73)
	17:34		18:11	25	08:21 (TRIV-74)	19:44			20:16			20:48	138	20:16 (TRIV-84)	21:12	128	20:19 (TRIV-84)
15	08:02		07:35		07:54 (TRIV-74)	07:52			07:01			06:22		06:49 (TRIV-73)	06:06		06:56 (TRIV-73)
	17:35		18:13	26	08:20 (TRIV-74)	19:45			20:17			20:49	138	20:16 (TRIV-84)	21:12	128	20:19 (TRIV-84)
16	08:02		07:33		07:53 (TRIV-74)	07:50			06:59			06:21		06:49 (TRIV-73)	06:06		06:56 (TRIV-73)
	17:36		18:14	28	08:21 (TRIV-74)	19:46			20:18			20:50	139	20:16 (TRIV-84)	21:13	128	20:19 (TRIV-84)
17	08:02		07:32		07:52 (TRIV-74)	07:49			06:58			06:20		06:49 (TRIV-73)	06:06		06:57 (TRIV-73)
	17:37		18:15	30	08:22 (TRIV-74)	19:47			20:19			20:51	139	20:16 (TRIV-84)	21:13	126	20:19 (TRIV-84)
18	08:01		07:31		07:50 (TRIV-74)	07:47			06:56			06:19		06:49 (TRIV-73)	06:06		06:57 (TRIV-73)
	17:38		18:16	31	08:21 (TRIV-74)	19:48			20:20			20:52	140	20:17 (TRIV-84)	21:14	126	20:19 (TRIV-84)
19	08:00		07:29		07:49 (TRIV-74)	07:45			06:55			06:18		06:49 (TRIV-73)	06:06		06:58 (TRIV-73)
	17:39		18:17	33	08:22 (TRIV-74)	19:49			20:21			20:53	140	20:17 (TRIV-84)	21:14	126	20:20 (TRIV-84)
20	08:00		07:28		07:47 (TRIV-74)	07:44			06:53		19:37 (TRIV-84)	06:17		06:49 (TRIV-73)	06:06		06:58 (TRIV-73)
	17:40		18:19	34	08:21 (TRIV-74)	19:50			20:22	10	19:47 (TRIV-84)	20:53	140	20:17 (TRIV-84)	21:14	126	20:20 (TRIV-84)
21	07:59		07:26		07:48 (TRIV-74)	07:42			06:52		19:30 (TRIV-84)	06:16		06:49 (TRIV-73)	06:07		06:58 (TRIV-73)
	17:42		18:20	33	08:21 (TRIV-74)	19:52			20:24	23	19:53 (TRIV-84)	20:54	140	20:17 (TRIV-84)	21:15	126	20:20 (TRIV-84)
22	07:59		07:25		07:47 (TRIV-74)	07:40			06:50		07:18 (TRIV-73)	06:16		06:50 (TRIV-73)	06:07		06:58 (TRIV-73)
	17:43		18:21	33	08:20 (TRIV-74)	19:53			20:25	44	19:57 (TRIV-84)	20:55	140	20:18 (TRIV-84)	21:15	126	20:20 (TRIV-84)
23	07:58		07:23		07:48 (TRIV-74)	07:39			06:49		07:13 (TRIV-73)	06:15		06:50 (TRIV-73)	06:07		06:58 (TRIV-73)
	17:44		18:22	32	08:20 (TRIV-74)	19:54			20:26	58	19:59 (TRIV-84)	20:56	139	20:17 (TRIV-84)	21:15	126	20:20 (TRIV-84)
24	07:57		07:22		07:49 (TRIV-74)	07:37			06:48		07:10 (TRIV-73)	06:14		06:49 (TRIV-73)	06:07		06:59 (TRIV-73)
	17:45		18:23	30	08:19 (TRIV-74)	19:55			20:27	68	20:01 (TRIV-84)	20:57	140	20:17 (TRIV-84)	21:15	126	20:21 (TRIV-84)
25	07:57		07:21		07:49 (TRIV-74)	07:35			06:46		07:06 (TRIV-73)	06:13		06:49 (TRIV-73)	06:08		06:59 (TRIV-73)
	17:47		18:25	29	08:18 (TRIV-74)	19:56			20:28	78	20:02 (TRIV-84)	20:58	139	20:17 (TRIV-84)	21:15	126	20:21 (TRIV-84)
26	07:56		07:19		07:51 (TRIV-74)	07:34			06:45		07:05 (TRIV-73)	06:13		06:50 (TRIV-73)	06:08		06:58 (TRIV-73)
	17:48		18:26	26	08:17 (TRIV-74)	19:57			20:29	85	20:04 (TRIV-84)	20:59	138	20:17 (TRIV-84)	21:15	127	20:21 (TRIV-84)
27	07:55		07:18		07:52 (TRIV-74)	07:32			06:43		07:03 (TRIV-73)	06:12		06:50 (TRIV-73)	06:08		06:59 (TRIV-73)
	17:49		18:27	23	08:15 (TRIV-74)	19:58			20:30	92	20:06 (TRIV-84)	21:00	138	20:17 (TRIV-84)	21:15	128	20:22 (TRIV-84)
28	07:54		07:16		07:53 (TRIV-74)	07:30			06:42		07:01 (TRIV-73)	06:11		06:51 (TRIV-73)	06:09		06:59 (TRIV-73)
	17:50		18:28	20	08:13 (TRIV-74)	19:59			20:31	97	20:06 (TRIV-84)	21:01	138	20:18 (TRIV-84)	21:16	128	20:22 (TRIV-84)
29	07:53					07:29			06:41		07:00 (TRIV-73)	06:11		06:50 (TRIV-73)	06:09		07:00 (TRIV-73)
	17:51					20:00			20:32	102	20:08 (TRIV-84)	21:01	137	20:17 (TRIV-84)	21:16	128	20:23 (TRIV-84)
30	07:52					07:27			06:39		06:59 (TRIV-73)	06:10		06:51 (TRIV-73)	06:10		06:59 (TRIV-73)
	17:53					20:00			20:33	107	20:09 (TRIV-84)	21:02	137	20:18 (TRIV-84)	21:16	129	20:22 (TRIV-84)
31	07:52					07:25						06:10		06:51 (TRIV-73)			
	17:54					20:01						21:03	135	20:17 (TRIV-84)			
Potential sun hours	298		297			370			399			448			452		
Total, worst case				538			18			764			4147			3869	
Sun reduction				0.55			0.57			0.63			0.69			0.74	
Oper. time red.				1.00			1.00			1.00			1.00			1.00	
Wind dir. red.				0.64			0.64			0.66			0.67			0.67	
Total reduction				0.35			0.36			0.42			0.46			0.49	
Total, real				189			7			319			1907			1906	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 287 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1304)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October			November			December
1	06:10		06:59 (TRIV-73)	06:34		07:01 (TRIV-73)	07:05	07:35			07:09		07:30 (TRIV-74)	07:44
	21:15	129	20:22 (TRIV-84)	20:57	136	20:26 (TRIV-84)	20:14	19:22			17:36	15	07:45 (TRIV-74)	17:12
2	06:10		06:59 (TRIV-73)	06:35		07:01 (TRIV-73)	07:06	07:36			07:10		07:32 (TRIV-74)	07:45
	21:15	130	20:23 (TRIV-84)	20:56	135	20:25 (TRIV-84)	20:13	19:21			17:34	12	07:44 (TRIV-74)	17:11
3	06:11		06:59 (TRIV-73)	06:36		07:01 (TRIV-73)	07:07	07:37			07:12		07:33 (TRIV-74)	07:46
	21:15	131	20:23 (TRIV-84)	20:55	133	20:25 (TRIV-84)	20:11	19:19			17:33	9	07:42 (TRIV-74)	17:11
4	06:12		06:59 (TRIV-73)	06:37		07:02 (TRIV-73)	07:08	07:38			07:13		07:34 (TRIV-74)	07:47
	21:15	131	20:24 (TRIV-84)	20:54	132	20:25 (TRIV-84)	20:10	19:17			17:32	5	07:39 (TRIV-74)	17:11
5	06:12		07:00 (TRIV-73)	06:38		07:02 (TRIV-73)	07:09	07:39			07:14			07:48
	21:15	131	20:24 (TRIV-84)	20:53	130	20:24 (TRIV-84)	20:08	19:16			17:31			17:11
6	06:13		06:59 (TRIV-73)	06:39		07:02 (TRIV-73)	07:10	07:40			07:15			07:49
	21:15	132	20:24 (TRIV-84)	20:52	129	20:24 (TRIV-84)	20:06	19:14			17:30			17:11
7	06:13		07:00 (TRIV-73)	06:40		07:03 (TRIV-73)	07:11	07:41			07:16			07:50
	21:14	133	20:25 (TRIV-84)	20:50	126	20:23 (TRIV-84)	20:05	19:12			17:29			17:10
8	06:14		06:59 (TRIV-73)	06:41		07:03 (TRIV-73)	07:12	07:42			07:18			07:51
	21:14	132	20:24 (TRIV-84)	20:49	123	20:21 (TRIV-84)	20:03	19:11			17:28			17:10
9	06:15		06:59 (TRIV-73)	06:42		07:03 (TRIV-73)	07:13	07:43			07:19			07:52
	21:14	134	20:25 (TRIV-84)	20:48	120	20:20 (TRIV-84)	20:01	19:09			17:27			17:10
10	06:15		07:00 (TRIV-73)	06:43		07:04 (TRIV-73)	07:14	07:44			07:20			07:53
	21:13	134	20:25 (TRIV-84)	20:47	118	20:20 (TRIV-84)	20:00	19:07			17:25			17:10
11	06:16		06:59 (TRIV-73)	06:44		07:05 (TRIV-73)	07:15	07:45			07:21			07:53
	21:13	135	20:25 (TRIV-84)	20:45	114	20:19 (TRIV-84)	19:56	19:06			17:24			17:11
12	06:17		06:59 (TRIV-73)	06:45		07:06 (TRIV-73)	07:16	07:47		08:32 (TRIV-74)	07:22			07:54
	21:13	136	20:26 (TRIV-84)	20:44	110	20:18 (TRIV-84)	19:55	19:04	10	08:42 (TRIV-74)	17:24			17:11
13	06:17		07:00 (TRIV-73)	06:46		07:07 (TRIV-73)	07:17	07:48		08:28 (TRIV-74)	07:24			07:55
	21:12	136	20:26 (TRIV-84)	20:43	105	20:16 (TRIV-84)	19:53	19:03	17	08:45 (TRIV-74)	17:23			17:11
14	06:18		07:00 (TRIV-73)	06:47		07:08 (TRIV-73)	07:18	07:49		08:26 (TRIV-74)	07:25			07:56
	21:12	137	20:27 (TRIV-84)	20:41	101	20:15 (TRIV-84)	19:51	19:01	21	08:47 (TRIV-74)	17:22			17:11
15	06:19		06:59 (TRIV-73)	06:48		07:09 (TRIV-73)	07:19	07:50		08:24 (TRIV-74)	07:26			07:57
	21:11	137	20:26 (TRIV-84)	20:40	96	20:14 (TRIV-84)	19:49	19:00	24	08:48 (TRIV-74)	17:21			17:11
16	06:20		06:59 (TRIV-73)	06:49		07:10 (TRIV-73)	07:20	07:51		08:22 (TRIV-74)	07:27			07:57
	21:10	138	20:26 (TRIV-84)	20:39	91	20:12 (TRIV-84)	19:48	18:58	27	08:49 (TRIV-74)	17:20			17:11
17	06:21		06:59 (TRIV-73)	06:50		07:12 (TRIV-73)	07:21	07:52		08:21 (TRIV-74)	07:28			07:58
	21:10	139	20:27 (TRIV-84)	20:37	85	20:11 (TRIV-84)	19:46	18:56	29	08:50 (TRIV-74)	17:19			17:12
18	06:21		07:00 (TRIV-73)	06:51		07:14 (TRIV-73)	07:22	07:53		08:19 (TRIV-74)	07:29			07:59
	21:09	139	20:27 (TRIV-84)	20:36	76	20:09 (TRIV-84)	19:44	18:55	31	08:50 (TRIV-74)	17:18			17:12
19	06:22		06:59 (TRIV-73)	06:52		07:16 (TRIV-73)	07:23	07:54		08:19 (TRIV-74)	07:31			07:59
	21:09	139	20:26 (TRIV-84)	20:34	67	20:06 (TRIV-84)	19:43	18:53	32	08:51 (TRIV-74)	17:18			17:12
20	06:23		06:59 (TRIV-73)	06:53		07:19 (TRIV-73)	07:24	07:55		08:19 (TRIV-74)	07:32			08:00
	21:08	139	20:27 (TRIV-84)	20:33	56	20:04 (TRIV-84)	19:41	18:52	33	08:52 (TRIV-74)	17:17			17:13
21	06:24		06:59 (TRIV-73)	06:54		07:24 (TRIV-73)	07:25	07:56		08:18 (TRIV-74)	07:33			08:00
	21:07	140	20:27 (TRIV-84)	20:31	40	20:01 (TRIV-84)	19:39	18:51	34	08:52 (TRIV-74)	17:16			17:13
22	06:25		06:59 (TRIV-73)	06:55		19:35 (TRIV-84)	07:26	07:58		08:18 (TRIV-74)	07:34			08:01
	21:06	140	20:27 (TRIV-84)	20:30	22	19:57 (TRIV-84)	19:37	18:49	33	08:51 (TRIV-74)	17:16			17:14
23	06:26		07:00 (TRIV-73)	06:56		19:42 (TRIV-84)	07:27	07:59		08:19 (TRIV-74)	07:35			08:01
	21:06	139	20:27 (TRIV-84)	20:28	7	19:49 (TRIV-84)	19:36	18:48	32	08:51 (TRIV-74)	17:15			17:14
24	06:27		07:00 (TRIV-73)	06:57			07:28	08:00		08:21 (TRIV-74)	07:36			08:02
	21:05	140	20:27 (TRIV-84)	20:27			19:34	18:46	31	08:52 (TRIV-74)	17:14			17:15
25	06:27		07:00 (TRIV-73)	06:58			07:29	08:01		08:22 (TRIV-74)	07:38			08:02
	21:04	140	20:28 (TRIV-84)	20:25			19:32	18:45	29	08:51 (TRIV-74)	17:14			17:16
26	06:28		06:59 (TRIV-73)	06:59			07:30	08:02		08:23 (TRIV-74)	07:39			08:03
	21:03	140	20:27 (TRIV-84)	20:24			19:31	18:43	28	08:51 (TRIV-74)	17:13			17:16
27	06:29		06:59 (TRIV-73)	07:00			07:31	08:03		08:24 (TRIV-74)	07:40			08:03
	21:02	140	20:27 (TRIV-84)	20:22			19:29	18:42	26	08:50 (TRIV-74)	17:13			17:17
28	06:30		07:00 (TRIV-73)	07:01			07:32	08:04		08:25 (TRIV-74)	07:41			08:03
	21:01	138	20:26 (TRIV-84)	20:21			19:27	18:41	24	08:49 (TRIV-74)	17:13			17:17
29	06:31		07:00 (TRIV-73)	07:02			07:33	08:06		08:27 (TRIV-74)	07:42			08:04
	21:00	138	20:26 (TRIV-84)	20:19			19:26	18:39	22	08:49 (TRIV-74)	17:12			17:18
30	06:32		07:00 (TRIV-73)	07:03			07:34	08:07		08:28 (TRIV-74)	07:43			08:04
	20:59	137	20:26 (TRIV-84)	20:18			19:24	18:38	20	08:48 (TRIV-74)	17:12			17:19
31	06:33		07:00 (TRIV-73)	07:04				08:08		08:29 (TRIV-74)				08:04
	20:58	137	20:26 (TRIV-84)	20:16				18:37	18	08:47 (TRIV-74)				17:20
Potential sun hours	459			428			375	345			298			288
Total, worst case		4221			2252				521			41		
Sun reduction		0.76			0.75				0.60			0.40		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.67			0.67				0.64			0.64		
Total reduction		0.51			0.50				0.38			0.26		
Total, real		2138			1124				199			10		

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 291 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1308)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February			March			April			May			June		
1	08:04		07:50			07:14		17:06 (TRIV-74)	07:24			06:38		19:59 (TRIV-73)	06:09		20:04 (TRIV-73)
	17:21		17:55			18:29	58	18:04 (TRIV-74)	20:02			20:34	12	20:11 (TRIV-73)	21:04	14	20:18 (TRIV-73)
2	08:04		07:50			07:13		17:05 (TRIV-74)	07:22			06:37		19:58 (TRIV-73)	06:09		20:04 (TRIV-73)
	17:22		17:56			18:30	59	18:04 (TRIV-74)	20:03			20:35	15	20:13 (TRIV-73)	21:05	12	20:16 (TRIV-73)
3	08:04		07:49			07:11		17:06 (TRIV-74)	07:20			06:35		19:57 (TRIV-73)	06:08		20:07 (TRIV-73)
	17:22		17:58			18:31	58	18:04 (TRIV-74)	20:04			20:36	17	20:14 (TRIV-73)	21:05	8	20:15 (TRIV-73)
4	08:04		07:47			07:10		17:05 (TRIV-74)	07:19			06:34		19:56 (TRIV-73)	06:08		20:11 (TRIV-73)
	17:23		17:59			18:33	59	18:04 (TRIV-74)	20:05			20:37	19	20:15 (TRIV-73)	21:06	1	20:12 (TRIV-73)
5	08:04		07:46			07:08		17:04 (TRIV-74)	07:17			06:33		19:55 (TRIV-73)	06:08		
	17:24		18:00			18:34	59	18:03 (TRIV-74)	20:06			20:38	21	20:16 (TRIV-73)	21:07		
6	08:04		07:45			07:07		17:05 (TRIV-74)	07:15			06:32		19:53 (TRIV-73)	06:07		
	17:25		18:01			18:35	59	18:04 (TRIV-74)	20:08			20:39	23	20:16 (TRIV-73)	21:07		
7	08:04		07:44			07:05		17:04 (TRIV-74)	07:14			06:30		19:53 (TRIV-73)	06:07		
	17:26		18:03			18:36	59	18:03 (TRIV-74)	20:09			20:40	24	20:17 (TRIV-73)	21:08		
8	08:04		07:43			08:03		18:05 (TRIV-74)	07:12			06:29		19:53 (TRIV-73)	06:07		
	17:27		18:04			19:37	58	19:03 (TRIV-74)	20:10			20:41	26	20:19 (TRIV-73)	21:09		
9	08:04		07:42			08:02		18:05 (TRIV-74)	07:10			06:28		19:52 (TRIV-73)	06:07		
	17:28		18:05			19:38	57	19:02 (TRIV-74)	20:11			20:42	28	20:20 (TRIV-73)	21:09		
10	08:04		07:41			08:00		18:05 (TRIV-74)	07:09			06:27		19:52 (TRIV-73)	06:06		
	17:29		18:06			19:39	56	19:01 (TRIV-74)	20:12			20:43	29	20:21 (TRIV-73)	21:10		
11	08:04		07:40			07:59		18:06 (TRIV-74)	07:07			06:26		19:52 (TRIV-73)	06:06		
	17:30		18:08			19:41	55	19:01 (TRIV-74)	20:13			20:45	30	20:22 (TRIV-73)	21:10		
12	08:03		07:38			07:57		18:06 (TRIV-74)	07:06			06:25		19:52 (TRIV-73)	06:06		
	17:31		18:09			19:42	54	19:00 (TRIV-74)	20:14			20:46	31	20:23 (TRIV-73)	21:11		
13	08:03		07:37		17:35 (TRIV-74)	07:55		18:06 (TRIV-74)	07:04			06:24		19:52 (TRIV-73)	06:06		
	17:32		18:10	3	17:38 (TRIV-74)	19:43	53	18:59 (TRIV-74)	20:15			20:47	31	20:23 (TRIV-73)	21:11		
14	08:03		07:36		17:27 (TRIV-74)	07:54		18:07 (TRIV-74)	07:03			06:23		19:52 (TRIV-73)	06:06		
	17:34		18:11	19	17:46 (TRIV-74)	19:44	51	18:58 (TRIV-74)	20:16			20:48	32	20:24 (TRIV-73)	21:12		
15	08:02		07:34		17:23 (TRIV-74)	07:52		18:08 (TRIV-74)	07:01			06:22		19:52 (TRIV-73)	06:06		
	17:35		18:13	25	17:48 (TRIV-74)	19:45	49	18:57 (TRIV-74)	20:17			20:49	33	20:25 (TRIV-73)	21:12		
16	08:02		07:33		17:21 (TRIV-74)	07:50		18:08 (TRIV-74)	06:59			06:21		19:52 (TRIV-73)	06:06		
	17:36		18:14	30	17:51 (TRIV-74)	19:46	47	18:55 (TRIV-74)	20:18			20:50	34	20:26 (TRIV-73)	21:13		
17	08:01		07:32		17:19 (TRIV-74)	07:49		18:10 (TRIV-74)	06:58			06:20		19:52 (TRIV-73)	06:06		
	17:37		18:15	34	17:53 (TRIV-74)	19:47	44	18:54 (TRIV-74)	20:19			20:51	33	20:25 (TRIV-73)	21:13		
18	08:01		07:30		17:17 (TRIV-74)	07:47		18:11 (TRIV-74)	06:56			06:19		19:53 (TRIV-73)	06:06		
	17:38		18:16	36	17:53 (TRIV-74)	19:48	41	18:52 (TRIV-74)	20:20			20:51	33	20:26 (TRIV-73)	21:14		
19	08:00		07:29		17:15 (TRIV-74)	07:45		18:12 (TRIV-74)	06:55			06:18		19:53 (TRIV-73)	06:06		
	17:39		18:17	40	17:55 (TRIV-74)	19:49	38	18:50 (TRIV-74)	20:21			20:52	33	20:26 (TRIV-73)	21:14		
20	08:00		07:28		17:13 (TRIV-74)	07:44		18:14 (TRIV-74)	06:53			06:17		19:53 (TRIV-73)	06:06		
	17:40		18:19	43	17:56 (TRIV-74)	19:50	34	18:48 (TRIV-74)	20:22			20:53	32	20:25 (TRIV-73)	21:14		
21	07:59		07:26		17:13 (TRIV-74)	07:42		18:16 (TRIV-74)	06:52			06:16		19:54 (TRIV-73)	06:07		
	17:42		18:20	45	17:58 (TRIV-74)	19:51	29	18:45 (TRIV-74)	20:23			20:54	31	20:25 (TRIV-73)	21:14		
22	07:59		07:25		17:11 (TRIV-74)	07:40		18:19 (TRIV-74)	06:50			06:15		19:54 (TRIV-73)	06:07		
	17:43		18:21	47	17:58 (TRIV-74)	19:53	23	18:42 (TRIV-74)	20:25			20:55	30	20:24 (TRIV-73)	21:15		
23	07:58		07:23		17:10 (TRIV-74)	07:39		18:23 (TRIV-74)	06:49			06:15		19:55 (TRIV-73)	06:07		
	17:44		18:22	50	18:00 (TRIV-74)	19:54	15	18:38 (TRIV-74)	20:26			20:56	29	20:24 (TRIV-73)	21:15		
24	07:57		07:22		17:09 (TRIV-74)	07:37			06:47			06:14		19:56 (TRIV-73)	06:07		
	17:45		18:23	52	18:01 (TRIV-74)	19:55			20:27			20:57	27	20:23 (TRIV-73)	21:15		
25	07:57		07:20		17:09 (TRIV-74)	07:35			06:46			06:13		19:56 (TRIV-73)	06:08		
	17:46		18:25	53	18:02 (TRIV-74)	19:56			20:28			20:58	27	20:23 (TRIV-73)	21:15		
26	07:56		07:19		17:07 (TRIV-74)	07:34			06:45			06:13		19:57 (TRIV-73)	06:08		
	17:48		18:26	55	18:02 (TRIV-74)	19:57			20:29			20:59	26	20:23 (TRIV-73)	21:15		
27	07:55		07:17		17:07 (TRIV-74)	07:32			06:43			06:12		19:58 (TRIV-73)	06:08		
	17:49		18:27	56	18:03 (TRIV-74)	19:58			20:30			21:00	24	20:22 (TRIV-73)	21:15		
28	07:54		07:16		17:06 (TRIV-74)	07:30			06:42			06:11		19:59 (TRIV-73)	06:09		
	17:50		18:28	57	18:03 (TRIV-74)	19:59			20:31			21:01	22	20:21 (TRIV-73)	21:15		
29	07:53					07:29			06:40		20:05 (TRIV-73)	06:11		20:00 (TRIV-73)	06:09		
	17:51					20:00			20:32	5	20:10 (TRIV-73)	21:01	20	20:20 (TRIV-73)	21:15		
30	07:52					07:27			06:39		20:02 (TRIV-73)	06:10		20:01 (TRIV-73)	06:09		
	17:53					20:00			20:33	9	20:11 (TRIV-73)	21:02	19	20:20 (TRIV-73)	21:15		
31	07:51					07:25						06:10		20:02 (TRIV-73)			
	17:54					20:01						21:03	17	20:19 (TRIV-73)			
Potential sun hours	298		297			370			399			448			452		
Total, worst case				645			1115			14			808			35	
Sun reduction				0.55			0.57			0.63			0.69			0.74	
Oper. time red.				1.00			1.00			1.00			1.00			1.00	
Wind dir. red.				0.70			0.70			0.64			0.64			0.64	
Total reduction				0.38			0.40			0.40			0.44			0.48	
Total, real				248			444			6			358			17	

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 291 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1308)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November	December
1	06:10			06:34		20:02 (TRIV-73)	07:05			07:35		17:46 (TRIV-74)	07:09	07:44
	21:15			20:57	31	20:33 (TRIV-73)	20:14			19:22	53	18:39 (TRIV-74)	17:36	17:11
2	06:10			06:35		20:03 (TRIV-73)	07:06			07:36		17:45 (TRIV-74)	07:10	07:45
	21:15			20:56	29	20:32 (TRIV-73)	20:13			19:20	54	18:39 (TRIV-74)	17:34	17:11
3	06:11			06:36		20:03 (TRIV-73)	07:07			07:37		17:44 (TRIV-74)	07:11	07:46
	21:15			20:55	28	20:31 (TRIV-73)	20:11			19:19	55	18:39 (TRIV-74)	17:33	17:11
4	06:11			06:37		20:03 (TRIV-73)	07:08			07:38		17:43 (TRIV-74)	07:13	07:47
	21:15			20:54	27	20:30 (TRIV-73)	20:09			19:17	57	18:40 (TRIV-74)	17:32	17:11
5	06:12			06:38		20:03 (TRIV-73)	07:09			07:39		17:42 (TRIV-74)	07:14	07:48
	21:15			20:53	26	20:29 (TRIV-73)	20:08			19:15	57	18:39 (TRIV-74)	17:31	17:11
6	06:13			06:39		20:04 (TRIV-73)	07:10			07:40		17:41 (TRIV-74)	07:15	07:49
	21:15			20:51	24	20:28 (TRIV-73)	20:06			19:14	58	18:39 (TRIV-74)	17:30	17:10
7	06:13			06:40		20:03 (TRIV-73)	07:11			07:41		17:41 (TRIV-74)	07:16	07:50
	21:14			20:50	23	20:26 (TRIV-73)	20:05			19:12	58	18:39 (TRIV-74)	17:29	17:10
8	06:14			06:41		20:04 (TRIV-73)	07:12			07:42		17:40 (TRIV-74)	07:17	07:51
	21:14			20:49	21	20:25 (TRIV-73)	20:03			19:11	59	18:39 (TRIV-74)	17:27	17:10
9	06:15		20:15 (TRIV-73)	06:42		20:05 (TRIV-73)	07:13			07:43		17:40 (TRIV-74)	07:19	07:52
	21:14	6	20:21 (TRIV-73)	20:48	18	20:23 (TRIV-73)	20:01			19:09	58	18:38 (TRIV-74)	17:26	17:10
10	06:15		20:13 (TRIV-73)	06:43		20:06 (TRIV-73)	07:14			07:44		17:39 (TRIV-74)	07:20	07:53
	21:13	11	20:24 (TRIV-73)	20:47	16	20:22 (TRIV-73)	20:00			19:07	59	18:38 (TRIV-74)	17:25	17:10
11	06:16		20:11 (TRIV-73)	06:44		20:07 (TRIV-73)	07:15			07:45		17:39 (TRIV-74)	07:21	07:53
	21:13	14	20:25 (TRIV-73)	20:45	14	20:21 (TRIV-73)	19:56			19:06	59	18:38 (TRIV-74)	17:24	17:10
12	06:17		20:11 (TRIV-73)	06:45		20:08 (TRIV-73)	07:16			07:46		17:39 (TRIV-74)	07:22	07:54
	21:12	15	20:26 (TRIV-73)	20:44	12	20:20 (TRIV-73)	19:54			19:04	58	18:37 (TRIV-74)	17:23	17:11
13	06:17		20:10 (TRIV-73)	06:46		20:10 (TRIV-73)	07:17			07:48		17:40 (TRIV-74)	07:23	07:55
	21:12	18	20:28 (TRIV-73)	20:43	9	20:19 (TRIV-73)	19:53			19:03	57	18:37 (TRIV-74)	17:23	17:11
14	06:18		20:08 (TRIV-73)	06:47		20:13 (TRIV-73)	07:18			07:49		17:40 (TRIV-74)	07:25	07:56
	21:11	20	20:28 (TRIV-73)	20:41	4	20:17 (TRIV-73)	19:51			19:01	56	18:36 (TRIV-74)	17:22	17:11
15	06:19		20:08 (TRIV-73)	06:48			07:19			07:50		17:40 (TRIV-74)	07:26	07:57
	21:11	21	20:29 (TRIV-73)	20:40			19:49			18:59	56	18:36 (TRIV-74)	17:21	17:11
16	06:20		20:07 (TRIV-73)	06:49			07:20			07:51		17:40 (TRIV-74)	07:27	07:57
	21:10	24	20:31 (TRIV-73)	20:39			19:48			18:58	55	18:35 (TRIV-74)	17:20	17:11
17	06:21		20:07 (TRIV-73)	06:50			07:21			07:52		17:40 (TRIV-74)	07:28	07:58
	21:10	25	20:32 (TRIV-73)	20:37			19:46			18:56	54	18:34 (TRIV-74)	17:19	17:12
18	06:21		20:07 (TRIV-73)	06:51			07:22			07:53		17:41 (TRIV-74)	07:29	07:59
	21:09	26	20:33 (TRIV-73)	20:36			19:44			18:55	51	18:32 (TRIV-74)	17:18	17:12
19	06:22		20:05 (TRIV-73)	06:52			07:23			07:54		17:41 (TRIV-74)	07:31	07:59
	21:08	27	20:32 (TRIV-73)	20:34			19:43			18:53	49	18:30 (TRIV-74)	17:18	17:12
20	06:23		20:05 (TRIV-73)	06:53			07:24		18:12 (TRIV-74)	07:55		17:43 (TRIV-74)	07:32	08:00
	21:08	28	20:33 (TRIV-73)	20:33			19:41	11	18:23 (TRIV-74)	18:52	46	18:29 (TRIV-74)	17:17	17:13
21	06:24		20:05 (TRIV-73)	06:54			07:25		18:06 (TRIV-74)	07:56		17:44 (TRIV-74)	07:33	08:00
	21:07	29	20:34 (TRIV-73)	20:31			19:39	21	18:27 (TRIV-74)	18:50	44	18:28 (TRIV-74)	17:16	17:13
22	06:25		20:04 (TRIV-73)	06:55			07:26		18:02 (TRIV-74)	07:58		17:44 (TRIV-74)	07:34	08:01
	21:06	31	20:35 (TRIV-73)	20:30			19:37	28	18:30 (TRIV-74)	18:49	42	18:26 (TRIV-74)	17:16	17:14
23	06:26		20:04 (TRIV-73)	06:56			07:27		17:59 (TRIV-74)	07:59		17:46 (TRIV-74)	07:35	08:01
	21:06	31	20:35 (TRIV-73)	20:28			19:36	32	18:31 (TRIV-74)	18:48	38	18:24 (TRIV-74)	17:15	17:14
24	06:27		20:04 (TRIV-73)	06:57			07:28		17:56 (TRIV-74)	08:00		17:47 (TRIV-74)	07:36	08:02
	21:05	32	20:36 (TRIV-73)	20:27			19:34	37	18:33 (TRIV-74)	18:46	36	18:23 (TRIV-74)	17:14	17:15
25	06:27		20:03 (TRIV-73)	06:58			07:29		17:54 (TRIV-74)	08:01		17:49 (TRIV-74)	07:37	08:02
	21:04	32	20:35 (TRIV-73)	20:25			19:32	40	18:34 (TRIV-74)	18:45	33	18:22 (TRIV-74)	17:14	17:15
26	06:28		20:03 (TRIV-73)	06:59			07:30		17:52 (TRIV-74)	08:02		17:51 (TRIV-74)	07:39	08:03
	21:03	33	20:36 (TRIV-73)	20:24			19:31	43	18:35 (TRIV-74)	18:43	29	18:20 (TRIV-74)	17:13	17:16
27	06:29		20:02 (TRIV-73)	07:00			07:31		17:51 (TRIV-74)	08:03		17:54 (TRIV-74)	07:40	08:03
	21:02	34	20:36 (TRIV-73)	20:22			19:29	46	18:37 (TRIV-74)	18:42	23	18:17 (TRIV-74)	17:13	17:17
28	06:30		20:02 (TRIV-73)	07:01			07:32		17:50 (TRIV-74)	08:04		17:57 (TRIV-74)	07:41	08:03
	21:01	34	20:36 (TRIV-73)	20:21			19:27	48	18:38 (TRIV-74)	18:41	16	18:13 (TRIV-74)	17:12	17:17
29	06:31		20:02 (TRIV-73)	07:02			07:33		17:48 (TRIV-74)	08:06			07:42	08:04
	21:00	33	20:35 (TRIV-73)	20:19			19:26	50	18:38 (TRIV-74)	18:39			17:12	17:18
30	06:32		20:02 (TRIV-73)	07:03			07:34		17:47 (TRIV-74)	08:07			07:43	08:04
	20:59	33	20:35 (TRIV-73)	20:18			19:24	52	18:39 (TRIV-74)	18:38			17:12	17:19
31	06:33		20:02 (TRIV-73)	07:04						08:08				08:04
	20:58	32	20:34 (TRIV-73)	20:16						18:37				17:20
Potential sun hours	459			428			375			345			298	288
Total, worst case		589			282			408			1370			
Sun reduction		0.76			0.75			0.67			0.60			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.64			0.64			0.70			0.70			
Total reduction		0.49			0.48			0.47			0.42			
Total, real		287			136			191			575			

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

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

Licensed user:
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 294 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1311)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January	February	March	April			May			June		
1	08:04	07:51	07:15	07:24			06:38		19:51 (TRIV-61)	06:10		20:02 (TRIV-61a)
	17:21	17:55	18:29	20:02			20:34	21	20:12 (TRIV-61)	21:04	37	20:39 (TRIV-61a)
2	08:04	07:50	07:13	07:22			06:37		19:50 (TRIV-61)	06:09		20:02 (TRIV-61a)
	17:22	17:57	18:31	20:03			20:35	24	20:14 (TRIV-61)	21:05	39	20:41 (TRIV-61a)
3	08:04	07:49	07:11	07:20			06:36		19:49 (TRIV-61)	06:09		20:02 (TRIV-61a)
	17:23	17:58	18:32	20:04			20:36	25	20:14 (TRIV-61)	21:05	39	20:41 (TRIV-61a)
4	08:05	07:48	07:10	07:19			06:34		19:49 (TRIV-61)	06:08		20:02 (TRIV-61a)
	17:24	17:59	18:33	20:06			20:37	26	20:15 (TRIV-61)	21:06	40	20:42 (TRIV-61a)
5	08:05	07:47	07:08	07:17			06:33		19:48 (TRIV-61)	06:08		20:03 (TRIV-61a)
	17:25	18:00	18:34	20:07			20:38	28	20:16 (TRIV-61)	21:07	39	20:42 (TRIV-61a)
6	08:04	07:45	07:07	07:16			06:32		19:48 (TRIV-61)	06:08		20:02 (TRIV-61a)
	17:26	18:02	18:35	20:08			20:39	29	20:17 (TRIV-61)	21:08	40	20:42 (TRIV-61a)
7	08:04	07:44	07:05	07:14			06:31		19:48 (TRIV-61)	06:07		20:03 (TRIV-61a)
	17:27	18:03	18:36	20:09			20:41	30	20:18 (TRIV-61)	21:08	39	20:42 (TRIV-61a)
8	08:04	07:43	08:04	07:12			06:29		19:48 (TRIV-61)	06:07		20:03 (TRIV-61a)
	17:28	18:04	19:37	20:10			20:42	31	20:19 (TRIV-61)	21:09	40	20:43 (TRIV-61a)
9	08:04	07:42	08:02	07:11			06:28		19:47 (TRIV-61)	06:07		20:04 (TRIV-61a)
	17:29	18:05	19:39	20:11			20:43	32	20:19 (TRIV-61)	21:09	39	20:43 (TRIV-61a)
10	08:04	07:41	08:00	07:09			06:27		19:47 (TRIV-61)	06:07		20:04 (TRIV-61a)
	17:30	18:07	19:40	20:12			20:44	33	20:20 (TRIV-61)	21:10	39	20:43 (TRIV-61a)
11	08:04	07:40	07:59	07:07			06:26		19:47 (TRIV-61)	06:07		20:04 (TRIV-61a)
	17:31	18:08	19:41	20:13			20:45	34	20:21 (TRIV-61a)	21:11	40	20:44 (TRIV-61a)
12	08:03	07:38	07:57	07:06			06:25		19:47 (TRIV-61)	06:06		20:04 (TRIV-61a)
	17:32	18:09	19:42	20:14			20:46	35	20:22 (TRIV-61a)	21:11	39	20:43 (TRIV-61a)
13	08:03	07:37	07:55	07:04			06:24		19:48 (TRIV-61)	06:06		20:04 (TRIV-61a)
	17:33	18:10	19:43	20:15			20:47	35	20:23 (TRIV-61a)	21:12	39	20:43 (TRIV-61a)
14	08:03	07:36	07:54	07:03			06:23		19:48 (TRIV-61)	06:06		20:04 (TRIV-61a)
	17:34	18:12	19:44	20:16			20:48	36	20:24 (TRIV-61a)	21:12	39	20:43 (TRIV-61a)
15	08:02	07:35	07:52	07:01			06:22		19:48 (TRIV-61)	06:06		20:05 (TRIV-61a)
	17:35	18:13	19:45	20:17			20:49	37	20:25 (TRIV-61a)	21:12	38	20:43 (TRIV-61a)
16	08:02	07:33	07:50	07:00			06:21		19:50 (TRIV-61)	06:06		20:06 (TRIV-61a)
	17:36	18:14	19:46	20:18			20:50	37	20:27 (TRIV-61a)	21:13	38	20:44 (TRIV-61a)
17	08:02	07:32	07:49	06:58			06:20		19:50 (TRIV-61)	06:06		20:06 (TRIV-61a)
	17:37	18:15	19:47	20:19			20:51	38	20:28 (TRIV-61a)	21:13	39	20:45 (TRIV-61a)
18	08:01	07:31	07:47	06:57			06:19		19:51 (TRIV-61)	06:06		20:06 (TRIV-61a)
	17:38	18:16	19:48	20:20			20:52	37	20:28 (TRIV-61a)	21:14	39	20:45 (TRIV-61a)
19	08:01	07:29	07:46	06:55			06:18		19:51 (TRIV-61)	06:07		20:06 (TRIV-61a)
	17:40	18:18	19:50	20:21			20:53	38	20:29 (TRIV-61a)	21:14	39	20:45 (TRIV-61a)
20	08:00	07:28	07:44	06:54			06:17		19:52 (TRIV-61)	06:07		20:06 (TRIV-61a)
	17:41	18:19	19:51	20:23			20:54	38	20:30 (TRIV-61a)	21:14	39	20:45 (TRIV-61a)
21	07:59	07:26	07:42	06:52			06:17		19:52 (TRIV-61)	06:07		20:06 (TRIV-61a)
	17:42	18:20	19:52	20:24			20:54	38	20:30 (TRIV-61a)	21:15	39	20:45 (TRIV-61a)
22	07:59	07:25	07:40	06:51			06:16		19:54 (TRIV-61)	06:07		20:06 (TRIV-61a)
	17:43	18:21	19:53	20:25			20:55	38	20:32 (TRIV-61a)	21:15	39	20:45 (TRIV-61a)
23	07:58	07:24	07:39	06:49			06:15		19:55 (TRIV-61)	06:07		20:07 (TRIV-61a)
	17:44	18:22	19:54	20:26			20:56	38	20:33 (TRIV-61a)	21:15	39	20:46 (TRIV-61a)
24	07:57	07:22	07:37	06:48			06:14		19:56 (TRIV-61)	06:08		20:07 (TRIV-61a)
	17:46	18:24	19:55	20:27			20:57	37	20:33 (TRIV-61a)	21:15	39	20:46 (TRIV-61a)
25	07:57	07:21	07:35	06:46		20:03 (TRIV-61)	06:14		19:58 (TRIV-61)	06:08		20:07 (TRIV-61a)
	17:47	18:25	19:56	20:28	3	20:06 (TRIV-61)	20:58	36	20:34 (TRIV-61a)	21:15	39	20:46 (TRIV-61a)
26	07:56	07:19	07:34	06:45		19:59 (TRIV-61)	06:13		19:59 (TRIV-61)	06:08		20:08 (TRIV-61a)
	17:48	18:26	19:57	20:29	8	20:07 (TRIV-61)	20:59	36	20:35 (TRIV-61a)	21:15	38	20:46 (TRIV-61a)
27	07:55	07:18	07:32	06:44		19:56 (TRIV-61)	06:12		20:02 (TRIV-61a)	06:09		20:08 (TRIV-61a)
	17:49	18:27	19:58	20:30	12	20:08 (TRIV-61)	21:00	34	20:36 (TRIV-61a)	21:15	38	20:46 (TRIV-61a)
28	07:54	07:16	07:30	06:42		19:55 (TRIV-61)	06:12		20:02 (TRIV-61a)	06:09		20:07 (TRIV-61a)
	17:50	18:28	19:59	20:31	14	20:09 (TRIV-61)	21:01	35	20:37 (TRIV-61a)	21:16	39	20:46 (TRIV-61a)
29	07:53		07:29	06:41		19:53 (TRIV-61)	06:11		20:01 (TRIV-61a)	06:09		20:08 (TRIV-61a)
	17:52		20:00	20:32	17	20:10 (TRIV-61)	21:02	36	20:37 (TRIV-61a)	21:16	39	20:47 (TRIV-61a)
30	07:52		07:27	06:39		19:52 (TRIV-61)	06:11		20:02 (TRIV-61a)	06:10		20:08 (TRIV-61a)
	17:53		20:00	20:33	19	20:11 (TRIV-61)	21:02	36	20:38 (TRIV-61a)	21:16	39	20:47 (TRIV-61a)
31	07:52		07:25				06:10		20:02 (TRIV-61a)			
	17:54		20:01				21:03	37	20:39 (TRIV-61a)			
Potential sun hours	298	297	370	398			448			452		
Total, worst case				73			1045			1168		
Sun reduction				0.63			0.69			0.74		
Oper. time red.				1.00			1.00			1.00		
Wind dir. red.				0.64			0.64			0.63		
Total reduction				0.40			0.44			0.47		
Total, real				30			460			547		

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:
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 294 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1311)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October	November	December		
1	06:10		20:09 (TRIV-61a)	06:34		19:58 (TRIV-61)	07:05	07:35	07:09	07:44		
	21:15	39	20:48 (TRIV-61a)	20:57	35	20:33 (TRIV-61a)	20:15	19:22	17:36	17:12		
2	06:11		20:08 (TRIV-61a)	06:35		19:58 (TRIV-61)	07:06	07:36	07:10	07:45		
	21:15	39	20:47 (TRIV-61a)	20:56	34	20:32 (TRIV-61a)	20:13	19:21	17:35	17:11		
3	06:11		20:09 (TRIV-61a)	06:36		19:58 (TRIV-61)	07:07	07:37	07:12	07:46		
	21:15	39	20:48 (TRIV-61a)	20:55	33	20:31 (TRIV-61)	20:11	19:19	17:33	17:11		
4	06:12		20:08 (TRIV-61a)	06:37		19:58 (TRIV-61)	07:08	07:38	07:13	07:47		
	21:15	40	20:48 (TRIV-61a)	20:54	32	20:30 (TRIV-61)	20:10	19:17	17:32	17:11		
5	06:12		20:09 (TRIV-61a)	06:38		19:58 (TRIV-61)	07:09	07:39	07:14	07:48		
	21:15	39	20:48 (TRIV-61a)	20:53	31	20:29 (TRIV-61)	20:08	19:16	17:31	17:11		
6	06:13		20:09 (TRIV-61a)	06:39		19:58 (TRIV-61)	07:10	07:40	07:15	07:49		
	21:15	39	20:48 (TRIV-61a)	20:52	30	20:28 (TRIV-61)	20:06	19:14	17:30	17:11		
7	06:14		20:09 (TRIV-61a)	06:40		19:58 (TRIV-61)	07:11	07:41	07:16	07:50		
	21:14	40	20:49 (TRIV-61a)	20:50	29	20:27 (TRIV-61)	20:05	19:12	17:29	17:11		
8	06:14		20:10 (TRIV-61a)	06:41		19:58 (TRIV-61)	07:12	07:42	07:18	07:51		
	21:14	39	20:49 (TRIV-61a)	20:49	27	20:25 (TRIV-61)	20:03	19:11	17:28	17:11		
9	06:15		20:09 (TRIV-61a)	06:42		19:58 (TRIV-61)	07:13	07:43	07:19	07:52		
	21:14	39	20:48 (TRIV-61a)	20:48	26	20:24 (TRIV-61)	20:01	19:09	17:27	17:11		
10	06:16		20:10 (TRIV-61a)	06:43		19:59 (TRIV-61)	07:14	07:44	07:20	07:53		
	21:13	38	20:48 (TRIV-61a)	20:47	24	20:23 (TRIV-61)	20:00	19:08	17:26	17:11		
11	06:16		20:10 (TRIV-61a)	06:44		19:59 (TRIV-61)	07:15	07:46	07:21	07:54		
	21:13	38	20:48 (TRIV-61a)	20:45	23	20:22 (TRIV-61)	19:56	19:06	17:25	17:11		
12	06:17		20:10 (TRIV-61a)	06:45		19:59 (TRIV-61)	07:16	07:47	07:22	07:54		16:20 (TRIV-53)
	21:13	37	20:47 (TRIV-61a)	20:44	21	20:20 (TRIV-61)	19:55	19:04	17:24	17:11	2	16:22 (TRIV-53)
13	06:18		20:10 (TRIV-61a)	06:46		20:00 (TRIV-61)	07:17	07:48	07:24	07:55		16:19 (TRIV-53)
	21:12	37	20:47 (TRIV-61a)	20:43	18	20:18 (TRIV-61)	19:53	19:03	17:23	17:11	6	16:25 (TRIV-53)
14	06:18		20:11 (TRIV-61a)	06:47		20:01 (TRIV-61)	07:18	07:49	07:25	07:56		16:18 (TRIV-53)
	21:12	36	20:47 (TRIV-61a)	20:41	16	20:17 (TRIV-61)	19:51	19:01	17:22	17:11	8	16:26 (TRIV-53)
15	06:19		20:11 (TRIV-61a)	06:48		20:02 (TRIV-61)	07:19	07:50	07:26	07:57		16:18 (TRIV-53)
	21:11	35	20:46 (TRIV-61a)	20:40	14	20:16 (TRIV-61)	19:50	19:00	17:21	17:11	9	16:27 (TRIV-53)
16	06:20		20:11 (TRIV-61a)	06:49		20:04 (TRIV-61)	07:20	07:51	07:27	07:57		16:18 (TRIV-53)
	21:10	34	20:45 (TRIV-61a)	20:39	11	20:15 (TRIV-61)	19:48	18:58	17:20	17:12	10	16:28 (TRIV-53)
17	06:21		20:10 (TRIV-61)	06:50		20:06 (TRIV-61)	07:21	07:52	07:28	07:58		16:17 (TRIV-53)
	21:10	35	20:45 (TRIV-61a)	20:37	7	20:13 (TRIV-61)	19:46	18:57	17:19	17:12	12	16:29 (TRIV-53)
18	06:22		20:08 (TRIV-61)	06:51		20:11 (TRIV-61)	07:22	07:53	07:29	07:59		16:18 (TRIV-53)
	21:09	36	20:44 (TRIV-61a)	20:36	1	20:12 (TRIV-61)	19:44	18:55	17:19	17:12	12	16:30 (TRIV-53)
19	06:22		20:07 (TRIV-61)	06:52			07:23	07:54	07:31	07:59		16:18 (TRIV-53)
	21:09	37	20:44 (TRIV-61a)	20:34			19:43	18:54	17:18	17:13	13	16:31 (TRIV-53)
20	06:23		20:06 (TRIV-61)	06:53			07:24	07:55	07:32	08:00		16:18 (TRIV-53)
	21:08	37	20:43 (TRIV-61a)	20:33			19:41	18:52	17:17	17:13	13	16:31 (TRIV-53)
21	06:24		20:04 (TRIV-61)	06:54			07:25	07:57	07:33	08:00		16:19 (TRIV-53)
	21:07	38	20:42 (TRIV-61a)	20:32			19:39	18:51	17:17	17:14	13	16:32 (TRIV-53)
22	06:25		20:03 (TRIV-61)	06:55			07:26	07:58	07:34	08:01		16:19 (TRIV-53)
	21:06	38	20:41 (TRIV-61a)	20:30			19:38	18:49	17:16	17:14	13	16:32 (TRIV-53)
23	06:26		20:03 (TRIV-61)	06:56			07:27	07:59	07:35	08:01		16:20 (TRIV-53)
	21:06	38	20:41 (TRIV-61a)	20:29			19:36	18:48	17:15	17:15	13	16:33 (TRIV-53)
24	06:27		20:02 (TRIV-61)	06:57			07:28	08:00	07:36	08:02		16:20 (TRIV-53)
	21:05	38	20:40 (TRIV-61a)	20:27			19:34	18:46	17:15	17:15	13	16:33 (TRIV-53)
25	06:28		20:01 (TRIV-61)	06:58			07:29	08:01	07:38	08:02		16:21 (TRIV-53)
	21:04	38	20:39 (TRIV-61a)	20:26			19:32	18:45	17:14	17:16	12	16:33 (TRIV-53)
26	06:29		20:01 (TRIV-61)	06:59			07:30	08:02	07:39	08:03		16:22 (TRIV-53)
	21:03	38	20:39 (TRIV-61a)	20:24			19:31	18:44	17:14	17:16	12	16:34 (TRIV-53)
27	06:30		20:00 (TRIV-61)	07:00			07:31	08:03	07:40	08:03		16:23 (TRIV-53)
	21:02	38	20:38 (TRIV-61a)	20:22			19:29	18:42	17:13	17:17	11	16:34 (TRIV-53)
28	06:30		19:59 (TRIV-61)	07:01			07:32	08:05	07:41	08:03		16:23 (TRIV-53)
	21:01	37	20:36 (TRIV-61a)	20:21			19:27	18:41	17:13	17:18	10	16:33 (TRIV-53)
29	06:31		19:59 (TRIV-61)	07:02			07:33	08:06	07:42	08:04		16:24 (TRIV-53)
	21:00	36	20:35 (TRIV-61a)	20:19			19:26	18:40	17:12	17:18	9	16:33 (TRIV-53)
30	06:32		19:58 (TRIV-61)	07:03			07:34	08:07	07:43	08:04		16:25 (TRIV-53)
	20:59	36	20:34 (TRIV-61a)	20:18			19:24	18:38	17:12	17:19	7	16:32 (TRIV-53)
31	06:33		19:58 (TRIV-61)	07:04				08:08		08:04		16:28 (TRIV-53)
	20:58	36	20:34 (TRIV-61a)	20:16				18:37		17:20	4	16:32 (TRIV-53)
Potential sun hours	459			428			375	345	298	288		
Total, worst case		1164			412						202	
Sun reduction		0.76			0.75						0.36	
Oper. time red.		1.00			1.00						1.00	
Wind dir. red.		0.63			0.64						0.69	
Total reduction		0.48			0.48						0.25	
Total, real		562			198						51	

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 307 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1322)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May	June
1	08:04		08:27 (TRIV-73)	07:51		08:23 (TRIV-73)	07:14	07:24	06:38	06:09
	17:21	88	16:52 (TRIV-84)	17:55	111	17:02 (TRIV-84)	18:29	20:02	20:34	21:04
2	08:04		08:27 (TRIV-73)	07:50		08:23 (TRIV-73)	07:13	07:22	06:37	06:09
	17:22	89	16:53 (TRIV-84)	17:56	110	17:01 (TRIV-84)	18:30	20:03	20:35	21:05
3	08:04		08:27 (TRIV-73)	07:49		08:23 (TRIV-73)	07:11	07:20	06:35	06:08
	17:23	91	16:54 (TRIV-84)	17:58	109	17:01 (TRIV-84)	18:32	20:04	20:36	21:05
4	08:05		08:27 (TRIV-73)	07:48		08:24 (TRIV-73)	07:10	07:19	06:34	06:08
	17:23	92	16:54 (TRIV-84)	17:59	105	17:00 (TRIV-84)	18:33	20:05	20:37	21:06
5	08:05		08:27 (TRIV-73)	07:47		08:24 (TRIV-73)	07:08	07:17	06:33	06:08
	17:24	94	16:55 (TRIV-84)	18:00	104	17:00 (TRIV-84)	18:34	20:07	20:38	21:07
6	08:04		08:27 (TRIV-73)	07:45		08:25 (TRIV-73)	07:07	07:15	06:32	06:07
	17:25	96	16:56 (TRIV-84)	18:01	101	16:59 (TRIV-84)	18:35	20:08	20:39	21:08
7	08:04		08:26 (TRIV-73)	07:44		08:24 (TRIV-73)	07:05	07:14	06:30	06:07
	17:26	96	16:55 (TRIV-84)	18:03	98	16:57 (TRIV-84)	18:36	20:09	20:40	21:08
8	08:04		08:26 (TRIV-73)	07:43		08:25 (TRIV-73)	08:03	07:12	06:29	06:07
	17:27	98	16:56 (TRIV-84)	18:04	95	16:56 (TRIV-84)	19:37	20:10	20:42	21:09
9	08:04		08:26 (TRIV-73)	07:42		08:26 (TRIV-73)	08:02	07:11	06:28	06:07
	17:28	99	16:57 (TRIV-84)	18:05	90	16:55 (TRIV-84)	19:38	20:11	20:43	21:09
10	08:04		08:26 (TRIV-73)	07:41		08:27 (TRIV-73)	08:00	07:09	06:27	06:06
	17:29	101	16:58 (TRIV-84)	18:06	84	16:53 (TRIV-84)	19:40	20:12	20:44	21:10
11	08:04		08:25 (TRIV-73)	07:40		08:28 (TRIV-73)	07:59	07:07	06:26	06:06
	17:30	103	16:58 (TRIV-84)	18:08	78	16:51 (TRIV-84)	19:41	20:13	20:45	21:11
12	08:03		08:25 (TRIV-73)	07:38		08:28 (TRIV-73)	07:57	07:06	06:25	06:06
	17:31	104	16:58 (TRIV-84)	18:09	72	16:48 (TRIV-84)	19:42	20:14	20:46	21:11
13	08:03		08:25 (TRIV-73)	07:37		08:29 (TRIV-73)	07:55	07:04	06:24	06:06
	17:32	105	16:59 (TRIV-84)	18:10	63	16:45 (TRIV-84)	19:43	20:15	20:47	21:12
14	08:03		08:24 (TRIV-73)	07:36		08:30 (TRIV-73)	07:54	07:03	06:23	06:06
	17:34	106	16:59 (TRIV-84)	18:11	44	09:14 (TRIV-73)	19:44	20:16	20:48	21:12
15	08:02		08:24 (TRIV-73)	07:35		08:31 (TRIV-73)	07:52	07:01	06:22	06:06
	17:35	109	17:00 (TRIV-84)	18:13	41	09:12 (TRIV-73)	19:45	20:17	20:49	21:12
16	08:02		08:23 (TRIV-73)	07:33		08:33 (TRIV-73)	07:50	06:59	06:21	06:06
	17:36	110	17:00 (TRIV-84)	18:14	38	09:11 (TRIV-73)	19:46	20:18	20:50	21:13
17	08:02		08:23 (TRIV-73)	07:32		08:35 (TRIV-73)	07:49	06:58	06:20	06:06
	17:37	111	17:01 (TRIV-84)	18:15	34	09:09 (TRIV-73)	19:47	20:19	20:51	21:13
18	08:01		08:22 (TRIV-73)	07:31		08:36 (TRIV-73)	07:47	06:56	06:19	06:06
	17:38	113	17:01 (TRIV-84)	18:16	31	09:07 (TRIV-73)	19:48	20:20	20:52	21:14
19	08:00		08:22 (TRIV-73)	07:29		08:39 (TRIV-73)	07:45	06:55	06:18	06:06
	17:39	114	17:02 (TRIV-84)	18:17	26	09:05 (TRIV-73)	19:49	20:21	20:53	21:14
20	08:00		08:22 (TRIV-73)	07:28		08:41 (TRIV-73)	07:44	06:53	06:17	06:06
	17:40	114	17:02 (TRIV-84)	18:19	20	09:01 (TRIV-73)	19:50	20:22	20:53	21:14
21	07:59		08:21 (TRIV-73)	07:26		08:47 (TRIV-73)	07:42	06:52	06:16	06:07
	17:42	116	17:02 (TRIV-84)	18:20	8	08:55 (TRIV-73)	19:52	20:24	20:54	21:15
22	07:59		08:22 (TRIV-73)	07:25			07:40	06:50	06:16	06:07
	17:43	116	17:03 (TRIV-84)	18:21			19:53	20:25	20:55	21:15
23	07:58		08:22 (TRIV-73)	07:23			07:39	06:49	06:15	06:07
	17:44	116	17:03 (TRIV-84)	18:22			19:54	20:26	20:56	21:15
24	07:57		08:22 (TRIV-73)	07:22			07:37	06:48	06:14	06:07
	17:45	117	17:03 (TRIV-84)	18:23			19:55	20:27	20:57	21:15
25	07:57		08:21 (TRIV-73)	07:21			07:35	06:46	06:13	06:08
	17:46	116	17:02 (TRIV-84)	18:25			19:56	20:28	20:58	21:15
26	07:56		08:22 (TRIV-73)	07:19			07:34	06:45	06:13	06:08
	17:48	116	17:03 (TRIV-84)	18:26			19:57	20:29	20:59	21:15
27	07:55		08:22 (TRIV-73)	07:18			07:32	06:43	06:12	06:08
	17:49	117	17:03 (TRIV-84)	18:27			19:58	20:30	21:00	21:15
28	07:54		08:22 (TRIV-73)	07:16			07:30	06:42	06:11	06:09
	17:50	116	17:03 (TRIV-84)	18:28			19:59	20:31	21:01	21:16
29	07:53		08:22 (TRIV-73)				07:29	06:41	06:11	06:09
	17:51	116	17:03 (TRIV-84)				20:00	20:32	21:02	21:16
30	07:52		08:22 (TRIV-73)				07:27	06:39	06:10	06:10
	17:53	114	17:02 (TRIV-84)				20:00	20:33	21:02	21:16
31	07:52		08:22 (TRIV-73)				07:25		06:10	
	17:54	113	17:02 (TRIV-84)				20:01		21:03	
Potential sun hours	298			297			370	399	448	452
Total, worst case		3306			1462					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.66			0.64					
Total reduction		0.33			0.35					
Total, real		1086			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)

