



Public Utilities Commission

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

Case No.: 13-0240-EL-EEC

Mercantile Customer: St. Gobain Performance Plastics

Electric Utility: Ohio Edison Company

Program Title or
Description: 2011 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: St. Gobain Performance Plastics

Principal address: 335 N. Diamond St., Ravenna, OH 44266

Address of facility for which this energy efficiency program applies: Same as above

Name and telephone number for responses to questions: George Brandt - 330.297.3041

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: Ohio Edison 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: 360,796 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?

12/1/2011

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

45 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 \$13,355.00. (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
Energy Efficiency/Peak Demand
Reduction Programs
(Mercantile Customers Only)

Case No.: 13-0240-EL-EEC

State of Ohio :

George Brandt, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

St. Gobain Performance Plastics

[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 7th day of February, 2013 Month/Year


Signature of official administering oath

Branch Mgr. Sarah Baker
Print Name and Title

My commission expires on 11/9/15



SARAH BAKER, NOTARY
STATE OF OHIO
MY COMMISSION EXPIRES: 11/9/15

Exhibit 1

Customer Legal Entity Name: St. Gobain Performance Plastics

Site Address: St. Gobain - Ravenna, OH

Principal Address: 335 N. Diamond St.

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	2011 Lighting Retrofit	Early retirement of fully functional existing lighting in plant and office areas including 400 watt Metal Halide fixtures, 8 foot and 4 foot T12 / 2 - 4 lamp fixtures/magnetic ballasts, and various incandescent and compact fluorescent fixtures with more efficient T8 based lamps utilizing 28 W and 32 W lamps, instant start ballasts, LED lamps and CFL lamps were applicable. In addition wide path motion sensors in plant area to shut down lights when there is not activity. See Attachment A.1 for technical cutsheets.	Third party (BDI) provided lighting audit to calculate and show energy savings from lighting project (IPMVP Option A). First Energy provides lighting calculator to calculate savings for rebate. See Attachment B.1.	No set time frame. Probably 2 - 5 years as replacement lamps and ballasts became unavailable or government standards evolved.	N/A

Exhibit 2

Customer Legal Entity Name: St. Gobain Performance Plastics

Site Address: St. Gobain - Ravenna, OH

Principal Address: 335 N. Diamond St.

	Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (C) <i>Note 1</i>
2011	1,718,478	1,718,478	1,749,121
2010	1,428,891	1,428,891	1,428,891
2009	1,347,737	1,347,737	1,347,737
Average	1,498,369	1,498,369	1,508,583

Project Number	Project Name	In-Service Date	Project Cost \$	50% of Project Cost \$	KWh Saved/Year (D) counting towards utility compliance	KWh Saved/Year (E) eligible for incentive	Utility Peak Demand Reduction Contribution, KW (F)	Prescriptive Rebate Amount (G) \$	Eligible Rebate Amount (H) \$ <i>Note 2</i>
1	2011 Lighting Retrofit	12/01/2011	\$53,076	\$26,538	360,796	360,796	45	\$17,806	\$13,355
					-	-	-		
					-	-	-		
					-	-	-		
					-	-	-		
					-	-	-		
		Total	\$53,076		360,796	360,796	45	\$17,806	\$13,355

Docket No. 13-0240

Site: 335 N. Diamond St.

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) The eligible rebate amount is based upon 75% of the rebates offered by the FirstEnergy Commercial and Industrial Energy Efficiency programs or 75% of \$0.08/kWh for custom programs for all energy savings eligible for a cash rebate as defined in the PUCO order in Case NO.10-834-EL-EEC dated 9/15/2010, not to exceed the lesser of 50% of the project cost or \$250,000 per project. The rebate also cannot exceed \$500,000 per customer per year, per utility service territory.

Commitment
Payment
\$



\$0

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	361	\$ 308	\$ 111,226	\$ 4,050	\$13,355	\$3,608	\$ 21,012	5.3
Total	361	\$ 308	111,226	4,050	\$13,355	\$3,608	21,012	5.3

Notes

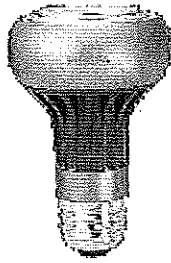
- (A) From Exhibit 2, = kWh saved / 1000
- (B) This value represents avoided energy costs (wholesale energy prices) from the Department of Energy, Energy Information Administration's 2009 Annual Energy Outlook (AEO) low oil prices case. The AEO represents a national average energy price, so for a better 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)

St. Gobain Performance Plastics ~ St. Gobain - Ravenna, OH
Docket No. 13-0240

Site: 335 N. Diamond St.

CUTSHEET 1 7 W LED

25/2/2011



EnduraLED 6W 2700K R20 Dimm

Product family description

The Philips EnduraLED™ R20 (NR-63) floods make downlighting simple. With only 7 watts of power and very long life, they eliminate the hassle of repeated re-lamping in busy areas. Installation into existing fixtures brings innovation to familiar applications.

Features

- Emits virtually no UV/IR light in the beam.
- Will not fade colors, avoids inventory spoilage.
- Designed to last 40,000 hours rated average life(2) (3).
- Instant-on light.
- Contains no mercury.
- Dims to 10% of full light levels with excellent beam control (Designed for "Leading Edge" TRIAC dimming systems).
- 7Watt Warm and Cool White versions.

Benefits

- Philips is the global leader in light and a leader in LED technology.
- Philips knows LED light and stands behind the EnduraLED products with a warranty.
- Philips' commitment to innovation and quality provides the confidence of partnering with an industry leader.

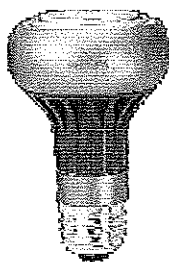
Application

- Ideal for general lighting in retail, hospitality, and residential spaces.

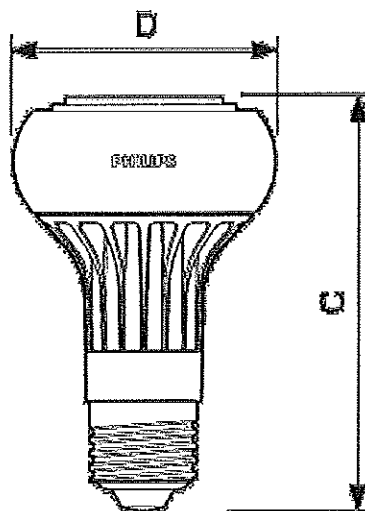
Product data	
Product Number	408260
Full product name	EnduraLED 6W 2700K R20 Dimm
Ordering Code	408260
Pack type	
Pieces per Sku	1
Skus/Case	6
Pack UPC	046677408268

PHILIPS

Product data	
EAN2US	
Case Bar Code	50046677408263
Successor Product number	
Additional Information	Dimmable
Cap-Base	E26
Bulb	R20
Average Lifetime	45000 hr
Pack UPC	046677408268
Case Bar Code	50046677408263
Ordering Code	6R20/END/F25 4800 DIM
Wattage	6W
Dimmable	Yes
Color Code	WH
Color Designation (text)	White
Correlated Color Temperature	2700 K
Luminous Flux	200 Lm
Luminous Intensity	900 cd
Color rendering index	81
Color Temperature	2700K [CCT 2700K]
Product Number	408260



EnduraLED E26 R20



EnduraLED E26 PAR20/R20



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Document order number : 0000 000 00000

CUTSHEET 2 - 12 W LED



FEATURES & SPECIFICATIONS

INTENDED USE — For use with housings L7X, L7XR, and LC6.

LED module for use in retrofit / remodel or new construction applications where energy savings, long-life, and functional delivered light levels are required. The Reality LED module provides 80% energy savings over the 65W BR30 and replicates the beam pattern and useful light levels of these fixtures. It will maintain at least 70% light output for 50,000 hours in a typical IC environment. The Reality LED module fits most common 6" cans for retrofit applications and can be ordered with L7X, L7XR, or LC6 for new construction. The Reality LED module is the most economical means to create a well lit environment with exceptional energy efficiency and near zero maintenance.

CONSTRUCTION — Rugged, one-piece, die-cast heat sink design for optimal thermal management.

Wet location rated lens is tightly fitted to the housing to reduce the ingress of dust.

Twin torsion springs ensure easy installation.

Utilizes 3000K color temperature.

OPTICS — Precisely designed elliptical upper reflector and a patented micro prism lens provides a 38 degree full width half max (FWHM) beam angle. Lower splay recesses optical system into the ceiling to prevent glare and provide a traditional look.

ELECTRICAL — Utilizes high-brightness LEDs on a metal core circuit board, ensuring cool-running operation. On-board circuitry to ensure protection against wiring errors.

High-efficiency driver mounted on the module. Primary power disconnect provided for simple connection to a standard Edison (E26) base socket.

Full range dimming is standard; dimming down to 25%. Optimal dimming performance is achieved when connected to an electronic low-voltage (ELV) dimmer; See page 2 for recommended dimmers.

Standard input wattage is 12.0W, 50 lumens per watt.

INSTALLATION — Suitable for installation in standard-height rough-in sections. Fits into most popular 6" housings.

LISTINGS — CSA certified for use in the US and Canadian safety standards. Wet location listed.

WARRANTY — Five-year limited warranty. Full warranty terms located at:

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

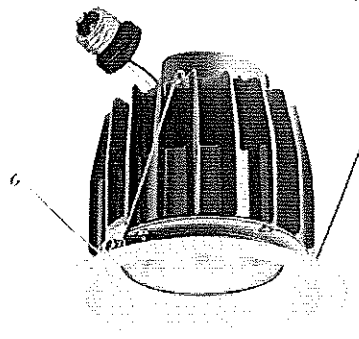
Note: Specifications subject to change without notice.

Catalog Number
Notes
Type

6" LED Module



IC/Non-IC
Retrofit



Specifications

Aperture: 4-3/8 (11.1)

Ceiling opening: As rough-in

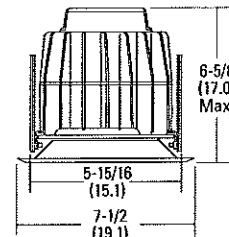
Overlap trim: 7-1/2 (19.1)

Height: 6-5/8 (17.0) max.

Weight (module only): 2.8 lbs.

Weight (module and carton): 3.96 lbs.

All dimensions are inches (centimeters) unless otherwise noted.



ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: REAL6 D6MW

Series/Finish				Lumen output ¹	Color temperature	Voltage	Options ²	
Series	Finish			(blank) 600 lumens	(blank) 3000K 27K 2700K	(blank) 120V	PFMW	Matte white plastic flange ring
REAL6 D6	6" retrofit module		MW				PFBL	Black plastic flange ring
			A				L7X	New construction rough-in
			AZ				L7XR	Remodel rough-in
			BN				LC6	New construction rough-in
			BLZ				ISH	Insect shield
			BZA					
			ORB					
			WT					

Accessories: Order as separate catalog number.

TSA6	Makes non-bracket housings compatible with the LED module ships as units, J6 or J25
FL2LED	Makes L7XF housings compatible with the LED module
REAL HW Kit	Enables a permanent conversion to an LED source and Title 24 compliant
CTR6	6" goof ring, white



TSA6
Torsion spring adapter



REAL HW Kit
REAL HW Hardware Kit



FL2LED
Fluorescent Adapter Kit

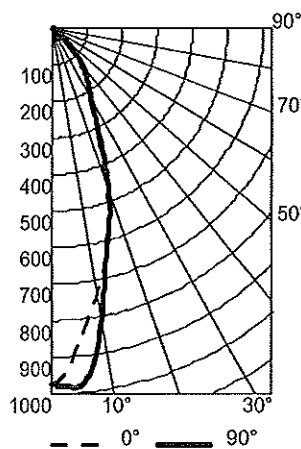
Notes

- Total system delivered lumens.
- See Real6 New Construction/Remodel Spec Sheets for use with dedicated LED Housings.

