



Public Utilities Commission

Application to Commit
Energy Efficiency/Peak Demand
Reduction Programs
(Mercantile Customers Only)

Case No.: 13-0471-EL-EEC

Mercantile Customer: Judson

Electric Utility: The Cleveland Electric Illuminating Company

Program Title or
Description: Lighting Retrofit

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. 10-834-EL-POR

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at ee-pdr@puc.state.oh.us.

Section 1: Mercantile Customer Information

Name: Judson

Principal address: 2181 Ambleside Drive, Cleveland Ohio, 44106

Address of facility for which this energy efficiency program applies: 2181 Ambleside Drive, Cleveland Ohio, 44106

Name and telephone number for responses to questions: James J. Carnovale,
216.791.2688

Electricity use by the customer (check the box(es) that apply):

- ☒ The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (Please attach documentation.)
- ☐ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.)

Section 2: Application Information

A) The customer is filing this application (choose which applies):

- ☐ Individually, without electric utility participation.
- ☒ Jointly with the electric utility.

B) The electric utility is: The Cleveland Electric Illuminating Company

C) The customer is offering to commit (check any that apply):

- ☐ Energy savings from the customer's energy efficiency program. (Complete Sections 3, 5, 6, and 7.)
- ☐ Capacity savings from the customer's demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)
- ☒ Both the energy savings and the capacity savings from the customer's energy efficiency program. (Complete all sections of the Application.)

Section 3: Energy Efficiency Programs

A) The customer's energy efficiency program involves (check those that apply):

- ☒ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)). **If Checked, Please see Exhibit 1 and Exhibit 2**
- ☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s): _____.
- ☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s): _____.
- ☐ Behavioral or operational improvement.

B) Energy savings achieved/to be achieved by the energy efficiency program:

- 1) If you checked the box indicating that the project involves the early replacement of fully functioning equipment replaced with new equipment, then calculate the annual savings [(kWh used by the original equipment) - (kWh used by new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: 400,533 kWh

- 2) If you checked the box indicating that the customer installed new equipment to replace equipment that needed to be replaced, then calculate the annual savings [(kWh used by less efficient new equipment) - (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: _____ kWh

Please describe any less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 3) If you checked the box indicating that the project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) - (kWh used by higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: _____ kWh

Please describe the less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 4) If you checked the box indicating that the project involves behavioral or operational improvements, provide a description of how the annual savings were determined.

Section 4: Demand Reduction/Demand Response Programs

A) The customer's program involves (check the one that applies):

- ☒ Coincident peak-demand savings from the customer's energy efficiency program.
- ☐ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)
- ☐ Potential peak-demand reduction (check the one that applies):
 - ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.
 - ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

B) On what date did the customer initiate its demand reduction program?

2/18/2013

C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

69 kW

Section 5: Request for Cash Rebate Reasonable Arrangement (Option 1) or Exemption from Rider (Option 2)

Under this section, check the box that applies and fill in all blanks relating to that choice.

Note: If Option 2 is selected, the application will not qualify for the 60-day automatic approval. All applications, however, will be considered on a timely basis by the Commission.

A) The customer is applying for:

☐ Option 1: A cash rebate reasonable arrangement.

OR

☒ Option 2: An exemption from the energy efficiency cost recovery mechanism implemented by the electric utility.

OR

☐ Commitment payment

B) The value of the option that the customer is seeking is:

Option 1: A cash rebate reasonable arrangement, which is the lesser of (show both amounts):

☐ A cash rebate of \$____. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

Option 2: An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider.

☐ An exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for ____ months (not to exceed 24 months). (Attach calculations showing how this time period was determined.)

OR

☐ A commitment payment valued at no more than \$____. (Attach documentation and calculations showing how this payment amount was determined.)

OR

- ☒ Ongoing exemption from payment of the electric utility's energy efficiency/peak demand reduction rider for an initial period of 24 months because this program is part of the customer's ongoing efficiency program. (Attach documentation that establishes the ongoing nature of the program.) In order to continue the exemption beyond the initial 24 month period, the customer will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

Section 6: Cost Effectiveness

The program is cost effective because it has a benefit/cost ratio greater than 1 using the (choose which applies):

- ☐ Total Resource Cost (TRC) Test. The calculated TRC value is: _____(Continue to Subsection 1, then skip Subsection 2)
- ☒ Utility Cost Test (UCT) . The calculated UCT value is: **See Exhibit 3** (Skip to Subsection 2.)

Subsection 1: TRC Test Used (please fill in all blanks).

The TRC value of the program is calculated by dividing the value of our avoided supply costs (generation capacity, energy, and any transmission or distribution) by the sum of our program overhead and installation costs and any incremental measure costs paid by either the customer or the electric utility.

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

Subsection 2: UCT Used (please fill in all blanks).

We calculated the UCT value of our program by dividing the value of our avoided supply costs (capacity and energy) by the costs to our electric utility (including administrative costs and incentives paid or rider exemption costs) to obtain our commitment.

Our avoided supply costs were **See Exhibit 3**

The utility's program costs were **See Exhibit 3**

The utility's incentive costs/rebate costs were **See Exhibit 3**

Section 7: Additional Information

Please attach the following supporting documentation to this application:

- Narrative description of the program including, but not limited to, make, model, and year of any installed and replaced equipment.
- A copy of the formal declaration or agreement that commits the program or measure to the electric utility, including:
 - 1) any confidentiality requirements associated with the agreement;
 - 2) a description of any consequences of noncompliance with the terms of the commitment;
 - 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;
 - 4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,
 - 5) a commitment by the customer to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.
- A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.



Public Utilities Commission

Application to Commit
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(Mercantile Customers Only)

Case No.: 13-0471-EL-EEC

State of Ohio :

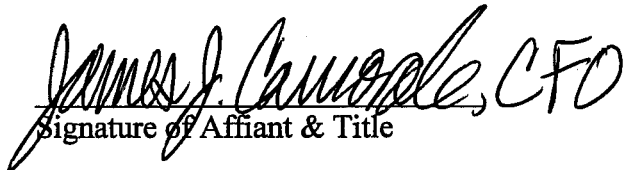
James J. Carnovale, Affiant, being duly sworn according to law, deposes and says that:

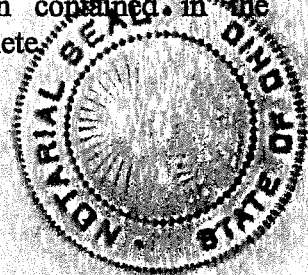
1. I am the duly authorized representative of:

Judson

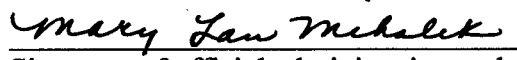
[insert customer or EDU company name and any applicable name(s) doing business as]

2. I have personally examined all the information contained in the foregoing application, including any exhibits and attachments. Based upon my examination and inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate and complete.


Signature of Affiant & Title



Sworn and subscribed before me this 6 day of March, 2013 Month/Year


Signature of official administering oath

Mary Lou Mihalek - Notary
Print Name and Title

My commission expires on 4-02-13.

Mary Lou Mihalek
Notary Public
State of Ohio, Cuyahoga County
My Commission Expires 4-02-13

Customer Legal Entity Name: Judson
Site Address: Ambleside
Principal Address: 2181 Ambleside Drive

Project No.	Project Name	Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:	Description of methodologies, protocols and practices used in measuring and verifying project results	What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date.	Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.
1	Lighting Retrofit	Retrofit lighting with new technology. 2 Lamp 40 watt Utube fixtures with magnetic ballasts were retrofit with 2 lamp T8 F17 fixtures with electronic ballasts. These common area lights are on 24-7. The are 355 of these retrofit fixtures. 687 incandecent fixtures with 75 watt lamps were replaced with 7 watt LED lamps.	Lighting inventory was performed with pre & post ECM fixture consumption and demand utilized in school. Specified retrofits and replacements of the existing fixtures. Electrical Usage (kWh) = (Number of fixtures x watts per fixture x Operating hours). Electrical Demand (kWd) = (Number of fixtures x watts per fixture) ; Electrical Energy Cost = (kWh x \$/kwh) ; Existing KWh - Retrofit KWh = Savings. See Judson_Ambleside_Lighting Calculator for details. Measurement and Verification is based on IPMVP Option A. Calculations based on physical assessment of operational factors and commonly accepted usage assumptions.	N/A	N/A

Exhibit 2

Customer Legal Entity Name: Judson

Site: Ambleside

Principal Address: 2181 Ambleside Drive

	Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (C)	Note 1
2012	5,429,960	5,429,960	5,429,960	
2011	5,616,778	5,616,778	5,616,778	
2010	5,528,740	5,528,740	5,528,740	
Average	5,525,159	5,525,159	5,525,159	

Project Number	Project Name	In-Service Date	Project Cost \$	KWh Saved/Year Counting towards Utility compliance	KWh Saved/Year (D) eligible for incentive	Utility Peak Demand Reduction Contribution, KW
1	Lighting Retrofit	02/18/2013	\$54,840	400,533	400,533	69
				-	-	-
				-	-	-
				-	-	-
				-	-	-
				-	-	-
				-	-	-
Total				400,533	400,533	69

Docket No. 13-0471

Site: 2181 Ambleside Drive

Savings as percent of usage 7.2% Note 2

= Total (D) divided by Average (C)

Customer Eligible Exemption Period: 77 Month(s) Note 3

Notes

(1) Customer's usage is adjusted to account for the effects of the energy efficiency programs included in this application. When applicable, such adjustments are prorated to the in-service date to account for partial year savings.

(2) Savings as a percent of usage is equal to the of total project savings (D) divided by the 3 year average Weather Adjusted Usage with Energy Efficiency Addbacks (C).

(3) Customer exemption determined by savings percentage in relation to energy efficiency schedule as set forth in O.R.C. 4928.66(A)(1)(a).

(4) The exemption period reflects the maximum potential exemption period. NOTE: The FirstEnergy Utilities cannot guarantee the length of the exemption period that will ultimately be approved by the Commission. Depending on the Commission's order, periods greater than 24 months may be capped at 24 months.