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 307 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1322)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		07:55 (TRIV-73)	07:44		08:07 (TRIV-73)
	21:15		20:57		20:14		19:22			17:36	86	16:22 (TRIV-84)	17:11	103	16:40 (TRIV-84)
2	06:10		06:35		07:06		07:36			07:10		07:55 (TRIV-73)	07:45		08:08 (TRIV-73)
	21:15		20:56		20:13		19:21			17:34	91	16:25 (TRIV-84)	17:11	101	16:40 (TRIV-84)
3	06:11		06:36		07:07		07:37			07:12		07:55 (TRIV-73)	07:46		08:10 (TRIV-73)
	21:15		20:55		20:11		19:19			17:33	95	16:26 (TRIV-84)	17:11	99	16:41 (TRIV-84)
4	06:12		06:37		07:08		07:38			07:13		07:54 (TRIV-73)	07:47		08:11 (TRIV-73)
	21:15		20:54		20:10		19:17			17:32	99	16:27 (TRIV-84)	17:11	98	16:41 (TRIV-84)
5	06:12		06:38		07:09		07:39			07:14		07:54 (TRIV-73)	07:48		08:12 (TRIV-73)
	21:15		20:53		20:08		19:16			17:31	102	16:29 (TRIV-84)	17:11	96	16:41 (TRIV-84)
6	06:13		06:39		07:10		07:40			07:15		07:54 (TRIV-73)	07:49		08:13 (TRIV-73)
	21:15		20:52		20:06		19:14			17:30	103	16:29 (TRIV-84)	17:11	96	16:42 (TRIV-84)
7	06:13		06:40		07:11		07:41			07:16		07:53 (TRIV-73)	07:50		08:13 (TRIV-73)
	21:14		20:50		20:05		19:12			17:29	107	16:30 (TRIV-84)	17:10	94	16:41 (TRIV-84)
8	06:14		06:41		07:12		07:42			07:18		07:53 (TRIV-73)	07:51		08:14 (TRIV-73)
	21:14		20:49		20:03		19:11			17:28	109	16:31 (TRIV-84)	17:10	93	16:41 (TRIV-84)
9	06:15		06:42		07:13		07:43			07:19		07:54 (TRIV-73)	07:52		08:15 (TRIV-73)
	21:14		20:48		20:01		19:09			17:27	110	16:32 (TRIV-84)	17:10	92	16:42 (TRIV-84)
10	06:15		06:43		07:14		07:44			07:20		07:53 (TRIV-73)	07:53		08:16 (TRIV-73)
	21:13		20:47		20:00		19:07			17:25	113	16:33 (TRIV-84)	17:10	90	16:42 (TRIV-84)
11	06:16		06:44		07:15		07:45			07:21		07:53 (TRIV-73)	07:54		08:17 (TRIV-73)
	21:13		20:45		19:56		19:06			17:24	113	16:33 (TRIV-84)	17:10	88	16:42 (TRIV-84)
12	06:17		06:45		07:16		07:47			07:22		07:53 (TRIV-73)	07:54		08:18 (TRIV-73)
	21:13		20:44		19:55		19:04			17:24	114	16:33 (TRIV-84)	17:11	88	16:43 (TRIV-84)
13	06:17		06:46		07:17		07:48			07:24		07:54 (TRIV-73)	07:55		08:19 (TRIV-73)
	21:12		20:43		19:53		19:03			17:23	116	16:35 (TRIV-84)	17:11	87	16:44 (TRIV-84)
14	06:18		06:47		07:18		07:49			07:25		07:54 (TRIV-73)	07:56		08:19 (TRIV-73)
	21:12		20:41		19:51		19:01			17:22	116	16:35 (TRIV-84)	17:11	85	16:43 (TRIV-84)
15	06:19		06:48		07:19		07:50			07:26		07:54 (TRIV-73)	07:57		08:20 (TRIV-73)
	21:11		20:40		19:49		19:00			17:21	116	16:35 (TRIV-84)	17:11	85	16:44 (TRIV-84)
16	06:20		06:49		07:20		07:51			07:27		07:55 (TRIV-73)	07:57		08:21 (TRIV-73)
	21:10		20:39		19:48		18:58			17:20	116	16:36 (TRIV-84)	17:11	83	16:44 (TRIV-84)
17	06:21		06:50		07:21		07:52			07:28		07:55 (TRIV-73)	07:58		08:21 (TRIV-73)
	21:10		20:37		19:46		18:56			17:19	116	16:36 (TRIV-84)	17:12	83	16:44 (TRIV-84)
18	06:21		06:51		07:22		07:53			07:29		07:56 (TRIV-73)	07:59		08:22 (TRIV-73)
	21:09		20:36		19:44		18:55			17:18	117	16:37 (TRIV-84)	17:12	83	16:45 (TRIV-84)
19	06:22		06:52		07:23		07:54			07:31		07:56 (TRIV-73)	07:59		08:23 (TRIV-73)
	21:09		20:34		19:43		18:53			17:18	116	16:37 (TRIV-84)	17:12	83	16:46 (TRIV-84)
20	06:23		06:53		07:24		07:55			07:32		07:57 (TRIV-73)	08:00		08:23 (TRIV-73)
	21:08		20:33		19:41		18:52			17:17	116	16:38 (TRIV-84)	17:13	85	16:46 (TRIV-84)
21	06:24		06:54		07:25		07:56		09:15 (TRIV-73)	07:33		07:57 (TRIV-73)	08:00		08:24 (TRIV-73)
	21:07		20:31		19:39		18:51	13	09:28 (TRIV-73)	17:16	116	16:38 (TRIV-84)	17:13	85	16:47 (TRIV-84)
22	06:25		06:55		07:26		07:58		09:11 (TRIV-73)	07:34		07:58 (TRIV-73)	08:01		08:24 (TRIV-73)
	21:06		20:30		19:37		18:49	21	09:32 (TRIV-73)	17:16	115	16:38 (TRIV-84)	17:14	85	16:47 (TRIV-84)
23	06:26		06:56		07:27		07:59		09:08 (TRIV-73)	07:35		07:58 (TRIV-73)	08:01		08:25 (TRIV-73)
	21:06		20:29		19:36		18:48	27	09:35 (TRIV-73)	17:15	114	16:38 (TRIV-84)	17:14	85	16:48 (TRIV-84)
24	06:27		06:57		07:28		08:00		09:06 (TRIV-73)	07:36		07:59 (TRIV-73)	08:02		08:25 (TRIV-73)
	21:05		20:27		19:34		18:46	32	09:38 (TRIV-73)	17:14	113	16:38 (TRIV-84)	17:15	83	16:48 (TRIV-84)
25	06:27		06:58		07:29		08:01		09:04 (TRIV-73)	07:38		08:01 (TRIV-73)	08:02		08:25 (TRIV-73)
	21:04		20:25		19:32		18:45	36	09:40 (TRIV-73)	17:14	112	16:39 (TRIV-84)	17:16	83	16:48 (TRIV-84)
26	06:28		06:59		07:30		08:02		09:02 (TRIV-73)	07:39		08:02 (TRIV-73)	08:03		08:26 (TRIV-73)
	21:03		20:24		19:31		18:43	39	09:41 (TRIV-73)	17:13	110	16:39 (TRIV-84)	17:16	82	16:49 (TRIV-84)
27	06:29		07:00		07:31		08:03		09:00 (TRIV-73)	07:40		08:03 (TRIV-73)	08:03		08:26 (TRIV-73)
	21:02		20:22		19:29		18:42	42	09:42 (TRIV-73)	17:13	109	16:39 (TRIV-84)	17:17	83	16:49 (TRIV-84)
28	06:30		07:01		07:32		08:05		08:59 (TRIV-73)	07:41		08:04 (TRIV-73)	08:03		08:26 (TRIV-73)
	21:01		20:21		19:27		18:41	49	17:08 (TRIV-84)	17:13	107	16:39 (TRIV-84)	17:17	84	16:50 (TRIV-84)
29	06:31		07:02		07:33		08:06		08:59 (TRIV-73)	07:42		08:05 (TRIV-73)	08:04		08:26 (TRIV-73)
	21:00		20:19		19:26		18:39	64	17:15 (TRIV-84)	17:12	105	16:39 (TRIV-84)	17:18	85	16:50 (TRIV-84)
30	06:32		07:03		07:34		08:07		08:57 (TRIV-73)	07:43		08:06 (TRIV-73)	08:04		08:27 (TRIV-73)
	20:59		20:18		19:24		18:38	74	17:18 (TRIV-84)	17:12	105	16:40 (TRIV-84)	17:19	86	16:51 (TRIV-84)
31	06:33		07:04				08:08		08:56 (TRIV-73)				08:04		08:27 (TRIV-73)
	20:58		20:16				18:37	81	17:21 (TRIV-84)				17:20	88	16:52 (TRIV-84)
Potential sun hours	459		428		375		345			298			288		
Total, worst case							478				3277			2741	
Sun reduction							0.60				0.40			0.36	
Oper. time red.							1.00				1.00			1.00	
Wind dir. red.							0.62				0.65			0.66	
Total reduction							0.37				0.26			0.24	
Total, real							178				855			656	

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

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

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US-SYRACUSE, NY 13202
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 309 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1324)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April			May			June
1	08:04		16:34 (TRIV-73)	07:51		16:35 (TRIV-73)	07:14	07:24			06:38		19:34 (TRIV-72)	06:09
	17:21	21	16:55 (TRIV-73)	17:55	45	17:20 (TRIV-73)	18:29	20:02			20:34	37	20:11 (TRIV-72)	21:04
2	08:04		16:34 (TRIV-73)	07:50		16:35 (TRIV-73)	07:13	07:22			06:37		19:33 (TRIV-72)	06:09
	17:22	22	16:56 (TRIV-73)	17:56	45	17:20 (TRIV-73)	18:30	20:03			20:35	40	20:13 (TRIV-72)	21:05
3	08:04		16:33 (TRIV-73)	07:49		16:36 (TRIV-73)	07:11	07:20			06:35		19:33 (TRIV-72)	06:08
	17:22	24	16:57 (TRIV-73)	17:58	44	17:20 (TRIV-73)	18:32	20:04			20:36	41	20:14 (TRIV-72)	21:05
4	08:04		16:33 (TRIV-73)	07:48		16:37 (TRIV-73)	07:10	07:19			06:34		19:33 (TRIV-72)	06:08
	17:23	25	16:58 (TRIV-73)	17:59	42	17:19 (TRIV-73)	18:33	20:05			20:37	42	20:15 (TRIV-72)	21:06
5	08:04		16:33 (TRIV-73)	07:46		16:37 (TRIV-73)	07:08	07:17			06:33		19:33 (TRIV-72)	06:08
	17:24	26	16:59 (TRIV-73)	18:00	42	17:19 (TRIV-73)	18:34	20:06			20:38	43	20:16 (TRIV-72)	21:07
6	08:04		16:33 (TRIV-73)	07:45		16:37 (TRIV-73)	07:07	07:15			06:32		19:32 (TRIV-72)	06:07
	17:25	27	17:00 (TRIV-73)	18:01	41	17:18 (TRIV-73)	18:35	20:08			20:39	44	20:16 (TRIV-72)	21:07
7	08:04		16:32 (TRIV-73)	07:44		16:39 (TRIV-73)	07:05	07:14			06:30		19:32 (TRIV-72)	06:07
	17:26	28	17:00 (TRIV-73)	18:03	38	17:17 (TRIV-73)	18:36	20:09			20:40	44	20:16 (TRIV-72)	21:08
8	08:04		16:32 (TRIV-73)	07:43		16:40 (TRIV-73)	08:03	07:12			06:29		19:32 (TRIV-72)	06:07
	17:27	29	17:01 (TRIV-73)	18:04	36	17:16 (TRIV-73)	19:37	20:10			20:41	44	20:16 (TRIV-72)	21:09
9	08:04		16:33 (TRIV-73)	07:42		16:41 (TRIV-73)	08:02	07:10			06:28		19:32 (TRIV-72)	06:07
	17:28	29	17:02 (TRIV-73)	18:05	34	17:15 (TRIV-73)	19:38	20:11			20:42	44	20:16 (TRIV-72)	21:09
10	08:04		16:33 (TRIV-73)	07:41		16:43 (TRIV-73)	08:00	07:09			06:27		19:32 (TRIV-72)	06:06
	17:29	31	17:04 (TRIV-73)	18:06	31	17:14 (TRIV-73)	19:39	20:12			20:44	44	20:16 (TRIV-72)	21:10
11	08:04		16:32 (TRIV-73)	07:40		16:44 (TRIV-73)	07:59	07:07			06:26		19:33 (TRIV-72)	06:06
	17:30	32	17:04 (TRIV-73)	18:08	28	17:12 (TRIV-73)	19:41	20:13			20:45	43	20:16 (TRIV-72)	21:10
12	08:03		16:32 (TRIV-73)	07:38		16:46 (TRIV-73)	07:57	07:06			06:25		19:33 (TRIV-72)	06:06
	17:31	33	17:05 (TRIV-73)	18:09	25	17:11 (TRIV-73)	19:42	20:14			20:46	42	20:15 (TRIV-72)	21:11
13	08:03		16:32 (TRIV-73)	07:37		16:49 (TRIV-73)	07:55	07:04			06:24		19:33 (TRIV-72)	06:06
	17:32	35	17:07 (TRIV-73)	18:10	19	17:08 (TRIV-73)	19:43	20:15			20:47	42	20:15 (TRIV-72)	21:12
14	08:03		16:32 (TRIV-73)	07:36		16:53 (TRIV-73)	07:54	07:03			06:23		19:34 (TRIV-72)	06:06
	17:34	36	17:08 (TRIV-73)	18:11	12	17:05 (TRIV-73)	19:44	20:16			20:48	41	20:15 (TRIV-72)	21:12
15	08:02		16:32 (TRIV-73)	07:34			07:52	07:01			06:22		19:34 (TRIV-72)	06:06
	17:35	37	17:09 (TRIV-73)	18:13			19:45	20:17			20:49	40	20:14 (TRIV-72)	21:12
16	08:02		16:31 (TRIV-73)	07:33			07:50	06:59			06:21		19:34 (TRIV-72)	06:06
	17:36	39	17:10 (TRIV-73)	18:14			19:46	20:18			20:50	40	20:14 (TRIV-72)	21:13
17	08:01		16:32 (TRIV-73)	07:32			07:49	06:58			06:20		19:35 (TRIV-72)	06:06
	17:37	40	17:12 (TRIV-73)	18:15			19:47	20:19			20:51	38	20:13 (TRIV-72)	21:13
18	08:01		16:32 (TRIV-73)	07:30			07:47	06:56			06:19		19:36 (TRIV-72)	06:06
	17:38	40	17:12 (TRIV-73)	18:16			19:48	20:20			20:52	37	20:13 (TRIV-72)	21:14
19	08:00		16:32 (TRIV-73)	07:29			07:45	06:55			06:18		19:37 (TRIV-72)	06:06
	17:39	42	17:14 (TRIV-73)	18:17			19:49	20:21			20:52	36	20:13 (TRIV-72)	21:14
20	08:00		16:32 (TRIV-73)	07:28			07:44	06:53		19:56 (TRIV-72)	06:17		19:37 (TRIV-72)	06:06
	17:40	43	17:15 (TRIV-73)	18:19			19:50	20:22	3	19:59 (TRIV-72)	20:53	35	20:12 (TRIV-72)	21:14
21	07:59		16:31 (TRIV-73)	07:26			07:42	06:52		19:49 (TRIV-72)	06:16		19:38 (TRIV-72)	06:06
	17:42	45	17:16 (TRIV-73)	18:20			19:52	20:23	13	20:02 (TRIV-72)	20:54	33	20:11 (TRIV-72)	21:15
22	07:59		16:32 (TRIV-73)	07:25			07:40	06:50		19:46 (TRIV-72)	06:15		19:38 (TRIV-72)	06:07
	17:43	46	17:18 (TRIV-73)	18:21			19:53	20:25	17	20:03 (TRIV-72)	20:55	32	20:10 (TRIV-72)	21:15
23	07:58		16:32 (TRIV-73)	07:23			07:39	06:49		19:43 (TRIV-72)	06:15		19:40 (TRIV-72)	06:07
	17:44	46	17:18 (TRIV-73)	18:22			19:54	20:26	21	20:04 (TRIV-72)	20:56	30	20:10 (TRIV-72)	21:15
24	07:57		16:32 (TRIV-73)	07:22			07:37	06:47		19:42 (TRIV-72)	06:14		19:40 (TRIV-72)	06:07
	17:45	47	17:19 (TRIV-73)	18:23			19:55	20:27	23	20:05 (TRIV-72)	20:57	29	20:09 (TRIV-72)	21:15
25	07:57		16:32 (TRIV-73)	07:20			07:35	06:46		19:39 (TRIV-72)	06:13		19:41 (TRIV-72)	06:08
	17:46	47	17:19 (TRIV-73)	18:25			19:56	20:28	27	20:06 (TRIV-72)	20:58	27	20:08 (TRIV-72)	21:15
26	07:56		16:32 (TRIV-73)	07:19			07:34	06:45		19:38 (TRIV-72)	06:13		19:43 (TRIV-72)	06:08
	17:48	47	17:19 (TRIV-73)	18:26			19:57	20:29	29	20:07 (TRIV-72)	20:59	24	20:07 (TRIV-72)	21:15
27	07:55		16:33 (TRIV-73)	07:17			07:32	06:43		19:38 (TRIV-72)	06:12		19:44 (TRIV-72)	06:08
	17:49	47	17:20 (TRIV-73)	18:27			19:58	20:30	30	20:08 (TRIV-72)	21:00	22	20:06 (TRIV-72)	21:15
28	07:54		16:33 (TRIV-73)	07:16			07:30	06:42		19:36 (TRIV-72)	06:11		19:46 (TRIV-72)	06:09
	17:50	47	17:20 (TRIV-73)	18:28			19:59	20:31	33	20:09 (TRIV-72)	21:01	19	20:05 (TRIV-72)	21:15
29	07:53		16:33 (TRIV-73)				07:29	06:40		19:35 (TRIV-72)	06:11		19:47 (TRIV-72)	06:09
	17:51	47	17:20 (TRIV-73)				20:00	20:32	35	20:10 (TRIV-72)	21:01	17	20:04 (TRIV-72)	21:15
30	07:52		16:34 (TRIV-73)				07:27	06:39		19:35 (TRIV-72)	06:10		19:49 (TRIV-72)	06:09
	17:53	46	17:20 (TRIV-73)				20:00	20:33	36	20:11 (TRIV-72)	21:02	14	20:03 (TRIV-72)	21:15
31	07:51		16:34 (TRIV-73)				07:25				06:10		19:51 (TRIV-72)	
	17:54	46	17:20 (TRIV-73)				20:01				21:03	9	20:00 (TRIV-72)	
Potential sun hours	298			297			370	399			448			452
Total, worst case		1150			482				267			1073		
Sun reduction		0.50			0.55				0.63			0.69		
Oper. time red.		1.00			1.00				1.00			1.00		
Wind dir. red.		0.69			0.69				0.64			0.64		
Total reduction		0.35			0.38				0.41			0.45		
Total, real		402			185				109			480		

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 309 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1324)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September	October			November			December		
1	06:10			06:34		19:43 (TRIV-72)	07:05	07:35			07:09		16:12 (TRIV-73)	07:44		16:14 (TRIV-73)
	21:15			20:57	43	20:26 (TRIV-72)	20:14	19:22			17:36	31	16:43 (TRIV-73)	17:11	32	16:46 (TRIV-73)
2	06:10			06:35		19:43 (TRIV-72)	07:06	07:36			07:10		16:11 (TRIV-73)	07:45		16:15 (TRIV-73)
	21:15			20:56	43	20:26 (TRIV-72)	20:13	19:20			17:34	34	16:45 (TRIV-73)	17:11	31	16:46 (TRIV-73)
3	06:11			06:36		19:43 (TRIV-72)	07:07	07:37			07:12		16:10 (TRIV-73)	07:46		16:16 (TRIV-73)
	21:15			20:55	43	20:26 (TRIV-72)	20:11	19:19			17:33	36	16:46 (TRIV-73)	17:11	29	16:45 (TRIV-73)
4	06:11			06:37		19:43 (TRIV-72)	07:08	07:38			07:13		16:08 (TRIV-73)	07:47		16:16 (TRIV-73)
	21:15			20:54	44	20:27 (TRIV-72)	20:10	19:17			17:32	39	16:47 (TRIV-73)	17:11	29	16:45 (TRIV-73)
5	06:12			06:38		19:43 (TRIV-72)	07:09	07:39			07:14		16:07 (TRIV-73)	07:48		16:17 (TRIV-73)
	21:15			20:53	44	20:27 (TRIV-72)	20:08	19:16			17:31	41	16:48 (TRIV-73)	17:11	28	16:45 (TRIV-73)
6	06:13			06:39		19:43 (TRIV-72)	07:10	07:40			07:15		16:07 (TRIV-73)	07:49		16:18 (TRIV-73)
	21:15			20:52	44	20:27 (TRIV-72)	20:06	19:14			17:30	42	16:49 (TRIV-73)	17:10	27	16:45 (TRIV-73)
7	06:13			06:40		19:42 (TRIV-72)	07:11	07:41			07:16		16:06 (TRIV-73)	07:50		16:19 (TRIV-73)
	21:14			20:50	43	20:25 (TRIV-72)	20:05	19:12			17:29	43	16:49 (TRIV-73)	17:10	26	16:45 (TRIV-73)
8	06:14			06:41		19:42 (TRIV-72)	07:12	07:42			07:17		16:06 (TRIV-73)	07:51		16:20 (TRIV-73)
	21:14			20:49	43	20:25 (TRIV-72)	20:03	19:11			17:27	44	16:50 (TRIV-73)	17:10	25	16:45 (TRIV-73)
9	06:15			06:42		19:42 (TRIV-72)	07:13	07:43			07:19		16:06 (TRIV-73)	07:52		16:21 (TRIV-73)
	21:14			20:48	41	20:23 (TRIV-72)	20:01	19:09			17:26	45	16:51 (TRIV-73)	17:10	24	16:45 (TRIV-73)
10	06:15			06:43		19:42 (TRIV-72)	07:14	07:44			07:20		16:05 (TRIV-73)	07:53		16:23 (TRIV-73)
	21:13			20:47	40	20:22 (TRIV-72)	20:00	19:07			17:25	46	16:51 (TRIV-73)	17:10	22	16:45 (TRIV-73)
11	06:16			06:44		19:42 (TRIV-72)	07:15	07:45			07:21		16:05 (TRIV-73)	07:53		16:24 (TRIV-73)
	21:13			20:45	39	20:21 (TRIV-72)	19:56	19:06			17:24	46	16:51 (TRIV-73)	17:10	21	16:45 (TRIV-73)
12	06:17		20:01 (TRIV-72)	06:45		19:42 (TRIV-72)	07:16	07:46			07:22		16:05 (TRIV-73)	07:54		16:25 (TRIV-73)
	21:13	6	20:07 (TRIV-72)	20:44	38	20:20 (TRIV-72)	19:54	19:04			17:23	46	16:51 (TRIV-73)	17:11	20	16:45 (TRIV-73)
13	06:17		19:58 (TRIV-72)	06:46		19:43 (TRIV-72)	07:17	07:48			07:23		16:05 (TRIV-73)	07:55		16:26 (TRIV-73)
	21:12	12	20:10 (TRIV-72)	20:43	36	20:19 (TRIV-72)	19:53	19:03			17:23	47	16:52 (TRIV-73)	17:11	20	16:46 (TRIV-73)
14	06:18		19:56 (TRIV-72)	06:47		19:43 (TRIV-72)	07:18	07:49			07:25		16:05 (TRIV-73)	07:56		16:26 (TRIV-73)
	21:12	15	20:11 (TRIV-72)	20:41	34	20:17 (TRIV-72)	19:51	19:01			17:22	47	16:52 (TRIV-73)	17:11	19	16:45 (TRIV-73)
15	06:19		19:55 (TRIV-72)	06:48		19:44 (TRIV-72)	07:19	07:50			07:26		16:05 (TRIV-73)	07:57		16:27 (TRIV-73)
	21:11	18	20:13 (TRIV-72)	20:40	32	20:16 (TRIV-72)	19:49	18:59			17:21	47	16:52 (TRIV-73)	17:11	18	16:45 (TRIV-73)
16	06:20		19:54 (TRIV-72)	06:49		19:45 (TRIV-72)	07:20	07:51			07:27		16:06 (TRIV-73)	07:57		16:28 (TRIV-73)
	21:10	21	20:15 (TRIV-72)	20:39	30	20:15 (TRIV-72)	19:48	18:58			17:20	47	16:53 (TRIV-73)	17:11	18	16:46 (TRIV-73)
17	06:21		19:53 (TRIV-72)	06:50		19:45 (TRIV-72)	07:21	07:52			07:28		16:06 (TRIV-73)	07:58		16:29 (TRIV-73)
	21:10	23	20:16 (TRIV-72)	20:37	28	20:13 (TRIV-72)	19:46	18:56			17:19	47	16:53 (TRIV-73)	17:12	17	16:46 (TRIV-73)
18	06:21		19:52 (TRIV-72)	06:51		19:46 (TRIV-72)	07:22	07:53			07:29		16:06 (TRIV-73)	07:59		16:30 (TRIV-73)
	21:09	26	20:18 (TRIV-72)	20:36	26	20:12 (TRIV-72)	19:44	18:55			17:18	47	16:53 (TRIV-73)	17:12	16	16:46 (TRIV-73)
19	06:22		19:50 (TRIV-72)	06:52		19:48 (TRIV-72)	07:23	07:54			07:31		16:06 (TRIV-73)	07:59		16:31 (TRIV-73)
	21:09	28	20:18 (TRIV-72)	20:34	23	20:11 (TRIV-72)	19:43	18:53			17:18	46	16:52 (TRIV-73)	17:12	16	16:47 (TRIV-73)
20	06:23		19:50 (TRIV-72)	06:53		19:49 (TRIV-72)	07:24	07:55			07:32		16:07 (TRIV-73)	08:00		16:31 (TRIV-73)
	21:08	29	20:19 (TRIV-72)	20:33	20	20:09 (TRIV-72)	19:41	18:52			17:17	46	16:53 (TRIV-73)	17:13	16	16:47 (TRIV-73)
21	06:24		19:49 (TRIV-72)	06:54		19:51 (TRIV-72)	07:25	07:56			07:33		16:07 (TRIV-73)	08:00		16:32 (TRIV-73)
	21:07	31	20:20 (TRIV-72)	20:31	17	20:08 (TRIV-72)	19:39	18:50			17:16	45	16:52 (TRIV-73)	17:13	16	16:48 (TRIV-73)
22	06:25		19:48 (TRIV-72)	06:55		19:54 (TRIV-72)	07:26	07:58			07:34		16:08 (TRIV-73)	08:01		16:32 (TRIV-73)
	21:06	33	20:21 (TRIV-72)	20:30	13	20:07 (TRIV-72)	19:37	18:49			17:16	43	16:51 (TRIV-73)	17:14	16	16:48 (TRIV-73)
23	06:26		19:48 (TRIV-72)	06:56			07:27	07:59			07:35		16:08 (TRIV-73)	08:01		16:32 (TRIV-73)
	21:06	34	20:22 (TRIV-72)	20:28			19:36	18:48			17:15	42	16:50 (TRIV-73)	17:14	16	16:48 (TRIV-73)
24	06:27		19:47 (TRIV-72)	06:57			07:28	08:00			07:36		16:09 (TRIV-73)	08:02		16:33 (TRIV-73)
	21:05	36	20:23 (TRIV-72)	20:27			19:34	18:46			17:14	41	16:50 (TRIV-73)	17:15	16	16:49 (TRIV-73)
25	06:27		19:46 (TRIV-72)	06:58			07:29	08:01			07:37		16:10 (TRIV-73)	08:02		16:33 (TRIV-73)
	21:04	37	20:23 (TRIV-72)	20:25			19:32	18:45			17:14	40	16:50 (TRIV-73)	17:15	16	16:49 (TRIV-73)
26	06:28		19:45 (TRIV-72)	06:59			07:30	08:02			07:39		16:11 (TRIV-73)	08:03		16:34 (TRIV-73)
	21:03	38	20:23 (TRIV-72)	20:24			19:31	18:43			17:13	38	16:49 (TRIV-73)	17:16	16	16:50 (TRIV-73)
27	06:29		19:45 (TRIV-72)	07:00			07:31	08:03			07:40		16:11 (TRIV-73)	08:03		16:33 (TRIV-73)
	21:02	39	20:24 (TRIV-72)	20:22			19:29	18:42			17:13	37	16:48 (TRIV-73)	17:17	18	16:51 (TRIV-73)
28	06:30		19:45 (TRIV-72)	07:01			07:32	08:04		17:21 (TRIV-73)	07:41		16:12 (TRIV-73)	08:03		16:33 (TRIV-73)
	21:01	39	20:24 (TRIV-72)	20:21			19:27	18:41	14	17:35 (TRIV-73)	17:12	36	16:48 (TRIV-73)	17:17	18	16:51 (TRIV-73)
29	06:31		19:44 (TRIV-72)	07:02			07:33	08:06		17:18 (TRIV-73)	07:42		16:12 (TRIV-73)	08:04		16:33 (TRIV-73)
	21:00	41	20:25 (TRIV-72)	20:19			19:26	18:39	21	17:39 (TRIV-73)	17:12	35	16:47 (TRIV-73)	17:18	19	16:52 (TRIV-73)
30	06:32		19:44 (TRIV-72)	07:03			07:34	08:07		17:16 (TRIV-73)	07:43		16:13 (TRIV-73)	08:04		16:33 (TRIV-73)
	20:59	41	20:25 (TRIV-72)	20:18			19:24	18:38	25	17:41 (TRIV-73)	17:12	34	16:47 (TRIV-73)	17:19	19	16:52 (TRIV-73)
31	06:33		19:44 (TRIV-72)	07:04				08:08		17:13 (TRIV-73)				08:04		16:34 (TRIV-73)
	20:58	42	20:26 (TRIV-72)	20:16				18:37	29	17:42 (TRIV-73)				17:20	20	16:54 (TRIV-73)
Potential sun hours	459			428			375	345			298			288		
Total, worst case		589			764				89			1258			644	
Sun reduction		0.76			0.75				0.60			0.40			0.36	
Oper. time red.		1.00			1.00				1.00			1.00			1.00	
Wind dir. red.		0.64			0.64				0.69			0.69			0.69	
Total reduction		0.49			0.49				0.42			0.28			0.25	
Total, real		290			371				37			352			162	

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 310 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1325)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June		
1	08:04			07:51			07:14		07:42 (TRIV-72)	07:24		19:17 (TRIV-71)	06:38		18:41 (TRIV-71)	06:09		19:13 (TRIV-71)
	17:21			17:55			18:29	66	08:48 (TRIV-72)	20:02	13	19:30 (TRIV-71)	20:34	71	19:52 (TRIV-71)	21:04	10	19:23 (TRIV-71)
2	08:04			07:50			07:13		07:41 (TRIV-72)	07:22		19:10 (TRIV-71)	06:37		18:41 (TRIV-71)	06:09		
	17:22			17:56			18:30	66	08:47 (TRIV-72)	20:03	25	19:35 (TRIV-71)	20:35	70	19:51 (TRIV-71)	21:05		
3	08:04			07:49			07:11		07:41 (TRIV-72)	07:20		19:06 (TRIV-71)	06:35		18:41 (TRIV-71)	06:08		
	17:23			17:58			18:32	67	08:48 (TRIV-72)	20:04	32	19:38 (TRIV-71)	20:36	70	19:51 (TRIV-71)	21:05		
4	08:05			07:48			07:10		07:40 (TRIV-72)	07:19		19:03 (TRIV-71)	06:34		18:42 (TRIV-71)	06:08		
	17:23			17:59			18:33	67	08:47 (TRIV-72)	20:05	38	19:41 (TRIV-71)	20:37	69	19:51 (TRIV-71)	21:06		
5	08:05			07:47			07:08		07:41 (TRIV-72)	07:17		19:00 (TRIV-71)	06:33		18:42 (TRIV-71)	06:08		
	17:24			18:00			18:34	66	08:47 (TRIV-72)	20:07	43	19:43 (TRIV-71)	20:38	68	19:50 (TRIV-71)	21:07		
6	08:04			07:45			07:07		07:40 (TRIV-72)	07:15		18:58 (TRIV-71)	06:32		18:43 (TRIV-71)	06:07		
	17:25			18:01			18:35	67	08:47 (TRIV-72)	20:08	46	19:44 (TRIV-71)	20:39	67	19:50 (TRIV-71)	21:08		
7	08:04			07:44			07:05		07:40 (TRIV-72)	07:14		18:56 (TRIV-71)	06:30		18:43 (TRIV-71)	06:07		
	17:26			18:03			18:36	66	08:46 (TRIV-72)	20:09	50	19:46 (TRIV-71)	20:40	66	19:49 (TRIV-71)	21:08		
8	08:04			07:43			08:03		08:40 (TRIV-72)	07:12		18:54 (TRIV-71)	06:29		18:43 (TRIV-71)	06:07		
	17:27			18:04			19:37	66	09:46 (TRIV-72)	20:10	53	19:47 (TRIV-71)	20:42	65	19:48 (TRIV-71)	21:09		
9	08:04			07:42			08:02		08:40 (TRIV-72)	07:11		18:52 (TRIV-71)	06:28		18:44 (TRIV-71)	06:07		
	17:28			18:05			19:38	65	09:45 (TRIV-72)	20:11	56	19:48 (TRIV-71)	20:43	64	19:48 (TRIV-71)	21:09		
10	08:04			07:41		08:09 (TRIV-72)	08:00		08:40 (TRIV-72)	07:09		18:51 (TRIV-71)	06:27		18:44 (TRIV-71)	06:06		
	17:29			18:06	15	08:24 (TRIV-72)	19:40	64	09:44 (TRIV-72)	20:12	58	19:49 (TRIV-71)	20:44	63	19:47 (TRIV-71)	21:10		
11	08:04			07:40		08:05 (TRIV-72)	07:59		08:41 (TRIV-72)	07:07		18:49 (TRIV-71)	06:26		18:45 (TRIV-71)	06:06		
	17:30			18:08	23	08:28 (TRIV-72)	19:41	63	09:44 (TRIV-72)	20:13	61	19:50 (TRIV-71)	20:45	61	19:46 (TRIV-71)	21:11		
12	08:03			07:38		08:01 (TRIV-72)	07:57		08:41 (TRIV-72)	07:06		18:49 (TRIV-71)	06:25		18:46 (TRIV-71)	06:06		
	17:31			18:09	30	08:31 (TRIV-72)	19:42	61	09:42 (TRIV-72)	20:14	62	19:51 (TRIV-71)	20:46	60	19:46 (TRIV-71)	21:11		
13	08:03			07:37		07:59 (TRIV-72)	07:55		08:41 (TRIV-72)	07:04		18:47 (TRIV-71)	06:24		18:47 (TRIV-71)	06:06		
	17:32			18:10	35	08:34 (TRIV-72)	19:43	60	09:41 (TRIV-72)	20:15	64	19:51 (TRIV-71)	20:47	58	19:45 (TRIV-71)	21:12		
14	08:03			07:36		07:57 (TRIV-72)	07:54		08:42 (TRIV-72)	07:03		18:47 (TRIV-71)	06:23		18:47 (TRIV-71)	06:06		
	17:34			18:11	39	08:36 (TRIV-72)	19:44	58	09:40 (TRIV-72)	20:16	65	19:52 (TRIV-71)	20:48	57	19:44 (TRIV-71)	21:12		
15	08:02			07:35		07:54 (TRIV-72)	07:52		08:42 (TRIV-72)	07:01		18:45 (TRIV-71)	06:22		18:48 (TRIV-71)	06:06		
	17:35			18:13	43	08:37 (TRIV-72)	19:45	57	09:39 (TRIV-72)	20:17	67	19:52 (TRIV-71)	20:49	56	19:44 (TRIV-71)	21:13		
16	08:02			07:33		07:53 (TRIV-72)	07:50		08:42 (TRIV-72)	06:59		18:45 (TRIV-71)	06:21		18:49 (TRIV-71)	06:06		
	17:36			18:14	46	08:39 (TRIV-72)	19:46	55	09:37 (TRIV-72)	20:18	68	19:53 (TRIV-71)	20:50	54	19:43 (TRIV-71)	21:13		
17	08:02			07:32		07:52 (TRIV-72)	07:49		08:44 (TRIV-72)	06:58		18:44 (TRIV-71)	06:20		18:50 (TRIV-71)	06:06		
	17:37			18:15	49	08:41 (TRIV-72)	19:47	52	09:36 (TRIV-72)	20:19	69	19:53 (TRIV-71)	20:51	52	19:42 (TRIV-71)	21:13		
18	08:01			07:31		07:50 (TRIV-72)	07:47		08:44 (TRIV-72)	06:56		18:44 (TRIV-71)	06:19		18:51 (TRIV-71)	06:06		
	17:38			18:16	52	08:42 (TRIV-72)	19:48	50	09:34 (TRIV-72)	20:20	70	19:54 (TRIV-71)	20:52	51	19:42 (TRIV-71)	21:14		
19	08:01			07:29		07:49 (TRIV-72)	07:45		08:45 (TRIV-72)	06:55		18:43 (TRIV-71)	06:18		18:52 (TRIV-71)	06:06		
	17:39			18:17	54	08:43 (TRIV-72)	19:49	47	09:32 (TRIV-72)	20:21	70	19:53 (TRIV-71)	20:53	49	19:41 (TRIV-71)	21:14		
20	08:00			07:28		07:48 (TRIV-72)	07:44		08:47 (TRIV-72)	06:53		18:43 (TRIV-71)	06:17		18:53 (TRIV-71)	06:06		
	17:40			18:19	55	08:43 (TRIV-72)	19:50	44	09:31 (TRIV-72)	20:22	71	19:54 (TRIV-71)	20:54	47	19:40 (TRIV-71)	21:14		
21	07:59			07:26		07:47 (TRIV-72)	07:42		08:48 (TRIV-72)	06:52		18:42 (TRIV-71)	06:16		18:54 (TRIV-71)	06:07		
	17:42			18:20	58	08:45 (TRIV-72)	19:52	40	09:28 (TRIV-72)	20:24	71	19:53 (TRIV-71)	20:54	45	19:39 (TRIV-71)	21:15		
22	07:59			07:25		07:46 (TRIV-72)	07:40		08:49 (TRIV-72)	06:50		18:42 (TRIV-71)	06:16		18:55 (TRIV-71)	06:07		
	17:43			18:21	59	08:45 (TRIV-72)	19:53	37	09:26 (TRIV-72)	20:25	72	19:54 (TRIV-71)	20:55	42	19:37 (TRIV-71)	21:15		
23	07:58			07:23		07:45 (TRIV-72)	07:39		08:52 (TRIV-72)	06:49		18:41 (TRIV-71)	06:15		18:57 (TRIV-71)	06:07		
	17:44			18:22	61	08:46 (TRIV-72)	19:54	31	09:23 (TRIV-72)	20:26	72	19:53 (TRIV-71)	20:56	40	19:37 (TRIV-71)	21:15		
24	07:57			07:22		07:45 (TRIV-72)	07:37		08:55 (TRIV-72)	06:48		18:41 (TRIV-71)	06:14		18:58 (TRIV-71)	06:07		
	17:45			18:23	62	08:47 (TRIV-72)	19:55	25	09:20 (TRIV-72)	20:27	72	19:53 (TRIV-71)	20:57	38	19:36 (TRIV-71)	21:15		
25	07:57			07:21		07:44 (TRIV-72)	07:35		08:58 (TRIV-72)	06:46		18:40 (TRIV-71)	06:13		18:59 (TRIV-71)	06:08		
	17:46			18:25	63	08:47 (TRIV-72)	19:56	16	09:14 (TRIV-72)	20:28	73	19:53 (TRIV-71)	20:58	35	19:34 (TRIV-71)	21:15		
26	07:56			07:19		07:44 (TRIV-72)	07:34			06:45		18:40 (TRIV-71)	06:13		19:01 (TRIV-71)	06:08		
	17:48			18:26	64	08:48 (TRIV-72)	19:57			20:29	73	19:53 (TRIV-71)	20:59	33	19:34 (TRIV-71)	21:15		
27	07:55			07:18		07:42 (TRIV-72)	07:32			06:43		18:41 (TRIV-71)	06:12		19:02 (TRIV-71)	06:08		
	17:49			18:27	66	08:48 (TRIV-72)	19:58			20:30	72	19:53 (TRIV-71)	21:00	30	19:32 (TRIV-71)	21:16		
28	07:54			07:16		07:42 (TRIV-72)	07:30			06:42		18:40 (TRIV-71)	06:11		19:04 (TRIV-71)	06:09		
	17:50			18:28	65	08:47 (TRIV-72)	19:59			20:31	72	19:52 (TRIV-71)	21:01	27	19:31 (TRIV-71)	21:16		
29	07:53						07:29			06:41		18:41 (TRIV-71)	06:11		19:05 (TRIV-71)	06:09		
	17:51						20:00			20:32	71	19:52 (TRIV-71)	21:02	24	19:29 (TRIV-71)	21:16		
30	07:52						07:27			06:39		18:41 (TRIV-71)	06:10		19:08 (TRIV-71)	06:09		
	17:53						20:00			20:33	71	19:52 (TRIV-71)	21:02	20	19:28 (TRIV-71)	21:16		
31	07:52						07:25						06:10		19:09 (TRIV-71)			
	17:54						20:01						21:03	17	19:26 (TRIV-71)			
Potential sun hours	298			297			370			399			448			452		
Total, worst case			939					1356			1800			1569			10	
Sun reduction			0.55					0.57			0.63			0.69			0.74	
Oper. time red.			1.00					1.00			1.00			1.00			1.00	
Wind dir. red.			0.64					0.64			0.66			0.66			0.66	
Total reduction			0.35					0.36			0.42			0.46			0.49	
Total, real			330					494			750			716			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)

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 310 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1325)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July			August			September			October			November			December
1	06:10			06:34		18:56 (TRIV-71)	07:05		18:48 (TRIV-71)	07:35		08:20 (TRIV-72)	07:09		07:39 (TRIV-72)	07:44
	21:15			20:57	61	19:57 (TRIV-71)	20:14	61	19:49 (TRIV-71)	19:22	62	09:22 (TRIV-72)	17:36	12	07:51 (TRIV-72)	17:11
2	06:10			06:35		18:56 (TRIV-71)	07:06		18:49 (TRIV-71)	07:36		08:19 (TRIV-72)	07:10			07:45
	21:15			20:56	61	19:57 (TRIV-71)	20:13	58	19:47 (TRIV-71)	19:21	63	09:22 (TRIV-72)	17:34			17:11
3	06:11			06:36		18:55 (TRIV-71)	07:07		18:50 (TRIV-71)	07:37		08:19 (TRIV-72)	07:12			07:46
	21:15			20:55	63	19:58 (TRIV-71)	20:11	56	19:46 (TRIV-71)	19:19	63	09:22 (TRIV-72)	17:33			17:11
4	06:12			06:37		18:54 (TRIV-71)	07:08		18:51 (TRIV-71)	07:38		08:18 (TRIV-72)	07:13			07:47
	21:15			20:54	64	19:58 (TRIV-71)	20:10	53	19:44 (TRIV-71)	19:17	64	09:22 (TRIV-72)	17:32			17:11
5	06:12			06:38		18:54 (TRIV-71)	07:09		18:52 (TRIV-71)	07:39		08:17 (TRIV-72)	07:14			07:48
	21:15			20:53	65	19:59 (TRIV-71)	20:08	50	19:42 (TRIV-71)	19:16	65	09:22 (TRIV-72)	17:31			17:11
6	06:13			06:39		18:53 (TRIV-71)	07:10		18:54 (TRIV-71)	07:40		08:17 (TRIV-72)	07:15			07:49
	21:15			20:52	66	19:59 (TRIV-71)	20:06	46	19:40 (TRIV-71)	19:14	65	09:22 (TRIV-72)	17:30			17:11
7	06:13			06:40		18:52 (TRIV-71)	07:11		18:55 (TRIV-71)	07:41		08:16 (TRIV-72)	07:16			07:50
	21:14			20:50	68	20:00 (TRIV-71)	20:05	43	19:38 (TRIV-71)	19:12	66	09:22 (TRIV-72)	17:29			17:10
8	06:14			06:41		18:51 (TRIV-71)	07:12		18:57 (TRIV-71)	07:42		08:15 (TRIV-72)	07:18			07:51
	21:14			20:49	68	19:59 (TRIV-71)	20:03	38	19:35 (TRIV-71)	19:11	67	09:22 (TRIV-72)	17:28			17:10
9	06:15			06:42		18:50 (TRIV-71)	07:13		19:00 (TRIV-71)	07:43		08:15 (TRIV-72)	07:19			07:52
	21:14			20:48	69	19:59 (TRIV-71)	20:01	32	19:32 (TRIV-71)	19:09	67	09:22 (TRIV-72)	17:26			17:10
10	06:15			06:43		18:50 (TRIV-71)	07:14		19:03 (TRIV-71)	07:44		08:15 (TRIV-72)	07:20			07:53
	21:13			20:47	70	20:00 (TRIV-71)	20:00	25	19:28 (TRIV-71)	19:07	67	09:22 (TRIV-72)	17:25			17:10
11	06:16		19:22 (TRIV-71)	06:44		18:49 (TRIV-71)	07:15		19:08 (TRIV-71)	07:45		08:14 (TRIV-72)	07:21			07:54
	21:13	7	19:29 (TRIV-71)	20:45	71	20:00 (TRIV-71)	19:56	15	19:23 (TRIV-71)	19:06	67	09:21 (TRIV-72)	17:24			17:10
12	06:17		19:19 (TRIV-71)	06:45		18:49 (TRIV-71)	07:16			07:47		08:15 (TRIV-72)	07:22			07:54
	21:13	14	19:33 (TRIV-71)	20:44	71	20:00 (TRIV-71)	19:55			19:04	67	09:22 (TRIV-72)	17:24			17:11
13	06:17		19:17 (TRIV-71)	06:46		18:49 (TRIV-71)	07:17			07:48		08:15 (TRIV-72)	07:24			07:55
	21:12	18	19:35 (TRIV-71)	20:43	71	20:00 (TRIV-71)	19:53			19:03	66	09:21 (TRIV-72)	17:23			17:11
14	06:18		19:15 (TRIV-71)	06:47		18:48 (TRIV-71)	07:18			07:49		08:15 (TRIV-72)	07:25			07:56
	21:12	23	19:38 (TRIV-71)	20:41	72	20:00 (TRIV-71)	19:51			19:01	66	09:21 (TRIV-72)	17:22			17:11
15	06:19		19:13 (TRIV-71)	06:48		18:48 (TRIV-71)	07:19			07:50		08:15 (TRIV-72)	07:26			07:57
	21:11	26	19:39 (TRIV-71)	20:40	72	20:00 (TRIV-71)	19:49			19:00	65	09:20 (TRIV-72)	17:21			17:11
16	06:20		19:12 (TRIV-71)	06:49		18:47 (TRIV-71)	07:20			07:51		08:15 (TRIV-72)	07:27			07:57
	21:10	29	19:41 (TRIV-71)	20:39	73	20:00 (TRIV-71)	19:48			18:58	64	09:19 (TRIV-72)	17:20			17:11
17	06:21		19:11 (TRIV-71)	06:50		18:47 (TRIV-71)	07:21			07:52		08:15 (TRIV-72)	07:28			07:58
	21:10	31	19:42 (TRIV-71)	20:37	73	20:00 (TRIV-71)	19:46			18:56	63	09:18 (TRIV-72)	17:19			17:12
18	06:21		19:10 (TRIV-71)	06:51		18:47 (TRIV-71)	07:22		08:48 (TRIV-72)	07:53		08:16 (TRIV-72)	07:29			07:59
	21:09	34	19:44 (TRIV-71)	20:36	72	19:59 (TRIV-71)	19:44	13	09:01 (TRIV-72)	18:55	61	09:17 (TRIV-72)	17:18			17:12
19	06:22		19:08 (TRIV-71)	06:52		18:47 (TRIV-71)	07:23		08:43 (TRIV-72)	07:54		08:17 (TRIV-72)	07:31			07:59
	21:09	36	19:44 (TRIV-71)	20:34	72	19:59 (TRIV-71)	19:43	23	09:06 (TRIV-72)	18:53	60	09:17 (TRIV-72)	17:18			17:12
20	06:23		19:07 (TRIV-71)	06:53		18:47 (TRIV-71)	07:24		08:39 (TRIV-72)	07:55		08:17 (TRIV-72)	07:32			08:00
	21:08	39	19:46 (TRIV-71)	20:33	72	19:59 (TRIV-71)	19:41	30	09:09 (TRIV-72)	18:52	59	09:16 (TRIV-72)	17:17			17:13
21	06:24		19:06 (TRIV-71)	06:54		18:47 (TRIV-71)	07:25		08:36 (TRIV-72)	07:56		08:18 (TRIV-72)	07:33			08:00
	21:07	41	19:47 (TRIV-71)	20:31	71	19:58 (TRIV-71)	19:39	35	09:11 (TRIV-72)	18:51	57	09:15 (TRIV-72)	17:16			17:13
22	06:25		19:05 (TRIV-71)	06:55		18:46 (TRIV-71)	07:26		08:34 (TRIV-72)	07:58		08:19 (TRIV-72)	07:34			08:01
	21:06	43	19:48 (TRIV-71)	20:30	72	19:58 (TRIV-71)	19:37	39	09:13 (TRIV-72)	18:49	55	09:14 (TRIV-72)	17:16			17:14
23	06:26		19:04 (TRIV-71)	06:56		18:46 (TRIV-71)	07:27		08:32 (TRIV-72)	07:59		08:19 (TRIV-72)	07:35			08:01
	21:06	46	19:50 (TRIV-71)	20:29	72	19:58 (TRIV-71)	19:36	43	09:15 (TRIV-72)	18:48	53	09:12 (TRIV-72)	17:15			17:14
24	06:27		19:03 (TRIV-71)	06:57		18:46 (TRIV-71)	07:28		08:30 (TRIV-72)	08:00		08:21 (TRIV-72)	07:36			08:02
	21:05	48	19:51 (TRIV-71)	20:27	71	19:57 (TRIV-71)	19:34	46	09:16 (TRIV-72)	18:46	51	09:12 (TRIV-72)	17:14			17:15
25	06:27		19:02 (TRIV-71)	06:58		18:47 (TRIV-71)	07:29		08:28 (TRIV-72)	08:01		08:22 (TRIV-72)	07:38			08:02
	21:04	50	19:52 (TRIV-71)	20:25	69	19:56 (TRIV-71)	19:32	49	09:17 (TRIV-72)	18:45	48	09:10 (TRIV-72)	17:14			17:16
26	06:28		19:01 (TRIV-71)	06:59		18:47 (TRIV-71)	07:30		08:27 (TRIV-72)	08:02		08:23 (TRIV-72)	07:39			08:03
	21:03	51	19:52 (TRIV-71)	20:24	69	19:56 (TRIV-71)	19:31	51	09:18 (TRIV-72)	18:43	45	09:08 (TRIV-72)	17:13			17:16
27	06:29		19:00 (TRIV-71)	07:00		18:47 (TRIV-71)	07:31		08:25 (TRIV-72)	08:03		08:25 (TRIV-72)	07:40			08:03
	21:02	53	19:53 (TRIV-71)	20:22	68	19:55 (TRIV-71)	19:29	54	09:19 (TRIV-72)	18:42	41	09:06 (TRIV-72)	17:13			17:17
28	06:30		18:59 (TRIV-71)	07:01		18:47 (TRIV-71)	07:32		08:24 (TRIV-72)	08:05		08:26 (TRIV-72)	07:41			08:03
	21:01	55	19:54 (TRIV-71)	20:21	67	19:54 (TRIV-71)	19:27	56	09:20 (TRIV-72)	18:41	38	09:04 (TRIV-72)	17:13			17:17
29	06:31		18:58 (TRIV-71)	07:02		18:48 (TRIV-71)	07:33		08:23 (TRIV-72)	08:06		08:29 (TRIV-72)	07:42			08:04
	21:00	57	19:55 (TRIV-71)	20:19	65	19:53 (TRIV-71)	19:26	58	09:21 (TRIV-72)	18:39	34	09:03 (TRIV-72)	17:12			17:18
30	06:32		18:58 (TRIV-71)	07:03		18:47 (TRIV-71)	07:34		08:21 (TRIV-72)	08:07		08:31 (TRIV-72)	07:43			08:04
	20:59	57	19:55 (TRIV-71)	20:18	64	19:51 (TRIV-71)	19:24	60	09:21 (TRIV-72)	18:38	29	09:00 (TRIV-72)	17:12			17:19
31	06:33		18:57 (TRIV-71)	07:04		18:48 (TRIV-71)				08:08		08:34 (TRIV-72)				08:04
	20:58	59	19:56 (TRIV-71)	20:16	62	19:50 (TRIV-71)				18:37	22	08:56 (TRIV-72)				17:20
Potential sun hours	459			428			375			345			298			288
Total, worst case		817			2124			1034			1760			12		
Sun reduction		0.76			0.75			0.67			0.60			0.40		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.66			0.66			0.65			0.64			0.64		
Total reduction		0.50			0.50			0.44			0.38			0.26		
Total, real		411			1053			450			675			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 311 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1326)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March		April		May	June
1	08:04	08:36 (TRIV-72)	07:51	08:18 (TRIV-72)	07:14	08:31 (TRIV-72)	07:24	18:29 (TRIV-71)	06:38	06:09
	17:21	13 08:49 (TRIV-72)	17:55	69 09:27 (TRIV-72)	18:29	39 09:10 (TRIV-72)	20:02	63 19:32 (TRIV-71)	20:34	21:04
2	08:04	08:34 (TRIV-72)	07:50	08:18 (TRIV-72)	07:13	08:32 (TRIV-72)	07:22	18:28 (TRIV-71)	06:37	06:09
	17:22	17 08:51 (TRIV-72)	17:56	69 09:27 (TRIV-72)	18:30	35 09:07 (TRIV-72)	20:03	64 19:32 (TRIV-71)	20:35	21:05
3	08:04	08:33 (TRIV-72)	07:49	08:18 (TRIV-72)	07:11	08:35 (TRIV-72)	07:20	18:28 (TRIV-71)	06:35	06:08
	17:23	20 08:53 (TRIV-72)	17:58	70 09:28 (TRIV-72)	18:32	30 09:05 (TRIV-72)	20:04	63 19:31 (TRIV-71)	20:36	21:05
4	08:05	08:32 (TRIV-72)	07:48	08:18 (TRIV-72)	07:10	08:38 (TRIV-72)	07:19	18:29 (TRIV-71)	06:34	06:08
	17:23	23 08:55 (TRIV-72)	17:59	70 09:28 (TRIV-72)	18:33	22 09:00 (TRIV-72)	20:05	62 19:31 (TRIV-71)	20:37	21:06
5	08:05	08:32 (TRIV-72)	07:47	08:18 (TRIV-72)	07:08	08:45 (TRIV-72)	07:17	18:28 (TRIV-71)	06:33	06:08
	17:24	25 08:57 (TRIV-72)	18:00	70 09:28 (TRIV-72)	18:34	9 08:54 (TRIV-72)	20:07	62 19:30 (TRIV-71)	20:38	21:07
6	08:04	08:31 (TRIV-72)	07:45	08:18 (TRIV-72)	07:07		07:15	18:28 (TRIV-71)	06:32	06:07
	17:25	28 08:59 (TRIV-72)	18:01	71 09:29 (TRIV-72)	18:35		20:08	61 19:29 (TRIV-71)	20:39	21:08
7	08:04	08:29 (TRIV-72)	07:44	08:17 (TRIV-72)	07:05		07:14	18:29 (TRIV-71)	06:30	06:07
	17:26	30 08:59 (TRIV-72)	18:03	71 09:28 (TRIV-72)	18:36		20:09	60 19:29 (TRIV-71)	20:40	21:08
8	08:04	08:29 (TRIV-72)	07:43	08:17 (TRIV-72)	08:03		07:12	18:29 (TRIV-71)	06:29	06:07
	17:27	32 09:01 (TRIV-72)	18:04	71 09:28 (TRIV-72)	19:37		20:10	59 19:28 (TRIV-71)	20:42	21:09
9	08:04	08:28 (TRIV-72)	07:42	08:17 (TRIV-72)	08:02		07:11	18:29 (TRIV-71)	06:28	06:07
	17:28	35 09:03 (TRIV-72)	18:05	72 09:29 (TRIV-72)	19:38		20:11	57 19:26 (TRIV-71)	20:43	21:09
10	08:04	08:28 (TRIV-72)	07:41	08:18 (TRIV-72)	08:00		07:09	18:30 (TRIV-71)	06:27	06:06
	17:29	37 09:05 (TRIV-72)	18:06	71 09:29 (TRIV-72)	19:40		20:12	56 19:26 (TRIV-71)	20:44	21:10
11	08:04	08:26 (TRIV-72)	07:40	08:18 (TRIV-72)	07:59		07:07	18:30 (TRIV-71)	06:26	06:06
	17:30	39 09:05 (TRIV-72)	18:08	71 09:29 (TRIV-72)	19:41		20:13	55 19:25 (TRIV-71)	20:45	21:11
12	08:03	08:26 (TRIV-72)	07:38	08:18 (TRIV-72)	07:57	19:00 (TRIV-71)	07:06	18:31 (TRIV-71)	06:25	06:06
	17:31	41 09:07 (TRIV-72)	18:09	70 09:28 (TRIV-72)	19:42	12 19:12 (TRIV-71)	20:14	53 19:24 (TRIV-71)	20:46	21:11
13	08:03	08:26 (TRIV-72)	07:37	08:18 (TRIV-72)	07:55	18:54 (TRIV-71)	07:04	18:32 (TRIV-71)	06:24	06:06
	17:32	43 09:09 (TRIV-72)	18:10	70 09:28 (TRIV-72)	19:43	23 19:17 (TRIV-71)	20:15	50 19:22 (TRIV-71)	20:47	21:12
14	08:03	08:25 (TRIV-72)	07:36	08:19 (TRIV-72)	07:54	18:51 (TRIV-71)	07:03	18:33 (TRIV-71)	06:23	06:06
	17:34	45 09:10 (TRIV-72)	18:11	69 09:28 (TRIV-72)	19:44	29 19:20 (TRIV-71)	20:16	49 19:22 (TRIV-71)	20:48	21:12
15	08:02	08:25 (TRIV-72)	07:35	08:18 (TRIV-72)	07:52	18:47 (TRIV-71)	07:01	18:34 (TRIV-71)	06:22	06:06
	17:35	46 09:11 (TRIV-72)	18:13	69 09:27 (TRIV-72)	19:45	35 19:22 (TRIV-71)	20:17	46 19:20 (TRIV-71)	20:49	21:13
16	08:02	08:24 (TRIV-72)	07:33	08:19 (TRIV-72)	07:50	18:44 (TRIV-71)	06:59	18:35 (TRIV-71)	06:21	06:06
	17:36	48 09:12 (TRIV-72)	18:14	68 09:27 (TRIV-72)	19:46	40 19:24 (TRIV-71)	20:18	44 19:19 (TRIV-71)	20:50	21:13
17	08:02	08:24 (TRIV-72)	07:32	08:20 (TRIV-72)	07:49	18:43 (TRIV-71)	06:58	18:36 (TRIV-71)	06:20	06:06
	17:37	50 09:14 (TRIV-72)	18:15	67 09:27 (TRIV-72)	19:47	43 19:26 (TRIV-71)	20:19	40 19:16 (TRIV-71)	20:51	21:13
18	08:01	08:23 (TRIV-72)	07:31	08:19 (TRIV-72)	07:47	18:41 (TRIV-71)	06:56	18:38 (TRIV-71)	06:19	06:06
	17:38	52 09:15 (TRIV-72)	18:16	66 09:25 (TRIV-72)	19:48	46 19:27 (TRIV-71)	20:20	37 19:15 (TRIV-71)	20:52	21:14
19	08:01	08:23 (TRIV-72)	07:29	08:20 (TRIV-72)	07:45	18:39 (TRIV-71)	06:55	18:40 (TRIV-71)	06:18	06:06
	17:39	53 09:16 (TRIV-72)	18:17	65 09:25 (TRIV-72)	19:49	49 19:28 (TRIV-71)	20:21	32 19:12 (TRIV-71)	20:53	21:14
20	08:00	08:22 (TRIV-72)	07:28	08:20 (TRIV-72)	07:44	18:38 (TRIV-71)	06:53	18:42 (TRIV-71)	06:17	06:06
	17:40	55 09:17 (TRIV-72)	18:19	64 09:24 (TRIV-72)	19:50	51 19:29 (TRIV-71)	20:22	28 19:10 (TRIV-71)	20:54	21:14
21	07:59	08:21 (TRIV-72)	07:26	08:21 (TRIV-72)	07:42	18:36 (TRIV-71)	06:52	18:44 (TRIV-71)	06:16	06:07
	17:42	57 09:18 (TRIV-72)	18:20	62 09:23 (TRIV-72)	19:52	54 19:30 (TRIV-71)	20:24	23 19:07 (TRIV-71)	20:54	21:15
22	07:59	08:21 (TRIV-72)	07:25	08:22 (TRIV-72)	07:40	18:35 (TRIV-71)	06:50	18:49 (TRIV-71)	06:16	06:07
	17:43	58 09:19 (TRIV-72)	18:21	59 09:21 (TRIV-72)	19:53	55 19:30 (TRIV-71)	20:25	13 19:02 (TRIV-71)	20:55	21:15
23	07:58	08:21 (TRIV-72)	07:23	08:23 (TRIV-72)	07:39	18:34 (TRIV-71)	06:49		06:15	06:07
	17:44	59 09:20 (TRIV-72)	18:22	58 09:21 (TRIV-72)	19:54	58 19:32 (TRIV-71)	20:26		20:56	21:15
24	07:57	08:20 (TRIV-72)	07:22	08:24 (TRIV-72)	07:37	18:33 (TRIV-71)	06:48		06:14	06:07
	17:45	61 09:21 (TRIV-72)	18:23	56 09:20 (TRIV-72)	19:55	59 19:32 (TRIV-71)	20:27		20:57	21:15
25	07:57	08:20 (TRIV-72)	07:21	08:25 (TRIV-72)	07:35	18:32 (TRIV-71)	06:46		06:13	06:08
	17:46	62 09:22 (TRIV-72)	18:25	53 09:18 (TRIV-72)	19:56	60 19:32 (TRIV-71)	20:28		20:58	21:15
26	07:56	08:20 (TRIV-72)	07:19	08:26 (TRIV-72)	07:34	18:32 (TRIV-71)	06:45		06:13	06:08
	17:48	63 09:23 (TRIV-72)	18:26	51 09:17 (TRIV-72)	19:57	61 19:33 (TRIV-71)	20:29		20:59	21:15
27	07:55	08:20 (TRIV-72)	07:18	08:27 (TRIV-72)	07:32	18:31 (TRIV-71)	06:43		06:12	06:08
	17:49	64 09:24 (TRIV-72)	18:27	48 09:15 (TRIV-72)	19:58	61 19:32 (TRIV-71)	20:30		21:00	21:16
28	07:54	08:19 (TRIV-72)	07:16	08:28 (TRIV-72)	07:30	18:30 (TRIV-71)	06:42		06:11	06:09
	17:50	65 09:24 (TRIV-72)	18:28	44 09:12 (TRIV-72)	19:59	62 19:32 (TRIV-71)	20:31		21:01	21:16
29	07:53	08:19 (TRIV-72)			07:29	18:30 (TRIV-71)	06:41		06:11	06:09
	17:51	66 09:25 (TRIV-72)			20:00	63 19:33 (TRIV-71)	20:32		21:02	21:16
30	07:52	08:18 (TRIV-72)			07:27	18:29 (TRIV-71)	06:39		06:10	06:09
	17:53	68 09:26 (TRIV-72)			20:00	63 19:32 (TRIV-71)	20:33		21:02	21:16
31	07:52	08:18 (TRIV-72)			07:25	18:29 (TRIV-71)			06:10	
	17:54	68 09:26 (TRIV-72)			20:01	63 19:32 (TRIV-71)			21:03	
Potential sun hours	298		297		370		399		448	452
Total, worst case		1423		1814		1122		1077		
Sun reduction		0.50		0.55		0.57		0.63		
Oper. time red.		1.00		1.00		1.00		1.00		
Wind dir. red.		0.61		0.61		0.67		0.68		
Total reduction		0.30		0.33		0.38		0.43		
Total, real		433		607		427		459		