6 Series REALITY™ 6" LED

PHOTOMETRICS

REAL6 D6MW, 3000K LEDS, 600 delivered lumens, 12.0 input watts, test no. LTL 18880



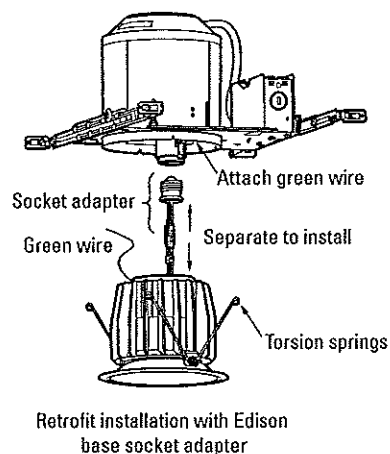
CP Summary		
	0°	90°
0°	974	974
5°	868	981
15°	616	608
25°	296	311
35°	178	175
45°	88	84
55°	15	13
65°	5	5
75°	3	3
85°	0	0
90°	0	0

Coefficients of Utilization											
ROR	pf	20%						50%			
	pc	80%			70%			30%			10%
	pw	70%	50%	30%	50%	30%	10%	50%	30%	10%	
0	119	119	119	119	116	116	116	111	111	111	
1	113	110	108	108	108	106	104	104	102	101	
2	108	103	98	98	101	97	94	98	94	92	
3	102	95	90	90	94	89	85	91	87	84	
4	97	89	83	83	88	83	79	86	81	78	
5	92	83	77	77	82	77	73	81	76	72	
6	87	78	72	72	77	72	68	76	71	67	
7	83	74	67	67	73	67	63	72	66	63	
8	79	69	63	63	69	63	59	68	63	59	
9	75	66	60	60	65	60	56	64	59	55	
10	72	62	57	57	62	56	53	61	56	52	

Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Fixture
0° - 30°	400	66.6	66.6
0° - 40°	510	84.9	84.9
0° - 60°	592	98.6	98.6
0° - 90°	600	100.0	100.0
90° - 180°	0	0.0	0.0
0° - 180°	600	100.0	100.0

Efficiency: 100.0%

INSTALLATION, DIMMING AND ENERGY DATA



COMPATIBLE DIMMERS/SWITCHES	
MANUFACTURER	PART NO.
LUTRON	DVELV-300
	DVELV-303
	MAELV-600
	MIRELV-600
	NTELV-300
	NTELV-600
	SELV-300
	VTELV-600M
LEVITON	6615-P
	ATE04-1L
	ATE06-1L
	VPE04-1L
	VPE06-1L
SYNERGY	ISD ELV

ENERGY DATA*	
Min. starting temp	-30°C (-22°F)
EMI/RFI	FCC Title 47 CFR, Part 15, Class B
Sound rating	Class A standards
Input voltage	120V
Min. power factor	0.95
Input frequency	50/60 Hz
Max. THD	30%
Rated wattage	12.0W
Input power	12.0W
Input current	125ma

*Values at non-dimming line voltage.

Notes

- Actual performance may differ as a result of end-user environment and application.
- Actual wattage may differ by +/-10% when operating at 120V.



REALITY-6-LED



SpringLight™ Specifications

Compact Fluorescent

Applications:

Perfect for most applications: Use where a standard incandescent is used.

- + Table Lamps
- + Floor Lamps
- + Ceiling Fixtures
- + Wall Scones
- + Vanities
- + Track Lighting



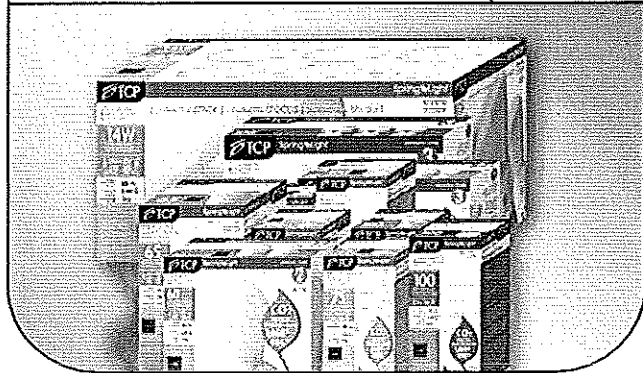
Features and Benefits:

- Long life, 10,000 hour average rated life – SpringLamps®
- 8,000 hour average rated life – globes/a-lamp/floodlights
- Lasts 9 years, based on 3 hours use per day – SpringLamps®
- Lasts 7 years, based on 3 hours use per day – globes/a-lamp/floodlights
- Replace less often, ideal for hard to reach places
- Lower maintenance costs for lamp replacements
- Saves up to 75% in energy costs compared to similar light output incandescent lamps
- Available in the following color temperatures: 2700K, 3500K, 4100K and 5000K
- Quick run-up time
- Medium base and compact height fits anywhere a standard incandescent fits
- Instant start, flicker free
- End of Life logic guards against violent failures
- World class phosphor insures high lumen output and excellent lumen maintenance
- Up to 23 watts approved for enclosed fixtures

Catalog Number

Notes

Type



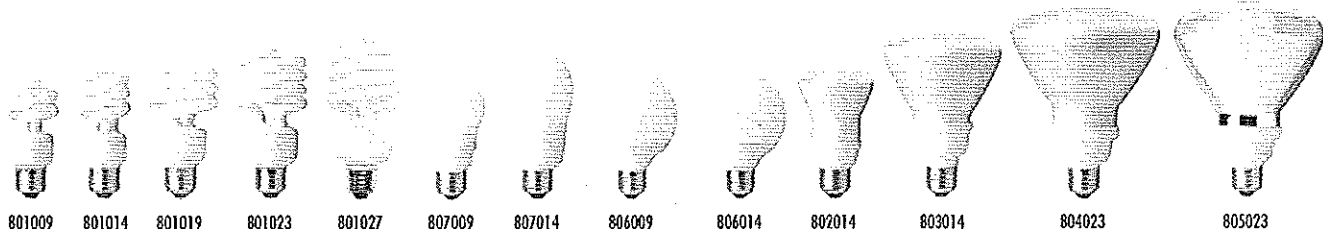
Specifications: (at full brightness)

End of Life Protection	Yes
Ballast Type	Electronic
Starting Method	Modified Rapid Start
Input Line Voltage	120VAC
Input Line Frequency	50/60HZ
Lamp Life (rated)	10,000 Hours / 8,000 Hours
Color Temperature	2700°K
Color Rendering Index	82
Minimum Starting Temperature	-20°F, -29°C
Maximum Operating Temperature	160°F, 71°C
U.L. / C.U.L. Listed	Yes
FCC Compliance	47 C.F.R. Part 18
Lamp Operating Frequency	45 KHZ
Lamp Current Crest Factor	<1.60
Max. Open Circuit Voltage	600V
Total Harmonic Distortion	<150%
Power Factor Rated	>.50

Special Application Notes:

Up to 23 watt is UL approved for totally enclosed fixtures.

Use a 27watt in an open recessed can.





SpringLight[™] Specifications

Meeting Your Needs.

SpringLight[™] is our basic standard CFL lineup which includes half SpringLamps[®] and standard floods. These high quality lamps are reasonably priced, designed to fit your budget, and are available in a variety of pack sizes from 1-packs to contractor packs and pallet programs.

**ENERGY
STAR[®]**
approved

Item Number	ENERGY STAR [®]	Item Description	Unit/Ballast Watts	Incandescent Comparison (Watts)	Initial Lumens	CCT (Kelvin)	CRI	MOL/Height (Inches)	Diameter/Width (Inches)	Input Line Current	Case Quantity
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SPRINGLIGHT[™] SPRINGLAMPS[®]

801009	★	9W SpringLamp 27K	9	40	550	2700	82	4.0	1.8	.15A	6
80100935	★	9W SpringLamp 35K	9	40	550	3500	82	4.0	1.8	.15A	6
80100941	★	9W SpringLamp 41K	9	40	550	4100	82	4.0	1.8	.15A	12
80100950	★	9W SpringLamp 50K	9	40	500	5000	82	4.0	1.8	.15A	12
801014	★	14W SpringLamp 27K	14	60	900	2700	82	4.4	1.8	.23A	12
8010143	★	14W SpringLamp 27K 3PK	14	60	900	2700	82	4.4	1.8	.23A	12
80101435	★	14W SpringLamp 35K	14	60	900	3500	82	4.4	1.8	.23A	12
80101441	★	14W SpringLamp 41K	14	60	900	4100	82	4.4	1.8	.23A	12
801014413	★	14W SpringLamp 41K 3PK	14	60	900	4100	82	4.4	1.8	.23A	12
80101450	★	14W SpringLamp 50K	14	60	850	5000	82	4.4	1.8	.23A	12
801019	★	19W SpringLamp 27K	19	75	1200	2700	82	4.4	2.3	.31A	12
8010193	★	19W SpringLamp 27K 3PK	19	75	1200	2700	82	4.4	2.3	.31A	12
80101935	★	19W SpringLamp 35K	19	75	1200	3500	82	4.4	2.3	.31A	12
80101941	★	19W SpringLamp 41K	19	75	1200	4100	82	4.4	2.3	.31A	6
801019413	★	19W SpringLamp 41K 3PK	19	75	1200	4100	82	4.4	2.3	.31A	6
80101950	★	19W SpringLamp 50K	19	75	1200	5000	82	4.4	2.3	.31A	12
801023	★	23W SpringLamp 27K	23	100	1600	2700	82	4.8	2.3	.38A	12
8010233	★	23W SpringLamp 27K 3PK	23	100	1600	2700	82	4.8	2.3	.38A	12
80102335	★	23W SpringLamp 35K	23	100	1600	3500	82	4.8	2.3	.38A	12
80102341	★	23W SpringLamp 41K	23	100	1600	4100	82	4.8	2.3	.38A	12
801023413	★	23W SpringLamp 41K 3PK	23	100	1600	4100	82	4.8	2.3	.38A	12
80102350	★	23W SpringLamp 50K	23	100	1500	5000	82	4.8	2.3	.38A	12
801027	★	27W SpringLamp 27K	27	100	1850	2700	82	5.5	2.4	.45A	12
8010273	★	27W SpringLamp 27K 3PK	27	100	1850	2700	82	5.5	2.4	.45A	12
80102735	★	27W SpringLamp 35K	27	100	1850	3500	82	5.5	2.4	.45A	12
80102741	★	27W SpringLamp 41K	27	100	1750	4100	82	5.5	2.4	.45A	12
801027413	★	27W SpringLamp 41K 3PK	27	100	1750	4100	82	5.5	2.4	.45A	12
80102750	★	27W SpringLamp 50K	27	100	1750	5000	82	5.5	2.4	.45A	12

SPRINGLIGHT[™] REFLECTOR LAMPS

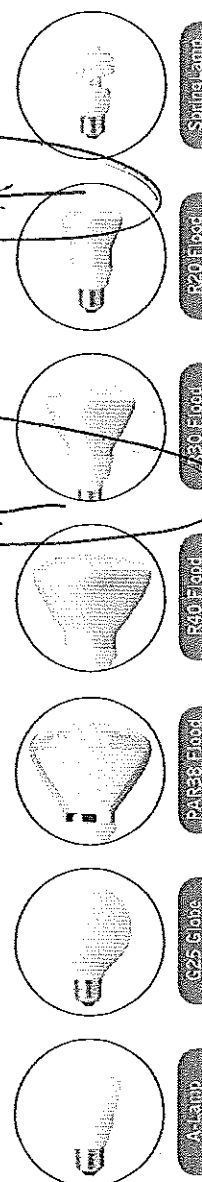
802014	★	14w R20 Flood SpringLamp	14	50	495	2700	82	4.3	2.5	.23A	12
803014	★	14w R30 Flood SpringLamp	14	65	645	2700	82	5.4	3.7	.23A	12
8030142	★	14w R30 Flood SpringLamp 2PK	14	65	645	2700	82	5.4	3.7	.23A	12
805023	★	23w Par38 Flood SpringLamp	23	90	1200	2700	82	6.2	4.8	.38A	12
8050232	★	23w Par38 Flood SpringLamp 2PK	23	90	1200	2700	82	6.2	4.8	.38A	12
804023	★	23w R40 Flood SpringLamp	23	120	1200	2700	82	6.1	4.8	.38A	12

SPRINGLIGHT[™] GLOBES

8060092	★	9w G25 Globe SpringLamp 2PK	9	40	495	2700	82	4.3	3.1	.15A	12
8060142	★	14w G25 Globe SpringLamp 2PK	14	60	800	2700	82	4.3	3.1	.23A	12

SPRINGLIGHT[™] A-LAMPS

8070092	★	9w A-Lamp SpringLamp 2pk	9	40	450	2700	82	4.1	2.2	.15A	12
8070142	★	14w A-Lamp SpringLamp 2pk	14	60	800	2700	82	4.3	3.1	.23A	12



ISO 9002
CERTIFIED



Globe Lamps G25, G30, G40 Series Specifications

SpringLamp® Compact Fluorescent, NPF

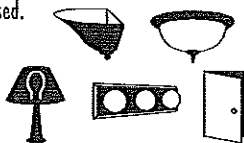
8,000 Hours
average rated life

Applications:

- Use anywhere a standard incandescent is used.

