Ohio | Public Utilities Commission

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

Case No.: 12-843-EL-EEC

Mercantile Customer: **Kohls**

Electric Utility: **Duke Energy**

Program Title or Description: **Lighting**

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: **Kohl's Department Store**

Principal address: **N56 W17000 Ridgewood Dr, Menomonee Falls, WI 53051**

Address of facility for which this energy efficiency program applies:

100 Cincinnati Mills Dr, Cincinnati Ohio, 45240

Name and telephone number for responses to questions:

Grady Reid Jr, 513-287-1038

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. (Refer to Appendix A.)**
- □ 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: **Duke Energy**

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)).

Customer completed retrofit between May 2011 and July 2011 using energy efficient lighting

□ 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: **4 1 , 6 8 7 kWh**
Refer to Appendix B for calculations and supporting documents

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:

Please describe any less efficient new equipment that was rejected in favor

of the more efficient new equipment.

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.

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?

Customer completed retrofit between May 2011 and July 2011 using energy efficient lighting

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

7.6 KW
Refer to Appendix B for calculations and supporting documents

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 $[redacted] (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.)
Refer to Appendix C.

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: **8.49** (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 **$18,615.28**

The utility's program costs were **$838.52.**

The utility's incentive costs/rebate costs were $[redacted]

Refer to Appendix D

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.

Refer to Rebate Offer letter following this application

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.

Ohio | Public Utilities Commission

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

Case No.: ____-____-EL-EEC

State of _____ :

Marcy Schaefer, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

   Kohl's Department Store, Inc.

   [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.

3. I am aware of fines and penalties which may be imposed under Ohio Revised Code Sections 2921.11, 2921.31, 4903.02, 4903.03, and 4903.99 for submitting false information.

Energy manager

Signature of Affiant & Title

Sworn and subscribed before me this 22 day of December 2011 Month/Year

Signature of official administering oath

Geraldine DePalma

Print Name and Title

My commission expires on 4/14/12

COMMONWEALTH OF PENNSYLVANIA
NOTARIAL SEAL
GERALDINE DePALMA, Notary Public
Upper Moreland Twp., Montgomery County
My Commission Expires April 14, 2012

DUKE ENERGY CORPORATION
Mercantile Self Direct Program
139 East Fourth Street
Cincinnati, OH 45202
513 419 5572 fax

December 7, 2011

Marcello Crestani
Real Win Win (Agent)
Kohl's Store #10210
100 Cincinnati Mills Drive
Cincinnati, Ohio 45240

Subject: Your Application for a Duke Energy Mercantile Self-Direct Rebate

Dear Mr. Crestani:

Thank you for your Duke Energy Mercantile Self Direct rebate application. As noted in the Energy Conservation Measure (ECM) chart on page three, a total rebate of [redacted] has been proposed for your lighting projects completed in the 2011 calendar year. All Self Direct Rebates are contingent upon approval by the Public Utilities Commission of Ohio (PUCO).

At your earliest convenience, please indicate if you accept this rebate by

- providing your signature on page two
- completing the PUCO-required affidavit on page four.

Please return the documents to my attention via fax at 513-419-5572 or e-mail to SelfDirect@Duke-Energy.com. Upon receipt, Duke Energy will submit the necessary documentation to PUCO. Following PUCO's approval, Duke Energy will remit payment.

At Duke Energy, we value your business and look forward to working with you on this and future energy efficiency projects. We hope you will consider our Smart $aver® incentives when applicable. Please contact me if you have any questions.

Sincerely,

Grady Reid, Jr
Product Manager
Mercantile Self Direct Rebates

cc: Terry Holt, Duke Energy
Rob Jung, WECC

Please indicate your response to this rebate offer within 30 days of receipt.

☐ Rebate is accepted. ☐ Rebate is declined.

By accepting this rebate, Kohl's Corporation affirms its intention to commit and integrate the energy efficiency projects listed on the following pages into Duke Energy's peak demand reduction, demand response and/or energy efficiency programs.

Additionally, Kohl's Corporation also agrees to serve as joint applicant in any future filings necessary to secure approval of this arrangement as required by PUCO and to comply with any information and reporting requirements imposed by rule or as part of that approval.

Finally, Kohl's Corporation affirms that all application information submitted to Duke Energy pursuant to this rebate offer is true and accurate. Information in question would include, but not be limited to, project scope, equipment specifications, equipment operational details, project costs, project completion dates, and the quantity of energy conservation measures installed.

If rebate is accepted, will you use the monies to fund future energy efficiency and/or demand reduction projects?

☐ YES ☐ NO

If rebate is declined, please indicate reason (optional):

M M Schaefer	Marcy Schaefer	12-19-11
Customer Signature	Printed Name	Date

Proposed Rebate Amounts

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	T-8 w/ Electronic Ballast 4ft 3 Lamps – (4) Retrofits	$18.00
ECM-2	T-8 w/ Electronic Ballast 4ft 2 Lamps – (175) Retrofits	$350.00
ECM-3	T-8 w/ Electronic Ballast 4ft 1 Lamps – (8) Retrofits	$12.00
ECM-4	T-8 w/ Electronic Ballast 3ft 1 Lamps – (8) Retrofits	$12.00
ECM-5	T-8 w/ Electronic Ballast 2ft 2 Lamps – (6) Retrofits	$12.00
ECM-6	T-5 w/ Electronic Ballast 1 Lamps – (42) Retrofits	$105.00
ECM-7	T-5 w/ Electronic Ballast 2 Lamps – (61) Retrofits	$244.00
ECM-8	CFL – (18) Retrofits	$90.00
ECM-9	Warehouse Upgrade – Retrofit (102) Halogen with LED	[redacted]
Total		[redacted]

17400840 02		
KOHLS DEPT STR #210		
100 FOREST FAIR DR		
CINCINNATI, OH 45240		
Read Date	Days	KWH Usage
11/25/2009	29	137,379
12/30/2009	35	158,565
1/29/2010	30	135,896
3/1/2010	31	143,214
3/30/2010	29	121,830
4/29/2010	30	137,847
5/28/2010	29	152,826
6/29/2010	32	198,708
7/29/2010	30	194,973
8/27/2010	29	217,866
9/28/2010	32	208,577
11/29/2010	33	142,552
Total		**1,950,233**

Note: The customer uses a different street name for this account compared to how we carry them within our billing system, they are located in a large mall

Appendix B - Energy Savings Achieved

Self Direct Custom

As-Found Equipment	Equipment Wattage	Annual Operating Hours	Annual kWh	New Equipment	Equipment Wattage	Annual Operating Hours	Annual kWh	Energy Savings (kWh each)	Demand Savings (kW each)
Halogen	60 Watt	5,096	306	LED	32 Watt	5,096	163	143	0.03

Quantity	Total Energy Savings (kWh) AT THE METER[1]	Total Demand Savings (kW) AT THE METER
102	14,586	3.1

Inclusion of 7.43% line losses yields **15,691 kWh** and **3.1 kW** saved at the plant. These values also include insignificant rounding error due to the mode of analysis used to model the project in DSMore software.

Self Direct Prescriptive – Deemed Savings

Measure	Quantity	Demand Savings (kW each)	Energy Savings At The Plant (kWh each)	Total (kW) Savings At The Plant	Total kWh Savings At The Plant
T-8 w/ Electronic Ballast - 4ft 3 lamp	4	0.03	125.82	0.12	503.28
T-8 w/ Electronic Ballast 4ft 2 lamp	175	0.01	62.91	1.75	11009.25
T-8 w/ Electronic Ballast - 4ft 1 lamp	8	0.01	59.05	0.08	472.4
T-8 w/ Electronic Ballast - 3ft 1 lamp	8	0.02	102.7	0.16	821.6
T-8 w/ Electronic Ballast - 2ft 2 lamp	6	0.02	116.83	0.12	700.98
T-5 w/ Electronic Ballast -1 Lamp replacing T-12	42	0.01	58.27	0.42	2447.34
T-5 w/ Electronic Ballast - 2 Lamp replacing T-12	61	0.01	57.78	0.61	3524.58
CFL - Fixture	18	0.07	362.04	1.26	6516.72
Total				**4.52**	**25,996.15**

Total kWh and kW Savings

Custom kWh Savings	15,691	Custom kW Savings	3.1
Prescriptive kWh Savings	25,996	Prescriptive kW Savings	4.5
TOTAL kWh Savings	**41,687**	**TOTAL kW Savings**	**7.6**

Kohls - Appendix C -Cash Payment Calculation

Custom Lighting

Measure	Quantity	Rebate Rate	Rebate	Cash Rebate
Warehouse Upgrade Halogen with LED	102	50% of incentive that would be offered by the Smart $aver Custom program	[redacted]	$[redacted]

Prescriptive Lighting

Measure	Quantity	Rebate Rate	Rebate	Cash Rebate
T-8 w/ Electronic Ballast 4ft 3 Lamps	4	50% of incentive that would be offered by the Smart $aver Custom program	$4.50	$18.00
T-8 w/ Electronic Ballast 4ft 2 Lamps	175	50% of incentive that would be offered by the Smart $aver Custom program	$2.00	$350.00
T-8 w/ Electronic Ballast 4ft 1 Lamp	8	50% of incentive that would be offered by the Smart $aver Custom program	$1.50	$12.00
T-8 w/ Electronic Ballast 3ft 1 Lamps	8	50% of incentive that would be offered by the Smart $aver Custom program	$1.50	$12.00
T-8 w/ Electronic Ballast 2ft 2 Lamps	6	50% of incentive that would be offered by the Smart $aver Custom program	$2.00	$12.00
T-5 w/ Electronic Ballast 1 Lamps	42	50% of incentive that would be offered by the Smart $aver Custom program	$2.50	$105.00
T-5 w/ Electronic Ballast 2 Lamps	61	50% of incentive that would be offered by the Smart $aver Custom program	$4.00	$244.00
CFL Retrofits	18	50% of incentive that would be offered by the Smart $aver Custom program	$5.00	$90.00
Total				**$843.00**

Total Incentive Amount **$[redacted]**

Appendix D -UCT Value

Self Direct Custom

Measure	Avoided Cost Each	Program Cost Each	Incentive Each	Quantity	Custom UCT
Replace 60W Halogen with 32W LED	$82.14	$3.26	$[redacted]	102	9.94

Self Direct Prescriptive

Measure	Avoided Cost Each	Program Cost Each	Total Incentive	Quantity	Prescriptive UCT
T-8 w/ Electronic Ballast - 4ft 3 lamp	$48.00	$3.00	$4.50	4	6.40
T-8 w/ Electronic Ballast 4ft 2 lamp	$23.00	$1.00	$2.00	175	7.67
T-8 w/ Electronic Ballast - 4ft 1 lamp	$22.00	$1.00	$1.50	8	8.80
T-8 w/ Electronic Ballast - 3ft 1 lamp	$39.00	$1.00	$1.50	8	15.60
T-8 w/ Electronic Ballast - 2ft 2 lamp	$44.00	$1.00	$2.00	6	14.67
T-5 w/ Electronic Ballast -1 Lamp replacing T-12	$24.00	$1.00	$2.50	42	6.86
T-5 w/ Electronic Ballast - 2 Lamp replacing T-12	$30.00	$3.00	$4.00	61	4.29
CFL - Fixture	$135.00	$4.00	$5.00	18	15.00
				Aggregate Prescriptive UCT	7.67

Aggregate Application UCT (Custom and Prescriptive)	***8.49***

Total Avoided Supply Costs	$18,615.28
Total Program Costs	$838.52
Total Incentive	$[redacted]

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-419-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☐ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts an/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct incentives are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☐ All sections of appropriate application(s) are completed	☐ Proof of payment.*	☐ Manufacturer's Spec sheets	☐ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Prescriptive Lighting ☐	MSD Prescriptive Lighting ☐
		MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐
Heating & Cooling	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Heating & Cooling ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐	MSD Prescriptive Heating & Cooling ☐	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐
Chillers & Thermal Storage	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Chillers & Thermal Storage ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Motors & Pumps	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Motors, Pumps & Drives ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
VFDs	Not Applicable	MSD Prescriptive Motors, Pumps & Drives ☐	MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐	
Food Service	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Food Service ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Process	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Process ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	
Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐
Behavioral* & No/Low Cost**	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐		

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**

*** Please ensure that you include the age of the replaced equipment for measures classified as “Early Replacement” in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.

**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

MERCANTILE SELF DIRECT Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☐ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☒ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☒ Duke Energy Representative	☐ Web Site	☐ Radio
☐ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information						
Customer/Business	Kohls1 #10210	Contact		Marcello Crestani		
Phone	215-732-4480 x 234	**Account Number**		1740-0840-024		
Street Address (Where incentive should be mailed)		PO Box #15787 (Dept. 61478)				
City	Philadelphia	State	PA	Zip Code	19103	
Installation Street Address	100 Cincinnati Mills Drive					
City	Cincinnati	State	OH	Zip Code	45240	
E-mail Address	mcrestani@realwinwin.com					

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor		Contact			
Phone		Fax			
Street Address					
City		State		Zip Code	
E-mail Address					

If Duke Energy has questions about this application, who should we contact? ☒ **Customer** ☐ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	13-3357362
	Vendor Tax ID #	

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature	Marcello Crestani	Vendor Signature	
Date	10/24/2011	Date	
Title	Utility Manager	Title	

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are elig ble for incentives based on the total measured length of the lamp.)							
T8 8ft 2 lamp replacing T12 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.50		Hrs.			
T8 8ft 1 lamp replacing T12 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T8 4ft 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 3ft 4 lamp replacing T12 3ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$3.25		Hrs.			
T8 3ft 2 lamp replacing T12 3ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 4 lamp replacing T12 2ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T8 2ft 3 lamp replacing T12 2ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$2.10		Hrs.			
T8 2ft 2 lamp replacing T12 2ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are elig ble for incentives based on the total measured length of the lamp.)							
T8 HO 8ft 1 lamp replacing T12 HO 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 HO 8ft 2 lamp replacing T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$7.00		Hrs.			
T8 HB 4ft 3L replacing 150-249W HID(retrofit only)	Ballast model# Lamp model #	$15.00		Hrs.			
T8 HB 4ft 4L a replacing 250-399W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
T8 HB 4ft 6L replacing 400-999W HID (retrofit only)	Ballast model# Lamp model #	$25.00		Hrs.			
T8 HB 4ft 8L replacing a 400-999W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
2 fixtures – T8 HB 4ft 8 Lamp (32W) replacing 1,000 W HID (2 for 1 replacement (retrofit only)	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast ***Fixtures must be permanently retrofitted to the lamp count specified. Reflectors may be utilized to maintain necessary lighting levels.***	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 with delamping							
T8 8ft 1 lamp replacing T12 8 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$5.00		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 2 lamp replacing T12 3 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 3 lamp replacing T12 2 ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 2 lamp replacing T12 2 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T12 8ft and 4ft fixture replaced by T8 High Performance Replace T12 and T12 HO 8' fixtures with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
High Performance T8 4ft 2 lamp fixture replacing T12 8ft 1 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 8ft 2 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 High Output 8ft 1 lamp fixture	Ballast model# Lamp model #	$10.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 High Output 8ft 2 lamp fixture	Ballast model# Lamp model #	$12.50		Hrs.			
High Performance T8 4ft 1 lamp fixture replacing T12 4ft 1 lamp	Ballast model# Lamp model #	$3.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 4ft 2 lamp	Ballast model# Lamp model #	$4.00		Hrs.			
High Performance T8 4ft 3 lamp fixture replacing T12 4 ft 3 lamp	Ballast model# Lamp model #	$6.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 4 ft 4 lamp	Ballast model# Lamp model #	$8.00		Hrs.			
T-12 4ft fixture replaced by Reduced Wattage T8 Lighting Replace standard T12 systems with 4' 25W lamps, 28W lamps, and approved CEE ballast. In order to qualify for incentives, bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: Reduced Watt T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T12 4ft 1 lamp – 34 W	Ballast model# Lamp model #	$4.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28 W or less & ballast replacing standard T12 4 ft 2 lamp – 34 W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28 W or less & ballast replacing standard T12 4 ft 3 lamp – 34 W	Ballast model# Lamp model #	$7.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28 W or less & ballast replacing standard T12 4 ft 4 lamp – 34 W	Ballast model# Lamp model #	$9.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Normal or low ballast factor ballasts must be utilized to be eligible.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced with T5 Electronic Ballasts							
T5 4ft (28 watt) 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T5 4ft (28 watt) 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.00		Hrs.			
T5 4ft (28 watt) 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T5 4ft (28 watt) 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.00		Hrs.			
T5 HO 4ft 1 (54 watt) lamp replacing 34W T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 34W T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 60W T12 8 ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 3 (54 watt) lamp replacing 95W T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 60W T12 8ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 95W T12 VHO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO HB 2L replacing 150-249W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$15.00		Hrs.			
T5 HO HB 3L replacing 250-399W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 4L replacing 400-999W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$25.00		Hrs.			
T5 HO HB 6L replacing 400-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 8L replacing 750-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$37.50		Hrs.			
2 fixtures – T5 HO HB 6 Lamp replacing 1,000 W HID (2 for 1 retrofit only) Fixture efficiency	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-5 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- Eligible T5 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%. *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-8 Fixtures replaced by High Performance T8 Lighting Replace standard T8 systems with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
T8 4ft High Performance 1 lamp & ballast replacing standard T8 4ft 1 lamp fixture	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft High Performance 2 lamp & ballast replacing standard T8 4ft 2 lamp fixture	Ballast model# Lamp model #	$3.00		Hrs.			
T8 4ft High Performance 3 lamp & ballast replacing standard T8 4ft 3 lamp fixture	Ballast model# Lamp model #	$3.10		Hrs.			
T8 4ft High Performance 4 lamp & ballast replacing standard T8 4ft 4 lamp fixture	Ballast model# Lamp model #	$6.00		Hrs.			
T-8 Fixtures replaced by Reduced Wattage High Performance T8 Lighting Replace standard T8 systems with 4' 25W lamps, 28W lamps approved CEE ballast OR relamp existing T8 fixtures with reduced wattage T8 lamps 28W or less. In order to qualify for incentives bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: reduced wattage T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T8 4ft 1 lamp – 32W	Ballast model# Lamp model #	$2.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28W or less & ballast replacing standard T8 4ft 2 lamp – 32W	Ballast model# Lamp model #	$3.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28W or less & ballast replacing standard T8 4ft 3 lamp – 32W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28W or less & ballast replacing standard T8 4ft 4 lamp – 32W	Ballast model# Lamp model #	$6.00		Hrs.			
Relamp T8 4ft 32W fixtures with Reduced Wattage T8 lamps 28 watts or less	Ballast model# Lamp model #	$2.50 / lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

CFL Lamps and Fixtures	Incentive	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
42W 8 lamp HB CFL replacing 400W HID (retrofit only) Model Number	$25.00		Hrs.			
CFL – Screw In (lamp only) replacing an incandescent (retrofit only) Model Number	$0.75 / lamp		Hrs.			
CFL – Screw-In dimmable or 3-way bulb replacing an incandescent dimmable or 3-way bulb (retrofit only) Model Number	$1.00 / lamp		Hrs.			
CFL – Hardwired Fixture replacing incandescent fixture (only pin based CFL's qualify) Model Number	$5.00 / fixture		Hrs.			
Up to 30W CFL Flood Lamp with Reflector replacing 100W or less incandescent (retrofit only) Model Number	$1.50 / lamp		Hrs.			
33W – 115W CFL lamp replacing 100 W or more incandescent Model Number	$2.50 / lamp		Hrs.			
Energy Star LED Lamps						
Replace incandescent bulbs with Energy Star LED (retrofit only) *LED lamps must be listed on the Energy Star Qualified Light Bulbs list to qualify.* *http://www.energystar.gov/index.cfm?fuseaction=iledl.display_products_pdf* Model Number	$5.00 / lamp		Hrs.			
Replace 60-100W incandescent with ENERGY STAR qualified LED downlight 18 Watts or less. (retrofit only) *Product must appear on ENERGY STAR Qualified LED Lighting qualified products list, and must contain the word "downlight".* *http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pd*. Model Number	$7.50 / fixture		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.

Metal Halide						
320W Pulse Start Halide replacing 400W HID (retrofit only) **check one ☐R ☐FE Model Number	$12.50		Hrs.			
Ceramic Metal Halide						
20W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 100 W Model Number	$15.00		Hrs.			
39W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 150 W Model Number	$15.00		Hrs.			
50W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 195W Model Number	$15.00		Hrs.			
70W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 225W Model Number	$15.00		Hrs.			
100W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 270W Model Number	$15.00		Hrs.			
150W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 360W Model Number	$15.00		Hrs.			
25 W or less Ceramic Metal Halide with integral ballast replacing 70 W or greater incandescent flood light Model Number	$5.00/lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Incentives for pulse start metal halide fixtures are for 320w pulse start metal halide lamp/ballast combinations. In a retrofit application, the fixture must be hard-wired ballast retrofit or new fixture. Screw in retrofit lamps do not qualify. Pulse start lamp wattage must be lower than existing probe start lamp wattage.
- Ceramic Metal Halide Incentive is for complete hardwired fixtures containing ceramic metal halide lamp and electronic ceramic metal halide ballast.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Measure	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
21" Tubular Skylight/Light Tube (at least one light fixture per light tube must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies) Check One ** ☐R ☐NC ☐FE Model Number	$37.50 / fixture					
LED Exit Signs (replacing or retrofitting existing incandescent or compact fluorescent exit sign) Check one ☐R ☐NC ☐FE Model Number	$5.00 / fixture					
LED Lighting In Reach-in Freezer or Cooler Case (replacing fluorescent fixtures) Model Number	$25.00 / door					
LED Case Lighting Sensor Controls Check one ☐R ☐NC ☐FE Model Number Model Number	5.00 / sensor					
Under 500 W connected to sensor check one ☐R ☐NC ☐FE Model Number	$10.00 / sensor					
Over 500 W connected to sensor check one ☐R ☐NC ☐FE Model Number	$20.00 / sensor					

- Replacement must result in energy savings to qualify
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Tubular Skylight requires at least one light fixture per light tube that must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies)
- LED exit signs shall use 5 watts or less including the battery charger when active. They must meet State Fire Marshal codes and be UL rated.
- Occupancy Sensors (under and over 500) must be either wall, ceiling, or fixture mounted. Rapid or programmed start ballasts are recommended for fluorescent fixtures.
- Occupancy Sensors (under 500W) installed on or built into High Bay fixtures are eligible for incentives.
- LED Lighting in Reach-in Freezer or Cooler Case: Must install a LED lighting system and replace (or in lieu of) a fluorescent lighting system for reach-in refrigerated display case.
- Fluorescent magnetic ballasts cannot be used to power the LED case lighting system. Existing fluorescent fixture end connectors and ballasts must be removed.
- LED case lighting system must be a permanently installed luminaire. LED lamps that install into fluorescent lamp sockets are not eligible for incentives.
- LED Case Lighting Sensor Controls may only be installed with LED lighting systems. End of aisle and individual case sensors qualify.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Outdoor Lighting	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
Exterior LED or Induction fixture replacing up to 175W HID Model Number	$20 / fixture					
Exterior LED or Induction fixture replacing 176W – 250W HID Model Number	$25 / fixture					
Exterior LED or Induction fixture replacing 251W – 400W HID Model Number	$40 / fixture					
Exterior LED or Induction fixture replacing > 400 W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing up to 175 W HID Model Number	$50/ fixture					
Garage LED or Induction fixture replacing 176W – 250W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing 251W – 400 W HID Model Number	$125/ fixture					
Garage LED or Induction fixture replacing > 400 W HID Model Number	$200/ fixture					
LED Auto Traffic Signals (replacing incandescent) Model Number	$6.25 / lamp					
LED Pedestrian Signals (replacing incandescent) Model Number	$12.50/ signal					

- Replacement must result in energy savings to qualify
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Outdoor and garage LE**D an**d induction lighting must result in a total power ***red***uction of 40% or more.
- Outdoor and garage LEDs should be listed on either the Energy Star or Design Lights consortium qualifying products lists:
    1. http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pdf
    2. http://www.designlights.org/documents/NEEPDLCQPL.xls
- Traffic and pedestrian signals using LED lights must replace conventional incandescent signals.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Program Requirements

Incentive Eligibility

- Incentives are only available to customers on a Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Incentive will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise incentive levels and/or qualifying efficiency levels at any time.
- Customer may assign the incentive to the vendor who installed/supplied the equipment. The customer's signature is required in the Payment Information section on page 1 of this form to assign the incentive to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the incentive. This assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount.
- Leased equipment is eligible for incentives providing the equipment meets the program requirements and the customer provides the required documentation noted on the Incentive Application Process page of this application.
- Any equipment which, either separately or as part of a project, has or will receive an incentive from any other Duke Energy program is ineligible.
- In no case will Duke Energy pay an incentive above the actual cost of the new equipment.
- Incentive recipient assumes all responsibilities for any tax consequences resulting from Duke Energy incentive payment.
- To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Terms and Conditions

I certify that this premise is served by Duke Energy (or an affiliate of Duke Energy), that the information provided herein is accurate and complete, and that I have purchased and installed the high efficiency equipment (indicated herein) for the business facility listed herein and not for resale. Attached is an itemized invoice for the indicated installed equipment. In understand that the proposed incentive payment from Duke Energy is subject to change based on verification and Duke Energy approval. I agree to Duke Energy verification of both the sales transaction and equipment installation which may include a site inspection from a Duke Energy representative or Duke Energy agent. I understand that I am not allowed to receive more than one incentive from Duke Energy on any piece of equipment. I also understand that my participation in the program may be taxable and that my company is solely responsible for paying all such taxes. I hereby agree to indemnify, hold harmless and release Duke Energy and it's affiliates from any actions or claims in regards to the installation, operation and disposal of equipment (and related materials) covered herein including liability from an incidental or consequential damages. Duke Energy does not endorse any particular manufacturer, product or system design within these programs; does not expressly or implicitly warrant the performance of installed equipment (Contact your contractor for details regarding equipment warranties) and is not liable for any damage caused by the installation of the equipment nor for any damage caused by the malfunction of the installed equipment.