Exhibit 3 Utility Cost Test

UCT = Utility Avoided Costs / Utility Costs

Project	Total Annual Savings, MWh (A)	Utility Avoided Cost \$/MWh (B)	Utility Avoided Cost \$ (C)	Utility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UCT (H)
1	401	\$ 308	\$ 123,476	\$ 4,050	\$0	\$4,005	\$ 8,055	15.3
Total	401	\$ 308	123,476	4,050	\$0	\$4,005	8,055	15.3

Notes

- (A) From Exhibit 2, = kWh saved / 1000
- (B) This value represents avoided energy costs (wholesale energy prices) from the Department of Energy, Energy Information Administration's 2009 Annual Energy Outlook (AEO) low oil prices case. The AEO represents a national average energy price, so for a better representation of the energy price that Ohio customers would see, a Cinergy Hub equivalent price was derived by applying a ratio based on three years of historic national average and Cinergy Hub prices. This value is consistent with avoided cost assumptions used in EE&PDR Program Portfolio and Initial Benchmark Report, filed Dec 15, 2009 (See Section 8.1, paragraph a).
- (C) = (A) * (B)
- (D) Represents the utility's costs incurred for self-directed mercantile applications for applications filed and applications in progress. Includes incremental costs of legal fees, fixed administrative expenses, etc.
- (E) This is the amount of the cash rebate paid to the customer for this project.
- (F) Based on approximate Administrator's variable compensation for purposes of calculating the UCT, actual compensation may be less.
- (G) = (D) + (E) + (F)
- (H) = (C) / (G)

Judson ~ Ambleside
Docket No. 13-0471

Site: 2181 Ambleside Drive

Lighting Inventory Form

Applicant Name:	Judson Ambleside
Facility Name:	Ambleside
Date:	2/18/2013

Instructions: Please use one line for each fixture type in a room or area.

For existing or proposed control, choose OCC for Occupancy Sensor, DAYLTG for photosensor, or NONE for none. Controls must save energy to qualify.

The total of Column S, the quantities of CFLs and exit signs in Column M, and the quantities of sensors in Column R, will be used to calculate your score.

PROJECT BASIC INFORMATION						PRE-INSTALLATION						POST-INSTALLATION						Energy Calculations																				
Line Item	Building Address	Floor	Area Description	Interior or Exterior Fixtures	Predominant Space Type	Area Cooling	Pre Fixture Qty	Pre Fixture Code	Pre Watts / Fixture (W)	Pre W / Space (W)	Existing Sensor Qty per Area	Existing Sensor Quantity	Post Fixture Qty	Post Fixture Code	Post Watts / Fixture (W)	Post W / Space (W)	Proposed Sensor Qty per Area	Proposed Sensor Quantity	Interior Change in Connected Load (W) including CFLs or LED Sign	Exterior Change in Connected Load (W) including CFLs or LED Sign	Change in Connected Load (W) CFL or LED only	Applicant Disconnect Factor (CF) Estimate	Correction Factor	Interactive Factor (demand)	Interactive Factor (energy)	CFLs Controls Factor	Post Controls Factor	Demand Savings (kW)	Applicant Equipment Full Load Hours (EFLH) Estimate	Prescribed Equivalent Full Load Hours	Annual Interior Fixture kWh Saved (including CFLs or LED Sign)	Annual Exterior Fixture kWh Saved (including CFLs or LED Sign)	Annual kWh Saved (CFLs or LED only)	Annual kWh Saved (Sensors only)	Post Fixture Cost Sheet Number			
4-9	400 North Street	2	Office Reception	Interior	Office - Small	Cooled Space	3	FABE1	137	0.34	NONE		3	OPT001 BX	99	0.17	CCC	3				84%	86%	94%	92%					2.438	3.435			218	184	184	1	
4-10	Example	1	Restaurant	Exterior	Restaurant - Fast Food	Uncooled space	5	Example 100 Street 1	50	0.25	DOE	5	5	Example 100 Street 2	25	0.13	Example 10	5			0.13	80%	85%		30%	30%					8.765	8.765	156.617		200	200	1A	
1				Interior	Other - Please identify CF and EFLH	Uncooled space	355	None	96	24.05	NONE	355	355	DOE	53	11.19	NONE		22.37												8.765	8.765	156.617					
2				Interior	Other - Please identify CF and EFLH	Uncooled space	151	None	75	11.53	NONE	151	151	DOE	2	4.81	NONE		48.72													4.885	4.885	204.03				
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[illegible]

Project Estimated Annual Savings Summary

Estimated Annual kWh Savings	400,533
Total Change in Connected Load	69.08

Annual Estimated Cost Savings	\$40,053.30
Annual Operating Hours	6,570

Interior Lighting Incentive @ \$0.05/kWh (excluding CFLs, sensors, or LED exit signs)	\$20,026.65
Exterior Lighting Incentive @ \$0.50/W (excluding CFLs, sensors, or LED exit signs)	\$0.00
Total CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all CFLs, both interior and exterior)	\$0.00
Total LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/sensor (includes all Lighting Controls, both interior and exterior)	\$0.00

Total Calculated Incentive	\$20,026.65
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Total Fixture Quantity excluding CFLs and LED Exit Sign	1042
Total Lamp Quantity for Screw-In CFLs	0
Total Lamp Quantity for Hard-Wired CFLs	0
Total Fixture Quantity for LED Exit Signs	0
Total Quantity for Occupancy Sensors	0
Total Quantity for Daylight Sensors	0

Please briefly describe how you estimated your coincidence factor (CF) for facility type "Other" indicated on the Lighting Form tab

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Demand Savings (For Internal Use Only)	
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Specification Data

Fixture Description:

Project/Job:

SYLVANIA lamp:

SYLVANIA ballast:

Notes:

Type

Sample Specification

Lamp(s) shall be OCTRON® XP® XL (32W, SUPERSAVER® XL 28W, SUPERSAVER XL 25W) ECOLOGIC®3 4-foot lamp(s) having medium bi-pin bases. Lamp(s) shall be designed to pass the Federal TCLP test in force at the time of manufacture. Lamp(s) shall have an average rated life of (36,000 hours, 60,000 hours) at 3 hours per start when operated on T8 (instant start, programmed start ballasts), (2950, 2600, 2400) initial lumens, 96% lumen maintenance, a correlated color temperature of (3000K, 3500K, 4100K, 5000K, 6500K) and a CRI of (85, 81). The OCTRON ECOLOGIC3 lamp(s) shall be operated on QUICKTRONIC® electronic, high frequency ballasts with complete system warranty from the manufacturer covering lamps and ballast.

Ordering Information

Item Number	Ordering Abbreviation	Watts	Bulb	Base	Initial Lumens	Mean Lumens ¹	lm/W	Avg. Rated Life				CCT	CRI
								Instant Start	12 hrs start	3 hrs/ start	12 hrs/ start		
21527	F032/830/XP/XL/EC03	32	T8	Med Bi-Pin	2950	2830	92	36,000	52,000	60,000	62,000	3000K	85
21576	F032/835/XP/XL/EC03	32	T8	Med Bi-Pin	2950	2830	92	36,000	52,000	60,000	62,000	3500K	85
21577	F032/841/XP/XL/EC03	32	T8	Med Bi-Pin	2950	2830	92	36,000	52,000	60,000	62,000	4100K	85
22002	F032/850/XP/XL/EC03	32	T8	Med Bi-Pin	2950	2830	92	36,000	52,000	60,000	62,000	5000K	81
21510	F032/865/XP/XL/EC03	32	T8	Med Bi-Pin	2950	2830	92	36,000	52,000	60,000	62,000	6500K	85
21528	F028/830/XP/XL/SS/EC03	28	T8	Med Bi-Pin	2600	2495	93	36,000	52,000	60,000	62,000	3000K	85
22166	F028/835/XP/XL/SS/EC03	28	T8	Med Bi-Pin	2600	2495	93	36,000	52,000	60,000	62,000	3500K	85
22167	F028/841/XP/XL/SS/EC03	28	T8	Med Bi-Pin	2600	2495	93	36,000	52,000	60,000	62,000	4100K	85
22326	F028/850/XP/XL/SS/EC03	28	T8	Med Bi-Pin	2600	2495	93	36,000	52,000	60,000	62,000	5000K	81
22349	F032/25W/830/XP/XL/SS/EC03	25	T8	Med Bi-Pin	2400	2305	96	36,000	52,000	60,000	62,000	3000K	85
22222	F032/25W/835/XP/XL/SS/EC03	25	T8	Med Bi-Pin	2400	2305	96	36,000	52,000	60,000	62,000	3500K	85
22223	F032/25W/841/XP/XL/SS/EC03	25	T8	Med Bi-Pin	2400	2305	96	36,000	52,000	60,000	62,000	4100K	85

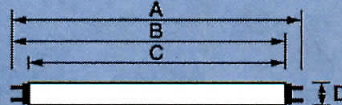
1. Measured at 40% of rated life.

Ordering Guide

F0	28	/	8	41	XP/XL	/	SS	/	EC03
Fluorescent	Wattage		CRI ≥ 81	Color	EXtended		SUPERSAVER		ECOLOGIC3
OCTRON	25, 28, 32			Temperature	Performance				
				30 = 3000K	EXtended				
				35 = 3500K	Life				
				41 = 4100K					
				50 = 5000K					
				65 = 6500K					

Lamp Dimensions

	(A) Max. Overall Length (in.)	(B) Base Face to Opposite Pin (in.)	(C) Max. Base Face to Base Face (in.)	(D) Max. Outside Diameter (in.)
F032, F028, F032/25W	47.78"	Min. 47.41" Max. 47.5"	47.22"	1.1"



Related Literature

For maximum energy savings consider pairing with the following electronic ballasts:

Ballast Technology Applications & Specification Guide (Literature Code: ECS-ELECTRONIC2009)

QUICKTRONIC® High Efficiency NEMA Premium Guide (Literature Code: ECS112)

QUICK 60+ System Warranty (Literature Code: ECS140)

SYLVANIA, ECOLOGIC, OCTRON, PROStart, QUICK 60+, SUPERSAVER and XP are registered trademarks of OSRAM SYLVANIA Inc. SEE THE WORLD IN A NEW LIGHT is a registered trademark of OSRAM SYLVANIA Inc. QUICKTRONIC is a registered trademark of OSRAM GmbH. Specifications subject to change without notice.

FL083R2

United States

OSRAM SYLVANIA

100 Endicott Street
Danvers, MA 01923

Trade

Phone: 1-800-255-5042

Fax: 1-800-255-5043

National Accounts

Phone: 1-800-562-4671

Fax: 1-800-562-4674

OEM/Special Markets

Phone: 1-800-762-7191

Fax: 1-800-762-7192

Display/Optic

Phone: 1-888-677-2627

Fax: 1-800-762-7192

SYLVANIA Lighting Services

Phone: 1-800-323-0572

Fax: 1-800-537-0784

Canada

OSRAM SYLVANIA LTD.