Replaces Incandescent for:

- + Vanity Strips
- + Table Lamps
- + Closet Lights
- + Ceiling Fixtures
- + Sconces

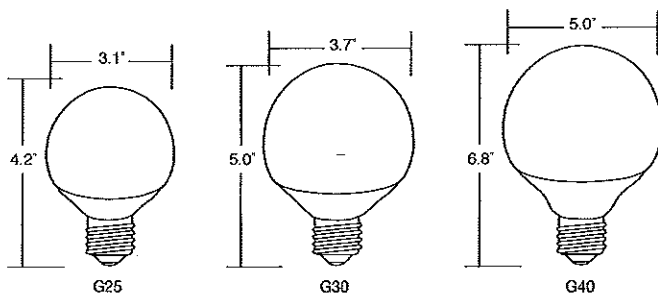


Special Application Options: (Ordering Suffix)

- 3100K (31K)
- 4100K (41K)
- 6500K (65K)
- 3500K (35K)
- 5500K (55K)

Features and Benefits

- Long life CFL, 8,000 hour average rated life
- Amalgam technology- provides cooler operating temperatures for consistent performance in any position
- No lead glass- Better lumen maintenance over life of bulb
- 2700°K color temperature closest to incandescent light
- Medium base or candelabra base available
- Replace less often, ideal for hard to reach places
- Quick run-up time
- Medium base and compact height fits anywhere a standard incandescent fits
- Instant start, flicker free
- End of Life logic guards against violent failures
- Quickstart technology - fast run up time

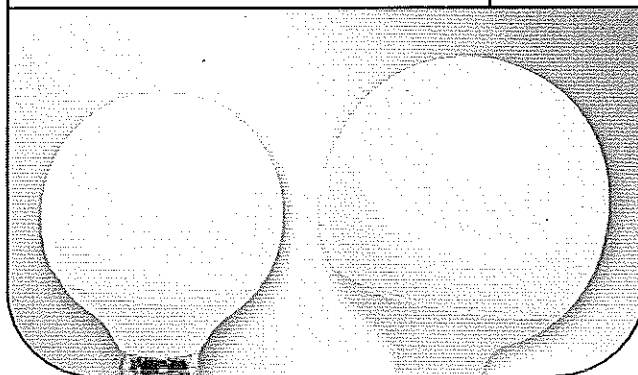


★ = ENERGY STAR® approved

Catalog Number

Notes

Type



Specifications (at full brightness)

End of Life Protection.....	Yes
Ballast Type	Electronic
Starting Method.....	Modified Rapid Start
Input Line Voltage	120VAC
Input Line Frequency	50/60HZ
Lamp Life (rated)	8,000 Hours
Color Temperature	2700°K
Color Rendering Index	82
Minimum Starting Temperature	-20°F, -29°C
Maximum Operating Temperature	160°F, 71°C
U.L. / C.U.L. Listed	Yes - E149698
FCC Compliance	Part 18, Subpart C
Lamp Operating Frequency	45 KHZ
Max. Open Circuit Voltage	600V
Lamp Current Crest Factor	<1.60
Total Harmonic Distortion	<150%
High Power Factor Rated	>.50

Special Notes

- UL approved for wet location in Base Up position only. Base Up position is defined as screw base in a 12:00 position. Any other base position must be in a UL approved weatherproof fixture.

Warranties and Certifications:	Item #	Wattage	Incandescent Wattage Comparison	Initial Lumens	Input Line Current	M.O.L. (Inches)	Diameter (Inches)	Base Type
ISO 9002 CERTIFIED 12 MONTH WARRANTY	1G2504	4	25	250	.07A	4.2	3.1	E26
	1G2509	9	40	495	.15A	4.2	3.1	E26
	1G2509C	9	40	495	.15A	4.2	3.1	E12
	★ 2G2514	14	60	800	.23A	4.7	3.1	E26
	1G3009	9	40	495	.15A	5.0	3.7	E26
	★ 1G3014	14	60	800	.23A	5.0	3.6	E26
	★ 1G3019	19	75	950	.32A	4.9	3.7	E26
	1G3023	23	100	1400	.38A	5.9	3.6	E26
	1G4014	14	60	800	.23A	6.8	5.0	E26
	1G4019	19	75	950	.30A	6.8	5.0	E26
	1G4023	23	100	1300	.38A	6.8	5.2	E26

TCP reserves the right to void the warranty for any mis-application of these products.



CUTSHEET 6

2 + 4 LAMP 20W T8 w/
LBF BALLAST RELAMP + REBALLAST

www.sylvania.com

QUICKTRONIC® T8 Instant Start Universal Voltage

High Efficiency Series

QHE ISL CC

Lamp/Ballast Guide

32W T8 - OCTRON®

1-lamp QHE1x32T8/UNV-ISL-SC-1

2-lamp QHE2x32T8/UNV-ISL-SC-1

3-lamp QHE3x32T8/UNV-ISL-SC-1

4-lamp QHE4x32T8/UNV-ISL-SC-1

Also operates:

FBO32, FBO31, F025, FBO24, F017,
FBO16, F030/SS (30W), FBO30/SS
(30W), FBO29/SS (29W), F028/SS (28W)
& F025/SS (25W)

Display lamps:

F013, F014, F021 & F028

Preheat lamps:

F15T8, F25T8 & F30T8

F40T8 operation:

1 lamp on 2L ballast; 2 lamps on 3L
ballast; 3 lamps on 4L ballast

Key System Features

- High Efficiency Systems over 90% efficient
- NEMA Premium Ballast compliant
- UL Type CC Rated (Commercial Cabinet)
- Lamp Striation Control (LSC)
- Min. Starting Temp:
 - -20°F (-29°C) for T8 lamps
 - 60°F (16°C) for Energy Saving T8 lamps
 - 0°F (-18°C) for F040T8 lamps
- Flexible De-Lamp Combinations — see wiring diagrams on next page

Application Information

SYLVANIA QUICKTRONIC High Efficiency (QHE) is ideally suited for:

UL Type CC

- Refrigerated cases*
- Walk-in coolers*
- Commercial cabinets
- Display cases
- Applications that could expose lamp and sockets to vibration and potential movement

*T8 energy saving lamps should not be used in applications below 60°F lamp ambient.

Lamp Striation Control, (LSC)

- General lighting applications where energy saving T8 lamps may striate, particularly for the F25 energy saving T8 lamps.

SYLVANIA QUICKTRONIC High Efficiency, (QHE) Type CC energy saving electronic T8 ballasts offer four major advantages:

1. Same Light, Less Power!
 - Up to 6% in energy savings compared to standard T8 low power electronic ballasts without compromising light output
 - 30-44% energy savings when compared to F34T12 magnetically ballasted systems (see table below)
2. UL Type CC compliant: ballasts utilize a micro-controller based circuit to reduce arcing caused by loose connections or improper lamp pin to socket connections.
3. Lamp Striation Control (LSC): T8 energy saving lamps should be operated above 60°F, but under certain conditions the lamps may striate. LSC circuitry may minimize or eliminate this condition; however there are limited applications where LSC circuitry may

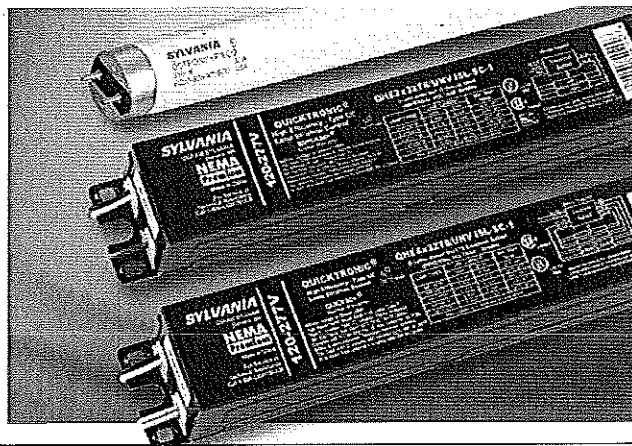
System Information

SYLVANIA QUICKTRONIC High Efficiency (QHE) System advantages:

- Operate from 120V through 277V
 - Eliminates "wrong voltage" errors
 - Reduces inventory by 50%
- Utilizes Instant Start operation for
 - Highest System Efficacy
 - Low temperature starting capability
 - Parallel circuitry - keeps remaining lamps lit if one or more go out
- Very low harmonic distortion (<10%)THD
- Operate at >42kHz to reduce potential interference with infrared control systems

**NEMA
Premium**

Type CC
Lamp Striation Control
Low Ballast Factor

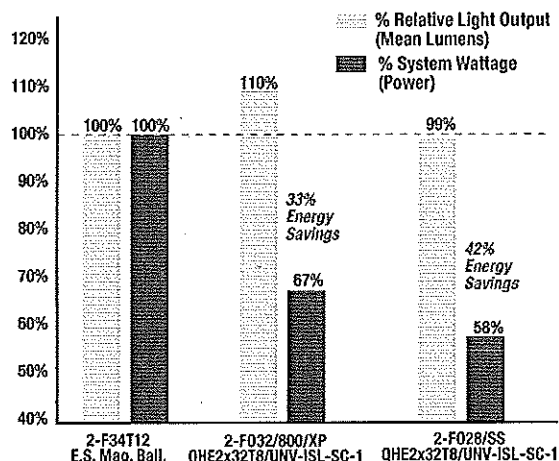


not entirely mitigate lamp striations. (Please consult lamp manufacturers for additional details.)

4. NEMA Premium Ballast (NPB) program compliant. The NPB program promotes the use of high efficiency T8 electronic

ballasts by meeting or exceeding the Ballast Efficiency Factors, (BEF) established by the CEE, (Consortium for Energy Efficiency). For additional information on this program go to: www.cee1.org or www.nema.org

System Type (2 lamp)	Input Power (W)	Initial System Lumens	System Efficacy (lm/W)	Mean System Lumens	Relative Mean Light Output	% Energy Savings
2-F34T12 E.S. Magnetic Ballast	72	4665	65	3965	Baseline	Baseline
2-F032/800/XP QHE 2x32T8/UNV ISL-SC-1	48	4620	96	4345	110%	33%
2-F028/SS QHE 2x32T8/UNV ISL-SC-1	42	4195	100	3945	99%	42%



SEE THE WORLD IN A NEW LIGHT

SYLVANIA



SPECIFICATION DATA

Catalog #	Date	Type
Project	Prepared by	
Comments		

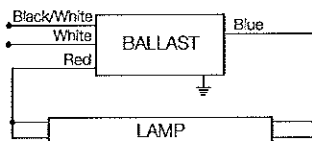
High Efficiency Universal Voltage (120-277V) Type CC & Lamp Striation Control



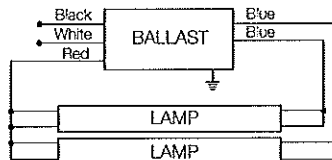
Item Number	OSRAM SYLVANIA Description	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	Initial System Lumens	Mean System Lumens	Input Power (W)	System Efficacy (lm/W)	BEF ¹
49199	QHE1x32T8/UNV ISL-SC-1 Banded Pack	0.21/0.093	F032/700	2800	1	0.77	2155	1940	25	86	3.08
49395	Pallet Pack	0.21/0.093	F032XP	3000	1	0.77	2310	2170	25	92	3.08
		0.20/0.087	F030SS	2850	1	0.77	2195	2065	24	91	3.21
		0.18/0.081	F028SS	2725	1	0.77	2100	1970	22	95	3.52
		0.16/0.073	F025SS	2475	1	0.77	1905	1790	21	91	3.67
49200	QHE2x32T8/UNV ISL-SC-1 Banded Pack	0.40/0.18	F032/700	2800	2	0.77	4310	3880	48	90	1.60
49396	Pallet Pack	0.40/0.18	F032XP	3000	2	0.77	4620	4345	48	96	1.60
2	LAMP	0.38/0.17	F030SS	2850	2	0.77	4390	4125	45	98	1.71
		0.35/0.16	F028SS	2725	2	0.77	4195	3945	42	100	1.83
		0.31/0.14	F025SS	2475	2	0.77	3810	3585	38	100	2.03
49367	QHE3x32T8/UNV ISL-SC-1 Banded Pack	0.60/0.26	F032/700	2800	3	0.77	6470	5820	73	89	1.05
49397	Pallet Pack	0.60/0.26	F032XP	3000	3	0.77	6930	6515	73	95	1.05
		0.56/0.24	F030SS	2850	3	0.77	6585	6190	68	96	1.13
		0.53/0.23	F028SS	2725	3	0.77	6295	5915	64	98	1.20
		0.47/0.20	F025SS	2475	3	0.77	5715	5375	57	100	1.35
49368	QHE4x32T8/UNV ISL-SC-1 Banded Pack	0.81/0.35	F032/700	2800	4	0.77	8625	7760	96	90	0.80
49398	Pallet Pack	0.81/0.35	F032XP	3000	4	0.77	9240	8685	96	96	0.80
		0.76/0.33	F030SS	2850	4	0.77	8780	8250	90	98	0.86
4	LAMP	0.71/0.31	F028SS	2725	4	0.77	8395	7890	85	99	0.91
		0.63/0.27	F025SS	2475	4	0.77	7625	7165	76	100	1.01

Banded Pack contains 10 pieces, (add "-B" to Description). 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).