Incentive Application Instructions

IMPORTANT NOTICE
Delays in processing incentive payments will occur if required documentation is not included with completed application(s).

1. Contact Duke Energy toll free at 866-380-9580 to confirm customer eligibility. Applications are available for download at www.duke-energy.com.

2. Review program and equipment requirements on the incentive application. (Page7)

3. Purchase and install eligible energy-efficient equipment.

4. Complete and submit application for equipment that was installed after 1/1/2008.

5. **The following items must be included to verify projects. If they are not included, it will delay payment of incentive.**

   A. Itemized invoice for all equipment installed to include:
      a. Equipment cost
      b. Quantity per equipment type installed
      c. Model # for each equipment type
      d. Manufacturer's data sheet for each equipment model #.

   B. Make sure the account number provided on the cover page (customer information section) is associated with the location where the equipment was installed. If the account # does not match the address where the equipment was installed, the application will be rejected as ineligible.

   C. Provide required tax ID# for payee.

   D. Customer must sign and date the application after reviewing the Terms and Conditions. If customer wishes to **assign payment of the incentive directly to the vendor**, the customer should circle the appropriate payee in the Payment Information section of the application and sign their name to authorize payment.

6. Duke Energy may require site verification of projects that have been self-installed, prior to payment of incentive.

8. Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

8. A percentage of equipment installations will be site verified for quality assurance purposes. Once selected, a Duke Energy representative will contact the customer to arrange for the inspection. All incentive payments related to the project will be withheld until site verification is complete. There is no charge to the customer for these inspections.

Mercantile Self Direct Rebate Program
Requirements for Vendor Participation

Program Overview

- Duke Energy offers it's eligible non-residential customers the opportunity to increase profitability through energy cost savings and contribute to a cleaner environment by participating in our Mercantile Self Direct Incentive Program.

- Under the Duke Energy Mercantile Self Direct Incentive Program, Vendor is defined as any third party who:

  – Promotes the sale and installation of the high efficiency equipment for the customer. The Vendor will ensure that the eligible equipment is installed and operating before submitting the application or assisting the customer in completing the application.

  – Is responsible for the product sale only and is not required to ensure installation of the eligible equipment.

- All license requirements, if any, are solely the Vendor's responsibility. Participating Vendors include equipment contractors, equipment Vendors, equipment manufacturers and distributors, energy service companies, etc. The typical Vendor role is to contact/solicit eligible customers building new or retrofitting existing facilities and encourage the installation of the energy-efficient equipment offered in Duke Energy's program.

- Incentives are paid directly to customers unless the customer assigns the incentive to the Vendor. The assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount. Incentives are taxable to the entity who receives the rebate check. Rebates greater than $600 will be reported to the IRS unless documentation of tax exempt status is provided.

  Vendors can sign up to be on Duke Energy's Web site as a participating Vendor and be added to Duke Energy's e-mail distribution by emailing the Vendor Participation Agreement (VPA) to SelfDirect@duke-energy.com or faxing to **513-419-5572.**

Guidelines for Vendor Activities

- Vendors shall sign and return the attached VPA to Duke Energy prior to soliciting customer participation or when submitting an application. Rebate payments will not be released to a Vendor unless a signed VPA is on file.

- Vendors shall not misrepresent the nature of their role in the program. In particular, Vendors shall not state or imply to customers, or any persons, that the Vendor is employed by or working on Duke Energy's behalf.

- Vendors may not represent to customers that Duke Energy endorses their specific products or services. Duke Energy does not endorse specific products, services, or companies – only energy-efficient technologies.

- Vendors may advise customers of their option to have Duke Energy make their rebate check(s) payable to the Vendor if the customer's rebate amount is being deducted from the total sale price in advance. The customer must complete and sign the Payment Release Authorization section of the Mercantile Self Direct Incentive Program Application.

- Vendors may use the words "Duke Energy's Mercantile Self Direct Incentive Program" in promotional materials or advertisements. Vendors may use the name Duke Energy in a text format to describe the Mercantile Self Direct Incentive Program, but are not permitted to use Duke Energy's logos.

- For Vendors who properly install the qualifying equipment, the equipment shall be installed and operating prior to an application being submitted. A percentage of each Vendor's installations will be subject to inspection by Duke Energy for verifying that the equipment is installed and operating. Vendors demonstrating high failure rates (based on a statistically significant sample) will have 100% of subsequent jobs inspected or may have their participation in the Mercantile Self Direct Incentive Program revoked by Duke Energy in it's sole discretion.

- Vendors shall provide customers with applicable equipment warranty information for all measures installed. Vendors shall provide the required documentation for customers to apply for the rebate (invoices with model numbers and quantities, specification sheets for installed equipment, etc.) and assist customers in filling out the application.

- Vendors shall comply with all applicable local, state, and federal laws and codes when performing installation and related functions.

- Duke Energy reserves the right to revoke a Vendor's participation in Mercantile Self Direct Incentive Program if, in Duke Energy's sole judgment, the Vendor fails to comply with the program's guidelines and requirements.

- Mercantile Self Direct Incentive Program offerings may be modified or terminated without prior notice. Check Duke Energy's Web site for current program status.

For more information, call **1-866.380.9580** or visit **www.duke-energy.com.**

Mercantile Self Direct Incentive Program

Technology	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*	**Technology**	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*
Lighting	☐	☐	Thermal Storage	☐	☐
Heating Ventilation & Cooling	☐	☐	Pumps/Motors/VFD's	☐	☐
Food Service	☐	☐	Chillers	☐	☐
Water Heating	☐	☐	Refrigeration	☐	☐
Process Equipment (air compressors, injection molding, etc.)	☐	☐	Window Film	☐	☐

* Check all that apply

Vendors who wish to be listed as a Mercantile Self Direct Incentive Program participating Vendor shall complete this form. A signed copy of this form must be on file at Duke Energy in order for the Vendor to receive incentive payments. Fax form to **513-419-5572** or email to SelfDirect@duke-energy.com.

I have read and understand the Mercantile Self Direct Incentive Program Requirements for Vendor Participation, and I agree to comply with all requirements set forth therein. By signing this agreement, I agree to provide my customers with information and documentation that is true and accurate to the best of my knowledge. I hereby represent and warrant that the Tax ID and Vendor Tax Status provided below are true and accurate. I agree that any confidential information concerning my customer, including but not limited to Duke Energy service account information, will be used for the sole purpose of facilitating the customer's participation in the Mercantile Self Direct Incentive Program. Further, I understand that I am responsible for making sure everyone working for me understands the requirements prior to soliciting customer participation.

Vendor Federal Tax ID Number	

To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a third-party vendor. The third-party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the third-party vendor have signed confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Vendor Tax Status	☐ Corporation	☐ Individual/Sole Proprietor	☐ Partnership	☐ Other

Contact me via	☐ Phone	☐ E-Mail	☐ Mail	

Company Name	
Mailing Address	
City, State, Zip	
Phone/Fax	
Primary E-mail Address	
Secondary E-mail Address	
Vendor Signature	
Title	
Print Name	
Date	

For more information, call 1-866-380-9580 or visit www.duke-energy.com.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Proposed energy efficiency measures may be eligible for Self-Direct Custom rebates if they clearly reduce electrical consumption and/or demand as compared to the appropriate baseline.

Before you complete this application, please note the following important criteria:

- Submitting this application does not guarantee a rebate will be approved.
- Rebates are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Incomplete applications cannot be reviewed; all fields are required.

Refer to the complete list of Instructions and Disclaimers, beginning on page 6.

Notes on the Application Process

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact your Duke Energy Ohio, Inc account manager or the Duke Energy Smart $aver® team at 1-866-380-9580.

Every application must include calculations of the baseline electrical usage and the electrical usage of the proposed high-efficiency equipment/system. Monthly calculations are best. You, the Duke Energy Ohio customer, or your equipment vendor / engineer should perform these calculations and submit them to Duke Energy for review. *We strongly encourage the use of modeling software (such as eQuest or comparable) for complex projects.*

Upon receipt of your application, an acknowledgement email will be sent to you with an estimated response time based on an initial assessment of your application. The application review may include some communication to resolve any questions about the project or to request additional information. Applications that are received complete without missing information have a faster review time.

There are two ways to submit your completed application.

Email your scanned form to: SelfDirect@duke-energy.com

Or, fax your form to 513-419-5572

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Duke Energy

1. Contact Information (Required)

Duke Energy Customer Contact Information							
Company Name	Kohls1 #10210						
Address	100 Cincinnati Mills Drive						
Project Contact	Marcello Crestani						
City	Cincinnati	State	OH	Zip Code	45240		
Title	Utility Manager						
Office Phone	215-732-4480 x 234	Mobile Phone		Fax	215-732-0477		
E-mail Address	mcrestani@realwinwin.com						

Equipment Vendor / Contractor / Architect / Engineer Contact Information					
Company Name					
Address					
City		State		Zip Code	
Project Contact					
Title					
Office Phone		Mobile Phone		Fax	
E-mail Address					
Describe Role					

Payment Information					
Payee Legal Company Name (as shown on Federal income tax return):	Kohl's Department Stores, INC.				
Mailing Address	PO Box #15787 (Dept. 61478)				
City	Philadelphia	State	PA	Zip Code	19103
Type of organization (check one) ☐ Individual/Sole Proprietor ☒ Corporation ☐ Partnership ☐ Unit of Government ☐ Non-Profit (non-corporation)					
Payee Federal Tax ID # of Legal Company Name Above:	13-3357362				
Who should receive incentive payment? (select one) ☒ Customer ☐ Vendor (Customer must sign below)					
If the vendor is to receive payment, please sign below: I hereby authorize payment of incentive directly to vendor: Customer Signature_____ Date_____ (mm/dd/yyyy)					

2. Project Information (Required)

A. Please indicate project type:
- ☐ New Construction
- ☐ Expansion at an existing facility
- ☐ Replacing equipment due to equipment failure
- ☐ Replacing equipment that is estimated to have remaining useful life of 2 years or less
- ☐ Replacing equipment that is estimated to have remaining useful life of more than 2 years
- ☐ Behavioral, operational and/or procedural programs/projects

B. Please describe your project, or attach a detailed project description that describes the project.

C. When did you start and complete implementation?
Start date / (mm/yyyy) End date / (mm/yyyy)

D. Are you also applying for Self-Direct Prescriptive incentives and, if so, which one(s)[1]?

E. Please indicate which worksheet(s) you are submitting for this application (check all that apply):
- ☐ Lighting
- ☐ Variable Frequency Drive (VFD)
- ☐ Compressed Air
- ☐ Energy Management System (EMS)
- ☐ General (for projects not easily submitted using one of the above worksheets)

F. Please tell us if there is anything about your electrical energy projections (either for the baseline or the proposed project) that you are either unsure about or for which you have made significant assumptions. Attach additional sheets as needed.

Required: Attach a supplier or contractor invoice or other equivalent information documenting the Implementation Cost for each project listed in your application. (Note: self-install costs cannot be included in the Implementation Cost)

[1] If your project involves some equipment that is eligible for prescriptive incentives and some equipment that is likely eligible for custom incentives, and if it is feasible to separate the equipment for the energy analysis, then the equipment will be evaluated separately. If it is not feasible to separate the equipment for analysis, then the equipment will be evaluated together in the custom application.

3. Signature (Required – must be signed by Duke Energy customer)

Customer Consent to Release of Personal Information

I, (insert name) Marcello Crestani, do hereby consent to Duke Energy disclosing my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number to its subcontractors solely for the purpose of administering Duke Energy Ohio's Mercantile Self-Direct Program. I understand that such subcontractors are contractually bound to otherwise maintain my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number in the strictest of confidence.

I realize that under the rules and regulations of the public utilities commission, I may refuse to allow Duke Energy Ohio, Inc to release the information set forth above. By my signature, I freely give Duke Energy Ohio, Inc permission to release the information designated above.

Application Signature

I certify that I meet the eligibility requirements of the Duke Energy Ohio, Inc Mercantile Self Direct Custom Incentives Program and that all information provided within this application is correct to the best of my knowledge. I agree to the terms and conditions set forth for this program. I certify that the numbers, energy savings, and responses shown on this form are correct. Further, I certify that the taxpayer identification number is current and correct. I am not subject to backup withholding because: (a) I am exempt from backup withholding; or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends; or (c) the IRS has notified me that I am no longer subject to backup withholding. I am a U.S. citizen (includes a U.S. resident alien).

Marcello Crestani

Duke Energy Ohio, Inc Customer Signature

Print Name Marcello Crestani

Date 10/24/2011

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Checklist for completing the Application

INCOMPLETE APPLICATIONS WILL RESULT IN DELAYS IN DUKE ENERGY PROCESSING YOUR APPLICATION AND NOTIFYING YOU CONCERNING AY REBATES. Before submitting the application and the required supplementary information, use the following checklist to ensure that your application is complete and the information in the application is accurate. (Note: this checklist is for your use only – do not submit this checklist with your application)

Section No. & Title	Have You:
1. Contact Information	☐ Completed the contact information for the Duke Energy customer? ☐ Completed the contact information for the equipment vendor / project engineer that can answer questions about the technical aspects of the project, if that is a different person than above?
2. Project Information	☐ Answered the questions A-E, including providing a description of your project. ☐ Completed and attached the lighting, compressed air, VFD, EMS and/or General worksheet(s)?
3. Signature	☐ Signed your name? ☐ Printed your name? ☐ Entered the date?
Supplementary information (Required)	☐ Attached a supplier or contractor's invoice or other equivalent information documenting the Implementation Cost for projects listed in your application? (Note: self-install costs cannot be included in the Implementation Cost) ☐ (If submitting the General Worksheet) attached calculations documenting the energy usage and energy savings for **each** project listed in your application?

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact:

- your Duke Energy account manager
  or,
- the Duke Energy Smart $aver® team at 1-866-380-9580.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Instructions/Terms/Conditions

Note: Please keep for your records- do not submit with the application

1. Energy service companies or contractors may assist in preparing the application, but an authorized representative of the customer must sign this application to be eligible to participate in the Mercantile Self Direct Program. Completion of this application does not guarantee the approval of a Self Direct Custom Rebate.

2. Once all documentation requested in this application is received by *Duke Energy Ohio, Inc,* and any follow-up information requested by *Duke Energy* is received, the rebate amount for each Energy Conservation Measure (ECM) will be communicated to the customer. The rebate amount will be based on ECM energy savings and ECM incremental installation cost.

3. All rebates require approval by the Public Utilities Commission of Ohio. *Duke Energy Ohio, Inc* will submit an application for rebate on the customer's behalf upon customer attestation to program terms, conditions and requirements as outlined in the rebate offer letter and upon customer completion of attestation documents required by the Public Utilities Commission of Ohio.

4. *Duke Energy Ohio, Inc* will issue a Self Direct Custom Rebate check, based on the approved rebate amount for each ECM, upon receiving approval from the Public Utilities Commission of Ohio. *Duke Energy* Ohio, Inc does not guarantee PUCO approval.

5. With the application, the customer must provide a list of all sites where the ECMs were installed. *Duke Energy Ohio, Inc* requests that sites of similar size, hours of operation and energy consuming characteristics be grouped together in one application for the determination of the rebate amount. The application should identify the site where each unique ECM was installed.

6. Based on the information submitted with the application and the information gathered both before and after the initial installation of the ECM, *Duke Energy Ohio, Inc* will calculate the rebate amount for each ECM.

7. *Duke Energy Ohio, Inc* may conduct random site inspections of a sample of the locations where the ECMs are installed to verify installation and operability of the ECMs and to obtain information needed to calculate the Approved Incentive Amount.

8. Customers are encouraged to retain copies of all forms, invoices and supporting documentation for their records.

9. Approved rebates are valid for 6 months from the date communicated to the customer by *Duke Energy Ohio, Inc,* subject to the expiration of measure eligibility based on project completion dates and application submission deadlines as defined by PUCO. Customers are encouraged to execute their rebate offer contracts and PUCO-required affidavits promptly to ensure eligibility is not forfeited.

10. *Duke Energy Ohio, Inc* reserves the right to recover all unrecoverable costs associated with the project approval if the customer decides not to execute the rebate contract, after the project is approved by *Duke Energy Ohio, Inc.*

11. Projects financially supported by other funding sources will be evaluated on a case-by-case basis for potential partial funding from *Duke Energy Ohio, Inc*.

12. Participants must be *Duke Energy Ohio, Inc* nonresidential, mercantile customers with the project sites in the *Duke Energy Ohio, Inc* service territory.

13. Customers or trade allies may not use any *Duke Energy* logo without prior written permission.

14. Only trade allies registered with *Duke Energy* are eligible to participate.

15. All equipment must be new. Used or rebuilt equipment is not eligible for incentives. All old existing equipment must be removed on retrofit projects.

16. Disclaimers: *Duke Energy Ohio, Inc*
    a. does not endorse any particular manufacturer, product or system design within the program;
    b. will not be responsible for any tax liability imposed on the customer as a result of the payment of incentives;
    c. does not expressly or implicitly warrant the performance of installed equipment. (Contact your contractor for details regarding equipment warranties.);
    d. is not responsible for the proper disposal/recycling of any waste generated or obsolete or old equipment as a result of this project;
    e. is not liable for any damage caused by the installation of the equipment nor for any damage caused by the malfunction of the installed equipment; and
    f. reserves the right to change or discontinue this program at any time. The acceptance of program applications is determined solely by *Duke Energy Ohio, Inc.*

amerlux
GLOBAL LIGHTING SOLUTIONS

Remit to:
23 Daniel Rd, East
Fairfield, NJ USA 07004
Phone (973) 882-5010, Fax (973) 882-8970

Invoice

Invoice Number	Invoice Date	Order Number	Order Date	Sales Representative
260818	23-MAY-11	122753	23-MAY-11	John Mamo
Customer No.	**Customer PO**		**Waybill No.**	**Ship Date**
15632	PUR-0000156306		AUTH#0141470F	23-MAY-11

TO: KOHL'S Corporation
N56 W17000 Ridgewood Drive,
Attn: Accounts Payable
,
Menomonee Falls, WI 53051
US

SHIP TO: KOHL'S Corporation
KOHL'S #10210-FOREST PARK,
100 CINCINNATI MILLS DR
CINCINNATI OH 45240-1244
US

	Line	Fixture Type	Description	UOM	Qty	Unit Price	Amount	Tax	Total
DNQ	1	WR	MCAV.39.T6.E.WT.120/277 U.WW.CL.WT.(OSRAM)	Each	159	161.00	25,760.00	0.00	25,760.00
DNQ	2	WRT	MCAV-39-T6-E-WT-120/277 U-SA-WT	Each	22	161.00	3,542.00	0.00	3,542.00
DNQ	3	Y	SVAII.39.T6.E.SDW.120/277 U.FL(OSRAM)	Each	75	171.50	12,862.50	0.00	12,862.50
DNQ	4	WL	HW46.39.T6.E.SDW.120/27 7U.WW.(OSRAM)	Each	7	209.00	1,463.00	0.00	1,463.00
	5	FL / NF / NFL	CNTRV34.32.LED.E.WT.TN 1W.120.NF.3000	Each	15	170.00	2,550.00	0.00	2,550.00
	6	NF / FL / NFL	CNTRV34.32.LED.E.WT.TN 1W.120.NF.3000	Each	87	170.00	15,300.00	0.00	15,300.00
DNQ	7	WS	CAVII.100.17.E.WT.120/277 U.WW.CL.(OSRAM)	Each	55	162.00	9,072.00	0.00	9,072.00
	8	39W LAMP	LAMP, 39W-T6-G12-SYLVANIA-MC 39T6/U/G12/830 #64363-1	Each	269	19.50	5,265.00	0.00	5,265.00
	9	100W LAMP	LAMP, 100W ED17 SYLVANIA # 64864 MC100/U/MED/830	Each	61	16.00	992.00	0.00	992.00
	10	TRACK	GLOBAL TRACK 1 CIRC. 120V 44" WHITE GES204-3	Each	71	19.00	1,387.00	0.00	1,387.00
	11	TRACK	GLOBAL TRACK 1 CIRC. 120V LIVE END WHITE GES11-3	Each	71	2.75	200.75	0.00	200.75
	12	TRACK	GLOBAL TRACK 1 CIRC.	Each	71	1.30	94.90	0.00	94.90

Amerlux is not responsible for any loss or damage as a result of shipping. Product returns will only be accepted if accompanied by an authorized RGA# issued by Amerlux. Payments not received within terms will be subject to an interest rate of 1.5% per month.

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GLOBAL LIGHTING SOLUTIONS

Remit to:
23 Daniel Rd, East
Fairfield, NJ USA 07004
Phone (973) 882-5010, Fax (973) 882-8970

		120V DEAD END WHITE GES41-3						
13	TRACK	GLOBAL TRACK 1 CIRC. 120V STRAIGHT CONN. WHITE GES21-3	Each	2	4.40	8.80	0.00	8.80
14	TRACK	GLOBAL TRACK 1 CIRC. 120V OUTLET BOX COVER WHITE GES15-3	Each	71	4.80	350.40	0.00	350.40
15	N-EXTERIOR TRIM	COOPER LIGHTING TRIM RING	Each	10	0.00	0.00	0.00	0.00

GST Registration No: 1001
PST Registration No: 723717

Term :NET 10

Freight Carrier:
BAY & BAY

Invoice Total:	78,848.35
Freight Total:	0.00
Tax Total:	0.00
PLEASE PAY THIS AMOUNT (in USD)	78,848.35

Amerlux is not responsible for any loss or damage as a result of shipping. Product returns will only be accepted if accompanied by an authorized RGA# issued by Amerlux. Payments not received within terms will be subject to an interest rate of 1.5% per month.

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ORIGINAL INVOICE

REPRINT BY BFW01

ORDER SHIPPED AND BILLED COMPLETE

LITHONIA LIGHTING
An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
07-07-2011	433492	16331468
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	07-07-2011	PUR174011	585-18240A-01

Invoice to : (2)

KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :

KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :

Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :

KOHLS STORE 10210
100 CINCINNATI MILLS DR
ATTN: WOODS CONSTRUCTION
CINCINNATI, OH 45240 US

Special Markings/Instructions :

Must be on job by: 7/8 (SHP 0)
Air next day Charge Distributor Authorized by BRIAN BLANK FOR KOHLS (SHP 0)
Man Shp Deliver to Construction Trailer (if one is on-site) (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	FEDP	473451798419	18240A	07-07-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit (1) Price	Extended Amount
1.000	LP6H 70M 120/277 OS DNQ	1	U HSG	784231065839	941289	3		3		73.53	220.59
2.000	6O8AZ	2	U TRM	784231167861	941129	3		3		12.06	36.18
3.000	MP70M/C/U SY U DNQ		U LMP	745973466421	555496	3		3		23.12	69.36
3	<-- Line Total					Quantity Total -->		9		Sub Total-->	326.13

Remittances are received by our banks who serve as clearing agents. They have no authority to determine whether or not the amount remitted constitutes payment in full. Remittances indicating payment in full will be deposited by the bank notwithstanding such markings and their action shall not confirm our acceptance of remittance as payment in full unless it actually constitutes payment of all sums owed.