2001 Drew Road
Mississauga, ON L5S 1S4

Trade

Phone: 1-800-263-2852

Fax: 1-800-667-6772

OEM/Special Markets/Display/Optic

Phone: 1-800-265-2852

Fax: 1-800-667-6772

SYLVANIA Lighting Services

Phone: 1-800-663-4268

Fax: 1-866-239-1278

Mexico

OSRAM MEXICO

Headquarters

Tultitlan/Edo de Mexico

011-52-55-58-99-18-50

www.sylvania.com

SPECIFICATION DATA

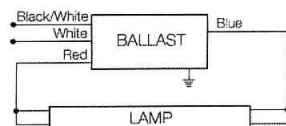
Catalog #	Date	Type
Project	Prepared by	
Comments		

High Efficiency Universal Voltage (120-277V)

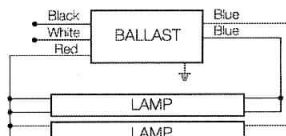


Item Number	OSRAM SYLVANIA Description	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Mean Lumens	Input Power (W)	System Efficacy (lm/W)	BEF ¹
49919	QHE 1X32T8/UNV ISH-SC Banded Pack	0.32/0.14	F032/700	2800	1	1.20	3360	3025	38	88	3.16
49871	10-Pack	0.32/0.14	F032/XP	3000	1	1.20	3600	3385	38	95	3.16
49872	Pallet Pack	0.30/0.13	F030SS	2850	1	1.20	3420	3215	36	95	3.33
		0.27/0.12	F028SS	2725	1	1.20	3270	3075	33	99	3.64
		0.26/0.12	F025/SS	2475	1	1.20	2970	2790	30	99	4.00
49920	QHE 2X32T8/UNV ISH-SC Banded Pack	0.65/0.28	F032/700	2800	2	1.20	6720	6050	74/73	91/92	1.64
49873	10-Pack	0.65/0.28	F032/XP	3000	2	1.20	7200	6770	74/73	97/99	1.64
49874	Pallet Pack	0.59/0.25	F030SS	2850	2	1.20	6840	6430	70/69	98/99	1.74
		0.55/0.23	F028SS	2725	2	1.20	6540	6150	65/64	101/102	1.88
		0.50/0.22	F025/SS	2475	2	1.20	5940	5585	58/57	102/104	2.11
49921	QHE 3X32T8/UNV ISH-SC Banded Pack	0.93/0.40	F032/700	2800	3	1.18	9910	8920	111/109	89/90	1.08
49875	10-Pack	0.93/0.40	F032/XP	3000	3	1.18	10,620	9985	111/109	96/97	1.08
49876	Pallet Pack	0.87/0.38	F030SS	2850	3	1.18	10,090	9485	104/103	97/98	1.15
		0.82/0.35	F028SS	2725	3	1.18	9650	9070	98/96	98/101	1.23
		0.72/0.31	F025/SS	2475	3	1.18	8760	8235	87/86	101/102	1.37
49922	QHE 4X32T8/UNV ISH Banded Pack	1.21/0.52	F032/700	2800	4	1.15	12,880	11,590	144/141	89/91	0.82
49877	10-Pack	1.21/0.52	F032/XP	3000	4	1.15	13,800	12,970	144/141	96/98	0.82
49878*	Pallet Pack	1.13/0.49	F030SS	2850	4	1.15	13,110	12,325	135/133	97/99	0.86
		1.06/0.46	F028SS	2725	4	1.15	12,535	11,785	127/124	99/101	0.93
		0.94/0.41	F025/SS	2475	4	1.15	11,385	10,700	112/111	102/103	1.04

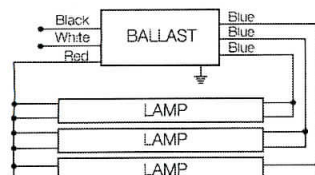
Banded Pack Item Numbers, (add "-B" to Description). Banded Pack and 10-Pack contain 10 pieces each. Pallet Pack contains 840 pieces, except Item Number 49878* contains 500 pieces, (add "-PAL" to Description). 1: Ballast Efficiency Factor (BEF) shown = (Ballast Factor x 100) divided by Input Power (Note: calculation based on lowest wattage value).



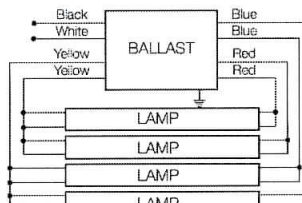
QUICKTRONIC 1x32



QUICKTRONIC 2x32



QUICKTRONIC 3x32

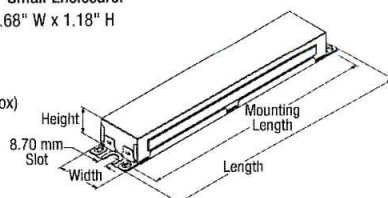


QUICKTRONIC 4x32

Dimensions "-SC" Small Enclosure:
Overall: 9.5" L x 1.68" W x 1.18" H
Mounting: 8.90"

Product Weight:
1.6 lbs each (approx)

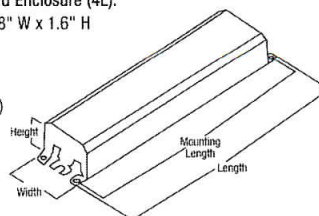
Wiring:
Leads only



Dimensions Standard Enclosure (4L):
Overall: 9.5" L x 2.38" W x 1.6" H
Mounting: 8.90"

Product Weight:
2.8 lbs each (approx)

Wiring:
Leads only



Item Number: 49921 QHE 3 x 32T8 / UNV ISH - SC
Case Size
QUICKTRONIC High Efficiency
Starting/Ballast Factor
Number of Lamps
Line Voltage (120-277V)
Primary Lamp Wattage

High Ballast Factor

T8 Instant Start

High Efficiency

Performance Guide

Data based upon SYLVANIA OCTRON® lamps shown. QUICKTRONIC® QHE Instant Start ballasts are also compatible with other lamp manufacturers equivalent lamp types that meet ANSI specifications.

QHE Instant Start ballasts will operate F32 (and the SUPERSAVER® & U-Bend equivalent) T8 lamps. Complete performance data is available in the QUICKSYSTEMS section of the SYLVANIA Electronic Ballast Catalog.

Specifications

Starting Method: Instant Start
Ballast Factor: 1.15-1.20
Circuit Type: Parallel
Lamp Frequency: >40kHz
Lamp CCF: Less than 1.7
Starting Temp:²
-20°F (-29°C) for OCTRON T8 lamps;
60°F (16°C) for SUPERSAVER® T8 lamps
Input Frequency: 50/60 Hz
Low THD: <10%
Power Factor: >98%
Voltage Range: ±10% of 120-277V rated line (108-305V)

UL Listed Class P, Type 1 Outdoor
CSA Certified
70°C Max Case Temperature
FCC 47CFR Part 18 Non-Consumer
Class A Sound Rating
RoHS Compliant³
NEMA Premium Electronic Ballast
Program compliant
ANSI C62.41 Cat. A Transient Protection
GFCI compatible
Emergency ballast compatible
Remote Mounting (Max. wire length from ballast case to lampholder):
• 20 ft: full wattage T8s
• 10 ft: energy saving T8s
• 4 ft: 25W energy saving T8s

2 Operation below 50°F (10°C) may affect light output or lamp operation – see "Low Temp. Starting" definition.

3 Complies with European Union Restriction of Hazardous Substances Directive (Directive EC 2002/95)

System Life / Warranty

QUICKTRONIC products are covered by the QUICK 60+® warranty, a comprehensive lamp and ballast system warranty. For additional details, refer to the QUICK 60+ warranty bulletin.

OSRAM SYLVANIA
National Customer
Service and Sales Center
1-800-LIGHTBULB
(1-800-544-4828)
www.sylvania.com

Specifications subject to change without notice.

SPECIFICATION DATA

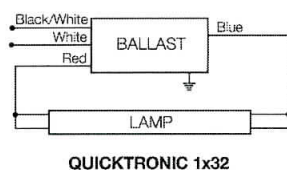
Catalog #	Date	Type
Project	Prepared by	
Comments		

High Efficiency Universal Voltage (120-277V)

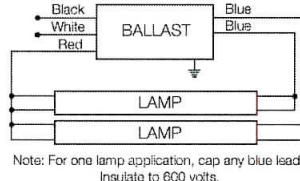


Item Number	OSRAM SYLVANIA Description	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Mean Lumens	Input Power (W)	System Efficacy (lm/W)	BEF ¹
49968	QHE 1X32T8/UNV ISN-SC	0.25/0.11	F032/700	2800	1	0.88	2465	2220	28	88	3.14
49851	Banded Pack	0.25/0.11	F032/XP	3000	1	0.88	2640	2480	28	94	3.14
49851	10-Pack	0.22/0.09	F030/SS	2850	1	0.88	2510	2360	26	97	3.38
49852	Pallet Pack	0.21/0.09	F028/SS	2725	1	0.88	2400	2255	25	96	3.52
		0.19/0.09	F025/SS	2475	1	0.88	2175	2045	22	99	4.00
49969	QHE 2X32T8/UNV ISN-SC	0.47/0.20	F032/700	2900	2	0.88	4930	4435	55	90	1.60
49853	Banded Pack	0.47/0.20	F032/XP	3000	2	0.88	5280	4965	55	96	1.60
49853	10-Pack	0.44/0.19	F030/SS	2850	2	0.88	5015	4715	52	96	1.69
49854	Pallet Pack	0.40/0.18	F028/SS	2725	2	0.88	4800	4510	48	100	1.83
		0.36/0.16	F025/SS	2475	2	0.88	4355	4095	43	101	2.05
49970	QHE 3X32T8/UNV ISN-SC	0.69/0.30	F032/700	2800	3	0.88	7390	6650	83/82	89/90	1.07
49855	Banded Pack	0.69/0.30	F032/XP	3000	3	0.88	7920	7445	83/82	95/97	1.07
49855	10-Pack	0.66/0.28	F030/SS	2850	3	0.88	7525	7075	78/77	96/98	1.14
49856	Pallet Pack	0.61/0.26	F028/SS	2725	3	0.88	7195	6760	72	100	1.22
		0.55/0.23	F025/SS	2475	3	0.88	6530	6140	65/64	101/102	1.38
49971	QHE 4X32T8/UNV ISN-SC	0.91/0.39	F032/700	2800	4	0.88	9855	8870	108/107	91/92	0.82
49857	Banded Pack	0.91/0.39	F032/XP	3000	4	0.88	10560	9925	108/107	98/99	0.82
49857	10-Pack	0.86/0.37	F030/SS	2850	4	0.88	10030	9430	102/101	98/99	0.87
49858	Pallet Pack	0.80/0.35	F028/SS	2725	4	0.88	9590	9015	95	101	0.93
		0.71/0.30	F025/SS	2475	4	0.88	8710	8190	85	102	1.04

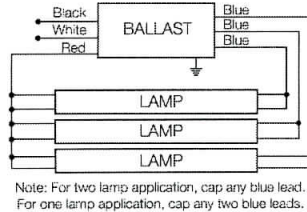
Banded Pack, (add "-B" to Description). Banded Pack and 10-Pack contain 10 pieces each. Pallet Pack contains 840 pieces, (add "-PAL" to Description).
¹ Ballast Efficiency Factor (BEF) shown = (Ballast Factor x 100) divided by Input Power (Note: calculation based on lowest wattage value).