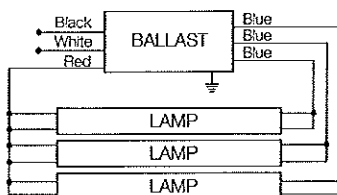


QUICKTRONIC 1x32



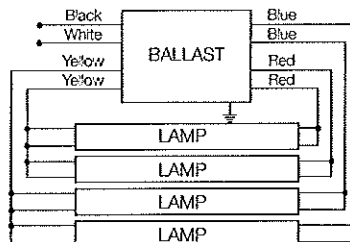
Note: For one lamp application, cap any blue lead. Insulate to 600 volts.

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:

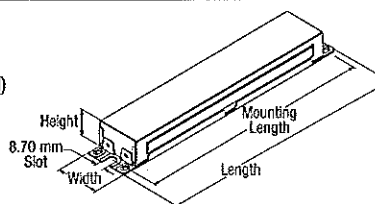
Overall: 9.5" L x 1.68" W x 1.18" H
Mounting: 8.90"

Product Weight:

1.6 lbs each (approx)

Wiring:

Leads only
(no connectors provided)



Item Number	49200 QHE 2 x 32T8 / UNV ISL - SC - 1	UL Type CC
QUICKTRONIC High Efficiency		Case Size
Number of Lamps		Starting/Ballast Factor
Primary Lamp Wattage		Line Voltage (120-277V)

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 manufacturers equivalent lamp types that meet ANSI specifications.

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

Specifications

Starting Method: Instant Start

Ballast Factor: 0.77

Circuit Type: Parallel

Lamp Frequency: >40kHz

Lamp CCF: Less than 1.7

Starting Temp:*

-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

UL Type CC Rated

CSA Certified

70°C Max Case Temperature

FCC 47 CFR Part 18 Non-Consumer

Class A Sound Rating

ANSI 62.41 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.

System Life / Warranty

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

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

the system solution®

**QUICKTRONIC® T8 Instant Start
Universal Voltage****High Efficiency Series**

QHE T8 ISN CC

Lamp/Ballast Guide**32W T8 - OCTRON®**

- 1-lamp QHE1x32T8/UNV-1SN-SC-1
- 2-lamp QHE2x32T8/UNV-1SN-SC-1
- 3-lamp QHE3x32T8/UNV-1SN-SC-1
- 4-lamp QHE4x32T8/UNV-1SN-SC-1

Also operates:

FBO32, FBO31, FO25, FBO24, FO17,
FBO16, FO30/SS (30W), FBO30/SS
(30W), FBO29/SS (29W), FO28/SS (28W)
& FO25/SS (25W)

Display lamps:

FO13, FO14, FO21 & FO28

Preheat lamps:

F15T8, F25T8 & F30T8

F40T8 operation:

1 lamp on 2L ballast; 2 lamps on 3L
ballast; 3 lamps on 4L ballast

Key System Features

- High Efficiency Systems over 90% efficient
- NEMA Premium Ballast compliant
- UL Type CC Rated (Commercial Cabinet)
- Lamp Striation Control (LSC)
- Min. Starting Temp:
 - -20°F (-29°C) for T8 lamps
 - 60°F (16°C) for Energy Saving T8 lamps
 - 0°F (-18°C) for FO40T8 lamps
- Flexible De-Lamp Combinations — see wiring diagrams on next page
- QHE ballasts also meets the most demanding utility rebate standards
- 30-50% energy savings

Application Information

SYLVANIA QUICKTRONIC High Efficiency (QHE) is ideally suited for:

UL Type CC

- Refrigerated cases*
- Walk-in coolers*
- Commercial cabinets
- Display cases
- Applications that could expose lamp and sockets to vibration and potential movement

*T8 energy saving lamps should not be used in applications below 60°F lamp ambient.

Lamp Striation Control, (LSC)

- General lighting applications where energy saving T8 lamps may striate, particularly for the F25 energy saving T8 lamps.

SYLVANIA QUICKTRONIC High Efficiency, (QHE) Type CC energy saving electronic T8 ballasts offer four major advantages:

1. Same Light, Less Power!
 - Up to 6% in energy savings compared to standard T8 low power electronic ballasts without compromising light output
 - 30-44% energy savings when compared to F40T12 magnetically ballasted systems
2. UL Type CC compliant: ballasts utilize a micro-controller based circuit to reduce arcing caused by loose connections or improper lamp pin to socket connections.
3. Lamp Striation Control (LSC): T8 energy saving lamps should be operated above 60°F, but under certain conditions the lamps may striate. LSC circuitry may minimize or eliminate this condition; however there are limited applications where LSC circuitry may

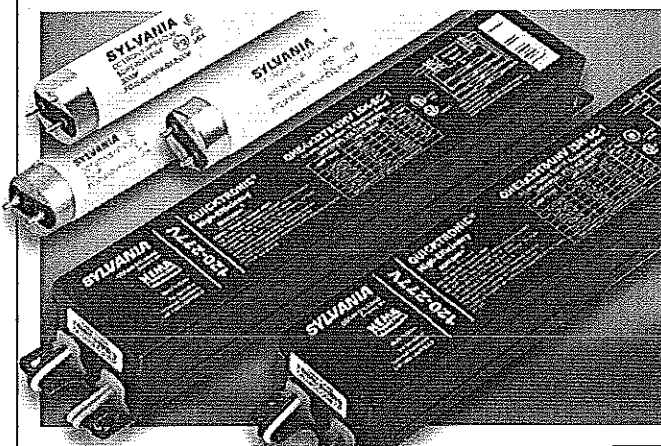
System Information

SYLVANIA QUICKTRONIC High Efficiency (QHE) System advantages:

- Operate from 120V through 277V
 - Eliminates "wrong voltage" errors
 - Reduces inventory by 50%
- Utilizes Instant Start operation for
 - Highest System Efficacy
 - Low temperature starting capability
 - Parallel circuitry - keeps remaining lamps lit if one or more go out
- Very low harmonic distortion (<10%)THD
- Operate at >42kHz to reduce potential interference with infrared control systems

**NEMA
Premium**

Type CC
Lamp Striation Control
Normal Ballast Factor

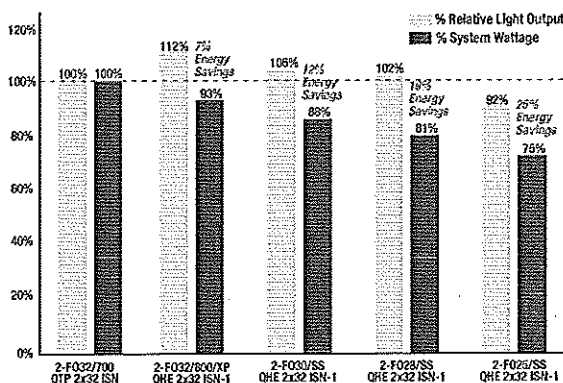


not entirely mitigate lamp striations. (Please consult lamp manufacturers for additional details.)

4. NEMA Premium Ballast (NPB) program compliant. The NPB program promotes the use of high efficiency T8 electronic

ballasts by meeting or exceeding the Ballast Efficiency Factors, (BEF) established by the CEE, (Consortium for Energy Efficiency). For additional information on this program go to: www.cee1.org or www.nema.org

Lamp & Ballast Type	System Watts	Initial LPW	Mean System Lumens @ 8000 Hours	Relative Light Output @ 8000 Hours	% Energy Savings	% Lamp Life @ 3hrs/start
2-F032/700 QTP 2x32 ISN	59	84	4435	Baseline	Baseline	Baseline
2-F032/800/XP QHE 2x32 ISN-1	55	95	4905	112%	7%	160%
2-F030/SS QHE 2x32 ISN-1	52	95	4660	106%	12%	160%
2-F028/SS QHE 2x32 ISN-1	48	99	4455	102%	19%	160%
2-F025/SS QHE 2x32 ISN-1	44	98	4050	92%	25%	160%



SEE THE WORLD IN A NEW LIGHT

SYLVANIA

SPECIFICATION DATA

Catalog #	Date	Type
Project	Prepared by	
Comments		

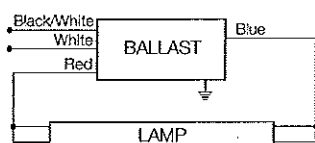
High Efficiency Universal Voltage (120-277V) Type CC & Lamp Striation Control



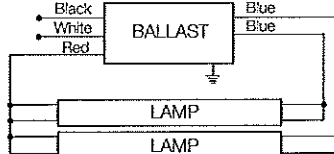
Item Number	Description	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Mean Lumens	Input Wattage (W)	System Efficacy (lm/W)	BEF ¹
49381	QHE1x32T8/UNV-1SN-SC-1 Banded Pack	0.25/0.11	F032/700	2800	1	0.87	2435	2190	28	87	3.11
49382	QHE1x32T8/UNV-1SN-SC-1 Pallet Pack	0.25/0.11	F032/XP	3000	1	0.87	2610	2455	28	93	3.11
		0.23/0.09	F030/SS	2850	1	0.87	2480	2330	27/26	92/95	3.35
		0.21/0.09	F028/SS	2725	1	0.87	2370	2230	25/24	95/99	3.63
		0.20/0.09	F025/SS	2475	1	0.87	2155	2025	23/22	94/98	3.95
49383	QHE2x32T8/UNV-1SN-SC-1 Banded Pack	0.47/0.20	F032/700	2800	2	0.87	4870	4385	55	89	1.58
49384	QHE2x32T8/UNV-1SN-SC-1 Pallet Pack	0.47/0.20	F032/XP	3000	2	0.87	5220	4905	55	95	1.58
		0.44/0.19	F030/SS	2850	2	0.87	4960	4660	52	95	1.67
		0.40/0.18	F028/SS	2725	2	0.87	4740	4455	48/47	99/101	1.85
		0.37/0.16	F025/SS	2475	2	0.87	4305	4050	44/43	98/100	2.02
49385	QHE3x32T8/UNV-1SN-SC-1 Banded Pack	0.68/0.30	F032/700	2800	3	0.87	7305	6575	82/81	89/90	1.07
49386	QHE3x32T8/UNV-1SN-SC-1 Pallet Pack	0.68/0.30	F032/XP	3000	3	0.87	7830	7360	82/81	96/97	1.07
		0.65/0.28	F030/SS	2850	3	0.87	7440	6990	77/76	97/98	1.14
		0.61/0.26	F028/SS	2725	3	0.87	7110	6685	72/71	99/100	1.23
		0.55/0.23	F025/SS	2475	3	0.87	6460	6070	65/64	99/101	1.36
49387	QHE4x32T8/UNV-1SN-SC-1 Banded Pack	0.92/0.39	F032/700	2800	4	0.87	9745	8770	109/107	89/91	0.81
49388	QHE4x32T8/UNV-1SN-SC-1 Pallet Pack	0.92/0.39	F032/XP	3000	4	0.87	10,440	9815	109/107	96/98	0.81
		0.86/0.37	F030/SS	2850	4	0.87	9920	9325	102	97	0.85
		0.80/0.35	F028/SS	2725	4	0.87	9485	8915	95/94	100/101	0.93
		0.74/0.31	F025/SS	2475	4	0.87	8615	8095	87/86	99/100	1.01

Banded Pack contains 10 pieces, (add "-B" to Description). 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).