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:
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217 Montgomery St., Suite 1000
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 311 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1326)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August			September			October			November			December		
1	06:10	06:34			07:05		18:29 (TRIV-71)	07:35		18:37 (TRIV-71)	07:09		07:46 (TRIV-72)	07:44		08:08 (TRIV-72)
	21:15	20:57			20:14	55	19:24 (TRIV-71)	19:22	17	18:54 (TRIV-71)	17:36	72	08:58 (TRIV-72)	17:11	40	08:48 (TRIV-72)
2	06:10	06:35			07:06		18:28 (TRIV-71)	07:36			07:10		07:47 (TRIV-72)	07:45		08:10 (TRIV-72)
	21:15	20:56			20:13	56	19:24 (TRIV-71)	19:21			17:34	71	08:58 (TRIV-72)	17:11	37	08:47 (TRIV-72)
3	06:11	06:36			07:07		18:27 (TRIV-71)	07:37			07:12		07:47 (TRIV-72)	07:46		08:12 (TRIV-72)
	21:15	20:55			20:11	57	19:24 (TRIV-71)	19:19			17:33	71	08:58 (TRIV-72)	17:11	35	08:47 (TRIV-72)
4	06:12	06:37			07:08		18:26 (TRIV-71)	07:38			07:13		07:47 (TRIV-72)	07:47		08:14 (TRIV-72)
	21:15	20:54			20:10	59	19:25 (TRIV-71)	19:17			17:32	71	08:58 (TRIV-72)	17:11	32	08:46 (TRIV-72)
5	06:12	06:38			07:09		18:25 (TRIV-71)	07:39			07:14		07:48 (TRIV-72)	07:48		08:15 (TRIV-72)
	21:15	20:53			20:08	60	19:25 (TRIV-71)	19:16			17:31	71	08:59 (TRIV-72)	17:11	31	08:46 (TRIV-72)
6	06:13	06:39			07:10		18:24 (TRIV-71)	07:40			07:15		07:48 (TRIV-72)	07:49		08:17 (TRIV-72)
	21:15	20:52			20:06	61	19:25 (TRIV-71)	19:14			17:30	70	08:58 (TRIV-72)	17:10	28	08:45 (TRIV-72)
7	06:13	06:40			07:11		18:23 (TRIV-71)	07:41			07:16		07:48 (TRIV-72)	07:50		08:18 (TRIV-72)
	21:14	20:50			20:05	62	19:25 (TRIV-71)	19:12			17:29	70	08:58 (TRIV-72)	17:10	25	08:43 (TRIV-72)
8	06:14	06:41			07:12		18:23 (TRIV-71)	07:42			07:18		07:48 (TRIV-72)	07:51		08:19 (TRIV-72)
	21:14	20:49			20:03	62	19:25 (TRIV-71)	19:11			17:28	69	08:57 (TRIV-72)	17:10	23	08:42 (TRIV-72)
9	06:15	06:42			07:13		18:22 (TRIV-71)	07:43		09:16 (TRIV-72)	07:19		07:49 (TRIV-72)	07:52		08:21 (TRIV-72)
	21:14	20:48			20:01	63	19:25 (TRIV-71)	19:09	16	09:32 (TRIV-72)	17:26	69	08:58 (TRIV-72)	17:10	20	08:41 (TRIV-72)
10	06:15	06:43			07:14		18:22 (TRIV-71)	07:44		09:11 (TRIV-72)	07:20		07:49 (TRIV-72)	07:53		08:23 (TRIV-72)
	21:13	20:47			20:00	63	19:25 (TRIV-71)	19:07	26	09:37 (TRIV-72)	17:25	69	08:58 (TRIV-72)	17:10	17	08:40 (TRIV-72)
11	06:16	06:44			07:15		18:21 (TRIV-71)	07:45		09:07 (TRIV-72)	07:21		07:49 (TRIV-72)	07:54		08:26 (TRIV-72)
	21:13	20:45			19:56	63	19:24 (TRIV-71)	19:06	32	09:39 (TRIV-72)	17:24	68	08:57 (TRIV-72)	17:10	13	08:39 (TRIV-72)
12	06:17	06:45			07:16		18:21 (TRIV-71)	07:47		09:06 (TRIV-72)	07:22		07:50 (TRIV-72)	07:54		08:28 (TRIV-72)
	21:13	20:44			19:55	63	19:24 (TRIV-71)	19:04	37	09:43 (TRIV-72)	17:24	68	08:58 (TRIV-72)	17:11	10	08:38 (TRIV-72)
13	06:17	06:46			07:17		18:20 (TRIV-71)	07:48		09:03 (TRIV-72)	07:24		07:51 (TRIV-72)	07:55		
	21:12	20:43			19:53	64	19:24 (TRIV-71)	19:03	42	09:45 (TRIV-72)	17:23	66	08:57 (TRIV-72)	17:11		
14	06:18	06:47			07:18		18:20 (TRIV-71)	07:49		09:01 (TRIV-72)	07:25		07:51 (TRIV-72)	07:56		
	21:12	20:41			19:51	63	19:23 (TRIV-71)	19:01	45	09:46 (TRIV-72)	17:22	65	08:56 (TRIV-72)	17:11		
15	06:19	06:48			07:19		18:20 (TRIV-71)	07:50		08:59 (TRIV-72)	07:26		07:52 (TRIV-72)	07:57		
	21:11	20:40			19:49	62	19:22 (TRIV-71)	19:00	49	09:48 (TRIV-72)	17:21	64	08:56 (TRIV-72)	17:11		
16	06:20	06:49			07:20		18:20 (TRIV-71)	07:51		08:57 (TRIV-72)	07:27		07:53 (TRIV-72)	07:57		
	21:10	20:39			19:48	62	19:22 (TRIV-71)	18:58	52	09:49 (TRIV-72)	17:20	63	08:56 (TRIV-72)	17:11		
17	06:21	06:50			07:21		18:20 (TRIV-71)	07:52		08:56 (TRIV-72)	07:28		07:54 (TRIV-72)	07:58		
	21:10	20:37			19:46	61	19:21 (TRIV-71)	18:56	54	09:50 (TRIV-72)	17:19	62	08:56 (TRIV-72)	17:12		
18	06:21	06:51			07:22		18:20 (TRIV-71)	07:53		08:54 (TRIV-72)	07:29		07:54 (TRIV-72)	07:59		
	21:09	20:36			19:44	60	19:20 (TRIV-71)	18:55	57	09:51 (TRIV-72)	17:18	61	08:55 (TRIV-72)	17:12		
19	06:22	06:52			07:23		18:20 (TRIV-71)	07:54		08:54 (TRIV-72)	07:31		07:55 (TRIV-72)	07:59		
	21:09	20:34			19:43	59	19:19 (TRIV-71)	18:53	59	09:53 (TRIV-72)	17:18	59	08:54 (TRIV-72)	17:12		
20	06:23	06:53			07:24		18:21 (TRIV-71)	07:55		08:53 (TRIV-72)	07:32		07:56 (TRIV-72)	08:00		
	21:08	20:33			19:41	57	19:18 (TRIV-71)	18:52	60	09:53 (TRIV-72)	17:17	58	08:54 (TRIV-72)	17:13		
21	06:24	06:54		18:53 (TRIV-71)	07:25		18:21 (TRIV-71)	07:56		08:52 (TRIV-72)	07:33		07:57 (TRIV-72)	08:00		
	21:07	20:31	15	19:08 (TRIV-71)	19:39	56	19:17 (TRIV-71)	18:51	62	09:54 (TRIV-72)	17:16	57	08:54 (TRIV-72)	17:13		
22	06:25	06:55		18:49 (TRIV-71)	07:26		18:21 (TRIV-71)	07:58		08:51 (TRIV-72)	07:34		07:58 (TRIV-72)	08:01		
	21:06	20:30	23	19:12 (TRIV-71)	19:37	55	19:16 (TRIV-71)	18:49	63	09:54 (TRIV-72)	17:16	55	08:53 (TRIV-72)	17:14		
23	06:26	06:56		18:46 (TRIV-71)	07:27		18:22 (TRIV-71)	07:59		08:50 (TRIV-72)	07:35		07:59 (TRIV-72)	08:01		
	21:06	20:29	28	19:14 (TRIV-71)	19:36	52	19:14 (TRIV-71)	18:48	65	09:55 (TRIV-72)	17:15	53	08:52 (TRIV-72)	17:14		
24	06:27	06:57		18:43 (TRIV-71)	07:28		18:23 (TRIV-71)	08:00		08:50 (TRIV-72)	07:36		08:00 (TRIV-72)	08:02		
	21:05	20:27	33	19:16 (TRIV-71)	19:34	50	19:13 (TRIV-71)	18:46	66	09:56 (TRIV-72)	17:14	52	08:52 (TRIV-72)	17:15		
25	06:27	06:58		18:41 (TRIV-71)	07:29		18:24 (TRIV-71)	08:01		08:49 (TRIV-72)	07:38		08:02 (TRIV-72)	08:02		
	21:04	20:25	37	19:18 (TRIV-71)	19:32	47	19:11 (TRIV-71)	18:45	67	09:56 (TRIV-72)	17:14	50	08:52 (TRIV-72)	17:15		
26	06:28	06:59		18:39 (TRIV-71)	07:30		18:25 (TRIV-71)	08:02		08:48 (TRIV-72)	07:39		08:03 (TRIV-72)	08:03		
	21:03	20:24	41	19:20 (TRIV-71)	19:31	44	19:09 (TRIV-71)	18:43	69	09:57 (TRIV-72)	17:13	48	08:51 (TRIV-72)	17:16		
27	06:29	07:00		18:37 (TRIV-71)	07:31		18:26 (TRIV-71)	08:03		08:48 (TRIV-72)	07:40		08:04 (TRIV-72)	08:03		
	21:02	20:22	44	19:21 (TRIV-71)	19:29	41	19:07 (TRIV-71)	18:42	69	09:57 (TRIV-72)	17:13	46	08:50 (TRIV-72)	17:17		
28	06:30	07:01		18:35 (TRIV-71)	07:32		18:28 (TRIV-71)	08:05		08:47 (TRIV-72)	07:41		08:05 (TRIV-72)	08:03		
	21:01	20:21	47	19:22 (TRIV-71)	19:27	37	19:05 (TRIV-71)	18:41	70	09:57 (TRIV-72)	17:13	45	08:50 (TRIV-72)	17:17		
29	06:31	07:02		18:34 (TRIV-71)	07:33		18:30 (TRIV-71)	08:06		08:48 (TRIV-72)	07:42		08:06 (TRIV-72)	08:04		
	21:00	20:19	49	19:23 (TRIV-71)	19:26	32	19:02 (TRIV-71)	18:39	70	09:58 (TRIV-72)	17:12	43	08:49 (TRIV-72)	17:18		
30	06:32	07:03		18:32 (TRIV-71)	07:34		18:33 (TRIV-71)	08:07		08:47 (TRIV-72)	07:43		08:07 (TRIV-72)	08:04		
	20:59	20:18	50	19:22 (TRIV-71)	19:24	26	18:59 (TRIV-71)	18:38	71	09:58 (TRIV-72)	17:12	41	08:48 (TRIV-72)	17:19		
31	06:33	07:04		18:30 (TRIV-71)				08:08		08:47 (TRIV-72)				08:04		08:38 (TRIV-72)
	20:58	20:16	53	19:23 (TRIV-71)				18:37	71	09:58 (TRIV-72)				17:20	7	08:45 (TRIV-72)
Potential sun hours	459	428			375			345			298			288		
Total, worst case			420			1652			1289			1827			318	
Sun reduction			0.75			0.67			0.60			0.40			0.36	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.68			0.68			0.61			0.61			0.61	
Total reduction			0.51			0.45			0.37			0.24			0.22	
Total, real			213			748			471			445			70	

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 312 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1327)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May			June
1	08:04			07:51		08:11 (TRIV-72)	07:14		07:59 (TRIV-72)	07:24		18:30 (TRIV-71)	06:38		18:35 (TRIV-71)	06:09
	17:21			17:55	36	08:47 (TRIV-72)	18:29	58	08:57 (TRIV-72)	20:02	68	19:38 (TRIV-71)	20:34	46	19:21 (TRIV-71)	21:04
2	08:04			07:50		08:10 (TRIV-72)	07:13		07:59 (TRIV-72)	07:22		18:29 (TRIV-71)	06:37		18:36 (TRIV-71)	06:09
	17:22			17:56	39	08:49 (TRIV-72)	18:30	57	08:56 (TRIV-72)	20:03	69	19:38 (TRIV-71)	20:35	43	19:19 (TRIV-71)	21:05
3	08:04			07:49		08:09 (TRIV-72)	07:11		08:00 (TRIV-72)	07:20		18:28 (TRIV-71)	06:35		18:38 (TRIV-71)	06:08
	17:23			17:58	42	08:51 (TRIV-72)	18:32	55	08:55 (TRIV-72)	20:04	70	19:38 (TRIV-71)	20:36	40	19:18 (TRIV-71)	21:05
4	08:05			07:48		08:08 (TRIV-72)	07:10		08:01 (TRIV-72)	07:19		18:28 (TRIV-71)	06:34		18:40 (TRIV-71)	06:08
	17:23			17:59	44	08:52 (TRIV-72)	18:33	53	08:54 (TRIV-72)	20:05	71	19:39 (TRIV-71)	20:37	36	19:16 (TRIV-71)	21:06
5	08:05			07:47		08:07 (TRIV-72)	07:08		08:02 (TRIV-72)	07:17		18:27 (TRIV-71)	06:33		18:42 (TRIV-71)	06:08
	17:24			18:00	47	08:54 (TRIV-72)	18:34	51	08:53 (TRIV-72)	20:07	71	19:38 (TRIV-71)	20:38	32	19:14 (TRIV-71)	21:07
6	08:04			07:45		08:06 (TRIV-72)	07:07		08:03 (TRIV-72)	07:15		18:26 (TRIV-71)	06:32		18:45 (TRIV-71)	06:07
	17:25			18:01	49	08:55 (TRIV-72)	18:35	48	08:51 (TRIV-72)	20:08	72	19:38 (TRIV-71)	20:39	27	19:12 (TRIV-71)	21:08
7	08:04			07:44		08:04 (TRIV-72)	07:05		08:03 (TRIV-72)	07:14		18:26 (TRIV-71)	06:30		18:47 (TRIV-71)	06:07
	17:26			18:03	51	08:55 (TRIV-72)	18:36	46	08:49 (TRIV-72)	20:09	73	19:39 (TRIV-71)	20:40	21	19:08 (TRIV-71)	21:08
8	08:04			07:43		08:03 (TRIV-72)	08:03		09:05 (TRIV-72)	07:12		18:25 (TRIV-71)	06:29		18:51 (TRIV-71)	06:07
	17:27			18:04	54	08:57 (TRIV-72)	19:37	43	09:48 (TRIV-72)	20:10	73	19:38 (TRIV-71)	20:42	13	19:04 (TRIV-71)	21:09
9	08:04			07:42		08:02 (TRIV-72)	08:02		09:06 (TRIV-72)	07:11		18:25 (TRIV-71)	06:28			06:07
	17:28			18:05	56	08:58 (TRIV-72)	19:38	39	09:45 (TRIV-72)	20:11	73	19:38 (TRIV-71)	20:43			21:09
10	08:04			07:41		08:02 (TRIV-72)	08:00		09:08 (TRIV-72)	07:09		18:25 (TRIV-71)	06:27			06:06
	17:29			18:06	57	08:59 (TRIV-72)	19:40	34	09:42 (TRIV-72)	20:12	73	19:38 (TRIV-71)	20:44			21:10
11	08:04			07:40		08:01 (TRIV-72)	07:59		09:11 (TRIV-72)	07:07		18:24 (TRIV-71)	06:26			06:06
	17:30			18:08	59	09:00 (TRIV-72)	19:41	29	09:40 (TRIV-72)	20:13	73	19:37 (TRIV-71)	20:45			21:11
12	08:03			07:38		08:00 (TRIV-72)	07:57		09:13 (TRIV-72)	07:06		18:25 (TRIV-71)	06:25			06:06
	17:31			18:09	60	09:00 (TRIV-72)	19:42	23	09:36 (TRIV-72)	20:14	73	19:38 (TRIV-71)	20:46			21:11
13	08:03			07:37		08:00 (TRIV-72)	07:55		09:18 (TRIV-72)	07:04		18:24 (TRIV-71)	06:24			06:06
	17:32			18:10	60	09:00 (TRIV-72)	19:43	12	09:30 (TRIV-72)	20:15	73	19:37 (TRIV-71)	20:47			21:12
14	08:03			07:36		08:00 (TRIV-72)	07:54			07:03		18:25 (TRIV-71)	06:23			06:06
	17:34			18:11	61	09:01 (TRIV-72)	19:44			20:16	72	19:37 (TRIV-71)	20:48			21:12
15	08:02			07:35		07:59 (TRIV-72)	07:52			07:01		18:24 (TRIV-71)	06:22			06:06
	17:35			18:13	62	09:01 (TRIV-72)	19:45			20:17	72	19:36 (TRIV-71)	20:49			21:13
16	08:02			07:33		07:59 (TRIV-72)	07:50			06:59		18:25 (TRIV-71)	06:21			06:06
	17:36			18:14	62	09:01 (TRIV-72)	19:46			20:18	71	19:36 (TRIV-71)	20:50			21:13
17	08:02			07:32		07:59 (TRIV-72)	07:49			06:58		18:25 (TRIV-71)	06:20			06:06
	17:37			18:15	63	09:02 (TRIV-72)	19:47			20:19	70	19:35 (TRIV-71)	20:51			21:13
18	08:01			07:31		07:58 (TRIV-72)	07:47		19:05 (TRIV-71)	06:56		18:26 (TRIV-71)	06:19			06:06
	17:38			18:16	63	09:01 (TRIV-72)	19:48	6	19:11 (TRIV-71)	20:20	69	19:35 (TRIV-71)	20:52			21:14
19	08:01			07:29		07:58 (TRIV-72)	07:45		18:56 (TRIV-71)	06:55		18:25 (TRIV-71)	06:18			06:06
	17:39			18:17	64	09:02 (TRIV-72)	19:49	22	19:18 (TRIV-71)	20:21	69	19:34 (TRIV-71)	20:53			21:14
20	08:00			07:28		07:57 (TRIV-72)	07:44		18:52 (TRIV-71)	06:53		18:26 (TRIV-71)	06:17			06:06
	17:40			18:19	64	09:01 (TRIV-72)	19:50	31	19:23 (TRIV-71)	20:22	67	19:33 (TRIV-71)	20:54			21:14
21	07:59			07:26		07:58 (TRIV-72)	07:42		18:49 (TRIV-71)	06:52		18:26 (TRIV-71)	06:16			06:07
	17:42			18:20	64	09:02 (TRIV-72)	19:52	36	19:25 (TRIV-71)	20:24	66	19:32 (TRIV-71)	20:54			21:15
22	07:59			07:25		07:57 (TRIV-72)	07:40		18:45 (TRIV-71)	06:50		18:27 (TRIV-71)	06:16			06:07
	17:43			18:21	64	09:01 (TRIV-72)	19:53	42	19:27 (TRIV-71)	20:25	65	19:32 (TRIV-71)	20:55			21:15
23	07:58			07:23		07:58 (TRIV-72)	07:39		18:44 (TRIV-71)	06:49		18:27 (TRIV-71)	06:15			06:07
	17:44			18:22	63	09:01 (TRIV-72)	19:54	46	19:30 (TRIV-71)	20:26	63	19:30 (TRIV-71)	20:56			21:15
24	07:57			07:22		07:58 (TRIV-72)	07:37		18:41 (TRIV-71)	06:48		18:28 (TRIV-71)	06:14			06:07
	17:45			18:23	63	09:01 (TRIV-72)	19:55	50	19:31 (TRIV-71)	20:27	62	19:30 (TRIV-71)	20:57			21:15
25	07:57			07:21		07:58 (TRIV-72)	07:35		18:39 (TRIV-71)	06:46		18:28 (TRIV-71)	06:13			06:08
	17:46			18:25	62	09:00 (TRIV-72)	19:56	53	19:32 (TRIV-71)	20:28	60	19:28 (TRIV-71)	20:58			21:15
26	07:56			07:19		07:58 (TRIV-72)	07:34		18:38 (TRIV-71)	06:45		18:29 (TRIV-71)	06:13			06:08
	17:48			18:26	62	09:00 (TRIV-72)	19:57	56	19:34 (TRIV-71)	20:29	58	19:27 (TRIV-71)	20:59			21:15
27	07:55		08:26 (TRIV-72)	07:18		07:58 (TRIV-72)	07:32		18:36 (TRIV-71)	06:43		18:31 (TRIV-71)	06:12			06:08
	17:49	4	08:30 (TRIV-72)	18:27	61	08:59 (TRIV-72)	19:58	58	19:34 (TRIV-71)	20:30	56	19:27 (TRIV-71)	21:00			21:16
28	07:54		08:20 (TRIV-72)	07:16		07:58 (TRIV-72)	07:30		18:34 (TRIV-71)	06:42		18:31 (TRIV-71)	06:11			06:09
	17:50	17	08:37 (TRIV-72)	18:28	60	08:58 (TRIV-72)	19:59	61	19:35 (TRIV-71)	20:31	54	19:25 (TRIV-71)	21:01			21:16
29	07:53		08:17 (TRIV-72)				07:29		18:34 (TRIV-71)	06:41		18:32 (TRIV-71)	06:11			06:09
	17:51	23	08:40 (TRIV-72)				20:00	62	19:36 (TRIV-71)	20:32	52	19:24 (TRIV-71)	21:02			21:16
30	07:52		08:14 (TRIV-72)				07:27		18:32 (TRIV-71)	06:39		18:34 (TRIV-71)	06:10			06:09
	17:53	29	08:43 (TRIV-72)				20:00	65	19:37 (TRIV-71)	20:33	49	19:23 (TRIV-71)	21:02			21:16
31	07:52		08:12 (TRIV-72)				07:25		18:31 (TRIV-71)				06:10			
	17:54	33	08:45 (TRIV-72)				20:01	66	19:37 (TRIV-71)				21:03			
Potential sun hours	298			297			370			399			448			452
Total, worst case		106			1592			1202			2007			258		
Sun reduction		0.50			0.55			0.57			0.63			0.69		
Oper. time red.		1.00			1.00			1.00			1.00			1.00		
Wind dir. red.		0.63			0.63			0.66			0.68			0.68		
Total reduction		0.31			0.35			0.37			0.43			0.47		
Total, real		33			551			448			853			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:
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(315) 471 0688

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 312 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1327)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August			September			October			November			December	
1	06:10		06:34			07:05		18:23 (TRIV-71)	07:35		08:54 (TRIV-72)	07:09		07:31 (TRIV-72)	07:44	
	21:15		20:57			20:14	73	19:36 (TRIV-71)	19:22	20	09:14 (TRIV-72)	17:36	56	08:27 (TRIV-72)	17:11	
2	06:10		06:35			07:06		18:23 (TRIV-71)	07:36		08:50 (TRIV-72)	07:10		07:32 (TRIV-72)	07:45	
	21:15		20:56			20:13	73	19:36 (TRIV-71)	19:21	27	09:17 (TRIV-72)	17:34	55	08:27 (TRIV-72)	17:11	
3	06:11		06:36			07:07		18:23 (TRIV-71)	07:37		08:47 (TRIV-72)	07:12		07:33 (TRIV-72)	07:46	
	21:15		20:55			20:11	73	19:36 (TRIV-71)	19:19	33	09:20 (TRIV-72)	17:33	53	08:26 (TRIV-72)	17:11	
4	06:12		06:37			07:08		18:22 (TRIV-71)	07:38		08:45 (TRIV-72)	07:13		07:34 (TRIV-72)	07:47	
	21:15		20:54			20:10	73	19:35 (TRIV-71)	19:17	37	09:22 (TRIV-72)	17:32	51	08:25 (TRIV-72)	17:11	
5	06:12		06:38		19:00 (TRIV-71)	07:09		18:22 (TRIV-71)	07:39		08:43 (TRIV-72)	07:14		07:36 (TRIV-72)	07:48	
	21:15		20:53	16	19:16 (TRIV-71)	20:08	73	19:35 (TRIV-71)	19:16	40	09:23 (TRIV-72)	17:31	49	08:25 (TRIV-72)	17:11	
6	06:13		06:39		18:56 (TRIV-71)	07:10		18:22 (TRIV-71)	07:40		08:41 (TRIV-72)	07:15		07:37 (TRIV-72)	07:49	
	21:15		20:52	24	19:20 (TRIV-71)	20:06	72	19:34 (TRIV-71)	19:14	44	09:25 (TRIV-72)	17:30	47	08:24 (TRIV-72)	17:10	
7	06:13		06:40		18:53 (TRIV-71)	07:11		18:22 (TRIV-71)	07:41		08:39 (TRIV-72)	07:16		07:38 (TRIV-72)	07:50	
	21:14		20:50	29	19:22 (TRIV-71)	20:05	71	19:33 (TRIV-71)	19:12	47	09:26 (TRIV-72)	17:29	44	08:22 (TRIV-72)	17:10	
8	06:14		06:41		18:50 (TRIV-71)	07:12		18:22 (TRIV-71)	07:42		08:37 (TRIV-72)	07:18		07:39 (TRIV-72)	07:51	
	21:14		20:49	33	19:23 (TRIV-71)	20:03	71	19:33 (TRIV-71)	19:11	50	09:27 (TRIV-72)	17:28	42	08:21 (TRIV-72)	17:10	
9	06:15		06:42		18:48 (TRIV-71)	07:13		18:22 (TRIV-71)	07:43		08:36 (TRIV-72)	07:19		07:41 (TRIV-72)	07:52	
	21:14		20:48	37	19:25 (TRIV-71)	20:01	70	19:32 (TRIV-71)	19:09	52	09:28 (TRIV-72)	17:26	39	08:20 (TRIV-72)	17:10	
10	06:15		06:43		18:46 (TRIV-71)	07:14		18:22 (TRIV-71)	07:44		08:35 (TRIV-72)	07:20		07:42 (TRIV-72)	07:53	
	21:13		20:47	41	19:27 (TRIV-71)	20:00	69	19:31 (TRIV-71)	19:07	54	09:29 (TRIV-72)	17:25	36	08:18 (TRIV-72)	17:10	
11	06:16		06:44		18:44 (TRIV-71)	07:15		18:22 (TRIV-71)	07:45		08:33 (TRIV-72)	07:21		07:43 (TRIV-72)	07:54	
	21:13		20:45	44	19:28 (TRIV-71)	19:56	68	19:30 (TRIV-71)	19:06	56	09:29 (TRIV-72)	17:24	33	08:16 (TRIV-72)	17:10	
12	06:17		06:45		18:43 (TRIV-71)	07:16		18:23 (TRIV-71)	07:47		08:33 (TRIV-72)	07:22		07:46 (TRIV-72)	07:54	
	21:13		20:44	47	19:30 (TRIV-71)	19:55	66	19:29 (TRIV-71)	19:04	58	09:31 (TRIV-72)	17:24	29	08:15 (TRIV-72)	17:11	
13	06:17		06:46		18:41 (TRIV-71)	07:17		18:23 (TRIV-71)	07:48		08:32 (TRIV-72)	07:24		07:49 (TRIV-72)	07:55	
	21:12		20:43	50	19:31 (TRIV-71)	19:53	65	19:28 (TRIV-71)	19:03	59	09:31 (TRIV-72)	17:23	23	08:12 (TRIV-72)	17:11	
14	06:18		06:47		18:40 (TRIV-71)	07:18		18:24 (TRIV-71)	07:49		08:31 (TRIV-72)	07:25		07:52 (TRIV-72)	07:56	
	21:12		20:41	52	19:32 (TRIV-71)	19:51	63	19:27 (TRIV-71)	19:01	60	09:31 (TRIV-72)	17:22	17	08:09 (TRIV-72)	17:11	
15	06:19		06:48		18:38 (TRIV-71)	07:19		18:24 (TRIV-71)	07:50		08:31 (TRIV-72)	07:26		07:59 (TRIV-72)	07:57	
	21:11		20:40	55	19:33 (TRIV-71)	19:49	61	19:25 (TRIV-71)	19:00	61	09:32 (TRIV-72)	17:21	3	08:02 (TRIV-72)	17:11	
16	06:20		06:49		18:37 (TRIV-71)	07:20		18:25 (TRIV-71)	07:51		08:30 (TRIV-72)	07:27			07:57	
	21:11		20:39	57	19:34 (TRIV-71)	19:48	59	19:24 (TRIV-71)	18:58	62	09:32 (TRIV-72)	17:20			17:11	
17	06:21		06:50		18:36 (TRIV-71)	07:21		18:26 (TRIV-71)	07:52		08:29 (TRIV-72)	07:28			07:58	
	21:10		20:37	58	19:34 (TRIV-71)	19:46	56	19:22 (TRIV-71)	18:56	63	09:32 (TRIV-72)	17:19			17:12	
18	06:21		06:51		18:35 (TRIV-71)	07:22		18:27 (TRIV-71)	07:53		08:29 (TRIV-72)	07:29			07:59	
	21:09		20:36	60	19:35 (TRIV-71)	19:44	54	19:21 (TRIV-71)	18:55	63	09:32 (TRIV-72)	17:18			17:12	
19	06:22		06:52		18:34 (TRIV-71)	07:23		18:28 (TRIV-71)	07:54		08:29 (TRIV-72)	07:31			07:59	
	21:09		20:34	62	19:36 (TRIV-71)	19:43	51	19:19 (TRIV-71)	18:53	64	09:33 (TRIV-72)	17:18			17:12	
20	06:23		06:53		18:33 (TRIV-71)	07:24		18:30 (TRIV-71)	07:55		08:29 (TRIV-72)	07:32			08:00	
	21:08		20:33	63	19:36 (TRIV-71)	19:41	47	19:17 (TRIV-71)	18:52	63	09:32 (TRIV-72)	17:17			17:13	
21	06:24		06:54		18:32 (TRIV-71)	07:25		18:31 (TRIV-71)	07:56		08:28 (TRIV-72)	07:33			08:00	
	21:07		20:31	65	19:37 (TRIV-71)	19:39	43	19:14 (TRIV-71)	18:51	64	09:32 (TRIV-72)	17:16			17:13	
22	06:25		06:55		18:31 (TRIV-71)	07:26		18:33 (TRIV-71)	07:58		08:28 (TRIV-72)	07:34			08:01	
	21:06		20:30	66	19:37 (TRIV-71)	19:37	38	19:11 (TRIV-71)	18:49	64	09:32 (TRIV-72)	17:16			17:14	
23	06:26		06:56		18:30 (TRIV-71)	07:27		18:36 (TRIV-71)	07:59		08:28 (TRIV-72)	07:35			08:01	
	21:06		20:29	67	19:37 (TRIV-71)	19:36	32	19:08 (TRIV-71)	18:48	64	09:32 (TRIV-72)	17:15			17:14	
24	06:27		06:57		18:29 (TRIV-71)	07:28		18:39 (TRIV-71)	08:00		08:28 (TRIV-72)	07:36			08:02	
	21:05		20:27	69	19:38 (TRIV-71)	19:34	25	19:04 (TRIV-71)	18:46	64	09:32 (TRIV-72)	17:14			17:15	
25	06:27		06:58		18:28 (TRIV-71)	07:29		18:44 (TRIV-71)	08:01		08:28 (TRIV-72)	07:38			08:02	
	21:04		20:25	70	19:38 (TRIV-71)	19:32	14	18:58 (TRIV-71)	18:45	64	09:32 (TRIV-72)	17:14			17:16	
26	06:28		06:59		18:28 (TRIV-71)	07:30			08:02		08:28 (TRIV-72)	07:39			08:03	
	21:03		20:24	70	19:38 (TRIV-71)	19:31			18:43	63	09:31 (TRIV-72)	17:13			17:16	
27	06:29		07:00		18:27 (TRIV-71)	07:31			08:03		08:28 (TRIV-72)	07:40			08:03	
	21:02		20:22	71	19:38 (TRIV-71)	19:29			18:42	62	09:30 (TRIV-72)	17:13			17:17	
28	06:30		07:01		18:26 (TRIV-71)	07:32			08:05		08:28 (TRIV-72)	07:41			08:03	
	21:01		20:21	72	19:38 (TRIV-71)	19:27			18:41	62	09:30 (TRIV-72)	17:13			17:17	
29	06:31		07:02		18:26 (TRIV-71)	07:33			08:06		08:30 (TRIV-72)	07:42			08:04	
	21:00		20:19	72	19:38 (TRIV-71)	19:26			18:39	60	09:30 (TRIV-72)	17:12			17:18	
30	06:32		07:03		18:24 (TRIV-71)	07:34		09:02 (TRIV-72)	08:07		08:30 (TRIV-72)	07:43			08:04	
	20:59		20:18	73	19:37 (TRIV-71)	19:24	5	09:07 (TRIV-72)	18:38	59	09:29 (TRIV-72)	17:12			17:19	
31	06:33		07:04		18:24 (TRIV-71)				08:08		08:30 (TRIV-72)				08:04	
	20:58		20:16	73	19:37 (TRIV-71)				18:37	58	09:28 (TRIV-72)				17:20	
Potential sun hours	459		428			375			345			298			288	
Total, worst case				1496			1465			1697			577			
Sun reduction				0.75			0.67			0.60			0.40			
Oper. time red.				1.00			1.00			1.00			1.00			
Wind dir. red.				0.68			0.68			0.63			0.63			
Total reduction				0.51			0.45			0.38			0.25			
Total, real				757			662			641			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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 313 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1328)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April			May	June
1	08:04			07:51		08:16 (TRIV-72)	07:14			07:24		18:11 (TRIV-71)	06:38	06:09
	17:21			17:55	62	09:18 (TRIV-72)	18:29			20:02	67	19:18 (TRIV-71)	20:34	21:04
2	08:04		08:35 (TRIV-72)	07:50		08:16 (TRIV-72)	07:13			07:22		18:11 (TRIV-71)	06:37	06:09
	17:22	5	08:40 (TRIV-72)	17:56	62	09:18 (TRIV-72)	18:30			20:03	66	19:17 (TRIV-71)	20:35	21:05
3	08:04		08:32 (TRIV-72)	07:49		08:16 (TRIV-72)	07:11		17:44 (TRIV-71)	07:20		18:12 (TRIV-71)	06:35	06:08
	17:23	12	08:44 (TRIV-72)	17:58	63	09:19 (TRIV-72)	18:32	15	17:59 (TRIV-71)	20:04	64	19:16 (TRIV-71)	20:36	21:05
4	08:05		08:31 (TRIV-72)	07:48		08:16 (TRIV-72)	07:10		17:39 (TRIV-71)	07:19		18:13 (TRIV-71)	06:34	06:08
	17:23	15	08:46 (TRIV-72)	17:59	63	09:19 (TRIV-72)	18:33	25	18:04 (TRIV-71)	20:05	62	19:15 (TRIV-71)	20:37	21:06
5	08:05		08:30 (TRIV-72)	07:47		08:17 (TRIV-72)	07:08		17:35 (TRIV-71)	07:17		18:13 (TRIV-71)	06:33	06:08
	17:24	18	08:48 (TRIV-72)	18:00	62	09:19 (TRIV-72)	18:34	33	18:08 (TRIV-71)	20:07	61	19:14 (TRIV-71)	20:38	21:07
6	08:04		08:29 (TRIV-72)	07:45		08:17 (TRIV-72)	07:07		17:32 (TRIV-71)	07:15		18:13 (TRIV-71)	06:32	06:07
	17:25	21	08:50 (TRIV-72)	18:01	62	09:19 (TRIV-72)	18:35	38	18:10 (TRIV-71)	20:08	60	19:13 (TRIV-71)	20:39	21:08
7	08:04		08:27 (TRIV-72)	07:44		08:16 (TRIV-72)	07:05		17:29 (TRIV-71)	07:14		18:15 (TRIV-71)	06:30	06:07
	17:26	24	08:51 (TRIV-72)	18:03	63	09:19 (TRIV-72)	18:36	43	18:12 (TRIV-71)	20:09	57	19:12 (TRIV-71)	20:40	21:08
8	08:04		08:26 (TRIV-72)	07:43		08:16 (TRIV-72)	08:03		18:28 (TRIV-71)	07:12		18:15 (TRIV-71)	06:29	06:07
	17:27	27	08:53 (TRIV-72)	18:04	63	09:19 (TRIV-72)	19:37	46	19:14 (TRIV-71)	20:10	55	19:10 (TRIV-71)	20:42	21:09
9	08:04		08:26 (TRIV-72)	07:42		08:17 (TRIV-72)	08:02		18:25 (TRIV-71)	07:11		18:16 (TRIV-71)	06:28	06:07
	17:28	29	08:55 (TRIV-72)	18:05	62	09:19 (TRIV-72)	19:38	50	19:15 (TRIV-71)	20:11	52	19:08 (TRIV-71)	20:43	21:09
10	08:04		08:26 (TRIV-72)	07:41		08:17 (TRIV-72)	08:00		18:23 (TRIV-71)	07:09		18:17 (TRIV-71)	06:27	06:06
	17:29	31	08:57 (TRIV-72)	18:06	62	09:19 (TRIV-72)	19:40	53	19:16 (TRIV-71)	20:12	50	19:07 (TRIV-71)	20:44	21:10
11	08:04		08:25 (TRIV-72)	07:40		08:18 (TRIV-72)	07:59		18:22 (TRIV-71)	07:07		18:18 (TRIV-71)	06:26	06:06
	17:30	33	08:58 (TRIV-72)	18:08	61	09:19 (TRIV-72)	19:41	56	19:18 (TRIV-71)	20:13	47	19:05 (TRIV-71)	20:45	21:11
12	08:03		08:25 (TRIV-72)	07:38		08:17 (TRIV-72)	07:57		18:20 (TRIV-71)	07:06		18:20 (TRIV-71)	06:25	06:06
	17:31	34	08:59 (TRIV-72)	18:09	61	09:18 (TRIV-72)	19:42	58	19:18 (TRIV-71)	20:14	44	19:04 (TRIV-71)	20:46	21:11
13	08:03		08:25 (TRIV-72)	07:37		08:18 (TRIV-72)	07:55		18:19 (TRIV-71)	07:04		18:22 (TRIV-71)	06:24	06:06
	17:32	36	09:01 (TRIV-72)	18:10	60	09:18 (TRIV-72)	19:43	60	19:19 (TRIV-71)	20:15	40	19:02 (TRIV-71)	20:47	21:12
14	08:03		08:24 (TRIV-72)	07:36		08:19 (TRIV-72)	07:54		18:18 (TRIV-71)	07:03		18:24 (TRIV-71)	06:23	06:06
	17:34	38	09:02 (TRIV-72)	18:11	58	09:17 (TRIV-72)	19:44	62	19:20 (TRIV-71)	20:16	36	19:00 (TRIV-71)	20:48	21:12
15	08:02		08:24 (TRIV-72)	07:35		08:19 (TRIV-72)	07:52		18:17 (TRIV-71)	07:01		18:26 (TRIV-71)	06:22	06:06
	17:35	40	09:04 (TRIV-72)	18:13	57	09:16 (TRIV-72)	19:45	63	19:20 (TRIV-71)	20:17	31	18:57 (TRIV-71)	20:49	21:13
16	08:02		08:23 (TRIV-72)	07:33		08:20 (TRIV-72)	07:50		18:15 (TRIV-71)	06:59		18:29 (TRIV-71)	06:21	06:06
	17:36	41	09:04 (TRIV-72)	18:14	56	09:16 (TRIV-72)	19:46	66	19:21 (TRIV-71)	20:18	25	18:54 (TRIV-71)	20:50	21:13
17	08:02		08:23 (TRIV-72)	07:32		08:21 (TRIV-72)	07:49		18:15 (TRIV-71)	06:58		18:33 (TRIV-71)	06:20	06:06
	17:37	43	09:06 (TRIV-72)	18:15	54	09:15 (TRIV-72)	19:47	67	19:22 (TRIV-71)	20:19	16	18:49 (TRIV-71)	20:51	21:13
18	08:01		08:22 (TRIV-72)	07:31		08:21 (TRIV-72)	07:47		18:14 (TRIV-71)	06:56			06:19	06:06
	17:38	45	09:07 (TRIV-72)	18:16	53	09:14 (TRIV-72)	19:48	68	19:22 (TRIV-71)	20:20			20:52	21:14
19	08:01		08:22 (TRIV-72)	07:29		08:22 (TRIV-72)	07:45		18:13 (TRIV-71)	06:55			06:18	06:06
	17:39	46	09:08 (TRIV-72)	18:17	51	09:13 (TRIV-72)	19:49	69	19:22 (TRIV-71)	20:21			20:53	21:14
20	08:00		08:21 (TRIV-72)	07:28		08:22 (TRIV-72)	07:44		18:13 (TRIV-71)	06:53			06:17	06:06
	17:40	48	09:09 (TRIV-72)	18:19	49	09:11 (TRIV-72)	19:50	69	19:22 (TRIV-71)	20:22			20:54	21:14
21	07:59		08:20 (TRIV-72)	07:26		08:24 (TRIV-72)	07:42		18:12 (TRIV-71)	06:52			06:16	06:07
	17:42	50	09:10 (TRIV-72)	18:20	46	09:10 (TRIV-72)	19:52	70	19:22 (TRIV-71)	20:24			20:54	21:15
22	07:59		08:20 (TRIV-72)	07:25		08:25 (TRIV-72)	07:40		18:11 (TRIV-71)	06:50			06:16	06:07
	17:43	51	09:11 (TRIV-72)	18:21	43	09:08 (TRIV-72)	19:53	71	19:22 (TRIV-71)	20:25			20:55	21:15
23	07:58		08:19 (TRIV-72)	07:23		08:26 (TRIV-72)	07:39		18:12 (TRIV-71)	06:49			06:15	06:07
	17:44	53	09:12 (TRIV-72)	18:22	41	09:07 (TRIV-72)	19:54	70	19:22 (TRIV-71)	20:26			20:56	21:15
24	07:57		08:18 (TRIV-72)	07:22		08:28 (TRIV-72)	07:37		18:11 (TRIV-71)	06:48			06:14	06:07
	17:45	55	09:13 (TRIV-72)	18:23	37	09:05 (TRIV-72)	19:55	71	19:22 (TRIV-71)	20:27			20:57	21:15
25	07:57		08:17 (TRIV-72)	07:21		08:30 (TRIV-72)	07:35		18:11 (TRIV-71)	06:46			06:13	06:08
	17:46	56	09:13 (TRIV-72)	18:25	33	09:03 (TRIV-72)	19:56	70	19:21 (TRIV-71)	20:28			20:58	21:15
26	07:56		08:18 (TRIV-72)	07:19		08:33 (TRIV-72)	07:34		18:11 (TRIV-71)	06:45			06:13	06:08
	17:48	57	09:15 (TRIV-72)	18:26	27	09:00 (TRIV-72)	19:57	71	19:22 (TRIV-71)	20:29			20:59	21:15
27	07:55		08:18 (TRIV-72)	07:18		08:36 (TRIV-72)	07:32		18:11 (TRIV-71)	06:43			06:12	06:08
	17:49	57	09:15 (TRIV-72)	18:27	20	08:56 (TRIV-72)	19:58	70	19:21 (TRIV-71)	20:30			21:00	21:16
28	07:54		08:17 (TRIV-72)	07:16		08:41 (TRIV-72)	07:30		18:10 (TRIV-71)	06:42			06:11	06:09
	17:50	59	09:16 (TRIV-72)	18:28	8	08:49 (TRIV-72)	19:59	70	19:20 (TRIV-71)	20:31			21:01	21:16
29	07:53		08:17 (TRIV-72)				07:29		18:11 (TRIV-71)	06:41			06:11	06:09
	17:51	59	09:16 (TRIV-72)				20:00	69	19:20 (TRIV-71)	20:32			21:02	21:16
30	07:52		08:17 (TRIV-72)				07:27		18:11 (TRIV-71)	06:39			06:10	06:09
	17:53	60	09:17 (TRIV-72)				20:00	68	19:19 (TRIV-71)	20:33			21:02	21:16
31	07:52		08:17 (TRIV-72)				07:25		18:11 (TRIV-71)				06:10	
	17:54	60	09:17 (TRIV-72)				20:01	67	19:18 (TRIV-71)				21:03	
Potential sun hours	298			297			370			399			448	452
Total, worst case		1203			1439			1708			833			
Sun reduction		0.50			0.55			0.57			0.63			
Oper. time red.		1.00			1.00			1.00			1.00			
Wind dir. red.		0.61			0.61			0.68			0.68			
Total reduction		0.30			0.34			0.39			0.43			
Total, real		367			483			659			355			

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 313 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1328)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August			September			October			November			December		
1	06:10	06:34			07:05		18:17 (TRIV-71)	07:35		18:00 (TRIV-71)	07:09		07:46 (TRIV-72)	07:44		08:07 (TRIV-72)
	21:15	20:57			20:14	47	19:04 (TRIV-71)	19:22	58	18:58 (TRIV-71)	17:36	62	08:48 (TRIV-72)	17:11	33	08:40 (TRIV-72)
2	06:10	06:35			07:06		18:15 (TRIV-71)	07:36		18:00 (TRIV-71)	07:10		07:47 (TRIV-72)	07:45		08:08 (TRIV-72)
	21:15	20:56			20:13	50	19:05 (TRIV-71)	19:21	57	18:57 (TRIV-71)	17:34	62	08:49 (TRIV-72)	17:11	31	08:39 (TRIV-72)
3	06:11	06:36			07:07		18:14 (TRIV-71)	07:37		18:01 (TRIV-71)	07:12		07:46 (TRIV-72)	07:46		08:10 (TRIV-72)
	21:15	20:55			20:11	52	19:06 (TRIV-71)	19:19	54	18:55 (TRIV-71)	17:33	63	08:49 (TRIV-72)	17:11	29	08:39 (TRIV-72)
4	06:12	06:37			07:08		18:12 (TRIV-71)	07:38		18:02 (TRIV-71)	07:13		07:46 (TRIV-72)	07:47		08:11 (TRIV-72)
	21:15	20:54			20:10	55	19:07 (TRIV-71)	19:17	51	18:53 (TRIV-71)	17:32	62	08:48 (TRIV-72)	17:11	27	08:38 (TRIV-72)
5	06:12	06:38			07:09		18:11 (TRIV-71)	07:39		18:03 (TRIV-71)	07:14		07:47 (TRIV-72)	07:48		08:13 (TRIV-72)
	21:15	20:53			20:08	57	19:08 (TRIV-71)	19:16	48	18:51 (TRIV-71)	17:31	62	08:49 (TRIV-72)	17:11	24	08:37 (TRIV-72)
6	06:13	06:39			07:10		18:09 (TRIV-71)	07:40		18:05 (TRIV-71)	07:15		07:46 (TRIV-72)	07:49		08:15 (TRIV-72)
	21:15	20:52			20:06	60	19:09 (TRIV-71)	19:14	44	18:49 (TRIV-71)	17:30	63	08:49 (TRIV-72)	17:10	22	08:37 (TRIV-72)
7	06:13	06:40			07:11		18:08 (TRIV-71)	07:41		18:07 (TRIV-71)	07:16		07:46 (TRIV-72)	07:50		08:16 (TRIV-72)
	21:14	20:50			20:05	61	19:09 (TRIV-71)	19:12	40	18:47 (TRIV-71)	17:29	63	08:49 (TRIV-72)	17:10	18	08:34 (TRIV-72)
8	06:14	06:41			07:12		18:07 (TRIV-71)	07:42		18:09 (TRIV-71)	07:18		07:46 (TRIV-72)	07:51		08:18 (TRIV-72)
	21:14	20:49			20:03	63	19:10 (TRIV-71)	19:11	35	18:44 (TRIV-71)	17:28	62	08:48 (TRIV-72)	17:10	15	08:33 (TRIV-72)
9	06:15	06:42			07:13		18:06 (TRIV-71)	07:43		18:11 (TRIV-71)	07:19		07:47 (TRIV-72)	07:52		08:20 (TRIV-72)
	21:14	20:48			20:01	64	19:10 (TRIV-71)	19:09	30	18:41 (TRIV-71)	17:26	62	08:49 (TRIV-72)	17:10	12	08:32 (TRIV-72)
10	06:15	06:43			07:14		18:05 (TRIV-71)	07:44		18:15 (TRIV-71)	07:20		07:47 (TRIV-72)	07:53		08:24 (TRIV-72)
	21:13	20:47			20:00	65	19:10 (TRIV-71)	19:07	21	18:36 (TRIV-71)	17:25	62	08:49 (TRIV-72)	17:10	6	08:30 (TRIV-72)
11	06:16	06:44			07:15		18:04 (TRIV-71)	07:45		18:23 (TRIV-71)	07:21		07:47 (TRIV-72)	07:54		
	21:13	20:45			19:56	66	19:10 (TRIV-71)	19:06	5	18:28 (TRIV-71)	17:24	61	08:48 (TRIV-72)	17:10		
12	06:17	06:45			07:16		18:03 (TRIV-71)	07:47			07:22		07:49 (TRIV-72)	07:54		
	21:13	20:44			19:55	67	19:10 (TRIV-71)	19:04			17:24	60	08:49 (TRIV-72)	17:11		
13	06:17	06:46			07:17		18:02 (TRIV-71)	07:48			07:24		07:49 (TRIV-72)	07:55		
	21:12	20:43			19:53	68	19:10 (TRIV-71)	19:03			17:23	59	08:48 (TRIV-72)	17:11		
14	06:18	06:47			07:18		18:01 (TRIV-71)	07:49		09:11 (TRIV-72)	07:25		07:49 (TRIV-72)	07:56		
	21:12	20:41			19:51	69	19:10 (TRIV-71)	19:01	15	09:26 (TRIV-72)	17:22	59	08:48 (TRIV-72)	17:11		
15	06:19	06:48			07:19		18:01 (TRIV-71)	07:50		09:07 (TRIV-72)	07:26		07:50 (TRIV-72)	07:57		
	21:11	20:40			19:49	69	19:10 (TRIV-71)	19:00	23	09:30 (TRIV-72)	17:21	57	08:47 (TRIV-72)	17:11		
16	06:20	06:49			07:20		18:00 (TRIV-71)	07:51		09:03 (TRIV-72)	07:27		07:51 (TRIV-72)	07:57		
	21:11	20:39			19:48	70	19:10 (TRIV-71)	18:58	30	09:33 (TRIV-72)	17:20	57	08:48 (TRIV-72)	17:11		
17	06:21	06:50			07:21		17:59 (TRIV-71)	07:52		09:01 (TRIV-72)	07:28		07:51 (TRIV-72)	07:58		
	21:10	20:37			19:46	71	19:10 (TRIV-71)	18:56	34	09:35 (TRIV-72)	17:19	56	08:47 (TRIV-72)	17:12		
18	06:21	06:51			07:22		17:59 (TRIV-71)	07:53		08:58 (TRIV-72)	07:29		07:52 (TRIV-72)	07:59		
	21:09	20:36			19:44	71	19:10 (TRIV-71)	18:55	39	09:37 (TRIV-72)	17:18	55	08:47 (TRIV-72)	17:12		
19	06:22	06:52			07:23		17:58 (TRIV-71)	07:54		08:57 (TRIV-72)	07:31		07:53 (TRIV-72)	07:59		
	21:09	20:34			19:43	71	19:09 (TRIV-71)	18:53	42	09:39 (TRIV-72)	17:18	53	08:46 (TRIV-72)	17:12		
20	06:23	06:53			07:24		17:58 (TRIV-71)	07:55		08:56 (TRIV-72)	07:32		07:55 (TRIV-72)	08:00		
	21:08	20:33			19:41	71	19:09 (TRIV-71)	18:52	44	09:40 (TRIV-72)	17:17	51	08:46 (TRIV-72)	17:13		
21	06:24	06:54			07:25		17:58 (TRIV-71)	07:56		08:54 (TRIV-72)	07:33		07:56 (TRIV-72)	08:00		
	21:07	20:31			19:39	70	19:08 (TRIV-71)	18:51	47	09:41 (TRIV-72)	17:16	50	08:46 (TRIV-72)	17:13		
22	06:25	06:55			07:26		17:58 (TRIV-71)	07:58		08:53 (TRIV-72)	07:34		07:57 (TRIV-72)	08:01		
	21:06	20:30			19:37	70	19:08 (TRIV-71)	18:49	49	09:42 (TRIV-72)	17:16	48	08:45 (TRIV-72)	17:14		
23	06:26	06:56			07:27		17:57 (TRIV-71)	07:59		08:51 (TRIV-72)	07:35		07:58 (TRIV-72)	08:01		
	21:06	20:29			19:36	70	19:07 (TRIV-71)	18:48	52	09:43 (TRIV-72)	17:15	46	08:44 (TRIV-72)	17:14		
24	06:27	06:57			07:28		17:57 (TRIV-71)	08:00		08:51 (TRIV-72)	07:36		07:59 (TRIV-72)	08:02		
	21:05	20:27			19:34	69	19:06 (TRIV-71)	18:46	54	09:45 (TRIV-72)	17:14	45	08:44 (TRIV-72)	17:15		
25	06:27	06:58			07:29		17:57 (TRIV-71)	08:01		08:50 (TRIV-72)	07:38		08:01 (TRIV-72)	08:02		
	21:04	20:25			19:32	68	19:05 (TRIV-71)	18:45	55	09:45 (TRIV-72)	17:14	43	08:44 (TRIV-72)	17:15		
26	06:28	06:59		18:35 (TRIV-71)	07:30		17:58 (TRIV-71)	08:02		08:49 (TRIV-72)	07:39		08:02 (TRIV-72)	08:03		
	21:03	20:24	17	18:52 (TRIV-71)	19:31	66	19:04 (TRIV-71)	18:43	57	09:46 (TRIV-72)	17:13	41	08:43 (TRIV-72)	17:16		
27	06:29	07:00		18:31 (TRIV-71)	07:31		17:58 (TRIV-71)	08:03		08:48 (TRIV-72)	07:40		08:03 (TRIV-72)	08:03		
	21:02	20:22	25	18:56 (TRIV-71)	19:29	65	19:03 (TRIV-71)	18:42	58	09:46 (TRIV-72)	17:13	40	08:43 (TRIV-72)	17:17		
28	06:30	07:01		18:28 (TRIV-71)	07:32		17:58 (TRIV-71)	08:05		08:47 (TRIV-72)	07:41		08:04 (TRIV-72)	08:03		
	21:01	20:21	31	18:59 (TRIV-71)	19:27	64	19:02 (TRIV-71)	18:41	59	09:46 (TRIV-72)	17:13	38	08:42 (TRIV-72)	17:17		
29	06:31	07:02		18:25 (TRIV-71)	07:33		17:58 (TRIV-71)	08:06		08:48 (TRIV-72)	07:42		08:05 (TRIV-72)	08:04		
	21:00	20:19	36	19:01 (TRIV-71)	19:26	63	19:01 (TRIV-71)	18:39	59	09:47 (TRIV-72)	17:12	36	08:41 (TRIV-72)	17:18		
30	06:32	07:03		18:21 (TRIV-71)	07:34		17:59 (TRIV-71)	08:07		08:47 (TRIV-72)	07:43		08:06 (TRIV-72)	08:04		
	20:59	20:18	41	19:02 (TRIV-71)	19:24	61	19:00 (TRIV-71)	18:38	61	09:48 (TRIV-72)	17:12	34	08:40 (TRIV-72)	17:19		
31	06:33	07:04		18:19 (TRIV-71)				08:08		08:46 (TRIV-72)				08:04		
	20:58	20:16	44	19:03 (TRIV-71)				18:37	62	09:48 (TRIV-72)				17:20		
Potential sun hours	459	428			375			345			298			288		
Total, worst case			194			1933			1283			1612			217	
Sun reduction			0.75			0.67			0.60			0.40			0.36	
Oper. time red.			1.00			1.00			1.00			1.00			1.00	
Wind dir. red.			0.68			0.68			0.64			0.61			0.61	
Total reduction			0.51			0.45			0.38			0.24			0.22	
Total, real			98			876			487			393			48	

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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 314 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1329)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April	May	June
1	08:04		08:27 (TRIV-72)	07:51		08:36 (TRIV-72)	07:14		16:59 (TRIV-71)	07:24	06:38	06:09
	17:21	54	09:21 (TRIV-72)	17:55	55	09:31 (TRIV-72)	18:29	64	18:03 (TRIV-71)	20:02	20:34	21:04
2	08:04		08:27 (TRIV-72)	07:50		08:37 (TRIV-72)	07:13		16:57 (TRIV-71)	07:22	06:37	06:09
	17:22	55	09:22 (TRIV-72)	17:56	54	09:31 (TRIV-72)	18:30	66	18:03 (TRIV-71)	20:03	20:35	21:05
3	08:04		08:27 (TRIV-72)	07:49		08:38 (TRIV-72)	07:11		16:57 (TRIV-71)	07:20	06:35	06:08
	17:23	55	09:22 (TRIV-72)	17:58	52	09:30 (TRIV-72)	18:32	67	18:04 (TRIV-71)	20:04	20:36	21:05
4	08:05		08:28 (TRIV-72)	07:48		08:39 (TRIV-72)	07:10		16:56 (TRIV-71)	07:19	06:34	06:08
	17:23	55	09:23 (TRIV-72)	17:59	50	09:29 (TRIV-72)	18:33	68	18:04 (TRIV-71)	20:05	20:37	21:06
5	08:05		08:28 (TRIV-72)	07:47		08:40 (TRIV-72)	07:08		16:57 (TRIV-71)	07:17	06:33	06:08
	17:24	56	09:24 (TRIV-72)	18:00	49	09:29 (TRIV-72)	18:34	68	18:05 (TRIV-71)	20:07	20:38	21:07
6	08:04		08:28 (TRIV-72)	07:45		08:41 (TRIV-72)	07:07		16:56 (TRIV-71)	07:15	06:32	06:07
	17:25	56	09:24 (TRIV-72)	18:01	47	09:28 (TRIV-72)	18:35	68	18:04 (TRIV-71)	20:08	20:39	21:08
7	08:04		08:28 (TRIV-72)	07:44		08:41 (TRIV-72)	07:05		16:55 (TRIV-71)	07:14	06:30	06:07
	17:26	56	09:24 (TRIV-72)	18:03	45	09:26 (TRIV-72)	18:36	69	18:04 (TRIV-71)	20:09	20:40	21:08
8	08:04		08:28 (TRIV-72)	07:43		08:43 (TRIV-72)	08:03		17:56 (TRIV-71)	07:12	06:29	06:07
	17:27	57	09:25 (TRIV-72)	18:04	42	09:25 (TRIV-72)	19:37	68	19:04 (TRIV-71)	20:10	20:42	21:09
9	08:04		08:29 (TRIV-72)	07:42		08:44 (TRIV-72)	08:02		17:55 (TRIV-71)	07:11	06:28	06:07
	17:28	57	09:26 (TRIV-72)	18:05	40	09:24 (TRIV-72)	19:38	69	19:04 (TRIV-71)	20:11	20:43	21:09
10	08:04		08:29 (TRIV-72)	07:41		08:46 (TRIV-72)	08:00		17:55 (TRIV-71)	07:09	06:27	06:06
	17:29	58	09:27 (TRIV-72)	18:06	37	09:23 (TRIV-72)	19:40	68	19:03 (TRIV-71)	20:12	20:44	21:10
11	08:04		08:29 (TRIV-72)	07:40		08:48 (TRIV-72)	07:59		17:55 (TRIV-71)	07:07	06:26	06:06
	17:30	58	09:27 (TRIV-72)	18:08	33	09:21 (TRIV-72)	19:41	68	19:03 (TRIV-71)	20:13	20:45	21:11
12	08:03		08:29 (TRIV-72)	07:38		08:50 (TRIV-72)	07:57		17:55 (TRIV-71)	07:06	06:25	06:06
	17:31	59	09:28 (TRIV-72)	18:09	28	09:18 (TRIV-72)	19:42	68	19:03 (TRIV-71)	20:14	20:46	21:11
13	08:03		08:30 (TRIV-72)	07:37		08:53 (TRIV-72)	07:55		17:55 (TRIV-71)	07:04	06:24	06:06
	17:32	58	09:28 (TRIV-72)	18:10	22	09:15 (TRIV-72)	19:43	67	19:02 (TRIV-71)	20:15	20:47	21:12
14	08:03		08:29 (TRIV-72)	07:36		08:57 (TRIV-72)	07:54		17:56 (TRIV-71)	07:03	06:23	06:06
	17:34	59	09:28 (TRIV-72)	18:11	26	17:38 (TRIV-71)	19:44	66	19:02 (TRIV-71)	20:16	20:48	21:12
15	08:02		08:30 (TRIV-72)	07:35		17:21 (TRIV-71)	07:52		17:55 (TRIV-71)	07:01	06:22	06:06
	17:35	59	09:29 (TRIV-72)	18:13	22	17:43 (TRIV-71)	19:45	66	19:01 (TRIV-71)	20:17	20:49	21:13
16	08:02		08:30 (TRIV-72)	07:33		17:17 (TRIV-71)	07:50		17:55 (TRIV-71)	06:59	06:21	06:06
	17:36	59	09:29 (TRIV-72)	18:14	30	17:47 (TRIV-71)	19:46	65	19:00 (TRIV-71)	20:18	20:50	21:13
17	08:02		08:30 (TRIV-72)	07:32		17:15 (TRIV-71)	07:49		17:57 (TRIV-71)	06:58	06:20	06:06
	17:37	60	09:30 (TRIV-72)	18:15	35	17:50 (TRIV-71)	19:47	62	18:59 (TRIV-71)	20:19	20:51	21:13
18	08:01		08:30 (TRIV-72)	07:31		17:12 (TRIV-71)	07:47		17:57 (TRIV-71)	06:56	06:19	06:06
	17:38	60	09:30 (TRIV-72)	18:16	39	17:51 (TRIV-71)	19:48	61	18:58 (TRIV-71)	20:20	20:52	21:14
19	08:01		08:31 (TRIV-72)	07:29		17:10 (TRIV-71)	07:45		17:57 (TRIV-71)	06:55	06:18	06:06
	17:39	60	09:31 (TRIV-72)	18:17	44	17:54 (TRIV-71)	19:49	60	18:57 (TRIV-71)	20:21	20:53	21:14
20	08:00		08:31 (TRIV-72)	07:28		17:08 (TRIV-71)	07:44		17:58 (TRIV-71)	06:53	06:17	06:06
	17:40	60	09:31 (TRIV-72)	18:19	47	17:55 (TRIV-71)	19:50	58	18:56 (TRIV-71)	20:22	20:54	21:14
21	07:59		08:31 (TRIV-72)	07:26		17:07 (TRIV-71)	07:42		17:59 (TRIV-71)	06:52	06:16	06:07
	17:42	60	09:31 (TRIV-72)	18:20	50	17:57 (TRIV-71)	19:52	56	18:55 (TRIV-71)	20:24	20:54	21:15
22	07:59		08:32 (TRIV-72)	07:25		17:05 (TRIV-71)	07:40		18:00 (TRIV-71)	06:50	06:16	06:07
	17:43	60	09:32 (TRIV-72)	18:21	52	17:57 (TRIV-71)	19:53	53	18:53 (TRIV-71)	20:25	20:55	21:15
23	07:58		08:32 (TRIV-72)	07:23		17:04 (TRIV-71)	07:39		18:01 (TRIV-71)	06:49	06:15	06:07
	17:44	60	09:32 (TRIV-72)	18:22	55	17:59 (TRIV-71)	19:54	51	18:52 (TRIV-71)	20:26	20:56	21:15
24	07:57		08:32 (TRIV-72)	07:22		17:03 (TRIV-71)	07:37		18:02 (TRIV-71)	06:48	06:14	06:07
	17:45	60	09:32 (TRIV-72)	18:23	57	18:00 (TRIV-71)	19:55	48	18:50 (TRIV-71)	20:27	20:57	21:15
25	07:57		08:32 (TRIV-72)	07:21		17:02 (TRIV-71)	07:35		18:03 (TRIV-71)	06:46	06:13	06:08
	17:46	60	09:32 (TRIV-72)	18:25	59	18:01 (TRIV-71)	19:56	45	18:48 (TRIV-71)	20:28	20:58	21:15
26	07:56		08:34 (TRIV-72)	07:19		17:01 (TRIV-71)	07:34		18:06 (TRIV-71)	06:45	06:13	06:08
	17:48	59	09:33 (TRIV-72)	18:26	61	18:02 (TRIV-71)	19:57	41	18:47 (TRIV-71)	20:29	20:59	21:15
27	07:55		08:34 (TRIV-72)	07:18		17:00 (TRIV-71)	07:32		18:07 (TRIV-71)	06:43	06:12	06:08
	17:49	58	09:32 (TRIV-72)	18:27	62	18:02 (TRIV-71)	19:58	37	18:44 (TRIV-71)	20:30	21:00	21:16
28	07:54		08:34 (TRIV-72)	07:16		16:59 (TRIV-71)	07:30		18:09 (TRIV-71)	06:42	06:11	06:09
	17:50	58	09:32 (TRIV-72)	18:28	63	18:02 (TRIV-71)	19:59	32	18:41 (TRIV-71)	20:31	21:01	21:16
29	07:53		08:35 (TRIV-72)				07:29		18:13 (TRIV-71)	06:41	06:11	06:09
	17:51	57	09:32 (TRIV-72)				20:00	25	18:38 (TRIV-71)	20:32	21:02	21:16
30	07:52		08:35 (TRIV-72)				07:27		18:17 (TRIV-71)	06:39	06:10	06:09
	17:53	57	09:32 (TRIV-72)				20:00	16	18:33 (TRIV-71)	20:33	21:02	21:16
31	07:52		08:36 (TRIV-72)				07:25				06:10	
	17:54	55	09:31 (TRIV-72)				20:01				21:03	
Potential sun hours	298			297			370			399	448	452
Total, worst case		1795			1256			1720				
Sun reduction		0.50			0.55			0.57				
Oper. time red.		1.00			1.00			1.00				
Wind dir. red.		0.60			0.65			0.70				
Total reduction		0.30			0.35			0.39				
Total, real		531			445			674				