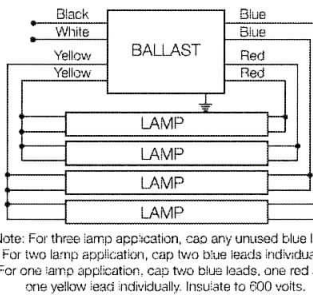
QUICKTRONIC 1x32



QUICKTRONIC 2x32
 Note: For one lamp application, cap any blue lead. Insulate to 600 volts.



QUICKTRONIC 3x32
 Note: For two lamp application, cap any blue lead. For one lamp application, cap any two blue leads. Insulate to 600 volts.



QUICKTRONIC 4x32
 Note: For three lamp application, cap any unused blue lead. For two lamp application, cap two blue leads individually. For one lamp application, cap two blue leads, one red and one yellow lead individually. Insulate to 600 volts.

Normal Ballast Factor

T8 Instant Start

High Efficiency

Performance Guide

Data based upon SYLVANIA OCTRON® lamps shown. QUICKTRONIC® QHE Instant Start ballasts are also compatible with other lamp manufacturers equivalent lamp types that meet ANSI specifications.

QHE Instant Start ballasts will operate F17, F25 and F32 (and the SUPERSAVER® & U-Bend equivalent) T8 lamps. Complete performance data is available in the QUICKSYSTEMS section of the SYLVANIA Electronic Ballast Catalog.

Specifications

Starting Method: Instant Start
 Ballast Factor: 0.88
 Circuit Type: Parallel
 Lamp Frequency: >40kHz
 Lamp CCF: Less than 1.7
 Starting Temp:²
 -20°F (-29°C) for OCTRON T8 lamps;
 60°F (16°C) for SUPERSAVER® T8 lamps
 0°F (-18°C) for F040T8
 Input Frequency: 50/60 Hz
 Low THD: <10%
 Power Factor: >98%
 Voltage Range: ±10% of 120-277V rated line (108-305V)

UL Listed Class P, Type 1 Outdoor
 CSA Certified
 70°C Max Case Temperature
 FCC 47CFR Part 18 Non-Consumer
 Class A Sound Rating
 RoHS Compliant³
 NEMA Premium Electronic Ballast Program compliant
 ANSI C62.41 Cat. A Transient Protection
 GFCI compatible
 Emergency ballast compatible
 Remote Mounting (Max. wire length from ballast case to lampholder):
 • 20 ft: full wattage T8s
 • 10 ft: energy saving T8s
 • 4 ft: 25W energy saving T8s
² Operation below 50°F (10°C) may affect light output or lamp operation – see "Low Temp. Starting" definition.
³ Complies with European Union Restriction of Hazardous Substances Directive (Directive EC 2002/95)

System Life / Warranty

QUICKTRONIC products are covered by the QUICK 60+® warranty, a comprehensive lamp and ballast system warranty. For additional details, refer to the QUICK 60+ warranty bulletin.

OSRAM SYLVANIA
National Customer
Service and Sales Center
 1-800-LIGHTBULB
 (1-800-544-4828)
www.sylvania.com

Specifications subject to change without notice.

Dimensions:

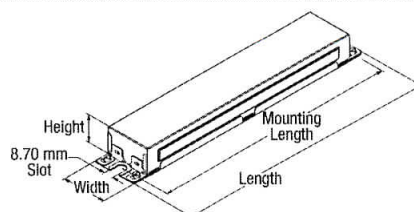
Overall: 9.5" L x 1.68" W x 1.18" H
 Mounting: 8.90"

Product Weight:

1.6 lbs each (approx)

Wiring:

Leads only
 (no connectors provided)



Item Number: 49970 QHE 3 x 32T8 / UNV ISN - SC
 QUICKTRONIC High Efficiency
 Number of Lamps: Case Size
 Starting/Ballast Factor
 Line Voltage (120-277V)
 Primary Lamp Wattage

SPECIFICATION DATA

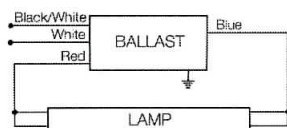
Catalog #	Date	Type
Project	Prepared by	
Comments		

High Efficiency Universal Voltage (120-277V)

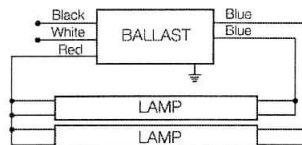


Item Number	OSRAM SYLVANIA Description	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Mean Lumens	Input Power (W)	System Efficacy (lm/W)	BEF ¹
49837	QHE 1X32T8/UNV ISL-SC	0.21/0.09	F032/700	2800	1	0.78	2185	1965	25	87	3.12
49861	Banded Pack	0.21/0.09	F032/XP	3000	1	0.78	2340	2200	25	94	3.12
49862	10-Pack	0.20/0.09	F030/SS	2850	1	0.78	2225	2090	24	93	3.25
49862	Pallet Pack	0.19/0.08	F028/SS	2725	1	0.78	2125	2000	22	97	3.55
		0.17/0.08	F025/SS	2475	1	0.78	1930	1815	20	97	3.90
49838	QHE 2X32T8/UNV ISL-SC	0.41/0.13	F032/700	2800	2	0.78	4370	3930	48	91	1.63
49863	Banded Pack	0.41/0.18	F032/XP	3000	2	0.78	4680	4400	48	98	1.63
49863	10-Pack	0.38/0.16	F030/SS	2850	2	0.78	4445	4180	45	99	1.73
49864	Pallet Pack	0.35/0.15	F028/SS	2725	2	0.78	4250	3995	42	101	1.86
		0.32/0.14	F025/SS	2475	2	0.78	3860	3630	38	102	2.05
49839	QHE 3X32T8/UNV ISL-SC	0.61/0.27	F032/700	2800	3	0.78	6550	5895	73/72	90/91	1.08
49865	Banded Pack	0.61/0.27	F032/XP	3000	3	0.78	7020	6600	73/72	96/98	1.08
49865	10-Pack	0.58/0.25	F030/SS	2850	3	0.78	6670	6270	68	98	1.15
49866	Pallet Pack	0.53/0.23	F028/SS	2725	3	0.78	6380	5995	63	101	1.24
		0.48/0.21	F025/SS	2475	3	0.78	5790	5445	57	102	1.37
49840	QHE 4X32T8/UNV ISL-SC	0.80/0.35	F032/700	2800	4	0.78	8735	7860	95	92	0.82
49867	Banded Pack	0.80/0.35	F032/XP	3000	4	0.78	9360	8800	95	99	0.82
49867	10-Pack	0.75/0.32	F030/SS	2850	4	0.78	8890	8360	89	100	0.88
49868	Pallet Pack	0.71/0.31	F028/SS	2725	4	0.78	8500	7990	84	101	0.93
		0.62/0.27	F025/SS	2475	4	0.78	7720	7260	76/75	102/103	1.04

Banded Pack, (add "B" to Description). Banded Pack and 10-Pack contain 10 pieces each. Pallet Pack contains 840 pieces, (add "-PAL" to Description).
1: Ballast Efficiency Factor (BEF) shown = (Ballast Factor x 100) divided by Input Power (Note: calculation based on lowest wattage value).

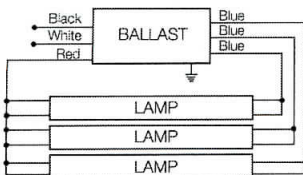


QUICKTRONIC 1x32



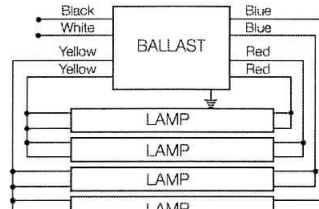
Note: For one lamp application, cap any blue lead. Insulate to 600 volts.

QUICKTRONIC 2x32



Note: For two lamp application, cap any blue lead. For one lamp application, cap any two blue leads. Insulate to 600 volts.

QUICKTRONIC 3x32



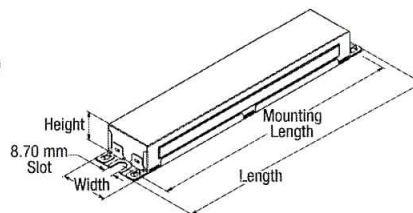
Note: For three lamp application, cap any unused blue lead. For two lamp application, cap two blue leads individually. For one lamp application, cap two blue leads, one red and one yellow lead individually. Insulate to 600 volts.

QUICKTRONIC 4x32

Dimensions:
Overall: 9.5" L x 1.68" W x 1.18" H
Mounting: 8.90"

Product Weight:
1.6 lbs each (approx)

Wiring:
Leads only
(no connectors provided)



Item Number	49838	QHE 2 x 32T8 / UNV ISL - SC	Case Size
QUICKTRONIC High Efficiency			Starting/Ballast Factor
Number of Lamps			Line Voltage (120-277V)
			Primary Lamp Wattage

Low Ballast Factor

T8 Instant Start

High Efficiency

Performance Guide

Data based upon SYLVANIA OCTRON® lamps shown. QUICKTRONIC® QHE Instant Start ballasts are also compatible with other lamp manufacturers equivalent lamp types that meet ANSI specifications.

QHE Instant Start ballasts will operate F17, F25 and F32 (and the SUPERSAVER® & U-Bend equivalent) T8 lamps. Complete performance data is available in the QUICKSYSTEMS section of the SYLVANIA Electronic Ballast Catalog.