End Use	Quote Number
024 - JOB	

Due date	Last Page
Net 05Th 09-2011	

Total Cart.	9	TAXES	36.74
Total Wt.	51	FREIGHT	239.12
		INVOICE TOTAL	601.99
		Cash Discount	

(1) Unit prices are valid for this invoice only. Line prices shown for consisting of lines, and for lump sum orders, are for the purpose of billing partial shipments only that are not intended for the purpose of reorder.
(2) Terms and conditions on file with customer.

Staple Here

ORIGINAL INVOICE

REPRINT BY BFW01

ORDER SHIPPED AND BILLED COMPLETE

LITHONIA LIGHTING
An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
07-05-2011	433492	16326594

Selling Rep	Entry Date	P.O. Number	Order Number
National Accounts - 585	06-20-2011	PUR172950	585-17621A-01

Invoice to : (2)

KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :

KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :

Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :

KOHL'S STORE #10210
100 CINCINNATI MILLS DR
ATTN: CONSTRUTION TRAILER
CINCINNATI, OH 45240 US

Special Markings/Instructions :

Call 810-533-2143 24 HRS B4 DEL Contact: MARK ARMSTRONG (SHP 0)
Man Shp MUST DELIVER BEFORE 2:30PM (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	UPS	1Z3213760371560452	17621A	07-05-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit (1) Price	Extended Amount
1.000	Z 1 14T5 MVOLT GEUSP DNQ	3	LC2	784231550007	208HFY	3		3		53.95	161.85
2.000	F21T5 LPSM835 J6	5	3' T5	745976361884	186TPJ	6		6		5.82	34.92
3.000	F28T5 LPSM835 J6	4	4' T5	745972290706	108WHW	6		6		4.85	29.10
4.000	Z 1 28T5 MVOLT GEUSP	1	LC4	745976845674	198VJ8	3		3		51.65	154.95
5.000	Z 1 21T5 MVOLT GEUSP DNQ	2	LC3	784231550014	208HG0	2		2		53.95	107.90
5	<-- Line Total					Quantity Total -->		20		Sub Total-->	488.72

Remittances are received by our banks who serve as clearing agents. They have no authority to determine whether or not the amount remitted constitutes payment in full. Remittances indicating payment in full will be deposited by the bank notwithstanding such markings and their action shall not confirm our acceptance of remittance as payment in full unless it actually constitutes payment of all sums owed.

End Use	Quote Number
024 - JOB	

Due date	Last Page
Net 03Th 09-2011	

Total Cart.	20	TAXES	31.76
Total Wt.	21	FREIGHT	0.00
		INVOICE TOTAL	520.48
		Cash Discount	

(1) Unit prices are valid for this invoice only. Line prices shown for consisting of lines, and for lump sum orders, are for the purpose of billing partial shipments only that are not intended for the purpose of reorder.
(2) Terms and conditions on file with customer.

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ORIGINAL INVOICE

REPRINT BY BFW01

ORDER SHIPPED AND BILLED COMPLETE

LITHONIA LIGHTING
An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
06-07-2011	433492	16270671
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	05-24-2011	PUR170250	585-16589A-02

Invoice to : (2)

KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :

KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :

Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :

KOHLS STORE #0210
100 CINCINNATI MILLS DR
ATTN: CONSTRUCTION TRAILER
CINCINNATI, OH 45240-1244 US

Special Markings/Instructions :

Call 810-533-2143 24 HRS B4 DEL Contact: MARK ARMSTRONG (SHP 0)
Man Shp MUST DELIVER BEFORE 2:30PM (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	HMES	10079362550	16589A	06-07-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit Price (1)	Extended Amount
1.000	Z 1 28T5 MVOLT GEUSP	1	LC4	745976845674	198VJ8	39		39		51.65	2014.35
2.000	Z 1 21T5 MVOLT GEUSP DNQ	2	LC3	784231550014	208HG0	8		8		53.95	431.60
3.000	Z 1 14T5 MVOLT GEUSP DNQ	3	LC2	784231550007	208HFY	3		3		53.95	161.85
4.000	F28T5 LPSM835 J40	4	4' T5	745972281698	108V5E	40		40		4.85	194.00
5.000	F21T5 LPSM835 J6	5	3' T5	745976361884	186TPJ	12		12		5.82	69.84
6.000	F14T5 LPSM835 J6	6	2' T5	745972289885	108WHX	6		6		5.58	33.48
6	<-- Line Total					Quantity Total -->		108		Sub Total-->	2905.12

Remittances are received by our banks who serve as clearing agents. They have no authority to determine whether or not the amount remitted constitutes payment in full. Remittances indicating payment in full will be deposited by the bank notwithstanding such markings and their action shall not confirm our acceptance of remittance as payment in full unless it actually constitutes payment of all sums owed.

Total Cart.	108	TAXES	188.83
Total Wt.	321	FREIGHT	0.00

End Use	Quote Number
024 - JOB	

(1) Unit prices are valid for this invoice only. Line prices shown for consisting of lines, and for lump sum orders, are for the purpose of billing partial shipments only that are not intended for the purpose of reorder.
(2) Terms and conditions on file with customer.

Due date	Last Page	INVOICE TOTAL	3093.95
Net 06Th 08-2011		Cash Discount	

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ORDER SHIPPED AND BILLED COMPLETE

LITHONIA LIGHTING
An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
05-23-2011	433492	16239910
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	04-20-2011	PUR160305	585-15230A-01

Invoice to : (2)

KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :

KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :

Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :

KOHLS STORE 0210 FOREST PARK
100 CINCINNATI MILLS DR
CINCINNATI, OH 45240 US

Special Markings/Instructions :

Must be on job by: 5/24 (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	HMES	10079360226	15230A	05-23-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit Price (1)	Extended Amount
1.000	2AV G 2 32 MDR MVOLT GEPIS LPSM835EX	1	D4	784231274262	206G6V	14		14		124.64	1744.96
2.000	2AV G 2 32 MDR MVOLT GEPIS EL14 LPSM835EX	2	D4E	784231274330	206G73	2		2		220.54	441.08
3.000	2AV G 2 17 MDR MVOLT GEPIS LPSM835EX	3	D2	784231274439	206G79	5		5		106.60	533.00
4.000	2AV G 2 17 MDR MVOLT GEPIS EL14 LPSM835EX	4	D2E	784231274569	206G5H	1		1		202.50	202.50
4	<-- Line Total					Quantity Total -->		22		Sub Total-->	2921.54

Remittances are received by our banks who serve as clearing agents. They have no authority to determine whether or not the amount remitted constitutes payment in full. Remittances indicating payment in full will be deposited by the bank notwithstanding such markings and their action shall not confirm our acceptance of remittance as payment in full unless it actually constitutes payment of all sums owed.

End Use	Quote Number
024 - JOB	

Total Cart.	22	TAXES	189.90
Total Wt.	16	FREIGHT	0.00
		INVOICE TOTAL	3111.44
		Cash Discount	

(1) Unit prices are valid for this invoice only. Line prices shown for consisting of lines, and for lump sum orders, are for the purpose of billing partial shipments only that are not intended for the purpose of reorder.
(2) Terms and conditions on file with customer.

Due date

Net 22Th 07-2011

Last Page

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ORIGINAL INVOICE **REPRINT BY BFW01**

LITHONIA LIGHTING
An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
05-16-2011	433492	16225207
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	04-08-2011	PUR158715	585-14817A-01

Invoice to : (2)
KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :
KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :
Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :
KOHLS STORE 0210
100 CINCINNATI MILLS DR
CINCINNATI, OH 45240 US

Special Markings/Instructions :
Must be on job by: 5/24 (SHP 0)
Call 810-533-2143 24 HRS B4 DEL Contact: Mark Armstrong (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	HMES	10079358298	14817A	05-16-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit Price (1)	Extended Amount
1.000	2ES8P 232 PDC 277 GEPIS LPSM835EX JP16	8	A	745976818647	198RPE	32		32		52.57	1682.24
2.000	2ES8P 232 PDC 277 GEPIS LPSM835EX	5	A	745976817954	198RH3	13		13		52.57	683.41
3.000	2ES8P 2U31 PDC 277 GEPIS S835EU JP32	9	B	745976818708	198RPF	96		96		54.34	5216.64
4.000	2ES8P 2U31 PDC 277 GEPIS S835EU	6	B	745976818395	198RH8	18		18		54.34	978.12
5.000	AW 3 32 MVOLT GEPISL LPSM835EX	11	R	745976835682	198U49	4		4		64.58	258.32
6.000	F25T8 LPSM835EX NACV J30	16	3'T8	784231002490	892829	30		30		2.44	73.20
7.000	F32T8 LPSM835EX NACV J30	14	4'T8	784231001530	726400	60		60		1.28	76.80
8.000	F17T8 LPSM835EX J30	15	2' T8	784231002056	798361	30		30		5.82	174.60
9.000	F28T5 LPSM835 J40	1	4'T5	745972281698	108V5E	120		120		4.85	582.00
10.000	F28T5 LPSM835 J6	2	4'T5	745972290706	108WHW	6		6		4.85	29.10
11.000	F21T5 LPSM835 J40	3	3'T5	745976145163	185V25	40		40		5.82	232.80
12.000	Z 2 28T5 MVOLT GEUSP	7	LD4/LR4	745976819873	198RLE	61		61		66.51	4057.11
13.000	Z 2 21T5 MVOLT GEUSP DNQ	10	LD3	745976822385	198T2N	20		20		68.81	1376.20
	Z5RASR46					6				11.82	70.92
	CONSISTING OF :										
14.000	Z5RASR46	4	LR REFL	745976277536	186M5U			4			
14.001	Z5RASR46	4	LR REFL	745976277536	186M5U			2			

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ORIGINAL INVOICE

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LITHONIA LIGHTING
An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
05-16-2011	433492	16225207
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	04-08-2011	PUR158715	585-14817A-01

Invoice to : (2)

KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :

KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :

Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :

KOHLS STORE 0210
100 CINCINNATI MILLS DR
CINCINNATI, OH 45240 US

Special Markings/Instructions :

Must be on job by: 5/24 (SHP 0)
Call 810-533-2143 24 HRS B4 DEL Contact: Mark Armstrong (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	HMES	10079358298	14817A	05-16-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit Price (1)	Extended Amount
15.000	GRSF 2/26-42TRT 8 MVOLT HSG J2	18	T HSG	745976986278	199GV6	6		6		23.26	139.56
16.000	AF 2 8WR TRT TRIM J4	20	T TRIM	745978594792	952341	4		4		24.55	98.20
17.000	AF 2 8WR TRT TRIM U	19	T TRIM	745978594785	952340	2		2		24.55	49.10
18.000	F42TRT/35 4PIN SY J2	17	T LAMPS	784231129449	936921	20		20		5.14	102.80
19.000	LQJ 13DTT MVOLT GECF	21	W	745973338599	202WU7	18		18		21.54	387.72
20.000	JO1AZ	22	W TRIM	784231044216	927262	18		18		15.36	276.48
21.000	F13DTT/35 4PIN SY J2	23	W	784231114667	936693	18		18		3.08	55.44
23.000	VL 204258-ALT1-34IN OAH	25	AC	745976368647	187AVT	2		2		1472.09	2944.18
24.000	Z8SMR48 SSR	26		745975694501	182RA9	2		2		11.57	23.14
25.000	Z 1 32 MVOLT GPHP LCHCV	27	LCHCV/	784231445181	207LL5	2		2		34.43	68.86
26.000	Z 1 32 MVOLT GEPIS LCHCV	28	LCHCV/L	784231040058	205L3U	6		6		17.61	105.66
27.000	Z 1 25 MVOLT GEPIS LCHCV	29	LCHCV/L	784231040065	205L3V	8		8		19.96	159.68
28.000	Z8LASR36 J4	30	L6/L3	784231067291	205LRJ	8		8		11.57	92.56
29.000	Z8LASR48 J4	31	L8/L4	784231067314	205LRK	4		4		11.57	46.28
30.000	Z8LASR48	32	L8/L4	784231049044	205L49	2		2		11.57	23.14

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ORIGINAL INVOICE **REPRINT BY BFW01**

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An AcuityBrands Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
05-16-2011	433492	16225207
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	04-08-2011	PUR158715	585-14817A-01

Invoice to : (2)
KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :
KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :
Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :
KOHLS STORE 0210
100 CINCINNATI MILLS DR
CINCINNATI, OH 45240 US

Special Markings/Instructions :
Must be on job by: 5/24 (SHP 0)
Call 810-533-2143 24 HRS B4 DEL Contact: Mark Armstrong (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	HMES	10079358298	14817A	05-16-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit (1) Price	Extended Amount
30	<-- Line Total					Quantity Total -->		656		Sub Total-->	20064.26

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End Use	Quote Number
024 - JOB	

Due date
Net 15Th 07-2011

Last Page

Total Cart.	657	TAXES 1304.16
Total Wt.	4052	FREIGHT 0.00
		INVOICE TOTAL 21368.42
		Cash Discount

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ORIGINAL INVOICE

REPRINT BY BFW01

ORDER SHIPPED AND BILLED COMPLETE

LITHONIA LIGHTING
An AcuityBrands, Company
Acuity Brands Lighting Inc.
One Lithonia Way, Conyers GA 30012, Phone: (770) 922-9000 Fax: (770) 388-0229

Invoice Date	Seller Reference Number	Invoice Number
05-16-2011	433492	16225208
Selling Rep	**Entry Date**	**P.O. Number**	**Order Number**
National Accounts - 585	04-08-2011	PUR158715	585-14817A-01

Invoice to : (2)

KOHLS DEPARTMENT STORE
ATTN ACCOUNTS PAYABLE
PO BOX 359
MILWAUKEE, WI 53201 US

Sold to :

KOHLS DEPARTMENT STORE
N56 W117000 Ridgewood Drive
MENOMONEE FALLS, WI 53051 US

Remit to :

Acuity Brands Lighting Inc.
P.O. Box 100863
Atlanta, GA 30384

Shipped To :

KOHLS STORE 0210
100 CINCINNATI MILLS DR
CINCINNATI, OH 45240 US

Special Markings/Instructions :

Must be on job by: 5/24 (SHP 0)
Call 810-533-2143 24 HRS B4 DEL Contact: Mark Armstrong (SHP 0)
Produce and Ship Complete (SHP 0)

Shipping Point	VIA	Pro Number	Bill of Lading No.	Date Shipped	Freight Terms
01 - Conyers Distribution Center	HMES	10079358298	14817A	05-16-2011	

Order Line	Catalog Number and Description	PO Line	Mark as	UPC	CICODE	Quantity Ordered	Quantity B.O.	Quantity Shipped	No. Cart.	Unit (1) Price	Extended Amount
22.000	10320K	24	JR-1	745975701773	182U4N	1		1		479.42	479.42
1	<-- Line Total					Quantity Total -->		1		Sub Total-->	479.42

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End Use	Quote Number
024 - JOB	

Due date
Net 15Th 07-2011

Last Page

Total Cart.	657	TAXES	31.16
Total Wt.	4052	FREIGHT	0.00
		INVOICE TOTAL	510.58
		Cash Discount	

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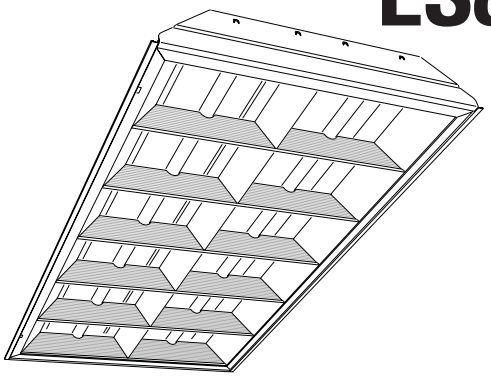
LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type **A**

FEATURES & SPECIFICATIONS

Energy-Saving T8 Lighting

ES8 2'x4'



2 Lamps
T8

INTENDED USE

ES8 provides an energy-saving alternative to 3-lamp, 18-cell parabolic fixtures. Used in place of parabolics, ES8 can provide 35% energy savings while easily meeting IESNA recommended illuminance levels. Ideal for retail, educational, and commercial applications requiring lighting power density of less than 0.7 watts/square foot.

ATTRIBUTES

Designed and optimized for use with T8 lamps and energy-efficient electronic ballasts.

Highly reflective surfaces combine with efficient design to produce up to 82% photometric efficiency and a Luminaire Efficacy Rating (LER) of up to 74 using high efficiency electronic ballasts and 700 series lamps using listed lamps and ballast.

CONSTRUCTION

Robust design, precision-tooling and automated assembly combine to create the industry's strongest louver. Rotary sockets provide for simple lamp insertion and positive engagement into lamp contacts. Mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed of cold-rolled steel.

FINISH

Five-stage iron-phosphate pre-treatment ensures superior paint adhesion and rust resistance. Housing painted with high gloss, high reflectivity baked white polyester.

Louver painted with low gloss, high reflectivity baked white polyester.

OPTICAL

Mechanical shielding is provided with angled length blades, and linear faceted cross baffles. Contoured housing efficiently directs light downward. Lamp cut-out maximizes shielding even in shallow plenum applications and softens light distribution to deliver a balanced amount of light to both vertical and horizontal surfaces.

ELECTRICAL SYSTEM

Standard ballast is high-efficiency, CEE qualified, instant-start, ≤10% THD, universal voltage and sound rated A.

Optional program-start and step-dimming ballasts available.

LISTING

Standard: UL, Optional: Canada – CSA or cUL. Mexico – NOM.

Specifications

Length: 48 (1218)

Width: 24 (609)

Depth: 3-11/16 (94)

Weight: 26 lbs (11.7 kg)

All dimensions are inches (millimeters) unless otherwise specified.

WARRANTY

Light fixture is guaranteed for one year against mechanical defects in manufacture.

US PATENTS: 6,210,025; 6,231,213, additional patents pending.

Specifications subject to change without notice.

ORDERING INFORMATION

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

Example: 2ES8 232 BINP

Series	Trim type	Number of lamps/wattage	Voltage	Ballast	Lamp	Options[4]
2ES8	(blank) **Lay-in grid**	**232 2-lamp, 32W T8 (48")**	(blank) **MVOLT**[1]	**BINP IS, high efficiency, .88 bf (normal)**	**L735 2800 lumen, 3500°K**	**EL Emergency battery pack (nominal 300 lumens)**
	F Overlapping flanged	Not included.	120	BILP IS, high efficiency, .78 bf (low)	L730 2800 lumen, 3000°K	**EL14 Emergency battery pack (nominal 1400 lumens)**
	MT Modular fit-in		277	BIHP IS, high efficiency, 1.20 bf (high)[2]	**L741 2800 lumen, 4100°K**	**PWS1836 6' prewire, 3/8" dia., 18-gauge, 3 wires**
			347	BSNP PS, step-dimming, high-efficiency, .88 bf (normal)[3]	L835HT8 3100 lumen, long life, 3500°K	QFC__ Quick-flex, fixture cable, factory installed prewired cable (RELOC)[5]
					L830HT8 3100 lumen, long life, 3000°K	BDP Ballast disconnect. Meets codes that require in-fixture disconnect
					L841HT8 3100 lumen, long life, 4100°K	CSA Listed and labeled to comply with Canadian standards
						NOM NOM Certified

NOTES:

1 MVOLT standard for 120V-277V applications. 50 or 60 hz operation. Some options require voltage specified.

2 CEE qualified ballast is not available in 347V.

3 Not available in 347V.

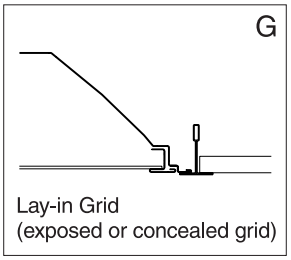
4 Other options available. Some options may increase fixture depth to 4-1/2".

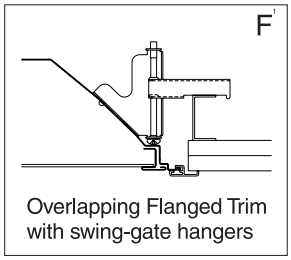
5 Must specify voltage.

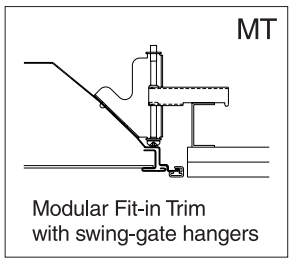
ES8 2'x4' Energy-Saving T8 Lighting

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options.



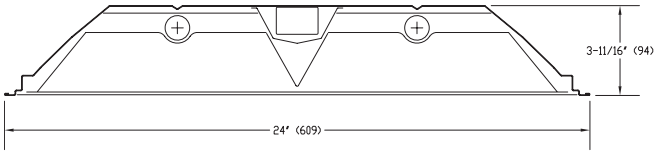




NOTE:

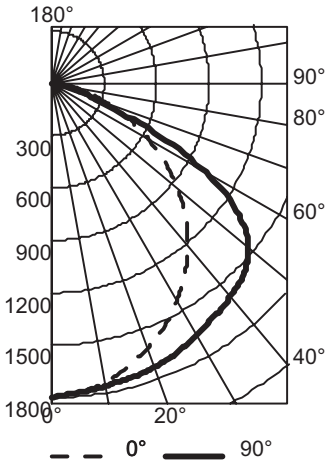
1 Recommended rough-in dimensions for F-trim fixtures 24"x48". (Tolerance is +1/4"-0".) Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

DIMENSIONS



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

ES8 232, 3100 lumens per lamp, test no. LTL 16080



Coefficients of Utilization

CP Summary			pf	20%								
			pc	80%			70%			50%		
	0°	90	pw	70%	50%	30%	50%	30%	10%	50%	30%	10%
0°	1797	1797	0	98	98	98	96	96	96	91	91	91
5°	1781	1778	1	90	86	83	84	81	79	81	79	76
15°	1683	1746	2	82	76	70	74	69	65	71	67	63
25°	1532	1700	3	75	66	60	65	59	54	63	58	53
35°	1331	1627	RCR 4	69	59	52	58	51	46	56	50	45
45°	1081	1551	5	63	52	45	52	45	40	50	44	39
55°	796	1310	6	58	47	40	46	39	34	45	39	34
65°	497	602	7	54	43	36	42	35	30	41	35	30
75°	219	167	8	50	39	32	38	32	27	37	31	27
85°	56	30	9	47	36	29	35	29	24	34	28	24
90	0	0	10	44	33	26	32	26	22	32	26	22

Zonal Lumen Summary

Zone		Lumens	% Lamp	% Fixture
0°	30°	1396	22.5	27.4
0°	40°	2311	37.3	45.3
0°	60°	4226	68.2	82.9
0°	90°	5099	82.2	100.0
90°	180°	0	0.0	0.0
0°	180°	5099	82.2	100.0

Efficiency: 82.2%

ENERGY AND LIGHT LEVEL COMPARISON							
System	**Light level**	**Input watts**	**Watts/SF**	**Watts saved**	**% Savings**	**$ Savings per year**	**LER**
Parabolic, (3) 2800 lumen T8 lamps .88 ballast factor	69	85	1.06	Base	Base	Base	65
ES8, (2) 2800 lumen T8 lamps, .88 ballast factor	51	55	0.69	30	35%	$9.60	74

Light level is calculated based on 8x10 mounting centers 9 foot ceilings, 60 x 60 room, 80/50/20 reflectances, .95 LLD, .90 LDD, horizontal light level on 2.5 foot workplane height.

Annual savings based on 4000 operating hours, $.08/kwh. Luminaire Efficacy Rating (LER) is fixture lumen output divided by fixture input wattage.

LITHONIA LIGHTING®

An AcuityBrands Company

Sheet #: 2ES8-2x4

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

Universal Lighting Technologies

TRIAD®
B232IUNVHE-A

ULTim8 A Triad® Brand

APPLICATION and PERFORMANCE SPECIFICATION

Description: High frequency electronic ballast for (1/2) F32T8, (1/2) F32T8ES, (1/2) F32T8ES-25W, (1/2) F28T8, (2) F25T8, (2) F17T8 and (1) F40T8 lamps. Also equivalent U-shaped lamps.