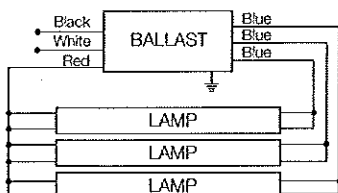


QUICKTRONIC 1x32



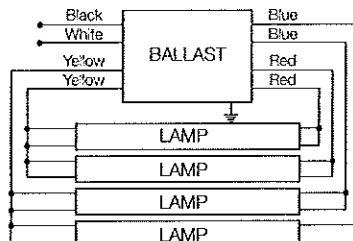
Note: For one lamp application, cap any blue lead. Insulate to 600 volts.

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



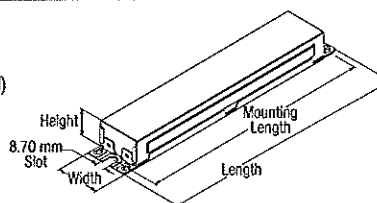
Note: For three lamp application, cap any unused blue lead. For two lamp application, cap two blue leads individually. For one lamp application, cap two blue leads, one red and one yellow lead individually. Insulate to 600 volts.

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 — 49383 QHE 2 x 32T8 / UNV 1SN - SC - 1 — UL Type CC
QUICKTRONIC High Efficiency — Case Size
Number of Lamps — Starting/Ballast Factor
Primary Lamp Wattage — Line Voltage (120-277V)

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 manufacturers equivalent lamp types that meet ANSI specifications.

QHE Instant Start ballasts will also operate F17, F25, F32 and the U-Bend equivalent & energy saving 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: 0.87

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

UL Type CC Rated

CSA Certified

70°C Max Case Temperature

FCC 47 CFR Part 18 Non-Consumer

Class A Sound Rating

ANSI 62.41 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.

System Life / Warranty

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

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

the system solution®



FEATURES & SPECIFICATIONS

INTENDED USE — The I-BEAM fluorescent high bay is ideal for new construction and renovation projects. It is a one-for-one replacement of common metal halide high bay systems. The unique Cool Running Plus™ technology provides industry-leading, trouble-free operation in ambient temperatures up to 155°F (68°C). Applications include manufacturing, warehousing, commercial and industrial facilities. The I-BEAM fixture performs well at mounting heights from 15'-40'. **Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.**

CONSTRUCTION — The highly configurable design of the I-BEAM high bay allows for a multitude of fixture options that can either be factory- or field-installed. The ballast can be accessed easily with the I-BEAM proprietary Z-strip channel design, which is thermally vented to provide years of trouble-free operation.

In addition to the reliable operation of I-BEAM fixtures, the reflectors tightly control the distribution of light and effectively manage lamp heat to increase the overall efficiency. The result is superior optics in either narrow distribution for aisles, or wide distribution for general lighting. Both distributions are available with or without uplight. Installation is made quick and easy with I-BEAM hanging accessories such as the aircraft cable and single-point mounting bracket. I-BEAM fixtures can be factory-wired to have both sensors and cordsets, further reducing installation time. The configurability, performance and ease of installation make I-BEAM fixtures the preferred choice for fluorescent high bay lighting.

Channel is formed of heavy-duty code-gauge (22-gauge) steel to stand up to the most demanding elements. Lamp holder assembly protects from incidental damage or movement of sockets during handling and installation. Sockets include secure positioning rotating collars with enclosed contacts. Access plate on the back of the channel housing allows quick and easy wiring.

Finish: Channel is high-gloss white baked enamel; five-stage iron phosphate pretreatment ensures superior paint adhesion and rust resistance.

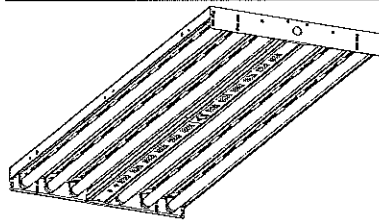
OPTICS — Two optical systems are available. Narrow distribution is ideal for narrow or aisle lighting applications and features precision-formed segmented optics utilizing Alanod Miro® 4 specular aluminum reflectors. Provides 95% reflectivity and warranted for 25 years. Wide distribution includes high-reflectance white finish for general or open areas.

ELECTRICAL — Thermally protected, resetting, Class P, HPE, A+ sound-rated electronic ballast. AWM TFM or THHN wire used throughout rated for required temperatures. Ballast disconnect (BDP) is standard unless EL14 or cordset is requested.

ORDERING INFORMATION For shortest lead times, configure products using **bolded options**.

Example: IBZ 632 WDU GEB10PS

Catalog Number	4 Lamp 32 W T8 Low Bay
Notes	MH REPLACEMENT
Type	HBF BALLAST - 2 BALLAST/FIXTURE



I-BEAM®
FLUORESCENT HIGH BAY LIGHTING
IBZ

SPECIFICATIONS			
	4-lamp	6-lamp	8-lamp
Length	48-1/16 (1221)	48-1/16 (1221)	48-1/16 (1221)
Width	13-1/4 (337)	18-1/8 (460)	23-7/8 (606)
Depth	2-3/8 (60)	2-3/8 (60)	2-3/8 (60)
Weight	15 lbs. (6.8 kg)	19 lbs (8.6 kg)	24 lbs. (10.9 kg)

All dimensions are inches (millimeters) unless otherwise specified.
Specifications subject to change without notice.

INSTALLATION — Suitable for suspension by chain, cable, surface-mounting bracket, hook monopoint or single (pendant) monopoint.

LISTINGS — CSA Certified to U.S. and Canadian safety standards (UL1598 and CSA 250.0-08).

WARRANTY — Guaranteed for one year against mechanical defects in manufacturing. Ballast is backed by manufacturer for five years.

Fluorescent High Bay
4-, 6- or 8-lamp T8
Patent Pending

IBZ	Number of lamps/wattage		Shielding ¹	Distribution	Voltage	Ballast configuration
Series	Lamps installed¹					
IBZ I-BEAM	Unlamped					
For tandem double-length unit, add prefix "T". Ex: IBZ	4-lamp 32W T8	4-lamp 32W T8	(blank) No shielding	(blank) Narrow distribution, ≤4% uplight	(blank) MVOLT; 120-277V	(blank) Standard configuration
	6-lamp 32W T8	6-lamp 32W T8	A12125 Pattern 12 acrylic, 0.125"	NDU Narrow distribution, enhanced uplight, ≤13% uplight	347 347V	For other options, refer to Ballast Configuration on page 2.
	8-lamp 32W T8	8-lamp 32W T8	ACL Clear acrylic, 0.125"	WD Wide distribution, ≤4% uplight	480 480V	
			PCL125 Clear polycarbonate, 0.125"	WDU Wide distribution, enhanced uplight, ≤13% uplight		
			A12125WG Pattern 12 acrylic, 0.125" w/wireguard in door frame			
			ACLWG Clear acrylic, 0.125" w/wireguard in door frame			
			PCL125WG Clear polycarbonate, 0.125" w/wireguard in door frame			

Ballast	Lamps installed	Options
(blank) T8 electronic, <10% THD, instant start, high BF	(blank) F32T8/841	EL14 Emergency battery pack ^{2,3,5}
GEB10IS T8 electronic, <10% THD, instant start, normal BF	LP835 F32T8/835	EL14SD Emergency battery pack w/self-diagnostics ^{2,3,5}
GEB10PS T8 electronic, <10% THD, programmed rapid start	LP850 F32T8/850	FSP Integral side panels
GEB10PSH T8 electronic, <10% THD, programmed rapid start, high ballast factor (see Ballast Configuration chart on page 2)	LP865 F32T8/865	GLR Internal fast-blow fuse ³
		GMF Internal slow-blow fuse ³
		IMP Integrated modular plug ⁴
		MSI Aisle motion sensor pre-wired ³
		MSI360 360° motion sensor pre-wired ³
		MSE360 360° motion sensor embedded ^{3,6}
		OCS RELOC® OnePass® 5' installed
		WGX External wireguard installed
		2WGX External wireguard installed on bottom of fixture ⁷
		I162 1250 lumens per lamp battery ⁴
		OUTCR Wiring leads pulled through back center of fixture ⁹
		Cords: See page 2.

Accessories: Order as separate catalog number.

IBAC120 M20	Aircraft cable 10' Y hanger (one pair)
IBAC240 M20	Aircraft cable 20' Y hanger (one pair)
WGIBZX	Wireguard, white finish (see chart on page 2)
IBHMP	Hook monopoint
IBZTFC	Tandem coupler and side panel
IBZPMP	Pendant monopoint splice box, includes side covers (3/4" hub) ¹⁰
HBBS36	Chain hanger, 36"
IBZSMB	Surface-mounting bracket (one pair)

Notes

- Lamps installed are F32T8/841.
- UL Listed for 55°C. Output in emergency mode varies with ambient temperature. Single-lamp operation only. Not available with HVOLT.
- Specify voltage.
- Must be factory-installed.
- Not available with IBZPMP.
- Recommended for heights of 30'-45'. Not available with 208V or 480V.
- One wireguard shipped as separate line item for top installation in field.
- Max 3000 lumens when used with T8 lamps up to 55°C ambient temperatures (not available with HVOLT).
- Not available with MSE360 option.
- When ordering IBZPMP, two-ballast configurations are recommended. Ex: 2/2.

I-BEAM® Fluorescent High Bay, T8

Cord Set Option:

Add suffix to end of catalog number, specify voltage. All cord sets are 18/3, 6', white unless otherwise noted. Other configurations available, consult factory.

Suffix	Description
CS1W	Straight plug, 120V
CS3W	Twist lock, 120V
CS7W	Straight plug, 277V
CS11W	Twist-lock, 277V
CS25W	Twist-lock, 347V
CS97W	Twist-lock, 480V
CS93W	600V SO white cord, no plug (no voltage required)

Wire Guard Accessories:

Order as a separate catalog number.

Wire guard	Description
WGIBZ14	Standard four-lamp
WGIBZ19	Standard six-lamp
WGIBZ24	Standard eight-lamp

Modular Accessories:

Order as a separate catalog number. All cord sets are 18/3, 6', white unless otherwise noted. Must include "IMP" option on fixture.

Suffix	Description
CS1WIMP	Straight plug, 120V
CS3WIMP	Twist lock, 120V
CS7WIMP	Straight plug, 277V
CS11WIMP	Twist-lock, 277V
CS93WIMP	600V SO white cord, no plug (no voltage required)
MSIIMP	Aisle sensor ¹
MSI360IMP	360° sensor ¹
OCSIMP	RELOC® 5' OnePass®

Field-installable Door and Lens Assemblies:²

Lens Type	4-lamp Nomenclature	6-lamp Nomenclature
A12125	DLIBZ14 A12125	DLIBZ19 A12125
ACL	DLIBZ14 ACL	DLIBZ19 ACL
PCL125	DLIBZ14 PCL125	DLIBZ19 PCL125

Notes:

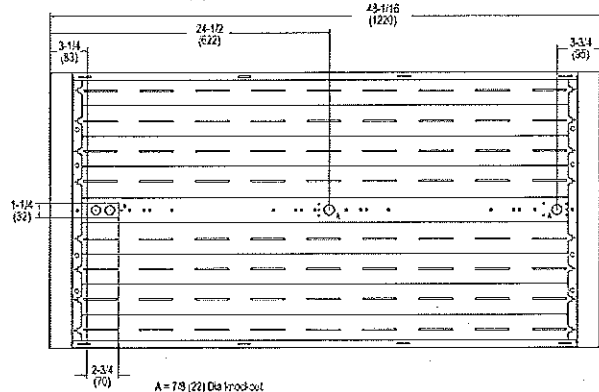
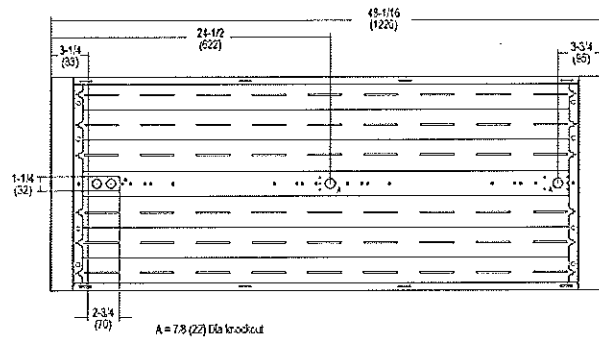
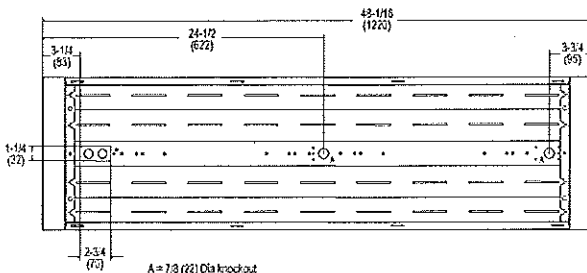
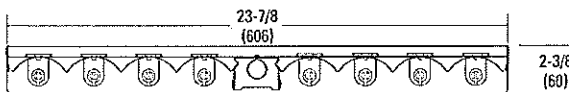
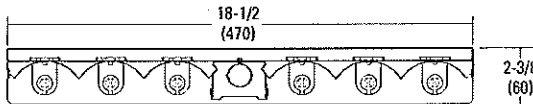
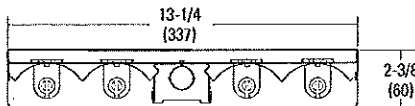
- Must have "IMP" power cord to power fixture. 120/277 voltage only.
- Add WG to nomenclature if wire guard is to be installed in door frame, ex: DLIBZ14 A12125WG.