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 314 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1329)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September			October			November			December		
1	06:10		06:34		07:05			07:35		17:35 (TRIV-71)	07:09		08:15 (TRIV-72)	07:44		08:11 (TRIV-72)
	21:15		20:57		20:14			19:22	67	18:42 (TRIV-71)	17:36	37	08:52 (TRIV-72)	17:11	58	09:09 (TRIV-72)
2	06:10		06:35		07:06			07:36		17:34 (TRIV-71)	07:10		08:14 (TRIV-72)	07:45		08:11 (TRIV-72)
	21:15		20:56		20:13			19:21	68	18:42 (TRIV-71)	17:34	40	08:54 (TRIV-72)	17:11	58	09:09 (TRIV-72)
3	06:11		06:36		07:07			07:37		17:33 (TRIV-71)	07:12		08:12 (TRIV-72)	07:46		08:13 (TRIV-72)
	21:15		20:55		20:11			19:19	69	18:42 (TRIV-71)	17:33	43	08:55 (TRIV-72)	17:11	57	09:10 (TRIV-72)
4	06:12		06:37		07:08			07:38		17:33 (TRIV-71)	07:13		08:11 (TRIV-72)	07:47		08:13 (TRIV-72)
	21:15		20:54		20:10			19:17	68	18:41 (TRIV-71)	17:32	45	08:56 (TRIV-72)	17:11	57	09:10 (TRIV-72)
5	06:12		06:38		07:09			07:39		17:32 (TRIV-71)	07:14		08:11 (TRIV-72)	07:48		08:14 (TRIV-72)
	21:15		20:53		20:08			19:16	69	18:41 (TRIV-71)	17:31	47	08:58 (TRIV-72)	17:11	56	09:10 (TRIV-72)
6	06:13		06:39		07:10			07:40		17:32 (TRIV-71)	07:15		08:10 (TRIV-72)	07:49		08:14 (TRIV-72)
	21:15		20:52		20:06			19:14	68	18:40 (TRIV-71)	17:30	49	08:59 (TRIV-72)	17:10	57	09:11 (TRIV-72)
7	06:13		06:40		07:11			07:41		17:31 (TRIV-71)	07:16		08:09 (TRIV-72)	07:50		08:14 (TRIV-72)
	21:14		20:50		20:05			19:12	69	18:40 (TRIV-71)	17:29	50	08:59 (TRIV-72)	17:10	56	09:10 (TRIV-72)
8	06:14		06:41		07:12			07:42		17:31 (TRIV-71)	07:18		08:08 (TRIV-72)	07:51		08:15 (TRIV-72)
	21:14		20:49		20:03			19:11	68	18:39 (TRIV-71)	17:28	52	09:00 (TRIV-72)	17:10	55	09:10 (TRIV-72)
9	06:15		06:42		07:13			07:43		17:31 (TRIV-71)	07:19		08:08 (TRIV-72)	07:52		08:15 (TRIV-72)
	21:14		20:48		20:01			19:09	68	18:39 (TRIV-71)	17:26	54	09:02 (TRIV-72)	17:10	55	09:10 (TRIV-72)
10	06:15		06:43		07:14			07:44		17:31 (TRIV-71)	07:20		08:07 (TRIV-72)	07:53		08:16 (TRIV-72)
	21:13		20:47		20:00			19:07	67	18:38 (TRIV-71)	17:25	55	09:02 (TRIV-72)	17:10	55	09:11 (TRIV-72)
11	06:16		06:44		07:15			07:45		17:31 (TRIV-71)	07:21		08:07 (TRIV-72)	07:54		08:17 (TRIV-72)
	21:13		20:45		19:56			19:06	66	18:37 (TRIV-71)	17:24	55	09:02 (TRIV-72)	17:10	54	09:11 (TRIV-72)
12	06:17		06:45		07:16			07:47		17:32 (TRIV-71)	07:22		08:07 (TRIV-72)	07:54		08:18 (TRIV-72)
	21:13		20:44		19:55			19:04	65	18:37 (TRIV-71)	17:24	57	09:04 (TRIV-72)	17:11	54	09:12 (TRIV-72)
13	06:17		06:46		07:17		18:09 (TRIV-71)	07:48		17:32 (TRIV-71)	07:24		08:07 (TRIV-72)	07:55		08:19 (TRIV-72)
	21:12		20:43		19:53	14	18:23 (TRIV-71)	19:03	64	18:36 (TRIV-71)	17:23	57	09:04 (TRIV-72)	17:11	53	09:12 (TRIV-72)
14	06:18		06:47		07:18		18:04 (TRIV-71)	07:49		17:32 (TRIV-71)	07:25		08:06 (TRIV-72)	07:56		08:19 (TRIV-72)
	21:12		20:41		19:51	24	18:28 (TRIV-71)	19:01	63	18:35 (TRIV-71)	17:22	58	09:04 (TRIV-72)	17:11	53	09:12 (TRIV-72)
15	06:19		06:48		07:19		18:00 (TRIV-71)	07:50		17:33 (TRIV-71)	07:26		08:06 (TRIV-72)	07:57		08:20 (TRIV-72)
	21:11		20:40		19:49	31	18:31 (TRIV-71)	19:00	61	18:34 (TRIV-71)	17:21	58	09:04 (TRIV-72)	17:11	52	09:12 (TRIV-72)
16	06:20		06:49		07:20		17:57 (TRIV-71)	07:51		17:33 (TRIV-71)	07:27		08:07 (TRIV-72)	07:57		08:21 (TRIV-72)
	21:11		20:39		19:48	36	18:33 (TRIV-71)	18:58	60	18:33 (TRIV-71)	17:20	59	09:06 (TRIV-72)	17:11	52	09:13 (TRIV-72)
17	06:21		06:50		07:21		17:54 (TRIV-71)	07:52		17:34 (TRIV-71)	07:28		08:06 (TRIV-72)	07:58		08:21 (TRIV-72)
	21:10		20:37		19:46	40	18:34 (TRIV-71)	18:56	58	18:32 (TRIV-71)	17:19	60	09:06 (TRIV-72)	17:12	52	09:13 (TRIV-72)
18	06:21		06:51		07:22		17:52 (TRIV-71)	07:53		17:34 (TRIV-71)	07:29		08:06 (TRIV-72)	07:59		08:22 (TRIV-72)
	21:09		20:36		19:44	44	18:36 (TRIV-71)	18:55	57	18:31 (TRIV-71)	17:18	60	09:06 (TRIV-72)	17:12	51	09:13 (TRIV-72)
19	06:22		06:52		07:23		17:50 (TRIV-71)	07:54		17:36 (TRIV-71)	07:31		08:06 (TRIV-72)	07:59		08:23 (TRIV-72)
	21:09		20:34		19:43	47	18:37 (TRIV-71)	18:53	54	18:30 (TRIV-71)	17:18	60	09:06 (TRIV-72)	17:12	51	09:14 (TRIV-72)
20	06:23		06:53		07:24		17:48 (TRIV-71)	07:55		17:37 (TRIV-71)	07:32		08:07 (TRIV-72)	08:00		08:23 (TRIV-72)
	21:08		20:33		19:41	50	18:38 (TRIV-71)	18:52	51	18:28 (TRIV-71)	17:17	60	09:07 (TRIV-72)	17:13	51	09:14 (TRIV-72)
21	06:24		06:54		07:25		17:46 (TRIV-71)	07:56		17:38 (TRIV-71)	07:33		08:07 (TRIV-72)	08:00		08:24 (TRIV-72)
	21:07		20:32		19:39	53	18:39 (TRIV-71)	18:51	49	18:27 (TRIV-71)	17:16	60	09:07 (TRIV-72)	17:13	51	09:15 (TRIV-72)
22	06:25		06:55		07:26		17:45 (TRIV-71)	07:58		17:39 (TRIV-71)	07:34		08:07 (TRIV-72)	08:01		08:24 (TRIV-72)
	21:06		20:30		19:37	55	18:40 (TRIV-71)	18:49	46	18:25 (TRIV-71)	17:16	60	09:07 (TRIV-72)	17:14	51	09:15 (TRIV-72)
23	06:26		06:56		07:27		17:43 (TRIV-71)	07:59		17:41 (TRIV-71)	07:35		08:07 (TRIV-72)	08:01		08:25 (TRIV-72)
	21:06		20:29		19:36	57	18:40 (TRIV-71)	18:48	42	18:23 (TRIV-71)	17:15	60	09:07 (TRIV-72)	17:14	51	09:16 (TRIV-72)
24	06:27		06:57		07:28		17:42 (TRIV-71)	08:00		17:43 (TRIV-71)	07:36		08:07 (TRIV-72)	08:02		08:25 (TRIV-72)
	21:05		20:27		19:34	59	18:41 (TRIV-71)	18:46	38	18:21 (TRIV-71)	17:14	60	09:07 (TRIV-72)	17:15	51	09:16 (TRIV-72)
25	06:27		06:58		07:29		17:41 (TRIV-71)	08:01		17:45 (TRIV-71)	07:38		08:09 (TRIV-72)	08:02		08:25 (TRIV-72)
	21:04		20:25		19:32	60	18:41 (TRIV-71)	18:45	34	18:19 (TRIV-71)	17:14	59	09:08 (TRIV-72)	17:15	51	09:16 (TRIV-72)
26	06:28		06:59		07:30		17:39 (TRIV-71)	08:02		17:48 (TRIV-71)	07:39		08:09 (TRIV-72)	08:03		08:26 (TRIV-72)
	21:03		20:24		19:31	63	18:42 (TRIV-71)	18:43	28	18:16 (TRIV-71)	17:13	59	09:08 (TRIV-72)	17:16	52	09:18 (TRIV-72)
27	06:29		07:00		07:31		17:38 (TRIV-71)	08:03		17:51 (TRIV-71)	07:40		08:09 (TRIV-72)	08:03		08:26 (TRIV-72)
	21:02		20:22		19:29	64	18:42 (TRIV-71)	18:42	21	18:12 (TRIV-71)	17:13	59	09:08 (TRIV-72)	17:17	52	09:18 (TRIV-72)
28	06:30		07:01		07:32		17:37 (TRIV-71)	08:05		09:24 (TRIV-72)	07:41		08:09 (TRIV-72)	08:03		08:26 (TRIV-72)
	21:01		20:21		19:27	65	18:42 (TRIV-71)	18:41	23	18:04 (TRIV-71)	17:13	59	09:08 (TRIV-72)	17:17	52	09:18 (TRIV-72)
29	06:31		07:02		07:33		17:36 (TRIV-71)	08:06		09:22 (TRIV-72)	07:42		08:10 (TRIV-72)	08:04		08:26 (TRIV-72)
	21:00		20:19		19:26	66	18:42 (TRIV-71)	18:39	24	09:46 (TRIV-72)	17:12	59	09:09 (TRIV-72)	17:18	53	09:19 (TRIV-72)
30	06:32		07:03		07:34		17:35 (TRIV-71)	08:07		09:19 (TRIV-72)	07:43		08:10 (TRIV-72)	08:04		08:27 (TRIV-72)
	20:59		20:18		19:24	67	18:42 (TRIV-71)	18:38	29	09:48 (TRIV-72)	17:12	59	09:09 (TRIV-72)	17:19	53	09:20 (TRIV-72)
31	06:33		07:04					08:08		09:17 (TRIV-72)				08:04		08:27 (TRIV-72)
	20:58		20:16					18:37	33	09:50 (TRIV-72)				17:20	53	09:20 (TRIV-72)
Potential sun hours	459		428		375			345			298			288		
Total, worst case					895			1647			1650			1657		
Sun reduction					0.67			0.60			0.40			0.36		
Oper. time red.					1.00			1.00			1.00			1.00		
Wind dir. red.					0.70			0.69			0.60			0.60		
Total reduction					0.46			0.41			0.24			0.21		
Total, real					412			674			390			353		

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

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

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 315 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1330)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April		May	June
1	08:04		08:38 (TRIV-72)	07:51		09:02 (TRIV-72)	07:14		16:45 (TRIV-71)	07:24		06:38	06:09
	17:21	58	09:36 (TRIV-72)	17:55	29	09:31 (TRIV-72)	18:29	65	17:50 (TRIV-71)	20:02		20:34	21:04
2	08:04		08:38 (TRIV-72)	07:50		09:04 (TRIV-72)	07:13		16:45 (TRIV-71)	07:22		06:37	06:09
	17:22	59	09:37 (TRIV-72)	17:56	40	17:25 (TRIV-71)	18:30	64	17:49 (TRIV-71)	20:03		20:35	21:05
3	08:04		08:39 (TRIV-72)	07:49		09:07 (TRIV-72)	07:11		16:46 (TRIV-71)	07:20		06:35	06:08
	17:23	58	09:37 (TRIV-72)	17:58	42	17:29 (TRIV-71)	18:32	63	17:49 (TRIV-71)	20:04		20:36	21:05
4	08:05		08:39 (TRIV-72)	07:48		09:12 (TRIV-72)	07:10		16:46 (TRIV-71)	07:19		06:34	06:08
	17:23	59	09:38 (TRIV-72)	17:59	39	17:32 (TRIV-71)	18:33	62	17:48 (TRIV-71)	20:05		20:37	21:06
5	08:05		08:40 (TRIV-72)	07:47		17:01 (TRIV-71)	07:08		16:47 (TRIV-71)	07:17		06:33	06:08
	17:24	58	09:38 (TRIV-72)	18:00	34	17:35 (TRIV-71)	18:34	61	17:48 (TRIV-71)	20:07		20:38	21:07
6	08:04		08:40 (TRIV-72)	07:45		16:59 (TRIV-71)	07:07		16:47 (TRIV-71)	07:15		06:32	06:07
	17:25	59	09:39 (TRIV-72)	18:01	38	17:37 (TRIV-71)	18:35	60	17:47 (TRIV-71)	20:08		20:39	21:08
7	08:04		08:40 (TRIV-72)	07:44		16:57 (TRIV-71)	07:05		16:47 (TRIV-71)	07:14		06:30	06:07
	17:26	58	09:38 (TRIV-72)	18:03	41	17:38 (TRIV-71)	18:36	59	17:46 (TRIV-71)	20:09		20:40	21:08
8	08:04		08:40 (TRIV-72)	07:43		16:56 (TRIV-71)	08:03		17:48 (TRIV-71)	07:12		06:29	06:07
	17:27	59	09:39 (TRIV-72)	18:04	44	17:40 (TRIV-71)	19:37	57	18:45 (TRIV-71)	20:10		20:42	21:09
9	08:04		08:41 (TRIV-72)	07:42		16:55 (TRIV-71)	08:02		17:49 (TRIV-71)	07:11		06:28	06:07
	17:28	58	09:39 (TRIV-72)	18:05	47	17:42 (TRIV-71)	19:38	55	18:44 (TRIV-71)	20:11		20:43	21:09
10	08:04		08:42 (TRIV-72)	07:41		16:54 (TRIV-71)	08:00		17:49 (TRIV-71)	07:09		06:27	06:06
	17:29	58	09:40 (TRIV-72)	18:06	49	17:43 (TRIV-71)	19:40	53	18:42 (TRIV-71)	20:12		20:44	21:10
11	08:04		08:42 (TRIV-72)	07:40		16:53 (TRIV-71)	07:59		17:51 (TRIV-71)	07:07		06:26	06:06
	17:30	57	09:39 (TRIV-72)	18:08	52	17:45 (TRIV-71)	19:41	50	18:41 (TRIV-71)	20:13		20:45	21:11
12	08:03		08:43 (TRIV-72)	07:38		16:51 (TRIV-71)	07:57		17:52 (TRIV-71)	07:06		06:25	06:06
	17:31	57	09:40 (TRIV-72)	18:09	54	17:45 (TRIV-71)	19:42	47	18:39 (TRIV-71)	20:14		20:46	21:11
13	08:03		08:44 (TRIV-72)	07:37		16:50 (TRIV-71)	07:55		17:53 (TRIV-71)	07:04		06:24	06:06
	17:32	57	09:41 (TRIV-72)	18:10	56	17:46 (TRIV-71)	19:43	44	18:37 (TRIV-71)	20:15		20:47	21:12
14	08:03		08:44 (TRIV-72)	07:36		16:50 (TRIV-71)	07:54		17:55 (TRIV-71)	07:03		06:23	06:06
	17:34	56	09:40 (TRIV-72)	18:11	57	17:47 (TRIV-71)	19:44	41	18:36 (TRIV-71)	20:16		20:48	21:12
15	08:02		08:45 (TRIV-72)	07:35		16:48 (TRIV-71)	07:52		17:57 (TRIV-71)	07:01		06:22	06:06
	17:35	56	09:41 (TRIV-72)	18:13	60	17:48 (TRIV-71)	19:45	36	18:33 (TRIV-71)	20:17		20:49	21:13
16	08:02		08:45 (TRIV-72)	07:33		16:48 (TRIV-71)	07:50		17:59 (TRIV-71)	06:59		06:21	06:06
	17:36	55	09:40 (TRIV-72)	18:14	61	17:49 (TRIV-71)	19:46	31	18:30 (TRIV-71)	20:18		20:50	21:13
17	08:02		08:46 (TRIV-72)	07:32		16:48 (TRIV-71)	07:49		18:02 (TRIV-71)	06:58		06:20	06:06
	17:37	55	09:41 (TRIV-72)	18:15	62	17:50 (TRIV-71)	19:47	26	18:28 (TRIV-71)	20:19		20:51	21:13
18	08:01		08:46 (TRIV-72)	07:31		16:47 (TRIV-71)	07:47		18:06 (TRIV-71)	06:56		06:19	06:06
	17:38	54	09:40 (TRIV-72)	18:16	62	17:49 (TRIV-71)	19:48	17	18:23 (TRIV-71)	20:20		20:52	21:14
19	08:01		08:47 (TRIV-72)	07:29		16:47 (TRIV-71)	07:45			06:55		06:18	06:06
	17:39	54	09:41 (TRIV-72)	18:17	63	17:50 (TRIV-71)	19:49			20:21		20:53	21:14
20	08:00		08:48 (TRIV-72)	07:28		16:46 (TRIV-71)	07:44			06:53		06:17	06:06
	17:40	52	09:40 (TRIV-72)	18:19	64	17:50 (TRIV-71)	19:50			20:22		20:54	21:14
21	07:59		08:48 (TRIV-72)	07:26		16:46 (TRIV-71)	07:42			06:52		06:16	06:07
	17:42	52	09:40 (TRIV-72)	18:20	65	17:51 (TRIV-71)	19:52			20:24		20:54	21:15
22	07:59		08:49 (TRIV-72)	07:25		16:45 (TRIV-71)	07:40			06:50		06:16	06:07
	17:43	51	09:40 (TRIV-72)	18:21	65	17:50 (TRIV-71)	19:53			20:25		20:55	21:15
23	07:58		08:50 (TRIV-72)	07:23		16:45 (TRIV-71)	07:39			06:49		06:15	06:07
	17:44	50	09:40 (TRIV-72)	18:22	66	17:51 (TRIV-71)	19:54			20:26		20:56	21:15
24	07:57		08:51 (TRIV-72)	07:22		16:45 (TRIV-71)	07:37			06:48		06:14	06:07
	17:45	48	09:39 (TRIV-72)	18:23	66	17:51 (TRIV-71)	19:55			20:27		20:57	21:15
25	07:57		08:51 (TRIV-72)	07:21		16:45 (TRIV-71)	07:35			06:46		06:13	06:08
	17:46	47	09:38 (TRIV-72)	18:25	66	17:51 (TRIV-71)	19:56			20:28		20:58	21:15
26	07:56		08:53 (TRIV-72)	07:19		16:45 (TRIV-71)	07:34			06:45		06:13	06:08
	17:48	45	09:38 (TRIV-72)	18:26	66	17:51 (TRIV-71)	19:57			20:29		20:59	21:15
27	07:55		08:54 (TRIV-72)	07:18		16:45 (TRIV-71)	07:32			06:43		06:12	06:08
	17:49	44	09:38 (TRIV-72)	18:27	66	17:51 (TRIV-71)	19:58			20:30		21:00	21:16
28	07:54		08:55 (TRIV-72)	07:16		16:44 (TRIV-71)	07:30			06:42		06:11	06:09
	17:50	42	09:37 (TRIV-72)	18:28	66	17:50 (TRIV-71)	19:59			20:31		21:01	21:16
29	07:53		08:57 (TRIV-72)				07:29			06:41		06:11	06:09
	17:51	38	09:35 (TRIV-72)				20:00			20:32		21:02	21:16
30	07:52		08:58 (TRIV-72)				07:27			06:39		06:10	06:09
	17:53	36	09:34 (TRIV-72)				20:00			20:33		21:02	21:16
31	07:52		09:00 (TRIV-72)				07:25					06:10	
	17:54	33	09:33 (TRIV-72)				20:01					21:03	
Potential sun hours	298			297			370			399		448	452
Total, worst case		1623			1520			891					
Sun reduction		0.50			0.55			0.57					
Oper. time red.		1.00			1.00			1.00					
Wind dir. red.		0.60			0.69			0.70					
Total reduction		0.30			0.38			0.39					
Total, real		480			574			352					

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)

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 315 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1330)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July	August	September			October			November			December		
1	06:10	06:34	07:05			07:35		17:32 (TRIV-71)	07:09		16:23 (TRIV-71)	07:44		08:24 (TRIV-72)
	21:15	20:57	20:14			19:22	46	18:18 (TRIV-71)	17:36	49	17:12 (TRIV-71)	17:11	57	09:21 (TRIV-72)
2	06:10	06:35	07:06			07:36		17:30 (TRIV-71)	07:10		16:25 (TRIV-71)	07:45		08:24 (TRIV-72)
	21:15	20:56	20:13			19:21	49	18:19 (TRIV-71)	17:34	46	17:11 (TRIV-71)	17:11	58	09:22 (TRIV-72)
3	06:11	06:36	07:07			07:37		17:29 (TRIV-71)	07:12		16:26 (TRIV-71)	07:46		08:25 (TRIV-72)
	21:15	20:55	20:11			19:19	51	18:20 (TRIV-71)	17:33	44	17:10 (TRIV-71)	17:11	58	09:23 (TRIV-72)
4	06:12	06:37	07:08			07:38		17:27 (TRIV-71)	07:13		16:27 (TRIV-71)	07:47		08:26 (TRIV-72)
	21:15	20:54	20:10			19:17	54	18:21 (TRIV-71)	17:32	41	17:08 (TRIV-71)	17:11	58	09:24 (TRIV-72)
5	06:12	06:38	07:09			07:39		17:25 (TRIV-71)	07:14		16:30 (TRIV-71)	07:48		08:26 (TRIV-72)
	21:15	20:53	20:08			19:16	56	18:21 (TRIV-71)	17:31	37	17:07 (TRIV-71)	17:11	58	09:24 (TRIV-72)
6	06:13	06:39	07:10			07:40		17:24 (TRIV-71)	07:15		16:31 (TRIV-71)	07:49		08:26 (TRIV-72)
	21:15	20:52	20:06			19:14	58	18:22 (TRIV-71)	17:30	34	17:05 (TRIV-71)	17:10	59	09:25 (TRIV-72)
7	06:13	06:40	07:11			07:41		17:23 (TRIV-71)	07:16		08:41 (TRIV-72)	07:50		08:26 (TRIV-72)
	21:14	20:50	20:05			19:12	59	18:22 (TRIV-71)	17:29	40	17:02 (TRIV-71)	17:10	58	09:24 (TRIV-72)
8	06:14	06:41	07:12			07:42		17:22 (TRIV-71)	07:18		08:37 (TRIV-72)	07:51		08:26 (TRIV-72)
	21:14	20:49	20:03			19:11	60	18:22 (TRIV-71)	17:28	42	16:59 (TRIV-71)	17:10	59	09:25 (TRIV-72)
9	06:15	06:42	07:13			07:43		17:21 (TRIV-71)	07:19		08:35 (TRIV-72)	07:52		08:27 (TRIV-72)
	21:14	20:48	20:01			19:09	62	18:23 (TRIV-71)	17:26	40	16:56 (TRIV-71)	17:10	58	09:25 (TRIV-72)
10	06:15	06:43	07:14			07:44		17:20 (TRIV-71)	07:20		08:32 (TRIV-72)	07:53		08:27 (TRIV-72)
	21:13	20:47	20:00			19:07	63	18:23 (TRIV-71)	17:25	30	09:02 (TRIV-72)	17:10	59	09:26 (TRIV-72)
11	06:16	06:44	07:15			07:45		17:19 (TRIV-71)	07:21		08:30 (TRIV-72)	07:54		08:28 (TRIV-72)
	21:13	20:45	19:56			19:06	64	18:23 (TRIV-71)	17:24	34	09:04 (TRIV-72)	17:10	58	09:26 (TRIV-72)
12	06:17	06:45	07:16			07:47		17:19 (TRIV-71)	07:22		08:30 (TRIV-72)	07:54		08:28 (TRIV-72)
	21:13	20:44	19:55			19:04	65	18:24 (TRIV-71)	17:24	36	09:06 (TRIV-72)	17:11	59	09:27 (TRIV-72)
13	06:17	06:46	07:17			07:48		17:18 (TRIV-71)	07:24		08:29 (TRIV-72)	07:55		08:29 (TRIV-72)
	21:12	20:43	19:53			19:03	66	18:24 (TRIV-71)	17:23	38	09:07 (TRIV-72)	17:11	59	09:28 (TRIV-72)
14	06:18	06:47	07:18			07:49		17:18 (TRIV-71)	07:25		08:27 (TRIV-72)	07:56		08:29 (TRIV-72)
	21:12	20:41	19:51			19:01	65	18:23 (TRIV-71)	17:22	42	09:09 (TRIV-72)	17:11	58	09:27 (TRIV-72)
15	06:19	06:48	07:19			07:50		17:17 (TRIV-71)	07:26		08:26 (TRIV-72)	07:57		08:30 (TRIV-72)
	21:11	20:40	19:49			19:00	66	18:23 (TRIV-71)	17:21	44	09:10 (TRIV-72)	17:11	58	09:28 (TRIV-72)
16	06:20	06:49	07:20			07:51		17:17 (TRIV-71)	07:27		08:26 (TRIV-72)	07:57		08:30 (TRIV-72)
	21:11	20:39	19:48			18:58	66	18:23 (TRIV-71)	17:20	45	09:11 (TRIV-72)	17:11	59	09:29 (TRIV-72)
17	06:21	06:50	07:21			07:52		17:16 (TRIV-71)	07:28		08:25 (TRIV-72)	07:58		08:30 (TRIV-72)
	21:10	20:37	19:46			18:56	66	18:22 (TRIV-71)	17:19	47	09:12 (TRIV-72)	17:12	59	09:29 (TRIV-72)
18	06:21	06:51	07:22			07:53		17:16 (TRIV-71)	07:29		08:25 (TRIV-72)	07:59		08:31 (TRIV-72)
	21:09	20:36	19:44			18:55	66	18:22 (TRIV-71)	17:18	48	09:13 (TRIV-72)	17:12	59	09:30 (TRIV-72)
19	06:22	06:52	07:23			07:54		17:17 (TRIV-71)	07:31		08:24 (TRIV-72)	07:59		08:32 (TRIV-72)
	21:09	20:34	19:43			18:53	65	18:22 (TRIV-71)	17:18	50	09:14 (TRIV-72)	17:12	58	09:30 (TRIV-72)
20	06:23	06:53	07:24			07:55		17:16 (TRIV-71)	07:32		08:24 (TRIV-72)	08:00		08:32 (TRIV-72)
	21:08	20:33	19:41			18:52	66	18:22 (TRIV-71)	17:17	51	09:15 (TRIV-72)	17:13	58	09:30 (TRIV-72)
21	06:24	06:54	07:25			07:56		17:16 (TRIV-71)	07:33		08:24 (TRIV-72)	08:00		08:33 (TRIV-72)
	21:07	20:32	19:39			18:51	65	18:21 (TRIV-71)	17:16	52	09:16 (TRIV-72)	17:13	58	09:31 (TRIV-72)
22	06:25	06:55	07:26			07:58		17:16 (TRIV-71)	07:34		08:24 (TRIV-72)	08:01		08:33 (TRIV-72)
	21:06	20:30	19:37			18:49	65	18:21 (TRIV-71)	17:16	52	09:16 (TRIV-72)	17:14	58	09:31 (TRIV-72)
23	06:26	06:56	07:27			07:59		17:16 (TRIV-71)	07:35		08:23 (TRIV-72)	08:01		08:34 (TRIV-72)
	21:06	20:29	19:36			18:48	64	18:20 (TRIV-71)	17:15	54	09:17 (TRIV-72)	17:14	58	09:32 (TRIV-72)
24	06:27	06:57	07:28			08:00		17:17 (TRIV-71)	07:36		08:23 (TRIV-72)	08:02		08:34 (TRIV-72)
	21:05	20:27	19:34			18:46	63	18:20 (TRIV-71)	17:14	54	09:17 (TRIV-72)	17:15	58	09:32 (TRIV-72)
25	06:27	06:58	07:29		17:52 (TRIV-71)	08:01		17:18 (TRIV-71)	07:38		08:24 (TRIV-72)	08:02		08:34 (TRIV-72)
	21:04	20:25	19:32	12	18:04 (TRIV-71)	18:45	61	18:19 (TRIV-71)	17:14	55	09:19 (TRIV-72)	17:15	58	09:32 (TRIV-72)
26	06:28	06:59	07:30		17:46 (TRIV-71)	08:02		17:18 (TRIV-71)	07:39		08:24 (TRIV-72)	08:03		08:35 (TRIV-72)
	21:03	20:24	19:31	23	18:09 (TRIV-71)	18:43	60	18:18 (TRIV-71)	17:13	55	09:19 (TRIV-72)	17:16	59	09:34 (TRIV-72)
27	06:29	07:00	07:31		17:42 (TRIV-71)	08:03		17:18 (TRIV-71)	07:40		08:24 (TRIV-72)	08:03		08:35 (TRIV-72)
	21:02	20:22	19:29	30	18:12 (TRIV-71)	18:42	59	18:17 (TRIV-71)	17:13	56	09:20 (TRIV-72)	17:17	59	09:34 (TRIV-72)
28	06:30	07:01	07:32		17:39 (TRIV-71)	08:05		17:19 (TRIV-71)	07:41		08:24 (TRIV-72)	08:03		08:35 (TRIV-72)
	21:01	20:21	19:27	35	18:14 (TRIV-71)	18:41	57	18:16 (TRIV-71)	17:13	56	09:20 (TRIV-72)	17:17	59	09:34 (TRIV-72)
29	06:31	07:02	07:33		17:37 (TRIV-71)	08:06		17:20 (TRIV-71)	07:42		08:24 (TRIV-72)	08:04		08:36 (TRIV-72)
	21:00	20:19	19:26	39	18:16 (TRIV-71)	18:39	56	18:16 (TRIV-71)	17:12	57	09:21 (TRIV-72)	17:18	58	09:34 (TRIV-72)
30	06:32	07:03	07:34		17:34 (TRIV-71)	08:07		17:21 (TRIV-71)	07:43		08:24 (TRIV-72)	08:04		08:37 (TRIV-72)
	20:59	20:18	19:24	43	18:17 (TRIV-71)	18:38	54	18:15 (TRIV-71)	17:12	57	09:21 (TRIV-72)	17:19	59	09:36 (TRIV-72)
31	06:33	07:04				08:08		17:22 (TRIV-71)				08:04		08:37 (TRIV-72)
	20:58	20:16				18:37	51	18:13 (TRIV-71)				17:20	59	09:36 (TRIV-72)
Potential sun hours	459	428	375			345			298			288		
Total, worst case				182			1868			1386			1810	
Sun reduction				0.67			0.60			0.40			0.36	
Oper. time red.				1.00			1.00			1.00			1.00	
Wind dir. red.				0.70			0.70			0.62			0.60	
Total reduction				0.46			0.42			0.25			0.21	
Total, real				84			776			341			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:
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 316 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1331)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March			April		May	June
1	08:04		08:47 (TRIV-72)	07:51		16:43 (TRIV-71)	07:14		16:41 (TRIV-71)	07:24		06:38	06:09
	17:21	55	09:42 (TRIV-72)	17:55	48	17:31 (TRIV-71)	18:29	54	17:35 (TRIV-71)	20:02		20:34	21:04
2	08:04		08:47 (TRIV-72)	07:50		16:42 (TRIV-71)	07:13		16:41 (TRIV-71)	07:22		06:37	06:09
	17:22	55	09:42 (TRIV-72)	17:56	50	17:32 (TRIV-71)	18:30	53	17:34 (TRIV-71)	20:03		20:35	21:05
3	08:04		08:48 (TRIV-72)	07:49		16:41 (TRIV-71)	07:11		16:43 (TRIV-71)	07:20		06:35	06:08
	17:23	54	09:42 (TRIV-72)	17:58	53	17:34 (TRIV-71)	18:32	50	17:33 (TRIV-71)	20:04		20:36	21:05
4	08:05		08:48 (TRIV-72)	07:48		16:41 (TRIV-71)	07:10		16:43 (TRIV-71)	07:19		06:34	06:08
	17:23	54	09:42 (TRIV-72)	17:59	54	17:35 (TRIV-71)	18:33	48	17:31 (TRIV-71)	20:05		20:37	21:06
5	08:05		08:49 (TRIV-72)	07:47		16:40 (TRIV-71)	07:08		16:45 (TRIV-71)	07:17		06:33	06:08
	17:24	54	09:43 (TRIV-72)	18:00	56	17:36 (TRIV-71)	18:34	45	17:30 (TRIV-71)	20:07		20:38	21:07
6	08:04		08:50 (TRIV-72)	07:45		16:39 (TRIV-71)	07:07		16:47 (TRIV-71)	07:15		06:32	06:07
	17:25	53	09:43 (TRIV-72)	18:01	58	17:37 (TRIV-71)	18:35	41	17:28 (TRIV-71)	20:08		20:39	21:08
7	08:04		08:49 (TRIV-72)	07:44		16:38 (TRIV-71)	07:05		16:48 (TRIV-71)	07:14		06:30	06:07
	17:26	54	09:43 (TRIV-72)	18:03	59	17:37 (TRIV-71)	18:36	37	17:25 (TRIV-71)	20:09		20:40	21:08
8	08:04		08:50 (TRIV-72)	07:43		16:38 (TRIV-71)	08:03		17:51 (TRIV-71)	07:12		06:29	06:07
	17:27	53	09:43 (TRIV-72)	18:04	60	17:38 (TRIV-71)	19:37	32	18:23 (TRIV-71)	20:10		20:42	21:09
9	08:04		08:51 (TRIV-72)	07:42		16:37 (TRIV-71)	08:02		17:53 (TRIV-71)	07:11		06:28	06:07
	17:28	52	09:43 (TRIV-72)	18:05	62	17:39 (TRIV-71)	19:38	27	18:20 (TRIV-71)	20:11		20:43	21:09
10	08:04		08:52 (TRIV-72)	07:41		16:37 (TRIV-71)	08:00		17:57 (TRIV-71)	07:09		06:27	06:06
	17:29	52	09:44 (TRIV-72)	18:06	62	17:39 (TRIV-71)	19:40	19	18:16 (TRIV-71)	20:12		20:44	21:10
11	08:04		08:52 (TRIV-72)	07:40		16:37 (TRIV-71)	07:59			07:07		06:26	06:06
	17:30	51	09:43 (TRIV-72)	18:08	63	17:40 (TRIV-71)	19:41			20:13		20:45	21:11
12	08:03		08:53 (TRIV-72)	07:38		16:36 (TRIV-71)	07:57			07:06		06:25	06:06
	17:31	50	09:43 (TRIV-72)	18:09	64	17:40 (TRIV-71)	19:42			20:14		20:46	21:11
13	08:03		08:54 (TRIV-72)	07:37		16:36 (TRIV-71)	07:55			07:04		06:24	06:06
	17:32	50	09:44 (TRIV-72)	18:10	64	17:40 (TRIV-71)	19:43			20:15		20:47	21:12
14	08:03		08:55 (TRIV-72)	07:36		16:36 (TRIV-71)	07:54			07:03		06:23	06:06
	17:34	48	09:43 (TRIV-72)	18:11	65	17:41 (TRIV-71)	19:44			20:16		20:48	21:12
15	08:02		08:56 (TRIV-72)	07:35		16:36 (TRIV-71)	07:52			07:01		06:22	06:06
	17:35	47	09:43 (TRIV-72)	18:13	64	17:40 (TRIV-71)	19:45			20:17		20:49	21:13
16	08:02		08:56 (TRIV-72)	07:33		16:36 (TRIV-71)	07:50			06:59		06:21	06:06
	17:36	46	09:42 (TRIV-72)	18:14	65	17:41 (TRIV-71)	19:46			20:18		20:50	21:13
17	08:02		08:58 (TRIV-72)	07:32		16:36 (TRIV-71)	07:49			06:58		06:20	06:06
	17:37	45	09:43 (TRIV-72)	18:15	65	17:41 (TRIV-71)	19:47			20:19		20:51	21:13
18	08:01		08:58 (TRIV-72)	07:31		16:36 (TRIV-71)	07:47			06:56		06:19	06:06
	17:38	44	09:42 (TRIV-72)	18:16	65	17:41 (TRIV-71)	19:48			20:20		20:52	21:14
19	08:01		09:00 (TRIV-72)	07:29		16:36 (TRIV-71)	07:45			06:55		06:18	06:06
	17:39	42	09:42 (TRIV-72)	18:17	65	17:41 (TRIV-71)	19:49			20:21		20:53	21:14
20	08:00		09:01 (TRIV-72)	07:28		16:36 (TRIV-71)	07:44			06:53		06:17	06:06
	17:40	40	09:41 (TRIV-72)	18:19	64	17:40 (TRIV-71)	19:50			20:22		20:54	21:14
21	07:59		09:02 (TRIV-72)	07:26		16:36 (TRIV-71)	07:42			06:52		06:16	06:07
	17:42	38	09:40 (TRIV-72)	18:20	64	17:40 (TRIV-71)	19:52			20:24		20:54	21:15
22	07:59		09:04 (TRIV-72)	07:25		16:36 (TRIV-71)	07:40			06:50		06:16	06:07
	17:43	36	09:40 (TRIV-72)	18:21	64	17:40 (TRIV-71)	19:53			20:25		20:55	21:15
23	07:58		09:05 (TRIV-72)	07:23		16:37 (TRIV-71)	07:39			06:49		06:15	06:07
	17:44	49	17:13 (TRIV-71)	18:22	63	17:40 (TRIV-71)	19:54			20:26		20:56	21:15
24	07:57		09:06 (TRIV-72)	07:22		16:38 (TRIV-71)	07:37			06:48		06:14	06:07
	17:45	53	17:16 (TRIV-71)	18:23	62	17:40 (TRIV-71)	19:55			20:27		20:57	21:15
25	07:57		09:08 (TRIV-72)	07:21		16:38 (TRIV-71)	07:35			06:46		06:13	06:08
	17:46	54	17:19 (TRIV-71)	18:25	60	17:38 (TRIV-71)	19:56			20:28		20:58	21:15
26	07:56		09:11 (TRIV-72)	07:19		16:39 (TRIV-71)	07:34			06:45		06:13	06:08
	17:48	54	17:22 (TRIV-71)	18:26	59	17:38 (TRIV-71)	19:57			20:29		20:59	21:15
27	07:55		09:14 (TRIV-72)	07:18		16:39 (TRIV-71)	07:32			06:43		06:12	06:08
	17:49	53	17:24 (TRIV-71)	18:27	58	17:37 (TRIV-71)	19:58			20:30		21:00	21:16
28	07:54		09:18 (TRIV-72)	07:16		16:39 (TRIV-71)	07:30			06:42		06:11	06:09
	17:50	48	17:26 (TRIV-71)	18:28	57	17:36 (TRIV-71)	19:59			20:31		21:01	21:16
29	07:53		16:46 (TRIV-71)				07:29			06:41		06:11	06:09
	17:51	41	17:27 (TRIV-71)				20:00			20:32		21:02	21:16
30	07:52		16:45 (TRIV-71)				07:27			06:39		06:10	06:09
	17:53	43	17:28 (TRIV-71)				20:00			20:33		21:02	21:16
31	07:52		16:44 (TRIV-71)				07:25					06:10	
	17:54	46	17:30 (TRIV-71)				20:01					21:03	
Potential sun hours	298			297			370			399		448	452
Total, worst case		1514			1693			406					
Sun reduction		0.50			0.55			0.57					
Oper. time red.		1.00			1.00			1.00					
Wind dir. red.		0.62			0.70			0.70					
Total reduction		0.31			0.38			0.39					
Total, real		462			645			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)

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

Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 316 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1331)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July		August		September		October			November			December		
1	06:10		06:34		07:05		07:35			07:09		16:06 (TRIV-71)	07:44		08:34 (TRIV-72)
	21:15		20:57		20:14		19:22			17:36	62	17:08 (TRIV-71)	17:11	51	09:25 (TRIV-72)
2	06:10		06:35		07:06		07:36			07:10		16:07 (TRIV-71)	07:45		08:35 (TRIV-72)
	21:15		20:56		20:13		19:21			17:34	61	17:08 (TRIV-71)	17:11	52	09:27 (TRIV-72)
3	06:11		06:36		07:07		07:37		17:38 (TRIV-71)	07:12		16:08 (TRIV-71)	07:46		08:35 (TRIV-72)
	21:15		20:55		20:11		19:19	14	17:52 (TRIV-71)	17:33	59	17:07 (TRIV-71)	17:11	52	09:27 (TRIV-72)
4	06:12		06:37		07:08		07:38		17:33 (TRIV-71)	07:13		16:08 (TRIV-71)	07:47		08:35 (TRIV-72)
	21:15		20:54		20:10		19:17	23	17:56 (TRIV-71)	17:32	59	17:07 (TRIV-71)	17:11	53	09:28 (TRIV-72)
5	06:12		06:38		07:09		07:39		17:29 (TRIV-71)	07:14		16:09 (TRIV-71)	07:48		08:36 (TRIV-72)
	21:15		20:53		20:08		19:16	30	17:59 (TRIV-71)	17:31	58	17:07 (TRIV-71)	17:11	53	09:29 (TRIV-72)
6	06:13		06:39		07:10		07:40		17:26 (TRIV-71)	07:15		16:10 (TRIV-71)	07:49		08:36 (TRIV-72)
	21:15		20:52		20:06		19:14	35	18:01 (TRIV-71)	17:30	56	17:06 (TRIV-71)	17:10	53	09:29 (TRIV-72)
7	06:13		06:40		07:11		07:41		17:23 (TRIV-71)	07:16		16:10 (TRIV-71)	07:50		08:35 (TRIV-72)
	21:14		20:50		20:05		19:12	40	18:03 (TRIV-71)	17:29	55	17:05 (TRIV-71)	17:10	54	09:29 (TRIV-72)
8	06:14		06:41		07:12		07:42		17:21 (TRIV-71)	07:18		16:11 (TRIV-71)	07:51		08:35 (TRIV-72)
	21:14		20:49		20:03		19:11	43	18:04 (TRIV-71)	17:28	53	17:04 (TRIV-71)	17:10	55	09:30 (TRIV-72)
9	06:15		06:42		07:13		07:43		17:19 (TRIV-71)	07:19		16:13 (TRIV-71)	07:52		08:36 (TRIV-72)
	21:14		20:48		20:01		19:09	46	18:05 (TRIV-71)	17:26	50	17:03 (TRIV-71)	17:10	54	09:30 (TRIV-72)
10	06:15		06:43		07:14		07:44		17:17 (TRIV-71)	07:20		16:14 (TRIV-71)	07:53		08:36 (TRIV-72)
	21:13		20:47		20:00		19:07	49	18:06 (TRIV-71)	17:25	48	17:02 (TRIV-71)	17:10	55	09:31 (TRIV-72)
11	06:16		06:44		07:15		07:45		17:15 (TRIV-71)	07:21		16:15 (TRIV-71)	07:54		08:37 (TRIV-72)
	21:13		20:45		19:56		19:06	52	18:07 (TRIV-71)	17:24	45	17:00 (TRIV-71)	17:10	55	09:32 (TRIV-72)
12	06:17		06:45		07:16		07:47		17:15 (TRIV-71)	07:22		16:17 (TRIV-71)	07:54		08:37 (TRIV-72)
	21:13		20:44		19:55		19:04	53	18:08 (TRIV-71)	17:24	43	17:00 (TRIV-71)	17:11	55	09:32 (TRIV-72)
13	06:17		06:46		07:17		07:48		17:13 (TRIV-71)	07:24		16:18 (TRIV-71)	07:55		08:38 (TRIV-72)
	21:12		20:43		19:53		19:03	56	18:09 (TRIV-71)	17:23	41	16:59 (TRIV-71)	17:11	55	09:33 (TRIV-72)
14	06:18		06:47		07:18		07:49		17:12 (TRIV-71)	07:25		08:50 (TRIV-72)	07:56		08:37 (TRIV-72)
	21:12		20:41		19:51		19:01	57	18:09 (TRIV-71)	17:22	49	16:58 (TRIV-71)	17:11	56	09:33 (TRIV-72)
15	06:19		06:48		07:19		07:50		17:11 (TRIV-71)	07:26		08:45 (TRIV-72)	07:57		08:38 (TRIV-72)
	21:11		20:40		19:49		19:00	59	18:10 (TRIV-71)	17:21	54	16:56 (TRIV-71)	17:11	56	09:34 (TRIV-72)
16	06:20		06:49		07:20		07:51		17:10 (TRIV-71)	07:27		08:44 (TRIV-72)	07:57		08:39 (TRIV-72)
	21:11		20:39		19:48		18:58	60	18:10 (TRIV-71)	17:20	54	16:55 (TRIV-71)	17:11	55	09:34 (TRIV-72)
17	06:21		06:50		07:21		07:52		17:09 (TRIV-71)	07:28		08:42 (TRIV-72)	07:58		08:39 (TRIV-72)
	21:10		20:37		19:46		18:56	61	18:10 (TRIV-71)	17:19	54	16:53 (TRIV-71)	17:12	55	09:34 (TRIV-72)
18	06:21		06:51		07:22		07:53		17:08 (TRIV-71)	07:29		08:40 (TRIV-72)	07:59		08:39 (TRIV-72)
	21:09		20:36		19:44		18:55	62	18:10 (TRIV-71)	17:18	53	16:50 (TRIV-71)	17:12	56	09:35 (TRIV-72)
19	06:22		06:52		07:23		07:54		17:08 (TRIV-71)	07:31		08:39 (TRIV-72)	07:59		08:40 (TRIV-72)
	21:09		20:34		19:43		18:53	63	18:11 (TRIV-71)	17:18	49	16:47 (TRIV-71)	17:12	56	09:36 (TRIV-72)
20	06:23		06:53		07:24		07:55		17:07 (TRIV-71)	07:32		08:39 (TRIV-72)	08:00		08:40 (TRIV-72)
	21:08		20:33		19:41		18:52	64	18:11 (TRIV-71)	17:17	36	09:15 (TRIV-72)	17:13	56	09:36 (TRIV-72)
21	06:24		06:54		07:25		07:56		17:07 (TRIV-71)	07:33		08:38 (TRIV-72)	08:00		08:41 (TRIV-72)
	21:07		20:32		19:39		18:51	64	18:11 (TRIV-71)	17:16	38	09:16 (TRIV-72)	17:13	56	09:37 (TRIV-72)
22	06:25		06:55		07:26		07:58		17:06 (TRIV-71)	07:34		08:37 (TRIV-72)	08:01		08:41 (TRIV-72)
	21:06		20:30		19:37		18:49	65	18:11 (TRIV-71)	17:16	40	09:17 (TRIV-72)	17:14	56	09:37 (TRIV-72)
23	06:26		06:56		07:27		07:59		17:06 (TRIV-71)	07:35		08:36 (TRIV-72)	08:01		08:42 (TRIV-72)
	21:06		20:29		19:36		18:48	65	18:11 (TRIV-71)	17:15	42	09:18 (TRIV-72)	17:14	56	09:38 (TRIV-72)
24	06:27		06:57		07:28		08:00		17:06 (TRIV-71)	07:36		08:35 (TRIV-72)	08:02		08:42 (TRIV-72)
	21:05		20:27		19:34		18:46	65	18:11 (TRIV-71)	17:14	44	09:19 (TRIV-72)	17:15	56	09:38 (TRIV-72)
25	06:27		06:58		07:29		08:01		17:06 (TRIV-71)	07:38		08:36 (TRIV-72)	08:02		08:42 (TRIV-72)
	21:04		20:25		19:32		18:45	65	18:11 (TRIV-71)	17:14	45	09:21 (TRIV-72)	17:15	56	09:38 (TRIV-72)
26	06:28		06:59		07:30		08:02		17:05 (TRIV-71)	07:39		08:35 (TRIV-72)	08:03		08:44 (TRIV-72)
	21:03		20:24		19:31		18:43	66	18:11 (TRIV-71)	17:13	46	09:21 (TRIV-72)	17:16	55	09:39 (TRIV-72)
27	06:29		07:00		07:31		08:03		17:05 (TRIV-71)	07:40		08:35 (TRIV-72)	08:03		08:44 (TRIV-72)
	21:02		20:22		19:29		18:42	65	18:10 (TRIV-71)	17:13	47	09:22 (TRIV-72)	17:17	55	09:39 (TRIV-72)
28	06:30		07:01		07:32		08:05		17:05 (TRIV-71)	07:41		08:35 (TRIV-72)	08:03		08:44 (TRIV-72)
	21:01		20:21		19:27		18:41	65	18:10 (TRIV-71)	17:13	48	09:23 (TRIV-72)	17:17	56	09:40 (TRIV-72)
29	06:31		07:02		07:33		08:06		17:06 (TRIV-71)	07:42		08:34 (TRIV-72)	08:04		08:44 (TRIV-72)
	21:00		20:19		19:26		18:39	64	18:10 (TRIV-71)	17:12	50	09:24 (TRIV-72)	17:18	56	09:40 (TRIV-72)
30	06:32		07:03		07:34		08:07		17:06 (TRIV-71)	07:43		08:34 (TRIV-72)	08:04		08:46 (TRIV-72)
	20:59		20:18		19:24		18:38	63	18:09 (TRIV-71)	17:12	50	09:24 (TRIV-72)	17:19	55	09:41 (TRIV-72)
31	06:33		07:04				08:08		17:06 (TRIV-71)				08:04		08:46 (TRIV-72)
	20:58		20:16				18:37	63	18:09 (TRIV-71)				17:20	55	09:41 (TRIV-72)
Potential sun hours	459		428		375		345			298			288		
Total, worst case								1577			1489			1699	
Sun reduction								0.60			0.40			0.36	
Oper. time red.								1.00			1.00			1.00	
Wind dir. red.								0.70			0.66			0.60	
Total reduction								0.42			0.26			0.21	
Total, real								655			387			361	

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

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

Licensed user:
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217 Montgomery St., Suite 1000
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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 318 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1333)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January		February		March	April	May	June	July	August	September	October	November		December	
1	08:04		07:51		07:14	07:24	06:38	06:09	06:10	06:34	07:05	07:35	07:09		07:44	
	17:21	106	16:38 (TRIV-71)	17:55	52	16:39 (TRIV-71)	18:29	20:02	20:34	21:04	21:16	20:57	20:14	19:22	17:36	14	15:51 (TRIV-71)	17:11	91	16:23 (TRIV-71)
2	08:04		07:50		07:13	07:22	06:37	06:09	06:10	06:35	07:06	07:36	07:10		07:45	
	17:22	104	16:38 (TRIV-71)	17:56	51	16:39 (TRIV-71)	18:30	20:03	20:35	21:05	21:15	20:56	20:13	19:21	17:34	23	15:56 (TRIV-71)	17:11	93	16:25 (TRIV-71)
3	08:04		07:49		07:11	07:20	06:35	06:08	06:11	06:36	07:07	07:37	07:12		07:46	
	17:23	104	16:39 (TRIV-71)	17:58	48	16:38 (TRIV-71)	18:32	20:04	20:36	21:05	21:15	20:55	20:11	19:19	17:33	29	15:59 (TRIV-71)	17:11	96	16:25 (TRIV-71)
4	08:05		07:48		07:10	07:19	06:34	06:08	06:12	06:37	07:08	07:38	07:13		07:47	
	17:23	102	16:39 (TRIV-71)	17:59	45	16:37 (TRIV-71)	18:33	20:05	20:37	21:06	21:15	20:54	20:10	19:17	17:32	34	16:01 (TRIV-71)	17:11	98	16:25 (TRIV-71)
5	08:05		07:47		07:08	07:17	06:33	06:08	06:12	06:38	07:09	07:39	07:14		07:48	
	17:24	102	16:40 (TRIV-71)	18:00	41	16:35 (TRIV-71)	18:34	20:07	20:38	21:07	21:15	20:53	20:08	19:16	17:31	39	16:04 (TRIV-71)	17:11	100	16:26 (TRIV-71)
6	08:04		07:45		07:07	07:15	06:32	06:07	06:13	06:39	07:10	07:40	07:15		07:49	
	17:25	100	16:40 (TRIV-71)	18:01	38	16:34 (TRIV-71)	18:35	20:08	20:39	21:08	21:15	20:52	20:06	19:14	17:30	42	16:05 (TRIV-71)	17:10	100	16:26 (TRIV-71)
7	08:04		07:44		07:05	07:14	06:30	06:07	06:13	06:40	07:11	07:41	07:16		07:50	
	17:26	100	16:40 (TRIV-71)	18:03	34	16:31 (TRIV-71)	18:36	20:09	20:40	21:08	21:14	20:50	20:05	19:12	17:29	46	16:07 (TRIV-71)	17:10	102	16:27 (TRIV-71)
8	08:04		07:43		07:03	07:12	06:29	06:07	06:14	06:41	07:12	07:42	07:18		07:51	
	17:27	98	16:40 (TRIV-71)	18:04	29	16:29 (TRIV-71)	18:37	20:10	20:42	21:09	21:14	20:49	20:03	19:11	17:28	48	16:08 (TRIV-71)	17:10	102	16:26 (TRIV-71)
9	08:04		07:42		07:02	07:11	06:28	06:07	06:15	06:42	07:13	07:43	07:19		07:52	
	17:28	96	16:41 (TRIV-71)	18:05	22	16:26 (TRIV-71)	18:38	20:11	20:43	21:09	21:14	20:48	20:01	19:09	17:26	51	16:10 (TRIV-71)	17:10	104	16:27 (TRIV-71)
10	08:04		07:41		07:00	07:09	06:27	06:06	06:15	06:43	07:14	07:44	07:20		07:53	
	17:29	93	16:42 (TRIV-71)	18:06	11	16:21 (TRIV-71)	18:39	20:12	20:44	21:10	21:13	20:47	20:00	19:07	17:25	52	16:10 (TRIV-71)	17:10	104	16:27 (TRIV-71)
11	08:04		07:40				07:59	07:07	06:26	06:06	06:16	06:44	07:15	07:45	07:21		15:17 (TRIV-71)	07:54		08:46 (TRIV-72)
	17:30	92	16:41 (TRIV-71)	18:08			19:41	20:13	20:45	21:11	21:13	20:45	19:56	19:06	17:24	54	16:11 (TRIV-71)	17:10	106	16:28 (TRIV-71)
12	08:03		07:38				07:57	07:06	06:25	06:06	06:17	06:45	07:16	07:47	07:22		15:16 (TRIV-71)	07:54		08:47 (TRIV-72)
	17:31	88	16:42 (TRIV-71)	18:09			19:42	20:14	20:46	21:11	21:13	20:44	19:55	19:04	17:24	57	16:13 (TRIV-71)	17:11	105	16:28 (TRIV-71)
13	08:03		07:37				07:55	07:04	06:24	06:06	06:17	06:46	07:17	07:48	07:24		15:15 (TRIV-71)	07:55		08:47 (TRIV-72)
	17:32	84	16:43 (TRIV-71)	18:10			19:43	20:15	20:47	21:12	21:12	20:43	19:53	19:03	17:23	59	16:14 (TRIV-71)	17:11	106	16:29 (TRIV-71)
14	08:03		07:36				07:54	07:03	06:23	06:06	06:18	06:47	07:18	07:49	07:25		15:14 (TRIV-71)	07:56		08:46 (TRIV-72)
	17:34	76	16:42 (TRIV-71)	18:11			19:44	20:16	20:48	21:12	21:12	20:41	19:51	19:01	17:22	60	16:14 (TRIV-71)	17:11	108	16:29 (TRIV-71)
15	08:02		15:33 (TRIV-71)	07:35			07:52	07:01	06:22	06:06	06:19	06:48	07:19	07:50	07:26		15:14 (TRIV-71)	07:57		08:47 (TRIV-72)
	17:35	70	16:43 (TRIV-71)	18:13			19:45	20:17	20:49	21:13	21:11	20:40	19:49	19:00	17:21	61	16:15 (TRIV-71)	17:11	107	16:29 (TRIV-71)
16	08:02		15:33 (TRIV-71)	07:33			07:50	06:59	06:21	06:06	06:20	06:49	07:20	07:51	07:27		15:14 (TRIV-71)	07:57		08:48 (TRIV-72)
	17:36	70	16:43 (TRIV-71)	18:14			19:46	20:18	20:50	21:13	21:11	20:39	19:48	18:58	17:20	62	16:16 (TRIV-71)	17:11	107	16:30 (TRIV-71)
17	08:02		15:34 (TRIV-71)	07:32			07:49	06:58	06:20	06:06	06:21	06:50	07:21	07:52	07:28		15:13 (TRIV-71)	07:58		08:47 (TRIV-72)
	17:37	69	16:43 (TRIV-71)	18:15			19:47	20:19	20:51	21:13	21:10	20:37	19:46	18:56	17:19	64	16:17 (TRIV-71)	17:12	108	16:30 (TRIV-71)
18	08:01		15:34 (TRIV-71)	07:31			07:47	06:56	06:19	06:06	06:21	06:51	07:22	07:53	07:29		15:13 (TRIV-71)	07:59		08:48 (TRIV-72)
	17:38	69	16:43 (TRIV-71)	18:16			19:48	20:20	20:52	21:14	21:09	20:36	19:44	18:55	17:18	64	16:17 (TRIV-71)	17:12	108	16:31 (TRIV-71)
19	08:01		15:35 (TRIV-71)	07:29			07:45	06:55	06:18	06:06	06:22	06:52	07:23	07:54	07:31		15:12 (TRIV-71)	07:59		08:49 (TRIV-72)
	17:39	69	16:44 (TRIV-71)	18:17			19:49	20:21	20:53	21:14	21:09	20:34	19:43	18:53	17:18	65	16:17 (TRIV-71)	17:12	108	16:32 (TRIV-71)
20	08:00		15:36 (TRIV-71)	07:28			07:44	06:53	06:17	06:06	06:23	06:53	07:24	07:55	07:32		15:13 (TRIV-71)	08:00		08:49 (TRIV-72)
	17:40	67	16:43 (TRIV-71)	18:19			19:50	20:22	20:54	21:14	21:08	20:33	19:41	18:52	17:17	66	16:19 (TRIV-71)	17:13	109	16:32 (TRIV-71)
21	07:59		15:36 (TRIV-71)	07:26			07:42	06:52	06:16	06:07	06:24	06:54	07:25	07:56	07:33		15:12 (TRIV-71)	08:00		08:50 (TRIV-72)
	17:42	67	16:43 (TRIV-71)	18:20			19:52	20:24	20:54	21:15	21:07	20:32	19:39	18:51	17:16	67	16:19 (TRIV-71)	17:13	109	16:33 (TRIV-71)
22	07:59		15:37 (TRIV-71)	07:25			07:40	06:50	06:16	06:07	06:25	06:55	07:26	07:58	07:34		15:12 (TRIV-71)	08:01		08:50 (TRIV-72)
	17:43	67	16:44 (TRIV-71)	18:21			19:53	20:25	20:55	21:15	21:06	20:30	19:37	18:49	17:16	67	16:19 (TRIV-71)	17:14	109	16:33 (TRIV-71)
23	07:58		15:38 (TRIV-71)	07:23			07:39	06:49	06:15	06:07	06:26	06:56	07:27	07:59	07:35		15:12 (TRIV-71)	08:01		08:51 (TRIV-72)
	17:44	65	16:43 (TRIV-71)	18:22			19:54	20:26	20:56	21:15	21:06	20:29	19:36	18:48	17:15	68	16:20 (TRIV-71)	17:14	109	16:34 (TRIV-71)
24	07:57		15:39 (TRIV-71)	07:22			07:37	06:48	06:14	06:07	06:27	06:57	07:28	08:00	07:36		15:11 (TRIV-71)	08:02		08:51 (TRIV-72)
	17:45	64	16:43 (TRIV-71)	18:23			19:55	20:27	20:57	21:15	21:05	20:27	19:34	18:46	17:14	69	16:20 (TRIV-71)	17:15	108	16:34 (TRIV-71)
25	07:57		15:39 (TRIV-71)	07:21			07:35	06:46	06:13	06:08	06:27	06:58	07:29	08:01	07:38		15:12 (TRIV-71)	08:02		08:51 (TRIV-72)
	17:46	64	16:43 (TRIV-71)	18:25			19:56	20:28	20:58	21:15	21:04	20:25	19:32	18:45	17:14	69	16:21 (TRIV-71)	17:15	108	16:34 (TRIV-71)
26	07:56		15:41 (TRIV-71)	07:19			07:34	06:45	06:13	06:08	06:28	06:59	07:30	08:02	07:39		15:12 (TRIV-71)	08:03		08:52 (TRIV-72)
	17:48	62	16:43 (TRIV-71)	18:26			19:57	20:29	20:59	21:15	21:03	20:24	19:31	18:43	17:13	70	16:22 (TRIV-71)	17:16	108	16:35 (TRIV-71)
27	07:55		15:42 (TRIV-71)	07:18			07:32	06:43	06:12	06:08	06:29	07:00	07:31	08:03	07:40		15:12 (TRIV-71)	08:03		08:52 (TRIV-72)
	17:49	61	16:43 (TRIV-71)	18:27			19:58	20:30	21:00	21:16	21:02	20:22	19:29	18:42	17:13	70	16:22 (TRIV-71)	17:17	108	16:35 (TRIV-71)
28	07:54		15:42 (TRIV-71)	07:16			07:30	06:42	06:11	06:09	06:30	07:01	07:32	08:05	07:41		08:55 (TRIV-72)	08:03		08:53 (TRIV-72)
	17:50	60	16:42 (TRIV-71)	18:28			19:59	20:31	21:01	21:16	21:01	20:21	19:27	18:41	17:13	76	16:22 (TRIV-71)	17:17	107	16:35 (TRIV-71)
29	07:53		15:43 (TRIV-71)				07:29	06:41	06:11	06:09	06:31	07:02	07:33	08:06	07:42		08:52 (TRIV-72)	08:04		08:53 (TRIV-72)
	17:51	59	16:42 (TRIV-71)				20:00	20:32	21:02	21:16	21:00	20:19	19:26	18:39	17:12	84	16:23 (TRIV-71)	17:18	108	16:36 (TRIV-71)
30	07:52		15:45 (TRIV-71)				07:27	06:39	06:10	06:09	06:32	07:03	07:34	08:07	07:43		08:50 (TRIV-72)	08:04		08:55 (TRIV-72)
	17:53	56	16:41 (TRIV-71)				20:00	20:33	21:02	21:16	20:59	20:18	19:24	18:38	17:12	88	16:23 (TRIV-71)	17:19	106	16:37 (TRIV-71)
31	07:52		15:46 (TRIV-71)				07:25		06:10		06:33	07:04		08:08				08:04		08:55 (TRIV-72)
	17:54	54	16:40 (TRIV-71)				20:01		21:03		20:58	20:16		18:37				17:20	106	16:37 (TRIV-71)
Potential sun hours	298			297			370	399	448	452	459	428	375	345	298			288		
Total, worst case		2438			371											1718			3248	
Sun reduction		0.50			0.55											0.40			0.36	
Oper. time red.		1.00			1.00											1.00			1.00	
Wind dir. red.		0.68			0.69											0.69			0.66	
Total reduction		0.34			0.38											0.28			0.24	
Total, real		825			141											473			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:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 379 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1375)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	January			February			March	April	May	June
1	08:04		09:03 (TRIV-72)	07:51		15:57 (TRIV-71)	07:14	07:24	06:38	06:09
	17:21	97	16:48 (TRIV-71)	17:55	59	16:56 (TRIV-71)	18:29	20:02	20:34	21:04
2	08:04		09:04 (TRIV-72)	07:50		15:57 (TRIV-71)	07:13	07:22	06:37	06:09
	17:22	96	16:49 (TRIV-71)	17:56	59	16:56 (TRIV-71)	18:30	20:03	20:35	21:05
3	08:04		09:05 (TRIV-72)	07:49		15:58 (TRIV-71)	07:11	07:20	06:35	06:08
	17:23	95	16:49 (TRIV-71)	17:58	58	16:56 (TRIV-71)	18:32	20:04	20:36	21:05
4	08:05		09:06 (TRIV-72)	07:48		16:00 (TRIV-71)	07:10	07:19	06:34	06:08
	17:23	95	16:50 (TRIV-71)	17:59	55	16:55 (TRIV-71)	18:33	20:05	20:37	21:06
5	08:05		09:07 (TRIV-72)	07:47		16:01 (TRIV-71)	07:08	07:17	06:33	06:08
	17:24	94	16:51 (TRIV-71)	18:00	53	16:54 (TRIV-71)	18:34	20:07	20:38	21:07
6	08:04		09:08 (TRIV-72)	07:45		16:02 (TRIV-71)	07:07	07:15	06:32	06:07
	17:25	92	16:51 (TRIV-71)	18:01	52	16:54 (TRIV-71)	18:35	20:08	20:39	21:08
7	08:04		09:08 (TRIV-72)	07:44		16:03 (TRIV-71)	07:05	07:14	06:30	06:07
	17:26	91	16:51 (TRIV-71)	18:03	49	16:52 (TRIV-71)	18:36	20:09	20:40	21:08
8	08:04		09:10 (TRIV-72)	07:43		16:04 (TRIV-71)	08:03	07:12	06:29	06:07
	17:27	90	16:52 (TRIV-71)	18:04	47	16:51 (TRIV-71)	19:37	20:10	20:42	21:09
9	08:04		09:12 (TRIV-72)	07:42		16:06 (TRIV-71)	08:02	07:11	06:28	06:07
	17:28	86	16:52 (TRIV-71)	18:05	44	16:50 (TRIV-71)	19:38	20:11	20:43	21:09
10	08:04		09:14 (TRIV-72)	07:41		16:08 (TRIV-71)	08:00	07:09	06:27	06:06
	17:29	84	16:53 (TRIV-71)	18:06	41	16:49 (TRIV-71)	19:40	20:12	20:44	21:10
11	08:04		09:16 (TRIV-72)	07:40		16:10 (TRIV-71)	07:59	07:07	06:26	06:06
	17:30	80	16:53 (TRIV-71)	18:08	37	16:47 (TRIV-71)	19:41	20:13	20:45	21:11
12	08:03		09:20 (TRIV-72)	07:38		16:12 (TRIV-71)	07:57	07:06	06:25	06:06
	17:31	74	16:54 (TRIV-71)	18:09	32	16:44 (TRIV-71)	19:42	20:14	20:46	21:11
13	08:03		15:47 (TRIV-71)	07:37		16:15 (TRIV-71)	07:55	07:04	06:24	06:06
	17:32	68	16:55 (TRIV-71)	18:10	27	16:42 (TRIV-71)	19:43	20:15	20:47	21:12
14	08:03		15:47 (TRIV-71)	07:36		16:19 (TRIV-71)	07:54	07:03	06:23	06:06
	17:34	67	16:54 (TRIV-71)	18:11	20	16:39 (TRIV-71)	19:44	20:16	20:48	21:12
15	08:02		15:48 (TRIV-71)	07:35		16:25 (TRIV-71)	07:52	07:01	06:22	06:06
	17:35	67	16:55 (TRIV-71)	18:13	7	16:32 (TRIV-71)	19:45	20:17	20:49	21:13
16	08:02		15:48 (TRIV-71)	07:33			07:50	06:59	06:21	06:06
	17:36	67	16:55 (TRIV-71)	18:14			19:46	20:18	20:50	21:13
17	08:02		15:48 (TRIV-71)	07:32			07:49	06:58	06:20	06:06
	17:37	68	16:56 (TRIV-71)	18:15			19:47	20:19	20:51	21:13
18	08:01		15:48 (TRIV-71)	07:31			07:47	06:56	06:19	06:06
	17:38	68	16:56 (TRIV-71)	18:16			19:48	20:20	20:52	21:14
19	08:01		15:49 (TRIV-71)	07:29			07:45	06:55	06:18	06:06
	17:39	68	16:57 (TRIV-71)	18:17			19:49	20:21	20:53	21:14
20	08:00		15:49 (TRIV-71)	07:28			07:44	06:53	06:17	06:06
	17:40	68	16:57 (TRIV-71)	18:19			19:50	20:22	20:54	21:14
21	07:59		15:49 (TRIV-71)	07:26			07:42	06:52	06:16	06:07
	17:42	68	16:57 (TRIV-71)	18:20			19:52	20:24	20:54	21:15
22	07:59		15:51 (TRIV-71)	07:25			07:40	06:50	06:16	06:07
	17:43	67	16:58 (TRIV-71)	18:21			19:53	20:25	20:55	21:15
23	07:58		15:51 (TRIV-71)	07:23			07:39	06:49	06:15	06:07
	17:44	67	16:58 (TRIV-71)	18:22			19:54	20:26	20:56	21:15
24	07:57		15:51 (TRIV-71)	07:22			07:37	06:48	06:14	06:07
	17:45	66	16:57 (TRIV-71)	18:23			19:55	20:27	20:57	21:15
25	07:57		15:51 (TRIV-71)	07:21			07:35	06:46	06:13	06:08
	17:46	66	16:57 (TRIV-71)	18:25			19:56	20:28	20:58	21:15
26	07:56		15:53 (TRIV-71)	07:19			07:34	06:45	06:13	06:08
	17:48	65	16:58 (TRIV-71)	18:26			19:57	20:29	20:59	21:15
27	07:55		15:53 (TRIV-71)	07:18			07:32	06:43	06:12	06:08
	17:49	65	16:58 (TRIV-71)	18:27			19:58	20:30	21:00	21:16
28	07:54		15:54 (TRIV-71)	07:16			07:30	06:42	06:11	06:09
	17:50	64	16:58 (TRIV-71)	18:28			19:59	20:31	21:01	21:16
29	07:53		15:54 (TRIV-71)				07:29	06:41	06:11	06:09
	17:51	63	16:57 (TRIV-71)				20:00	20:32	21:02	21:16
30	07:52		15:55 (TRIV-71)				07:27	06:39	06:10	06:09
	17:53	62	16:57 (TRIV-71)				20:00	20:33	21:02	21:16
31	07:52		15:56 (TRIV-71)				07:25		06:10	
	17:54	61	16:57 (TRIV-71)				20:01		21:03	
Potential sun hours	298			297			370	399	448	452
Total, worst case		2329			640					
Sun reduction		0.50			0.55					
Oper. time red.		1.00			1.00					
Wind dir. red.		0.68			0.70					
Total reduction		0.34			0.38					
Total, real		793			244					