- Line Voltage: 108vac - 305vac, 50/60Hz
- Parallel Lamp Operation
- Instant Start
- Active Power Factor Correction

*60 Hz data

Lamp Type	Lamp #	Volts	Input Watts	Nominal Line Amps	Power Factor	Ballast Factor	Ballast Efficacy Factor	Harmonic Total	Crest Factor
F32T8	**2**	**120**	**55**	**0.45**	**>.95**	**.87**	**1.58**	**< 10%**	**< 1.7**
F32T8	**2**	**277**	**54**	**0.20**	**>.95**	**.87**	**1.61**	**< 10%**	**< 1.7**
F32T8	1	120	33	0.28	>.95	1.05	3.18	< 10%	< 1.7
F32T8	1	277	33	0.13	>.95	1.05	3.18	< 10%	< 1.7
F32T8ES	2	120	52	0.42	>.95	.87	1.67	< 10%	< 1.7
F32T8ES	2	277	51	0.19	>.95	.87	1.71	< 10%	< 1.7
F32T8ES	1	120	32	0.25	>.95	1.05	3.28	< 10%	< 1.7
F32T8ES	1	277	32	0.12	>.95	1.05	3.28	< 10%	< 1.7
F32T8ES (25W)	2	120	44	0.37	>.98	.87	1.98	< 10%	< 1.7
F32T8ES (25W)	2	277	43	0.16	>.98	.87	2.02	< 10%	< 1.7
F32T8ES (25W)	1	120	27	0.23	>.98	1.05	3.89	< 10%	< 1.7
F32T8ES (25W)	1	277	27	0.10	>.95	1.05	3.89	< 10%	< 1.7
F28T8	2	120	49	0.40	>.95	.87	1.78	<10%	<1.7
F28T8	2	277	48	0.18	>.95	.87	1.81	<10%	<1.7
F28T8	1	120	29	0.24	>.95	1.10	3.79	<10%	<1.7
F28T8	1	277	29	0.11	>.95	1.10	3.79	<10%	<1.7
F25T8	2	120	44	0.36	>.95	.88	2.00	< 10%	< 1.7
F25T8	2	277	44	0.16	>.95	.88	2.00	< 10%	< 1.7
F17T8	2	120	30	0.24	>.95	.90	3.00	< 10%	< 1.7
F17T8	2	277	30	0.12	>.95	.90	3.00	< 10%	< 1.7

Application and Performance Specification Information Subject to Change without Notification.

Performance:
- Meets ANSI Standard C82.11-1993
- Meets ANSI Standard C62.41-1991
- Meets FCC Part 18 (Class A) for EMI and RFI Non-Consumer Limits
- Meets CSA Standard 654 for Ballast Efficiency
- Anti-striation circuitry

Safety:
- No PCB's
- cULus

(Class P, Type 1 Outdoor, Type HL)

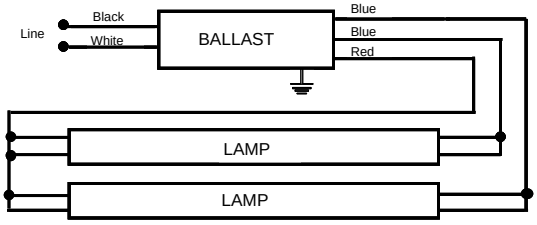
Application:
- Minimum Starting Temperature: 0° F, -18° C
  For ES & 28W Lamps: 60° F, 16° C
- Maximum Ambient Temperature: 105° F, 40° C
- Sound Rated: A
- Remote Mounting: 20 ft. max. lead length, 18 AWG
- No remote/tandem wiring for ES lamps

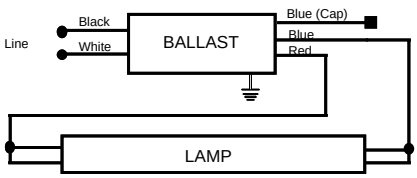
Physical Parameters

Length:	9.50"	
Width:	1.70"	
Height:	1.18"	
Weight:	1.70 lbs	
Lead Length:	Black, White	25" (+/-1")
	Red	48" (+/-1")
	Blue	31" (+/-1")

Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Cal**1-800-BALLASTx800** for technical assistance

Manufactured in North America





For one lamp application, individually cap blue leads, insulate to 600 volts

Ballast Must be Grounded

NEMA Premium

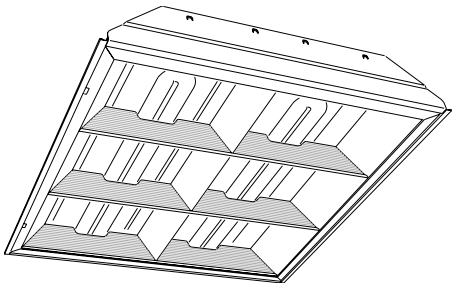
LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type **B**

FEATURES & SPECIFICATIONS

Premium Energy-Saving T8 Lighting

ES8P 2'x2'



2-U Lamps
T8

INTENDED USE

ES8P provides a T8 energy-saving alternative to 2-lamp compact fluorescent or 3-lamp parabolic fixtures. Used in place of parabolics, ES8P can provide 41% energy savings while meeting IESNA recommended illuminance levels. Ideal for retail, educational, and commercial applications requiring lighting power density as low as 0.73 watts/square foot.

ATTRIBUTES

Designed and optimized for use with high lumen T8 lamps and energy-efficient electronic ballasts.

Highly reflective surfaces combine with efficient design to produce up to 82% photometric efficiency and a Luminaire Efficacy Rating (LER) of up to 76 using listed lamps and ballast.

CONSTRUCTION

Robust design, precision-tooling, and automated assembly combine to create the industry's strongest louver. Mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed of cold-rolled steel.

FINISH

Five-stage iron-phosphate pre-treatment ensures superior paint adhesion and rust resistance. Housing painted after fabrication with environmentally friendly, high gloss, very high reflectivity polyester powder-coat.

Louver painted after fabrication with low gloss, high reflectivity polyester powder coat.

OPTICAL

Mechanical shielding is provided with angled length blades, and linear faceted cross baffles. Contoured housing efficiently directs light downward. Lamp cut-out maximizes shielding even in shallow plenum applications and softens light distribution to deliver a balanced amount of light to both vertical and horizontal surfaces.

ELECTRICAL SYSTEM

Standard ballast is high-efficiency, instant-start, ≤10% THD, universal voltage and sound rated A.

Optional program-start and step-dimming ballasts available.

LISTING

Standard: UL; Optional: Canada – CSA or cUL. Mexico – NOM.

Specifications

Length: 24 (609)

Width: 24 (609)

Depth: 3-11/16 (94)

Weight: 18 lbs (8.1 kg)

All dimensions are inches (millimeters) unless otherwise specified.

WARRANTY

Light fixture is guaranteed for one year against mechanical defects in manufacture.

Ballast is warranted for five years, and lamp is warranted for three years under system warranty terms provided by lamp and ballast manufacturer. For options see below.

US PATENTS: 6,210,025; 6,231,213, additional patents pending.

Specifications subject to change without notice.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: 2ES8P 2U31 BILP L835HT8

2ES8P		2U31					
Series	Trim type	Number of lamps/wattage	Voltage	Ballast	Lamp[4]	Options[5]	
2ES8P	(blank) **Lay-in grid**	**2U31 2-lamp, 31W T8 U (1-5/8" leg)**	(blank) **MVOLT**[1]	**BILP**	**IS, high efficiency, .79 bf (low)**	**L835HT8**	**2775 lumen, long life, 3500°K**	**EL**	**Emergency battery pack (nominal 300 lumens)**
	F Overlapping flanged		120	BINP	IS, high efficiency, .88 bf (normal)	L830HT8	2775 lumen, long life, 3000°K	**PWS1836**	**6' prewire, 3/8" dia., 18-gauge, 3 wires**
	MT Modular fit-in		277	BIHP	IS, high efficiency, 1.20 bf (high)[2]	**L841HT8**	**2775 lumen, long life, 4100°K**	QFC__	Quick-flex, fixture cable, factory installed prewired cable (RELOC)[6]
			347	BSNP	PS, step-dimming, high-efficiency, .88 bf (normal)[3]			BDP	Ballast disconnect. Meets codes that require in-fixture disconnect
								CSA	Listed and labeled to comply with Canadian standards
								NOM	NOM Certified

NOTES:

1 MVOLT standard for 120V - 277V applications. 50 or 60 hz operation. Some options require voltage specified.

2 347V not available with high-efficiency ballast.

3 Not available in 347V.

4 Required. All fixtures shipped with lamps installed.

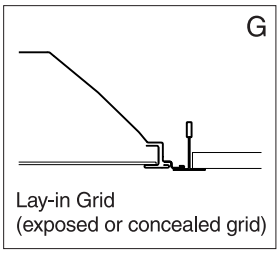
5 Other options available may increase fixture depth up to 6". Consult factory if plenum space is a concern.

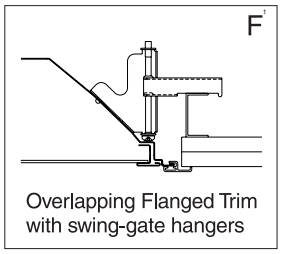
6 Must specify voltage.

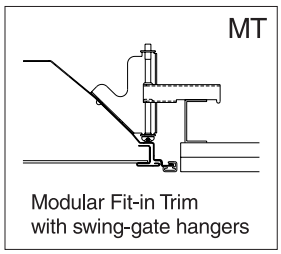
ES8P 2'x2' Premium Energy-Saving T8 Lighting

MOUNTING DATA

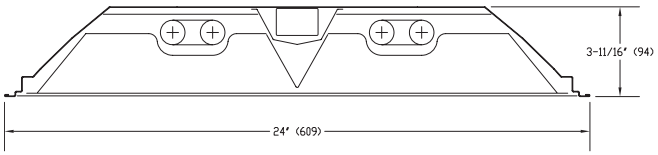
Continuous row mounting of flanged units requires CRE and CRM trim options.







DIMENSIONS

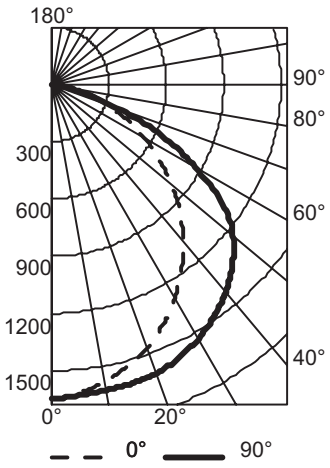


All dimensions are inches (millimeters) unless otherwise specified. Specifications subject to change without notice.

NOTE:

1 Recommended rough-in dimensions for F-trim fixtures 24"x 24". (Tolerance is +1/4"-0".) Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

2ES8P 2U31, 2775 lumens per lamp, test no. LTL 16076



Coefficients of Utilization

CP Summary			pf	20%								
	0°	90	pc	80%			70%			50%		
			pw	70%	50%	30%	50%	30%	10%	50%	30%	10%
0°	1643	1643	0	97	97	97	95	95	95	91	91	91
5°	1621	1635	1	90	86	83	84	81	78	81	78	76
15°	1531	1622	2	82	75	70	74	69	65	71	67	63
25°	1383	1578	3	75	66	60	65	59	54	62	57	53
35°	1185	1483	RCR 4	68	59	52	58	51	46	56	50	45
45°	952	1338	5	63	52	45	51	45	40	50	44	39
55°	690	1093	6	58	47	40	46	40	35	45	39	34
65°	430	637	7	54	43	36	42	35	31	41	35	30
75°	190	156	8	50	39	32	38	32	27	37	31	27
85°	49	26	9	47	36	29	35	29	24	34	28	24
90	0	0	10	44	33	26	33	26	22	32	26	22

Zonal Lumen Summary

Zone		Lumens	% Lamp	% Fixture
0°	30°	1275	23.0	28.1
0°	40°	2099	37.8	46.2
0°	60°	3746	67.5	82.5
0°	90°	4543	81.8	100.0
90°	180°	0	0.0	0.0
0°	180°	4543	81.8	100.0

Efficiency: 81.8%

ENERGY AND LIGHT LEVEL COMPARISON							
System	Light level	Input watts	Watts/SF	Watts saved	% Savings	$ Savings per year	LER
Parabolic, (3) 2775 lumen U31 T8 lamps .88 ballast factor	74	80	1.25	Base	Base	Base	58
ES8P, (2) 2775 lumen U31 T8 lamps, .79 ballast factor	56	47	0.73	33	41%	$10.56	76
ES8P, (2) 2775 lumen U31 T8 lamps, .88 ballast factor	62	53	0.83	27	34%	$8.64	75

Light level is estimate based on 8x8 mounting centers 9 foot ceilings, 60x60 room, 80/50/20 reflectances, .95 LLD, .90 LDD, horizontal light level on 2.5 foot workplane height.

Annual savings based on 4000 operating hours, $.08/kwh. Lumainare Efficacy Rating (LER) is fixture lumen output divided by fixture input wattage.

LITHONIA LIGHTING®
An AcuityBrands Company

Sheet #: 2ES8P-2x2-U

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

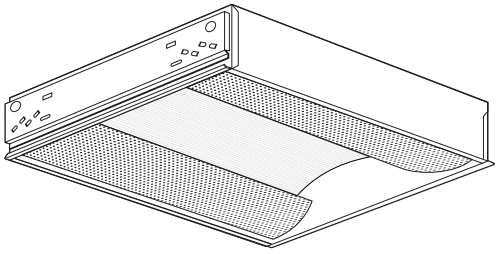
LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

Avante®
Direct/Indirect Lighting

2AV 2'x 2' SMD

SIDE-MOUNTED DIFFUSER
Linear Fluorescent
T8
2 or 4 lamps



FEATURES & SPECIFICATIONS

INTENDED USE — The Avante side-mounted diffuser is for use as general area lighting and for private offices. Especially suited for conference rooms, corridors and reception areas where soft distinctive lighting is required. **Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.**

CONSTUCTION — Housing is gloss white enamel on cold rolled steel. All edges hemmed or rounded.

All shieldings pivot on light traps and swing down for easy lamp access.

Molded light traps prevent light leaks between shielding and endplates.

OPTICS — Matte white polyester powder paint finished reflector provides uniform light distribution. Optional low brightness diffuse aluminum stepped reflector available.

All diffusers control direct light distribution and glare by shielding lamps from direct view.

Metal diffuser staggered round holes (MDR) 52% open perforated metal with .075" diameter holes backed with white acrylic diffuser.

Metal diffuser aligned mini slots (MDM) 46% open perforated metal backed with white acrylic diffuser.

ELECTRICAL — All ballasts supplied are class P, thermally protected, resetting, HPF, non-PCB, UL Listed. Ballasts are sound rated A. Standard combinations conform to UL 935.

INSTALLATION — Trims available for standard 1" and 9/16" tee bar or screw slot grids.

Fixtures can be row mounted end-to-end.

Drywall ceiling adapters available.

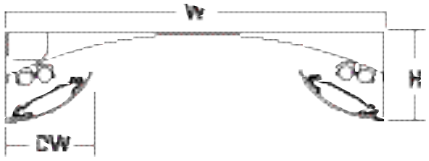
LISTINGS — UL Listed to US and Canadian safety standards. Chicago Plenum approved and NYC approved (see Options).

Avante is covered by one or more of the following patents: 5,988,829; 399,586; 411,641; 413,402; 2,212,513; 87,513.

NOTE: Specifications are subject to change without notice.

Specifications

Length: 24" (602)
Width: 24" (602)
Diffuser Width: 6" (153)
Depth: 5-1/2" (140)



All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: 2AV G 2 17 MDR SMD MVOLT GEB10IS

2AV

Series
2AV 2' wide

Trim type
G Grid trim
ST Screw slot

Number of lamps
2
4
Not included.

17

Lamp type
17 17W T8 (24")

Air function
(blank) **Static (no air function)**
A Air return/supply

Diffuser
MDR Metal diffuser, round holes
MDM Metal diffuser, mini slots
Others available.

SMD

Lamp distribution
SMD Side-mounted diffuser

Voltage
MVOLT[1]
347
Others available.

Options

GEB10IS	**Electronic ballast, ≤ 10% THD**
ALG	Acrylic litter guard[2]
EL14	**Emergency battery pack (nominal 300 lumens, see Life Safety section)**
GLR	Internal fast-blow fuse[3]
LP_	Lamped. Specify lamp type and color
PWS1836	**6' prewire, 3/8" dia., 18-gauge, 3 wires**
NY3	New York City approved
CP	Chicago Plenum approved

Reflector option

ASR	Aluminum stepped reflector

NOTES:
1 MVOLT (120 - 277 volt).
2 Refer to options and accessories tab for more detailed information.
3 Must specify voltage, 120 or 277.

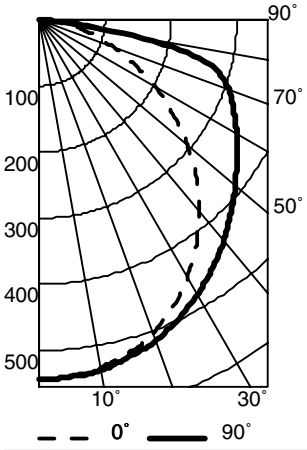
Accessories

Order as separate catalog number.

DGA22 Drywall ceiling adapter, unit installation. Use G trim plus DGA accessory for fixture trim flange and fixture support in plaster or plasterboard ceilings.

2AV 2x2 SMD Direct/Indirect Lighting

2AV G 2 17 MDR SMD, (2) 17W T8 lamps, 14000 lumens per lamp, s/m 1.2 (along) 1.3 (across), test no. LTL 11464



CP Summary

	0˚	90
0˚	543	543
5˚	540	541
15˚	521	527
25˚	480	500
35˚	416	458
45˚	337	411
55˚	247	366
65˚	159	326
75˚	84	272
85˚	19	45
90	0	0

Coefficients of Utilization

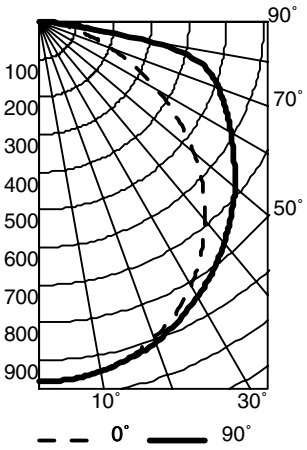
pf		20%								
pc		80%			70%			50%		
pw		70%	50%	30%	50%	30%	10%	50%	30%	10%
RCR	0	73	73	73	71	71	71	68	68	68
	1	66	63	60	61	59	56	59	57	55
	2	60	54	50	53	49	45	51	47	44
	3	54	47	42	46	41	37	44	40	37
	4	49	42	36	41	35	31	39	34	31
	5	45	37	31	36	31	27	35	30	26
	6	42	33	27	33	27	23	31	27	23
	7	39	30	24	30	24	20	29	24	20
	8	36	27	22	27	22	18	26	21	18
	9	34	25	20	25	20	16	24	19	16
	10	31	23	18	23	18	15	22	18	15

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0˚ - 30˚	424	15.1	24.7
0˚ - 40˚	697	24.9	40.6
0˚ - 60˚	1260	45.0	73.3
0˚ - 90˚	1718	61.3	100.0
90˚ - 180˚	0	0.0	0.0
0˚ - 180˚	1718	61.3	100.0

Efficiency: 61.3%

2AV G 4 17 MDR SMD, (4) 17W T8 lamps, 1325 lumens per lamp, s/m 1.3 (along) 1.3 (across), test no. LTL 9784



CP Summary

	0˚	90
0˚	956	956
5˚	955	953
15˚	923	926
25˚	859	879
35˚	754	809
45˚	617	726
55˚	453	635
65˚	280	550
75˚	139	459
85˚	39	82
90	0	0

Coefficients of Utilization

pf		20%								
pc		80%			70%			50%		
pw		70%	50%	30%	50%	30%	10%	50%	30%	10%
RCR	0	69	69	69	68	68	68	65	65	65
	1	63	60	57	58	56	53	56	54	52
	2	57	51	47	50	46	43	48	45	42
	3	51	45	40	44	39	35	42	38	34
	4	47	39	34	39	33	29	37	33	29
	5	43	35	29	34	29	25	33	28	25
	6	40	31	26	31	26	22	30	25	22
	7	37	28	23	28	23	19	27	22	19
	8	34	26	21	25	21	17	25	20	17
	9	32	24	19	23	19	15	23	18	15
	10	30	22	17	22	17	14	21	17	14

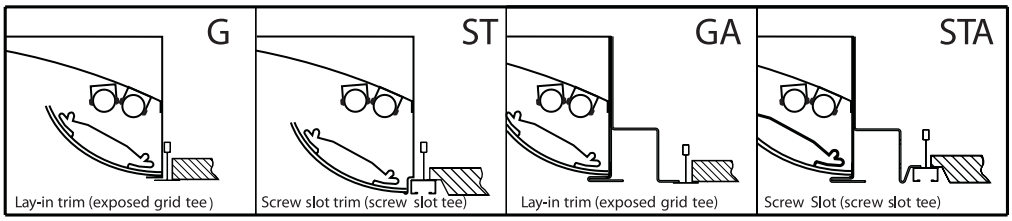
Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0˚ - 30˚	751	14.2	24.3
0˚ - 40˚	1239	23.4	40.1
0˚ - 60˚	2250	42.5	72.8
0˚ - 90˚	3092	58.3	100.0
90˚ - 180˚	0	0.0	0.0
0˚ - 180˚	3092	58.3	100.0

Efficiency: 58.3%

MOUNTING DATA

Ceiling Type	Appropriate Trim Type
Exposed grid tee (1' and 9/16")	**G**
Concealed grid tee	**G**
Screw slot	**ST**
Plaster or plasterboard	**G***



*DGA accessory available to provide ceiling trim flange and fixture support for plaster or plasterboard ceiling. Recommended rough-in dimensions for DGA installation is 24-3/4" x 24-3/4" (Tolerance is +1/8", -0").

LITHONIA LIGHTING®
An AcuityBrands Company

Lithonia Lighting
Fluorescent
One Lithonia Way, Conyers, GA 30012
Phone: 800-858-7763 Fax: 770-929-8789
www.lithonia.com

Sheet #: 2AV 2x2 SMD T8

TRIAD®

B332IUNVHE-A

APPLICATION and PERFORMANCE SPECIFICATION

Description: High frequency electronic ballast for (3/2) F32T8, (3/2) F32T8ES, (3/2) F28T8, (2) F40T8, (3/2) F25T8ES-25W, (3) F25T8, and (3) F17T8. Also equivalent U-shaped lamps.

- Line Voltage: 108vac - 305vac, 50/60Hz
- Parallel Lamp Operation
- Instant Start
- Active Power Factor Correction

*60 Hz data

Lamp Type	Lamp #	Volts	Input Watts	Nominal Line Amps	Power Factor	Ballast Factor	Ballast Efficacy Factor	Harmonic Total	Crest Factor
F32T8	**3**	**120**	**83**	**0.70**	**> .99**	**.87**	**1.05**	**< 10%**	**< 1.7**
F32T8	**3**	**277**	**81**	**0.30**	**> .98**	**.87**	**1.07**	**< 10%**	**< 1.7**
F32T8	2	120	64	0.53	> .99	.99	1.55	< 10%	< 1.7
F32T8	2	277	63	0.23	> .98	.99	1.57	< 10%	< 1.7
F32T8ES	3	120	79	0.65	> .99	.87	1.10	< 10%	< 1.7
F32T8ES	3	277	77	0.28	> .98	.87	1.13	< 10%	< 1.7
F32T8ES	2	120	59	0.49	> .99	.99	1.68	< 10%	< 1.7
F32T8ES	2	277	57	0.21	> .97	.99	1.74	< 10%	< 1.7
F32T8ES (25W)	3	120	66	0.56	> .98	.87	1.32	< 10%	< 1.7
F32T8ES (25W)	3	277	65	0.24	> .95	.87	1.34	< 10%	< 1.7
F32T8ES (25W)	2	120	51	0.43	> .98	.99	1.94	< 10%	< 1.7
F32T8ES (25W)	2	277	50	0.19	> .95	.99	1.98	< 10%	< 1.7
F28T8	3	120	75	0.60	> .99	.87	1.16	< 10%	< 1.7
F28T8	3	277	73	0.26	> .98	.87	1.19	< 10%	< 1.7
F28T8	2	120	54	0.45	> .99	.99	1.83	< 10%	< 1.7
F28T8	2	277	53	0.19	> .97	.99	1.87	< 10%	< 1.7
F40T8	2	120	77	0.64	> .99	.99	1.29	< 10%	< 1.7
F40T8	2	277	75	0.27	> .98	.99	1.32	< 10%	< 1.7
F25T8	3	120	67	0.56	> .99	.90	1.34	< 10%	< 1.7
F25T8	3	277	66	0.24	> .98	.90	1.36	< 10%	< 1.7
F17T8	3	120	46	0.39	> .99	.92	2.00	< 10%	< 1.7
F17T8	3	277	46	0.17	> .97	.92	2.00	< 10%	< 1.7

Application and Performance Specification Information Subject to Change without Notification.