Standard Ballast Configurations

	4-lamp	6-lamp	8-lamp
T8 instant start (1.15-1.20 bf)	Two 2-lamp ballasts	Two 3-lamp ballasts	Two 4-lamp ballasts
T8 program instant start (.88 bf)	One 4-lamp ballast	One 4-lamp and one 2-lamp ballast	Two 4-lamp ballasts
T8 program rapid start start (1.15-1.20 bf)	Two 2-lamp ballasts	Two 3-lamp ballasts	One 2-lamp and two 3-lamp ballasts

DIMENSIONS

Inches (millimeters). Subject to change without notice.



An Acuity Brands Company

INDUSTRIAL: One Lithonia Way Conyers, GA 30012 Phone: 770.922.9000 Fax: 770.981-8141 www.lithonia.com

IBZ-15

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GE
Lighting

30198 - GE-232-MV-H

GE LFL Multi-Volt ProLine™ Electronic Multivolt Instant Start Ballast

- High performance electronic ballast for all general fluorescent applications
 - Instant start electronic ballast for long lamp starting cycles and low initial cost
 - Multi-Voltage Technology handles voltage from 120 to 277V
 - Light-weight, Low Profile Housing
 - Parallel lamp operation means system maintenance is easier to manage
- This product is no longer manufactured.

GENERAL CHARACTERISTICS

Application	2 or 1- F32T8 120 to 277 "H"
	1.15 BF
Category	Linear Fluorescent
Ballast Type	Electronic - Multivolt Instant Start
Starting Method	Instant start
Lamp Wiring	Parallel
Line Voltage Regulation (+/-)	10.0 %
Case Temperature (MAX)	70.0 °C
Ballast Factor	High (1.18)
Power Factor Correction	Active
Sound Rating	A (20-24 decibels)
Additional Info	Auto-restart / Thermally protected

PRODUCT INFORMATION

Product Code	30198
Description	GE-232-MV-H
Standard Package	Case
Standard Package GTIN	10043168301982
Standard Package Quantity	10
Sales Unit	Standard Pack
No Of Items Per Sales Unit	1
No Of Items Per Standard	10
Package	
UPC	043168301985

DIMENSIONS

Case dimensions			
Length (L)	9.5 in(241.30 mm)		
Width (W)	1.7 in(43.18 mm)		
Height (H)	1.2 in(29.97 mm)		
Mounting dimensions			
Bracket Length (BL)	NaN in(NaN mm)		
Mount Length (M)	8.9 in(225.81 mm)		
Mount Width (X or F)	1.1 in(28.70 mm)		
Mount Slots (MS)	0.3 in(7.92 mm)		
Weight	1.4 lb		
Exit Type	Side		
Remote Mounting Distance	18.0 ft		
Remote Mounting Wire Gauge	18.0 AWG		
Lead lengths	Qty	Exit	Length (± 1 in.)
Black	1	Left	22.0 (559 mm)
Blue	1	Right	30 in (NaN mm)
Red	1		
White	1	Right	48.0 (1219 mm)
		Left	22.0 (559 mm)

ELECTRICAL CHARACTERISTICS

Supply Current Frequency	50.0 Hz / 60.0 Hz
--------------------------	-------------------

SAFETY & PERFORMANCE

- cUL Listed
- FCC - CLASS A Non-Consumer
- NRCan
- UL Class P
- UL Listed
- UL Type 1 Outdoor
- UL Type HL
- RoHS Compliant
- NEMA Premium®

SPECIFICATIONS BY LAMP & WATTAGE

Lamp	# of Lamps	Line Volts	System Watts	Nom. Line Current	System Ballast Factor	Ballast Efficacy Factor	Power Factor% (>=)	Crest Factor (<=)	THD% (<=)	Min. Starting Temp (°F/ °C)
F40T8	1	120	57	0.53 A			99	1.7	10.0	0.0 °F / NaN
F40T8	1	277	57	0.23 A			97	1.7	10.0	0.0 °F / NaN
F32T8/WM	1	120	45	0.42 A	1.30	2.89	99	1.7	10.0	60.0 °F / NaN
F32T8/WM	1	277	45	0.19 A	1.30	2.89	96	1.7	10.0	60.0 °F / NaN
F32T8/WM	2	120	70	0.63 A	1.13	1.61	99	1.7	10.0	60.0 °F / NaN

F32T8/WM	2	277	69	0.28 A	1.13	1.64	98	1.7	10.0	60.0 °F / NaN
F32T8/25W	1	120	37	0.0 A	1.28	3.46	99	1.5	10.0	60.0 °F / NaN
F32T8/25W	1	277	37	0.0 A	1.28	3.46	97	1.5	18.0	60.0 °F / NaN
F32T8/25W	2	120	60	0.0 A	1.10	1.83	99	1.5	7.0	60.0 °F / NaN
F32T8/25W	2	277	60	0.0 A	1.10	1.83	98	1.5	15.0	60.0 °F / NaN
F32T8	1	120	48	0.44 A	1.34	2.79	99	1.7	10.0	0.0 °F / NaN
F32T8	1	277	48	0.2 A	1.34	2.79	97	1.7	10.0	0.0 °F / NaN
F32T8	2	120	77	0.65 A	1.18	1.53	99	1.7	10.0	0.0 °F / NaN
F32T8	2	277	76	0.28 A	1.18	1.55	98	1.7	10.0	0.0 °F / NaN
F28T8	1	120	42	0.39 A	1.28	3.05	99	1.7	10.0	60.0 °F / NaN
F28T8	1	277	42	0.18 A	1.28	3.05	96	1.7	10.0	60.0 °F / NaN
F28T8	2	120	65	0.57 A	1.10	1.69	99	1.7	10.0	60.0 °F / NaN
F28T8	2	277	64	0.26 A	1.10	1.72	98	1.7	10.0	60.0 °F / NaN
F25T8	1	120	38	0.35 A	1.32	3.47	99	1.7	10.0	0.0 °F / NaN
F25T8	1	277	38	0.16 A	1.32	3.47	96	1.7	10.0	0.0 °F / NaN
F25T8	2	120	57	0.51 A	1.16	2.04	99	1.7	10.0	0.0 °F / NaN
F25T8	2	277	57	0.23 A	1.16	2.04	97	1.7	10.0	0.0 °F / NaN
F17T8	1	120	27	0.24 A	1.31	4.85	99	1.7	10.0	0.0 °F / NaN
F17T8	1	277	27	0.11 A	1.31	4.85	94	1.7	10.0	0.0 °F / NaN
F17T8	2	120	41	0.36 A	1.15	2.80	99	1.7	10.0	0.0 °F / NaN
F17T8	2	277	41	0.16 A	1.15	2.80	96	1.7	10.0	0.0 °F / NaN

CAUTIONS & WARNINGS

Warning

- Risk of Electric Shock
 - Properly ground ballast and fixture.
 - Turn power off before servicing—see instructions.

WARRANTY INFORMATION

GE Lighting warrants to the purchaser that each ballast will be free from defects in material or workmanship for period as defined in the attached documents from the date of manufacture when properly installed and under normal conditions of use.



FEATURES & SPECIFICATIONS

INTENDED USE — The industry's next generation in linear direct fluorescent products. This new compact, low-profile design offers our customers unique product features which improve the overall installation process and appearance while reducing labor cost, making it the most versatile solution for commercial, retail, manufacturing, warehouse, and cove and display applications.

ATTRIBUTES — Designed to accommodate a wide variety of T8 lamp lengths. Channel offers the gripper back feature which strengthens the overall construction and allows for the use of the new Z spring hanger (see back). Newly designed, patent-pending channel cover offers a secure fit design, allowing for easy access and quick attachment without pinching wires.

CONSTRUCTION — Compact designed channel and cover are formed from code-gauge cold-rolled steel. Innovative T8 two-lamp back plate offers compact design and additional socket protection. Locking lamp holder tracks bolsters strength of the overall strip construction while creating improved lamp stability. Design includes T8 socket, features rotating collar and enclosed contacts. Improved easy "snap n' lock" end plates allow for quick attachment.

FINISH — High-gloss, baked white enamel finish (white standard). Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Other channel paint finish options: black (MB), smoke gray (SMG) and galvanized (GALV).

OPTICAL — Reflector options include solid or apertured designs in both symmetric and asymmetric configurations. Consult factory for special-apertured versions.

ELECTRICAL SYSTEM — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed.

Suitable for damp locations. AWN, TFN or THHN wire used throughout, rated for required temperatures.

INSTALLATION — Patented-pending "three-point" row connector locks channel together for straighter and faster row mounting; included as standard. Ideal for surface-mount or suspended.

LISTING — UL Listed, CUL Listed or CSA Certified to Canadian Standards.

WARRANTY — Guaranteed for one year against mechanical defects in manufacture.

Cutsheet 9 STRIP FIXTURE
2 LAMPS NBF BALLAST - 48WATS

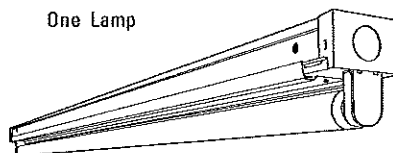
Catalog Number	"SEE CUTSHEET 4 FOR BALLAST INFO"	
Notes	Type	



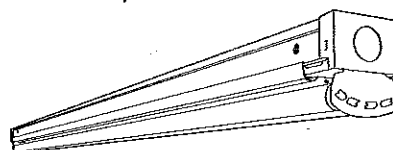
Compact T8 Striplight



One Lamp



Two Lamps



Linear Lamps
1 or 2 Lamps

Specifications

Length: 18 (45.7), 24 (61.0)

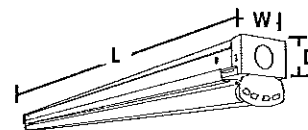
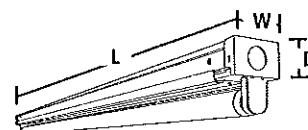
36 (91.4), 48 (121.9)

72 (182.9) or 96 (243.8)

Width: 2-1/8 (5.4)

Depth: 1-1/2 (3.8)

All dimensions are inches (millimeters).



ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: Z 1 32 MVOLT GEB10IS

Series	Number of lamps	Lamp type	Voltage	Options
Z Compact strip¹	1	17 17W T8 (24")	120	GEB10IS T8 electronic ballast, ≤ 10% THD, instant start (T8 only)
	2	25 25W T8 (36")	277	GEB10RS T8 electronic ballast, ≤ 10% THD, rapid start
	Not included	32 32W T8 (48")	347	BILP High-efficiency .78 bf (low)
For tandem double-length unit, add prefix T. Example: TZ			MVOLT	GLR Internal fast-blow fuse (add X for external) ²
			Others available	GMF Internal slow-blow fuse (add X for external) ²
Accessories				
Order as separate catalog numbers.				
SQ_ Swivel-stem hanger (specify length in 2" increments)				PLR_ Plug in wiring, specify number of branch circuits and hot wires (A-black, B-Red, C-Blue, AB or AC)
J2 Job pack of two				TILW Tandem in-line wiring
J10 Job pack of 10				EL55 Emergency battery pack (nominal 390-700 lumens); consult factory for additional battery packs ^{2,3,4}
J48 Job pack of 48				EL65 Emergency battery pack (nominal 725-1325 lumens) ^{2,3,4}
ZSPRG Tong and T-grid hanger				CSA CSA Certified
Z8SMR48 Symmetric reflector, 4' white				NOM NOM Certified
Z8ASR48 Asymmetric reflector, 4' white				
Z8SMR36 Symmetric reflector, 3' white				
Z8ASR36 Asymmetric reflector, 3' white				
Z8SMR24 Symmetric reflector, 2' white				
Z8ASR24 Asymmetric reflector, 2' white				
WGZ48 4' wireguard, white				
WGZ8SMR48 4' wireguard, white, for symmetric reflector				
WGZ8ASR48 4' wireguard, white, for asymmetric reflector				
MS5ACF Adjustable aircraft cable system with power feed (specify length as 36, 72 or 108 inches)				
MS5AC Adjustable aircraft cable system (specify 36, 72 or 108 inches)				

NOTES:

- Order two 48" for 8' fixtures.
- Specify voltage (available 120/277V).
- Not available with CSA Certified.
- Available with 4' and 8' lengths only.

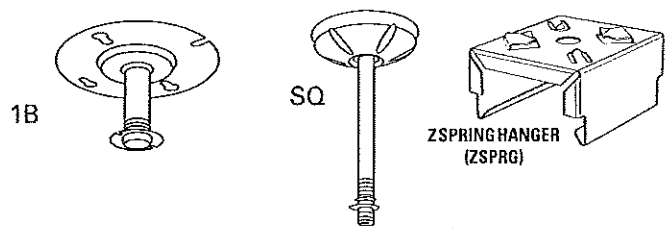
Z Compact Striplight

MOUNTING DATA

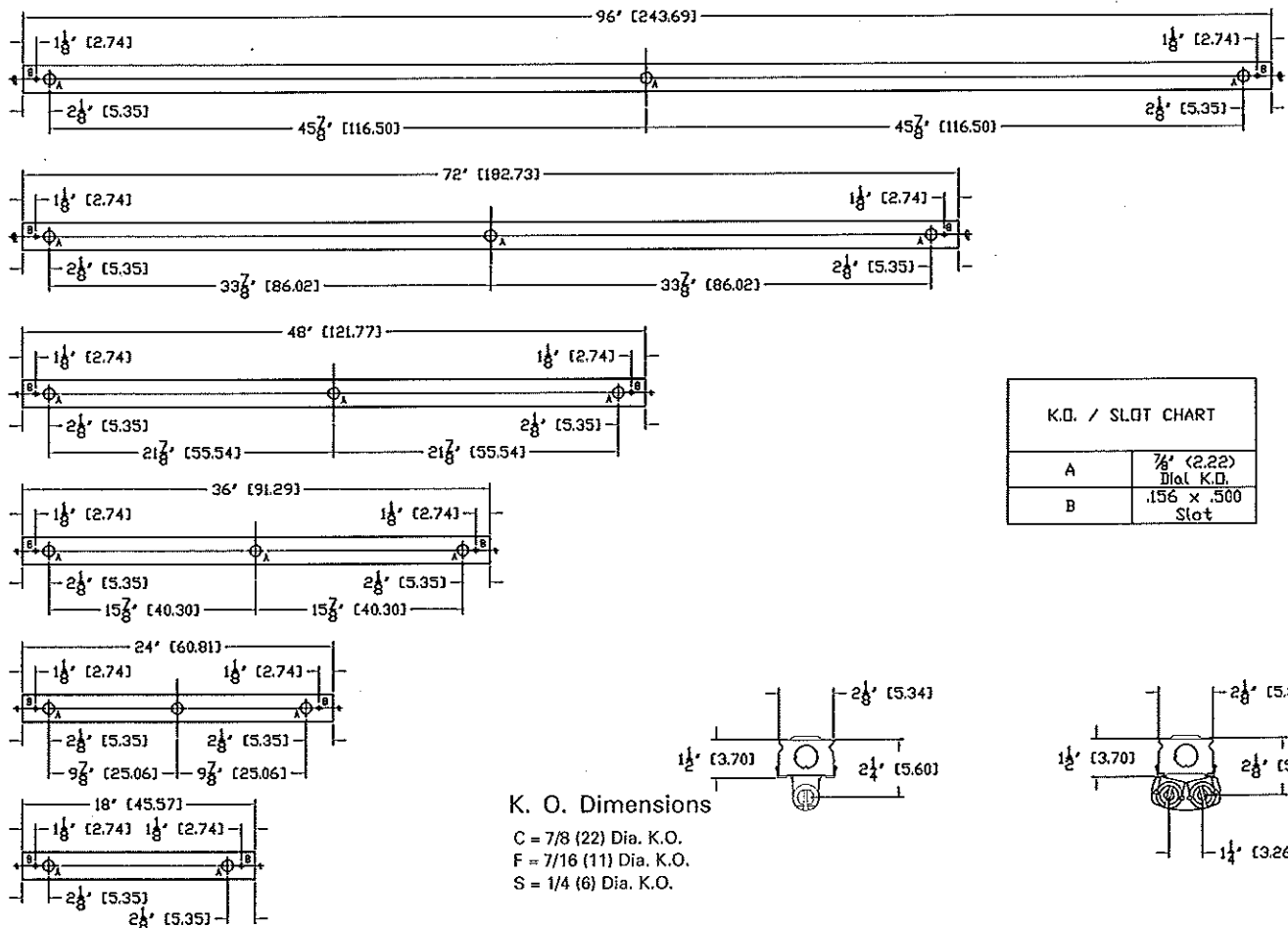
For unit or row installation, surface or stem mounting.

Unit installation — Minimum of two hangers required.

Row installation — One hanger per channel plus one per row required.



DIMENSIONS



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

TEST NO: LTL17128

LUMINAIRE CATALOG NO.: Z 132 MVOLT GEB1015
LUMENS PER LAMP: 2850

TEST NO: LTL17130

LUMINAIRE CATALOG NO.: Z 232 MVOLT GEB1015
LUMENS PER LAMP: 2850

FCI	Coefficients of Utilization											
	20%				50%				80%			
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	107	107	107	102	102	102	92	92	92	87	87	87
1	87	82	77	83	78	74	75	71	63	74	66	60
2	74	66	60	70	63	57	63	53	53	64	55	48
3	64	55	48	61	53	46	55	43	43	55	47	40
4	55	47	40	53	46	39	49	41	35	49	40	33
5	49	40	33	47	39	32	42	35	30	44	35	29
6	44	35	29	42	34	28	38	31	26	40	31	25
7	40	31	25	38	30	24	34	27	22	36	28	22
8	36	28	22	34	27	21	31	25	20	33	25	19
9	33	25	19	31	24	19	29	22	18	30	22	17
10	30	22	17	29	22	17	26	20	16			

Zonal Lumen Summary			
Zone	Lumens % Lamp % Fixture		
0° - 30°	358.4	12.7	13.5
0° - 45°	603.9	21.6	22.9
0° - 60°	1195.3	42.8	45.5
0° - 90°	2029.3	72.5	77.1
90° - 150°	672.8	21.5	22.9
0° - 180°	2632.0	94.0	100.0

FCI	Coefficients of Utilization											
	20%				50%				80%			
	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	100	100	100	95	95	95	86	86	86	84	79	75
1	84	79	75	79	75	71	72	68	65	71	64	59
2	71	64	59	63	62	56	61	56	52	62	54	47
3	62	54	47	59	51	46	53	47	42	54	46	39
4	54	46	39	51	44	38	46	40	35	48	39	33
5	48	39	33	46	38	32	41	35	30	43	34	29
6	43	34	29	41	33	28	37	30	26	40	31	25
7	38	30	25	37	29	24	33	27	22	36	28	22
8	35	27	22	33	26	21	30	24	20	32	24	19
9	32	24	19	30	24	19	28	22	18	29	22	17
10	29	22	17	28	21	17	26	20	16			

Zonal Lumen Summary			
Zone	Lumens % Lamp % Fixture		
0° - 30°	723.3	12.9	14.8
0° - 45°	1293.3	22.0	24.8
0° - 60°	2402.0	42.9	48.4
0° - 90°	3748.6	66.9	75.5
90° - 150°	1215.1	21.7	24.5
0° - 180°	4963.7	88.6	100.0



An AcuityBrands Company

Sheet #: Z-T8

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Lithonia Lighting
Fluorescent
One Lithonia Way, Conyers, GA 30012
Phone: 800-858-7763
www.lithonia.com

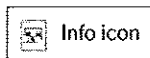
28 WATT LAMPS



Product Number: 22179

Order Abbreviation: FO28/841/XP/SS/ECO3

General Description: 28W, 48" MOL, T8 OCTRON Extended Performance Supersaver fluorescent lamp, 4100K color temperature, rare earth phosphor, 85 CRI, suitable for RS or IS operation, ECOLOGIC®3



Info icon

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Product Information	
Abbrev. With Packaging Info.	FO28841XPSSECO3 30/CS 1/SKU
Actual Length (in)	47.780
Actual Length (mm)	1213.61
Average Rated Life (hr)	40000
Base	Medium Bipin
Bulb	T8
Color Rendering Index (CRI)	85
Color Temperature/CCT (K)	4100
Diameter (in)	1.098
Diameter (mm)	27.90
Family Brand Name	OCTRON® 800 XP® SS, ECOLOGIC®3
Industry Standards	ANSI C78.81 - 2001
Initial Lumens at 25C	2725
Mean Lumens at 25C	2590
Nominal Length (in)	48.000
Nominal Length (mm)	1219.20
Nominal Wattage (W)	28.00
Life at 3 hrs./start on IS ballasts	24000
Life at 12 hrs./start on IS ballasts	40000
Life at 3 hrs./start on PRS ballasts	40000
Life at 12 hrs./start on PRS ballasts	42000



ECOLOGIC

13-1



Footnotes

- This lamp may also be operated by the OSRAM SYLVANIA QUICKTRONIC(R) PSN ballast (.88 BF), or the QUICTRONIC PSX ballast (.71 BF).
- If an operating lamp is exposed to drafts or the ambient temperature falls below 60 degrees F, striation (a rhythmic pulsing pattern of light running down the tube) and/or reduction in lamp brightness may occur. While visually disconcerting, neither behavior is

damaging to the lamp and removing the cause (draft or temperature) will return the lamp to normal operation.