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)

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Calendar

Calculation: 2018-06-05_TRIV Shadow Flicker AnalysisShadow receptor: 379 - Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1375)

Assumptions for shadow calculations

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

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Sum
376	336	411	526	570	353	301	322	513	699	781	841	964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

	July	August	September	October			November			December		
1	06:10	06:34	07:05	07:35			07:09		15:37 (TRIV-71)	07:44		08:58 (TRIV-72)
	21:16	20:57	20:14	19:22			17:36	41	16:18 (TRIV-71)	17:11	80	16:35 (TRIV-71)
2	06:10	06:35	07:06	07:36			07:10		15:36 (TRIV-71)	07:45		08:57 (TRIV-72)
	21:15	20:56	20:13	19:21			17:34	44	16:20 (TRIV-71)	17:11	84	16:36 (TRIV-71)
3	06:11	06:36	07:07	07:37			07:12		15:34 (TRIV-71)	07:46		08:56 (TRIV-72)
	21:15	20:55	20:11	19:19			17:33	47	16:21 (TRIV-71)	17:11	86	16:36 (TRIV-71)
4	06:12	06:37	07:08	07:38			07:13		15:32 (TRIV-71)	07:47		08:55 (TRIV-72)
	21:15	20:54	20:10	19:17			17:32	50	16:22 (TRIV-71)	17:11	90	16:37 (TRIV-71)
5	06:12	06:38	07:09	07:39			07:14		15:32 (TRIV-71)	07:48		08:55 (TRIV-72)
	21:15	20:53	20:08	19:16			17:31	52	16:24 (TRIV-71)	17:11	90	16:37 (TRIV-71)
6	06:13	06:39	07:10	07:40			07:15		15:30 (TRIV-71)	07:49		08:54 (TRIV-72)
	21:15	20:52	20:06	19:14			17:30	54	16:24 (TRIV-71)	17:10	92	16:37 (TRIV-71)
7	06:13	06:40	07:11	07:41			07:16		15:29 (TRIV-71)	07:50		08:53 (TRIV-72)
	21:14	20:50	20:05	19:12			17:29	56	16:25 (TRIV-71)	17:10	94	16:37 (TRIV-71)
8	06:14	06:41	07:12	07:42			07:18		15:28 (TRIV-71)	07:51		08:53 (TRIV-72)
	21:14	20:49	20:03	19:11			17:28	57	16:25 (TRIV-71)	17:10	95	16:37 (TRIV-71)
9	06:15	06:42	07:13	07:43			07:19		15:28 (TRIV-71)	07:52		08:53 (TRIV-72)
	21:14	20:48	20:01	19:09			17:26	59	16:27 (TRIV-71)	17:10	95	16:37 (TRIV-71)
10	06:15	06:43	07:14	07:44			07:20		15:27 (TRIV-71)	07:53		08:53 (TRIV-72)
	21:13	20:47	20:00	19:07			17:25	60	16:27 (TRIV-71)	17:10	96	16:38 (TRIV-71)
11	06:16	06:44	07:15	07:45			07:21		15:27 (TRIV-71)	07:54		08:53 (TRIV-72)
	21:13	20:45	19:56	19:06			17:24	61	16:28 (TRIV-71)	17:10	97	16:38 (TRIV-71)
12	06:17	06:45	07:16	07:47			07:22		15:27 (TRIV-71)	07:54		08:53 (TRIV-72)
	21:13	20:44	19:55	19:04			17:24	62	16:29 (TRIV-71)	17:11	98	16:39 (TRIV-71)
13	06:17	06:46	07:17	07:48			07:24		15:26 (TRIV-71)	07:55		08:54 (TRIV-72)
	21:12	20:43	19:53	19:03			17:23	63	16:29 (TRIV-71)	17:11	97	16:39 (TRIV-71)
14	06:18	06:47	07:18	07:49			07:25		15:26 (TRIV-71)	07:56		08:53 (TRIV-72)
	21:12	20:41	19:51	19:01			17:22	64	16:30 (TRIV-71)	17:11	98	16:39 (TRIV-71)
15	06:19	06:48	07:19	07:50			07:26		15:25 (TRIV-71)	07:57		08:53 (TRIV-72)
	21:11	20:40	19:49	19:00			17:21	65	16:30 (TRIV-71)	17:11	100	16:40 (TRIV-71)
16	06:20	06:49	07:20	07:51			07:27		15:26 (TRIV-71)	07:57		08:54 (TRIV-72)
	21:11	20:39	19:48	18:58			17:20	65	16:31 (TRIV-71)	17:11	99	16:40 (TRIV-71)
17	06:21	06:50	07:21	07:52			07:28		15:25 (TRIV-71)	07:58		08:54 (TRIV-72)
	21:10	20:37	19:46	18:56			17:19	66	16:31 (TRIV-71)	17:12	99	16:40 (TRIV-71)
18	06:21	06:51	07:22	07:53			07:29		15:25 (TRIV-71)	07:59		08:54 (TRIV-72)
	21:09	20:36	19:44	18:55			17:18	66	16:31 (TRIV-71)	17:12	100	16:41 (TRIV-71)
19	06:22	06:52	07:23	07:54			07:31		15:25 (TRIV-71)	07:59		08:55 (TRIV-72)
	21:09	20:34	19:43	18:53			17:18	67	16:32 (TRIV-71)	17:12	100	16:42 (TRIV-71)
20	06:23	06:53	07:24	07:55			07:32		15:26 (TRIV-71)	08:00		08:55 (TRIV-72)
	21:08	20:33	19:41	18:52			17:17	67	16:33 (TRIV-71)	17:13	100	16:42 (TRIV-71)
21	06:24	06:54	07:25	07:56			07:33		15:25 (TRIV-71)	08:00		08:56 (TRIV-72)
	21:07	20:32	19:39	18:51			17:16	68	16:33 (TRIV-71)	17:13	99	16:42 (TRIV-71)
22	06:25	06:55	07:26	07:58			07:34		15:25 (TRIV-71)	08:01		08:56 (TRIV-72)
	21:06	20:30	19:37	18:49			17:16	68	16:33 (TRIV-71)	17:14	99	16:42 (TRIV-71)
23	06:26	06:56	07:27	07:59			07:35		15:25 (TRIV-71)	08:01		08:57 (TRIV-72)
	21:06	20:29	19:36	18:48			17:15	68	16:33 (TRIV-71)	17:14	99	16:43 (TRIV-71)
24	06:27	06:57	07:28	08:00			07:36		15:25 (TRIV-71)	08:02		08:57 (TRIV-72)
	21:05	20:27	19:34	18:46			17:14	68	16:33 (TRIV-71)	17:15	100	16:44 (TRIV-71)
25	06:27	06:58	07:29	08:01			07:38		15:26 (TRIV-71)	08:02		08:57 (TRIV-72)
	21:04	20:25	19:32	18:45			17:14	68	16:34 (TRIV-71)	17:15	100	16:44 (TRIV-71)
26	06:28	06:59	07:30	08:02			07:39		15:27 (TRIV-71)	08:03		08:59 (TRIV-72)
	21:03	20:24	19:31	18:43			17:13	67	16:34 (TRIV-71)	17:16	99	16:45 (TRIV-71)
27	06:29	07:00	07:31	08:03		16:52 (TRIV-71)	07:40		15:27 (TRIV-71)	08:03		08:59 (TRIV-72)
	21:02	20:22	19:29	18:42	12	17:04 (TRIV-71)	17:13	67	16:34 (TRIV-71)	17:17	99	16:45 (TRIV-71)
28	06:30	07:01	07:32	08:05		16:47 (TRIV-71)	07:41		15:27 (TRIV-71)	08:03		08:59 (TRIV-72)
	21:01	20:21	19:27	18:41	22	17:09 (TRIV-71)	17:13	68	16:35 (TRIV-71)	17:17	99	16:45 (TRIV-71)
29	06:31	07:02	07:33	08:06		16:44 (TRIV-71)	07:42		15:27 (TRIV-71)	08:04		09:00 (TRIV-72)
	21:00	20:19	19:26	18:39	28	17:12 (TRIV-71)	17:12	68	16:35 (TRIV-71)	17:18	98	16:46 (TRIV-71)
30	06:32	07:03	07:34	08:07		16:41 (TRIV-71)	07:43		09:01 (TRIV-72)	08:04		09:01 (TRIV-72)
	20:59	20:18	19:24	18:38	34	17:15 (TRIV-71)	17:12	74	16:35 (TRIV-71)	17:19	98	16:47 (TRIV-71)
31	06:33	07:04		08:08		16:39 (TRIV-71)				08:04		09:02 (TRIV-72)
	20:58	20:16		18:37	37	17:16 (TRIV-71)				17:20	98	16:48 (TRIV-71)
Potential sun hours	459	428	375	345			298			288		
Total, worst case					133			1850			2978	
Sun reduction					0.60			0.40			0.36	
Oper. time red.					1.00			1.00			1.00	
Wind dir. red.					0.70			0.69			0.66	
Total reduction					0.42			0.28			0.24	
Total, real					55			513			708	

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)

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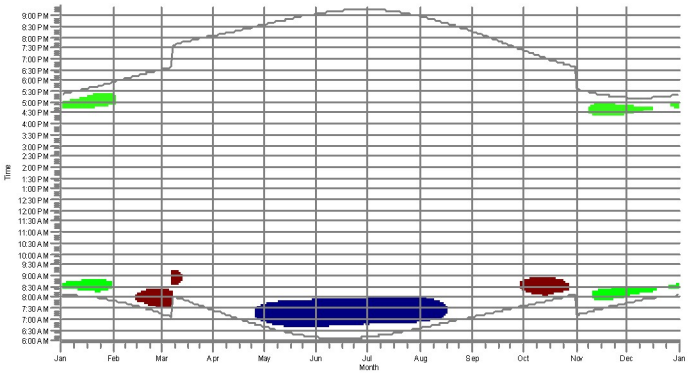
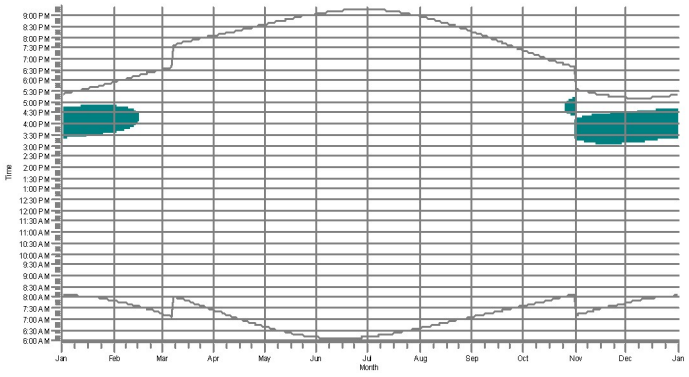
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

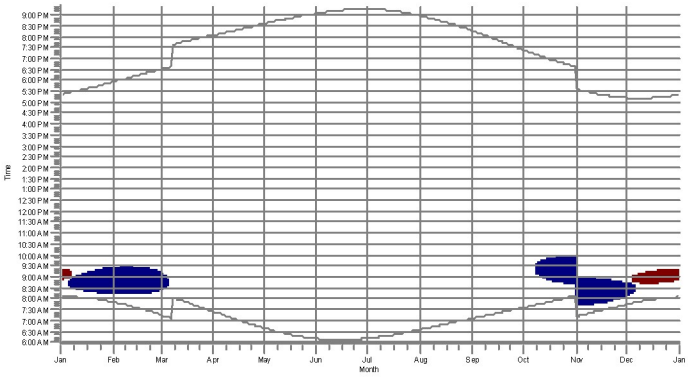
23: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1057)



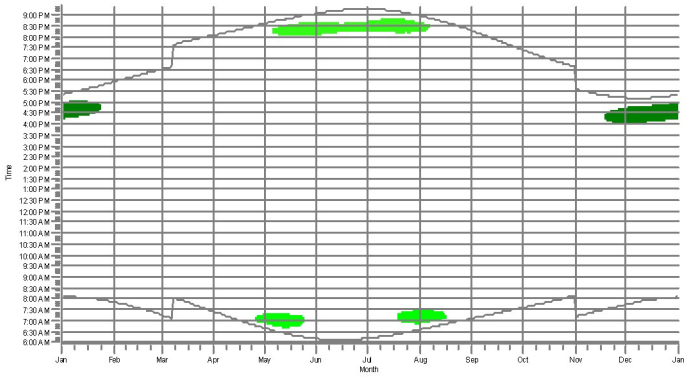
24: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1058)



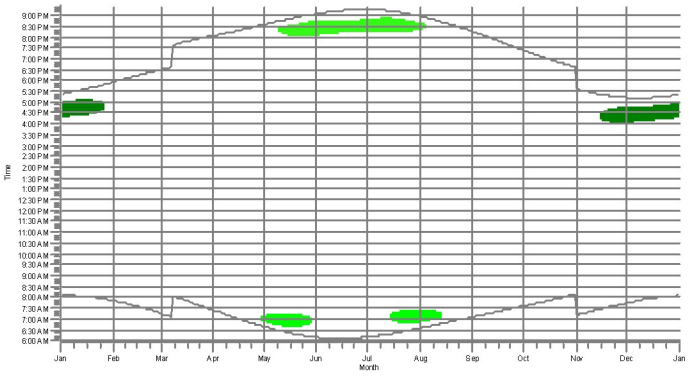
25: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1059)



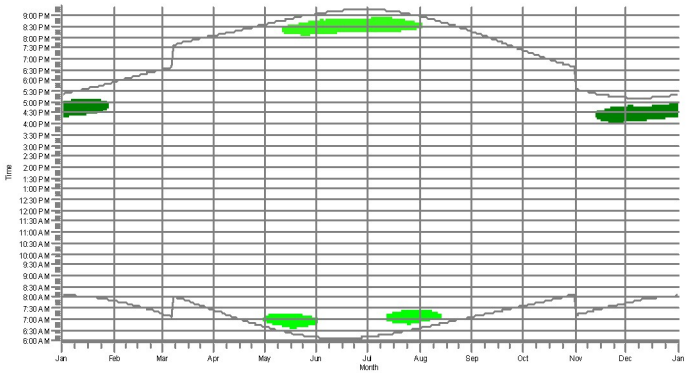
51: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1082)



52: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1083)



53: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1084)



WTGs

TRIV-07: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (1)
TRIV-14: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (6)
TRIV-15: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (7)
TRIV-16: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (8)
TRIV-17: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (9)
TRIV-47: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (18)

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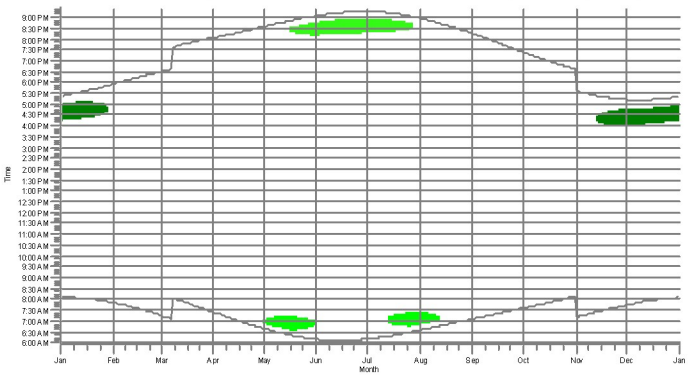
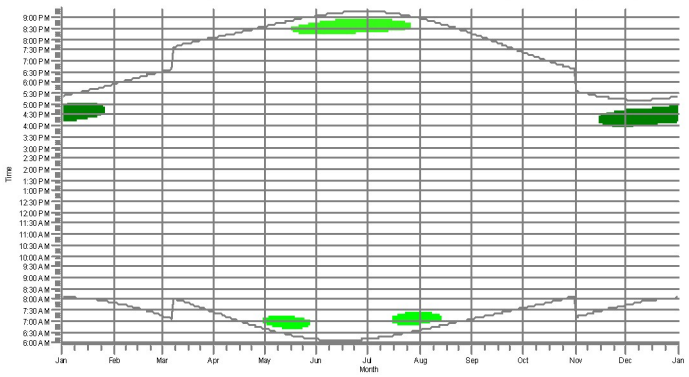
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

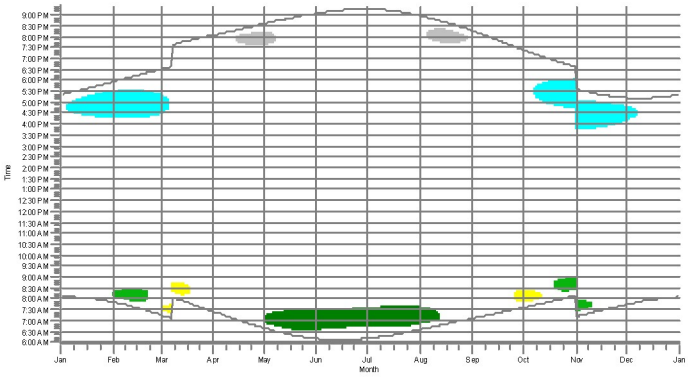
54: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1085)



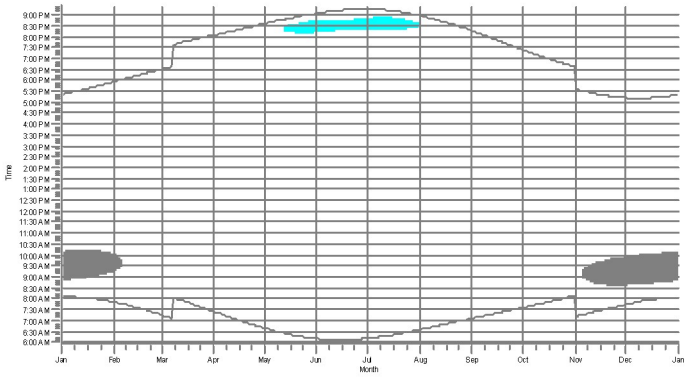
55: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1086)



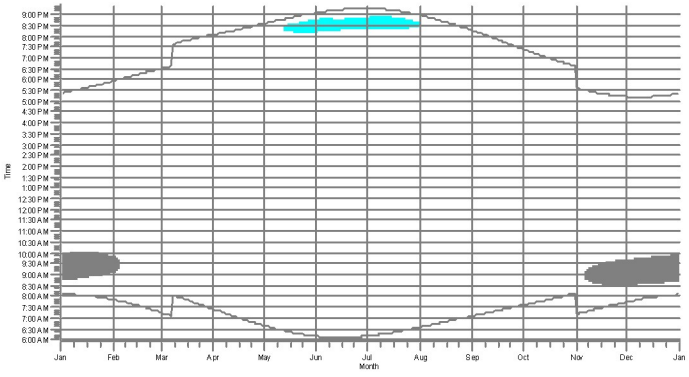
60: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1091)



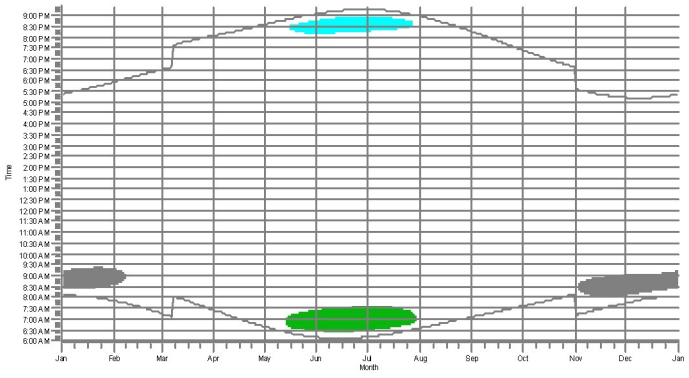
62: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1093)



63: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1094)



64: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1095)



WTGs

TRIV-07: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (1)
TRIV-08: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (2)
TRIV-10a: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (4)
TRIV-17: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (9)
TRIV-41: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (12)
TRIV-42: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (13)
TRIV-47: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (18)
TRIV-90: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (54)

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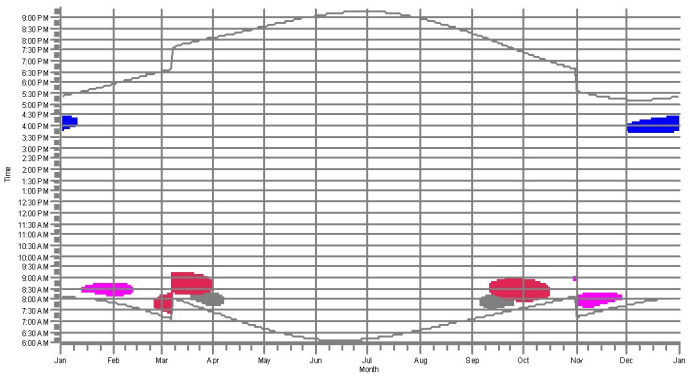
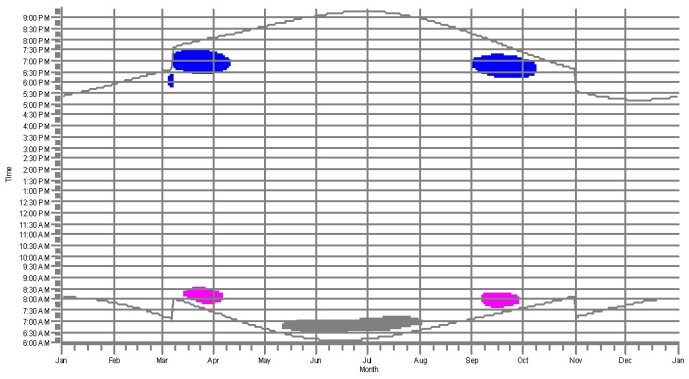
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

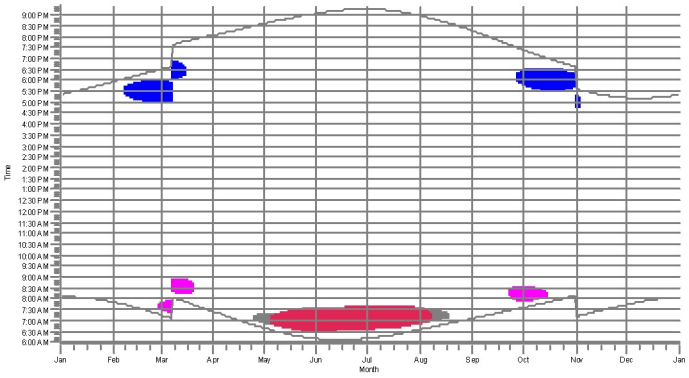
70: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1101)



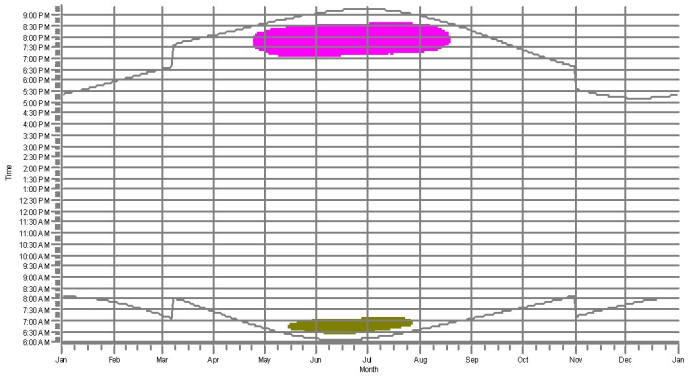
78: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1109)



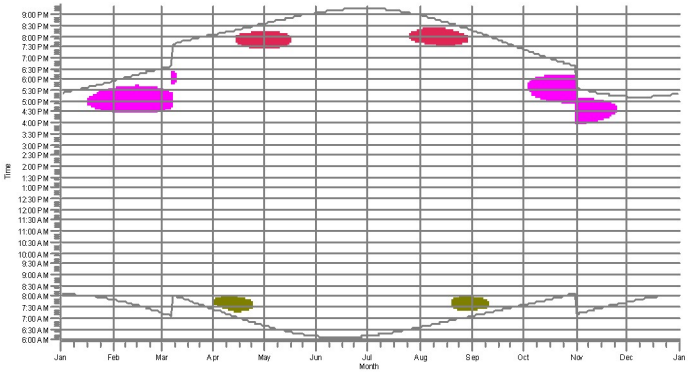
79: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1110)



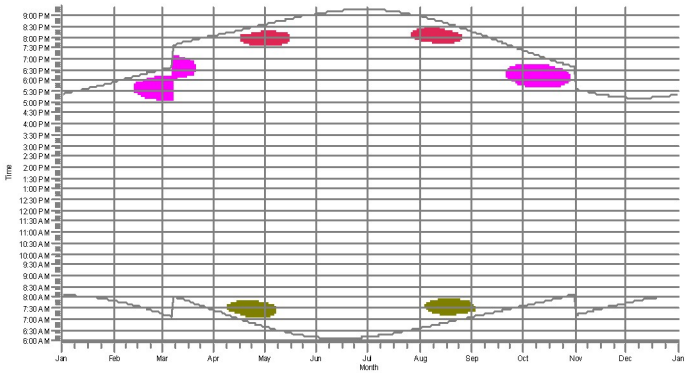
83: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1114)



84: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1115)



85: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1116)



WTGs

TRIV-09: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (3)
TRIV-10a: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (4)
TRIV-10: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (5)
TRIV-19: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (10)
TRIV-87: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (53)

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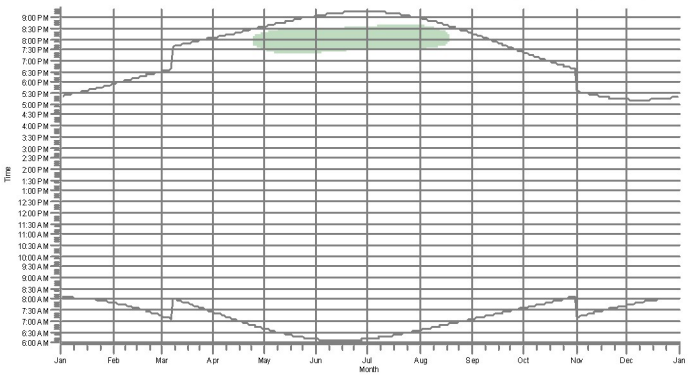
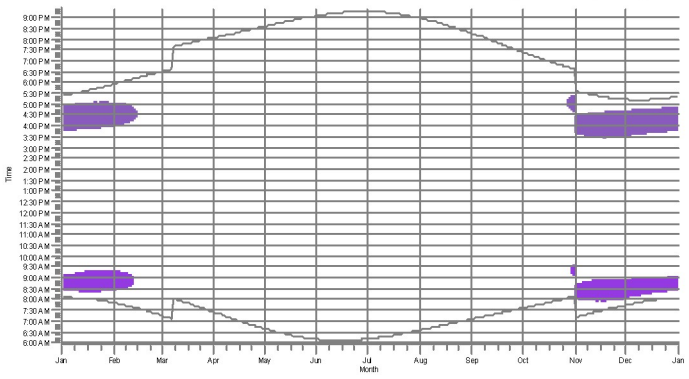
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

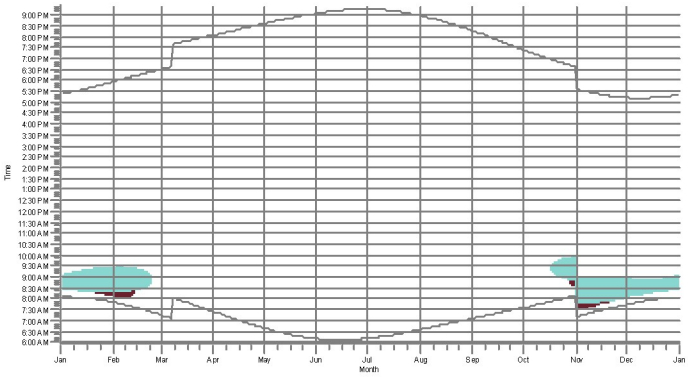
104: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1133)



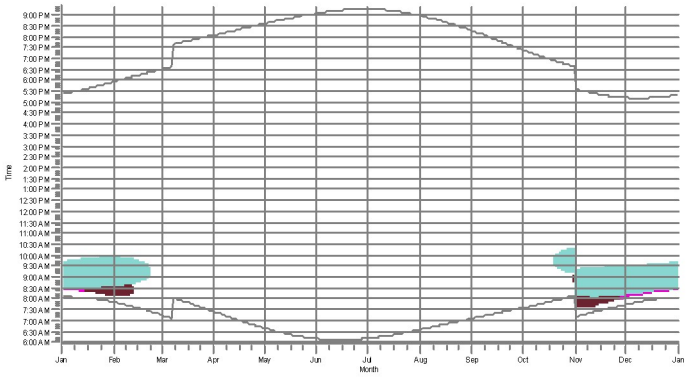
138: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1163)



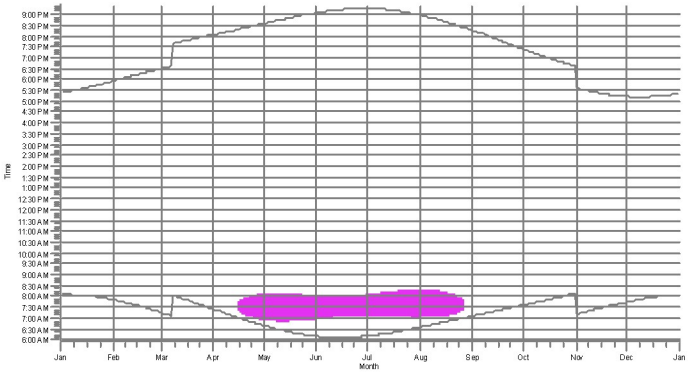
148: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1171)



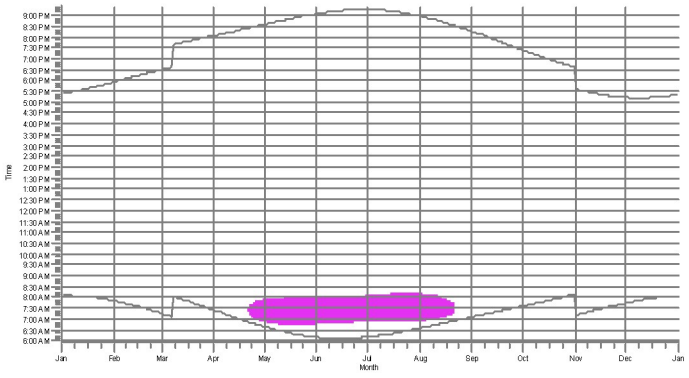
149: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1172)



150: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1173)



151: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1174)



WTGs

TRIV-44: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (14)
TRIV-52b: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (24)
TRIV-57: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (32)
TRIV-76: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (45)
TRIV-77: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (46)
TRIV-78: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (47)
TRIV-78a: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (48)

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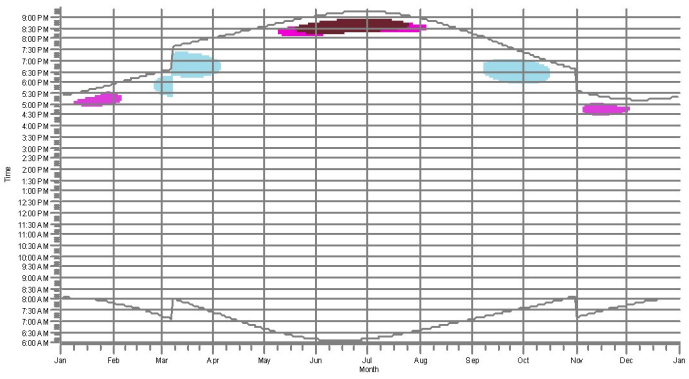
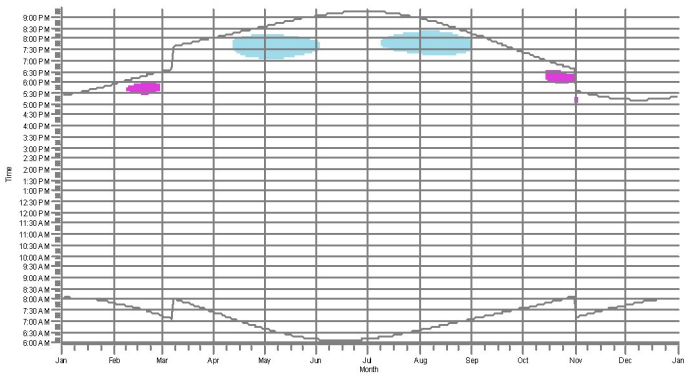
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

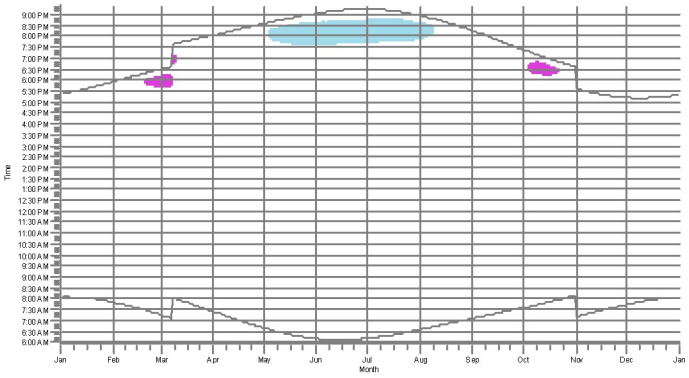
159: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1182)



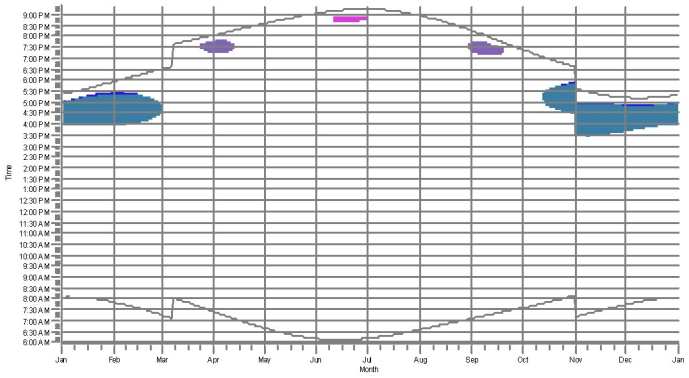
160: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1183)



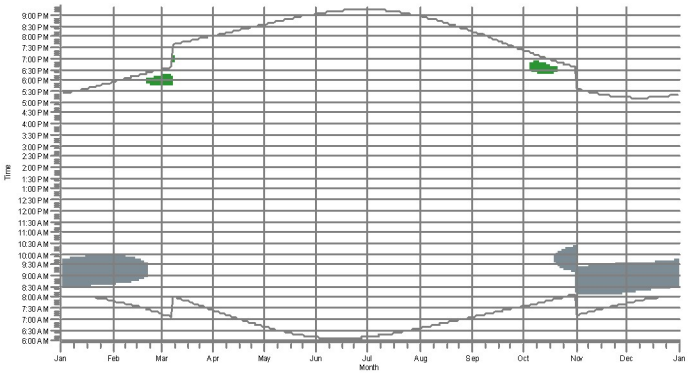
161: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1184)



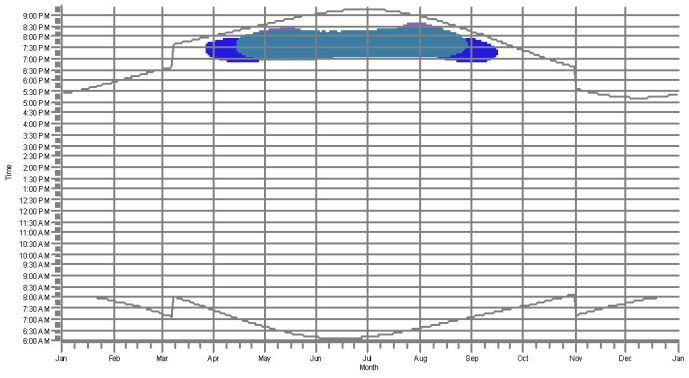
169: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1192)



170: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1193)



171: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1194)



WTGs

TRIV-52b: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (24)
TRIV-52c: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (27)
TRIV-57: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (32)
TRIV-58: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (33)
TRIV-59: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (34)
TRIV-60: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (35)
TRIV-61: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (36)
TRIV-61a: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (37)
TRIV-62: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (38)

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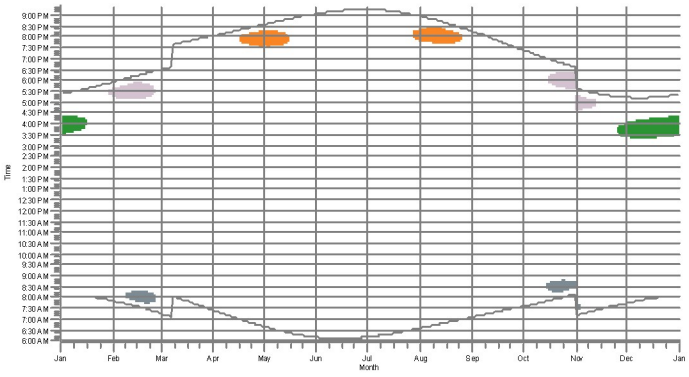
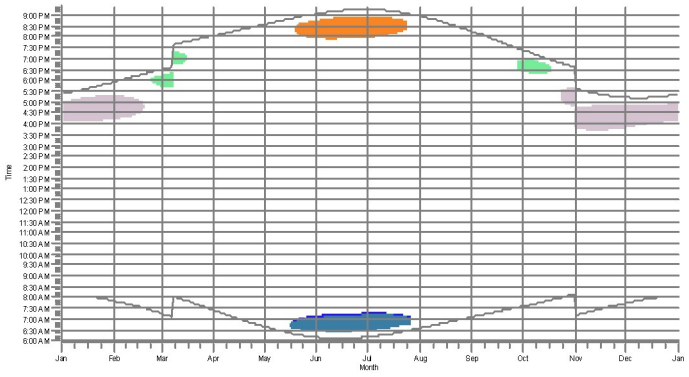
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

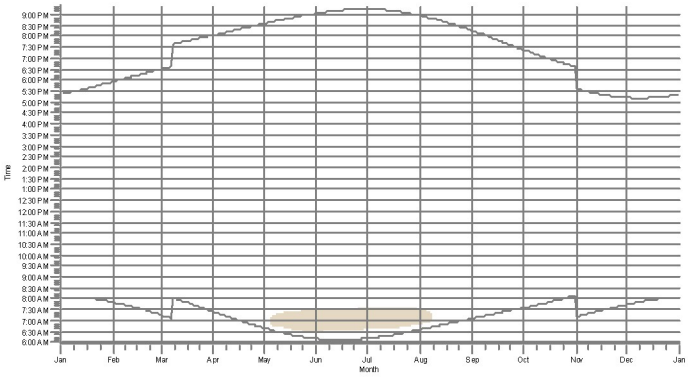
174: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1197)



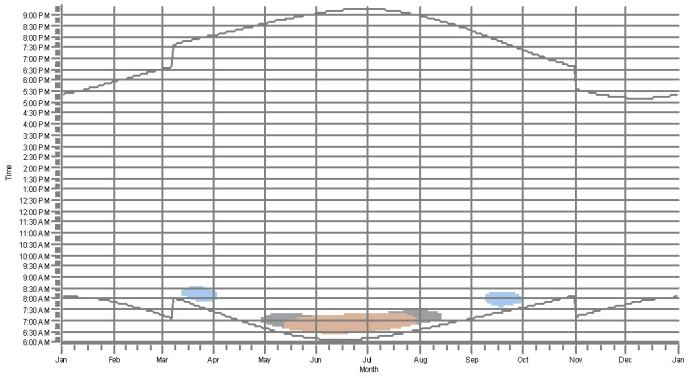
175: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1198)



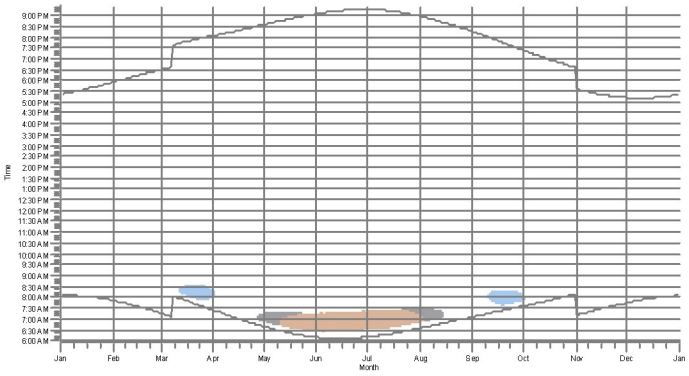
191: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1214)



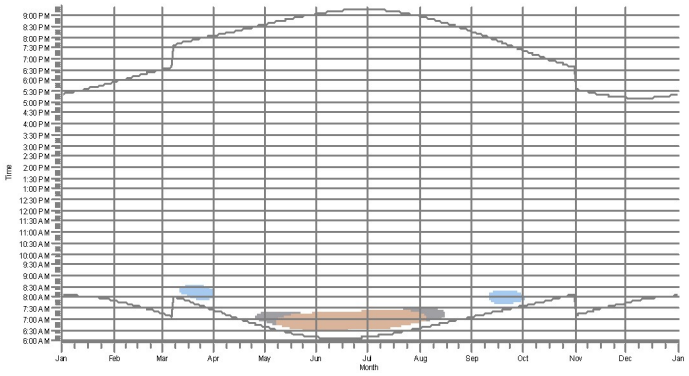
234: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1251)



235: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1252)



236: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1253)



WTGs

TRIV-45: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (15)
TRIV-46: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (16)
TRIV-46a: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (17)
TRIV-51: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (23)
TRIV-52a: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (25)
TRIV-52: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (26)
TRIV-52c: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (27)
TRIV-61: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (36)
TRIV-61a: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (37)
TRIV-62: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (38)
TRIV-80: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (49)

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SHADOW - Calendar, graphical

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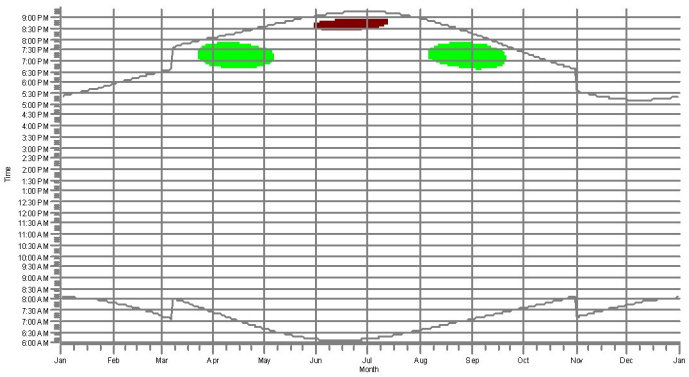
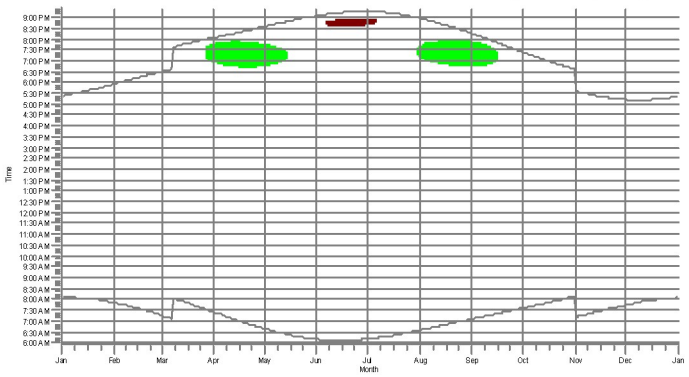
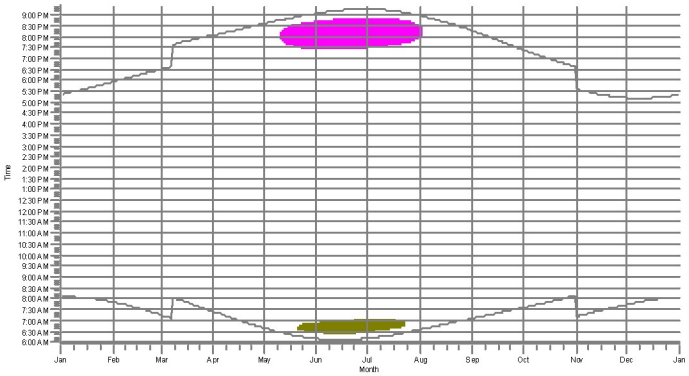
238: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1255)



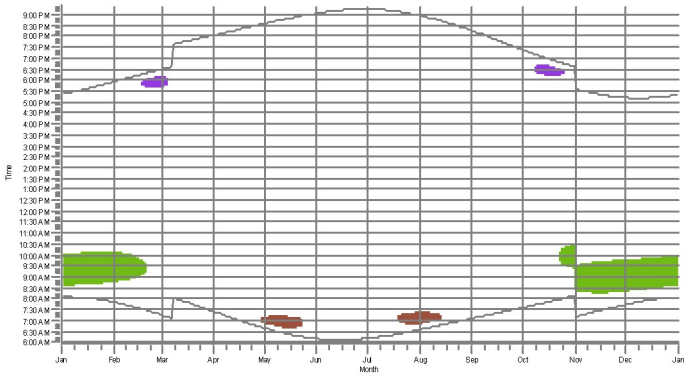
239: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1256)



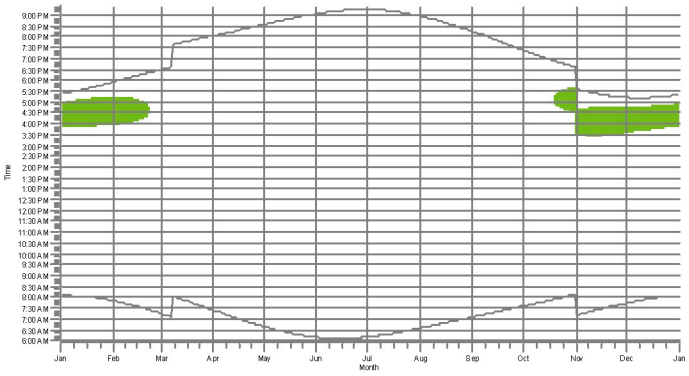
275: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1292)



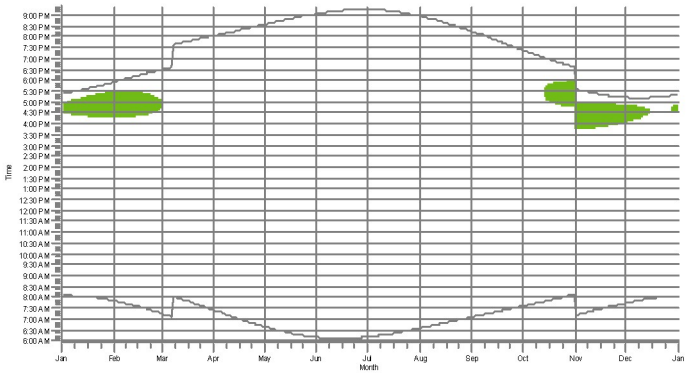
279: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1296)



280: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1297)



281: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1298)



WTGs

TRIV-10: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (5)
TRIV-16: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (8)
TRIV-17: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (9)
TRIV-19: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (10)
TRIV-66: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (40)
TRIV-77: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (46)
TRIV-86: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (52)

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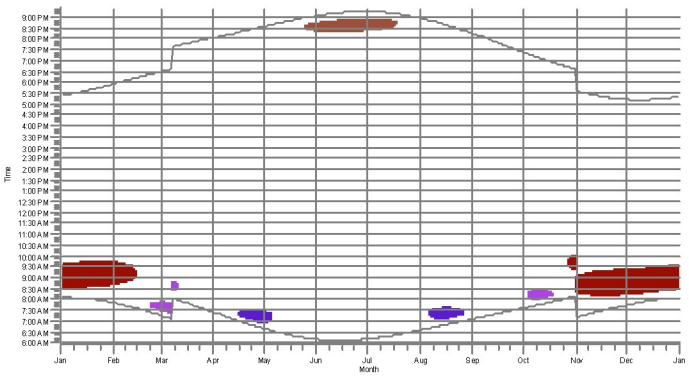
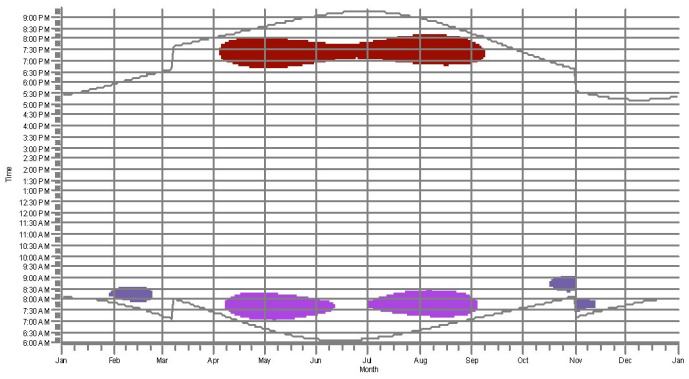
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

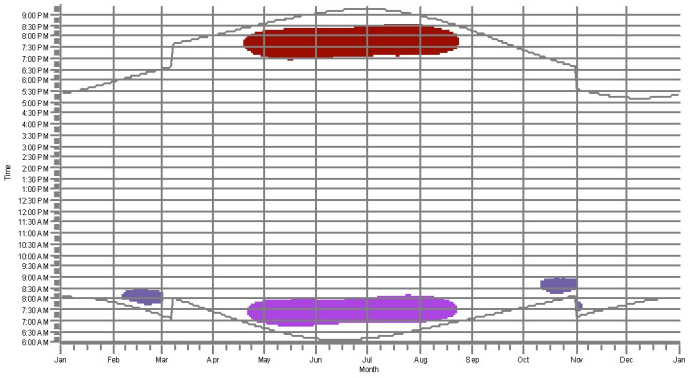
285: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1302)



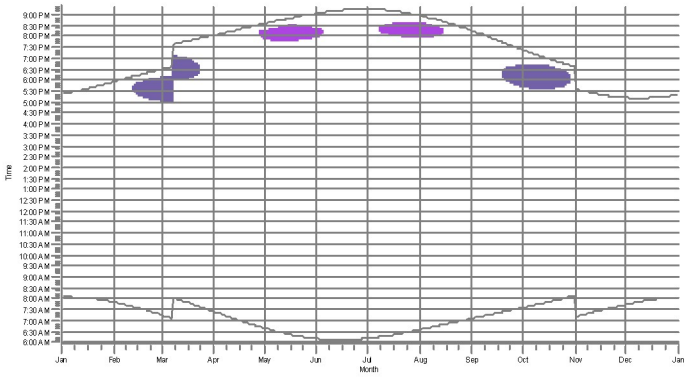
286: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1303)



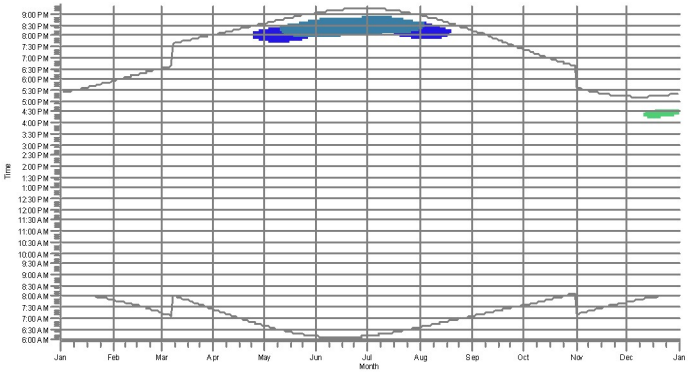
287: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1304)



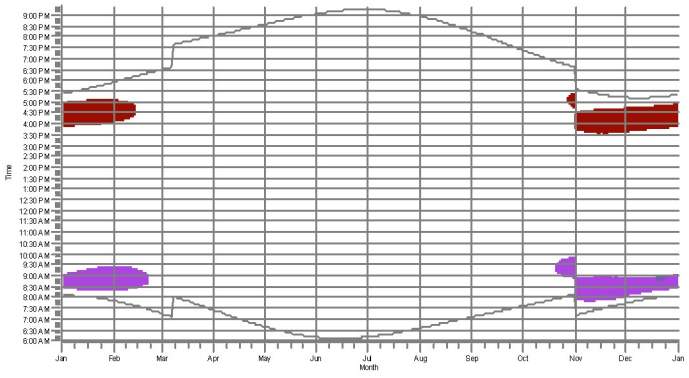
291: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1308)



294: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1311)



307: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1322)



WTGs

TRIV-53: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (28)
TRIV-61: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (36)
TRIV-61a: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (37)
TRIV-66: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (40)
TRIV-72: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (42)
TRIV-73: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (43)
TRIV-74: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (44)
TRIV-84: VESTAS V150-4.2 4200 150.0 IO! hub: 105.0 m (TOT: 180.0 m) (51)

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SHADOW - Calendar, graphical