Performance:
- Meets ANSI Standard C82.11-1993
- Meets ANSI Standard C62.41-1991
- Meets FCC Part 18 (Class A) for EMI and RFI Non-Consumer Limits
- Anti-striation circuitry

Safety:
- No PCB's
- cULus

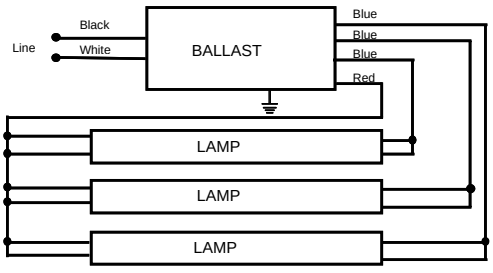
(Class P, Type 1 Outdoor, Type HL)

Application:
- Minimum Starting Temperature: 0° F, -18° C
  For ES & 28W Lamps: 60° F, 16° C
- Maximum Ambient Temperature: 105° F, 40° C
- Sound Rated: A
- Remote Mounting: 20 ft. max. lead length, 18 AWG
- No remote/tandem wiring for ES lamps

Physical Parameters

Length:	9.50"	
Width:	1.70"	
Height:	1.18"	
Weight:	1.7 lbs.	
Lead Length:	White, Black	25" (± 1")
	Red	48" (± 1")
	Blue	31" (± 1")

Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Call **1-800-BALLASTx800** for technical assistance
Manufactured in North America



Note: For two lamp application, cap one blue lead, insulate to 600 volts

Ballast Must be Grounded

KOHL'S

expect **great** things

CORPORATE OFFICES ● N56 W17000 RIDGEWOOD DRIVE ● MENOMONEE FALLS, WISCONSIN 53051 ● (262) 703-7000

LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

FEATURES & SPECIFICATIONS

INTENDED USE

Intended for unit or row installations, surface or suspended mounting.

ATTRIBUTES

Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION

Standard channel, die formed from Code-guage steel.

Sturdy Channel cover secured by captive quarter turnlatch for easy access to wireway.

End plate and channel connector furnished with each fixture.

Housing formed from Cold rolled steel.

FINISH

Five Stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

Painted parts finished with high-gloss, baked white polyester.

ELECTRICAL SYSTEM

Thermally-protected, resetting, Class P, UL Listed, CSA Certified ballast is standard.

Available in Tandem wired lengths.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTING

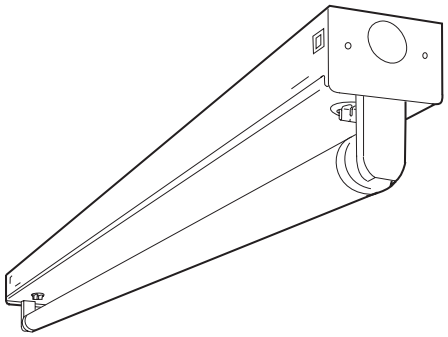
UL Listed to US and Canadian safety standards. Optional: Mexico NOM.

WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Standard Strip

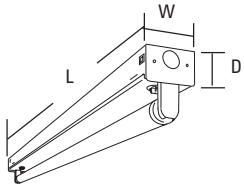
S



Linear Lamp and Compact Fluorescent
1 Lamp

Specifications

Length: 18 (457), 24 (610)
36 (914), 48 (1219)
72 (1829) or 96 (2438)
Width: 2-3/4 (70)
Depth: 1-3/4 (45)
All dimensions are inches (millimeters).



ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: S 1 32 MVOLT GEB10IS

Series	Number of lamps	Lamp type	Voltage	Options
S	**1**			
S Standard strip[1]	**1**	25 25W T8 (36")	120	**GEB10IS T8 electronic ballast, ≤ 10% THD, instant start (T8 only)**
For tandem double-length unit, add prefix T. Example: TS	Not included	CF27 27W TT5 (15")	277	GEB10RS T8 electronic ballast, ≤ 10% THD, rapid start
		17 17W T8 (24")	347	BILP IS High-efficiency .78 bf (low)
		32 32W T8 (48")	**MVOLT**	GEB Electronic ballasts, ≤20% THD.
		CF39 39W TT5 (18")	Others available	GLR Internal fast-blow fuse (add X for external)
		CF40 40W TT5 (24")		GMF Internal slow-blow fuse (add X for external)
		50T8 40W T8 (60")		CS3 6' cordset, NEMA L5-15P SJT, twist-lock plug, 120V
				PLF__ Plug in wiring, specify number of branch circuits and hot wires (A-black, B-Red, C-Blue, AB or AC)
				NOM NOM Certified

Accessories

Order as separate catalog numbers.

SQ_	Swivel-stem hanger (specify length in 2" increments).
1B	Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).
WGS	Wireguard, 4' white, for unshielded S strip.[1]
WGSSMR	Wireguard, 4' white, for S strip with SSMR reflector.[1]
WGSASR	Wireguard, 4' white, for S strip with SASR reflector.[1]
SSMR 48WH	Symmetric reflector, 4' white. [1]
SASR 48WH	Asymmetric reflector, 4' white.[1]
S48WG	Wireguard, 4' white, Canada only
SSMRCF 24WH	Symmetric reflector, 2' white.*
SASRCF 24WH	Asymmetric reflector, 2' white.*
TSASRCF 24WH	Asymmetric reflector, 2' white, for TS 1 CF18.*

*Other lengths available. Replace **24** in catalog number with length in inches. Other finishes available. Replace **WH** in catalog number with **SSR** or other finish.

NOTES:
1 Order two for 8' fixtures.

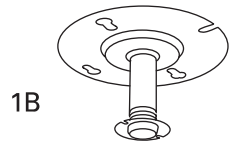
MOUNTING DATA

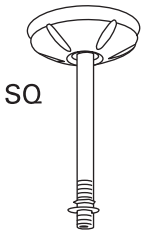
For unit or row installation, surface or stem mounting.

Unit installation — Minimum of two hangers required.

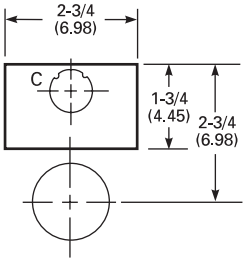
Row installation — One hanger per channel plus one per row required.

See ACCESSORIES below for hanging devices.





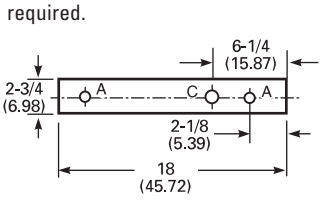
DIMENSIONS

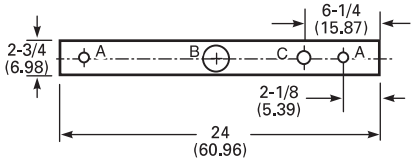


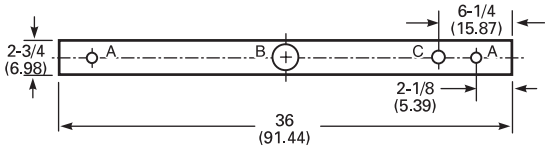
A = 11/16 (1.74) Dia. K.O.

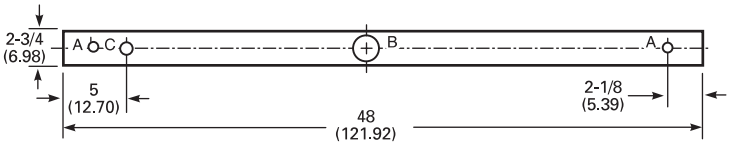
B = 2 (5.08) Dia. K.O.

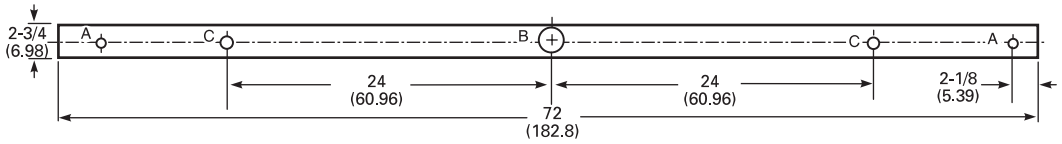
C = 7/8 (2.22) Dia. K.O.

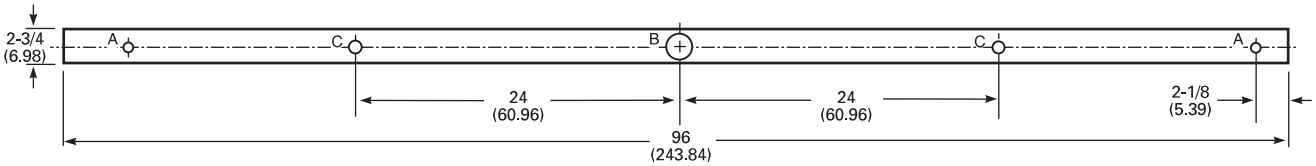












PHOTOMETRICS

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.

S 1 32

Report LTL 5725

S/MH (along) 1.2 (across) 1.6

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
1	97	91	86	92	87	82	79	75	72
2	87	77	70	82	74	67	67	61	56
3	78	67	58	74	64	56	58	52	46
4	71	59	50	67	56	48	51	44	38
5	65	51	42	61	49	41	45	37	32
10	43	30	22	41	28	21	26	20	15

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	388	13.4	13.9
0-40	660	22.8	23.7
0-60	1307	45.1	46.9
0-90	2176	75.0	78.1
90-180	609	21.0	21.9
0-180	2786	96.1	100.0

Energy (Calculated in accordance with NEMA standard LE-5)

LER.FL	ANNUAL ENERGY COST*	LAMP DESCR PTION	LAMP UMENS	BALLAST FACTOR	INPUT WATTS
94.7	$2.53	(1) F3278/735	2800	.88	25

* Comparative yearly lighting energy cost per 1000 lumens

LITHONIA LIGHTING®

An AcuityBrands Company

Sheet #: S-TT5-T8

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

LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

FEATURES & SPECIFICATIONS

INTENDED USE

Intended for unit or row installations, surface or suspended mounting.

ATTRIBUTES

Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION

Standard channel, die formed from Code-guage steel.

Sturdy Channel cover secured by captive quarter turnlatch for easy access to wireway.

End plate and channel connector furnished with each fixture.

Housing formed from Cold rolled steel.

FINISH

Five Stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

Painted parts finished with high-gloss, baked white polyester.

ELECTRICAL SYSTEM

Thermally-protected, resetting, Class P, UL Listed, CSA Certified ballast is standard.

Available in Tandem wired lengths.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTING

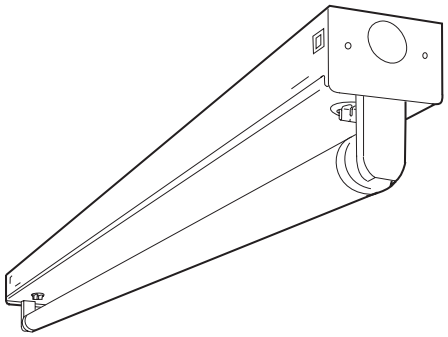
UL Listed to US and Canadian safety standards. Optional: Mexico NOM.

WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Standard Strip

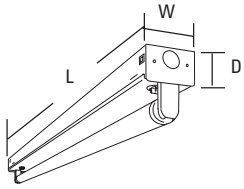
S



Linear Lamp and Compact Fluorescent
1 Lamp

Specifications

Length: 18 (457), 24 (610)
36 (914), 48 (1219)
72 (1829) or 96 (2438)
Width: 2-3/4 (70)
Depth: 1-3/4 (45)
All dimensions are inches (millimeters).



ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: S 1 32 MVOLT GEB10IS

Series	Number of lamps	Lamp type	Voltage	Options
S	**1**			
S Standard strip[1]	**1**	25 25W T8 (36")	120	**GEB10IS T8 electronic ballast, ≤ 10% THD, instant start (T8 only)**
For tandem double-length unit, add prefix T. Example: TS	Not included	CF27 27W TT5 (15")	277	GEB10RS T8 electronic ballast, ≤ 10% THD, rapid start
		17 17W T8 (24")	347	BILP IS High-efficiency .78 bf (low)
		32 32W T8 (48")	**MVOLT**	GEB Electronic ballasts, ≤20% THD.
		CF39 39W TT5 (18")	Others available	GLR Internal fast-blow fuse (add X for external)
		CF40 40W TT5 (24")		GMF Internal slow-blow fuse (add X for external)
		50T8 40W T8 (60")		CS3 6' cordset, NEMA L5-15P SJT, twist-lock plug, 120V
				PLF__ Plug in wiring, specify number of branch circuits and hot wires (A-black, B-Red, C-Blue, AB or AC)
				NOM NOM Certified

Accessories

Order as separate catalog numbers.

SQ_	Swivel-stem hanger (specify length in 2" increments).
1B	Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).
WGS	Wireguard, 4' white, for unshielded S strip.[1]
WGSSMR	Wireguard, 4' white, for S strip with SSMR reflector.[1]
WGSASR	Wireguard, 4' white, for S strip with SASR reflector.[1]
SSMR 48WH	Symmetric reflector, 4' white. [1]
SASR 48WH	Asymmetric reflector, 4' white.[1]
S48WG	Wireguard, 4' white, Canada only
SSMRCF 24WH	Symmetric reflector, 2' white.*
SASRCF 24WH	Asymmetric reflector, 2' white.*
TSASRCF 24WH	Asymmetric reflector, 2' white, for TS 1 CF18.*

*Other lengths available. Replace **24** in catalog number with length in inches. Other finishes available. Replace **WH** in catalog number with **SSR** or other finish.

NOTES:
1 Order two for 8' fixtures.

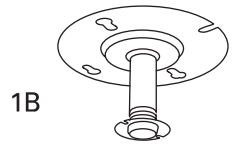
MOUNTING DATA

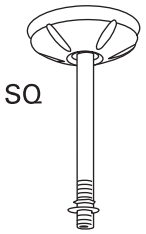
For unit or row installation, surface or stem mounting.

Unit installation — Minimum of two hangers required.

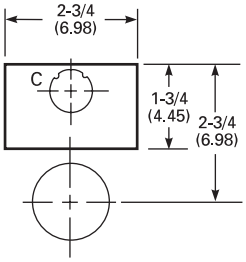
Row installation — One hanger per channel plus one per row required.

See ACCESSORIES below for hanging devices.





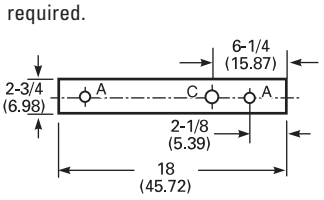
DIMENSIONS

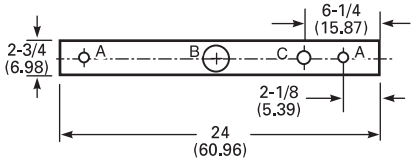


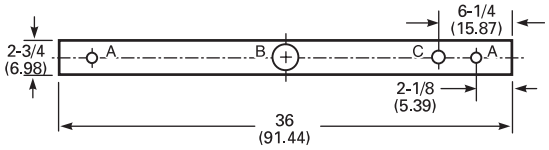
A = 11/16 (1.74) Dia. K.O.

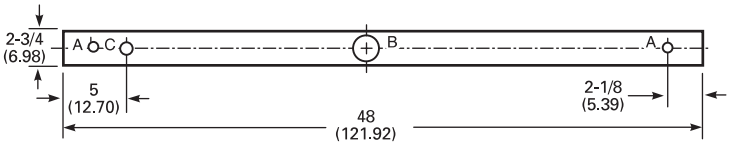
B = 2 (5.08) Dia. K.O.

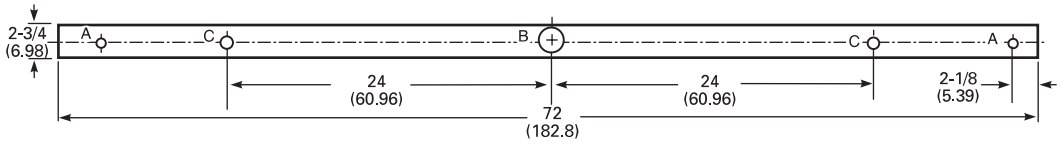
C = 7/8 (2.22) Dia. K.O.

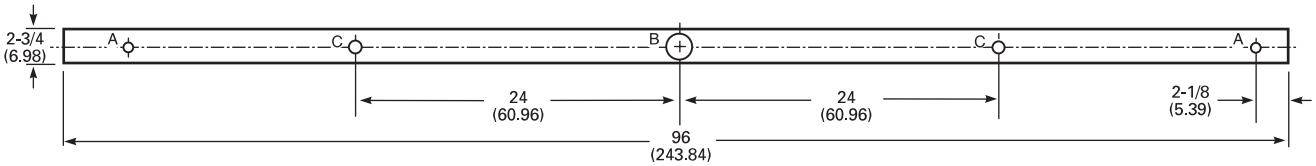












PHOTOMETRICS

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.

S 1 32

Report LTL 5725

S/MH (along) 1.2 (across) 1.6

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
1	97	91	86	92	87	82	79	75	72
2	87	77	70	82	74	67	67	61	56
3	78	67	58	74	64	56	58	52	46
4	71	59	50	67	56	48	51	44	38
5	65	51	42	61	49	41	45	37	32
10	43	30	22	41	28	21	26	20	15

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	388	13.4	13.9
0-40	660	22.8	23.7
0-60	1307	45.1	46.9
0-90	2176	75.0	78.1
90-180	609	21.0	21.9
0-180	2786	96.1	100.0

Energy (Calculated in accordance with NEMA standard LE-5)

LER.FL	ANNUAL ENERGY COST*	LAMP DESCR PTION	LAMP UMENS	BALLAST FACTOR	INPUT WATTS
94.7	$2.53	(1) F3278/735	2800	.88	25

* Comparative yearly lighting energy cost per 1000 lumens

LITHONIA LIGHTING®

An AcuityBrands Company

Sheet #: S-TT5-T8

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

Universal Lighting Technologies

TRIAD®

B132IUNVHE-A

ULTim8 A Triad® Brand

APPLICATION and PERFORMANCE SPECIFICATION

Description: High frequency electronic ballast for (1) F32T8 and others as indicated below. Also equivalent U-shaped lamps.

- Line Voltage: 108vac - 305vac, 50/60Hz
- Parallel Lamp Operation
- Instant Start
- Active Power Factor Correction

*60 Hz data

Lamp		Volts	Input	Nominal	Power	Ballast	Ballast Efficacy	Harmonic	Crest
Type	#		Watts	Line Amps	Factor	Factor	Factor	Total	Factor
F32T8	**1**	**120**	**28**	**0.24**	**>.98**	**.87**	**3.11**	**< 10%**	**< 1.7**
F32T8	**1**	**277**	**28**	**0.12**	**>.95**	**.87**	**3.11**	**< 10%**	**< 1.7**
F32T8ES	1	120	26	0.22	>.98	.87	3.35	< 10%	< 1.7
F32T8ES	1	277	26	0.11	>.95	.87	3.35	< 10%	< 1.7
F32T8ES (25W)	1	120	23	0.19	>.98	.87	3.78	< 10%	< 1.7
F32T8ES (25W)	1	277	23	0.09	>.95	.87	3.78	< 10%	< 1.7
F28T8	1	120	24	0.20	>.98	.87	3.63	< 10%	< 1.7
F28T8	1	277	24	0.10	>.95	.87	3.63	< 10%	< 1.7
F25T8	1	120	22	0.18	>.98	.89	4.05	< 10%	< 1.7
F25T8	1	277	22	0.10	>.95	.89	4.05	< 10%	< 1.7
F17T8	1	120	16	0.13	>.98	.90	5.63	< 10%	< 1.7
F17T8	1	277	16	0.07	>.90	.90	5.63	< 10%	< 1.7
F40T8	1	120	35	0.30	>.98	.86	2.46	< 10%	< 1.7
F40T8	1	277	35	0.14	>.95	.86	2.46	< 10%	< 1.7

Application and Performance Specification Information Subject to Change wi hout Notification.

Performance:
- Meets ANSI Standard C82.11-1993
- Meets ANSI Standard C62.41-1991
- Meets FCC Part 18 (Class A) for EMI and RFI Non-Consumer Limits
- Anti-striation circuitry

Safety:
- No PCB's
- cULus

(Class P, Type 1 Outdoor, Type HL)

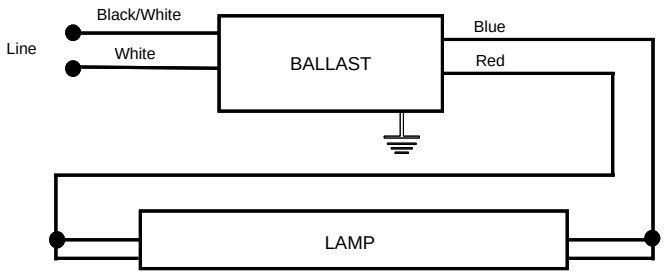
Application:
- Minimum Starting Temperature: 0° F, -18° C
  For ES & 28W Lamps: 60° F, 16° C
- Maximum Ambient Temperature: 105° F, 40° C
- Sound Rated: A
- Remote Mounting: 20 ft. max. lead length, 18 AWG
- No remote/tandem wiring for ES lamps

Physical Parameters

Length:	9.50"	
Width:	1.70"	
Height:	1.18"	
Weight:	1.70 lbs	
Lead Length:	Black, White	25" (+/-1")
	Red	48" (+/-1")
	Blue	31" (+/-1")

Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Call **1-800-BALLASTx800** for technical assistance.

Manufactured in North America



Ballast Must be Grounded

NEMA Premium

LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

FEATURES & SPECIFICATIONS

INTENDED USE

Intended for unit or row installations, surface or suspended mounting.

ATTRIBUTES

Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION

Standard channel, die formed from Code-guage steel.

Sturdy Channel cover secured by captive quarter turnlatch for easy access to wireway.

End plate and channel connector furnished with each fixture.

Housing formed from Cold rolled steel.

FINISH

Five Stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

Painted parts finished with high-gloss, baked white polyester.

ELECTRICAL SYSTEM

Thermally-protected, resetting, Class P, UL Listed, CSA Certified ballast is standard.

Available in Tandem wired lengths.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTING

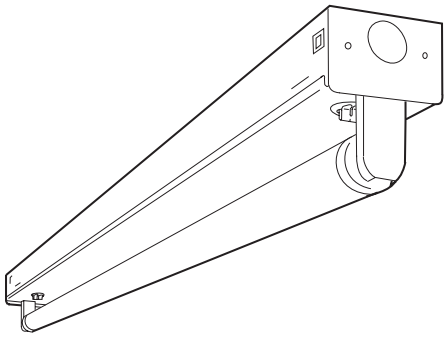
UL Listed to US and Canadian safety standards. Optional: Mexico NOM.

WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Standard Strip

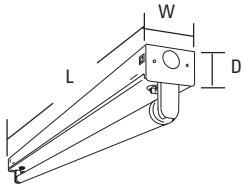
S



Linear Lamp and Compact Fluorescent
1 Lamp

Specifications

Length: 18 (457), 24 (610)
36 (914), 48 (1219)
72 (1829) or 96 (2438)
Width: 2-3/4 (70)
Depth: 1-3/4 (45)
All dimensions are inches (millimeters).



ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: S 1 32 MVOLT GEB10IS

Series	Number of lamps	Lamp type	Voltage	Options
S	**1**			
S Standard strip[1]	**1**	25 25W T8 (36")	120	**GEB10IS T8 electronic ballast, ≤ 10% THD, instant start (T8 only)**
For tandem double-length unit, add prefix T. Example: TS	Not included	CF27 27W TT5 (15")	277	GEB10RS T8 electronic ballast, ≤ 10% THD, rapid start
		17 17W T8 (24")	347	BILP IS High-efficiency .78 bf (low)
		32 32W T8 (48")	**MVOLT**	GEB Electronic ballasts, ≤20% THD.
		CF39 39W TT5 (18")	Others available	GLR Internal fast-blow fuse (add X for external)
		CF40 40W TT5 (24")		GMF Internal slow-blow fuse (add X for external)
		50T8 40W T8 (60")		CS3 6' cordset, NEMA L5-15P SJT, twist-lock plug, 120V
				PLF__ Plug in wiring, specify number of branch circuits and hot wires (A-black, B-Red, C-Blue, AB or AC)
				NOM NOM Certified

Accessories

Order as separate catalog numbers.

SQ_	Swivel-stem hanger (specify length in 2" increments).
1B	Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).
WGS	Wireguard, 4' white, for unshielded S strip.[1]
WGSSMR	Wireguard, 4' white, for S strip with SSMR reflector.[1]
WGSASR	Wireguard, 4' white, for S strip with SASR reflector.[1]
SSMR 48WH	Symmetric reflector, 4' white. [1]
SASR 48WH	Asymmetric reflector, 4' white.[1]
S48WG	Wireguard, 4' white, Canada only
SSMRCF 24WH	Symmetric reflector, 2' white.*
SASRCF 24WH	Asymmetric reflector, 2' white.*
TSASRCF 24WH	Asymmetric reflector, 2' white, for TS 1 CF18.*

*Other lengths available. Replace **24** in catalog number with length in inches. Other finishes available. Replace **WH** in catalog number with **SSR** or other finish.

NOTES:
1 Order two for 8' fixtures.

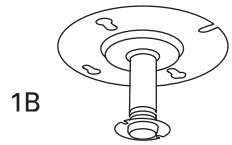
MOUNTING DATA

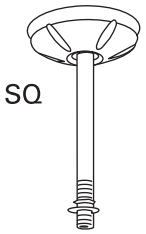
For unit or row installation, surface or stem mounting.

Unit installation — Minimum of two hangers required.

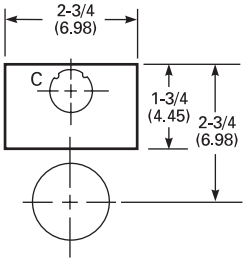
Row installation — One hanger per channel plus one per row required.

See ACCESSORIES below for hanging devices.





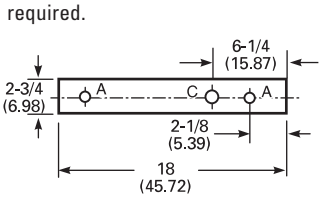
DIMENSIONS

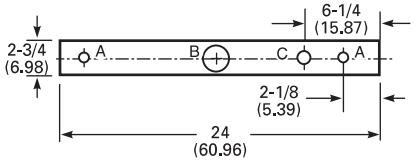


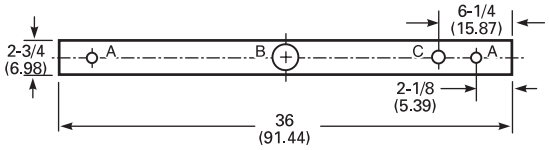
A = 11/16 (1.74) Dia. K.O.

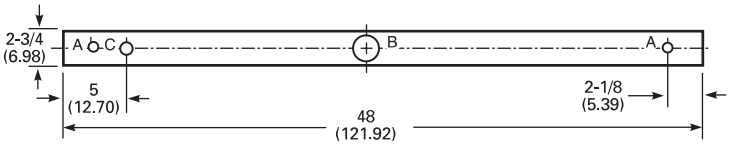
B = 2 (5.08) Dia. K.O.

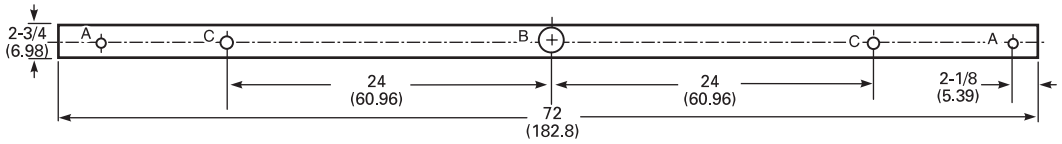
C = 7/8 (2.22) Dia. K.O.

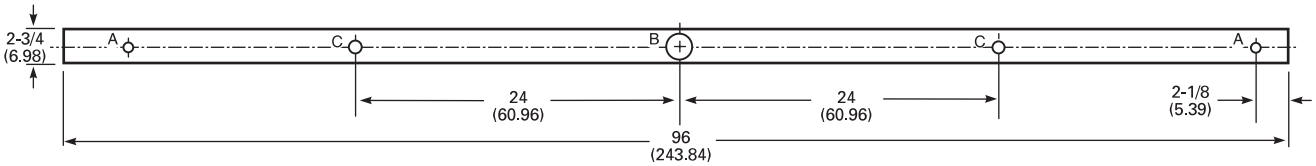












PHOTOMETRICS

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.

S 1 32

Report LTL 5725

S/MH (along) 1.2 (across) 1.6

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
1	97	91	86	92	87	82	79	75	72
2	87	77	70	82	74	67	67	61	56
3	78	67	58	74	64	56	58	52	46
4	71	59	50	67	56	48	51	44	38
5	65	51	42	61	49	41	45	37	32
10	43	30	22	41	28	21	26	20	15

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	388	13.4	13.9
0-40	660	22.8	23.7
0-60	1307	45.1	46.9
0-90	2176	75.0	78.1
90-180	609	21.0	21.9
0-180	2786	96.1	100.0

Energy (Calculated in accordance with NEMA standard LE-5)

LER.FL	ANNUAL ENERGY COST*	LAMP DESCR PTION	LAMP UMENS	BALLAST FACTOR	INPUT WATTS
94.7	$2.53	(1) F3278/735	2800	.88	25

* Comparative yearly lighting energy cost per 1000 lumens

LITHONIA LIGHTING®

An AcuityBrands Company

Sheet #: S-TT5-T8

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

LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

FEATURES & SPECIFICATIONS

INTENDED USE

Intended for unit or row installations, surface or suspended mounting.

ATTRIBUTES

Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION

Standard channel, die formed from Code-guage steel.

Sturdy Channel cover secured by captive quarter turnlatch for easy access to wireway.

End plate and channel connector furnished with each fixture.

Housing formed from Cold rolled steel.

FINISH

Five Stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance.

Painted parts finished with high-gloss, baked white polyester.

ELECTRICAL SYSTEM

Thermally-protected, resetting, Class P, UL Listed, CSA Certified ballast is standard.

Available in Tandem wired lengths.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTING

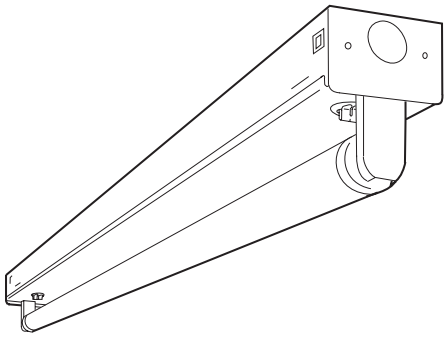
UL Listed to US and Canadian safety standards. Optional: Mexico NOM.

WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Standard Strip

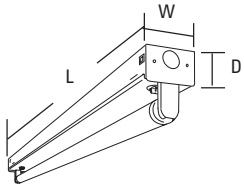
S



Linear Lamp and Compact Fluorescent
1 Lamp

Specifications

Length: 18 (457), 24 (610)
36 (914), 48 (1219)
72 (1829) or 96 (2438)
Width: 2-3/4 (70)
Depth: 1-3/4 (45)
All dimensions are inches (millimeters).



ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: S 1 32 MVOLT GEB10IS

Series	Number of lamps	Lamp type	Voltage	Options
S	**1**			
S Standard strip[1]	**1**	25 25W T8 (36")	120	**GEB10IS T8 electronic ballast, ≤ 10% THD, instant start (T8 only)**
For tandem double-length unit, add prefix T. Example: TS	Not included	CF27 27W TT5 (15")	277	GEB10RS T8 electronic ballast, ≤ 10% THD, rapid start
		17 17W T8 (24")	347	BILP IS High-efficiency .78 bf (low)
		32 32W T8 (48")	**MVOLT**	GEB Electronic ballasts, ≤20% THD.
		CF39 39W TT5 (18")	Others available	GLR Internal fast-blow fuse (add X for external)
		CF40 40W TT5 (24")		GMF Internal slow-blow fuse (add X for external)
		50T8 40W T8 (60")		CS3 6' cordset, NEMA L5-15P SJT, twist-lock plug, 120V
				PLF__ Plug in wiring, specify number of branch circuits and hot wires (A-black, B-Red, C-Blue, AB or AC)
				NOM NOM Certified

Accessories

Order as separate catalog numbers.

SQ_	Swivel-stem hanger (specify length in 2" increments).
1B	Ceiling spacer (adjusts from 1-1/2" to 2-1/2" from ceiling).
WGS	Wireguard, 4' white, for unshielded S strip.[1]
WGSSMR	Wireguard, 4' white, for S strip with SSMR reflector.[1]
WGSASR	Wireguard, 4' white, for S strip with SASR reflector.[1]
SSMR 48WH	Symmetric reflector, 4' white. [1]
SASR 48WH	Asymmetric reflector, 4' white.[1]
S48WG	Wireguard, 4' white, Canada only
SSMRCF 24WH	Symmetric reflector, 2' white.*
SASRCF 24WH	Asymmetric reflector, 2' white.*
TSASRCF 24WH	Asymmetric reflector, 2' white, for TS 1 CF18.*

*Other lengths available. Replace **24** in catalog number with length in inches. Other finishes available. Replace **WH** in catalog number with **SSR** or other finish.

NOTES:
1 Order two for 8' fixtures.

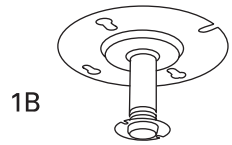
MOUNTING DATA

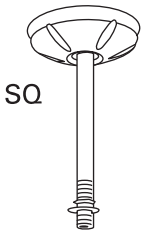
For unit or row installation, surface or stem mounting.

Unit installation — Minimum of two hangers required.

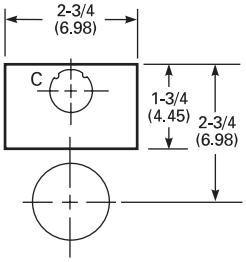
Row installation — One hanger per channel plus one per row required.

See ACCESSORIES below for hanging devices.





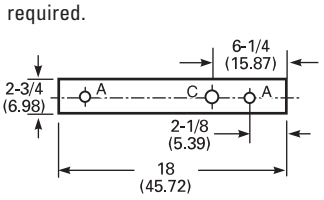
DIMENSIONS

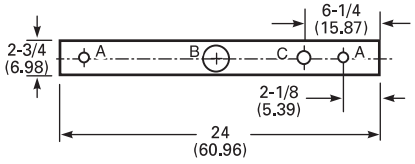


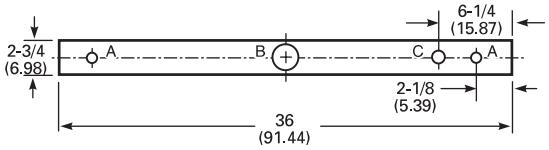
A = 11/16 (1.74) Dia. K.O.

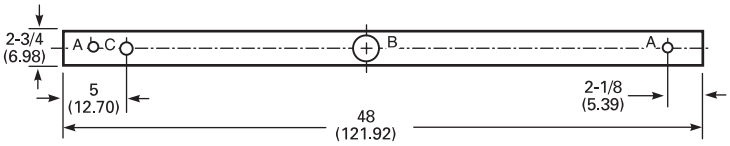
B = 2 (5.08) Dia. K.O.

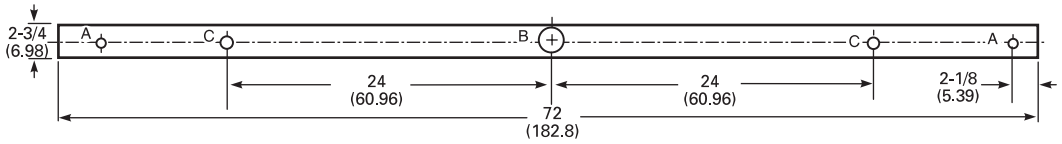
C = 7/8 (2.22) Dia. K.O.

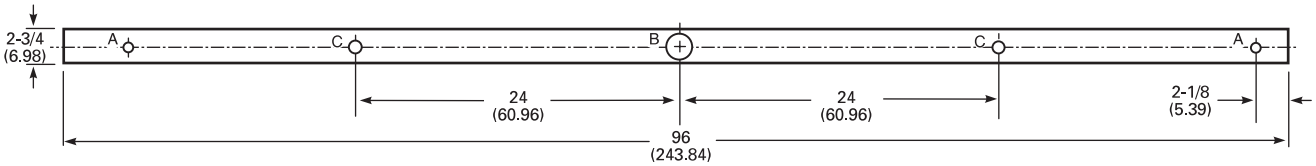












PHOTOMETRICS

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.

S 1 32

Report LTL 5725

S/MH (along) 1.2 (across) 1.6

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
1	97	91	86	92	87	82	79	75	72
2	87	77	70	82	74	67	67	61	56
3	78	67	58	74	64	56	58	52	46
4	71	59	50	67	56	48	51	44	38
5	65	51	42	61	49	41	45	37	32
10	43	30	22	41	28	21	26	20	15

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	388	13.4	13.9
0-40	660	22.8	23.7
0-60	1307	45.1	46.9
0-90	2176	75.0	78.1
90-180	609	21.0	21.9
0-180	2786	96.1	100.0

Energy (Calculated in accordance with NEMA standard LE-5)

LER.FL	ANNUAL ENERGY COST*	LAMP DESCR PTION	LAMP UMENS	BALLAST FACTOR	INPUT WATTS
94.7	$2.53	(1) F3278/735	2800	.88	25

* Comparative yearly lighting energy cost per 1000 lumens

LITHONIA LIGHTING®

An AcuityBrands Company

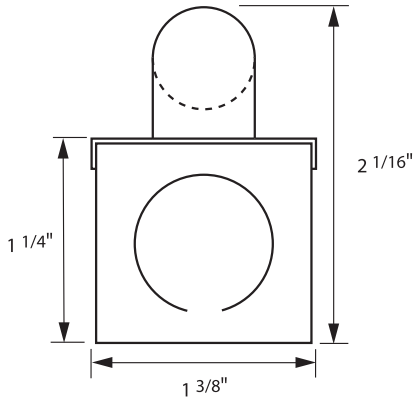
Sheet #: S-TT5-T8

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

BFL281

LINEAR T5 FLUORESCENT

low profile linear T5 fluorescent architectural fixture
with integral ballast



SPECIFICATIONS

- Fully assembled housing is formed and welded, 20 ga. steel, chemically treated to resist corrosion and enhance paint adhesion
- Standard finish is high reflectance white powder coat, applied post production
- Knock-outs accept standard electrical fittings (by others)
- Rotational locking lamp holders
- Available for T5 8W, 13W, 14W, 21W, 28W, 35W and high output 24W, 39W, 54W, 80W linear fluorescent lamps
- Standard 120V or 277V electronic high power factor ballast is pre-wired to the lamp holders (consult factory for other voltage options)
- Dimming ballast options available **(consult factory for availability and system compatibility)**
- UL and C-UL listed for dry and damp locations
- IBEW

SPECIFICATION/ORDER FORMAT

catalog no.	voltage	options
BFL281-8	/120	Dimming -
BFL281-13	/277	*(consult factory or power*
BFL281-14	*(consult factory for*	*supply section for cata-*
BFL281-21	*other voltages)*	*log number)*
BFL281-28		/DL - damp location
BFL281-35		/CU - custom finish
BFL281-24		*(consult factory)*
BFL281-39		
BFL281-54		
BFL281-80		

DIMENSION INFORMATION

lamp	O.A. length
8w T5	12 3/16"
13w T5	21 1/4"
14w T5	22 1/2"
21w T5	34 1/4"
28w T5	46 1/16"
35w T5	57 15/16"
24w T5 HO	22 1/2"
39w T5 HO	34 1/4"
54w T5 HO	46 1/16"
80w T5 HO	57 15/16"

bartco LIGHTING
leading the way and lighting it.™
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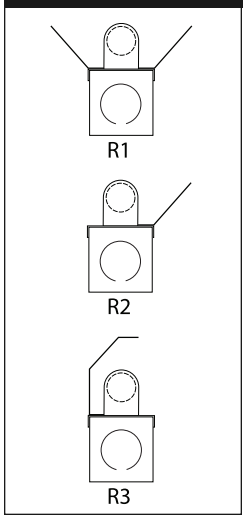
BFL281

ACCESSORIES

REFLECTORS



Standard finish on all reflectors is high reflectance white powder coat

- 281-R1-6 Symmetrical Reflector For BFL281-6
- 281-R1-8 Symmetrical Reflector For BFL281-8
- 281-R1-13 Symmetrical Reflector For BFL281-13
- 281-R1-14 Symmetrical Reflector For BFL281-14
- 281-R1-21 Symmetrical Reflector For BFL281-21
- 281-R1-28 Symmetrical Reflector For BFL281-28
- 281-R1-35 Symmetrical Reflector For BFL281-35
- 281-R1-24 Symmetrical Reflector For BFL281-24
- 281-R1-39 Symmetrical Reflector For BFL281-39
- 281-R1-54 Symmetrical Reflector For BFL281-54
- 281-R1-80 Symmetrical Reflector For BFL281-80
- 281-R2-6 Asymmetrical Reflector For BFL281-6
- 281-R2-8 Asymmetrical Reflector For BFL281-8
- 281-R2-13 Asymmetrical Reflector For BFL281-13
- 281-R2-14 Asymmetrical Reflector For BFL281-14
- 281-R2-21 Asymmetrical Reflector For BFL281-21
- 281-R2-28 Asymmetrical Reflector For BFL281-28
- 281-R2-35 Asymmetrical Reflector For BFL281-35
- 281-R2-24 Asymmetrical Reflector For BFL281-24
- 281-R2-39 Asymmetrical Reflector For BFL281-39
- 281-R2-54 Asymmetrical Reflector For BFL281-54
- 281-R2-80 Asymmetrical Reflector For BFL281-80
- 281-R3-6 Inside Asymmetrical Reflector For BFL281-6
- 281-R3-8 Inside Asymmetrical Reflector For BFL281-8
- 281-R3-13 Inside Asymmetrical Reflector For BFL281-13
- 281-R3-14 Inside Asymmetrical Reflector For BFL281-14
- 281-R3-21 Inside Asymmetrical Reflector For BFL281-21
- 281-R3-28 Inside Asymmetrical Reflector For BFL281-28
- 281-R3-35 Inside Asymmetrical Reflector For BFL281-35
- 281-R3-24 Inside Asymmetrical Reflector For BFL281-24
- 281-R3-39 Inside Asymmetrical Reflector For BFL281-39
- 281-R3-54 Inside Asymmetrical Reflector For BFL281-54
- 281-R3-80 Inside Asymmetrical Reflector For BFL281-80

MOUNTING CLIPS

- MC281 Pair mounting clips *(for glass to glass case mounting)*

LENSES

One piece polycarbonate striated snap-on cover with end caps

- LNC Clear Lens *(sold by the foot)* ___ft
- LNO Opal Lens *(sold by the foot)* ___ft

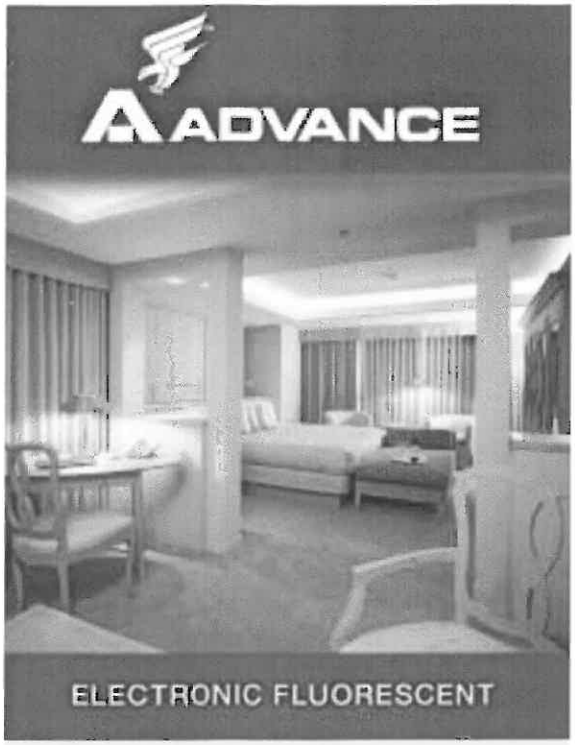
LENSES

Two piece system comprised of a polycarbonate channel and striated snap-on cover

- U5LNC Universal Clear Lens *(sold by the foot)* ___ft
- U5LNO Universal Opal Lens *(sold by the foot)* ___ft

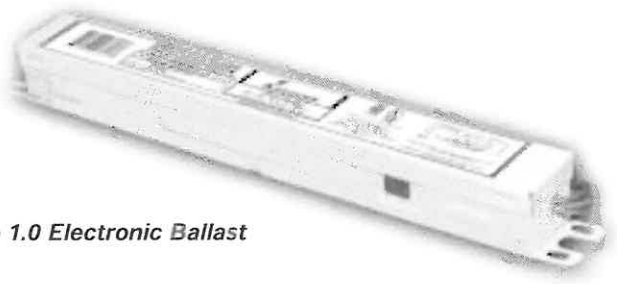
TUBE GUARD

- TG Tube Guard *(sold by the foot)* ___ft



Centium®

Instant Start Ballast for Energy Efficiency T5 & T8 Lamps



Micro 1.0 Electronic Ballast

PRODUCT OVERVIEW:

Advance announces the enhancement of its popular line of Centium® Instant Start micro-can electronic ballasts. Advance's Centium (MC) ballasts with leads now feature Advance's exclusive IntelliVolt® multiple-voltage technology, enabling their operation at any input voltage from 120 to 277 volts, 50/60Hz. In addition, the ballasts, which previously operated one or two 32-watt T8, 25-watt T8, 28-watt T5 or 21-watt T5 fluorescent lamps, will now also run both 17-watt T8 lamps as well as 14-watt T5 lamps.

Lightweight and compact enough to fit into the sleekest new fixture designs, Advance's Centium (MC) ballasts are ideal in such applications as decorative/cove lighting, general and indirect lighting, and in any fixture where space restrictions require smaller ballasts. As with all Centium (MC) electronic ballasts, the ballasts operate at 0°F/-18°C and feature total harmonic distortion less than 10% and instant start technology, insuring energy-efficient lighting operation.