Specifications

Data based on F32T8

Starting Method: Instant Start

Ballast Factor: 0.78

Circuit Type: Parallel

Lamp Frequency: >40kHz

Lamp CCF: Less than 1.7

Starting Temp:²

-20°F (-29°C) for OCTRON T8 lamps;

60°F (16°C) for SUPERSAVER® T8 lamps

0°F (-18°C) for F040T8

Input Frequency: 50/60 Hz

Low THD: <10%

Power Factor: >98%

Voltage Range: ±10% of 120-277V rated line (108-305V)

UL Listed Class P, Type 1 Outdoor

CSA Certified

70°C Max Case Temperature

FCC 47CFR Part 18 Non-Consumer

Class A Sound Rating

RoHS Compliant³

NEMA Premium Electronic Ballast

Program compliant

ANSI C62.41 Cat. A Transient Protection

GFCI compatible

Emergency ballast compatible

Remote Mounting (Max. wire length from ballast case to lampholder):

- 20 ft: full wattage T8s
- 10 ft: energy saving T8s
- 4 ft: 25W energy saving T8s

2 Operation below 50°F (10°C) may affect light output or lamp operation – see "Low Temp. Starting" definition.

3 Complies with European Union Restriction of Hazardous Substances Directive (Directive EC 2002/95)

System Life / Warranty

QUICKTRONIC products are covered by the QUICK 60+® warranty, a comprehensive lamp and ballast system warranty. For additional details, refer to the QUICK 60+ warranty bulletin.

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Service and Sales Center
1-800-LIGHTBULB
(1-800-544-4828)
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Specifications subject to change without notice.

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the system solution

QHE T8 ISL

Ordering Information

Item Number	Ordering Abbreviation	Nominal				Average Rated Life				CCT	CRI	
		Watts	Length (in)	Initial Lumens	Mean Lumens ¹	Lumens per Watt	Instant Start 3 hrs/ start	12 hrs/ start	Prog. Rapid Start 3 hrs/ start			12 hrs/ start
OCTRON® 800 XP® SUPERSAVER®												
22405	F017/15W/830/XP/SS/EC03	15	24	1200	1128	80	24,000	40,000	40,000	42,000	3000K	85
22406	F017/15W/835/XP/SS/EC03	15	24	1200	1128	80	24,000	40,000	40,000	42,000	3500K	85
22407	F017/15W/841/XP/SS/EC03	15	24	1200	1128	80	24,000	40,000	40,000	42,000	4100K	85
22408	F017/15W/850/XP/SS/EC03	15	24	1200	1128	80	24,000	40,000	40,000	42,000	5000K	80
22394	F025/21W/830/XP/SS/EC03	21	36	1925	1810	92	24,000	40,000	40,000	42,000	3000K	85
22395	F025/21W/835/XP/SS/EC03	21	36	1925	1810	92	24,000	40,000	40,000	42,000	3500K	85
22396	F025/21W/841/XP/SS/EC03	21	36	1925	1810	92	24,000	40,000	40,000	42,000	4100K	85
22397	F025/21W/850/XP/SS/EC03	21	36	1925	1810	92	24,000	40,000	40,000	42,000	5000K	80
22232	F032/25W/830/XP/SS/EC03	25	48	2475	2327	99	24,000	40,000	40,000	42,000	3000K	85
22233	F032/25W/835/XP/SS/EC03	25	48	2475	2327	99	24,000	40,000	40,000	42,000	3500K	85
22234	F032/25W/841/XP/SS/EC03	25	48	2475	2327	99	24,000	40,000	40,000	42,000	4100K	85
22235	F032/25W/850/XP/SS/EC03	25	48	2400	2256	96	24,000	40,000	40,000	42,000	5000K	80
22177	F028/830/XP/SS/EC03	28	48	2725	2562	97	24,000	40,000	40,000	42,000	3000K	85
22178	F028/835/XP/SS/EC03	28	48	2725	2562	97	24,000	40,000	40,000	42,000	3500K	85
22179	F028/841/XP/SS/EC03	28	48	2725	2562	97	24,000	40,000	40,000	42,000	4100K	85
22184	F028/850/XP/SS/EC03	28	48	2600	2444	93	24,000	40,000	40,000	42,000	5000K	80
22063	F030/830/XP/SS/EC03	30	48	2850	2679	95	24,000	40,000	40,000	42,000	3000K	85
22060	F030/835/XP/SS/EC03	30	48	2850	2679	95	24,000	40,000	40,000	42,000	3500K	85
22062	F030/841/XP/SS/EC03	30	48	2850	2679	95	24,000	40,000	40,000	42,000	4100K	85
22202	F030/850/XP/SS/EC03	30	48	2800	2632	93	24,000	40,000	40,000	42,000	5000K	80
OCTRON® 800 XP® XL SUPERSAVER®												
22349	F032/25W/830/XP/XL/SS/EC03	25	48	2400	2304	96	36,000	50,000	52,000	55,000	3000K	85
22222	F032/25W/835/XP/XL/SS/EC03	25	48	2400	2304	96	36,000	50,000	52,000	55,000	3500K	85
22223	F032/25W/841/XP/XL/SS/EC03	25	48	2400	2304	96	36,000	50,000	52,000	55,000	4100K	85
22166	F028/835/XP/XL/SS/EC03	28	48	2600	2496	93	36,000	50,000	52,000	55,000	3500K	85
22167	F028/841/XP/XL/SS/EC03	28	48	2600	2496	93	36,000	50,000	52,000	55,000	4100K	85
22326	F028/850/XP/XL/SS/EC03	28	48	2600	2496	93	36,000	50,000	52,000	55,000	5000K	80
OCTRON® F096 XP® SUPERSAVER												
22420	F096/50W/835/XP/SS/EC03	50	96	5400	5076	108	24,000	36,000			3500K	85
22421	F096/50W/841/XP/SS/EC03	50	96	5400	5076	108	24,000	36,000			4100K	85
22422	F096/50W/850/XP/SS/EC03	50	96	5400	5076	108	24,000	36,000			5000K	85
22100	F096/54W/835/XP/SS/EC03	54	96	5700	5360	106	24,000	36,000			3500K	85
22101	F096/54W/841/XP/SS/EC03	54	96	5700	5360	106	24,000	36,000			4100K	85
22347	F096/54W/850/XP/SS/EC03	54	96	5700	5360	106	24,000	36,000			5000K	85

1. Measured at 40% of rated life.

Ordering Guide

F0	30	/	8	35	XP	/	SS	/	EC03
Fluorescent	Actual Wattage		Actual CRI	Color Temperature	Extended		SUPERSAVER		ECOLOGIC3
OCTRON	15, 21, 25, 28, 30, 50 and 54		80 or 85	30 = 3000K CCT, 35 = 3500K CCT, 41 = 4100K CCT, 50 = 5000K CCT	Performance				

Lamp Dimensions

Lamp Type	(A) Max. Overall Length (in.)	(B) Base Face to Opposite Pin (in.)	(C) Max. Base Face to Base Face (in.)	(D) Max. Outside Diameter (in.)
F017	23.78	Min. 23.41 Max. 23.50	23.22	1.1
F025	35.78	Min. 35.40 Max. 35.50	35.22	1.1
F032 F032/25W F028 F030	47.78	Min. 47.41 Max. 47.50	47.22	1.1
F096	94.00	Min. 93.42 Max. 93.65	93.30	1.1

Related Literature

For maximum energy savings consider pairing with the following electronic ballast

Ballast Technology Applications & Specification Guide (Literature code: ECS-Electronic)

QUICKTRONIC® High Efficiency NEMA Premium Guide (Literature code: ECS112)

QUICK 60+® System Warranty (Literature code: ECS140)

Specification Data

Fixture Description

Type

Project/Job

SYLVANIA lamp

SYLVANIA ballast

Notes

Sample Specification

Lamp shall be OCTRON® 800 XP® SUPERSAVER® ECOLOGIC®3 (15W, 21W, 25W, 28W, 30W, 50W, 54W) lamp having medium bi-pin bases or 50W and 54W lamp having single pin bases. Lamp shall be designed to pass the Federal TCLP test in force at the time of manufacture. Lamps shall have initial lumens of (1200, 1925, 2400, 2475, 2600, 2725, 2850, 5400, 5700), mean lumens of (1128, 1810, 2304, 2327, 2496, 2562, 2679, 5076, 5360) and a correlated color temperature of (3000, 3500, 4100) Kelvin or initial lumens of (2400, 2600, 2800, 5700) and mean lumens of (2256, 2444, 2632, 5360) and a correlated color temperature of 5000K. Lamp shall have an average rated life of (24,000, 40,000, 42,000) on (instant start, programmed rapid start) ballasts, 94% lumen maintenance at 40% of rated life and a CRI of (85, 80). The OCTRON XP SUPERSAVER ECOLOGIC3 lamp shall be operated on QUICKTRONIC® electronic, high frequency ballasts with complete system warranty from the manufacturer covering lamps and ballast.

United States

OSRAM SYLVANIA

100 Endicott Street

Danvers, MA 01923

Trade

Handwritten notes:
 250 single 368
 438 double 608
 750 triple 958
 240 ✓ 15 ship

Phone: 1-800-265-2852
 Fax: 1-800-667-6772

www.sylvania.com

PRODUCT DESCRIPTION

NaturalLED 9W PAR20 is designed and used the latest LED technology. Its innovative thermal solution and proprietary driving circuit has made this lamp one of the leading PAR lamps in the industry. NaturalLED 9W PAR20 is capable of providing luminance equivalent to a 50 Watt incandescent while using only 18% of power consumption.

Specifically designed for its optic delivery at the highest level of light and quality, this lamp can be valued by the most demanding lighting professionals. This lamp is ideal for high profile lighting applications, such as museums, jewelry stores, boutiques, restaurants, etc.