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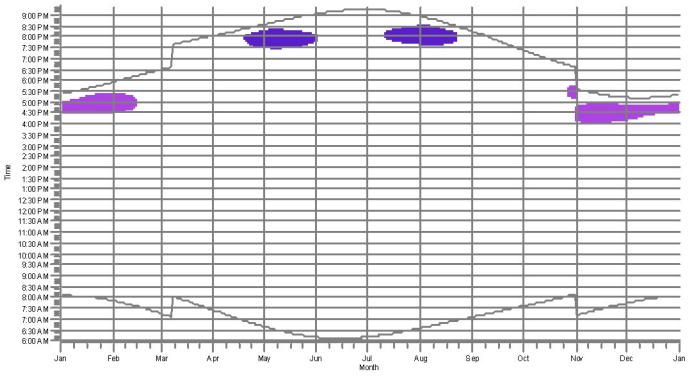
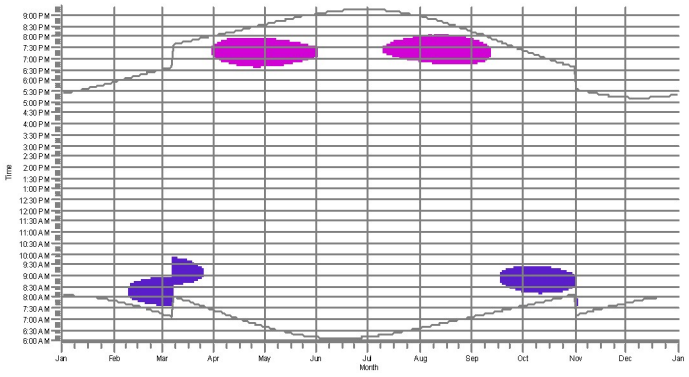
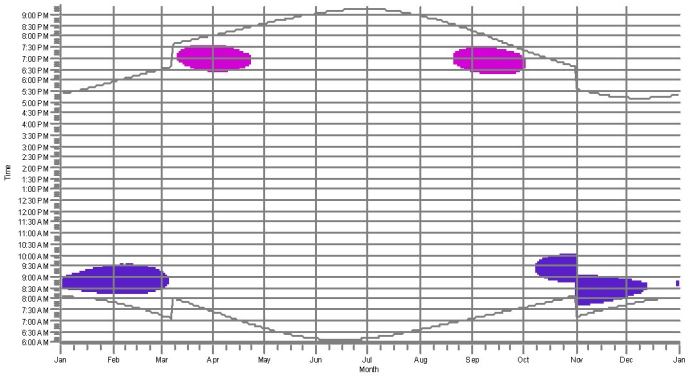
309: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1324)



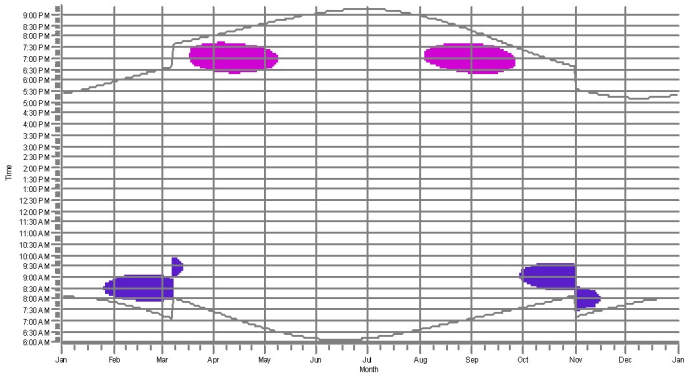
310: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1325)



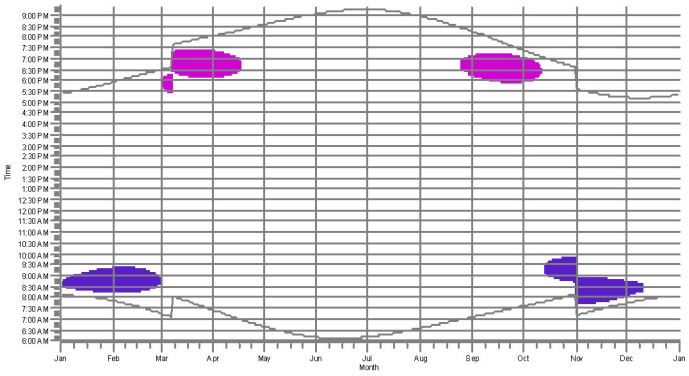
311: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1326)



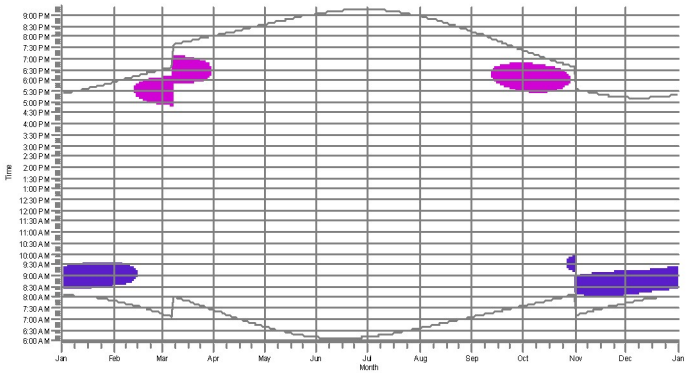
312: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1327)



313: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1328)



314: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1329)



WTGs

TRIV-71: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)

TRIV-72: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)

TRIV-73: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (43)

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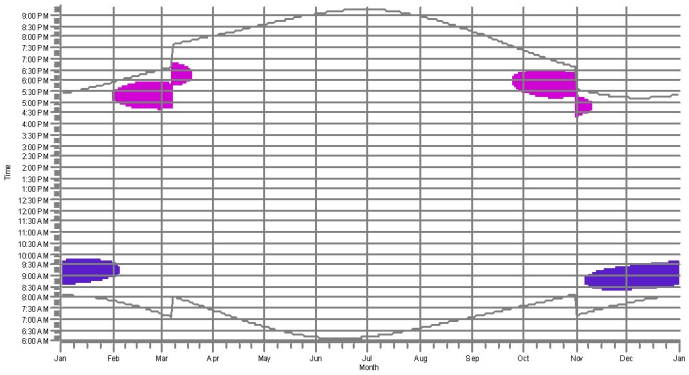
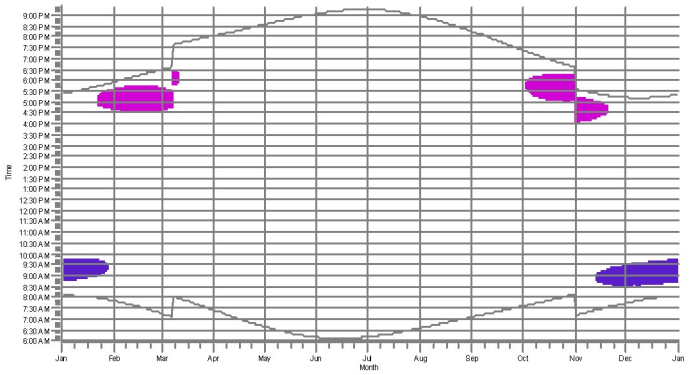
SHADOW - Calendar, graphical

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

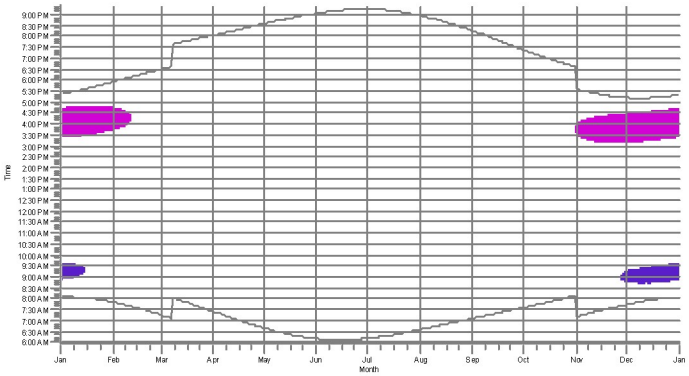
315: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1330)



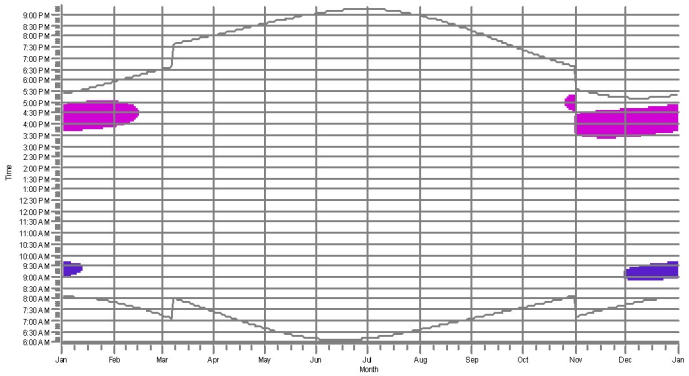
316: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1331)



318: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1333)



379: Shadow Receptor: 1.0 × 1.0 Azimuth: 0.0° Slope: 0.0° (1375)



WTGs

TRIV-71: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)

TRIV-72: VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)

Attachment C

Summary of Receptors Predicted to Receive Over
30 Hours Annually by Turbine Model

Receptor ID	Project Status	Predicted Annual Shadow Flicker (hh:mm/year)									
		V150 (105 meter HH)	SG126 (84 meter HH)	SG132 (114 meter HH)	SG132 (84 meter HH)	SG145 (107.5 meter HH)	V136 (105 meter HH)	V136 (82 meter HH)	AW132 (112.5 meter HH)	AW132 (84 m HH)	AW140 (105 meter HH)
294	Non-participating	30:48	22:33	27:57	23:36	30:11	27:36	23:53	27:41	23:36	28:32
55	Non-participating	32:08	21:05	28:41	22:27	31:20	28:13	22:47	28:26	22:27	29:22
281	Non-participating	32:45	24:24	23:18	26:19	29:42	26:03	27:16	23:27	26:19	27:47
51	Non-participating	33:14	17:41	29:05	19:17	32:11	27:24	19:47	28:31	19:17	29:17
25	Non-participating	33:34	22:47	24:53	24:58	30:56	26:35	26:37	24:58	24:58	28:30
191	Non-participating	33:59	26:53	28:21	28:18	32:44	30:25	28:58	28:31	28:18	31:22
54	Non-participating	34:06	22:37	30:36	23:58	33:17	30:11	24:22	30:21	23:58	31:15
70	Non-participating	34:14	19:08	28:03	20:35	32:36	27:54	21:16	27:44	20:35	29:48
52	Non-participating	35:40	20:23	31:48	22:19	34:38	31:03	22:58	31:25	22:19	32:10
53	Non-participating	36:13	22:30	32:23	24:19	35:11	31:40	24:46	32:05	24:19	32:57
318	Non-participating	36:51	20:45	32:06	22:51	35:31	31:11	23:35	31:45	22:51	32:44
160	Non-participating	37:20	22:48	30:01	24:39	35:23	30:40	25:30	29:47	24:39	32:29
238	Non-participating	37:29	24:57	28:33	27:03	34:56	30:37	28:15	28:39	27:03	32:23
239	Non-participating	37:37	24:34	27:57	26:47	34:56	30:14	28:05	27:48	26:47	32:15
291	Non-participating	37:41	24:11	30:10	26:14	35:39	31:05	27:06	30:03	26:14	33:03
379	Non-participating	38:34	23:42	32:51	25:22	36:57	32:32	26:14	32:33	25:22	34:11
161	Non-participating	39:08	30:41	32:13	32:25	37:31	34:42	33:14	32:28	32:25	35:59
285	Non-participating	42:53	29:28	36:09	31:29	41:03	36:52	32:24	36:06	31:29	38:33
149	Non-participating	42:59	30:39	38:46	32:09	42:14	38:53	32:35	38:38	32:09	40:08
159	Non-participating	43:21	29:50	36:50	31:52	41:33	37:26	32:43	36:45	31:52	39:07
85	Non-participating	43:46	28:04	35:39	30:19	41:39	36:34	31:18	35:29	30:19	38:41
316	Non-participating	44:31	28:57	35:39	31:31	41:53	36:57	32:48	35:29	31:31	39:02
104	Non-participating	45:27	34:27	37:32	36:30	43:28	39:57	37:43	37:38	36:30	41:36
78	Non-participating	45:36	29:53	37:59	32:20	43:38	38:56	33:23	37:54	32:20	40:54
315	Non-participating	49:51	33:55	40:10	36:38	47:08	41:48	37:56	40:10	36:38	43:55
138	Non-participating	49:53	35:24	41:47	37:39	47:54	43:18	38:37	41:51	37:39	45:11
314	Non-participating	57:59	41:02	46:00	44:03	54:37	48:40	45:34	46:03	44:03	51:21
64	Non-participating	59:13	46:06	47:02	48:20	56:30	51:49	49:21	47:30	48:20	54:08
151	Non-participating	60:15	47:02	49:04	50:09	57:08	52:30	51:42	49:27	50:09	54:40
150	Non-participating	60:16	38:03	49:30	43:22	57:16	51:35	45:20	49:24	43:22	54:04
313	Non-participating	62:46	44:19	47:15	48:23	58:14	51:09	50:23	47:23	48:23	54:19
311	Non-participating	64:32	46:25	48:01	50:11	59:29	52:14	52:10	48:07	50:11	55:33
79	Non-participating	68:45	52:03	57:20	54:59	66:10	60:37	56:21	57:17	54:59	63:05
312	Non-participating	70:12	48:09	54:14	52:12	65:37	57:35	54:21	54:10	52:12	60:55
310	Non-participating	81:27	53:39	62:57	58:19	76:02	66:04	60:39	62:49	58:19	70:10
287	Non-participating	130:00	101:27	106:02	107:51	123:12	113:16	111:21	106:32	107:51	117:58
174	Participating	30:30	14:00	26:19	15:51	29:24	24:53	16:17	25:49	15:51	26:32
148	Participating	30:31	21:34	23:53	22:53	29:02	25:55	23:20	23:53	22:53	27:24
63	Participating	33:07	19:00	29:28	21:05	32:12	28:42	21:53	29:12	21:05	30:03
62	Participating	34:09	18:31	30:20	20:25	33:02	29:14	21:02	30:00	20:25	30:41
234	Participating	36:00	27:09	32:31	28:20	35:19	32:52	28:35	32:32	28:20	33:53
236	Participating	37:02	27:28	33:27	28:50	36:11	33:35	29:18	33:21	28:50	34:32
235	Participating	37:14	28:02	33:37	29:18	36:25	33:54	29:47	33:32	29:18	34:52
24	Participating	37:35	25:23	32:19	27:16	36:13	32:32	28:06	32:10	27:16	33:56
280	Participating	39:26	28:33	31:50	30:19	37:29	33:48	31:07	32:01	30:19	35:19
170	Participating	39:38	27:55	33:12	29:55	37:55	34:08	30:49	33:08	29:55	35:41
309	Participating	39:47	25:40	31:03	27:36	37:59	33:13	28:28	31:03	27:36	35:13
279	Participating	45:57	30:20	39:23	32:40	44:12	39:35	33:44	39:07	32:40	41:18
275	Participating	49:26	42:17	35:17	44:31	45:26	41:20	45:43	36:00	44:31	43:36
169	Participating	53:22	37:34	41:33	39:53	50:56	45:44	40:54	42:10	39:53	48:05
307	Participating	54:49	39:01	42:46	41:27	52:06	46:30	42:31	42:55	41:27	49:03

Receptor ID	Project Status	Predicted Annual Shadow Flicker (hh:mm/year)									
		V150 (105 meter HH)	SG126 (84 meter HH)	SG132 (114 meter HH)	SG132 (84 meter HH)	SG145 (107.5 meter HH)	V136 (105 meter HH)	V136 (82 meter HH)	AW132 (112.5 meter HH)	AW132 (84 m HH)	AW140 (105 meter HH)
84	Participating	54:54	36:58	43:20	40:01	51:33	45:30	41:28	43:21	40:01	48:03
175	Participating	74:57	56:41	58:45	60:00	71:41	65:12	61:29	59:28	60:00	68:16
23	Participating	75:02	56:57	61:14	60:24	71:11	65:05	62:08	61:25	60:24	67:50
83	Participating	75:07	61:44	61:18	65:00	71:16	65:59	66:44	61:45	65:00	68:34
60	Participating	85:07	60:16	68:19	65:33	80:23	72:02	68:19	68:21	65:33	75:43
171	Participating	85:56	64:30	74:47	68:13	83:01	76:58	69:38	74:37	68:13	79:32
286	Participating	123:09	72:21	97:23	79:05	115:45	97:30	82:17	96:26	79:05	105:17
Participants > 30 hours/year		22	11	18	12	21	18	13	19	12	20
Non-participants > 30 hours/year		36	15	27	20	35	30	20	26	20	30
Total receptors > 30 hours/year		58	26	45	32	56	48	33	45	32	50

[1] Highlighted cells represent receptors that are predicted to experience over 30 hours of shadow flicker annually.

Attachment D

WindPro Results for Each Turbine Model

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US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/8/2018 12:26 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-08	695,393	4,555,358	222.1	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-09	693,543	4,553,744	224.2	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-10	695,148	4,553,817	223.9	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-10a	695,248	4,554,372	223.2	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-14	695,087	4,558,394	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-15	695,990	4,557,833	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-16	696,285	4,557,413	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-17	696,664	4,556,925	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-19	696,650	4,554,220	223.5	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-27	696,026	4,560,119	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-41	692,852	4,555,787	224.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-42	693,590	4,555,279	224.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-44	693,510	4,552,657	225.8	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-45	695,101	4,559,935	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-46	695,044	4,560,371	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-46a	694,816	4,560,369	222.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-47	694,421	4,556,942	223.3	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-48	693,276	4,557,174	223.9	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-49	694,102	4,546,865	227.4	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-49a	694,135	4,546,233	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-50	693,075	4,545,372	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-51	694,040	4,545,311	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-52	693,507	4,544,751	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-52a	694,135	4,544,663	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-52b	694,578	4,547,672	226.8	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-52c	694,579	4,544,560	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-53	695,340	4,544,198	227.2	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-54	693,200	4,542,930	228.5	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-55	694,750	4,542,980	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-56	693,612	4,541,386	228.3	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-57	694,748	4,547,677	226.8	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-58	695,265	4,547,043	226.9	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-59	694,658	4,545,792	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0

To be continued on next page...

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Calculated:
6/8/2018 12:26 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

...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]
TRIV-60	694,668	4,546,454	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-61	695,358	4,545,418	226.8	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-61a	695,493	4,545,487	226.6	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-62	696,334	4,544,649	226.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-63	696,424	4,543,990	226.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-66	697,270	4,550,408	224.1	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-71	698,479	4,550,494	225.7	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-72	699,436	4,550,299	224.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-73	699,591	4,549,664	224.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-74	700,042	4,549,153	224.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-76	693,557	4,549,515	226.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-77	694,604	4,549,481	226.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-78	694,722	4,549,026	226.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-78a	694,072	4,547,926	226.8	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-80	693,422	4,544,051	228.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-82	693,450	4,542,211	228.8	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-84	698,608	4,549,608	224.7	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-86	696,353	4,549,622	226.0	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-87	694,736	4,554,248	223.6	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0
TRIV-90	695,166	4,555,096	222.5	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 ...	No	Acciona	AW132-3,000	3,000	132.0	112.5	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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6/8/2018 12:26 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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Calculated:
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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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US-SYRACUSE, NY 13202
(315) 471 0688

Calculated:
6/8/2018 12:26 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
1	9:53	33	0:25	4:11
2	8:37	31	0:24	3:38
3	8:33	32	0:24	3:36
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	0:28	7	0:05	0:14
9	38:43	86	0:37	19:37
10	53:44	68	0:58	12:57
11	49:17	109	0:36	22:19
12	9:33	40	0:21	4:49
21	17:43	51	0:28	8:52
22	25:31	58	0:43	11:35
23	139:45	215	0:58	61:25
24	106:31	110	1:06	32:10
25	81:10	126	1:00	24:58
26	18:27	65	0:28	7:00
27	6:41	30	0:19	3:10
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	26:25	84	0:29	6:57
34	10:37	40	0:24	3:03
35	8:47	38	0:21	2:34
37	29:14	70	0:29	7:17
38	28:17	78	0:29	7:13
39	0:00	0	0:00	0:00
40	16:29	38	0:32	3:45
41	11:38	49	0:21	5:54
42	21:27	78	0:23	11:03
43	19:12	69	0:25	9:49
44	39:35	65	0:59	11:46
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	70:57	172	0:43	28:31
52	78:11	172	0:43	31:25
53	79:56	174	0:43	32:05
54	77:10	174	0:34	30:21
55	72:59	172	0:35	28:26
56	64:10	164	0:36	24:32
57	57:13	153	0:36	21:42
58	51:09	142	0:36	19:06
59	53:34	119	0:40	17:52
60	161:59	252	1:26	68:21
61	73:20	88	0:57	20:44
62	102:16	167	1:03	30:00
63	97:06	165	0:58	29:12
64	124:11	160	1:18	47:30
65	8:58	36	0:22	2:44
66	8:03	35	0:22	2:32
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	0:33	7	0:06	0:16
70	78:30	160	0:58	27:44
71	11:48	35	0:27	4:45
72	6:42	29	0:20	2:27
73	15:16	40	0:30	5:39
74	17:38	44	0:32	8:01
75	21:43	55	0:31	10:47

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
76	8:18	24	0:26	2:00
77	0:00	0	0:00	0:00
78	83:32	142	1:19	37:54
79	123:25	185	1:07	57:17
80	18:23	78	0:23	8:01
81	16:44	44	0:31	6:28
82	52:18	100	0:41	15:52
83	128:54	106	1:35	61:45
84	105:58	173	0:59	43:21
85	80:50	128	1:00	35:29
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	8:31	36	0:21	3:54
92	10:11	42	0:21	4:41
93	12:50	49	0:23	5:55
94	12:18	51	0:21	5:40
95	19:16	80	0:23	8:57
96	19:46	64	0:24	9:11
97	11:14	48	0:19	5:11
98	29:11	76	0:28	13:35
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	43:20	65	0:51	18:35
103	0:00	0	0:00	0:00
104	80:15	106	0:52	37:38
105	50:51	78	0:46	23:43
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	21:23	65	0:25	11:04
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	5:39	26	0:19	2:09
129	0:00	0	0:00	0:00
130	5:55	27	0:19	2:11
131	9:55	34	0:25	3:58
132	51:53	81	0:59	16:18
133	50:22	90	0:44	13:19
134	59:10	120	0:39	18:13
135	56:06	105	0:46	16:55
136	9:33	32	0:22	2:30
137	12:53	51	0:23	3:56
138	145:34	108	1:39	41:51
139	58:49	108	0:50	16:10
140	50:16	72	0:54	18:58
141	25:54	52	0:38	11:46
142	18:37	44	0:33	8:00
144	15:02	41	0:30	5:34
145	7:52	30	0:23	2:56
147	5:08	24	0:16	1:07

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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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]
148	81:26	101	1:14	23:53
149	141:25	124	1:36	38:38
150	98:22	124	0:58	49:24
151	97:10	112	0:59	49:27
152	32:45	83	0:33	10:24
153	21:02	48	0:35	8:26
154	25:52	52	0:38	10:06
155	42:07	76	0:44	14:09
156	32:51	99	0:29	15:01
157	0:00	0	0:00	0:00
158	13:12	37	0:29	5:38
159	87:05	195	0:52	36:45
160	65:58	124	0:50	29:47
161	70:30	119	0:48	32:28
162	16:40	64	0:24	6:33
163	15:25	43	0:29	5:08
164	6:01	28	0:19	2:43
165	31:05	89	0:29	13:57
166	28:07	83	0:29	12:07
167	39:33	102	0:30	13:16
168	51:02	107	0:37	19:05
169	123:37	169	1:13	42:10
170	119:32	151	1:05	33:08
171	160:40	164	1:24	74:37
172	73:39	131	0:45	20:20
173	46:14	76	0:58	14:55
174	71:17	146	0:49	25:49
175	149:11	214	1:20	59:28
176	9:41	34	0:25	4:08
177	10:21	35	0:26	4:09
178	10:21	35	0:26	4:09
179	11:29	37	0:27	4:36
180	9:44	35	0:24	3:52
181	10:50	37	0:25	4:13
182	12:00	40	0:26	4:32
183	13:16	40	0:28	4:55
184	37:47	98	0:38	13:58
185	6:35	28	0:20	2:38
186	72:07	128	0:57	21:10
187	46:54	103	0:40	22:45
188	81:28	122	0:57	24:36
189	8:24	32	0:23	2:59
190	0:00	0	0:00	0:00
191	55:23	87	0:43	28:31
192	27:57	52	0:41	11:16
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	42:28	68	0:49	16:45
215	35:11	61	0:44	13:41
216	42:37	70	0:47	16:02
217	0:00	0	0:00	0:00

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No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	33:42	92	0:31	15:43
225	13:01	45	0:25	6:00
226	14:09	48	0:25	6:32
227	24:30	60	0:36	7:37
228	24:14	72	0:33	9:21
229	26:30	75	0:35	10:06
230	31:53	89	0:33	14:02
231	32:33	91	0:33	14:31
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	65:50	136	0:38	32:32
235	67:47	140	0:37	33:32
236	67:23	142	0:37	33:21
237	8:30	37	0:21	2:45
238	63:04	110	0:55	28:39
239	60:37	84	0:56	27:48
240	25:01	85	0:27	11:38
241	30:39	81	0:28	14:17
242	29:04	88	0:28	13:32
243	23:49	72	0:29	11:03
244	24:48	80	0:25	11:33
245	22:43	82	0:24	10:34
246	21:24	80	0:24	9:57
247	14:31	55	0:23	6:42
248	9:50	34	0:25	4:09
249	18:50	48	0:31	8:29
250	32:38	58	0:42	9:04
251	34:35	60	0:42	9:43
252	17:15	60	0:26	5:21
253	10:52	42	0:24	3:30
254	39:52	60	0:50	10:59
255	28:21	60	0:35	13:09
256	0:00	0	0:00	0:00
257	36:26	140	0:25	16:29
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	75:12	69	1:26	36:00
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	42:14	76	0:58	13:43
279	134:56	189	1:08	39:07
280	100:45	124	1:01	32:01
281	67:26	94	0:57	23:27

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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	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]
282	35:54	100	0:37	15:31
283	27:05	78	0:33	9:10
284	43:12	120	0:33	19:19
285	117:48	215	0:57	36:06
286	207:01	190	2:03	96:26
287	222:53	158	2:03	106:32
288	21:48	61	0:30	11:01
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	69:44	132	0:52	30:03
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	60:26	126	0:38	27:41
295	31:59	87	0:29	14:41
296	48:49	116	0:43	17:26
297	48:24	92	0:43	15:19
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	6:31	27	0:21	2:43
305	6:44	28	0:21	2:47
306	0:00	0	0:00	0:00
307	144:13	122	1:42	42:55
308	66:29	132	0:59	21:03
309	80:23	159	0:42	31:03
310	146:10	187	1:04	62:49
311	132:48	174	1:03	48:07
312	132:16	170	1:05	54:10
313	128:49	172	1:02	47:23
314	141:47	187	1:01	46:03
315	125:31	167	0:58	40:10
316	111:44	155	0:57	35:29
317	82:30	84	1:25	23:04
318	111:45	100	1:34	31:45
319	0:00	0	0:00	0:00
320	48:29	66	0:54	13:31
321	19:52	40	0:37	5:11
322	3:09	16	0:16	0:45
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	42:11	68	0:44	12:02
327	68:36	104	0:47	20:44
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	111:35	110	1:23	32:33
380	86:36	98	1:10	25:21
381	74:10	90	0:57	21:42
382	74:53	94	0:54	22:06
383	63:38	86	0:52	18:33
384	55:40	74	0:54	15:53
385	34:11	56	0:45	9:25
386	18:16	56	0:23	5:10
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	23:52	77	0:28	10:16
390	14:56	45	0:25	6:54
391	56:30	134	0:44	22:42
393	22:20	54	0:33	6:54
394	16:08	40	0:32	6:47
395	50:28	130	0:31	18:41
398	0:00	0	0:00	0:00
399	37:53	62	0:45	10:37
400	0:00	0	0:00	0:00
401	23:38	48	0:36	6:27
402	60:20	98	0:50	19:48
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	8:54	32	0:24	3:34
406	0:00	0	0:00	0:00
407	16:17	64	0:23	6:55
408	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]
TRIV-07	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (1)	138:05	52:39
TRIV-08	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (2)	29:55	13:25
TRIV-09	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (3)	142:51	59:50
TRIV-10	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (5)	257:20	107:48
TRIV-10a	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (4)	217:15	69:18
TRIV-14	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (6)	113:12	35:20
TRIV-15	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (7)	226:24	93:33
TRIV-16	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (8)	53:50	18:39
TRIV-17	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (9)	161:32	72:48
TRIV-19	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (10)	217:11	83:27
TRIV-27	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (11)	40:57	19:03
TRIV-41	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (12)	93:18	27:19
TRIV-42	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (13)	103:43	40:31
TRIV-44	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (14)	336:35	137:47
TRIV-45	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (15)	53:24	22:26
TRIV-46	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (16)	60:38	27:28
TRIV-46a	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (17)	104:37	47:23
TRIV-47	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (18)	102:52	46:22
TRIV-48	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (19)	62:52	20:06
TRIV-49	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (20)	52:27	23:08

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_112HH

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No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (21)	38:33	16:04
TRIV-50	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (22)	29:54	10:05
TRIV-51	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (23)	70:40	27:34
TRIV-52	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (26)	10:57	4:24
TRIV-52a	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (25)	94:51	30:56
TRIV-52b	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (24)	84:44	28:38
TRIV-52c	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (27)	47:49	15:39
TRIV-53	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (28)	32:21	15:49
TRIV-54	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (29)	94:05	29:33
TRIV-55	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (30)	128:31	41:46
TRIV-56	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (31)	125:04	44:57
TRIV-57	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (32)	51:00	20:14
TRIV-58	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (33)	158:29	71:19
TRIV-59	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (34)	56:28	23:43
TRIV-60	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (35)	45:22	17:49
TRIV-61	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (36)	165:35	70:16
TRIV-61a	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (37)	297:37	126:35
TRIV-62	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (38)	235:30	67:11
TRIV-63	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (39)	22:01	10:34
TRIV-66	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (40)	64:01	28:38
TRIV-71	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (41)	426:41	165:40
TRIV-72	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (42)	271:30	93:24
TRIV-73	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (43)	337:44	132:31
TRIV-74	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (44)	91:04	38:04
TRIV-76	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (45)	220:02	74:49
TRIV-77	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (46)	209:57	65:42
TRIV-78	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (47)	128:52	64:13
TRIV-78a	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (48)	232:53	73:16
TRIV-80	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (49)	99:54	47:15
TRIV-82	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (50)	42:17	21:45
TRIV-84	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (51)	374:02	138:26
TRIV-86	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (52)	321:19	97:39
TRIV-87	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (53)	169:00	71:51
TRIV-90	Acciona AW132 3000 132.0 !O! hub: 112.5 m (TOT: 178.5 m) (54)	59:20	28:24

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.

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Calculated:
6/8/2018 1:22 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-08	695,393	4,555,358	222.1	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-09	693,543	4,553,744	224.2	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-10	695,148	4,553,817	223.9	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-10a	695,248	4,554,372	223.2	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-14	695,087	4,558,394	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-15	695,990	4,557,833	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-16	696,285	4,557,413	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-17	696,664	4,556,925	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-19	696,650	4,554,220	223.5	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-27	696,026	4,560,119	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-41	692,852	4,555,787	224.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-42	693,590	4,555,279	224.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-44	693,510	4,552,657	225.8	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-45	695,101	4,559,935	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-46	695,044	4,560,371	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-46a	694,816	4,560,369	222.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-47	694,421	4,556,942	223.3	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-48	693,276	4,557,174	223.9	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-49	694,102	4,546,865	227.4	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-49a	694,135	4,546,233	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-50	693,075	4,545,372	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-51	694,040	4,545,311	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-52	693,507	4,544,751	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-52a	694,135	4,544,663	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-52b	694,578	4,547,672	226.8	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-52c	694,579	4,544,560	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-53	695,340	4,544,198	227.2	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-54	693,200	4,542,930	228.5	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-55	694,750	4,542,980	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-56	693,612	4,541,386	228.3	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-57	694,748	4,547,677	226.8	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-58	695,265	4,547,043	226.9	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-59	694,658	4,545,792	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...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]
TRIV-60	694,668	4,546,454	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-61	695,358	4,545,418	226.8	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-61a	695,493	4,545,487	226.6	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-62	696,334	4,544,649	226.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-63	696,424	4,543,990	226.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-66	697,270	4,550,408	224.1	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-71	698,479	4,550,494	225.7	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-72	699,436	4,550,299	224.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-73	699,591	4,549,664	224.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-74	700,042	4,549,153	224.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-76	693,557	4,549,515	226.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-77	694,604	4,549,481	226.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-78	694,722	4,549,026	226.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-78a	694,072	4,547,926	226.8	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-80	693,422	4,544,051	228.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-82	693,450	4,542,211	228.8	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-84	698,608	4,549,608	224.7	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-86	696,353	4,549,622	226.0	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-87	694,736	4,554,248	223.6	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0
TRIV-90	695,166	4,555,096	222.5	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m...	No	Acciona	AW132-3,465	3,465	132.0	84.0	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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Calculated:
6/8/2018 1:22 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...continued from previous page

No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
1	7:19	32	0:22	3:05
2	6:19	29	0:20	2:39
3	6:11	29	0:19	2:36
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	8:48	40	0:18	4:32
9	28:29	71	0:35	14:19
10	27:33	46	0:45	6:22
11	44:18	119	0:33	20:14
12	6:19	35	0:16	3:11
21	12:56	46	0:25	6:27
22	19:09	56	0:36	8:39
23	134:20	229	0:57	60:24
24	92:45	95	1:09	27:16
25	82:57	118	1:02	24:58
26	13:46	62	0:24	5:12
27	4:29	27	0:15	2:07
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	21:52	76	0:27	5:41
34	7:47	39	0:19	2:13
35	6:09	34	0:17	1:47
37	22:39	62	0:27	5:35
38	22:18	70	0:26	5:39
39	0:00	0	0:00	0:00
40	0:00	0	0:00	0:00
41	7:30	41	0:16	3:48
42	12:27	61	0:18	6:24
43	12:13	54	0:20	6:12
44	32:37	72	0:51	9:36
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	49:23	134	0:36	19:17
52	56:38	161	0:35	22:19
53	61:11	167	0:34	24:19
54	61:19	166	0:32	23:58
55	58:05	164	0:34	22:27
56	49:00	153	0:34	18:45
57	41:59	141	0:32	16:08
58	36:00	131	0:30	13:51
59	40:09	98	0:39	12:58
60	162:08	282	1:19	65:33
61	40:18	82	0:50	11:40
62	72:46	133	1:01	20:25
63	72:28	149	0:57	21:05
64	122:28	164	1:15	48:20
65	6:30	34	0:18	1:56
66	5:45	31	0:17	1:45
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	5:42	36	0:13	2:56
70	55:30	125	0:48	20:35
71	9:04	33	0:24	3:38
72	4:45	26	0:16	1:44
73	12:14	40	0:28	4:31
74	14:07	42	0:30	6:21
75	16:35	52	0:29	8:12

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...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]
76	0:00	0	0:00	0:00
77	0:00	0	0:00	0:00
78	72:12	146	1:13	32:20
79	118:27	195	0:55	54:59
80	14:40	80	0:19	6:25
81	13:24	44	0:28	5:06
82	47:07	92	0:41	14:05
83	136:43	120	1:27	65:00
84	102:17	179	1:01	40:01
85	70:06	129	0:51	30:19
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	5:42	32	0:16	2:36
92	6:38	37	0:16	3:03
93	8:28	42	0:18	3:54
94	7:58	43	0:17	3:40
95	10:53	54	0:18	5:01
96	16:18	68	0:19	7:34
97	9:43	52	0:16	4:29
98	24:33	81	0:24	11:25
99	0:11	11	0:01	0:04
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	40:53	67	0:51	17:19
103	0:00	0	0:00	0:00
104	78:11	117	0:52	36:30
105	53:20	90	0:45	24:50
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	17:49	69	0:20	9:13
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	3:49	24	0:14	1:27
129	0:00	0	0:00	0:00
130	4:00	25	0:15	1:28
131	7:15	32	0:21	2:54
132	49:25	101	0:50	14:50
133	36:47	82	0:36	9:34
134	48:37	106	0:39	14:44
135	40:12	88	0:42	11:54
136	0:00	0	0:00	0:00
137	6:14	31	0:19	2:13
138	133:47	96	1:40	37:39
139	23:33	68	0:33	6:37
140	50:18	75	0:56	18:43
141	21:57	51	0:37	9:52
142	14:59	43	0:31	6:24
144	11:57	39	0:28	4:25
145	5:38	28	0:18	2:06
147	0:00	0	0:00	0:00

To be continued on next page...

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6/8/2018 1:22 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...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]
148	82:48	116	1:06	22:53
149	121:41	110	1:25	32:09
150	87:07	136	0:58	43:22
151	99:04	124	0:59	50:09
152	16:05	60	0:23	5:22
153	17:43	48	0:34	7:01
154	22:53	55	0:37	8:46
155	42:57	94	0:44	13:51
156	26:38	101	0:27	12:09
157	0:00	0	0:00	0:00
158	10:16	35	0:26	4:21
159	76:00	196	0:53	31:52
160	54:52	112	0:50	24:39
161	70:12	130	0:48	32:25
162	11:55	61	0:19	4:38
163	12:19	49	0:26	4:01
164	4:02	26	0:14	1:48
165	23:20	83	0:25	10:24
166	21:23	79	0:26	9:09
167	28:47	86	0:27	9:40
168	44:46	114	0:37	16:21
169	123:13	170	1:12	39:53
170	112:51	134	1:08	29:55
171	148:03	174	1:14	68:13
172	65:14	124	0:46	17:36
173	41:04	88	0:49	12:45
174	41:04	120	0:42	15:51
175	150:58	210	1:17	60:00
176	7:02	30	0:21	2:59
177	7:49	33	0:22	3:08
178	7:49	33	0:22	3:08
179	8:45	35	0:23	3:29
180	7:14	32	0:21	2:51
181	8:02	35	0:21	3:05
182	9:03	36	0:23	3:21
183	10:15	39	0:24	3:43
184	35:29	114	0:37	13:00
185	4:53	40	0:16	1:58
186	66:44	122	0:46	18:54
187	35:17	94	0:32	17:01
188	62:14	105	0:56	18:29
189	6:03	31	0:18	2:08
190	0:00	0	0:00	0:00
191	55:02	97	0:43	28:18
192	25:04	54	0:41	10:02
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	41:29	71	0:50	15:55
215	33:08	65	0:44	12:32
216	41:52	75	0:48	15:12
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	21:17	69	0:28	9:51
225	9:07	39	0:20	4:11
226	9:56	42	0:21	4:34
227	19:00	62	0:28	5:46
228	18:14	70	0:29	7:01
229	20:24	74	0:31	7:44
230	24:20	84	0:31	10:41
231	24:38	84	0:30	10:57
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	57:07	142	0:36	28:20
235	58:58	144	0:36	29:18
236	58:00	145	0:35	28:50
237	5:58	34	0:17	1:55
238	60:21	121	0:56	27:03
239	59:22	110	0:57	26:47
240	15:46	60	0:23	7:16
241	23:41	86	0:24	11:01
242	17:39	65	0:24	8:10
243	16:09	58	0:25	7:27
244	15:27	67	0:21	7:10
245	12:56	59	0:20	5:59
246	12:04	58	0:19	5:35
247	9:17	46	0:18	4:16
248	7:17	30	0:21	3:04
249	14:43	46	0:29	6:35
250	15:19	38	0:31	4:04
251	19:45	44	0:34	5:20
252	13:51	65	0:23	4:16
253	8:00	40	0:19	2:33
254	15:23	36	0:33	4:00
255	26:54	70	0:31	12:27
256	0:00	0	0:00	0:00
257	22:14	113	0:20	9:59
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	94:03	88	1:28	44:31
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	35:31	80	0:50	11:19
279	118:33	166	1:11	32:40
280	99:16	112	1:03	30:19
281	81:00	126	0:58	26:19

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...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]
282	30:27	112	0:29	13:21
283	26:50	112	0:31	9:43
284	31:31	111	0:26	14:03
285	105:23	206	0:58	31:29
286	172:27	156	2:04	79:05
287	226:19	169	2:04	107:51
288	15:39	53	0:26	7:53
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	61:53	126	0:53	26:14
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	50:50	116	0:33	23:36
295	22:32	76	0:25	10:19
296	16:00	63	0:22	7:18
297	49:21	99	0:43	14:58
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	4:29	24	0:16	1:52
305	4:40	25	0:16	1:55
306	0:00	0	0:00	0:00
307	145:38	112	1:42	41:27
308	36:55	125	0:31	14:16
309	75:07	166	0:41	27:36
310	138:40	180	1:05	58:19
311	148:27	207	1:04	50:11
312	131:14	172	1:05	52:12
313	138:37	207	1:03	48:23
314	136:28	179	1:02	44:03
315	114:26	159	0:59	36:38
316	98:33	147	0:59	31:31
317	51:00	66	0:57	14:20
318	80:09	84	1:21	22:51
319	0:00	0	0:00	0:00
320	24:03	44	0:41	6:25
321	0:00	0	0:00	0:00
322	0:00	0	0:00	0:00
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	28:49	54	0:40	8:00
327	62:18	92	0:49	18:31
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	85:49	96	1:03	25:22
380	70:01	84	0:59	20:21
381	58:33	76	0:56	16:48
382	62:22	80	0:56	18:03
383	50:07	71	0:51	14:20
384	36:21	56	0:48	10:05
385	12:38	32	0:30	3:16
386	12:48	48	0:19	3:34
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	17:50	73	0:24	7:38
390	15:06	56	0:22	6:57
391	37:56	112	0:36	15:17
393	18:55	55	0:32	5:40
394	13:17	40	0:30	5:33
395	36:41	109	0:27	13:21
398	0:00	0	0:00	0:00
399	20:13	42	0:36	5:26
400	0:00	0	0:00	0:00
401	7:39	26	0:22	1:57
402	66:45	110	0:51	20:38
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	6:30	31	0:20	2:36
406	0:00	0	0:00	0:00
407	11:24	60	0:18	4:49
408	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]
TRIV-07	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (1)	115:38	45:00
TRIV-08	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (2)	18:06	8:02
TRIV-09	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (3)	112:35	48:14
TRIV-10	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (5)	266:42	111:05
TRIV-10a	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (4)	150:10	48:15
TRIV-14	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (6)	97:14	29:23
TRIV-15	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (7)	237:07	95:15
TRIV-16	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (8)	37:27	14:10
TRIV-17	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (9)	132:13	59:01
TRIV-19	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (10)	159:58	63:02
TRIV-27	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (11)	26:13	12:07
TRIV-41	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (12)	58:36	17:46
TRIV-42	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (13)	116:49	43:47
TRIV-44	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (14)	280:37	115:29
TRIV-45	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (15)	39:44	16:36
TRIV-46	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (16)	44:25	20:00
TRIV-46a	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (17)	89:36	40:43
TRIV-47	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (18)	74:50	33:16
TRIV-48	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (19)	51:52	16:20
TRIV-49	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (20)	39:05	17:00

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SHADOW - Main Result

Calculation: 2018-06-07_AW132_84HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (21)	29:36	12:17
TRIV-50	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (22)	26:58	8:48
TRIV-51	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (23)	67:30	27:27
TRIV-52	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (26)	8:21	3:20
TRIV-52a	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (25)	88:59	27:59
TRIV-52b	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (24)	54:35	17:55
TRIV-52c	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (27)	22:07	7:46
TRIV-53	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (28)	22:33	11:20
TRIV-54	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (29)	72:15	22:17
TRIV-55	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (30)	111:52	35:00
TRIV-56	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (31)	89:34	34:25
TRIV-57	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (32)	41:17	16:25
TRIV-58	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (33)	150:56	67:32
TRIV-59	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (34)	42:58	17:57
TRIV-60	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (35)	33:10	12:58
TRIV-61	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (36)	161:54	65:52
TRIV-61a	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (37)	291:08	119:54
TRIV-62	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (38)	187:45	52:24
TRIV-63	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (39)	22:40	10:52
TRIV-66	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (40)	48:21	21:39
TRIV-71	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (41)	375:10	144:55
TRIV-72	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (42)	249:50	85:38
TRIV-73	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (43)	291:50	114:36
TRIV-74	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (44)	79:01	32:31
TRIV-76	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (45)	167:05	58:20
TRIV-77	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (46)	170:17	52:23
TRIV-78	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (47)	124:43	62:02
TRIV-78a	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (48)	214:29	64:57
TRIV-80	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (49)	93:11	44:12
TRIV-82	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (50)	37:22	19:14
TRIV-84	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (51)	353:22	130:25
TRIV-86	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (52)	289:43	85:24
TRIV-87	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (53)	155:58	67:12
TRIV-90	Acciona AW132 3465 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (54)	62:51	30:43

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.

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Calculated:
6/8/2018 2:15 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-08	695,393	4,555,358	222.1	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-09	693,543	4,553,744	224.2	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-10	695,148	4,553,817	223.9	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-10a	695,248	4,554,372	223.2	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-14	695,087	4,558,394	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-15	695,990	4,557,833	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-16	696,285	4,557,413	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-17	696,664	4,556,925	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-19	696,650	4,554,220	223.5	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-27	696,026	4,560,119	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-41	692,852	4,555,787	224.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-42	693,590	4,555,279	224.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-44	693,510	4,552,657	225.8	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-45	695,101	4,559,935	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-46	695,044	4,560,371	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-46a	694,816	4,560,369	222.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-47	694,421	4,556,942	223.3	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-48	693,276	4,557,174	223.9	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-49	694,102	4,546,865	227.4	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-49a	694,135	4,546,233	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-50	693,075	4,545,372	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-51	694,040	4,545,311	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-52	693,507	4,544,751	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-52a	694,135	4,544,663	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-52b	694,578	4,547,672	226.8	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-52c	694,579	4,544,560	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-53	695,340	4,544,198	227.2	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-54	693,200	4,542,930	228.5	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-55	694,750	4,542,980	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-56	693,612	4,541,386	228.3	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-57	694,748	4,547,677	226.8	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-58	695,265	4,547,043	226.9	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-59	694,658	4,545,792	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0

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Calculated:
6/8/2018 2:15 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...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]
TRIV-60	694,668	4,546,454	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-61	695,358	4,545,418	226.8	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-61a	695,493	4,545,487	226.6	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-62	696,334	4,544,649	226.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-63	696,424	4,543,990	226.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-66	697,270	4,550,408	224.1	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-71	698,479	4,550,494	225.7	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-72	699,436	4,550,299	224.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-73	699,591	4,549,664	224.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-74	700,042	4,549,153	224.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-76	693,557	4,549,515	226.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-77	694,604	4,549,481	226.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-78	694,722	4,549,026	226.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-78a	694,072	4,547,926	226.8	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-80	693,422	4,544,051	228.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-82	693,450	4,542,211	228.8	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-84	698,608	4,549,608	224.7	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-86	696,353	4,549,622	226.0	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-87	694,736	4,554,248	223.6	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0
TRIV-90	695,166	4,555,096	222.5	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 ...	No	Acciona	AW140-3,000	3,000	140.0	105.0	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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Calculated:
6/8/2018 2:15 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...continued from previous page

No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

Calculation Results

Shadow receptor

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]
1	10:18	35	0:26	4:22
2	8:57	32	0:24	3:46
3	8:44	32	0:24	3:40
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	7:19	28	0:19	3:46
9	40:43	88	0:39	20:35
10	53:55	68	1:00	12:58
11	52:38	118	0:38	23:49
12	9:44	42	0:21	4:54
21	18:19	53	0:29	9:10
22	26:33	60	0:44	12:02
23	153:36	228	1:01	67:50
24	112:57	109	1:11	33:56
25	93:31	135	1:04	28:30
26	19:12	70	0:28	7:17
27	6:47	32	0:19	3:12
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	28:01	84	0:30	7:21
34	11:02	42	0:24	3:10
35	8:59	39	0:22	2:37
37	29:52	70	0:31	7:27
38	28:52	76	0:30	7:22
39	0:00	0	0:00	0:00
40	15:22	36	0:32	3:29
41	11:48	50	0:21	5:59
42	21:45	80	0:23	11:13
43	19:31	69	0:25	9:59
44	42:05	72	0:59	12:29
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	73:02	174	0:44	29:17
52	80:03	175	0:44	32:10
53	82:00	176	0:43	32:57
54	79:31	175	0:36	31:15
55	75:38	174	0:37	29:22
56	66:13	170	0:38	25:18
57	58:58	158	0:38	22:24
58	53:24	148	0:38	20:03
59	55:20	118	0:43	18:23
60	181:52	266	1:30	75:43
61	74:21	88	0:58	20:58
62	104:59	167	1:07	30:41
63	100:20	167	1:02	30:03
64	139:30	166	1:24	54:08
65	9:16	38	0:23	2:49
66	8:10	34	0:21	2:33
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	5:01	27	0:14	2:35
70	83:52	166	0:59	29:48
71	12:19	38	0:28	4:58
72	6:55	30	0:21	2:32
73	16:08	44	0:32	5:58
74	18:40	46	0:34	8:28
75	22:46	58	0:33	11:18

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

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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]
76	4:29	18	0:20	1:04
77	0:00	0	0:00	0:00
78	90:36	149	1:24	40:54
79	136:18	193	1:08	63:05
80	19:14	83	0:24	8:23
81	17:38	47	0:32	6:47
82	57:06	100	0:43	17:14
83	143:36	112	1:39	68:34
84	119:09	182	1:03	48:03
85	88:31	137	1:01	38:41
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	8:38	38	0:21	3:57
92	10:17	44	0:21	4:44
93	13:04	51	0:23	6:01
94	12:29	51	0:21	5:45
95	19:22	82	0:23	9:00
96	20:03	67	0:24	9:18
97	11:55	51	0:19	5:30
98	30:14	79	0:29	14:04
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	48:50	70	0:54	20:51
103	0:00	0	0:00	0:00
104	88:53	112	0:55	41:36
105	57:25	84	0:48	26:45
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	21:44	68	0:25	11:15
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	5:44	27	0:19	2:11
129	0:00	0	0:00	0:00
130	6:02	29	0:20	2:14
131	10:12	36	0:26	4:05
132	58:28	90	1:01	18:08
133	51:56	88	0:46	13:43
134	61:55	119	0:42	18:59
135	57:37	106	0:49	17:21
136	8:54	30	0:22	2:18
137	8:53	36	0:23	3:10
138	158:15	107	1:46	45:11
139	58:39	108	0:49	16:05
140	57:14	76	0:58	21:32
141	28:09	56	0:41	12:45
142	19:41	46	0:35	8:27
144	15:46	42	0:32	5:50
145	8:06	32	0:23	3:02
147	4:35	23	0:15	0:59

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...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]
148	95:52	126	1:15	27:24
149	148:05	123	1:38	40:08
150	107:56	130	1:01	54:04
151	107:41	118	1:03	54:40
152	33:07	84	0:34	10:33
153	22:37	50	0:37	9:01
154	28:27	58	0:40	11:01
155	48:58	86	0:46	16:16
156	33:56	104	0:31	15:30
157	0:00	0	0:00	0:00
158	13:50	40	0:30	5:53
159	93:08	206	0:56	39:07
160	72:01	129	0:53	32:29
161	78:06	127	0:51	35:59
162	17:12	68	0:24	6:45
163	16:13	47	0:30	5:22
164	6:03	29	0:19	2:44
165	32:24	95	0:30	14:32
166	29:12	86	0:30	12:34
167	40:51	101	0:32	13:45
168	55:59	116	0:40	20:50
169	144:06	184	1:17	48:05
170	129:50	150	1:10	35:41
171	171:44	168	1:24	79:32
172	79:49	131	0:49	21:53
173	50:47	84	0:59	16:13
174	72:57	154	0:51	26:32
175	171:31	219	1:27	68:16
176	9:53	35	0:25	4:13
177	10:49	37	0:26	4:20
178	10:49	37	0:26	4:20
179	12:00	39	0:27	4:47
180	10:01	36	0:25	3:57
181	11:10	39	0:26	4:20
182	12:29	42	0:27	4:42
183	13:55	44	0:29	5:08
184	42:35	111	0:40	15:48
185	6:55	39	0:21	2:47
186	81:10	128	0:59	23:26
187	49:17	107	0:42	23:53
188	84:29	124	1:01	25:28
189	8:38	34	0:23	3:04
190	0:00	0	0:00	0:00
191	60:58	92	0:46	31:22
192	31:08	55	0:44	12:31
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	48:39	73	0:52	18:58
215	39:57	67	0:47	15:21
216	48:59	75	0:51	18:10
217	0:00	0	0:00	0:00

To be continued on next page...

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Calculated:
6/8/2018 2:15 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	34:56	95	0:32	16:17
225	13:21	46	0:25	6:09
226	14:26	49	0:26	6:39
227	24:58	64	0:35	7:45
228	25:07	77	0:34	9:41
229	27:30	79	0:36	10:28
230	32:51	92	0:34	14:27
231	33:36	95	0:34	14:59
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	68:33	142	0:40	33:53
235	70:29	146	0:39	34:52
236	69:47	148	0:39	34:32
237	8:35	38	0:21	2:47
238	71:35	122	0:59	32:23
239	70:41	111	1:00	32:15
240	25:18	84	0:28	11:45
241	31:36	84	0:29	14:43
242	29:47	91	0:29	13:52
243	24:32	74	0:30	11:23
244	25:17	82	0:26	11:46
245	22:59	84	0:25	10:41
246	21:39	82	0:24	10:04
247	14:39	57	0:23	6:45
248	10:11	35	0:26	4:18
249	19:44	49	0:33	8:53
250	32:37	56	0:43	9:03
251	35:03	60	0:44	9:49
252	18:31	67	0:28	5:44
253	11:09	43	0:24	3:35
254	39:13	58	0:50	10:46
255	30:22	66	0:36	14:04
256	0:00	0	0:00	0:00
257	36:53	144	0:25	16:41
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	91:36	78	1:33	43:36
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	45:21	81	0:59	14:40
279	143:37	191	1:14	41:18
280	112:16	123	1:05	35:19
281	81:22	109	1:00	27:47

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...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]
282	38:26	111	0:38	16:39
283	32:16	105	0:34	11:28
284	44:39	124	0:35	19:58
285	126:17	224	1:01	38:33
286	226:37	200	2:11	105:17
287	247:16	166	2:11	117:58
288	22:30	63	0:31	11:22
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	77:03	140	0:55	33:03
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	62:03	127	0:37	28:32
295	32:15	89	0:30	14:49
296	46:57	115	0:42	16:53
297	59:06	108	0:45	18:15
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	6:41	28	0:21	2:47
305	6:53	29	0:21	2:50
306	0:00	0	0:00	0:00
307	168:13	121	1:49	49:03
308	65:25	134	0:59	20:47
309	93:26	185	0:44	35:13
310	164:09	196	1:08	70:10
311	156:02	195	1:07	55:33
312	150:14	181	1:08	60:55
313	149:57	190	1:06	54:19
314	157:54	193	1:05	51:21
315	136:48	171	1:02	43:55
316	122:32	157	1:01	39:02
317	83:16	82	1:28	23:17
318	115:17	98	1:40	32:44
319	0:00	0	0:00	0:00
320	48:29	64	0:56	13:29
321	18:12	38	0:37	4:43
322	0:28	6	0:06	0:06
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	43:16	68	0:46	12:19
327	74:46	103	0:51	22:28
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	117:25	108	1:31	34:11
380	89:12	97	1:12	26:11
381	76:52	89	1:01	22:26
382	78:23	92	0:58	23:04
383	66:10	84	0:55	19:14
384	56:36	73	0:56	16:07
385	33:34	54	0:46	9:13
386	18:16	56	0:24	5:10
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	24:48	82	0:29	10:39
390	16:55	51	0:26	7:48
391	57:39	134	0:44	23:11
393	24:00	57	0:35	7:22
394	17:13	43	0:33	7:14
395	52:11	132	0:32	19:20
398	0:00	0	0:00	0:00
399	37:59	60	0:47	10:37
400	0:00	0	0:00	0:00
401	23:15	48	0:37	6:20
402	77:10	120	0:53	24:31
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	9:11	34	0:25	3:41
406	0:00	0	0:00	0:00
407	16:46	67	0:23	7:06
408	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]
TRIV-07	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (1)	144:35	55:35
TRIV-08	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (2)	30:26	13:39
TRIV-09	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (3)	154:56	64:55
TRIV-10	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (5)	290:14	121:06
TRIV-10a	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (4)	219:02	70:01
TRIV-14	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (6)	119:44	37:09
TRIV-15	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (7)	257:36	105:11
TRIV-16	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (8)	56:29	19:54
TRIV-17	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (9)	170:32	76:38
TRIV-19	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (10)	222:16	85:34
TRIV-27	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (11)	41:35	19:21
TRIV-41	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (12)	93:40	27:31
TRIV-42	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (13)	122:31	47:28
TRIV-44	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (14)	348:20	142:35
TRIV-45	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (15)	54:55	23:04
TRIV-46	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (16)	62:15	28:10
TRIV-46a	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (17)	110:19	49:55
TRIV-47	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (18)	103:45	46:37
TRIV-48	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (19)	65:47	21:02
TRIV-49	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (20)	53:37	23:34

To be continued on next page...

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6/8/2018 2:15 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_AW140_105HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (21)	39:34	16:31
TRIV-50	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (22)	33:04	11:05
TRIV-51	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (23)	81:51	32:34
TRIV-52	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (26)	11:26	4:36
TRIV-52a	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (25)	105:56	34:09
TRIV-52b	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (24)	87:51	29:24
TRIV-52c	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (27)	47:34	15:34
TRIV-53	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (28)	33:21	16:26
TRIV-54	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (29)	97:43	30:37
TRIV-55	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (30)	139:04	44:29
TRIV-56	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (31)	135:15	49:51
TRIV-57	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (32)	52:44	20:54
TRIV-58	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (33)	174:32	78:19
TRIV-59	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (34)	59:00	24:46
TRIV-60	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (35)	46:22	18:11
TRIV-61	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (36)	190:50	79:16
TRIV-61a	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (37)	327:26	136:40
TRIV-62	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (38)	251:15	71:20
TRIV-63	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (39)	25:30	12:15
TRIV-66	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (40)	66:32	29:47
TRIV-71	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (41)	446:25	173:46
TRIV-72	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (42)	287:41	98:43
TRIV-73	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (43)	377:25	145:39
TRIV-74	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (44)	98:48	41:10
TRIV-76	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (45)	228:27	78:23
TRIV-77	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (46)	216:42	67:27
TRIV-78	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (47)	140:35	69:56
TRIV-78a	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (48)	252:56	78:37
TRIV-80	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (49)	109:47	51:51
TRIV-82	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (50)	44:46	23:01
TRIV-84	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (51)	403:49	149:09
TRIV-86	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (52)	341:18	103:11
TRIV-87	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (53)	185:08	78:58
TRIV-90	Acciona AW140 3000 140.0 !O! hub: 105.0 m (TOT: 175.0 m) (54)	70:13	33:54

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.