DESIGN HIGHLIGHTS:

- IntelliVolt® technology (120-277V, 50/60Hz)
  - Ensures shipment of correct voltage ballast or fixture for each application
  - Reduces SKU's required in inventory
- Low profile housing
  - Only 1.00" high ballast provides flexibility in new generation fixture designs
- Operates above 40 kHz
  - Eliminates interference with Infrared Control Systems
- 0°F starting capability
  - Suitable for cold temperature applications
- <10% THD (>0.99 PF)
  - Meets most demanding power quality requirements
  - Perfect for applications where harmonics are a concern
- 20ft. remote mounting/tandem wiring capability
  - Provides maximum application flexibility
- Auto-restrike capability
  - Eliminates the need to reset power mains after failed lamps are replaced
- Instant Start lamp ignition
  - Consumes less energy than Rapid Start ballasts
- Lamp EOL protection circuit
  - Safely removes power from the lamp at end-of-life
  - Prevents lamp overheating
- Microprocessor technology
  - Provided optimal operation of lamps

APPLICATIONS:

- ***Decorative Lighting***
- ***Cove Lighting***
- ***Indirect Lighting***
- ***General Lighting***

Tel 800-322-2086 • Fax 888-423-1862 • Customer Support/Technical Service: 800-372-3331 •
www.advancetransformer.com

Centium

Lamp Data No.	Lamp Data Watts	Min. Start Temp. (F/C)	Input Volts	Catalog Number	Certifications	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Power Factor %	Dim.	Wiring Diagram
F14T5												
1	14	32/-0	120	ICN-132-MC	UL CSA	0.15	19	1.05	10	0.98	A	1
			230			0.08						
			277			0.07			20			
2	14	32/-0	120	ICN-2M32-MC	UL CSA	0.30	36	1.05	10	0.98	A	2
			230			0.16						
			277			0.13			20			
F21T5												
1	21	32/-0	120	RCN-132-MC	UL CSA	0.22	27	1.10	10	0.99	A	1
			277	VCN-132-MC		0.10						
			120	ICN-132-MC		0.21	26	1.05	10	0.98		
			230			0.11			15			
			277			0.09						
2	21	32/-0	120	RCN-2M32-MC	UL CSA	0.42	50	1.10	10	0.99	A	2
			277	VCN-2M32-MC		0.18						
			120	ICN-2M32-MC		0.42	50	1.05	10	0.98		
			230			0.22			15			
			277			0.18						
F28T5												
1	28	32/-0	120	RCN-132-MC	UL CSA	0.25	30	0.98	10	0.98	A	1
			277	VCN-132-MC		0.11						
			120	ICN-132-MC		0.28	34	1.05	10	0.98		
			230			0.14			15			
			277			0.12						
2	28	32/-0	120	RCN-2M32-MC	UL CSA	0.50	60	0.98	10	0.99	A	2
			277	VCN-2M32-MC		0.22						
			120	ICN-2M32-MC		0.57	68	1.05	10	0.98		
			230			0.30			15			
			277			0.25						

Wiring Diagrams / Dimensions

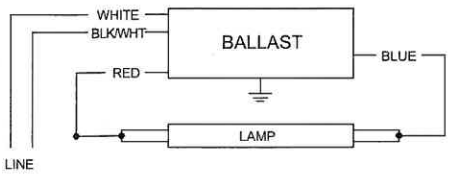


Diagram 1

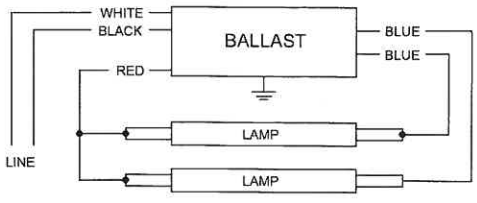
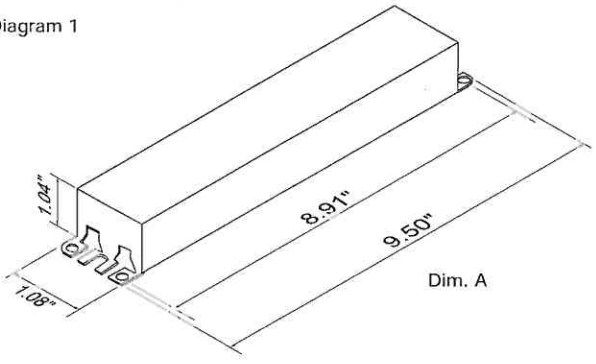


Diagram 2



Dim. A

Lamp Data		Min. Start Temp. (F/C)	Input Volts	Catalog Number	Certifications		Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Power Factor %	Dim.	Wiring Diagram
No.	Watts												
F17T8													
1	17	0/-18	120	ICN-132-MC	UL	CSA	0.14	17	0.88	10	0.98	A	1
			230				0.07						
			277				0.06			20			
2	17	0/-18	120	ICN-2M32-MC	UL	CSA	0.26	31	0.88	10	0.98	A	2
			230				0.13						
			277				0.11			20			
F25T8, FBO24T8													
1	25	0/-18	120	RCN-132-MC	UL	CSA	0.21	25	0.98	10	0.98	A	1
			277	VCN-132-MC			0.09						
			120	ICN-132-MC			0.19	23	0.88	10	0.98		
			230				0.11			15			
			277				0.09						
2	25	0/-18	120	RCN-2M32-MC	UL	CSA	0.41	48	0.88	10	0.99	A	2
			277	VCN-2M32-MC			0.18						
			120	ICN-2M32-MC			0.37	44	0.88	10	0.98		
			230				0.19			15			
			277				0.16						
F32T8/ES (30W)													
1	30	60/15	120	RCN-132-MC	UL	CSA	0.24	28	0.98	10	0.98	A	1
			277	VCN-132-MC			0.10						
			120	ICN-132-MC			0.23	27	0.88	10	0.98		
			230				0.12						
			277				0.10						
2	30	60/15	120	RCN-2M32-MC	UL	CSA	0.45	54	0.88	10	0.99	A	2
			277	VCN-2M32-MC			0.20						
			120	ICN-2M32-MC			0.45	54	0.88	15	0.98		
			230				0.24						
			277				0.20						
F32T8, FBO31T8, F32T8/U6													
1	32	0/-18	120	RCN-132-MC	UL	CSA	0.25	29	0.98	10	0.98	A	1
			277	VCN-132-MC			0.11						
			120	ICN-132-MC			0.25	30	0.88	10	0.98		
			230				0.13						
			277				0.11						
2	32	0/-18	120	RCN-2M32-MC	UL	CSA	0.49	58	0.88	10	0.99	A	2
			277	VCN-2M32-MC			0.21						
			120	ICN-2M32-MC			0.50	59	0.88	15	0.98		
			230				0.25						
			277				0.21						

Centium

BALLAST SPECIFICATIONS

Section I - Physical Characteristics

1.1 Ballast shall be physically interchangeable with standard electromagnetic and standard electronic ballasts.

1.2 The electronic ballast shall have a maximum height of 1.04 in. and maximum weight of 0.75 lbs.

1.3 The electronic ballast shall be furnished with integral leads, color-coded to ANSI C82.11.

Section II - Performance Requirements

2.1 Ballast shall be Instant Start

2.2 Ballast shall contain auto restart circuitry in order to restart lamps without resetting power.

2.3 Ballast shall operate from 50/60 Hz input source of 120V or 277V with sustained variations of +/- 10% (voltage and frequency with no damage to the ballast. IntelliVolt models shall operate from 50/60 Hz input source of 120V through 277V with sustained variations of +/-10% (voltage and frequency) with no damage to ballast.

2.4 The electronic ballast output frequency to the lamps shall be above 42 kHz to minimize interference with infrared control systems and eliminate visible flicker.

2.5 Ballast shall have a Power Factor greater than 0.98 for primary lamp.

2.6 Ballast shall have a minimum ballast factor for primary lamp applications as follows; 0.75 for Low Watt, 0.85 for Normal Light Output, and 1.20 for High Light.

2.7 Ballast shall provide for a Lamp Current Crest Factor of 1.7 or less in accordance with lamp manufacturer recommendations.

2.8 Ballast input current shall have Total Harmonic Distortion (THD) of less than 20% for Standard models and THD of less than 10% for Centium models when operated at nominal line voltage with primary lamp.

2.9 Ballast shall have a Class A sound rating.

2.10 Ballast shall have a minimum starting temperature of -18°C (0°F) for standard T8 lamps and 16°C (60°F) for energy-saving T8 lamps.

2.11 Ballast shall provide Lamp EOL Protection Circuit.

2.12 Ballast shall tolerate sustained open circuit and short circuit output conditions without damage.

Section III - Regulatory Requirements

3.1 Ballast shall not contain any Polychlorinated Biphenyl (PCB).

3.2 Ballast shall be Underwriters Laboratories (UL) listed, Class P, Type CC and Type 1 Outdoor; and Canadian Standards Association (CSA) certified.

3.3 Ballast shall comply with ANSI C62.41 Category A for Transient protection.

3.4 Ballast shall comply win ANSI C82.11, where applicable.

3.5 Ballast shall comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) for EMI/RFI (conducted and radiated).

Section IV - Other

4.1 The electronic ballast shall be produced in a factory certified to ISO 9002 Quality System Standards.

4.2 The electronic ballast shall carry a five-year warranty from the date of manufacture. Warranty shall be valid for a maximum case temperature of 70°C.

4.3 The manufacturer shall have a fifteen-year history of producing electronic ballasts for the North American market.

ADVANCE

Advance Transformer Co. • O'Hare International Center • 10275 W. Higgins Road • Rosemont, IL 60018
Tel: 800-322-2086 • Fax: 888-423-1682 • Customer Support/Technical Service: 800-372-3331

www.advancetransformer.com

 Form No. EL-2250-R02-10/04

LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

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.

CONSTRUCTION — Compact designed channel and cover are formed from code-gauge cold-rolled steel. Locking lamp holder tracks bolsters strength of the overall strip construction while creating improved lamp stability. Design includes T5 socket, features rotating collar and enclosed contacts. Improved easy "snap n' lock" end plates allow for quick attachment. Patented-pending "three-point" row connector locks channel together for straighter and faster rows mounting; included as standard.

Designed to accommodate a wide variety of T5 and T5HO lamp lengths. Channel offers the gripper back feature which strengthens the overall construction and allows for the use of the Z spring hanger (see back). Patent-pending fastener-less channel cover offers a secure fit design allowing for quick attachment and easy access without pinching wires.

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 (SKGY) and galvanized (GALV).

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

ELECTRICAL — 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.

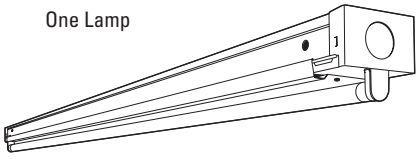
INSTALLATION — Patented-pending "three-point" row connector locks channels together for straighter and faster rows mounting; included as standard. Ideal for surface-mount or suspended.

LISTINGS — UL Listed, CUL Listed or CSA Certified to Canadian Standards. Listed for 25° C ambient temperature.

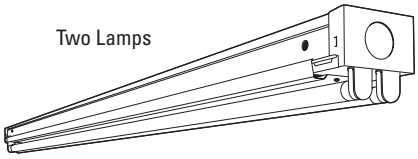
Low-Profile T5 Striplight

Z

One Lamp



Two Lamps

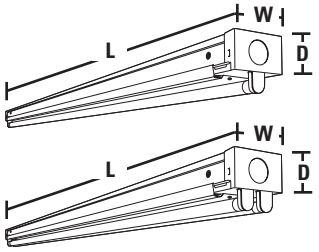


Linear Lamps
1 or 2 Lamps

Specifications

Length:	22-3/8 (56.8), 34-1/8 (86.7), 46 (116.8) or 92 (233.7)
Width:	2-1/8 (5.4)
Depth:	1-1/2 (3.8)
Weight:	7.1 lbs (3.2 kg)

All dimensions are inches (centimeters) unless otherwise noted.



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

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold).**
Example: Z 1 54T5HO Z5SMR46 MVOLT GEB10PS

Series

Z Compact T5

For tandem double-length unit, add prefix T.[1]
Example: TZ

Number of lamps

1
2
Not included.

Lamp type

14T5 14W T5 (22")
21T5 21W T5 (34")
24T5HO 24W T5 HO (22")
28T5 28W T5 (46")
39T5HO 39W T5 HO (34")
54T5HO 54W T5 HO (46")

Configuration

(blank) **No reflector**
Z5ASR46 46" asymmetric reflector
Z5SMR46 46" symmetric reflector
Other lengths available. See Accessories.

Paint finish

(blank) **White**
MB Matte black
GALV Galvanized
SKGY Smoke gray

Reflector type

(blank) **Solid**

Voltage

MVOLT[2]
120
277
347[1]
Others available.

Options

GEB10PS Electronic ballast, ≤10% THD, program start
OS10PS OSRAM® electronic ballast, ≤10% THD, program start
S5 0.95 ballast factor SIMPLY5™ system[4]
S5115 1.15 ballast factor SIMPLY5™ system[4]
GLR Internal fast-blow fuse[4]
GMF Internal slow-blow fuse[4]
PLF_ Plug-in wiring, specify 1, 2 or 3 branch circuits and hot wires (A=black, B=red, C=blue, AB or AC)
TILW Tandem in-line wiring
EL55 Emergency battery pack (nominal 390-700 lumens; consult factory for additional battery packs[5]
EL65 Emergency battery pack (nominal 725-1325 lumens)[5]
CSA CSA Certified[8]

Accessories

Order as separate catalog numbers.

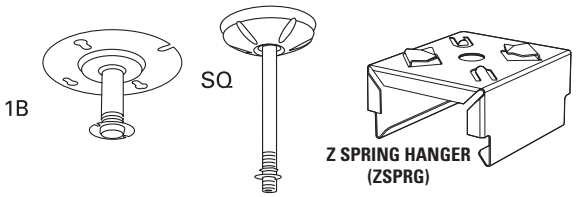
SQ_ Swivel-stem hanger (specify length in 2" increments)
ZSPRG Tong and T-grid hanger
Z5SMR46 Symmetric reflector, 46" white
Z5ASR46 Asymmetric reflector, 46" white
Z5SMR34 Symmetric reflector, 34" white
Z5ASR34 Asymmetric reflector, 34" white
Z5SMR22 Symmetric reflector, 22" white
Z5ASR22 Asymmetric reflector, 22" white
WGZ46 46" wireguard, white
WGZ5SMR46 46" wireguard, white, for symmetric reflector
WGZ5ASR46 46" wireguard, white, for asymmetric reflector

NOTES:
1 Only available with 28W and 54W.
2 MVOLT (120-277V), 50-60HZ
3 Specify voltage.
4 SIMPLY5 system includes a 13' S5SSC RELOC® wiring system. Specify voltage unless hardwire (HW) or PWS is ordered.
5 Available with 4' and 8' lengths only.
6 120-277V only for power feed.
7 Standard wire size for power feed is 18 gauge. For 12 gauge add **12AWG** to the end of catalog number. Consult factory for length of runs and required wire size.
8 347V only.

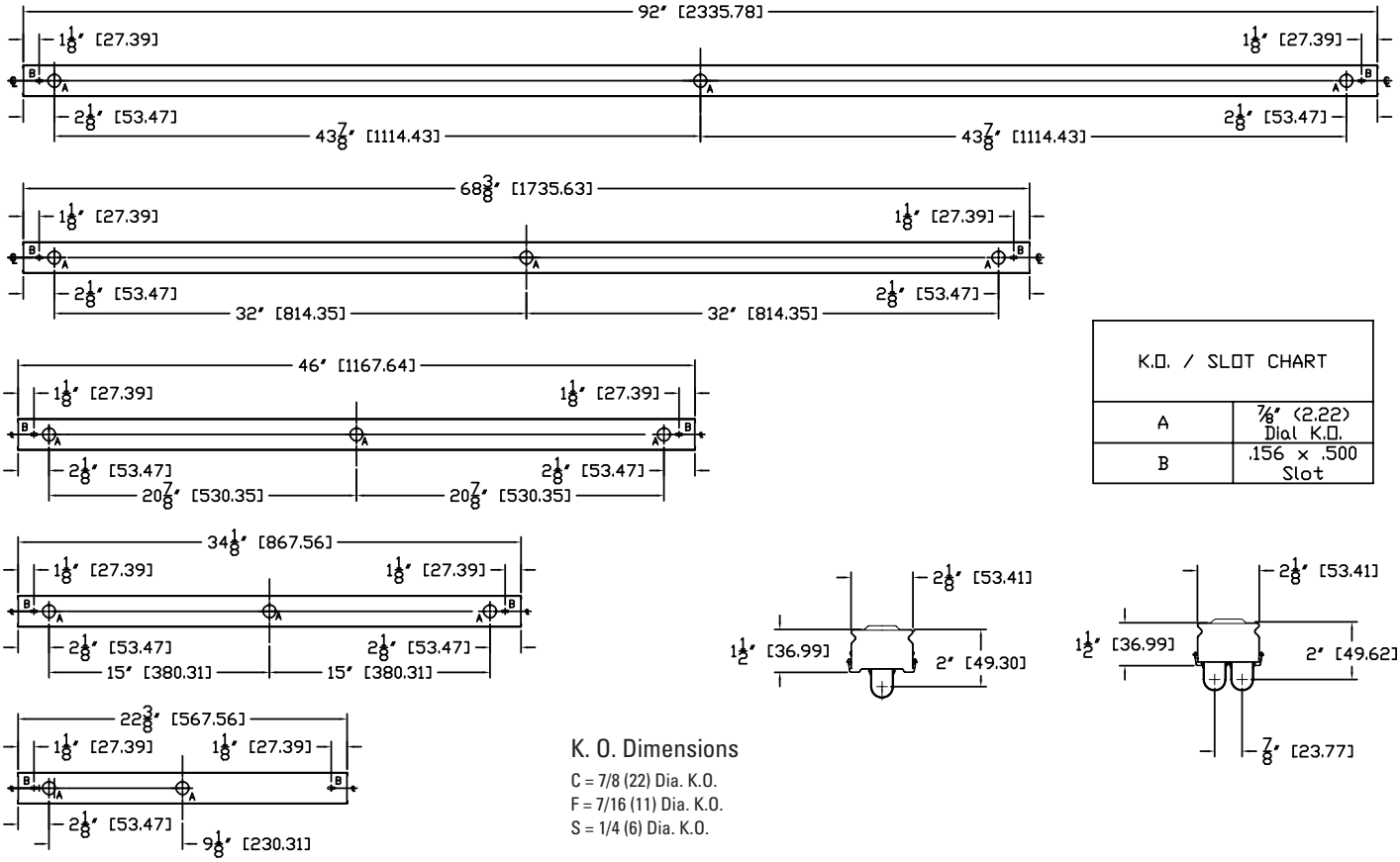
Z T5 Compact Striplight

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.
Hanging devices illustrated.



DIMENSIONS



K.O. / SLOT CHART	
A	7/8" (2.22) Dial K.O.
B	.156 x .500 Slot

K. O. Dimensions

C = 7/8 (22) Dia. K.O.
F = 7/16 (11) Dia. K.O.
S = 1/4 (6) Dia. K.O.

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

TEST NO: LTL17094
LUMINAIRE CATALOG NO.: Z 1 28T5 MVOLT GEB10PS
LUMENS PER LAMP: 2730

Coefficients of Utilization

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	115	115	115	110	110	110	102	102	102
1	94	89	83	90	85	81	83	79	75
2	80	72	65	77	69	63	70	64	59
3	69	60	52	66	58	51	61	54	48
4	60	51	43	58	49	42	53	46	40
5	54	44	37	51	42	36	47	40	34
6	48	38	31	46	37	31	42	35	29
7	43	34	27	41	33	27	38	31	25
8	39	30	24	38	29	24	35	28	22
9	36	27	21	34	26	21	32	25	20
10	33	25	19	32	24	19	30	23	18

RCR

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	428.3	15.7	15.7
0° - 40°	723.9	26.5	26.6
0° - 60°	1398.5	51.2	51.4
0° - 90°	2278.6	83.5	83.7
90° - 180°	443.9	16.3	16.3
0° - 180°	2722.4	99.7	100.0

TEST NO: LTL17092
LUMINAIRE CATALOG NO.: Z 1 54T5HO MVOLT GEB10PS
LUMENS PER LAMP: 4450

Coefficients of Utilization

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	109	109	109	106	106	106	99	99	99
1	92	87	83	89	85	81	84	80	77
2	79	72	66	76	70	64	72	66	61
3	68	60	53	66	59	52	62	56	50
4	60	51	44	58	50	44	55	48	42
5	53	44	38	52	43	37	49	41	36
6	48	39	32	46	38	32	44	36	31
7	43	34	28	42	34	28	40	32	27
8	39	31	25	38	30	25	36	29	24
9	36	28	22	35	27	22	33	26	21
10	33	25	20	32	25	20	30	24	19

RCR

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	809.8	18.2	19.5
0° - 40°	1366.0	30.7	32.9
0° - 60°	2625.8	59.0	63.2
0° - 90°	3806.5	85.5	91.6
90° - 180°	347.8	7.8	8.4
0° - 180°	4154.3	93.4	100.0

TEST NO: LTL17070
LUMINAIRE CATALOG NO.: Z 2 54T5HO MVOLT GEB10PS
LUMENS PER LAMP: 4450

Coefficients of Utilization

pf	20%								
pc	80%			70%			50%		
pw	50%	30%	10%	50%	30%	10%	50%	30%	10%
0	119	119	119	115	115	115	106	106	106
1	99	93	88	95	90	85	88	84	80
2	84	76	69	81	73	67	75	68	63
3	73	63	56	70	61	54	64	57	51
4	64	54	46	61	52	45	56	49	42
5	56	46	39	54	45	38	50	42	36
6	50	40	33	48	39	32	45	37	31
7	45	36	29	44	35	28	40	33	27
8	41	32	25	39	31	25	37	29	24
9	37	28	22	36	28	22	34	26	21
10	34	26	20	33	25	20	31	24	19

RCR

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0° - 30°	1451.4	16.3	15.8
0° - 40°	2517.9	28.3	27.4
0° - 60°	5023.5	56.4	54.7
0° - 90°	7793.5	87.6	84.8
90° - 180°	1392.3	15.6	15.2
0° - 180°	9185.9	103.2	100.0

LITHONIA LIGHTING®
An AcuityBrands Company

Lithonia Lighting
Industrial
One Lithonia Way, Conyers, GA 30012
Phone: 800-315-4963 Fax: 770-929-8789
www.lithonia.com

CONTOUR VERTICAL 3X4

TRACK LED

CNTRV34
LED

APPLICATION:
Retail & commercial accent & display lighting

CONSTRUCTION:
Extruded aluminum ballast housing and heat sink
Stamped aluminum end plates
Formed steel wire cover
Powder coat paint, available in over 200 finishes

ELECTRICAL:
Electronic constant current LED driver
120v or 277v input
Dimming down to less than 20%, available on 120v only with ELV (reverse phase) dimming equipment, consult factory for approved device list
This product complies with IEEE C62.41 for surge endurance up to 1KV. Amerlux recommends using additional surge protection with this unit (supplied by others), surge damage is not covered by warranty.

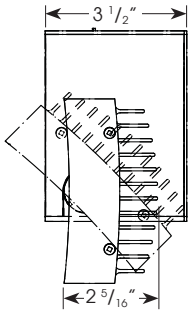
OPTICS:
LED cluster
Color Temp: 3000K (3045K ±175)
CRI: 85
Life: 50,000 hrs
Lumen Maintenance: >70% of intial lumens @ 50,000 hrs
Lumen output (@ 3000K): 1335 typ Narrow Flood, 1298 typ Medium Flood, 1279 typ Flood 1255 typ Wide Flood
0-90° tilt, 360° rotation
Beam options: Narrow Flood 16°, Medium Flood 24°, Flood 30°, Wide Flood 45°, Very Wide Flood 60°

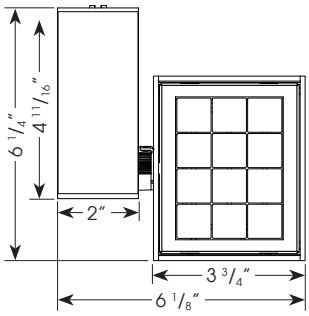
MOUNTING:
Track, canopy and busway

LABELING:
c UL us

PROJECT:
KOHL S

TYPE:
NFL





Electrostatic sensitive device, observe precautions for handling

ELECTRICAL

Driver	Operating Watts* (min/max)	Amps* (min/max)
Electronic 120v	27/38	.23/.32
277v	27/38	.10/.14

Class 2 constant current driver, 700 mA
*LED forward voltage bins result in actual consumed watts ranging from 27w to 38w. For circuiting planning use max watts and amp data provided.

LED
5-YEAR WARRANTY

ORDERING INFORMATION:

Model	Wattage	Lamp Type	Ballast	Finish	Mounting	Voltage	Beam Spread	Color Temp	Options
CNTRV34	32	LED	E - electronic	WT - white texture BT - black texture ST - silver texture __ - _____ (other RAL)	TN1 - Global 1cir, 120v TEK - Global 2cir/2neut, 120v TN3 - Global 3cir, 120v TN2 - Global 2cir/2neut, 277v B - busway C - canopy	120 277	NF - narrow flood, 16° MFL - medium flood, 24° FL - flood, 30° WF - wide flood, 45° VWF - very wide flood, 60° SL - linear spread lens, 12° x 48°	3000 Consult factory for other color temperature options	DIM - dimming (120v only) **Snoot** (accepts up to 2 forms of light control media) SN - snoot 1", specify WT, BT, ST finish **Light Control Media** (requires snoot) CB - cross blade 1/2" deep, 12 cell, black (B) finish standard HEX - hexcell louver, 1/8"x1/8" SPR - prismatic spread lens (use only with NF, FL) LSPR - linear spread lens (do not use if SL beam spread is specified)

Example: CNTRV34-32-LED-E-WT-TN1-120-NF-3000

Cat #: **CNTRV34-32-LED-E-WT-TN1-120-NF-3000**

Amerlux reserves the right to change details that do not affect overall function and performance.