BENEFITS & FEATURES

CREE LED technology, Compatible with most TRIAC dimmers, Low Lumen Depreciation, Low Power Consumption, 40,000 hrs Rated Lifetime, High Color Rendering Index (CRI), 3 Year Warranty, cULus, RoHS Compliant, LM-79, LM-80 Ready

ENERGY SAVING & CO2 REDUCTION

	Incandescent	PAR20
Power Consumption	50W	9W
Energy Saving	--	82%

PAR Lamps Dimmer Compatibility

Manufacturer	Dimmer Brands	Power Range (WA)	Volts	Load
Legrand	Pass & Seymour DR703P	700	120	Ha/Inc
Lutron	SKYLARK S-600/S-600P/S-603P	40-600	120	Ha/Inc
Lutron	Credenza TT-300NLH	300	120	Ha/Inc
Lutron	DIVA DV-600P/DV-603P	40-600	120	Ha/Inc
Lutron	Lumea LG-600/LG-600P/LG-603P	40-600	120	Ha/Inc
Lutron	Rotary D-600R/D-600P/D-603P	40-600	120	Ha/Inc
Lutron	DIVA DVLV-600P/DVLV-603P	450	120	MLV
Lutron	SKYLARK SLV-600P/SLV-603P	450	120	MLV
Lutron	DIVA DVELV-300P/DVELV-303P	300	120	ELV
Lutron	Maestro MAELV-600/MSCELV-600	5-600	120	ELV
Lutron	SKYLARK SELV-300P/SELV-303P	300	120	ELV
Leviton	Decora 619-6621	600	120	Ha/Inc

ORDER CODES

CCT	Beam Angle	Item #	Order Codes	Case Qty	Availability
2700K	25°	5624	LED9PAR20/DIM/NFL/27K	10	Coming Soon
3000K	25°	5625	LED9PAR20/DIM/NFL/30K	10	Coming Soon
4000K	25°	5626	LED9PAR20/DIM/NFL/40K	10	Coming Soon

MODEL

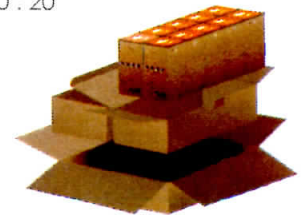
LED-9W PAR20


SPECIFICATIONS

Base	E26
CCT	2700K / 3000K / 4000K
CRI	> 80
Beam Angle	25°
Lumen Output	2700K : 450Lm 3000K: 480Lm 4000K : 550Lm
Power Consumption	9W
Voltage	120Vac
Weight	6.08oz
CBCP (Center Beam Candlepower)	2700K: 1862ccd 3000K: 1981ccd

PACKAGE

Packaging Qty - 1 : 10 : 20



THE AMBY SERIES



Available bases: B22, E26, E27

AMBY-A19-WHT-120

AMBY-A19-WHT-120

Features

- ◉ Dimmable 12W A19 lamp with TRIAC dimmers.
- ◉ Uniform light source.
- ◉ Patented optical design provides nearly 360° light distribution.
- ◉ Can replace a 60W incandescent lamp with up to 85% less power.
- ◉ Suitable for a wide range of lighting applications: hotels, offices, residences, restaurants, etc.



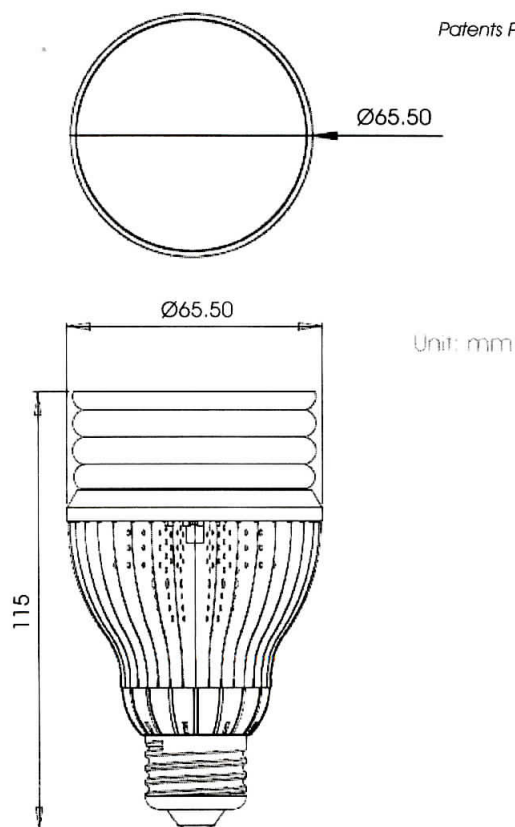
AMBY-A19-WHT-120

ELECTRONIC SPECIFICATIONS

PARAMETERS	AMBY-A19-WHT-120
ELECTRICAL:	
Input Voltage	100~120 Vac
Input Current	<90 mA
Power Consumption	>12W ±10%
OPTICAL:	
Operating Life	70% lumen maintenance after 35,000 hours
ENVIRONMENT:	
Operation Temperature	-20 ~ 50°C
Storage Temperature	-40 ~ 60°C
Dimensions	115 (H) x Ø65.5mm
Weight	122.6 g

Model	Lumen Output (lm)	Efficacy	CRI	Color Temperature
AMBY-A19-WHT-W-120	660 lm ±10%	53 lm/W	85	2900 ±200K
AMBY-A19-WHT-D-120	800 lm ±10%	65 lm/W	84	5000 ±200K

DIMENSIONS



Patents Pending

Unit: mm

Ver: 20110914

ColorStars Group

Taiwan Operations:

Color Stars, Inc.

10F, No. 566 Jungjeng Rd., Sindian District
New Taipei City 23148, Taiwan, R.O.C.

Tel: +886-2-8667-6600 Fax: +886-2-8667-1400

Email: sales@colorstars.com Website: www.colorstars.com

Headquarters:

ColorStars Group

One Technology Dr., Suite F-213
Irvine, CA 92618 USA

Tel: + (949) 336-6161; Fax: + (949) 336-6165

Email: sales@colorstars.com Website: www.colorstars.com



ZE-BR30-120-3000K

Description

Replaces a traditional 75 watt lamp
865 Lumens
Dimmable
Color temp = 3000 K
40,000 hour L70 rated life
UL Listed
120 volt

Instant "on" light
Mercury free
Not for totally enclosed fixture
Dry locations only
Beam angle >120°
3-year warranty



Z Energy Solutions LLC. / zledstore.com / 503-857-5363

Cut sheet 28



Product Number:

29376

Order Abbreviation:

CF13EL/MINI/830

General Description:

DULUX EL 13W mini twist spiral compact fluorescent lamp with integral 120V ballast, medium screw base, 3000K color temperature, 82 CRI, packaged 6/carton

Product Information	
Abbrev. With Packaging Info.	CF13EL/MINI830 6/CS 1/SKU
Average Rated Life (hr)	8000
Base	Medium
Bulb	MINI TWIST
Color Rendering Index (CRI)	82
Color Temperature/CCT (K)	3000
Diameter (in)	1.850
Diameter (mm)	47.00
Family Brand Name	Dulux® EL
Mean Lumens at 25C	640
Maximum Overall Length - MOL (in)	4.5
Maximum Overall Length - MOL (mm)	115

Energystar Listed A60 LED Lamp



Item No.	ZE-J7-A60-3000K
Power	7W
Voltage	120V
CCT	3000K
Base	E26
Luminous Flux	500lm
Beam Angle	>160°
CRI	80
Comparable Incandescent Watt	40W
Diameter	60mm
Length	113mm

ENERGY STAR Qualified Lamps Product List

List Posted on September 27, 2012

		ZE-J7-A60-3000K
Z Energy Solutions LLC.		
Non-standard	E26/24 (Medium)	LED
500 lumens	7 watts	N/A

Energystar Listed A55 LED Lamp



Item No.	ZE-J3.5-A55-3000K
Power	3.5W
Voltage	120V
CCT	3000K
Base	E26
Luminous Flux	300lm
Beam Angle	>160°
CRI	80
Comparable Incandescent Watt	40W
Diameter	60mm
Length	113mm

ENERGY STAR Qualified Lamps Product List

List Posted on September 27, 2012

Z Energy Solutions LLC.		ZE-J3.5-A60-3000K
Non-standard	E26/24 (Medium)	LED
300 lumens	3.5 watts	N/A

LED Dimmable Candelabra

Cut sheet 39

Ordering information

Item Number	Watt	Dim	Base	Voltage	Lumen	LPW	Beam Angle	CRI	CCT	cUL	PF
E250DC-10-2W2-300S	2W	YES	E12	120V	85lm	42	25°	82	2700K	YES	>0.8
E250DC-10-2C1-300S	2W	YES	E12	120V	120lm	60	25°	75	5000K	YES	>0.8
E251DC-10-4W2-300S	4W	YES	E12	120V	180lm	45	40°	>80	2700K	YES	>0.8
E251DC-10-4C1-300S	4W	YES	E12	120V	250lm	62	40°	>70	5000K	YES	>0.8

Note: 1. All specifications @ 25°C ambient condition. 2. Lumens tolerance is ±7%. 3. CCT tolerance is ±7%.

Ordering Guide

E250	D	C	10	2	W2	300	S
Lamp Type	Dimming:	Voltage	Base	Wattage	CCT	Beam Angle	Silver
E250: 2Watts Candelabra	Dimmable	A: 80-260V	10: E12	2W	W2: 2700-2800K	300°	Housing
E251: 4Watts Candelabra		B: 220-240V	15: E14	4W	C2: 5500-6500K		Finish
		C: 110-120V					

Note: Other CCT is available from 2600~7000K.

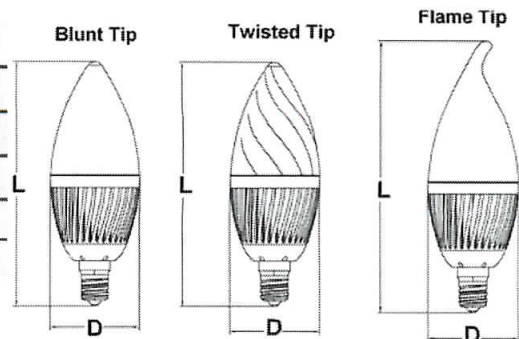
Energy Saving

Item #	Life	Watt	Estimated Yearly Energy Cost	Equivalency	Energy Saving Yearly
E250	50,000 hrs	2 w	\$0.96	15W halogen	\$6.25
E251	50,000 hrs	4 w	\$1.93	25W halogen	\$10.10

Note: Energy saving based on using one bulb for one year at 12 hours per day rate of 11 ¢ / kwh.

Lamp Dimensions

Lamp Type	Bulb Shape	M.O.L (mm)	Diameter (mm)	Weight(g)	Qty/Carton
E250	2W Blunt Tip	102	31.5	46	40
E250	2W Flame Tip	113	31.5	47	40
E251	4W Blunt Tip	102	31.5	53	40
E251	4W Flame Tip	113	31.5	54	40



Lamp

MR16

M6DJ / M6DR

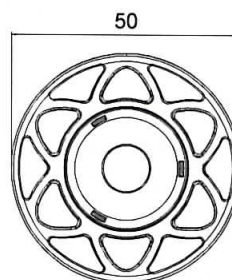
Introduction

With 85 CRI, Delta's MR16-compliant LED lamp is the most ideal energy saving replacement for your current halogen lamps. Inspired by shape of the reindeer horn and jasmine flower, Delta's MR16 LED lamps retain unique designs with carefully calculated heat dissipation mechanism. With the all-in-one design, Delta's MR16 LED lamps are combinedly both light source and fixture.