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Calculated:
6/7/2018 3:01 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-08	695,393	4,555,358	222.1	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-09	693,543	4,553,744	224.2	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-10	695,148	4,553,817	223.9	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-10a	695,248	4,554,372	223.2	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-14	695,087	4,558,394	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-15	695,990	4,557,833	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-16	696,285	4,557,413	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-17	696,664	4,556,925	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-19	696,650	4,554,220	223.5	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-27	696,026	4,560,119	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-41	692,852	4,555,787	224.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-42	693,590	4,555,279	224.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-44	693,510	4,552,657	225.8	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-45	695,101	4,559,935	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-46	695,044	4,560,371	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-46a	694,816	4,560,369	222.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-47	694,421	4,556,942	223.3	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-48	693,276	4,557,174	223.9	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-49	694,102	4,546,865	227.4	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-49a	694,135	4,546,233	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-50	693,075	4,545,372	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-51	694,040	4,545,311	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-52	693,507	4,544,751	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-52a	694,135	4,544,663	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-52b	694,578	4,547,672	226.8	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-52c	694,579	4,544,560	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-53	695,340	4,544,198	227.2	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-54	693,200	4,542,930	228.5	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-55	694,750	4,542,980	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-56	693,612	4,541,386	228.3	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-57	694,748	4,547,677	226.8	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-58	695,265	4,547,043	226.9	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-59	694,658	4,545,792	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...Yes		GAMESA	G126 -2,625	2,625	126.0	84.0	0.0

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...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]
TRIV-60	694,668	4,546,454	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-61	695,358	4,545,418	226.8	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-61a	695,493	4,545,487	226.6	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-62	696,334	4,544,649	226.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-63	696,424	4,543,990	226.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-66	697,270	4,550,408	224.1	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-71	698,479	4,550,494	225.7	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-72	699,436	4,550,299	224.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-73	699,591	4,549,664	224.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-74	700,042	4,549,153	224.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-76	693,557	4,549,515	226.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-77	694,604	4,549,481	226.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-78	694,722	4,549,026	226.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-78a	694,072	4,547,926	226.8	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-80	693,422	4,544,051	228.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-82	693,450	4,542,211	228.8	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-84	698,608	4,549,608	224.7	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-86	696,353	4,549,622	226.0	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-87	694,736	4,554,248	223.6	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0
TRIV-90	695,166	4,555,096	222.5	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m)...	Yes	GAMESA	G126 -2,625	2,625	126.0	84.0	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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Calculated:
6/7/2018 3:01 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...continued from previous page

No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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Calculated:
6/7/2018 3:01 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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6/7/2018 3:01 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
1	6:45	29	0:20	2:50
2	5:50	28	0:19	2:27
3	5:39	27	0:18	2:23
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	7:33	37	0:16	3:53
9	26:07	68	0:34	13:08
10	23:04	43	0:41	5:17
11	42:13	118	0:32	19:20
12	5:45	33	0:15	2:53
21	11:58	45	0:24	5:58
22	17:34	53	0:33	7:56
23	126:22	221	0:55	56:57
24	86:36	92	1:06	25:23
25	75:34	109	0:59	22:47
26	12:38	58	0:23	4:46
27	4:04	25	0:14	1:55
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	20:29	76	0:26	5:20
34	7:10	36	0:18	2:03
35	5:48	32	0:17	1:41
37	21:21	60	0:26	5:15
38	21:03	68	0:25	5:19
39	0:00	0	0:00	0:00
40	0:00	0	0:00	0:00
41	6:48	38	0:15	3:26
42	11:04	56	0:17	5:40
43	11:15	51	0:20	5:42
44	30:10	70	0:49	8:52
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	45:28	129	0:34	17:41
52	52:03	150	0:34	20:23
53	56:51	166	0:33	22:30
54	57:55	164	0:31	22:37
55	54:34	162	0:33	21:05
56	45:32	148	0:32	17:28
57	38:23	137	0:30	14:49
58	32:36	125	0:28	12:38
59	36:59	94	0:37	11:55
60	148:37	270	1:16	60:16
61	37:30	80	0:48	10:52
62	66:17	128	0:58	18:31
63	65:56	136	0:54	19:00
64	116:38	159	1:13	46:06
65	5:59	33	0:17	1:46
66	5:13	30	0:16	1:35
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	4:51	33	0:12	2:30
70	51:35	123	0:46	19:08
71	8:29	33	0:23	3:24
72	4:19	26	0:15	1:35
73	11:25	39	0:27	4:13
74	12:57	40	0:28	5:49
75	15:23	48	0:28	7:36

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

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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]
76	0:00	0	0:00	0:00
77	0:00	0	0:00	0:00
78	66:48	142	1:10	29:53
79	111:54	193	0:52	52:03
80	13:32	77	0:18	5:56
81	12:27	42	0:27	4:44
82	44:33	90	0:39	13:18
83	129:46	117	1:23	61:44
84	94:33	170	0:58	36:58
85	64:58	124	0:49	28:04
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	5:07	30	0:15	2:20
92	5:59	34	0:15	2:45
93	7:45	39	0:17	3:34
94	7:14	40	0:16	3:19
95	9:50	51	0:17	4:32
96	15:32	66	0:19	7:12
97	9:18	51	0:15	4:17
98	23:03	80	0:23	10:43
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	37:49	63	0:49	16:00
103	0:00	0	0:00	0:00
104	73:47	116	0:50	34:27
105	50:51	88	0:43	23:41
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	17:11	68	0:20	8:53
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	3:29	22	0:14	1:19
129	0:00	0	0:00	0:00
130	3:43	23	0:14	1:22
131	6:41	30	0:20	2:40
132	45:33	95	0:47	13:38
133	33:39	82	0:34	8:44
134	45:42	106	0:38	13:49
135	36:36	86	0:40	10:49
136	0:00	0	0:00	0:00
137	5:41	29	0:18	2:01
138	126:04	94	1:35	35:24
139	21:50	66	0:32	6:08
140	46:20	71	0:53	17:15
141	20:13	48	0:35	9:05
142	13:48	40	0:30	5:53
144	11:06	38	0:27	4:06
145	5:13	26	0:18	1:57
147	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

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	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]
148	78:16	114	1:04	21:34
149	116:29	108	1:23	30:39
150	76:36	118	0:55	38:03
151	92:55	122	0:57	47:02
152	13:12	55	0:22	4:31
153	16:27	47	0:32	6:31
154	21:03	52	0:35	8:04
155	39:33	88	0:42	12:44
156	25:16	101	0:25	11:32
157	0:00	0	0:00	0:00
158	9:31	34	0:25	4:02
159	71:05	191	0:50	29:50
160	50:46	108	0:48	22:48
161	66:26	126	0:46	30:41
162	10:59	57	0:19	4:16
163	11:24	42	0:26	3:42
164	3:38	22	0:14	1:37
165	21:35	80	0:25	9:37
166	19:49	75	0:24	8:29
167	26:15	84	0:26	8:50
168	41:35	110	0:35	15:10
169	116:40	161	1:10	37:34
170	105:40	131	1:05	27:55
171	140:02	172	1:12	64:30
172	61:40	122	0:45	16:35
173	38:03	84	0:46	11:48
174	35:24	109	0:40	14:00
175	142:40	204	1:14	56:41
176	6:32	29	0:20	2:46
177	7:09	32	0:21	2:52
178	7:09	32	0:21	2:52
179	7:59	33	0:22	3:11
180	6:39	32	0:20	2:37
181	7:27	34	0:21	2:52
182	8:28	36	0:21	3:08
183	9:33	38	0:23	3:28
184	32:45	109	0:36	11:57
185	4:17	32	0:15	1:43
186	62:41	121	0:42	17:42
187	32:30	90	0:31	15:41
188	57:05	100	0:53	16:55
189	5:38	29	0:18	1:59
190	0:00	0	0:00	0:00
191	52:17	96	0:41	26:53
192	23:09	50	0:39	9:16
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	38:22	68	0:47	14:44
215	30:43	62	0:42	11:38
216	38:46	71	0:46	14:04
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	19:20	66	0:26	8:56
225	8:27	38	0:20	3:53
226	9:08	40	0:20	4:12
227	17:47	60	0:27	5:23
228	16:58	66	0:28	6:31
229	18:55	70	0:30	7:10
230	22:31	80	0:29	9:54
231	23:07	81	0:29	10:16
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	54:39	138	0:35	27:09
235	56:22	141	0:35	28:02
236	55:13	143	0:34	27:28
237	5:24	32	0:16	1:44
238	55:42	115	0:53	24:57
239	54:31	104	0:55	24:34
240	14:20	57	0:23	6:36
241	21:22	85	0:24	9:56
242	16:05	61	0:24	7:26
243	14:49	56	0:24	6:50
244	13:44	62	0:20	6:22
245	11:42	55	0:19	5:24
246	10:54	54	0:18	5:02
247	8:34	44	0:17	3:56
248	6:46	30	0:20	2:51
249	13:33	43	0:28	6:04
250	12:33	34	0:28	3:17
251	16:53	40	0:31	4:32
252	12:52	61	0:22	3:58
253	7:19	37	0:19	2:20
254	11:30	30	0:28	2:56
255	25:51	69	0:30	11:58
256	0:00	0	0:00	0:00
257	20:07	106	0:19	9:01
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	89:16	85	1:26	42:17
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	32:49	76	0:47	10:26
279	110:32	161	1:08	30:20
280	93:51	110	1:00	28:33
281	75:07	124	0:55	24:24

To be continued on next page...

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6/7/2018 3:01 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...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]
282	28:18	108	0:27	12:26
283	24:16	105	0:29	8:42
284	29:01	108	0:25	12:56
285	98:50	201	0:56	29:28
286	157:49	146	1:59	72:21
287	212:49	166	1:58	101:27
288	14:21	52	0:25	7:14
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	57:07	121	0:50	24:11
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	48:35	114	0:32	22:33
295	21:04	74	0:25	9:39
296	14:53	62	0:21	6:47
297	46:40	98	0:42	14:09
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	4:12	24	0:15	1:45
305	4:19	25	0:16	1:46
306	0:00	0	0:00	0:00
307	137:25	110	1:38	39:01
308	26:01	107	0:25	10:18
309	69:53	162	0:40	25:40
310	127:37	171	1:02	53:39
311	137:22	203	1:01	46:25
312	121:08	166	1:02	48:09
313	126:25	191	1:01	44:19
314	127:42	174	0:59	41:02
315	105:59	151	0:57	33:55
316	90:30	141	0:56	28:57
317	46:22	64	0:54	12:59
318	72:27	82	1:12	20:45
319	0:00	0	0:00	0:00
320	19:52	40	0:37	5:15
321	0:00	0	0:00	0:00
322	0:00	0	0:00	0:00
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	25:55	52	0:38	7:09
327	59:03	92	0:46	17:31
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	80:17	94	0:59	23:42
380	65:30	82	0:56	19:00
381	54:04	72	0:54	15:28
382	58:07	78	0:53	16:47
383	46:16	68	0:49	13:12
384	32:35	54	0:45	8:59
385	9:21	28	0:25	2:23
386	11:57	46	0:19	3:19
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	16:25	69	0:23	7:01
390	14:15	54	0:22	6:34
391	34:27	106	0:34	13:55
393	17:37	54	0:30	5:15
394	12:14	39	0:28	5:06
395	33:56	106	0:26	12:16
398	0:00	0	0:00	0:00
399	16:58	40	0:32	4:31
400	0:00	0	0:00	0:00
401	5:13	22	0:18	1:18
402	63:03	108	0:48	19:25
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	5:59	29	0:19	2:23
406	0:00	0	0:00	0:00
407	10:35	55	0:18	4:28
408	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]
TRIV-07	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (1)	108:14	42:01
TRIV-08	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (2)	16:15	7:12
TRIV-09	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (3)	104:23	44:42
TRIV-10	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (5)	253:26	105:48
TRIV-10a	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (4)	141:28	45:10
TRIV-14	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (6)	90:40	27:19
TRIV-15	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (7)	220:44	89:02
TRIV-16	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (8)	34:37	13:05
TRIV-17	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (9)	122:35	54:41
TRIV-19	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (10)	147:49	58:41
TRIV-27	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (11)	24:11	11:10
TRIV-41	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (12)	54:56	16:36
TRIV-42	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (13)	107:08	40:18
TRIV-44	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (14)	266:00	109:35
TRIV-45	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (15)	36:49	15:22
TRIV-46	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (16)	40:57	18:26
TRIV-46a	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (17)	84:50	38:40
TRIV-47	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (18)	70:25	31:19
TRIV-48	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (19)	48:46	15:17
TRIV-49	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (20)	36:29	15:52

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_SG126_84HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (21)	27:36	11:27
TRIV-50	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (22)	25:00	8:08
TRIV-51	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (23)	62:46	25:37
TRIV-52	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (26)	7:38	3:03
TRIV-52a	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (25)	83:47	26:15
TRIV-52b	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (24)	49:01	16:06
TRIV-52c	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (27)	18:05	6:37
TRIV-53	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (28)	20:47	10:27
TRIV-54	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (29)	66:17	20:24
TRIV-55	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (30)	105:26	32:56
TRIV-56	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (31)	79:46	30:51
TRIV-57	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (32)	38:49	15:29
TRIV-58	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (33)	142:36	63:51
TRIV-59	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (34)	39:40	16:33
TRIV-60	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (35)	30:49	12:03
TRIV-61	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (36)	151:44	61:44
TRIV-61a	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (37)	275:52	113:33
TRIV-62	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (38)	179:07	49:48
TRIV-63	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (39)	21:09	10:08
TRIV-66	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (40)	44:42	20:01
TRIV-71	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (41)	361:16	139:08
TRIV-72	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (42)	235:07	79:41
TRIV-73	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (43)	269:44	106:35
TRIV-74	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (44)	73:10	30:04
TRIV-76	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (45)	155:56	54:21
TRIV-77	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (46)	161:29	49:34
TRIV-78	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (47)	117:38	58:31
TRIV-78a	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (48)	204:00	61:33
TRIV-80	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (49)	87:16	41:28
TRIV-82	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (50)	35:36	18:19
TRIV-84	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (51)	334:15	123:24
TRIV-86	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (52)	275:51	81:05
TRIV-87	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (53)	146:47	63:19
TRIV-90	GAMESA G126 2625 126.0 !O! hub: 84.0 m (TOT: 147.0 m) (54)	59:35	29:11

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.

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Calculated:
6/7/2018 2:23 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-08	695,393	4,555,358	222.1	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-09	693,543	4,553,744	224.2	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-10	695,148	4,553,817	223.9	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-10a	695,248	4,554,372	223.2	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-14	695,087	4,558,394	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-15	695,990	4,557,833	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-16	696,285	4,557,413	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-17	696,664	4,556,925	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-19	696,650	4,554,220	223.5	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-27	696,026	4,560,119	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-41	692,852	4,555,787	224.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-42	693,590	4,555,279	224.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-44	693,510	4,552,657	225.8	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-45	695,101	4,559,935	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-46	695,044	4,560,371	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-46a	694,816	4,560,369	222.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-47	694,421	4,556,942	223.3	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-48	693,276	4,557,174	223.9	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-49	694,102	4,546,865	227.4	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-49a	694,135	4,546,233	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-50	693,075	4,545,372	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-51	694,040	4,545,311	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-52	693,507	4,544,751	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-52a	694,135	4,544,663	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-52b	694,578	4,547,672	226.8	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-52c	694,579	4,544,560	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-53	695,340	4,544,198	227.2	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-54	693,200	4,542,930	228.5	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-55	694,750	4,542,980	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-56	693,612	4,541,386	228.3	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-57	694,748	4,547,677	226.8	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-58	695,265	4,547,043	226.9	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-59	694,658	4,545,792	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

...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]
TRIV-60	694,668	4,546,454	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-61	695,358	4,545,418	226.8	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-61a	695,493	4,545,487	226.6	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-62	696,334	4,544,649	226.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-63	696,424	4,543,990	226.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-66	697,270	4,550,408	224.1	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-71	698,479	4,550,494	225.7	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-72	699,436	4,550,299	224.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-73	699,591	4,549,664	224.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-74	700,042	4,549,153	224.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-76	693,557	4,549,515	226.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-77	694,604	4,549,481	226.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-78	694,722	4,549,026	226.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-78a	694,072	4,547,926	226.8	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-80	693,422	4,544,051	228.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-82	693,450	4,542,211	228.8	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-84	698,608	4,549,608	224.7	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-86	696,353	4,549,622	226.0	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-87	694,736	4,554,248	223.6	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0
TRIV-90	695,166	4,555,096	222.5	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m...	Yes	GAMESA	G132-3,550	3,550	132.0	114.0	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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6/7/2018 2:23 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

Calculation Results

Shadow receptor

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]
1	9:59	33	0:25	4:14
2	8:43	30	0:24	3:41
3	8:40	31	0:24	3:39
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	0:00	0	0:00	0:00
9	39:14	87	0:37	19:53
10	55:01	70	0:58	13:17
11	49:15	110	0:36	22:16
12	9:45	41	0:21	4:55
21	17:54	52	0:28	8:58
22	25:46	59	0:44	11:41
23	139:25	214	0:58	61:14
24	106:53	110	1:06	32:19
25	80:49	124	1:00	24:53
26	18:46	65	0:28	7:07
27	6:49	30	0:20	3:14
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	26:26	84	0:29	6:58
34	10:47	40	0:23	3:06
35	8:50	36	0:21	2:35
37	29:33	70	0:29	7:22
38	28:28	78	0:29	7:16
39	0:00	0	0:00	0:00
40	17:21	40	0:32	3:58
41	11:58	50	0:21	6:04
42	21:34	77	0:23	11:07
43	19:36	69	0:25	10:02
44	39:50	66	0:59	11:51
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	72:15	172	0:44	29:05
52	79:04	174	0:44	31:48
53	80:37	174	0:43	32:23
54	77:44	173	0:34	30:36
55	73:36	171	0:35	28:41
56	64:49	166	0:36	24:47
57	57:51	152	0:36	21:54
58	51:45	144	0:37	19:18
59	54:19	120	0:40	18:09
60	161:36	251	1:26	68:19
61	75:00	88	0:58	21:13
62	103:16	167	1:03	30:20
63	97:57	166	0:58	29:28
64	123:13	160	1:18	47:02
65	9:05	37	0:23	2:47
66	8:12	34	0:22	2:35
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	0:00	0	0:00	0:00
70	79:28	160	0:59	28:03
71	12:00	35	0:28	4:50
72	6:45	29	0:21	2:29
73	15:22	40	0:30	5:41
74	17:40	43	0:32	8:02
75	22:00	56	0:31	10:56

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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	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	10:06	26	0:29	2:28
77	0:00	0	0:00	0:00
78	83:39	141	1:20	37:59
79	123:33	185	1:07	57:20
80	18:29	77	0:24	8:03
81	16:49	44	0:31	6:31
82	52:03	102	0:41	15:50
83	127:54	104	1:35	61:18
84	105:40	170	0:59	43:20
85	81:11	129	1:00	35:39
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	8:35	36	0:21	3:56
92	10:21	43	0:21	4:46
93	13:08	50	0:23	6:03
94	12:32	50	0:22	5:46
95	19:50	80	0:23	9:13
96	19:56	64	0:24	9:15
97	11:17	47	0:19	5:13
98	29:14	76	0:28	13:37
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	43:11	66	0:51	18:33
103	0:00	0	0:00	0:00
104	80:01	106	0:52	37:32
105	50:11	78	0:45	23:24
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	21:30	65	0:25	11:08
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	5:45	27	0:20	2:12
129	0:00	0	0:00	0:00
130	5:59	27	0:20	2:13
131	9:58	34	0:25	4:00
132	51:37	79	1:01	16:16
133	51:00	90	0:45	13:30
134	59:27	120	0:39	18:19
135	56:46	107	0:46	17:08
136	10:17	32	0:24	2:41
137	15:06	54	0:23	4:24
138	144:59	108	1:40	41:47
139	60:32	108	0:51	16:39
140	50:05	71	0:54	18:54
141	25:52	52	0:38	11:46
142	18:40	44	0:34	8:01
144	15:06	40	0:30	5:36
145	7:53	30	0:23	2:57
147	5:34	26	0:16	1:13

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SHADOW - Main Result

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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]
148	81:14	100	1:15	23:53
149	141:36	125	1:37	38:46
150	98:32	124	0:58	49:30
151	96:23	111	0:59	49:04
152	33:35	83	0:34	10:39
153	21:03	47	0:35	8:27
154	25:51	53	0:38	10:07
155	41:44	74	0:44	14:03
156	33:13	100	0:30	15:11
157	0:00	0	0:00	0:00
158	13:18	37	0:29	5:40
159	87:14	194	0:52	36:50
160	66:28	126	0:50	30:01
161	69:58	119	0:48	32:13
162	16:54	67	0:24	6:39
163	15:32	44	0:29	5:10
164	6:05	28	0:19	2:45
165	31:34	90	0:29	14:11
166	28:22	82	0:29	12:14
167	39:49	101	0:30	13:21
168	51:03	109	0:37	19:07
169	120:51	165	1:13	41:33
170	119:31	152	1:06	33:12
171	160:58	164	1:24	74:47
172	73:42	131	0:46	20:24
173	46:18	76	0:59	14:58
174	72:46	149	0:50	26:19
175	147:23	213	1:19	58:45
176	9:45	33	0:25	4:09
177	10:25	34	0:26	4:11
178	10:25	34	0:26	4:11
179	11:33	37	0:26	4:38
180	9:50	35	0:25	3:54
181	10:56	36	0:26	4:15
182	12:07	38	0:26	4:35
183	13:23	40	0:28	4:58
184	37:20	95	0:38	13:49
185	6:36	28	0:20	2:38
186	71:07	128	0:59	20:58
187	47:28	104	0:41	23:02
188	82:18	123	0:57	24:52
189	8:28	32	0:23	3:01
190	0:00	0	0:00	0:00
191	55:02	86	0:43	28:21
192	27:54	52	0:41	11:15
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	42:05	67	0:48	16:38
215	35:06	62	0:44	13:40
216	42:18	69	0:47	15:58
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

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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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	34:08	91	0:31	15:55
225	13:16	45	0:25	6:07
226	14:24	48	0:26	6:39
227	24:43	60	0:37	7:42
228	24:29	73	0:34	9:27
229	26:42	75	0:35	10:11
230	32:17	89	0:33	14:13
231	32:52	92	0:33	14:40
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	65:48	136	0:38	32:31
235	67:58	139	0:37	33:37
236	67:36	142	0:36	33:27
237	8:36	38	0:21	2:47
238	62:46	109	0:55	28:33
239	60:53	84	0:57	27:57
240	26:01	88	0:28	12:06
241	30:46	81	0:28	14:20
242	29:25	87	0:28	13:42
243	24:19	73	0:29	11:17
244	25:01	80	0:25	11:39
245	23:05	82	0:24	10:44
246	21:50	80	0:24	10:09
247	14:43	56	0:23	6:47
248	10:00	33	0:26	4:14
249	18:59	48	0:31	8:33
250	33:36	58	0:43	9:22
251	35:23	62	0:42	9:57
252	17:29	60	0:26	5:26
253	10:59	42	0:24	3:32
254	40:51	60	0:50	11:17
255	28:03	59	0:35	13:01
256	0:00	0	0:00	0:00
257	36:55	141	0:25	16:42
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	73:38	68	1:25	35:17
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	42:24	75	0:59	13:48
279	135:28	191	1:08	39:23
280	99:52	125	1:01	31:50
281	66:47	93	0:56	23:18

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Calculation: 2018-06-07_SG132_114HH

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	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]
282	36:05	100	0:37	15:34
283	27:20	78	0:33	9:16
284	43:33	120	0:34	19:29
285	117:52	214	0:57	36:09
286	208:52	190	2:03	97:23
287	221:45	156	2:04	106:02
288	22:03	61	0:30	11:08
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	69:57	133	0:52	30:10
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	61:10	127	0:38	27:57
295	32:24	87	0:29	14:53
296	50:25	118	0:43	17:57
297	47:28	91	0:42	15:04
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	6:35	27	0:21	2:44
305	6:51	28	0:21	2:49
306	0:00	0	0:00	0:00
307	143:19	122	1:42	42:46
308	68:40	136	1:00	21:44
309	80:07	158	0:42	31:03
310	146:17	186	1:04	62:57
311	132:08	173	1:02	48:01
312	132:08	169	1:04	54:14
313	128:13	171	1:02	47:15
314	141:29	188	1:00	46:00
315	125:35	166	0:58	40:10
316	112:13	156	0:57	35:39
317	83:54	84	1:26	23:27
318	112:56	100	1:35	32:06
319	0:00	0	0:00	0:00
320	49:34	68	0:54	13:51
321	20:59	42	0:38	5:30
322	4:35	19	0:19	1:05
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	42:52	70	0:44	12:14
327	68:23	104	0:48	20:42
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

...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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	112:37	110	1:23	32:51
380	87:55	99	1:11	25:41
381	74:39	90	0:57	21:52
382	75:16	94	0:54	22:13
383	64:14	86	0:52	18:44
384	56:35	76	0:54	16:09
385	35:07	58	0:46	9:41
386	18:32	56	0:24	5:15
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	24:14	76	0:28	10:26
390	14:52	44	0:25	6:52
391	57:25	135	0:44	23:04
393	22:13	52	0:33	6:52
394	16:20	40	0:32	6:52
395	51:08	133	0:31	18:59
398	0:00	0	0:00	0:00
399	38:40	62	0:45	10:51
400	0:00	0	0:00	0:00
401	24:27	50	0:37	6:42
402	59:32	97	0:50	19:35
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	9:00	32	0:24	3:37
406	0:00	0	0:00	0:00
407	16:31	64	0:23	7:01
408	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]
TRIV-07	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (1)	138:40	52:48
TRIV-08	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (2)	30:16	13:35
TRIV-09	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (3)	144:06	60:19
TRIV-10	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (5)	255:42	107:09
TRIV-10a	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (4)	220:11	70:15
TRIV-14	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (6)	113:42	35:33
TRIV-15	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (7)	225:00	93:09
TRIV-16	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (8)	54:11	18:43
TRIV-17	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (9)	162:50	73:27
TRIV-19	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (10)	219:21	84:11
TRIV-27	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (11)	41:34	19:21
TRIV-41	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (12)	95:12	27:52
TRIV-42	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (13)	102:41	40:10
TRIV-44	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (14)	339:31	138:51
TRIV-45	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (15)	53:56	22:40
TRIV-46	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (16)	61:17	27:47
TRIV-46a	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (17)	104:47	47:26
TRIV-47	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (18)	103:51	46:50
TRIV-48	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (19)	62:59	20:11
TRIV-49	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (20)	53:12	23:30

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_114HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (21)	38:43	16:08
TRIV-50	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (22)	29:53	10:06
TRIV-51	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (23)	70:06	27:16
TRIV-52	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (26)	11:03	4:27
TRIV-52a	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (25)	94:20	30:51
TRIV-52b	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (24)	86:01	29:07
TRIV-52c	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (27)	49:04	16:02
TRIV-53	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (28)	33:12	16:09
TRIV-54	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (29)	94:55	29:49
TRIV-55	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (30)	127:45	41:42
TRIV-56	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (31)	126:47	45:28
TRIV-57	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (32)	51:21	20:23
TRIV-58	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (33)	157:56	71:06
TRIV-59	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (34)	56:57	23:56
TRIV-60	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (35)	45:56	18:02
TRIV-61	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (36)	164:45	70:00
TRIV-61a	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (37)	294:36	125:54
TRIV-62	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (38)	236:13	67:31
TRIV-63	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (39)	21:46	10:26
TRIV-66	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (40)	64:32	28:51
TRIV-71	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (41)	428:26	166:25
TRIV-72	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (42)	272:04	93:45
TRIV-73	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (43)	338:07	132:43
TRIV-74	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (44)	91:22	38:13
TRIV-76	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (45)	223:40	75:45
TRIV-77	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (46)	210:43	66:04
TRIV-78	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (47)	128:40	64:07
TRIV-78a	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (48)	232:43	73:22
TRIV-80	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (49)	99:38	47:08
TRIV-82	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (50)	42:15	21:44
TRIV-84	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (51)	374:24	138:39
TRIV-86	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (52)	321:35	97:54
TRIV-87	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (53)	169:05	71:51
TRIV-90	GAMESA G132 3550 132.0 !O! hub: 114.0 m (TOT: 180.0 m) (54)	58:35	27:59

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.

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Calculated:
6/7/2018 3:40 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-08	695,393	4,555,358	222.1	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-09	693,543	4,553,744	224.2	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-10	695,148	4,553,817	223.9	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-10a	695,248	4,554,372	223.2	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-14	695,087	4,558,394	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-15	695,990	4,557,833	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-16	696,285	4,557,413	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-17	696,664	4,556,925	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-19	696,650	4,554,220	223.5	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-27	696,026	4,560,119	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-41	692,852	4,555,787	224.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-42	693,590	4,555,279	224.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-44	693,510	4,552,657	225.8	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-45	695,101	4,559,935	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-46	695,044	4,560,371	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-46a	694,816	4,560,369	222.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-47	694,421	4,556,942	223.3	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-48	693,276	4,557,174	223.9	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-49	694,102	4,546,865	227.4	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-49a	694,135	4,546,233	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-50	693,075	4,545,372	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-51	694,040	4,545,311	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-52	693,507	4,544,751	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-52a	694,135	4,544,663	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-52b	694,578	4,547,672	226.8	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-52c	694,579	4,544,560	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-53	695,340	4,544,198	227.2	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-54	693,200	4,542,930	228.5	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-55	694,750	4,542,980	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-56	693,612	4,541,386	228.3	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-57	694,748	4,547,677	226.8	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-58	695,265	4,547,043	226.9	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-59	694,658	4,545,792	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0

To be continued on next page...

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Calculated:
6/7/2018 3:40 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...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]
TRIV-60	694,668	4,546,454	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-61	695,358	4,545,418	226.8	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-61a	695,493	4,545,487	226.6	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-62	696,334	4,544,649	226.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-63	696,424	4,543,990	226.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-66	697,270	4,550,408	224.1	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-71	698,479	4,550,494	225.7	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-72	699,436	4,550,299	224.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-73	699,591	4,549,664	224.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-74	700,042	4,549,153	224.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-76	693,557	4,549,515	226.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-77	694,604	4,549,481	226.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-78	694,722	4,549,026	226.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-78a	694,072	4,547,926	226.8	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-80	693,422	4,544,051	228.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-82	693,450	4,542,211	228.8	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-84	698,608	4,549,608	224.7	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-86	696,353	4,549,622	226.0	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-87	694,736	4,554,248	223.6	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0
TRIV-90	695,166	4,555,096	222.5	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m)	...Yes	GAMESA	G132-3,550	3,550	132.0	84.0	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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Calculated:
6/7/2018 3:40 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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6/7/2018 3:40 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

Calculation Results

Shadow receptor

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]
1	7:19	32	0:22	3:05
2	6:19	29	0:20	2:39
3	6:11	29	0:19	2:36
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	8:48	40	0:18	4:32
9	28:29	71	0:35	14:19
10	27:33	46	0:45	6:22
11	44:18	119	0:33	20:14
12	6:19	35	0:16	3:11
21	12:56	46	0:25	6:27
22	19:09	56	0:36	8:39
23	134:20	229	0:57	60:24
24	92:45	95	1:09	27:16
25	82:57	118	1:02	24:58
26	13:46	62	0:24	5:12
27	4:29	27	0:15	2:07
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	21:52	76	0:27	5:41
34	7:47	39	0:19	2:13
35	6:09	34	0:17	1:47
37	22:39	62	0:27	5:35
38	22:18	70	0:26	5:39
39	0:00	0	0:00	0:00
40	0:00	0	0:00	0:00
41	7:30	41	0:16	3:48
42	12:27	61	0:18	6:24
43	12:13	54	0:20	6:12
44	32:37	72	0:51	9:36
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	49:23	134	0:36	19:17
52	56:38	161	0:35	22:19
53	61:11	167	0:34	24:19
54	61:19	166	0:32	23:58
55	58:05	164	0:34	22:27
56	49:00	153	0:34	18:45
57	41:59	141	0:32	16:08
58	36:00	131	0:30	13:51
59	40:09	98	0:39	12:58
60	162:08	282	1:19	65:33
61	40:18	82	0:50	11:40
62	72:46	133	1:01	20:25
63	72:28	149	0:57	21:05
64	122:28	164	1:15	48:20
65	6:30	34	0:18	1:56
66	5:45	31	0:17	1:45
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	5:42	36	0:13	2:56
70	55:30	125	0:48	20:35
71	9:04	33	0:24	3:38
72	4:45	26	0:16	1:44
73	12:14	40	0:28	4:31
74	14:07	42	0:30	6:21
75	16:35	52	0:29	8:12

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...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]
76	0:00	0	0:00	0:00
77	0:00	0	0:00	0:00
78	72:12	146	1:13	32:20
79	118:27	195	0:55	54:59
80	14:40	80	0:19	6:25
81	13:24	44	0:28	5:06
82	47:07	92	0:41	14:05
83	136:43	120	1:27	65:00
84	102:17	179	1:01	40:01
85	70:06	129	0:51	30:19
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	5:42	32	0:16	2:36
92	6:38	37	0:16	3:03
93	8:28	42	0:18	3:54
94	7:58	43	0:17	3:40
95	10:53	54	0:18	5:01
96	16:18	68	0:19	7:34
97	9:43	52	0:16	4:29
98	24:33	81	0:24	11:25
99	0:11	11	0:01	0:04
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	40:53	67	0:51	17:19
103	0:00	0	0:00	0:00
104	78:11	117	0:52	36:30
105	53:20	90	0:45	24:50
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	17:49	69	0:20	9:13
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	3:49	24	0:14	1:27
129	0:00	0	0:00	0:00
130	4:00	25	0:15	1:28
131	7:15	32	0:21	2:54
132	49:25	101	0:50	14:50
133	36:47	82	0:36	9:34
134	48:37	106	0:39	14:44
135	40:12	88	0:42	11:54
136	0:00	0	0:00	0:00
137	6:14	31	0:19	2:13
138	133:47	96	1:40	37:39
139	23:33	68	0:33	6:37
140	50:18	75	0:56	18:43
141	21:57	51	0:37	9:52
142	14:59	43	0:31	6:24
144	11:57	39	0:28	4:25
145	5:38	28	0:18	2:06
147	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

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	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]
148	82:48	116	1:06	22:53
149	121:41	110	1:25	32:09
150	87:07	136	0:58	43:22
151	99:04	124	0:59	50:09
152	16:05	60	0:23	5:22
153	17:43	48	0:34	7:01
154	22:53	55	0:37	8:46
155	42:57	94	0:44	13:51
156	26:38	101	0:27	12:09
157	0:00	0	0:00	0:00
158	10:16	35	0:26	4:21
159	76:00	196	0:53	31:52
160	54:52	112	0:50	24:39
161	70:12	130	0:48	32:25
162	11:55	61	0:19	4:38
163	12:19	49	0:26	4:01
164	4:02	26	0:14	1:48
165	23:20	83	0:25	10:24
166	21:23	79	0:26	9:09
167	28:47	86	0:27	9:40
168	44:46	114	0:37	16:21
169	123:13	170	1:12	39:53
170	112:51	134	1:08	29:55
171	148:03	174	1:14	68:13
172	65:14	124	0:46	17:36
173	41:04	88	0:49	12:45
174	41:04	120	0:42	15:51
175	150:58	210	1:17	60:00
176	7:02	30	0:21	2:59
177	7:49	33	0:22	3:08
178	7:49	33	0:22	3:08
179	8:45	35	0:23	3:29
180	7:14	32	0:21	2:51
181	8:02	35	0:21	3:05
182	9:03	36	0:23	3:21
183	10:15	39	0:24	3:43
184	35:29	114	0:37	13:00
185	4:53	40	0:16	1:58
186	66:44	122	0:46	18:54
187	35:17	94	0:32	17:01
188	62:14	105	0:56	18:29
189	6:03	31	0:18	2:08
190	0:00	0	0:00	0:00
191	55:02	97	0:43	28:18
192	25:04	54	0:41	10:02
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	41:29	71	0:50	15:55
215	33:08	65	0:44	12:32
216	41:52	75	0:48	15:12
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

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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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	21:17	69	0:28	9:51
225	9:07	39	0:20	4:11
226	9:56	42	0:21	4:34
227	19:00	62	0:28	5:46
228	18:14	70	0:29	7:01
229	20:24	74	0:31	7:44
230	24:20	84	0:31	10:41
231	24:38	84	0:30	10:57
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	57:07	142	0:36	28:20
235	58:58	144	0:36	29:18
236	58:00	145	0:35	28:50
237	5:58	34	0:17	1:55
238	60:21	121	0:56	27:03
239	59:22	110	0:57	26:47
240	15:46	60	0:23	7:16
241	23:41	86	0:24	11:01
242	17:39	65	0:24	8:10
243	16:09	58	0:25	7:27
244	15:27	67	0:21	7:10
245	12:56	59	0:20	5:59
246	12:04	58	0:19	5:35
247	9:17	46	0:18	4:16
248	7:17	30	0:21	3:04
249	14:43	46	0:29	6:35
250	15:19	38	0:31	4:04
251	19:45	44	0:34	5:20
252	13:51	65	0:23	4:16
253	8:00	40	0:19	2:33
254	15:23	36	0:33	4:00
255	26:54	70	0:31	12:27
256	0:00	0	0:00	0:00
257	22:14	113	0:20	9:59
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	94:03	88	1:28	44:31
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	35:31	80	0:50	11:19
279	118:33	166	1:11	32:40
280	99:16	112	1:03	30:19
281	81:00	126	0:58	26:19

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...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]
282	30:27	112	0:29	13:21
283	26:50	112	0:31	9:43
284	31:31	111	0:26	14:03
285	105:23	206	0:58	31:29
286	172:27	156	2:04	79:05
287	226:19	169	2:04	107:51
288	15:39	53	0:26	7:53
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	61:53	126	0:53	26:14
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	50:50	116	0:33	23:36
295	22:32	76	0:25	10:19
296	16:00	63	0:22	7:18
297	49:21	99	0:43	14:58
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	4:29	24	0:16	1:52
305	4:40	25	0:16	1:55
306	0:00	0	0:00	0:00
307	145:38	112	1:42	41:27
308	36:55	125	0:31	14:16
309	75:07	166	0:41	27:36
310	138:40	180	1:05	58:19
311	148:27	207	1:04	50:11
312	131:14	172	1:05	52:12
313	138:37	207	1:03	48:23
314	136:28	179	1:02	44:03
315	114:26	159	0:59	36:38
316	98:33	147	0:59	31:31
317	51:00	66	0:57	14:20
318	80:09	84	1:21	22:51
319	0:00	0	0:00	0:00
320	24:03	44	0:41	6:25
321	0:00	0	0:00	0:00
322	0:00	0	0:00	0:00
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	28:49	54	0:40	8:00
327	62:18	92	0:49	18:31
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...continued from previous page

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	85:49	96	1:03	25:22
380	70:01	84	0:59	20:21
381	58:33	76	0:56	16:48
382	62:22	80	0:56	18:03
383	50:07	71	0:51	14:20
384	36:21	56	0:48	10:05
385	12:38	32	0:30	3:16
386	12:48	48	0:19	3:34
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	17:50	73	0:24	7:38
390	15:06	56	0:22	6:57
391	37:56	112	0:36	15:17
393	18:55	55	0:32	5:40
394	13:17	40	0:30	5:33
395	36:41	109	0:27	13:21
398	0:00	0	0:00	0:00
399	20:13	42	0:36	5:26
400	0:00	0	0:00	0:00
401	7:39	26	0:22	1:57
402	66:45	110	0:51	20:38
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	6:30	31	0:20	2:36
406	0:00	0	0:00	0:00
407	11:24	60	0:18	4:49
408	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]
TRIV-07	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (1)	115:38	45:00
TRIV-08	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (2)	18:06	8:02
TRIV-09	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (3)	112:35	48:14
TRIV-10	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (5)	266:42	111:05
TRIV-10a	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (4)	150:10	48:15
TRIV-14	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (6)	97:14	29:23
TRIV-15	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (7)	237:07	95:15
TRIV-16	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (8)	37:27	14:10
TRIV-17	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (9)	132:13	59:01
TRIV-19	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (10)	159:58	63:02
TRIV-27	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (11)	26:13	12:07
TRIV-41	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (12)	58:36	17:46
TRIV-42	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (13)	116:49	43:47
TRIV-44	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (14)	280:37	115:29
TRIV-45	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (15)	39:44	16:36
TRIV-46	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (16)	44:25	20:00
TRIV-46a	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (17)	89:36	40:43
TRIV-47	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (18)	74:50	33:16
TRIV-48	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (19)	51:52	16:20
TRIV-49	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (20)	39:05	17:00

To be continued on next page...

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6/7/2018 3:40 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG132_84HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (21)	29:36	12:17
TRIV-50	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (22)	26:58	8:48
TRIV-51	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (23)	67:30	27:27
TRIV-52	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (26)	8:21	3:20
TRIV-52a	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (25)	88:59	27:59
TRIV-52b	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (24)	54:35	17:55
TRIV-52c	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (27)	22:07	7:46
TRIV-53	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (28)	22:33	11:20
TRIV-54	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (29)	72:15	22:17
TRIV-55	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (30)	111:52	35:00
TRIV-56	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (31)	89:34	34:25
TRIV-57	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (32)	41:17	16:25
TRIV-58	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (33)	150:56	67:32
TRIV-59	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (34)	42:58	17:57
TRIV-60	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (35)	33:10	12:58
TRIV-61	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (36)	161:54	65:52
TRIV-61a	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (37)	291:08	119:54
TRIV-62	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (38)	187:45	52:24
TRIV-63	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (39)	22:40	10:52
TRIV-66	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (40)	48:21	21:39
TRIV-71	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (41)	375:10	144:55
TRIV-72	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (42)	249:50	85:38
TRIV-73	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (43)	291:50	114:36
TRIV-74	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (44)	79:01	32:31
TRIV-76	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (45)	167:05	58:20
TRIV-77	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (46)	170:17	52:23
TRIV-78	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (47)	124:43	62:02
TRIV-78a	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (48)	214:29	64:57
TRIV-80	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (49)	93:11	44:12
TRIV-82	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (50)	37:22	19:14
TRIV-84	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (51)	353:22	130:25
TRIV-86	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (52)	289:43	85:24
TRIV-87	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (53)	155:58	67:12
TRIV-90	GAMESA G132 3550 132.0 !O! hub: 84.0 m (TOT: 150.0 m) (54)	62:51	30:43

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.

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Calculated:
6/7/2018 4:37 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-08	695,393	4,555,358	222.1	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-09	693,543	4,553,744	224.2	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-10	695,148	4,553,817	223.9	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-10a	695,248	4,554,372	223.2	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-14	695,087	4,558,394	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-15	695,990	4,557,833	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-16	696,285	4,557,413	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-17	696,664	4,556,925	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-19	696,650	4,554,220	223.5	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-27	696,026	4,560,119	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-41	692,852	4,555,787	224.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-42	693,590	4,555,279	224.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-44	693,510	4,552,657	225.8	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-45	695,101	4,559,935	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-46	695,044	4,560,371	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-46a	694,816	4,560,369	222.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-47	694,421	4,556,942	223.3	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-48	693,276	4,557,174	223.9	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-49	694,102	4,546,865	227.4	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-49a	694,135	4,546,233	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-50	693,075	4,545,372	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-51	694,040	4,545,311	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-52	693,507	4,544,751	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-52a	694,135	4,544,663	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-52b	694,578	4,547,672	226.8	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-52c	694,579	4,544,560	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-53	695,340	4,544,198	227.2	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-54	693,200	4,542,930	228.5	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-55	694,750	4,542,980	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-56	693,612	4,541,386	228.3	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-57	694,748	4,547,677	226.8	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-58	695,265	4,547,043	226.9	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-59	694,658	4,545,792	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

...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]
TRIV-60	694,668	4,546,454	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-61	695,358	4,545,418	226.8	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-61a	695,493	4,545,487	226.6	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-62	696,334	4,544,649	226.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-63	696,424	4,543,990	226.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-66	697,270	4,550,408	224.1	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-71	698,479	4,550,494	225.7	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-72	699,436	4,550,299	224.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-73	699,591	4,549,664	224.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-74	700,042	4,549,153	224.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-76	693,557	4,549,515	226.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-77	694,604	4,549,481	226.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-78	694,722	4,549,026	226.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-78a	694,072	4,547,926	226.8	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-80	693,422	4,544,051	228.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-82	693,450	4,542,211	228.8	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-84	698,608	4,549,608	224.7	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-86	696,353	4,549,622	226.0	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-87	694,736	4,554,248	223.6	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0
TRIV-90	695,166	4,555,096	222.5	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m...	Yes	GAMESA	G145-4,200	4,200	145.0	107.5	0.0

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
1	11:05	35	0:27	4:42
2	9:39	35	0:25	4:05
3	9:29	34	0:25	3:59
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	8:06	29	0:20	4:10
9	45:23	97	0:40	22:59
10	59:58	70	1:03	14:29
11	55:27	121	0:40	25:02
12	10:38	44	0:22	5:21
21	19:55	56	0:30	9:58
22	28:43	62	0:47	13:02
23	161:55	234	1:03	71:11
24	119:45	112	1:13	36:13
25	101:37	143	1:06	30:56
26	20:41	71	0:30	7:51
27	7:28	33	0:20	3:32
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	29:47	86	0:31	7:49
34	11:52	45	0:25	3:25
35	9:40	40	0:23	2:50
37	31:36	72	0:32	7:54
38	30:41	78	0:31	7:50
39	0:00	0	0:00	0:00
40	19:29	42	0:35	4:28
41	13:02	53	0:22	6:36
42	23:25	80	0:24	12:04
43	21:50	77	0:26	11:11
44	45:09	75	1:02	13:25
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	79:53	176	0:46	32:11
52	85:57	177	0:46	34:38
53	87:21	178	0:46	35:11
54	84:33	176	0:37	33:17
55	80:36	176	0:38	31:20
56	70:47	172	0:39	27:03
57	64:01	163	0:40	24:16
58	57:51	153	0:39	21:43
59	59:26	123	0:44	19:51
60	193:04	269	1:34	80:23
61	83:41	88	1:06	23:38
62	112:50	172	1:10	33:02
63	107:17	169	1:04	32:12
64	145:53	168	1:26	56:30
65	10:06	40	0:24	3:06
66	9:03	38	0:23	2:51
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	5:32	27	0:15	2:51
70	92:02	173	1:03	32:36
71	13:15	38	0:30	5:20
72	7:29	31	0:22	2:45
73	17:23	45	0:33	6:26
74	19:54	47	0:35	9:02
75	24:45	61	0:34	12:17

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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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]
76	11:53	28	0:32	2:55
77	0:00	0	0:00	0:00
78	96:39	152	1:26	43:38
79	143:12	195	1:12	66:10
80	20:29	85	0:25	8:55
81	19:00	49	0:34	7:19
82	60:24	102	0:45	18:16
83	149:14	112	1:43	71:16
84	127:34	187	1:05	51:33
85	95:09	141	1:03	41:39
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	9:24	39	0:22	4:18
92	11:16	46	0:22	5:12
93	14:16	53	0:24	6:35
94	13:48	55	0:23	6:21
95	21:55	82	0:24	10:12
96	20:55	67	0:25	9:42
97	12:27	52	0:20	5:45
98	31:45	80	0:30	14:47
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	52:23	72	0:56	22:25
103	0:00	0	0:00	0:00
104	92:52	112	0:57	43:28
105	59:36	84	0:50	27:46
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	22:41	68	0:26	11:44
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	6:17	28	0:20	2:24
129	0:00	0	0:00	0:00
130	6:34	30	0:20	2:26
131	10:55	37	0:26	4:23
132	62:42	92	1:04	19:31
133	56:16	90	0:49	14:55
134	65:59	124	0:43	20:17
135	62:12	110	0:50	18:46
136	11:42	34	0:26	3:05
137	17:34	58	0:27	5:02
138	166:56	110	1:49	47:54
139	68:30	109	0:55	18:53
140	61:11	79	1:00	23:03
141	30:20	58	0:42	13:46
142	21:03	47	0:37	9:02
144	17:01	44	0:33	6:18
145	8:42	33	0:24	3:15
147	6:26	27	0:18	1:25

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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	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]
148	101:14	128	1:17	29:02
149	155:02	126	1:40	42:14
150	114:16	130	1:04	57:16
151	112:31	118	1:05	57:08
152	37:27	90	0:37	11:55
153	24:12	53	0:38	9:39
154	30:21	60	0:42	11:46
155	52:08	88	0:48	17:23
156	35:58	107	0:32	16:25
157	0:00	0	0:00	0:00
158	14:48	40	0:31	6:18
159	98:54	210	0:57	41:33
160	78:21	135	0:55	35:23
161	81:30	128	0:53	37:31
162	18:46	72	0:25	7:23
163	17:25	48	0:32	5:47
164	6:35	30	0:20	2:59
165	35:14	99	0:31	15:49
166	31:43	89	0:31	13:40
167	44:06	105	0:33	14:52
168	59:58	122	0:41	22:24
169	151:54	190	1:19	50:56
170	137:10	155	1:12	37:55
171	179:11	169	1:27	83:01
172	84:30	132	0:50	23:15
173	54:19	85	1:02	17:25
174	81:11	160	0:53	29:24
175	180:08	224	1:29	71:41
176	10:48	36	0:27	4:36
177	11:43	39	0:27	4:42
178	11:43	39	0:27	4:42
179	12:54	40	0:29	5:09
180	10:58	38	0:26	4:20
181	12:05	40	0:27	4:41
182	13:23	42	0:28	5:02
183	14:59	45	0:30	5:33
184	45:29	115	0:41	16:56
185	7:45	44	0:22	3:08
186	85:52	129	1:03	24:54
187	53:49	111	0:45	26:07
188	90:32	127	1:03	27:22
189	9:20	35	0:24	3:19
190	0:00	0	0:00	0:00
191	63:36	92	0:48	32:44
192	33:22	58	0:45	13:25
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	51:53	75	0:54	20:14
215	42:30	69	0:48	16:21
216	52:08	77	0:52	19:23
217	0:00	0	0:00	0:00

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Calculation: 2018-06-07_SG145_107HH

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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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	37:46	95	0:33	17:36
225	14:39	48	0:26	6:45
226	15:52	51	0:27	7:19
227	26:31	65	0:37	8:16
228	27:04	79	0:35	10:26
229	29:39	84	0:37	11:17
230	35:23	95	0:35	15:34
231	36:04	97	0:35	16:05
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	71:34	144	0:41	35:19
235	73:42	147	0:41	36:25
236	73:11	148	0:40	36:11
237	9:22	40	0:22	3:02
238	77:05	126	1:01	34:56
239	76:25	116	1:02	34:56
240	29:19	92	0:29	13:39
241	33:28	85	0:31	15:36
242	32:31	91	0:31	15:09
243	27:14	80	0:31	12:39
244	27:19	83	0:27	12:43
245	25:15	85	0:26	11:45
246	23:53	83	0:25	11:07
247	16:16	60	0:24	7:31
248	11:01	36	0:27	4:40
249	21:27	53	0:35	9:40
250	36:32	58	0:46	10:11
251	38:46	62	0:46	10:55
252	19:52	70	0:29	6:09
253	12:04	44	0:25	3:53
254	44:52	62	0:54	12:25
255	31:36	66	0:37	14:38
256	0:00	0	0:00	0:00
257	40:17	147	0:26	18:13
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	95:28	79	1:36	45:26
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	48:35	84	1:03	15:47
279	152:32	196	1:16	44:12
280	118:29	126	1:08	37:29
281	86:40	112	1:02	29:42

To be continued on next page...

SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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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]
282	41:05	112	0:41	17:46
283	35:01	109	0:35	12:32
284	48:31	129	0:38	21:43
285	133:46	229	1:02	41:03
286	248:31	201	2:16	115:45
287	258:21	167	2:16	123:12
288	24:43	67	0:32	12:29
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	82:57	146	0:57	35:39
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	66:15	133	0:39	30:11
295	34:51	92	0:31	16:01
296	54:37	121	0:47	19:23
297	62:39	110	0:47	19:25
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	7:15	31	0:22	3:01
305	7:25	30	0:22	3:03
306	0:00	0	0:00	0:00
307	177:53	124	1:53	52:06
308	74:57	143	1:04	23:45
309	100:22	192	0:46	37:59
310	177:23	207	1:10	76:02
311	166:34	202	1:09	59:29
312	161:29	189	1:11	65:37
313	160:13	198	1:09	58:14
314	167:14	197	1:07	54:37
315	146:30	175	1:04	47:08
316	131:29	159	1:03	41:53
317	92:50	86	1:35	25:57
318	124:55	102	1:45	35:31
319	0:00	0	0:00	0:00
320	54:20	68	0:59	15:11
321	23:50	44	0:42	6:16
322	5:59	21	0:22	1:26
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	46:52	70	0:48	13:23
327	78:46	106	0:53	23:46
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_SG145_107HH

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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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	126:43	111	1:35	36:57
380	98:26	100	1:21	28:41
381	82:26	92	1:03	24:08
382	83:32	96	1:00	24:39
383	70:41	86	0:57	20:37
384	61:56	76	0:59	17:42
385	38:26	58	0:49	10:38
386	19:34	58	0:25	5:34
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	26:59	85	0:30	11:36
390	17:50	52	0:27	8:13
391	63:17	139	0:47	25:29
393	25:33	58	0:36	7:53
394	18:33	44	0:35	7:48
395	56:35	139	0:33	21:09
398	0:00	0	0:00	0:00
399	42:21	64	0:49	11:54
400	0:00	0	0:00	0:00
401	26:57	50	0:40	7:24
402	81:52	122	0:55	26:07
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	9:51	35	0:25	3:57
406	0:00	0	0:00	0:00
407	18:11	67	0:24	7:43
408	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]
TRIV-07	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (1)	152:21	58:30
TRIV-08	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (2)	33:05	14:51
TRIV-09	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (3)	168:04	70:16
TRIV-10	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (5)	304:06	126:48
TRIV-10a	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (4)	236:07	75:32
TRIV-14	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (6)	127:13	39:46
TRIV-15	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (7)	271:24	110:42
TRIV-16	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (8)	62:28	21:47
TRIV-17	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (9)	183:11	82:20
TRIV-19	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (10)	238:36	91:38
TRIV-27	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (11)	44:38	20:46
TRIV-41	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (12)	103:16	30:20
TRIV-42	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (13)	129:54	50:24
TRIV-44	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (14)	374:23	152:04
TRIV-45	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (15)	59:20	24:58
TRIV-46	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (16)	67:27	30:33
TRIV-46a	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (17)	116:35	52:40
TRIV-47	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (18)	110:26	49:35
TRIV-48	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (19)	69:43	22:22
TRIV-49	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (20)	57:46	25:25

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No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (21)	42:30	17:46
TRIV-50	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (22)	35:21	11:54
TRIV-51	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (23)	86:56	34:31
TRIV-52	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (26)	12:18	4:57
TRIV-52a	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (25)	112:19	36:22
TRIV-52b	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (24)	96:48	32:31
TRIV-52c	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (27)	53:39	17:30
TRIV-53	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (28)	38:01	18:25
TRIV-54	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (29)	104:35	32:51
TRIV-55	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (30)	147:19	47:18
TRIV-56	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (31)	149:02	55:03
TRIV-57	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (32)	55:55	22:09
TRIV-58	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (33)	183:41	82:25
TRIV-59	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (34)	63:42	26:47
TRIV-60	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (35)	49:58	19:37
TRIV-61	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (36)	203:06	84:25
TRIV-61a	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (37)	340:33	142:07
TRIV-62	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (38)	268:41	76:38
TRIV-63	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (39)	27:02	12:59
TRIV-66	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (40)	71:52	32:10
TRIV-71	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (41)	468:06	182:54
TRIV-72	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (42)	302:36	104:25
TRIV-73	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (43)	404:36	155:38
TRIV-74	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (44)	106:07	44:20
TRIV-76	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (45)	256:34	86:52
TRIV-77	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (46)	228:18	71:18
TRIV-78	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (47)	147:11	73:13
TRIV-78a	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (48)	265:24	82:48
TRIV-80	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (49)	116:16	54:51
TRIV-82	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (50)	46:50	24:05
TRIV-84	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (51)	424:10	156:47
TRIV-86	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (52)	358:00	108:44
TRIV-87	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (53)	195:56	83:29
TRIV-90	GAMESA G145 4200 145.0 !O! hub: 107.5 m (TOT: 180.0 m) (54)	73:44	35:30

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.

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-08	695,393	4,555,358	222.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-09	693,543	4,553,744	224.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-10	695,148	4,553,817	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-10a	695,248	4,554,372	223.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-14	695,087	4,558,394	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-15	695,990	4,557,833	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-16	696,285	4,557,413	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-17	696,664	4,556,925	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-19	696,650	4,554,220	223.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-27	696,026	4,560,119	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-41	692,852	4,555,787	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-42	693,590	4,555,279	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-44	693,510	4,552,657	225.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-45	695,101	4,559,935	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-46	695,044	4,560,371	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-46a	694,816	4,560,369	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-47	694,421	4,556,942	223.3	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-48	693,276	4,557,174	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-49	694,102	4,546,865	227.4	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-49a	694,135	4,546,233	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-50	693,075	4,545,372	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-51	694,040	4,545,311	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52	693,507	4,544,751	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52a	694,135	4,544,663	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52b	694,578	4,547,672	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52c	694,579	4,544,560	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-53	695,340	4,544,198	227.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-54	693,200	4,542,930	228.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-55	694,750	4,542,980	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-56	693,612	4,541,386	228.3	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-57	694,748	4,547,677	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-58	695,265	4,547,043	226.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-59	694,658	4,545,792	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4

To be continued on next page...

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Calculated:
6/7/2018 12:45 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...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]
TRIV-60	694,668	4,546,454	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-61	695,358	4,545,418	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-61a	695,493	4,545,487	226.6	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-62	696,334	4,544,649	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-63	696,424	4,543,990	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-66	697,270	4,550,408	224.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-71	698,479	4,550,494	225.7	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-72	699,436	4,550,299	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-73	699,591	4,549,664	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-74	700,042	4,549,153	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-76	693,557	4,549,515	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-77	694,604	4,549,481	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-78	694,722	4,549,026	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-78a	694,072	4,547,926	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-80	693,422	4,544,051	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-82	693,450	4,542,211	228.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-84	698,608	4,549,608	224.7	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-86	696,353	4,549,622	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-87	694,736	4,554,248	223.6	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-90	695,166	4,555,096	222.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180....	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

Calculation Results

Shadow receptor

No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
1	11:25	36	0:28	4:51
2	10:03	36	0:25	4:15
3	9:45	34	0:25	4:06
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	10:11	35	0:22	5:15
9	47:35	101	0:42	24:06
10	62:06	72	1:04	15:01
11	57:04	125	0:40	25:43
12	10:59	44	0:22	5:32
21	20:39	57	0:31	10:20
22	29:52	64	0:48	13:33
23	170:35	245	1:05	75:02
24	124:19	112	1:16	37:35
25	110:51	148	1:09	33:34
26	21:26	73	0:30	8:07
27	7:41	34	0:20	3:38
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	30:43	86	0:32	8:03
34	12:21	46	0:25	3:33
35	10:04	40	0:23	2:57
37	32:22	72	0:33	8:06
38	31:26	78	0:32	8:01
39	0:00	0	0:00	0:00
40	20:17	42	0:36	4:40
41	13:29	54	0:22	6:50
42	23:58	81	0:24	12:21
43	22:50	79	0:27	11:42
44	47:18	78	1:04	14:03
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	82:25	178	0:47	33:14
52	88:21	178	0:47	35:40
53	89:46	180	0:47	36:13
54	86:38	179	0:38	34:06
55	82:42	176	0:40	32:08
56	72:59	173	0:41	27:53
57	65:58	166	0:41	25:00
58	60:00	156	0:40	22:33
59	61:26	124	0:46	20:31
60	205:56	279	1:36	85:07
61	86:39	89	1:08	24:28
62	116:38	172	1:12	34:09
63	110:31	170	1:06	33:07
64	152:15	172	1:30	59:13
65	10:27	40	0:24	3:12
66	9:16	38	0:23	2:55
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	6:59	33	0:17	3:36
70	96:36	177	1:05	34:14
71	13:47	39	0:30	5:33
72	7:43	32	0:22	2:50
73	18:04	46	0:34	6:42
74	20:46	50	0:35	9:25
75	25:37	62	0:35	12:43

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

...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]
76	12:33	29	0:33	3:06
77	0:00	0	0:00	0:00
78	101:11	155	1:29	45:36
79	149:06	197	1:13	68:45
80	21:23	88	0:25	9:18
81	19:46	50	0:35	7:36
82	62:11	102	0:46	18:48
83	157:33	116	1:46	75:07
84	136:42	194	1:08	54:54
85	100:03	146	1:05	43:46
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	9:40	40	0:22	4:26
92	11:36	47	0:22	5:21
93	14:45	54	0:24	6:48
94	14:08	55	0:23	6:31
95	22:33	83	0:24	10:29
96	21:15	68	0:25	9:51
97	12:56	53	0:20	5:58
98	32:30	81	0:31	15:08
99	0:19	11	0:02	0:08
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	55:37	74	0:58	23:46
103	0:00	0	0:00	0:00
104	97:12	114	0:59	45:27
105	62:15	87	0:52	29:00
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	23:02	70	0:26	11:55
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	6:30	29	0:20	2:29
129	0:00	0	0:00	0:00
130	6:46	30	0:20	2:30
131	11:21	39	0:26	4:33
132	66:29	98	1:05	20:37
133	58:12	90	0:49	15:25
134	68:08	126	0:45	20:57
135	64:08	111	0:52	19:22
136	11:59	34	0:26	3:09
137	18:32	60	0:28	5:17
138	173:47	110	1:54	49:53
139	71:08	109	0:56	19:37
140	65:50	83	1:02	24:47
141	31:46	60	0:44	14:24
142	22:01	50	0:37	9:27
144	17:43	46	0:34	6:34
145	9:03	34	0:24	3:23
147	6:45	28	0:18	1:30

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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	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]
148	107:00	129	1:18	30:31
149	157:39	126	1:40	42:59
150	120:22	132	1:06	60:16
151	118:48	121	1:07	60:15
152	38:44	90	0:38	12:19
153	25:17	54	0:39	10:03
154	31:49	62	0:43	12:19
155	55:40	94	0:50	18:32
156	37:10	110	0:32	16:58
157	0:00	0	0:00	0:00
158	15:26	43	0:32	6:35
159	103:24	216	1:00	43:21
160	82:40	140	0:57	37:20
161	85:01	131	0:54	39:08
162	19:24	74	0:25	7:38
163	18:20	57	0:33	6:06
164	6:47	30	0:20	3:04
165	36:31	101	0:32	16:23
166	32:49	93	0:32	14:08
167	45:53	109	0:33	15:29
168	62:48	126	0:43	23:27
169	159:31	196	1:21	53:22
170	143:32	155	1:15	39:38
171	185:40	171	1:27	85:56
172	87:23	132	0:52	24:04
173	57:07	89	1:04	18:16
174	84:16	163	0:54	30:30
175	188:18	228	1:31	74:57
176	11:10	36	0:27	4:46
177	12:06	39	0:28	4:51
178	12:06	39	0:28	4:51
179	13:20	42	0:29	5:19
180	11:20	40	0:27	4:28
181	12:24	41	0:28	4:48
182	13:54	45	0:29	5:14
183	15:26	47	0:30	5:43
184	48:06	120	0:43	17:56
185	8:19	49	0:22	3:23
186	89:19	129	1:04	25:54
187	55:59	114	0:47	27:11
188	93:35	128	1:05	28:18
189	9:41	37	0:24	3:26
190	0:00	0	0:00	0:00
191	66:04	94	0:49	33:59
192	34:54	59	0:47	14:02
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	55:05	78	0:56	21:25
215	44:55	73	0:50	17:14
216	55:31	81	0:54	20:33
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	39:06	96	0:34	18:14
225	15:06	51	0:27	6:57
226	16:25	53	0:27	7:34
227	27:14	67	0:37	8:28
228	27:57	81	0:36	10:46
229	30:44	87	0:38	11:42
230	36:24	98	0:36	16:01
231	37:13	99	0:36	16:36
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	72:59	146	0:43	36:00
235	75:24	150	0:42	37:14
236	74:56	150	0:41	37:02
237	9:38	40	0:22	3:07
238	82:48	132	1:03	37:29
239	82:26	123	1:04	37:37
240	30:29	93	0:30	14:11
241	34:27	86	0:31	16:03
242	33:36	92	0:31	15:39
243	28:28	82	0:31	13:14
244	28:10	84	0:27	13:07
245	25:56	86	0:26	12:04
246	24:29	84	0:25	11:24
247	16:45	61	0:24	7:44
248	11:24	36	0:28	4:50
249	22:16	53	0:35	10:02
250	37:49	60	0:47	10:33
251	39:55	62	0:47	11:15
252	20:48	73	0:29	6:26
253	12:30	46	0:25	4:01
254	46:28	62	0:56	12:52
255	32:35	68	0:37	15:05
256	0:00	0	0:00	0:00
257	41:28	148	0:26	18:45
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	104:05	83	1:39	49:26
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	50:49	86	1:04	16:30
279	158:44	196	1:19	45:57
280	124:50	126	1:10	39:26
281	96:30	124	1:05	32:45

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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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]
282	42:42	116	0:42	18:28
283	37:58	119	0:37	13:48
284	50:09	129	0:39	22:27
285	139:45	233	1:05	42:53
286	264:32	206	2:20	123:09
287	272:51	174	2:20	130:00
288	25:36	69	0:33	12:56
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	87:46	152	0:59	37:41
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	67:44	136	0:40	30:48
295	35:42	93	0:32	16:25
296	56:05	124	0:48	19:53
297	65:09	110	0:49	20:11
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	7:32	31	0:22	3:08
305	7:40	31	0:22	3:09
306	0:00	0	0:00	0:00
307	187:44	124	1:57	54:49
308	81:30	160	1:06	26:24
309	105:16	194	0:47	39:47
310	190:21	214	1:13	81:27
311	182:22	214	1:12	64:32
312	173:20	197	1:13	70:12
313	173:42	209	1:11	62:46
314	177:00	199	1:09	57:59
315	154:40	175	1:06	49:51
316	139:38	159	1:06	44:31
317	95:57	86	1:38	26:49
318	129:35	102	1:49	36:51
319	0:00	0	0:00	0:00
320	55:56	68	1:00	15:39
321	24:45	44	0:43	6:31
322	6:38	22	0:23	1:36
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	48:22	70	0:50	13:49
327	81:38	106	0:54	24:40
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	132:10	112	1:40	38:34
380	102:24	100	1:25	29:50
381	85:17	92	1:05	24:58
382	86:31	96	1:02	25:32
383	73:09	87	0:59	21:20
384	63:49	76	1:01	18:14
385	39:40	58	0:50	10:59
386	20:01	58	0:25	5:42
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	27:50	86	0:31	11:58
390	18:37	55	0:27	8:35
391	65:19	142	0:48	26:19
393	26:44	61	0:37	8:15
394	19:15	47	0:35	8:06
395	58:25	141	0:34	21:53
398	0:00	0	0:00	0:00
399	43:50	64	0:51	12:19
400	0:00	0	0:00	0:00
401	27:58	52	0:41	7:41
402	86:21	122	0:57	27:29
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	10:14	36	0:26	4:06
406	0:00	0	0:00	0:00
407	18:39	71	0:25	7:54
408	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]
TRIV-07	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (1)	156:53	60:23
TRIV-08	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (2)	34:07	15:19
TRIV-09	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (3)	176:03	73:32
TRIV-10	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (5)	322:43	134:15
TRIV-10a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (4)	240:41	77:05
TRIV-14	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (6)	132:00	41:14
TRIV-15	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (7)	290:03	117:38
TRIV-16	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (8)	65:15	22:50
TRIV-17	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (9)	191:06	85:48
TRIV-19	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (10)	245:07	94:07
TRIV-27	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (11)	45:50	21:20
TRIV-41	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (12)	106:09	31:12
TRIV-42	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (13)	140:59	54:20
TRIV-44	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (14)	385:30	156:23
TRIV-45	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (15)	61:15	25:46
TRIV-46	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (16)	69:32	31:29
TRIV-46a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (17)	120:25	54:20
TRIV-47	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (18)	112:51	50:35
TRIV-48	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (19)	71:34	23:00
TRIV-49	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (20)	59:31	26:09

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SHADOW - Main Result

Calculation: 2018-06-05_TRIV Shadow Flicker Analysis

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No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (21)	43:49	18:20
TRIV-50	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (22)	37:05	12:29
TRIV-51	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (23)	91:22	36:20
TRIV-52	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (26)	12:43	5:07
TRIV-52a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (25)	117:02	37:53
TRIV-52b	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (24)	100:04	33:38
TRIV-52c	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (27)	55:34	18:07
TRIV-53	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (28)	39:51	19:15
TRIV-54	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (29)	108:00	33:53
TRIV-55	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (30)	152:11	48:48
TRIV-56	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (31)	156:30	58:09
TRIV-57	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (32)	57:30	22:47
TRIV-58	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (33)	191:50	85:59
TRIV-59	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (34)	65:50	27:41
TRIV-60	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (35)	51:28	20:12
TRIV-61	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (36)	215:33	89:01
TRIV-61a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (37)	355:01	147:21
TRIV-62	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (38)	275:26	78:38
TRIV-63	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (39)	28:31	13:42
TRIV-66	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (40)	74:22	33:19
TRIV-71	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)	482:37	188:59
TRIV-72	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)	317:05	110:00
TRIV-73	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (43)	423:42	162:37
TRIV-74	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (44)	111:36	46:34
TRIV-76	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (45)	269:11	91:08
TRIV-77	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (46)	232:07	72:33
TRIV-78	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (47)	154:35	76:50
TRIV-78a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (48)	275:39	85:47
TRIV-80	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (49)	121:20	57:12
TRIV-82	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (50)	47:34	24:27
TRIV-84	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (51)	443:43	163:59
TRIV-86	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (52)	369:26	112:10
TRIV-87	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (53)	204:37	87:13
TRIV-90	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (54)	78:19	37:46

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.