- The 40,000 hour average rated life of OCTRON® 800XP®, XP/SS and XPS lamps is based on operation at 3 hours per start on a QUICKTRONIC® programmed rapid start ballast. Average rated life is 42,000 hours at 12 hours per start on a programmed rapid start ballast. On an instart start ballast, the average rated life is 40,000 hours at 12 hours per start, and 24,000 hours at 3 hours per start.
- Approximate initial lumens after 100 hours operation.
- The life ratings of fluorescent lamps are based on 3 hr. burning cycles under specified conditions and with ballast meeting ANSI specifications. If burning cycle is increased, there will be a corresponding increase in the average hours life.
- SYLVANIA ECOLOGIC fluorescent lamps are designed to pass the Federal Toxic Characteristic Leaching Procedure (TCLP) criteria for classification as non-hazardous waste in most states. TCLP test results are available upon request. Lamp disposal regulations may vary, check your local & state regulations. For more information, please visit www.lamprecycle.org
- Recommended to be used on any F32 T8 Instant Start circuit. It is not recommended to be used: (1) with Rapid Start circuits unless the open circuit voltage is greater than 550V, (2) at lamp ambient temperatures below 60 degrees F or in drafty locations, (3) on dimming ballast or (4) inverter operated emergency lighting systems unless any of the above equipment is specifically listed for use with the OCTRON(R) SUPERSAVER(R) 28 or 30 watt, 4 foot or 30W U-bent T8 lamp. Any of the above situations could result in lamp starting and stabilization problems

32 WATT LAMPS



Product Number: 22026

Order Abbreviation: FO32/850/XP/ECO3

General Description: 32W, 48" MOL, T8 Optron Extended Performance (XP) fluorescent lamp, 5000K color temperature, rare earth phosphor, 85 CRI, suitable for IS or RS operation, ECOLOGIC®3



Info icon

Navigation to the webpage was cancelled

Product Information	
Abbrev. With Packaging Info.	FO32850XPECO3 30/CS 1/SKU
Actual Length (in)	47.780
Actual Length (mm)	1213.61
Average Rated Life (hr)	40000
Base	Medium Bipin
Bulb	T8
Color Rendering Index (CRI)	85
Color Temperature/CCT (K)	5000
Diameter (in)	1.098
Diameter (mm)	27.90
Family Brand Name	Optron® 800 XP® ECOLOGIC®3
Industry Standards	ANSI C78.81 - 2001
Initial Lumens at 25C	3000
Mean Lumens at 25C	2820
Nominal Length (in)	48.000
Nominal Length (mm)	1219.20
Nominal Wattage (W)	32.00
Life at 3 hrs./start on IS ballasts	24000
Life at 12 hrs./start on IS ballasts	40000
Life at 3 hrs./start on PRS ballasts	40000
Life at 12 hrs./start on PRS ballasts	42000



ECOLOGIC

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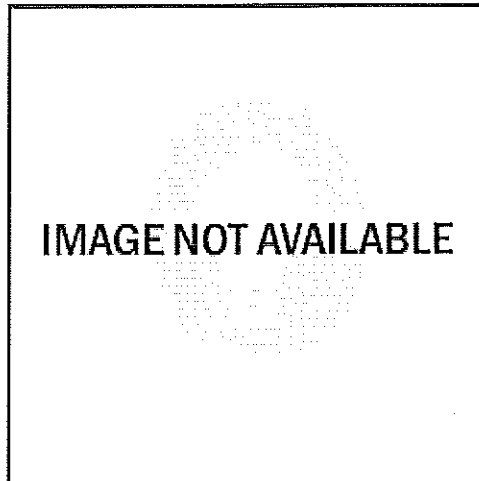


Footnotes

- The 40,000 hour average rated life of Optron® 800XP®, XP/SS and XPS lamps is based on operation at 3 hours per start on a QUICKTRONIC® programmed rapid start ballast. Average rated life is 42,000 hours at 12 hours per start on a programmed rapid start ballast. On an instart start ballast, the average rated life is 40,000 hours at 12 hours per start, and 24,000 hours at 3 hours per start.

- Approximate initial lumens after 100 hours operation.
- The life ratings of fluorescent lamps are based on 3 hr. burning cycles under specified conditions and with ballast meeting ANSI specifications. If burning cycle is increased, there will be a corresponding increase in the average hours life.
- Minimum starting temperature is a function of the ballast; consult the ballast manufacturer.
- OCTRON lamps should be operated only with magnetic rapid start ballasts designed to operate 265 mA, T-8 lamps or high frequency (electronic) ballasts that are either instant start, or rapid start, or programmed rapid start specifically designed to operate T8 lamps. OCTRON lamps may be operated on instant start ballasts with ballast factors ranging from a minimum of 0.71 to a maximum of 1.20 at the nominal ballast input voltage. When OCTRON lamps are operated in the instant start mode, the two wires or two contacts of each socket should be connected to each other. They should then be connected to the appropriate ballast lead wire using National Electric Code techniques.
- SYLVANIA ECOLOGIC fluorescent lamps are designed to pass the Federal Toxic Characteristic Leaching Procedure (TCLP) criteria for classification as non-hazardous waste in most states. TCLP test results are available upon request. Lamp disposal regulations may vary, check your local & state regulations. For more information, please visit www.lamprecycle.org
- The lamp lumen maintenance factor used to determine the mean lumen value was 95%. This is the lamp lumen maintenance factor at 8000 hours, 40% of 20,000 hours. It was used for comparison to standard OCTRON(R) lamps with an average rated life of 20,000 hours. The lamp lumen maintenance factor at 40% of 24,000 hours, 9600 hours, would be 94%. The lamp lumen maintenance factor at 40% of 30,000 hours, 12,000 hours, would be 93%. The lamp lumen maintenance factor at 40% of 36,000 hours, 14,400 hours would also be 93%.

17 WATT 24" LAMPS



Product Number: 22137

Order Abbreviation: FO17/841/ECO

General Description: 17W, 24" MOL, T8 OCTRON fluorescent lamp, 4100K color temperature, rare earth phosphor, 82 CRI, suitable for IS or RS operation, ECOLOGIC

Product Information	
Abbrev. With Packaging Info.	FO17841ECO 30/CS 1/SKU
Actual Length (in)	47.780
Actual Length (mm)	1213.61
Average Rated Life (hr)	30000
Base	Medium Bipin
Bulb	T8
Color Rendering Index (CRI)	82
Color Temperature/CCT (K)	4100
Diameter (in)	1.098
Diameter (mm)	27.90
Family Brand Name	Octron® 800, Ecologic
Industry Standards	ANSI C78.81 - 2001
Initial Lumens at 25C	1350
Mean Lumens at 25C	1240
Nominal Length (in)	24.000
Nominal Length (mm)	609.60
Nominal Wattage (W)	17.00
Life at 3 hrs./start on IS ballasts	24000
Life at 12 hrs./start on IS ballasts	30000
Life at 3 hrs./start on PRS ballasts	30000
Life at 12 hrs./start on PRS ballasts	36000



ECOLOGIC

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Footnotes

- The 30,000 hour average rated life of OCTRON® 800 Series lamps is based on operation at 3 hours per start on a QUICKTRONIC® programmed rapid start ballast. Average rated life is 36,000 hours at 12 hours per start on a programmed rapid start ballast. On an instart start ballast, the average rated life is 30,000 hours at 12 hours per start, and 24,000 hours at 3 hours per start.

- Approximate initial lumens after 100 hours operation.
- The life ratings of fluorescent lamps are based on 3 hr. burning cycles under specified conditions and with ballast meeting ANSI specifications. If burning cycle is increased, there will be a corresponding increase in the average hours life.
- Minimum starting temperature is a function of the ballast; consult the ballast manufacturer.
- OCTRON lamps should be operated only with magnetic rapid start ballasts designed to operate 265 mA, T-8 lamps or high frequency (electronic) ballasts that are either instant start, or rapid start, or programmed rapid start specifically designed to operate T8 lamps. OCTRON lamps may be operated on instant start ballasts with ballast factors ranging from a minimum of 0.71 to a maximum of 1.20 at the nominal ballast input voltage. When OCTRON lamps are operated in the instant start mode, the two wires or two contacts of each socket should be connected to each other. They should then be connected to the appropriate ballast lead wire using National Electric Code techniques.
- SYLVANIA ECOLOGIC fluorescent lamps are designed to pass the Federal Toxic Characteristic Leaching Procedure (TCLP) criteria for classification as non-hazardous waste in most states. TCLP test results are available upon request. Lamp disposal regulations may vary, check your local & state regulations. For more information, please visit www.lamprecycle.org

Project Estimated Annual Savings Summary

Lighting

Estimated Annual kWh Savings	360,796
Total Change in Connected Load	45.59

Annual Estimated Cost Savings	\$36,079.60
Annual Operating Hours	6,330

Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$17,734.15
Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$0.00
Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior)	\$22.00
Total retrofit LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/occupancy sensor and \$25/daylight sensor (includes all Lighting Controls, both interior and exterior)	\$50.00

Total Calculated Incentive	\$17,806.15
----------------------------	-------------

Total Fixture Quantity excluding retrofit CFLs and LED Exit Signs	475
Total Lamp Quantity for retrofit Screw-In CFLs	22

Total Lamp Quantity for retrofit Hard-Wired CFLs	0
Total Fixture Quantity for retrofit LED Exit Signs	0
Total Quantity for Occupancy Sensors	2
Total Quantity for Daylight Sensors	0

Please briefly describe how you estimated your coincidence factor (CF) and applicant equivalent full-load hours (EFLH) for facility type "Other" indicated on the Lighting Form tab

Demand Savings (For Internal Use Only)	38.82
--	-------

Mercantile Customer Project Commitment Agreement
Cash Rebate Option

THIS MERCANTILE CUSTOMER PROJECT COMMITMENT AGREEMENT ("Agreement") is made and entered into by and between Ohio Edison Company, its successors and assigns (hereinafter called the "Company") and St. Gobain Performance Plastics, Taxpayer ID No. 95-1947155 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 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 the Public Utilities Commission of Ohio's ("Commission") September 15, 2010 Order in Case No. 10-834-EL-BEC, desires to pursue a cash rebate of some of the costs pertaining to its Customer Energy Project(s) ("Cash Rebate") and is committing the Customer Energy Project(s) as a result of such incentive.

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 a Cash Rebate.

WHEREAS, in consideration of, and upon receipt of, said cash rebate, Customer will commit the Customer Energy Project(s) to the Company and will comply with all other terms and conditions set forth herein.

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 appropriate, "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 cash rebate discussed in Article 3 below; and (ii) will not affect any of Customer's other requirements or obligations.
 - 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 the Commission's standard 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" ("Joint Application") 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 Cash Rebate.

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 Cash Rebate.** Upon Commission approval of the Joint Application, Customer shall provide Company with a W-9 tax form, which shall at a minimum include Customer's tax identification number. Within the greater of 90 days of the Commission's approval of the Joint Application or the completion of the Customer Energy Project, the Company will issue to the Customer the Cash Rebate in the amount set forth in the Commission's Finding and Order approving the Joint Application.
 - a. Customer acknowledges: i) that the Company will cap the Cash Rebate at the lesser of 50% of Customer Energy Project(s) costs or \$250,000; ii) the maximum rebate that the Customer may receive per year is \$500,000 per Taxpayer Identification Number per utility service territory; and iii) if the Customer Energy Project qualifies for a rebate program approved by the Commission and offered by the Company, Customer may still elect to file such project under the Company's mercantile customer self direct program, however the Cash Rebate that will be paid shall be discounted by 25%; and
 - b. Customer acknowledges that breaches of this Agreement, include, but are not limited to:
 - i. Customer's failure to comply with the terms and conditions set forth in the Agreement, or its equivalent, within a reasonable period of time after receipt of written notice of such non-compliance;
 - ii. Customer knowingly falsifying any documents provided to the Company or the Commission in connection with this Agreement or the Joint Application.
 - c. In the event of a breach of this Agreement by the Customer, Customer agrees and acknowledges that it will repay to the Company, within 90 days of receipt of written notice of said breach, the full amount of the Cash Rebate paid under this Agreement. This remedy is in addition to any and all other remedies available to the Company by law or equity.
4. **Termination of Agreement.** This Agreement shall automatically terminate:
 - a. If the Commission fails to approve the Joint Agreement;
 - 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 Cash Rebate, 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.

5. **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.
6. Taxes. Customer shall be responsible for all tax consequences (if any) arising from the payment of the Cash Rebate.
7. 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:

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

If to the Customer:

St. Gobain Ravenna
335 N. Diamond St.
Ravenna, OH 44266
Attn: George Brandt
Telephone: 330.297.3041
Fax: 330.296.8846
Email: george.r.brandt@saint-gobain.com

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.

8. **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.
9. **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.
10. **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.
11. **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.
12. **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.
13. **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.
14. **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.

Ohio Edison Company_
(Company)

By: John C. Largin

Title: V.P. Of Energy Efficiency

Date: 2-18-13

St. Gobain Performance Plastics_
(Customer)

By: George Brunett

Title: Sr. Business Dev. Engineer

Date: 2/7/13

Affidavit of Saint Gobain Performance Plastics – Exhibit A

STATE OF OHIO)
) SS:
COUNTY OF Portage)

I, George Brandt, being first duly sworn in accordance with law, deposes and states as follows:

1. I am the Sr. Business Development Engineer of St. Gobain Performance Plastics ("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 Ohio Edison 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 Cash ("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.

George Brandt

Sworn to before me and subscribed in my presence this 7 day of Feb, 2013

Sarah Baker
Notary



SARAH BAKER, NOTARY
STATE OF OHIO
MY COMMISSION EXPIRES: 11/0/16

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/4/2013 2:45:45 PM

in

Case No(s). 13-0240-EL-EEC

Summary: Application to Commit Energy Efficiency/Peak Demand Reduction Programs of Ohio Edison Company and St. Gobain Performance Plastics electronically filed by Ms. Jennifer M. Sybyl on behalf of Ohio Edison Company and St. Gobain Performance Plastics