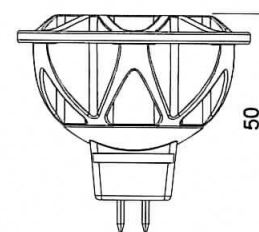


M6DJ

M6DR



M6DJ



Unit: mm

Application

- Display case accent
- Mood lighting
- Reading light
- Direct halogen MR16 lamp replacement to save energy and protect the environment

Features

- Elegant design
- Single high power chip-on-board LED with optimized secondary optical lens, which produces high quality light without multi shadows
- 12VAC input
- Low voltage and safe
- No UV or glare
- RoHS compliant
- No Hg or other hazardous elements
- Robust, high efficient heatsink design, no sharp edges
- Long life (>40,000 hours under normal operating condition)
- Designed to meet SSL Energy Star requirements (M6DJ)



Specification

Model	M6DJ	M6DR
Lumen Output (lm)	210(LB) / 220(WB)	150
Halogen Spot Lamp Equivalent (W)	20	20
Power Consumption (W)	5	5
Angle (°)	25 / 55	25 / 43
Dimension (mm)	Φ50x50	Φ50x50
Weight (g)	52	54
Base	GX5.3 / GU10	GX5.3 / GU10
Power Factor	Depends on external transformer	
Input Voltage	12VAC/DC, 50/60Hz	
CRI	85	70
CCT(K)	2700 (LB) / 3000 (WB)	3200
Regulation	UL / CE / WEEE / FCC ongoing	UL / CE / WEEE / FCC ongoing

4.5 Watt G25

LED

SPECIFICATION DATA

Project _____

Item Number _____

Prepared by _____ Date _____

ORDERING INFORMATION

Item Number	Description	Wattage	Base Type	Input Voltage (VAC)	Average Rated Life ¹	Typical Lumens ²	CCT ³	CBCP	Beam	R9	Duv	CRI ⁴	Power Factor	Operating Frequency
52029111	LED4.5w G25C830 NDIM	4.5	E26	120	25,000	210	3000K	79	73	21	0.0027	82	>0.90	60Hz

¹ Hours lifetime with 70% lumen maintenance

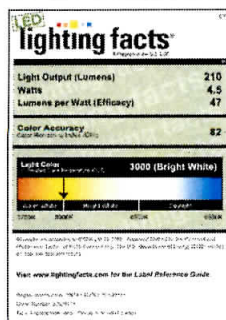
² Thermally stable typical lumens (±10%)

³ Thermally stable CCT (±10%)

⁴ Color rendering index/Ra

SHIPPING INFORMATION

Item Number	Item UPC	Item Dimensions (H x L x W)	Item Weight (lbs)	Inner Pack Qty	Inner Carton Bar Code	Inner Carton Dimensions (H x L x W)	Inner Pack Weight (lbs)	Master Pack Qty	Master Carton Bar Code	Master Dimensions (H x L x W)	Master Pack Weight (lbs)
52029111	8366070 06325	4.9" x 3.5" x 3.5"	0.34	6	30836607 006326	6.9" x 13.7" x 9.8"	2.5	24	50836607 006320	14.7" x 20.4" x 14.3"	11.6



The Americas Headquarters
26650 Renaissance Parkway, STE 6
Cleveland, OH 44128

855-384-7754 www.etiled.us



7 Watt A60

ZE-J7-A60-3000K

Description

Replaces a traditional 40 watt bulb
500 Lumens
Dimmable
Color temp = 3000 K
25,000 hour L70 rated life
UL Listed
120 volt

Instant "on" light
Mercury free
Not for totally enclosed fixture
Dry location only
Beam angle >160
3-year warranty



Mercantile Customer Project Commitment Agreement
Exemption Option

THIS MERCANTILE CUSTOMER PROJECT COMMITMENT AGREEMENT ("Agreement") is made and entered into by and between The Cleveland Electric Illuminating Company, its successors and assigns (hereinafter called the "Company") and Judson, its permitted successors and assigns (hereinafter called the "Customer") (collectively the "Parties" or individually the "Party") and is effective on the date last executed by the Parties as indicated below.

WITNESSETH

WHEREAS, the Company is an electric distribution utility and electric light company, as both of these terms are defined in R.C. § 4928.01(A); and

WHEREAS, Customer is a mercantile customer, as that term is defined in R.C. § 4928.01(A)(19), doing business within the Company's certified service territory; and

WHEREAS, R.C. § 4928.66 (the "Statute") requires the Company to meet certain annual energy efficiency and peak demand reduction ("EE&PDR") benchmarks; and

WHEREAS, when complying with certain EE&PDR benchmarks the Company may include the effects of mercantile customer-sited EE&PDR projects; and

WHEREAS, Customer has certain customer-sited demand reduction, demand response, or energy efficiency project(s) as set forth in attached Exhibit 1 (the "Customer Energy Project(s)") that it desires to commit to the Company for integration into the Company's Energy Efficiency & Peak Demand Reduction Program Portfolio Plan ("Company Plan") that the Company will implement in order to comply with the Statute; and

WHEREAS, the Customer, pursuant to and consistent with the Statute, desires to pursue exemption from paying charges included in the Company's then current cost recovery mechanism (hereinafter, "Rider DSE") as approved by the Public Utilities Commission of Ohio ("Commission") for recovery of the DSE2 costs associated with the Company Plan; and is committing the Customer Energy Project(s) as a result of such exemption.

WHEREAS, Customer's decision to commit its Customer Energy Project(s) to the Company for inclusion in the Company Plan has been reasonably encouraged by the possibility of an exemption; and

WHEREAS, in consideration of, and upon receipt of, said exemption, Customer has consented to committing the Customer Energy Project(s) to the Company and complying with all other terms and conditions set forth herein, including without limitation, the submission of an annual report on the energy savings and/or peak-demand reductions achieved by the Customer Energy Project(s).

NOW THEREFORE, in consideration of the mutual promises set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, do hereby agree as follows:

1. **Customer Energy Projects.** Customer hereby commits to the Company and Company accepts for integration into the Company Plan the Customer Energy Project(s) set forth on attached Exhibit 1. Said commitment shall be for the life of the Customer Energy Project(s). Company will incorporate said project(s) into the Company Plan to the extent that such projects qualify. In so committing, and as evidenced by the affidavit attached hereto as Exhibit A, Customer

acknowledges that the information provided to the Company about the Customer Energy Project(s) is true and accurate to the best of its knowledge.

- a. By committing the Customer Energy Project(s) to the Company, Customer acknowledges and agrees that the Company shall control the use of the kWh and/or kW reductions resulting from said projects for purposes of complying with the Statute. By committing the Customer Energy Project(s), Customer further acknowledges and agrees that the Company shall take ownership of the energy efficiency capacity rights associated with said Project(s) and shall, at its sole discretion, aggregate said capacity into the PJM market through an auction. Any proceeds from any such bids accepted by PJM will be used to offset the costs charged to the Customer and other of the Company's customers for compliance with state mandated energy efficiency and/or peak demand requirements.
 - b. The Company acknowledges that some of Customer's Energy Projects contemplated in this paragraph may have been performed under certain other federal and/or state programs in which certain parameters are required to be maintained in order to retain preferential financing or other government benefits (individually and collectively as applicable, "Benefits"). In the event that the use of any such project by the Company in any way affects such Benefits, and upon written request from the Customer, Company will release said Customer's Energy Project(s) to the extent necessary for Customer to meet the prerequisites for such Benefits. Customer acknowledges that such release (i) may affect Customer's exemption benefits discussed in Article 3 below; and (ii) will not affect any of Customer's other requirements or obligations, including without limitation any reporting requirements, as set forth herein.
 - c. Any future Customer Energy Project(s) committed by Customer shall be subject to a separate application and, upon approval by the Commission, said projects shall become part of this Agreement.
 - d. Customer will provide Company or Company's agent(s) with reasonable assistance in the preparation of a joint application for approval of this Agreement ("Joint Application") that will be filed with the Commission, with such Joint Application being consistent with then current Commission requirements.
 - e. Upon written request and reasonable advance notice, Customer will grant employees or authorized agents of either the Company or the Commission reasonable, pre-arranged access to the Customer Energy Project(s) for purposes of measuring and verifying energy savings and/or peak demand reductions resulting from the Customer Energy Project(s). It is expressly agreed that consultants of either the Company or the Commission are their respective authorized agents.
2. **Joint Application to the Commission.** The Parties will submit the Joint Application using the Commission's standard "Application to Commit Energy Efficiency/Peak Demand Reduction Programs" in which they will seek the Commission's approval of (i) this Agreement; (ii) the commitment of the Customer Energy Project(s) for inclusion in the Company Plan; and (iii) the Customer's exemption from paying the DSE2 charge of the Company's Rider DSE.

The Joint Application shall include all information as set forth in the Commission's standard form which, includes without limitation:

- i. A narrative description of the Customer Energy Project(s), including but not limited to, make, model and year of any installed and/or replaced equipment;
- ii. A copy of this Agreement; and

- iii. A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results.

3. Customer Exemption and Annual Report. Upon Commission approval of the request for exemption, the Company will exempt Customer from paying any Rider DSE charges consistent with any Commission directives as set forth in the Commission's Finding and Order approving the Joint Application. Such exempt status shall apply to those accounts identified by Customer that pertain to those Customer sites with one or more Customer Energy Project(s) approved for integration into the Company Plan by the Commission in the Joint Application.