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Calculated:
6/8/2018 10:23 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-08	695,393	4,555,358	222.1	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-09	693,543	4,553,744	224.2	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-10	695,148	4,553,817	223.9	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-10a	695,248	4,554,372	223.2	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-14	695,087	4,558,394	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-15	695,990	4,557,833	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-16	696,285	4,557,413	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-17	696,664	4,556,925	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-19	696,650	4,554,220	223.5	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-27	696,026	4,560,119	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-41	692,852	4,555,787	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-42	693,590	4,555,279	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-44	693,510	4,552,657	225.8	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-45	695,101	4,559,935	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-46	695,044	4,560,371	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-46a	694,816	4,560,369	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-47	694,421	4,556,942	223.3	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-48	693,276	4,557,174	223.9	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-49	694,102	4,546,865	227.4	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-49a	694,135	4,546,233	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-50	693,075	4,545,372	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-51	694,040	4,545,311	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-52	693,507	4,544,751	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-52a	694,135	4,544,663	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-52b	694,578	4,547,672	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-52c	694,579	4,544,560	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-53	695,340	4,544,198	227.2	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-54	693,200	4,542,930	228.5	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-55	694,750	4,542,980	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-56	693,612	4,541,386	228.3	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-57	694,748	4,547,677	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-58	695,265	4,547,043	226.9	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-59	694,658	4,545,792	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7

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Calculated:
6/8/2018 10:23 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...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]
TRIV-60	694,668	4,546,454	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-61	695,358	4,545,418	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-61a	695,493	4,545,487	226.6	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-62	696,334	4,544,649	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-63	696,424	4,543,990	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-66	697,270	4,550,408	224.1	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-71	698,479	4,550,494	225.7	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-72	699,436	4,550,299	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-73	699,591	4,549,664	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-74	700,042	4,549,153	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-76	693,557	4,549,515	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-77	694,604	4,549,481	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-78	694,722	4,549,026	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-78a	694,072	4,547,926	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-80	693,422	4,544,051	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-82	693,450	4,542,211	228.8	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-84	698,608	4,549,608	224.7	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-86	696,353	4,549,622	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-87	694,736	4,554,248	223.6	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7
TRIV-90	695,166	4,555,096	222.5	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173....	No	VESTAS	V136-3.6-3,600	3,600	136.0	105.0	11.7

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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Calculated:
6/8/2018 10:23 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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Calculated:
6/8/2018 10:23 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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Calculated:
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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...continued from previous page

No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

Calculation Results

Shadow receptor

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]
1	9:45	34	0:26	4:08
2	8:31	32	0:23	3:36
3	8:17	31	0:23	3:29
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	6:05	25	0:18	3:08
9	38:12	84	0:38	19:18
10	50:45	66	0:58	12:10
11	51:05	117	0:38	23:09
12	9:12	40	0:20	4:38
21	17:24	52	0:29	8:42
22	25:26	60	0:43	11:32
23	147:18	224	0:59	65:05
24	108:30	108	1:09	32:32
25	86:59	130	1:02	26:35
26	18:20	68	0:28	6:57
27	6:27	30	0:19	3:03
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	26:41	84	0:29	6:59
34	10:29	42	0:23	3:01
35	8:27	36	0:21	2:28
37	28:42	68	0:30	7:09
38	27:55	76	0:29	7:07
39	0:00	0	0:00	0:00
40	13:26	34	0:30	3:01
41	11:08	49	0:21	5:38
42	20:53	79	0:23	10:46
43	18:12	66	0:25	9:18
44	40:12	70	0:58	11:55
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	68:40	164	0:42	27:24
52	77:19	174	0:43	31:03
53	78:54	174	0:42	31:40
54	76:51	173	0:35	30:11
55	72:37	171	0:36	28:13
56	63:07	166	0:37	24:08
57	56:39	156	0:37	21:30
58	50:27	143	0:36	18:58
59	52:46	117	0:42	17:31
60	172:33	264	1:27	72:02
61	69:27	86	0:58	19:37
62	100:12	166	1:05	29:14
63	95:55	164	1:00	28:42
64	133:45	162	1:22	51:49
65	8:51	37	0:22	2:41
66	7:55	34	0:21	2:28
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	4:10	24	0:13	2:08
70	78:22	161	0:57	27:54
71	11:42	36	0:28	4:42
72	6:37	30	0:20	2:26
73	15:23	41	0:31	5:42
74	17:42	44	0:33	8:01
75	21:37	56	0:32	10:44

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

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	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	1:15	9	0:10	0:17
77	0:00	0	0:00	0:00
78	86:09	146	1:21	38:56
79	130:44	189	1:06	60:37
80	18:20	82	0:23	8:00
81	16:50	46	0:32	6:28
82	55:04	100	0:42	16:37
83	138:03	110	1:36	65:59
84	112:42	177	1:01	45:30
85	83:42	134	0:59	36:34
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	8:11	36	0:20	3:45
92	9:44	43	0:20	4:29
93	12:20	49	0:22	5:41
94	11:51	50	0:21	5:27
95	17:45	76	0:22	8:15
96	19:37	66	0:24	9:06
97	11:20	50	0:18	5:14
98	29:19	78	0:28	13:39
99	0:00	0	0:00	0:00
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	46:00	69	0:52	19:39
103	0:00	0	0:00	0:00
104	85:19	110	0:54	39:57
105	55:22	83	0:47	25:48
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	21:18	67	0:25	11:01
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	5:31	27	0:19	2:06
129	0:00	0	0:00	0:00
130	5:43	27	0:19	2:07
131	9:41	35	0:25	3:53
132	55:41	86	0:59	17:16
133	49:28	88	0:43	13:03
134	59:35	119	0:41	18:16
135	55:01	104	0:47	16:32
136	7:45	28	0:21	1:59
137	8:25	33	0:23	3:01
138	151:54	106	1:42	43:18
139	53:41	106	0:46	14:41
140	54:05	75	0:56	20:21
141	26:45	53	0:40	12:07
142	18:39	44	0:34	8:00
144	15:05	42	0:31	5:35
145	7:43	30	0:23	2:53
147	3:51	21	0:14	0:49

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...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]
148	90:23	125	1:14	25:55
149	143:52	122	1:36	38:53
150	102:57	128	0:59	51:35
151	103:22	116	1:01	52:30
152	30:48	80	0:33	9:49
153	21:37	50	0:36	8:37
154	26:59	55	0:39	10:28
155	46:22	82	0:45	15:23
156	32:52	103	0:30	15:01
157	0:00	0	0:00	0:00
158	13:10	39	0:30	5:36
159	89:00	201	0:54	37:26
160	68:01	126	0:51	30:40
161	75:19	123	0:50	34:42
162	16:26	66	0:24	6:27
163	15:32	46	0:30	5:08
164	5:43	27	0:19	2:35
165	30:54	91	0:29	13:51
166	27:59	85	0:29	12:03
167	38:49	100	0:31	13:03
168	53:17	115	0:39	19:49
169	137:03	178	1:15	45:44
170	124:25	149	1:08	34:08
171	166:09	168	1:23	76:58
172	76:47	130	0:47	21:02
173	48:22	81	0:57	15:25
174	68:17	146	0:49	24:53
175	163:49	216	1:25	65:12
176	9:32	33	0:25	4:03
177	10:18	36	0:25	4:08
178	10:18	36	0:25	4:08
179	11:24	38	0:26	4:33
180	9:41	36	0:25	3:49
181	10:36	37	0:25	4:07
182	11:56	41	0:27	4:29
183	13:09	44	0:28	4:52
184	40:18	107	0:39	14:55
185	6:33	37	0:20	2:37
186	77:54	127	0:56	22:28
187	46:29	105	0:39	22:31
188	80:44	120	0:59	24:18
189	8:20	34	0:23	2:57
190	0:00	0	0:00	0:00
191	59:06	91	0:45	30:25
192	29:44	55	0:43	11:57
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	45:49	71	0:50	17:53
215	37:43	65	0:46	14:31
216	46:15	72	0:49	17:10
217	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	33:10	94	0:32	15:27
225	12:45	46	0:25	5:52
226	13:48	48	0:25	6:22
227	24:11	64	0:35	7:30
228	23:55	75	0:33	9:13
229	26:26	78	0:35	10:03
230	31:29	91	0:34	13:51
231	32:06	92	0:34	14:18
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	66:29	141	0:39	32:52
235	68:30	145	0:38	33:54
236	67:48	144	0:38	33:35
237	8:11	36	0:21	2:39
238	67:40	118	0:57	30:37
239	66:13	106	0:58	30:14
240	23:32	78	0:28	10:56
241	30:35	84	0:29	14:15
242	28:19	90	0:29	13:11
243	23:05	70	0:29	10:42
244	24:34	82	0:25	11:26
245	21:36	84	0:24	10:03
246	20:35	82	0:23	9:34
247	13:48	54	0:23	6:21
248	9:40	33	0:25	4:05
249	18:54	48	0:32	8:30
250	30:24	54	0:41	8:24
251	33:03	58	0:42	9:14
252	17:40	66	0:27	5:28
253	10:44	42	0:23	3:27
254	36:30	56	0:48	10:00
255	29:34	64	0:35	13:42
256	0:00	0	0:00	0:00
257	35:18	143	0:24	15:58
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	86:46	76	1:30	41:20
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	43:13	79	0:58	13:58
279	138:00	188	1:11	39:35
280	107:34	122	1:03	33:48
281	76:09	105	0:59	26:03

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

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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]
282	36:37	107	0:36	15:53
283	29:55	97	0:34	10:30
284	42:24	120	0:33	18:57
285	121:01	219	0:59	36:52
286	210:08	187	2:07	97:30
287	237:18	164	2:08	113:16
288	21:24	61	0:30	10:48
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	72:29	136	0:54	31:05
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	59:43	122	0:36	27:36
295	30:46	86	0:29	14:07
296	43:26	112	0:39	15:45
297	56:30	107	0:44	17:26
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	6:23	28	0:20	2:39
305	6:30	29	0:21	2:41
306	0:00	0	0:00	0:00
307	159:24	120	1:46	46:30
308	60:54	131	0:57	19:22
309	87:54	183	0:43	33:13
310	154:33	191	1:06	66:04
311	146:29	186	1:05	52:14
312	141:56	176	1:07	57:35
313	141:00	183	1:04	51:09
314	150:06	188	1:03	48:40
315	130:28	169	1:00	41:48
316	116:04	156	0:59	36:57
317	78:20	82	1:24	21:55
318	109:46	98	1:36	31:11
319	0:00	0	0:00	0:00
320	45:22	62	0:54	12:35
321	15:37	36	0:33	4:01
322	0:00	0	0:00	0:00
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	41:09	66	0:45	11:42
327	71:48	102	0:49	21:33
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

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No.	Shadow, worst case: Shadow hours per year [h/year]	Shadow, worst case: Shadow days per year [days/year]	Shadow, worst case: Max shadow hours per day [h/day]	Shadow, expected values: Shadow hours per year [h/year]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	111:45	108	1:27	32:32
380	84:13	96	1:04	24:50
381	73:51	88	0:59	21:31
382	75:22	92	0:56	22:09
383	63:20	82	0:53	18:23
384	53:49	72	0:55	15:18
385	31:08	52	0:44	8:31
386	17:31	54	0:23	4:57
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	23:39	78	0:28	10:10
390	16:10	50	0:25	7:27
391	54:50	132	0:43	22:01
393	22:51	56	0:34	7:00
394	16:24	41	0:33	6:53
395	49:22	129	0:31	18:13
398	0:00	0	0:00	0:00
399	35:41	58	0:45	9:56
400	0:00	0	0:00	0:00
401	21:32	46	0:35	5:51
402	72:25	118	0:52	23:03
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	8:41	32	0:24	3:29
406	0:00	0	0:00	0:00
407	15:54	64	0:23	6:45
408	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]
TRIV-07	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (1)	139:11	53:29
TRIV-08	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (2)	28:57	12:59
TRIV-09	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (3)	145:21	60:59
TRIV-10	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (5)	276:46	115:38
TRIV-10a	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (4)	209:43	66:59
TRIV-14	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (6)	114:57	35:36
TRIV-15	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (7)	245:01	100:20
TRIV-16	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (8)	53:04	18:47
TRIV-17	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (9)	163:35	73:30
TRIV-19	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (10)	213:42	82:23
TRIV-27	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (11)	39:44	18:29
TRIV-41	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (12)	89:02	26:11
TRIV-42	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (13)	115:38	44:53
TRIV-44	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (14)	332:58	136:55
TRIV-45	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (15)	52:28	22:01
TRIV-46	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (16)	59:21	26:50
TRIV-46a	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (17)	106:21	48:10
TRIV-47	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (18)	100:08	45:00
TRIV-48	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (19)	63:16	20:11
TRIV-49	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (20)	51:29	22:37

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SHADOW - Main Result

Calculation: 2018-06-07_V136_105HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (21)	38:05	15:52
TRIV-50	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (22)	31:31	10:33
TRIV-51	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (23)	77:24	30:47
TRIV-52	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (26)	10:46	4:19
TRIV-52a	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (25)	101:06	32:33
TRIV-52b	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (24)	83:00	27:44
TRIV-52c	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (27)	44:32	14:37
TRIV-53	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (28)	30:48	15:21
TRIV-54	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (29)	93:33	29:17
TRIV-55	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (30)	133:55	42:49
TRIV-56	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (31)	126:54	46:36
TRIV-57	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (32)	50:50	20:10
TRIV-58	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (33)	167:23	75:09
TRIV-59	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (34)	56:18	23:38
TRIV-60	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (35)	44:22	17:24
TRIV-61	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (36)	179:06	74:53
TRIV-61a	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (37)	315:59	132:17
TRIV-62	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (38)	241:15	68:19
TRIV-63	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (39)	24:12	11:37
TRIV-66	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (40)	63:25	28:22
TRIV-71	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (41)	432:36	168:02
TRIV-72	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (42)	276:53	94:47
TRIV-73	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (43)	357:15	138:29
TRIV-74	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (44)	93:42	39:01
TRIV-76	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (45)	216:02	74:11
TRIV-77	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (46)	210:12	65:22
TRIV-78	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (47)	135:12	67:17
TRIV-78a	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (48)	242:59	75:32
TRIV-80	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (49)	105:20	49:47
TRIV-82	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (50)	43:31	22:23
TRIV-84	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (51)	388:00	143:18
TRIV-86	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (52)	330:08	99:37
TRIV-87	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (53)	177:29	75:43
TRIV-90	VESTAS V136-3.6 3600 136.0 !O! hub: 105.0 m (TOT: 173.0 m) (54)	66:37	32:09

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.

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Calculated:
6/8/2018 11:10 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
TRIV-07	694,733	4,555,842	223.9	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-08	695,393	4,555,358	222.1	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-09	693,543	4,553,744	224.2	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-10	695,148	4,553,817	223.9	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-10a	695,248	4,554,372	223.2	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-14	695,087	4,558,394	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-15	695,990	4,557,833	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-16	696,285	4,557,413	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-17	696,664	4,556,925	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-19	696,650	4,554,220	223.5	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-27	696,026	4,560,119	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-41	692,852	4,555,787	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-42	693,590	4,555,279	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-44	693,510	4,552,657	225.8	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-45	695,101	4,559,935	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-46	695,044	4,560,371	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-46a	694,816	4,560,369	222.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-47	694,421	4,556,942	223.3	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-48	693,276	4,557,174	223.9	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-49	694,102	4,546,865	227.4	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-49a	694,135	4,546,233	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-50	693,075	4,545,372	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-51	694,040	4,545,311	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-52	693,507	4,544,751	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-52a	694,135	4,544,663	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-52b	694,578	4,547,672	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-52c	694,579	4,544,560	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-53	695,340	4,544,198	227.2	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-54	693,200	4,542,930	228.5	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-55	694,750	4,542,980	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-56	693,612	4,541,386	228.3	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-57	694,748	4,547,677	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-58	695,265	4,547,043	226.9	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-59	694,658	4,545,792	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7

To be continued on next page...

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6/8/2018 11:10 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

...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]
TRIV-60	694,668	4,546,454	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-61	695,358	4,545,418	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-61a	695,493	4,545,487	226.6	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-62	696,334	4,544,649	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-63	696,424	4,543,990	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-66	697,270	4,550,408	224.1	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-71	698,479	4,550,494	225.7	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-72	699,436	4,550,299	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-73	699,591	4,549,664	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-74	700,042	4,549,153	224.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-76	693,557	4,549,515	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-77	694,604	4,549,481	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-78	694,722	4,549,026	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-78a	694,072	4,547,926	226.8	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-80	693,422	4,544,051	228.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-82	693,450	4,542,211	228.8	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-84	698,608	4,549,608	224.7	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-86	696,353	4,549,622	226.0	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-87	694,736	4,554,248	223.6	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7
TRIV-90	695,166	4,555,096	222.5	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 ...	No	VESTAS	V136-3.6-3,600	3,600	136.0	82.0	11.7

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
1	694,804	4,541,440	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
2	694,868	4,541,453	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
3	694,865	4,541,526	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
10	693,258	4,541,787	229.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
21	694,035	4,559,563	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
22	695,522	4,556,755	223.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
23	695,467	4,557,635	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
24	695,431	4,558,729	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
25	695,543	4,558,081	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
26	694,887	4,557,958	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
27	693,647	4,558,040	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
28	693,585	4,558,029	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
29	693,179	4,558,058	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
30	692,974	4,558,050	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
41	693,075	4,556,351	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
42	693,167	4,556,335	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
43	693,235	4,556,408	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
44	693,818	4,556,359	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
45	694,260	4,556,411	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
46	694,648	4,556,424	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
47	694,777	4,556,375	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
48	694,771	4,556,337	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
49	694,985	4,556,353	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
50	694,988	4,556,446	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

...continued from previous page

No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
51	695,542	4,556,511	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
52	695,541	4,556,486	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
53	695,540	4,556,474	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
54	695,496	4,556,454	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
55	695,470	4,556,453	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
56	695,426	4,556,450	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
57	695,398	4,556,451	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
58	695,376	4,556,449	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
59	695,353	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
60	694,014	4,555,545	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
61	695,576	4,554,840	222.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
62	694,880	4,554,736	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
63	694,831	4,554,755	223.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
64	694,618	4,554,810	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
65	693,472	4,554,816	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
66	693,421	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
67	693,293	4,554,817	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
68	693,267	4,554,733	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
69	692,795	4,554,775	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
70	694,108	4,554,354	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
72	692,128	4,553,092	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
73	692,527	4,552,940	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
74	692,553	4,552,549	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
75	692,547	4,552,347	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
76	693,737	4,553,099	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
77	693,413	4,553,167	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
78	694,139	4,553,835	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
79	694,131	4,553,976	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
80	694,729	4,553,134	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
81	694,442	4,553,077	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
82	694,145	4,553,117	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
83	695,604	4,553,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
84	695,597	4,554,069	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
85	695,733	4,554,015	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
86	695,733	4,552,672	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
87	695,641	4,552,529	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
88	695,250	4,552,332	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
90	694,911	4,552,259	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
92	694,906	4,552,170	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
93	694,810	4,552,194	224.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
94	694,867	4,552,147	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
95	694,816	4,552,121	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
96	694,749	4,552,085	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
97	694,685	4,552,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
98	694,594	4,552,197	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
99	694,511	4,552,075	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
100	694,638	4,551,996	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
101	694,512	4,551,954	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
102	694,095	4,552,733	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
103	694,185	4,552,113	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
104	694,101	4,552,476	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
105	694,181	4,552,381	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
106	694,124	4,551,901	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
107	694,145	4,551,825	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
108	694,263	4,551,906	224.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
109	693,867	4,551,846	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
110	694,060	4,551,861	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
111	693,998	4,551,857	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
112	693,591	4,551,729	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
113	693,550	4,551,713	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
114	693,452	4,551,655	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
115	693,389	4,551,580	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
116	693,238	4,551,562	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
117	693,072	4,551,541	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
119	692,570	4,551,734	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
120	692,554	4,551,992	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
121	692,353	4,552,048	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
122	694,217	4,550,702	224.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
126	695,710	4,550,592	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
127	695,769	4,550,634	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
128	695,808	4,550,635	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
129	695,790	4,550,722	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
130	695,827	4,550,779	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
131	694,720	4,549,946	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
132	695,708	4,549,981	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
133	695,680	4,550,166	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
134	695,253	4,550,012	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
135	695,123	4,549,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
136	694,241	4,550,205	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
137	693,339	4,549,935	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
138	693,989	4,549,882	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
139	693,786	4,549,926	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
140	693,029	4,549,675	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
141	692,762	4,549,437	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
142	692,643	4,549,495	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
147	693,076	4,548,742	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
149	693,684	4,548,215	227.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
150	694,201	4,548,876	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
151	694,214	4,548,853	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
152	695,170	4,548,275	226.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
153	694,901	4,548,262	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
154	694,821	4,548,265	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
155	694,682	4,548,312	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
160	695,881	4,546,924	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
161	695,903	4,546,803	227.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
162	695,935	4,546,429	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
165	693,056	4,546,493	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
166	693,047	4,546,586	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
167	693,122	4,546,000	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
168	693,804	4,545,804	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
169	695,874	4,545,768	227.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
170	695,955	4,544,938	226.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
171	695,959	4,545,383	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
172	695,753	4,545,046	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
173	695,619	4,545,029	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
174	695,030	4,545,083	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
175	694,624	4,545,027	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
177	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
178	695,887	4,543,415	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
179	695,843	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
180	695,918	4,543,463	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
181	695,875	4,543,470	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
182	695,830	4,543,480	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
183	695,788	4,543,476	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
184	695,471	4,543,411	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
185	694,562	4,543,398	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
186	694,131	4,543,371	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
187	694,450	4,543,870	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
188	693,604	4,543,342	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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No.	Easting	Northing	Z [m]	Width [m]	Height [m]	Height a.g.l. [m]	Degrees from south cw [°]	Slope of window [°]	Direction mode
189	693,472	4,543,446	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
190	693,230	4,543,419	228.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
199	694,762	4,561,447	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
200	694,580	4,561,406	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
201	694,607	4,561,348	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
202	695,454	4,561,184	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
203	695,454	4,561,246	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
204	695,433	4,561,230	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
205	695,554	4,561,243	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
206	695,601	4,561,260	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
207	695,625	4,561,252	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
208	695,517	4,561,242	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
209	695,481	4,561,173	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
210	694,329	4,561,224	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
211	694,361	4,561,220	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
212	694,311	4,561,228	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
213	695,438	4,559,008	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
214	696,560	4,558,098	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
215	696,623	4,558,134	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
216	696,564	4,558,135	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
217	696,378	4,561,330	221.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
218	696,299	4,561,344	221.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
219	696,333	4,561,350	221.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
220	696,675	4,561,392	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
221	696,646	4,561,355	220.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
222	696,704	4,561,360	220.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
223	696,716	4,561,341	220.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
224	697,026	4,559,749	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
225	697,240	4,559,757	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
226	697,216	4,559,753	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
227	693,830	4,560,859	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
228	693,822	4,560,441	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
229	693,861	4,560,449	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
230	693,882	4,560,177	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
231	693,877	4,560,154	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
232	694,164	4,561,203	221.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
233	694,162	4,561,186	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
234	694,029	4,559,969	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
235	694,015	4,559,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
236	693,996	4,559,981	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
237	697,553	4,558,108	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
238	697,209	4,556,916	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
239	697,200	4,556,896	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
240	697,775	4,556,504	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
241	697,738	4,556,488	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
242	697,746	4,556,510	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
243	697,737	4,556,538	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
244	697,856	4,556,435	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
245	697,889	4,556,430	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
246	697,925	4,556,408	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
247	697,947	4,556,443	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
248	697,849	4,554,289	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
249	697,630	4,554,045	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
250	697,139	4,554,745	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
251	697,180	4,554,758	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
252	697,674	4,554,896	222.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
253	697,817	4,554,887	222.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
254	697,018	4,554,678	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
255	697,486	4,553,827	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
256	697,014	4,554,872	223.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
257	696,609	4,554,860	223.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
258	696,954	4,553,461	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
259	696,908	4,553,460	222.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
260	697,389	4,553,596	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
261	697,321	4,553,410	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
262	697,248	4,553,382	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
263	697,378	4,553,564	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
264	697,362	4,553,532	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
265	697,347	4,553,501	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
266	697,243	4,553,488	222.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
267	697,324	4,553,385	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
268	697,234	4,553,034	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
269	697,220	4,552,980	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
270	697,202	4,553,005	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
271	697,257	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
272	697,284	4,552,992	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
273	696,277	4,552,965	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
274	695,783	4,552,722	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
275	695,579	4,553,631	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
276	696,671	4,556,375	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
277	696,745	4,556,386	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
278	695,482	4,550,011	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
279	696,002	4,549,917	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
280	696,755	4,549,939	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
281	696,811	4,549,921	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
282	697,555	4,549,956	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
283	697,726	4,550,011	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
284	698,403	4,550,037	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
285	698,160	4,549,950	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
286	699,064	4,549,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
287	699,066	4,549,487	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
288	699,024	4,548,760	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
291	700,591	4,549,340	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
294	696,358	4,545,124	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
295	696,556	4,545,127	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
296	696,669	4,545,116	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
302	696,463	4,543,476	226.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
303	695,768	4,550,526	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
304	695,874	4,550,434	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
305	695,889	4,550,489	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
306	695,760	4,550,478	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
307	699,065	4,549,987	224.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
308	699,836	4,550,062	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
309	700,226	4,550,097	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
310	698,951	4,550,449	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
311	699,011	4,550,542	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
312	698,940	4,550,508	225.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
313	698,946	4,550,576	225.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
314	698,945	4,550,649	225.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
315	698,951	4,550,704	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
316	698,948	4,550,742	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
317	698,831	4,550,891	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
318	698,842	4,550,858	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
319	698,841	4,551,110	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
320	698,835	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
321	698,832	4,550,980	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
322	698,819	4,551,002	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
323	698,820	4,551,043	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
324	698,884	4,551,112	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
325	699,001	4,551,132	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
326	699,016	4,551,013	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
327	699,010	4,550,906	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
328	699,000	4,551,189	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
329	698,998	4,551,270	225.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
330	698,922	4,551,300	225.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
331	698,994	4,551,326	225.4	1.0	1.0	1.0	0.0	90.0	"Green house mode"
332	698,926	4,551,342	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
333	698,992	4,551,384	225.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
334	698,921	4,551,401	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
335	698,991	4,551,439	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
336	698,922	4,551,462	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
337	698,994	4,551,473	224.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
338	698,922	4,551,501	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
339	698,916	4,551,532	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
340	698,991	4,551,517	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
341	698,990	4,551,552	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
342	698,987	4,551,597	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
343	698,916	4,551,595	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
344	698,775	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
345	698,639	4,551,573	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
346	698,582	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
347	697,913	4,551,548	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
348	696,654	4,551,622	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
349	694,149	4,550,796	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
350	694,022	4,551,427	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
351	694,418	4,551,510	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
370	696,493	4,551,616	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
371	698,391	4,551,644	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
372	697,608	4,553,384	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
373	697,656	4,553,240	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
374	697,724	4,553,251	222.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
376	699,207	4,551,584	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
377	698,927	4,551,647	223.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
378	698,883	4,551,067	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
379	698,881	4,550,847	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
380	698,887	4,550,878	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
381	698,888	4,550,899	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
382	698,916	4,550,900	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
383	698,940	4,550,933	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
384	698,886	4,550,937	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
385	698,896	4,550,984	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
386	699,595	4,551,359	224.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
387	699,948	4,551,690	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
388	700,030	4,551,625	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
389	700,662	4,549,989	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
390	697,299	4,543,543	226.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
391	695,540	4,556,549	223.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
395	692,555	4,553,348	225.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
398	697,668	4,551,676	222.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
399	698,946	4,550,997	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
400	698,918	4,551,258	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
401	699,016	4,551,064	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
402	698,998	4,550,853	225.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
403	699,033	4,551,576	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
404	699,158	4,551,587	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
405	700,651	4,550,688	223.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
407	695,954	4,546,326	227.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"
408	693,678	4,541,829	228.9	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

Calculation Results

Shadow receptor

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]
1	7:33	32	0:22	3:11
2	6:28	29	0:20	2:43
3	6:18	29	0:20	2:39
5	0:00	0	0:00	0:00
6	0:00	0	0:00	0:00
7	0:00	0	0:00	0:00
8	9:45	43	0:19	5:02
9	29:20	73	0:36	14:44
10	28:36	48	0:46	6:37
11	45:15	123	0:33	20:38
12	6:29	36	0:16	3:16
21	13:15	47	0:25	6:37
22	19:37	56	0:37	8:52
23	138:13	233	0:59	62:08
24	95:35	96	1:11	28:06
25	89:23	135	1:03	26:37
26	14:07	63	0:24	5:20
27	4:36	28	0:15	2:10
28	0:00	0	0:00	0:00
29	0:00	0	0:00	0:00
30	0:00	0	0:00	0:00
31	22:21	77	0:27	5:49
34	7:58	39	0:19	2:16
35	6:16	34	0:17	1:49
37	22:57	62	0:27	5:40
38	22:42	70	0:26	5:45
39	0:00	0	0:00	0:00
40	0:00	0	0:00	0:00
41	7:40	42	0:16	3:53
42	12:49	62	0:18	6:35
43	12:33	54	0:20	6:22
44	33:39	74	0:52	9:53
45	0:00	0	0:00	0:00
46	0:00	0	0:00	0:00
47	0:00	0	0:00	0:00
48	0:00	0	0:00	0:00
49	0:00	0	0:00	0:00
50	0:00	0	0:00	0:00
51	50:34	136	0:37	19:47
52	58:07	164	0:36	22:58
53	62:16	168	0:35	24:46
54	62:19	167	0:33	24:22
55	58:59	164	0:34	22:47
56	50:28	156	0:35	19:18
57	43:14	144	0:33	16:37
58	37:09	133	0:31	14:18
59	41:17	100	0:40	13:20
60	170:24	298	1:20	68:19
61	45:55	102	0:50	14:06
62	74:52	137	1:02	21:02
63	75:00	154	0:58	21:53
64	124:58	166	1:16	49:21
65	6:41	34	0:18	1:59
66	5:51	32	0:17	1:47
67	0:00	0	0:00	0:00
68	0:00	0	0:00	0:00
69	6:23	38	0:14	3:17
70	57:20	129	0:49	21:16
71	9:24	35	0:24	3:46
72	4:48	26	0:16	1:45
73	12:40	41	0:28	4:41
74	14:31	44	0:30	6:32
75	17:04	52	0:29	8:26

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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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]
76	0:00	0	0:00	0:00
77	0:00	0	0:00	0:00
78	74:37	149	1:15	33:23
79	121:34	198	0:57	56:21
80	15:06	83	0:19	6:36
81	13:46	44	0:28	5:14
82	48:14	92	0:42	14:25
83	140:28	122	1:29	66:44
84	106:11	183	1:03	41:28
85	72:23	133	0:52	31:18
86	0:00	0	0:00	0:00
87	0:00	0	0:00	0:00
88	0:00	0	0:00	0:00
90	5:46	32	0:16	2:38
92	6:46	37	0:16	3:07
93	8:44	42	0:18	4:01
94	8:09	43	0:17	3:45
95	11:08	55	0:18	5:08
96	16:24	68	0:19	7:36
97	10:03	54	0:16	4:38
98	24:57	82	0:25	11:37
99	0:27	16	0:02	0:12
100	0:00	0	0:00	0:00
101	0:00	0	0:00	0:00
102	42:23	69	0:53	17:56
103	0:00	0	0:00	0:00
104	80:48	119	0:53	37:43
105	54:32	92	0:46	25:24
106	0:00	0	0:00	0:00
107	0:00	0	0:00	0:00
108	0:00	0	0:00	0:00
109	0:00	0	0:00	0:00
110	0:00	0	0:00	0:00
111	0:00	0	0:00	0:00
112	0:00	0	0:00	0:00
113	0:00	0	0:00	0:00
114	0:00	0	0:00	0:00
115	0:00	0	0:00	0:00
116	0:00	0	0:00	0:00
117	0:00	0	0:00	0:00
119	0:00	0	0:00	0:00
120	0:00	0	0:00	0:00
121	17:55	69	0:20	9:16
122	0:00	0	0:00	0:00
126	0:00	0	0:00	0:00
127	0:00	0	0:00	0:00
128	3:53	24	0:14	1:28
129	0:00	0	0:00	0:00
130	4:07	25	0:15	1:31
131	7:27	33	0:21	2:59
132	51:28	108	0:51	15:24
133	38:00	83	0:37	9:53
134	49:40	108	0:40	15:04
135	41:19	89	0:43	12:14
136	0:00	0	0:00	0:00
137	6:24	31	0:19	2:16
138	137:09	96	1:42	38:37
139	24:19	70	0:34	6:50
140	52:14	77	0:57	19:25
141	22:37	52	0:38	10:10
142	15:29	44	0:31	6:37
144	12:18	40	0:28	4:33
145	5:46	29	0:18	2:09
147	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

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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]
148	84:28	116	1:06	23:20
149	123:14	111	1:25	32:35
150	91:03	138	1:00	45:20
151	102:09	126	1:01	51:42
152	16:40	61	0:24	5:33
153	18:16	49	0:34	7:13
154	23:28	58	0:38	8:59
155	44:59	103	0:45	14:28
156	27:08	104	0:27	12:23
157	0:00	0	0:00	0:00
158	10:31	36	0:26	4:27
159	78:09	202	0:54	32:43
160	56:46	116	0:50	25:30
161	71:58	131	0:49	33:14
162	12:12	61	0:19	4:44
163	12:54	56	0:26	4:15
164	4:08	26	0:14	1:51
165	24:02	86	0:26	10:43
166	21:58	79	0:26	9:24
167	29:38	87	0:27	9:57
168	46:11	118	0:38	16:52
169	126:13	175	1:15	40:54
170	116:04	137	1:10	30:49
171	151:07	175	1:15	69:38
172	66:32	124	0:47	17:57
173	42:28	91	0:50	13:11
174	42:15	122	0:43	16:17
175	154:41	212	1:17	61:29
176	7:10	30	0:21	3:02
177	7:58	34	0:22	3:11
178	7:58	34	0:22	3:11
179	8:56	36	0:23	3:33
180	7:24	33	0:21	2:54
181	8:14	35	0:22	3:10
182	9:17	38	0:23	3:26
183	10:34	41	0:24	3:50
184	36:44	118	0:38	13:29
185	5:16	43	0:16	2:09
186	68:23	122	0:47	19:22
187	36:14	94	0:32	17:29
188	63:57	107	0:57	19:00
189	6:15	32	0:18	2:12
190	0:00	0	0:00	0:00
191	56:19	99	0:43	28:58
192	26:01	55	0:42	10:25
199	0:00	0	0:00	0:00
200	0:00	0	0:00	0:00
201	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
206	0:00	0	0:00	0:00
207	0:00	0	0:00	0:00
208	0:00	0	0:00	0:00
209	0:00	0	0:00	0:00
210	0:00	0	0:00	0:00
211	0:00	0	0:00	0:00
212	0:00	0	0:00	0:00
213	0:00	0	0:00	0:00
214	42:57	75	0:51	16:27
215	34:18	67	0:45	12:58
216	43:38	79	0:50	15:49
217	0:00	0	0:00	0:00

To be continued on next page...

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6/8/2018 11:10 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

...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]
218	0:00	0	0:00	0:00
219	0:00	0	0:00	0:00
220	0:00	0	0:00	0:00
221	0:00	0	0:00	0:00
222	0:00	0	0:00	0:00
223	0:00	0	0:00	0:00
224	21:57	72	0:28	10:10
225	9:21	42	0:20	4:18
226	10:10	44	0:21	4:41
227	19:20	64	0:28	5:52
228	18:48	71	0:29	7:14
229	20:53	74	0:31	7:55
230	24:54	84	0:31	10:56
231	25:20	87	0:30	11:15
232	0:00	0	0:00	0:00
233	0:00	0	0:00	0:00
234	57:39	142	0:36	28:35
235	59:58	146	0:36	29:47
236	58:58	146	0:35	29:18
237	6:04	34	0:17	1:57
238	63:02	125	0:57	28:15
239	62:15	115	0:59	28:05
240	16:11	62	0:24	7:28
241	24:25	86	0:25	11:22
242	18:15	67	0:25	8:26
243	16:35	60	0:25	7:39
244	15:50	69	0:21	7:21
245	13:21	60	0:20	6:10
246	12:19	58	0:19	5:42
247	9:37	47	0:18	4:25
248	7:25	30	0:21	3:07
249	15:14	46	0:30	6:49
250	16:00	38	0:32	4:15
251	20:18	44	0:35	5:29
252	14:21	69	0:23	4:25
253	8:11	40	0:19	2:37
254	16:09	36	0:34	4:12
255	27:33	72	0:31	12:45
256	0:00	0	0:00	0:00
257	22:46	117	0:20	10:14
258	0:00	0	0:00	0:00
259	0:00	0	0:00	0:00
260	0:00	0	0:00	0:00
261	0:00	0	0:00	0:00
262	0:00	0	0:00	0:00
263	0:00	0	0:00	0:00
264	0:00	0	0:00	0:00
265	0:00	0	0:00	0:00
266	0:00	0	0:00	0:00
267	0:00	0	0:00	0:00
268	0:00	0	0:00	0:00
269	0:00	0	0:00	0:00
270	0:00	0	0:00	0:00
271	0:00	0	0:00	0:00
272	0:00	0	0:00	0:00
273	0:00	0	0:00	0:00
274	0:00	0	0:00	0:00
275	96:39	91	1:29	45:43
276	0:00	0	0:00	0:00
277	0:00	0	0:00	0:00
278	36:38	80	0:51	11:40
279	122:25	168	1:13	33:44
280	101:46	112	1:05	31:07
281	84:05	126	1:00	27:16

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

...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]
282	31:13	114	0:30	13:41
283	28:03	115	0:31	10:14
284	32:28	114	0:27	14:28
285	108:22	209	1:00	32:24
286	179:24	159	2:08	82:17
287	233:45	174	2:08	111:21
288	16:07	55	0:26	8:07
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
291	63:57	130	0:54	27:06
292	0:00	0	0:00	0:00
293	0:00	0	0:00	0:00
294	51:28	116	0:34	23:53
295	22:56	77	0:25	10:30
296	16:09	63	0:22	7:22
297	50:46	100	0:44	15:24
299	0:00	0	0:00	0:00
300	0:00	0	0:00	0:00
302	0:00	0	0:00	0:00
303	0:00	0	0:00	0:00
304	4:37	25	0:16	1:55
305	4:44	26	0:16	1:57
306	0:00	0	0:00	0:00
307	149:17	112	1:43	42:31
308	41:48	134	0:32	16:23
309	77:27	169	0:42	28:28
310	144:20	185	1:07	60:39
311	154:30	211	1:06	52:10
312	136:48	181	1:07	54:21
313	144:40	210	1:05	50:23
314	140:49	182	1:04	45:34
315	118:28	161	1:02	37:56
316	102:31	147	1:00	32:48
317	52:27	66	0:59	14:45
318	82:48	84	1:23	23:35
319	0:00	0	0:00	0:00
320	24:54	44	0:42	6:39
321	0:00	0	0:00	0:00
322	0:00	0	0:00	0:00
323	0:00	0	0:00	0:00
324	0:00	0	0:00	0:00
325	0:00	0	0:00	0:00
326	29:41	54	0:41	8:15
327	63:36	93	0:50	18:55
328	0:00	0	0:00	0:00
329	0:00	0	0:00	0:00
330	0:00	0	0:00	0:00
331	0:00	0	0:00	0:00
332	0:00	0	0:00	0:00
333	0:00	0	0:00	0:00
334	0:00	0	0:00	0:00
335	0:00	0	0:00	0:00
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	0:00	0	0:00	0:00
340	0:00	0	0:00	0:00
341	0:00	0	0:00	0:00
342	0:00	0	0:00	0:00
343	0:00	0	0:00	0:00
344	0:00	0	0:00	0:00
345	0:00	0	0:00	0:00
346	0:00	0	0:00	0:00
347	0:00	0	0:00	0:00

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SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

...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]
348	0:00	0	0:00	0:00
349	0:00	0	0:00	0:00
350	0:00	0	0:00	0:00
351	0:00	0	0:00	0:00
370	0:00	0	0:00	0:00
371	0:00	0	0:00	0:00
372	0:00	0	0:00	0:00
373	0:00	0	0:00	0:00
374	0:00	0	0:00	0:00
376	0:00	0	0:00	0:00
377	0:00	0	0:00	0:00
378	0:00	0	0:00	0:00
379	88:52	96	1:07	26:14
380	72:11	84	1:01	20:59
381	60:15	76	0:58	17:18
382	64:19	80	0:57	18:37
383	51:40	72	0:53	14:47
384	37:35	58	0:49	10:26
385	13:13	34	0:31	3:26
386	12:52	48	0:19	3:35
387	0:00	0	0:00	0:00
388	0:00	0	0:00	0:00
389	18:16	74	0:24	7:49
390	15:33	57	0:23	7:10
391	39:02	112	0:36	15:44
393	19:35	57	0:32	5:52
394	13:37	40	0:30	5:41
395	37:21	111	0:28	13:37
398	0:00	0	0:00	0:00
399	20:58	42	0:37	5:38
400	0:00	0	0:00	0:00
401	8:00	27	0:22	2:02
402	68:41	110	0:52	21:13
403	0:00	0	0:00	0:00
404	0:00	0	0:00	0:00
405	6:39	31	0:20	2:39
406	0:00	0	0:00	0:00
407	11:47	61	0:19	4:59
408	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]
TRIV-07	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (1)	118:04	46:02
TRIV-08	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (2)	18:27	8:11
TRIV-09	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (3)	116:41	49:55
TRIV-10	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (5)	272:22	113:14
TRIV-10a	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (4)	152:24	49:05
TRIV-14	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (6)	100:11	30:16
TRIV-15	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (7)	248:19	99:00
TRIV-16	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (8)	38:31	14:36
TRIV-17	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (9)	136:11	60:46
TRIV-19	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (10)	163:28	64:23
TRIV-27	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (11)	26:44	12:21
TRIV-41	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (12)	59:43	18:07
TRIV-42	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (13)	124:01	46:03
TRIV-44	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (14)	285:52	117:33
TRIV-45	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (15)	40:42	17:00
TRIV-46	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (16)	45:22	20:25
TRIV-46a	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (17)	91:14	41:24
TRIV-47	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (18)	75:55	33:45
TRIV-48	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (19)	52:47	16:38
TRIV-49	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (20)	39:59	17:23

To be continued on next page...

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Calculated:
6/8/2018 11:10 AM/3.1.633

SHADOW - Main Result

Calculation: 2018-06-07_V136_82HH

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-49a	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (21)	30:10	12:32
TRIV-50	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (22)	27:51	9:06
TRIV-51	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (23)	69:34	28:17
TRIV-52	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (26)	8:31	3:24
TRIV-52a	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (25)	91:08	28:40
TRIV-52b	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (24)	55:57	18:20
TRIV-52c	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (27)	22:46	7:58
TRIV-53	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (28)	23:12	11:39
TRIV-54	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (29)	74:15	22:54
TRIV-55	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (30)	114:09	35:41
TRIV-56	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (31)	93:03	35:49
TRIV-57	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (32)	41:58	16:41
TRIV-58	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (33)	154:31	69:05
TRIV-59	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (34)	43:57	18:21
TRIV-60	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (35)	34:19	13:26
TRIV-61	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (36)	166:17	67:38
TRIV-61a	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (37)	297:36	122:27
TRIV-62	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (38)	190:48	53:18
TRIV-63	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (39)	23:33	11:18
TRIV-66	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (40)	49:37	22:14
TRIV-71	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (41)	378:02	146:14
TRIV-72	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (42)	256:37	88:38
TRIV-73	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (43)	299:45	117:36
TRIV-74	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (44)	81:24	33:31
TRIV-76	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (45)	172:03	60:04
TRIV-77	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (46)	172:10	52:59
TRIV-78	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (47)	128:10	63:44
TRIV-78a	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (48)	218:27	66:10
TRIV-80	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (49)	96:00	45:30
TRIV-82	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (50)	37:57	19:31
TRIV-84	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (51)	361:56	133:33
TRIV-86	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (52)	294:21	86:45
TRIV-87	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (53)	160:18	69:03
TRIV-90	VESTAS V136-3.6 3600 136.0 !O! hub: 82.0 m (TOT: 150.0 m) (54)	69:03	33:34

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.

Attachment E

Cumulative Impacts Analysis WindPro Results

Licensed user:
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(315) 471 0688

Calculated:
6/8/2018 3:51 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-05-31_Cumulative 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
0.50	0.55	0.57	0.63	0.69	0.74	0.76	0.75	0.67	0.60	0.40	0.36

Operational time

N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW
376	336	411	526	570	353	301	322	513	699	781	841

W	WNW	NW	NNW	Sum
964	723	597	447	8,760

Idle start wind speed: Cut in wind speed from power curve

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_2018-05-22_Timber Road IV SFA_0.wpo (1)
Obstacles not used in calculation
Eye height: 1.5 m
Grid resolution: 10.0 m

All coordinates are in
UTM (north)-NAD83 (US+CA) Zone: 16

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]
T-01	696,668	4,548,602	226.0	GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hu...	Yes	GE WIND ENERGY	GE 2.5-116-2,500	2,500	116.0	94.0	13.0
T-02	696,817	4,547,956	226.0	GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hu...	Yes	GE WIND ENERGY	GE 2.5-116-2,500	2,500	116.0	94.0	13.0
T-03	696,944	4,547,397	225.9	GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hu...	Yes	GE WIND ENERGY	GE 2.5-116-2,500	2,500	116.0	94.0	13.0
T-08	697,754	4,545,637	225.7	GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hu...	Yes	GE WIND ENERGY	GE 2.5-116-2,500	2,500	116.0	94.0	13.0
T-13	699,680	4,547,432	224.9	GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hu...	Yes	GE WIND ENERGY	GE 2.5-116-2,500	2,500	116.0	94.0	13.0
T-14	700,129	4,547,318	224.0	GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hu...	Yes	GE WIND ENERGY	GE 2.5-116-2,500	2,500	116.0	94.0	13.0
T2	694,639	4,539,546	230.0	GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (...	Yes	GAMESA	G90/2000-2,000	2,000	90.0	100.0	16.7
T4	694,538	4,539,884	230.0	GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (...	Yes	GAMESA	G90/2000-2,000	2,000	90.0	100.0	16.7
T66	696,287	4,542,375	228.0	GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (...	Yes	GAMESA	G90/2000-2,000	2,000	90.0	100.0	16.7
T7	695,217	4,539,875	228.7	GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (...	Yes	GAMESA	G90/2000-2,000	2,000	90.0	100.0	16.7
T908	693,796	4,539,569	230.9	GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (...	Yes	GAMESA	G90/2000-2,000	2,000	90.0	100.0	16.7
TRIII-1	691,738	4,554,271	225.2	GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT:...	Yes	GAMESA	G114-2,100	2,100	114.0	93.0	0.0
TRIII-2	691,569	4,555,313	224.3	GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT:...	Yes	GAMESA	G114-2,100	2,100	114.0	93.0	0.0
TRIII-3	691,444	4,555,712	224.4	GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT:...	Yes	GAMESA	G114-2,100	2,100	114.0	93.0	0.0
TRIII-4	691,608	4,556,918	223.4	GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT:...	Yes	GAMESA	G114-2,100	2,100	114.0	93.0	0.0
TRIII-5	691,609	4,557,269	223.0	GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT:...	Yes	GAMESA	G114-2,100	2,100	114.0	93.0	0.0
TRIII-6	691,702	4,557,635	222.6	GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT:...	Yes	GAMESA	G114-2,100	2,100	114.0	93.0	0.0
TRIV-07	694,733	4,555,842	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-08	695,393	4,555,358	222.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-09	693,543	4,553,744	224.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-10	695,148	4,553,817	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-10a	695,248	4,554,372	223.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-14	695,087	4,558,394	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-15	695,990	4,557,833	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-16	696,285	4,557,413	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-17	696,664	4,556,925	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-19	696,650	4,554,220	223.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-27	696,026	4,560,119	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-41	692,852	4,555,787	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-42	693,590	4,555,279	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-44	693,510	4,552,657	225.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-45	695,101	4,559,935	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-46	695,044	4,560,371	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-46a	694,816	4,560,369	222.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-47	694,421	4,556,942	223.3	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4

To be continued on next page...

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Calculated:
6/8/2018 3:51 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-05-31_Cumulative 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]
TRIV-48	693,276	4,557,174	223.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-49	694,102	4,546,865	227.4	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-49a	694,135	4,546,233	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-50	693,075	4,545,372	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-51	694,040	4,545,311	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52	693,507	4,544,751	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52a	694,135	4,544,663	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52b	694,578	4,547,672	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-52c	694,579	4,544,560	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-53	695,340	4,544,198	227.2	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-54	693,200	4,542,930	228.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-55	694,750	4,542,980	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-56	693,612	4,541,386	228.3	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-57	694,748	4,547,677	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-58	695,265	4,547,043	226.9	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-59	694,658	4,545,792	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-60	694,668	4,546,454	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-61	695,358	4,545,418	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-61a	695,493	4,545,487	226.6	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-62	696,334	4,544,649	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-63	696,424	4,543,990	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-66	697,270	4,550,408	224.1	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-71	698,479	4,550,494	225.7	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-72	699,436	4,550,299	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-73	699,591	4,549,664	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-74	700,042	4,549,153	224.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-76	693,557	4,549,515	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-77	694,604	4,549,481	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-78	694,722	4,549,026	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-78a	694,072	4,547,926	226.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-80	693,422	4,544,051	228.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-82	693,450	4,542,211	228.8	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-84	698,608	4,549,608	224.7	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-86	696,353	4,549,622	226.0	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-87	694,736	4,554,248	223.6	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
TRIV-90	695,166	4,555,096	222.5	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (...	Yes	VESTAS	V150-4.2-4,200	4,200	150.0	105.0	10.4
WTG 12	692,836	4,547,677	228.0	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 22	691,972	4,540,677	230.5	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 23	692,104	4,541,047	230.0	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 49	692,159	4,542,305	230.0	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 51	692,040	4,543,077	230.0	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 52	691,848	4,543,627	229.8	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 53	691,835	4,544,006	229.6	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 54	691,993	4,544,396	229.3	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 55	691,980	4,544,795	229.0	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9
WTG 58	691,854	4,546,120	228.8	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: ...	Yes	VESTAS	V100-1,800	1,800	100.0	95.0	14.9

Shadow receptor-Input

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
5	694,886	4,540,643	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
6	694,050	4,540,185	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
7	692,859	4,540,871	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
8	692,934	4,540,958	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
9	692,795	4,541,087	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
11	692,647	4,541,792	230.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
12	692,095	4,541,693	230.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
31	692,314	4,557,770	222.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
34	691,641	4,556,388	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
35	691,560	4,556,396	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
37	691,920	4,556,430	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
38	691,890	4,556,414	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
39	692,327	4,556,398	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

To be continued on next page...

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Calculated:
6/8/2018 3:51 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-05-31_Cumulative SFA

...continued from previous page

No.	Easting	Northing	Z	Width	Height	Height a.g.l.	Degrees from south cw	Slope of window	Direction mode
			[m]	[m]	[m]	[m]	[°]	[°]	
40	692,356	4,556,315	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
71	692,440	4,553,859	224.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
144	693,083	4,548,204	227.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
145	692,776	4,548,193	227.8	1.0	1.0	1.0	0.0	90.0	"Green house mode"
148	693,577	4,548,229	227.3	1.0	1.0	1.0	0.0	90.0	"Green house mode"
156	695,761	4,548,929	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
157	696,363	4,548,357	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
158	695,808	4,547,727	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
159	695,825	4,547,167	226.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
163	693,103	4,547,287	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
164	692,626	4,546,661	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
176	695,959	4,543,015	228.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
191	692,731	4,543,745	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
192	692,692	4,544,139	228.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
289	699,894	4,548,459	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
290	699,961	4,548,463	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
292	696,706	4,548,305	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
293	697,167	4,548,367	225.2	1.0	1.0	1.0	0.0	90.0	"Green house mode"
297	696,947	4,545,073	226.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"
299	699,105	4,548,190	224.6	1.0	1.0	1.0	0.0	90.0	"Green house mode"
300	699,103	4,548,144	224.5	1.0	1.0	1.0	0.0	90.0	"Green house mode"
393	692,415	4,557,592	222.7	1.0	1.0	1.0	0.0	90.0	"Green house mode"
394	692,308	4,557,194	223.1	1.0	1.0	1.0	0.0	90.0	"Green house mode"
406	700,454	4,548,399	224.0	1.0	1.0	1.0	0.0	90.0	"Green house mode"

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]
5	0:00	0	0:00	0:00
6	37:43	91	0:37	11:06
7	31:04	83	0:31	13:40
8	33:06	105	0:28	15:09
9	79:10	183	0:42	36:48
11	57:04	125	0:40	25:43
12	10:59	44	0:22	5:32
31	93:17	139	1:04	29:57
34	12:21	46	0:25	3:33
35	10:04	40	0:23	2:57
37	32:22	72	0:33	8:06
38	31:26	78	0:32	8:01
39	21:01	60	0:25	5:59
40	36:21	84	0:36	9:35
71	13:47	39	0:30	5:33
144	17:43	46	0:34	6:34
145	9:03	34	0:24	3:23
148	134:32	129	1:22	38:33
156	50:42	151	0:32	21:49
157	46:45	70	0:48	11:31
158	34:51	112	0:32	14:57
159	112:12	250	1:00	47:29
163	18:20	57	0:33	6:06
164	30:01	111	0:26	10:05
176	11:10	36	0:27	4:46
191	93:42	154	0:58	46:01
192	101:42	193	1:13	42:49
289	0:00	0	0:00	0:00
290	0:00	0	0:00	0:00
292	0:00	0	0:00	0:00
293	75:50	119	0:48	28:29
297	65:09	110	0:49	20:11
299	0:00	0	0:00	0:00

To be continued on next page...

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Calculated:
6/8/2018 3:51 PM/3.1.633

SHADOW - Main Result

Calculation: 2018-05-31_Cumulative 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]
300	0:00	0	0:00	0:00
393	86:00	183	0:51	30:48
394	67:26	146	0:38	28:49
406	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]
	T-01 GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hub: 94.0 m (TOT: 152.0 m) (22)	51:41	22:33
	T-02 GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hub: 94.0 m (TOT: 152.0 m) (23)	96:14	27:31
	T-03 GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hub: 94.0 m (TOT: 152.0 m) (24)	16:25	6:56
	T-08 GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hub: 94.0 m (TOT: 152.0 m) (25)	0:00	0:00
	T-13 GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hub: 94.0 m (TOT: 152.0 m) (26)	0:00	0:00
	T-14 GE WIND ENERGY GE 2.5-116 2500 116.0 !O! hub: 94.0 m (TOT: 152.0 m) (27)	0:00	0:00
	T2 GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (TOT: 145.0 m) (17)	0:00	0:00
	T4 GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (TOT: 145.0 m) (18)	32:49	9:18
	T66 GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (TOT: 145.0 m) (20)	0:00	0:00
	T7 GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (TOT: 145.0 m) (19)	4:54	1:48
	T908 GAMESA G90/2000 2000 90.0 !O! hub: 100.0 m (TOT: 145.0 m) (21)	0:00	0:00
	TRIII-1 GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT: 150.0 m) (11)	0:00	0:00
	TRIII-2 GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT: 150.0 m) (12)	0:00	0:00
	TRIII-3 GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT: 150.0 m) (13)	33:09	9:46
	TRIII-4 GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT: 150.0 m) (14)	40:46	14:02
	TRIII-5 GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT: 150.0 m) (15)	76:11	28:25
	TRIII-6 GAMESA G114 2100 114.0 !O! hub: 93.0 m (TOT: 150.0 m) (16)	53:04	22:45
	TRIV-07 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (1)	0:00	0:00
	TRIV-08 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (2)	0:00	0:00
	TRIV-09 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (3)	13:47	5:33
	TRIV-10 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (5)	0:00	0:00
	TRIV-10a VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (4)	0:00	0:00
	TRIV-14 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (6)	0:00	0:00
	TRIV-15 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (7)	0:00	0:00
	TRIV-16 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (8)	0:00	0:00
	TRIV-17 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (9)	0:00	0:00
	TRIV-19 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (10)	0:00	0:00
	TRIV-27 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (11)	0:00	0:00
	TRIV-41 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (12)	71:19	18:07
	TRIV-42 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (13)	0:00	0:00
	TRIV-44 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (14)	0:00	0:00
	TRIV-45 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (15)	0:00	0:00
	TRIV-46 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (16)	0:00	0:00
	TRIV-46a VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (17)	0:00	0:00
	TRIV-47 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (18)	0:00	0:00
	TRIV-48 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (19)	71:34	23:00
	TRIV-49 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (20)	24:58	9:06
	TRIV-49a VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (21)	0:00	0:00
	TRIV-50 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (22)	0:00	0:00
	TRIV-51 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (23)	0:00	0:00
	TRIV-52 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (26)	0:00	0:00
	TRIV-52a VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (25)	0:00	0:00
	TRIV-52b VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (24)	57:14	22:11
	TRIV-52c VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (27)	0:00	0:00
	TRIV-53 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (28)	0:00	0:00
	TRIV-54 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (29)	0:00	0:00
	TRIV-55 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (30)	11:10	4:46
	TRIV-56 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (31)	77:19	35:53
	TRIV-57 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (32)	51:00	20:56
	TRIV-58 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (33)	58:22	24:17
	TRIV-59 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (34)	0:00	0:00
	TRIV-60 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (35)	13:45	4:20
	TRIV-61 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (36)	0:00	0:00
	TRIV-61a VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (37)	0:00	0:00
	TRIV-62 VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (38)	65:09	20:11

To be continued on next page...

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SHADOW - Main Result

Calculation: 2018-05-31_Cumulative SFA

...continued from previous page

No.	Name	Worst case [h/year]	Expected [h/year]
TRIV-63	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (39)	0:00	0:00
TRIV-66	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (40)	0:00	0:00
TRIV-71	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (41)	0:00	0:00
TRIV-72	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (42)	0:00	0:00
TRIV-73	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (43)	0:00	0:00
TRIV-74	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (44)	0:00	0:00
TRIV-76	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (45)	0:00	0:00
TRIV-77	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (46)	19:37	9:05
TRIV-78	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (47)	17:33	7:51
TRIV-78a	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (48)	121:12	36:19
TRIV-80	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (49)	100:58	48:02
TRIV-82	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (50)	47:34	24:27
TRIV-84	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (51)	0:00	0:00
TRIV-86	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (52)	0:00	0:00
TRIV-87	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (53)	0:00	0:00
TRIV-90	VESTAS V150-4.2 4200 150.0 !O! hub: 105.0 m (TOT: 180.0 m) (54)	0:00	0:00
WTG 12	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (1)	27:32	8:04
WTG 22	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (2)	29:57	11:34
WTG 23	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (3)	53:13	23:41
WTG 49	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (4)	0:00	0:00
WTG 51	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (5)	1:12	0:17
WTG 52	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (6)	24:44	8:59
WTG 53	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (7)	27:04	11:58
WTG 54	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (8)	41:26	19:22
WTG 55	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (9)	0:00	0:00
WTG 58	VESTAS V100 1800 100.0 !O! hub: 95.0 m (TOT: 145.0 m) (10)	23:14	7:00

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.

This foregoing document was electronically filed with the Public Utilities

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in

Case No(s). 18-0091-EL-BGN

Summary: Application – Part 5 of 11 – Exhibits G through K electronically filed by Christine M. T. Pirik on behalf of Paulding Wind Farm IV LLC