- a. For purposes of this Agreement, a "site" shall be a single location with one or more facilities. As examples only, a site includes an industrial plant, a hospital complex or a university located on one or more parcels of land, provided that said parcels are contiguous.
- b. For purposes of this Agreement, an "account" shall be as defined by the Company through its normal business practices. Any account identified by Customer shall be eligible for exemption, provided that said account pertains to a specific site with at least one Customer Energy Project that qualifies Customer for exemption from paying Rider DSE charges.
- c. Any new accounts created at a site on which there is already an approved Customer Energy Project shall, at the option of the Customer, be included within the exemption granted under said project, and shall be included for purposes of calculating future eligibility for exemption under the project. Any such election shall become effective in the first billing cycle after March 15th following identification of said account in the annual report required under Section 3(d)(iii) below.
- d. Customer acknowledges and agrees that if it desires to pursue such exempt status, as evidenced in the Joint Application, Customer is obligated to provide to the Company an annual report on the energy savings and peak-demand reductions achieved by the Customer Energy Project(s) on a calendar year basis. Company shall provide Customer with such information as it may require, that is in Company's possession, for the purposes of preparing such report. Company shall provide a template for Customer to use in preparing the annual report and shall make available a designated Company representative to answer questions.
 - i. Said report shall be submitted annually on or before January 31 of each year after Commission approval of the Joint Application.
 - ii. Said report shall provide all information required under the Rules, and where the requirements of the Rules conflict with a requirement under this Agreement or the Joint Application, the requirements of the Rules shall control.
 - iii. Said report shall, at a minimum, include the following information for each Customer Energy Project that has been approved by the Commission:
 - 1. A demonstration that the energy savings and peak-demand reductions associated with the Customer Energy Project(s) meet the total resource cost test or that the Company's avoided cost exceeds the cost to the Company for the Customer's program;
 - 2. A statement distinguishing programs implemented before and after January 1 of the current year;

3. A quantification of the energy savings or peak-demand reductions for programs initiated prior to 2009 in the baseline period;
4. A recognition that the Company's baselines have been increased by the amount of mercantile customer energy savings and demand reductions;
5. A listing and description of the Customer Energy Projects that have been implemented, which provides the detail required by the Rules;
6. An accounting of expenditures made by the mercantile customer for each program and its component energy savings and peak-demand reduction attributes; and
7. A timeline showing when each Customer Energy Project went into effect and when the energy savings and peak-demand reductions occurred.
8. Any other information reasonably necessary for the Company to (i) verify Customer's continued eligibility for exemption from paying Rider charges; and (ii) report in the Company's annual status report to the Commission the EE&PDR results related to each Customer Energy Project.

e. Customer's exemption shall automatically terminate:

- i. At the end of the exemption period as determined by the Commission
 - ii. Upon order of the Commission or pursuant to any Commission rule;
 - iii. If Customer fails to comply with the terms and conditions set forth in the Company's then current Rider DSE, or its equivalent, as amended from time to time by the Commission, within a reasonable period of time after receipt of written notice of such non-compliance;
 - iv. If it is discovered that Customer knowingly falsified any documents provided to the Company or the Commission in connection with this Agreement or the Joint Application. In such an instance, Company reserves the right to recover any exempted rider charges from the date of approval of the Joint Application through the date said exemption is terminated; or
 - v. If Customer fails to submit the annual report required in (d) above. In such an instance, Company reserves the right to recover any exempted rider charges from the date of approval of the Joint Application through the date said exemption is terminated. It is expressly agreed that this provision shall not apply should said report contain errors, provided that the submission of said report is made in good faith. It is further agreed that the Company will provide written notice of the date on which said report is due at least thirty (30) days prior thereto.
- f. Company reserves the right to recover from Customer any Rider DSE charges incurred by Customer after the date Customer's exemption terminates.

3. Termination of Agreement. This Agreement shall automatically terminate:

- a. If the Commission fails to approve this Agreement through the Joint Application;

- b. Upon order of the Commission; or
- c. At the end of the life of the last Customer Energy Project subject to this Agreement.

Customer shall also have an option to terminate this Agreement should the Commission not approve the Customer's exemption, provided that Customer provides the Company with written notice of such termination within ten days of either the Commission issuing a final appealable order or the Ohio Supreme Court issuing its opinion should the matter be appealed.

Customer acknowledges that if a Customer Project is withdrawn pursuant to Paragraph 1(b) of this Agreement, the exemption or a portion of such exemption may be affected. Should Customer elect to withdraw a project pursuant to Paragraph 1(b), Customer shall provide Company with reasonable assistance in preparing any documentation that may be required by the Commission and, upon reasonable request, shall provide documentation supporting the necessity to withdraw such project.

- 4. **Confidentiality.** Each Party shall hold in confidence and not release or disclose to any person any document or information furnished by the other Party in connection with this Agreement that is designated as confidential and proprietary ("Confidential Information"), unless: (i) compelled to disclose such document or information by judicial, regulatory or administrative process or other provisions of law; (ii) such document or information is generally available to the public; or (iii) such document or information was available to the receiving Party on a non-confidential basis at the time of disclosure.
 - a. Notwithstanding the above, a Party may disclose to its employees, directors, attorneys, consultants and agents all documents and information furnished by the other Party in connection with this Agreement, provided that such employees, directors, attorneys, consultants and agents have been advised of the confidential nature of this information and through such disclosure are deemed to be bound by the terms set forth herein.
 - b. A Party receiving such Confidential Information shall protect it with the same standard of care as its own confidential or proprietary information.
 - c. A Party receiving notice or otherwise concluding that Confidential Information furnished by the other Party in connection with this Agreement is being sought under any provision of law, to the extent it is permitted to do so under any applicable law, shall endeavor to: (i) promptly notify the other Party; and (ii) use reasonable efforts in cooperation with the other Party to seek confidential treatment of such Confidential Information, including without limitation, the filing of such information under a valid protective order.
 - d. By executing this Agreement, Customer hereby acknowledges and agrees that Company may disclose to the Commission or its Staff any and all Customer information, including Confidential Information, related to a Customer Energy Project, provided that Company uses reasonable efforts to seek confidential treatment of the same.
- 5. **Taxes.** Customer shall be responsible for all tax consequences (if any) arising from the application of the exemption.
- 6. **Notices.** Unless otherwise stated herein, all notices, demands or requests required or permitted under this Agreement must be in writing and must be delivered or sent by overnight express mail, courier service, electronic mail or facsimile transmission addressed as follows:

If to the Company:

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FirstEnergy Service Company
76 South Main Street
Akron, OH 44308
Attn: Victoria Nofziger
Telephone: 330-384-4684
Fax: 330-761-4281
Email: ymnofziger@firstenergycorp.com

If to the Customer:

Judson
2181 Ambleside Drive
Cleveland, Ohio 44106
Attn: James J. Carnovale
Telephone: 216.791.2688
Fax:
Email: jcarnovale@judsonsmartliving.org

or to such other person at such other address as a Party may designate by like notice to the other Party. Notice received after the close of the business day will be deemed received on the next business day; provided that notice by facsimile transmission will be deemed to have been received by the recipient if the recipient confirms receipt telephonically or in writing.

7. **Authority to Act.** The Parties represent and warrant that they are represented by counsel in connection with this Agreement, have been fully advised in connection with the execution thereof, have taken all legal and corporate steps necessary to enter into this Agreement, and that the undersigned has the authority to enter into this Agreement, to bind the Parties to all provisions herein and to take the actions required to be performed in fulfillment of the undertakings contained herein.
8. **Non-Waiver.** The delay or failure of either party to assert or enforce in any instance strict performance of any of the terms of this Agreement or to exercise any rights hereunder conferred, shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights at any later time or on any future occasion.
9. **Entire Agreement.** This Agreement, along with related exhibits, and the Company's Rider DSE, or its equivalent, as amended from time to time by the Commission, contains the Parties' entire understanding with respect to the matters addressed herein and there are no verbal or collateral representations, undertakings, or agreements not expressly set forth herein. No change in, addition to, or waiver of the terms of this Agreement shall be binding upon any of the Parties unless the same is set forth in writing and signed by an authorized representative of each of the Parties. In the event of any conflict between Rider DSE or its equivalent and this document, the latter shall prevail.
10. **Assignment.** Customer may not assign any of its rights or obligations under this Agreement without obtaining the prior written consent of the Company, which consent will not be unreasonably withheld. No assignment of this Agreement will relieve the assigning Party of any of its obligations under this Agreement until such obligations have been assumed by the assignee and all necessary consents have been obtained.
11. **Severability.** If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remaining portions of this Agreement, and the Parties further agree to substitute for the invalid portion a valid provision that most closely approximates the economic effect and intent of the invalid provision.

12. **Governing Law.** This Agreement shall be governed by the laws and regulations of the State of Ohio, without regard to its conflict of law provisions.

13. **Execution and Counterparts.** This Agreement may be executed in multiple counterparts, which taken together shall constitute an original without the necessity of all parties signing the same page or the same documents, and may be executed by signatures to electronically or telephonically transmitted counterparts in lieu of original printed or photocopied documents. Signatures transmitted by facsimile shall be considered original signatures.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized officers or representatives as of the day and year set forth below.

The Cleveland Electric Illuminating Company
(Company)

By: John C. Longi

Title: VP of Energy Efficiency

Date: 3-18-13

Judson
(Customer)

By: James J. Canavale

Title: VP of Finance / CFO

Date: 2/25/13

Affidavit of Judson – Exhibit A

STATE OF OHIO)

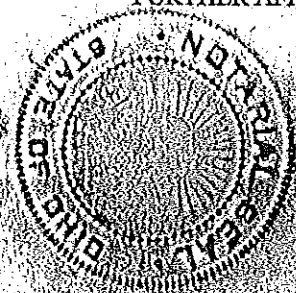
COUNTY OF Cuyahoga)

SS:

I, James J. Carnovale, being first duly sworn in accordance with law, deposes and states as follows:

1. I am the Chief Financial Officer of Judson ("Customer") As part of my duties, I oversee energy related matters for the Customer.
2. The Customer has agreed to commit certain energy efficiency projects to The Cleveland Electric Illuminating Company ("Company"), which are the subject of the agreement to which this affidavit is attached ("Project(s)").
3. In exchange for making such a commitment, the Company has agreed to provide Customer with a Rider Exemption ("Incentive"). This Incentive was a critical factor in the Customer's decision to go forward with the Project(s) and to commit the Project(s) to the Company.
4. All information related to said Project(s) that has been submitted to the Company is true and accurate to the best of my knowledge.

FURTHER AFFIANT SAYETH NAUGHT.



James J. Carnovale

Sworn to before me and subscribed in my presence this 6 day of Mar., 2013

Mary Lou Mihalek
Notary

Mary Lou Mihalek
Notary Public
State of Ohio, Cuyahoga County
My Commission Expires 4-02-13

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/27/2013 4:43:33 PM

in

Case No(s). 13-0471-EL-EEC

Summary: Application to Commit Energy Efficiency/Peak Demand Reduction Programs of The Cleveland Electric Illuminating Company and Judson electronically filed by Ms. Jennifer M. Sybyl on behalf of The Cleveland Electric Illuminating Company and Judson