23 daniel road, fairfield NJ 07004 • p: 973.882.5010 f: 973-882 2605 • www.amerlux.com

amerlux
GLOBAL LIGHTING SOLUTIONS

CONTOUR VERTICAL 3X4

TRACK LED

CNTRV34
LED

amerlux
GLOBAL LIGHTING SOLUTIONS

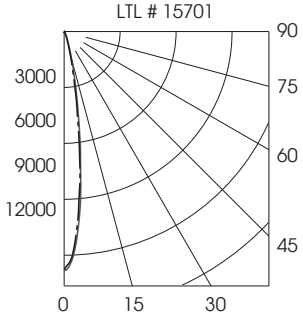
TYPE: **NFL**

FIXTURE DATA:

Complete photometric data (ies format) available upon request.

32 W LED

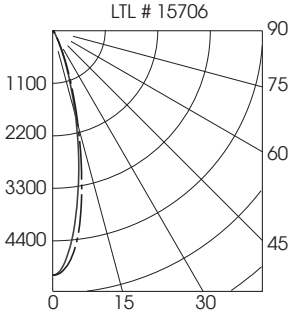
NARROW FLOOD 16° DISTRIBUTION
LTL # 15701



Candelas at Nadir

Deg	Candela
0	10959
5	9653
15	1579
25	263
35	51
45	23

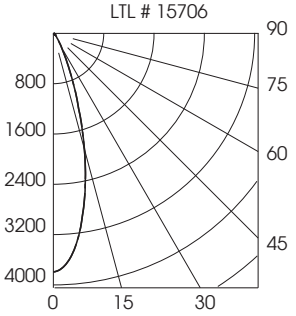
MEDIUM FLOOD 24° DISTRIBUTION
LTL # 15706



Candelas at Nadir

Deg	Candela
0	5113
5	4448
15	1842
25	413
35	96
45	41

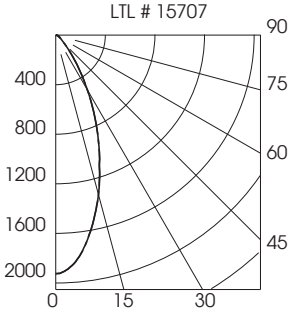
FLOOD 30° DISTRIBUTION
LTL # 15706



Candelas at Nadir

Deg	Candela
0	3795
5	3509
15	1908
25	527
35	140
45	55

WIDE FLOOD 45° DISTRIBUTION
LTL # 15707

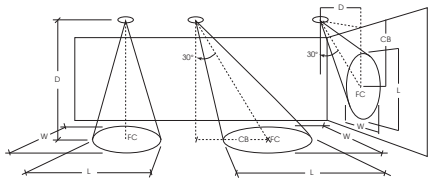


Candelas at Nadir

Deg	Candela
0	1925
5	1836
15	1331
25	757
35	315
45	104

APPLICATION DATA:

Notes and Definitions:
Beam spread is to 50% center beam candlepower (CBCP).
D=Distance to floor or wall.
FC=Footcandles on floor or wall at center beam aiming location.
L=Effective Visual Beam length in feet (50% of maximum footcandle level).
W=Effective Visual Beam width in feet (50% of maximum footcandle level).
CB=Distance across or down to center beam location.



	0° Aiming Angle Horizontal Footcandles				30° Aiming Angle Horizontal Footcandles					30° Aiming Angle Vertical Footcandles					60° Aiming Angle Vertical Footcandles				
	D	FC	L	W	D	FC	L	W	CB	D	FC	L	W	CB	D	FC	L	W	CB
NARROW FLOOD	5.0′	511	1.3	1.2	5.0′	319	1.9	1.4	3.0	3.0′	204	2.7	1.5	4.7	3.0′	915	1.1	0.8	1.7
	7.5′	227	2.0	1.9	7.5′	150	2.7	2.2	4.0	4.0′	116	3.6	1.9	6.2	4.0′	528	1.5	1.2	2.3
	10.0′	128	2.8	2.6	10.0′	80	3.8	3.0	6.0	5.0′	74	4.5	2.4	7.2	5.0′	339	1.8	1.5	2.8
	12.5′	82	3.4	3.2	12.5′	54	4.5	3.6	7.0	6.0′	52	5.4	2.8	9.2	6.0′	236	2.1	1.7	3.2
	D	FC	L	W	D	FC	L	W	CB	D	FC	L	W	CB	D	FC	L	W	CB
MEDIUM FLOOD	5.0′	205	2.1	2.3	5.0′	128	2.7	2.7	3.0	3.0′	94	3.5	2.4	3.8	3.0′	366	1.6	1.6	1.8
	7.5′	91	3.1	3.4	7.5′	61	3.9	3.8	4.0	4.0′	54	4.6	3.1	5.3	4.0′	211	2.1	2.0	2.3
	10.0′	51	4.1	4.5	10.0′	34	5.2	5.0	5.0	5.0′	34	5.7	3.8	6.7	5.0′	137	2.6	2.5	2.7
	12.5′	33	5.1	5.5	12.5′	22	6.5	6.3	7.0	6.0′	24	6.9	4.7	7.8	6.0′	96	3.1	3.0	3.2
	D	FC	L	W	D	FC	L	W	CB	D	FC	L	W	CB	D	FC	L	W	CB
FLOOD	5.0′	152	2.6	2.6	5.0′	99	3.2	2.9	2.0	3.0′	81	3.5	2.4	3.7	3.0′	280	1.9	1.7	1.2
	7.5′	68	3.7	3.7	7.5′	46	4.7	4.3	4..0	4.0′	46	4.6	3.2	4.8	4.0′	161	2.5	2.3	1.7
	10.0′	38	5.0	5.0	10.0′	26	6.1	5.6	5.0	5.0′	30	5.8	4.0	5.8	5.0′	104	3.1	2.8	2.2
	12.5′	24	6.2	6.2	12.5′	17	7.6	6.9	6.0	6.0′	21	6.8	4.8	7.2	6.0′	72	3.7	3.4	2.8
	D	FC	L	W	D	FC	L	W	CB	D	FC	L	W	CB	D	FC	L	W	CB
WIDE FLOOD	5.0′	77	3.4	3.4	5.0′	55	4.0	3.7	2.0	3.0′	53	3.8	2.9	2.7	3.0′	152	2.4	2.2	1.3
	7.5′	34	5.0	5.0	7.5′	24	6.0	5.5	3.0	4.0′	30	5.1	3.9	3.8	4.0′	86	3.2	2.9	1.8
	10.0′	19	6.7	6.7	10.0′	14	8.0	7.4	4.0	5.0′	19	6.4	5.0	4.8	5.0′	55	4.0	3.7	2.3
	12.5′	12	8.3	8.3	12.5′	9	9.9	9.3	5.0	6.0′	13	7.6	5.9	5.7	6.0′	38	4.7	4.4	2.8

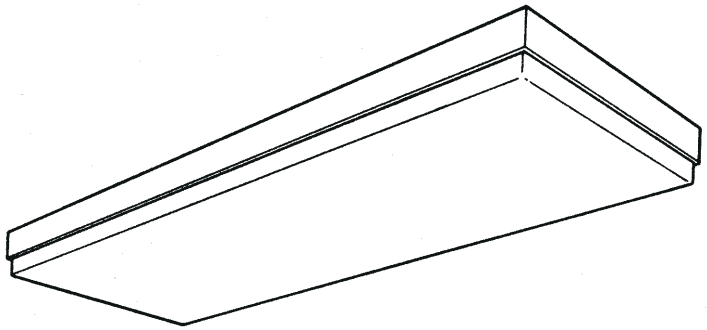
Catalog Number	Type
2ES8-232L-MP6647	A

Architectural Wraparound

AW

Wide Body

4' and 8' length
2, 3 or 4 lamps



FEATURES

- Flat-bottom acrylic prismatic diffuser with sonic-welded, injection-molded, luminous ends.
- Diffuser hinges open from either side for easy maintenance.
- Available in tandem-wired lenghs.
- Optional high-impact-resistant diffuser available—stronger than standard acrylic.
- Guaranteed for one year against mechanical defects in manufacture.

SPECIFICATIONS

BALLAST — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed, CSA-certified ballast is standard. Ballasts are sound rated A. Standard combinations are CBM approved and conform to UL 935.

WIRING & ELECTRICAL — Fixture conforms to UL 1570 and is suitable for damp locations. AWM, TFN or THHN wire used throughout. Rated for required temperatures. All ballast leads extend a minimum of 6" through access plate.

MATERIALS — Metal parts die-formed from code-gauge steel. Diffuser is 100% acrylic. No asbestos is used in this product.

FINISH — Five-stage, iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. High-gloss, baked white enamel finish. All parts painted after fabrication.

LISTING — UL listed and labeled. Listed and labeled to comply with Canadian and Mexican Standards (see Options).

Specifications subject to change without notice.

ENERGY

- Luminaire Efficacy Rating (LER) and Annual Energy Cost: Four-lamp LER.FW = 69. Annual Energy Cost = $3.48. Based on 32W T8 lamp, 2850 lumens, and energy-saving electronic ballast. Ballast factor = .88, input watts = 108.

Calculated in accordance with NEMA standard NEMA LE-5.

PHOTOMETRICS

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

AW 3 32

Report LTL 6019– Lumens per lamp = 2900

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%			0%
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%
0	90	90	90	88	88	88	83	83	83	73
1	83	79	76	80	77	74	73	71	69	62
2	76	70	65	74	68	64	65	61	58	53
3	70	62	56	68	61	56	58	54	50	46
4	64	56	49	62	54	48	52	47	43	40
5	59	49	43	57	48	42	46	41	37	34
6	54	44	38	52	43	37	42	36	32	30
7	50	40	33	48	39	33	38	32	28	26
8	46	36	29	44	35	29	34	28	24	22
9	42	32	26	41	31	25	30	25	21	19
10	39	29	23	38	28	23	27	22	18	16

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1758	20.2	26.5
0-40	2952	33.9	44.5
0-60	5181	59.5	78.0
0-90	6361	73.1	95.8
90-180	278	3.2	4.2
0-180	6639	76.3	100.0

AW 4 32

Report LTL 6018– Lumens per lamp = 2900

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

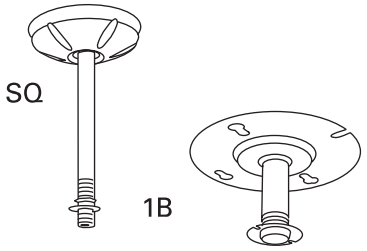
Ceiling	80%			70%			50%			0%
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%	0%
0	88	88	88	86	86	86	81	81	81	72
1	81	78	75	79	76	73	72	70	68	61
2	75	69	64	72	67	63	64	60	57	52
3	69	61	56	67	60	55	57	53	49	45
4	63	55	49	61	54	48	51	46	43	39
5	58	49	42	56	48	42	46	41	37	34
6	53	44	37	52	43	37	41	36	32	29
7	49	39	33	48	39	32	37	32	28	25
8	45	35	29	44	35	29	33	28	24	22
9	42	31	25	40	31	25	30	24	21	19
10	39	29	23	37	28	22	27	22	18	16

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2343	20.2	27.0
0-40	3930	33.9	45.3
0-60	6824	58.8	78.6
0-90	8325	71.8	95.9
90-180	355	3.1	4.1
0-180	8680	74.8	100.0

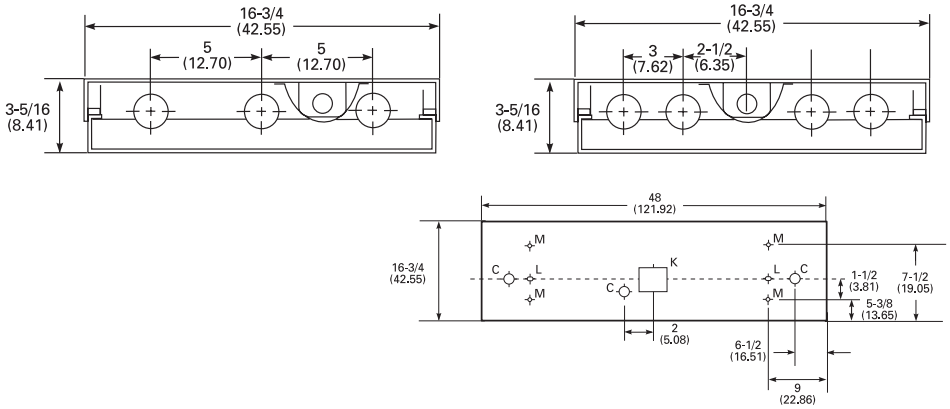
MOUNTING DATA

For unit or row installation. Surface or stem mounting.
Two hanging devices per fixture required.



DIMENSIONS

Inches (centimeters). Subject to change without notice.



C = 7/8 (2.22) Dia.K.O.
K = 2 x 2-1/2 (5.1 x 6.37) Square K.O.
L = 3/8 x 1/2 (.95 x 1.27) slot
M = 3/8 (.95) Dia. hole

ORDERING INFORMATION

Example: **AW 4 32 AR 120 GEB**

Series	Number of Lamps	Lamp Type	Diffuser	Voltage	Options
AW 3-lamp or 4-lamp, 16-3/4" wide	**2, 3, 4**	**32** 32W T8 (48")	**(blank)** Prismatic acrylic	**120, 277, 347**	**ES** Energy-saving ballasts (40W lamps only).
2AW 2-lamp, 16-3/4" wide	Not included	**40** 40W T12 (48")	**AR** High-impact prismatic acrylic (50% DR)	Others available	**GEB** Electronic ballast, ≤ 20% THD.
					GEB10 Electronic ballast, ≤10% THD.
					EL Emergency battery pack (nominal 300 lumens; See Life Safety Section).
					GLR Internal fast-blow fuse.
					GMF Internal slow-blow fuse.
					RIF1 Radio interference filter (1 per fixture).
					CSA Listed and labeled to comply with Canadian Standards.
					NOM Listed and labeled to comply with Mexican Standards.

For tandem double length unit, add prefix **T**. Example: **TAW**

Accessories

Order as separate catalog number.

SQ Swivel stem hanger (specify length in 2" increments). Not applicable with 3-light.

1B Ceiling spacer (1-1/2" to 2-1/2" from ceiling).

LITHONIA LIGHTING
COMMERCIAL & INDUSTRIAL FLUORESCENT LIGHTING
P.O. BOX A, CONYERS, GEORGIA 30012, TELEPHONE 770-922-9000, FAX 770-860-3106

Product Number: 21576

Order Abbreviation: FO32/835/XP/XL/ECO3

General Description: 48" MOL; T8 OCTRON XP Extended Performance; Extended Long Life; 3500K color temperature; rare earth phosphor; 85 CRI; ECOLOGIC®3; suitable for operation on instant start or rapid start ballasts.

Product Information

Abbrev. With Packaging Info.	FO32835XPXLECO3 30/CS 1/SKU
Actual Length (in)	47.78
Actual Length (mm)	1213.6
Average Rated Life (hr)	40000
Base	Medium Bipin
Bulb	T8
Color Rendering Index (CRI)	85
Color Temperature/CCT (K)	3500
Diameter (in)	1.10
Diameter (mm)	27.9
Family Brand Name	OCTRON® XP® XL ECOLOGIC®3
Industry Standards	ANSI C78.81-2005
Initial Lumens at 25C	2950
Mean Lumens at 25C	2861
Nominal Length (in)	47.78
Nominal Length (mm)	1219.2
Nominal Wattage (W)	32.00

Additional Product Information

Product Documents, Graphs, and Images

Packaging Information

Footnotes

- This lamp may also be operated by the OSRAM SYLVANIA QUICKTRONIC(R) PSN ballast (.88 BF), or the QUICTRONIC PSX ballast (.71 BF).
- The lamp lumen maintenance factor used to determine the mean lumen value was 97%. This is the lamp lumen maintenance factor at 8000 hours, 40% of 20,000 hours. It was used for comparison to standard OCTRON® lamps with an average rated life of 20,000 hours. The lamp lumen maintenance factor at 40% of 40,000 hours, 16000 hours, would be 96%.
- The life of this lamp, operated on instant start electronic ballasts is 36,000 hours based on the industry standard life test standard of 3 hours per start.
- The 40,000 hour average rated life of the FO32/800XP®/XL/ECO®/, FO28/800XP/XL/SS/ECO, and FO32/25W/800XP/XL/SS/ECO OCTRON® lamps is based on operation at 3 hours per start on a QUICKTRONIC® programmed start ballast. If operated on other ballasts for T8 OCTRON lamps, lamp life will be 40,000 hours for programmed rapid start operation and 36, 000 hours for instant start operation 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

Return to: 6 inch leg spacing | Print Page

Product Number: 22055

Order Abbreviation: FBO32/835XP/6/ECO

General Description: 32W, 22.5" MOL, T8 OCTRON XP Extended Performance Curvalume fluorescent lamp, 6" leg spacing, 3500K color temperature, rare earth phosphor, 85 CRI, suitable for IS or RS operation, ECOLOGIC

Product Information

Abbrev. With Packaging Info.	FBO32835XP6ECO 16/CS 1/SKU
Actual Length (in)	22.6
Actual Length (mm)	574.0
Average Rated Life (hr)	24000
Base	Medium Bipin
Bulb	T8
Color Rendering Index (CRI)	85
Color Temperature/CCT (K)	3500
Diameter (in)	1.10
Diameter (mm)	27.8
Family Brand Name	OCTRON® 800 XP®, ECOLOGIC®
Industry Standards	ANSI C78.81 - 2001
Initial Lumens at 25C	2900
Mean Lumens at 25C	2755
Nominal Length (in)	22.5
Nominal Wattage (W)	32.00

Additional Product Information

Product Documents, Graphs, and Images

Packaging Information

Footnotes

- 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.
- Life rating of OCTRON XP lamps operated on instant start electronic ballasts is 18,000 hours based on the industry standard life test cycle of 3 hours per start.
- 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.
- Approximate length of OCTRON CURVALUME lamps is measured from base face to outside of glass bend.
- 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 8,000 hours, 40% of 20,000 hours. It was used to allow comparison to standard OCTRON(R) lamps with an average rated life of 20,000 hours. The lamp lumen maintenance factor at 40% of the 24,000 hour average rated life of this lamp, 9600 hours, would be 94%.*

Print Page

Return to: Octron 800 XPS | Print Page

Product Number: 22154

Order Abbreviation: FO25/835/XPS/ECO3

General Description: 25W, 36" MOL, T8 OCTRON XPS Extended Performance Super fluorescent lamp, 3500K color temperature, rare earth phosphor, 85 CRI, suitable for RS or IS operation, ECOLOGIC®3

Product Information

Abbrev. With Packaging Info.	FO25835XPSECO3 30/CS 1/SKU
Actual Length (in)	35.78
Actual Length (mm)	1213.6
Average Rated Life (hr)	36000
Base	Medium Bipin
Bulb	T8
Color Rendering Index (CRI)	85
Color Temperature/CCT (K)	3500
Diameter (in)	1.10
Diameter (mm)	27.9
Family Brand Name	OCTRON® 800 XPS ECOLOGIC®3
Industry Standards	ANSI C78.81 - 2001
Initial Lumens at 25C	2200
Mean Lumens at 25C	2090
Mean Lumens at 35C	2090
Nominal Length (in)	36
Nominal Wattage (W)	25.00

Additional Product Information

Product Documents, Graphs, and Images

Packaging Information

Footnotes

- The 36,000 hour average rated life of the linear 2,3 and 4 foot OCTRON® XPS/ECO lamps is based on operation at 3 hours per start on a QUICKTRONIC® programmed start ballast. If operated on other ballasts for T8 OCTRON lamps, lamp life will be 36,000 hours for programmed rapid start operation and 24,000 hours for instant start operation 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%.

Print Page

46705 – F28W/T5/835/ECO

GE Ecolux® Starcoat® T5

PRINT

• Passes TCLP, which can lower disposal costs.

a product of ecomagination

High Color Rendering

GENERAL CHARACTERISTICS

Lamp type	Linear Fluorescent - Straight Linear
Bulb	T5
Base	Miniature Bi-Pin (G5)
Wattage	28
Voltage	167
Rated Life	30000 hrs
Rated Life (rapid start) @ Time	30000 h @ 3 h 36000 h @ 12 h
Bulb Material	Soda lime
Starting Temperature (MIN)	-20 ℃ (-4 ℉)
LEED-EB MR Credit	56 picograms Hg per mean lumen hour
Additional Info	TCLP compliant

PHOTOMETRIC CHARACTERISTICS

Initial Lumens	2900
Mean Lumens	2660
Nominal Initial Lumens per Watt	103
Color Temperature	3500 K
Color Rendering Index (CRI)	85
S/P Ratio (Scotopic/Photopic Ratio)	1.5

ELECTRICAL CHARACTERISTICS

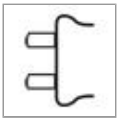
Open Circuit Voltage (rapid start) Min @ Temperature	425 V @ 10 ℃
Cathode Resistance Ratio - Rh/Rc (MIN)	4.25
Cathode Resistance Ratio - Rh/Rc (MAX)	6.5
Current Crest Factor (MAX)	1.7

DIMENSIONS

Maximum Overall Length (MOL)	45.8000 in (1163.3 mm)
Nominal Length	45.200 in (1148.0 mm)

Bulb

Base



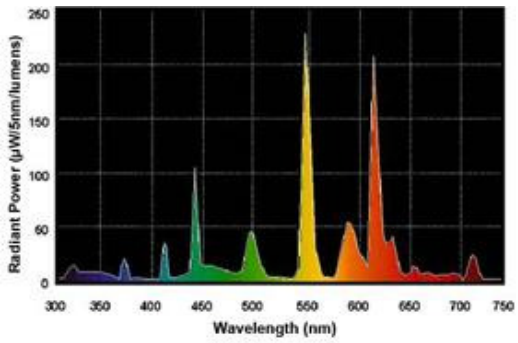
View Larger

ADDITIONAL RESOURCES

Catalogs
Testimonials
Disposal Policies & Recycling Information

GRAPHS & CHARTS

Spectral Power Distribution



Lamp Mortality

Bulb Diameter (DIA)	0.625 in (15.8 mm)
Bulb Diameter (DIA) (MAX)	0.670 in (17.0 mm)
Max Base Face to Base Face (A)	45.240 in (1149.0 mm)
Face to End of Opposing Pin (B) (MIN)	45.420 in (1153.6 mm)
Face to End of Opposing Pin (B) (MAX)	45.520 in (1156.2 mm)

PRODUCT INFORMATION

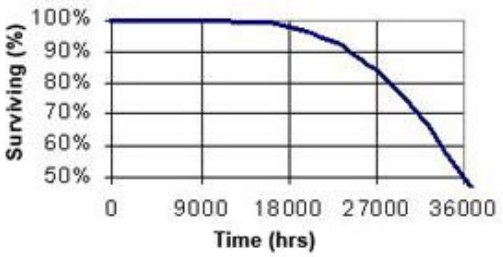
Product Code	46705
Description	F28W/T5/835/ECO
Standard Package	Case
Standard Package GTIN	10043168467053
Standard Package Quantity	40
Sales Unit	Unit
No Of Items Per Sales Unit	1
No Of Items Per Standard Package	40
UPC	043168467056

COMPATIBLE GE BALLASTS

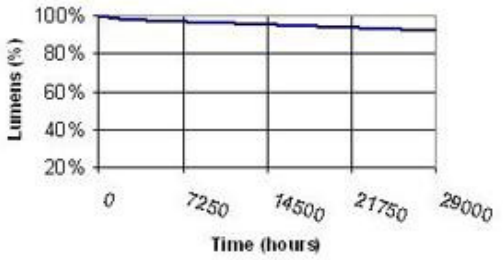
Product Code	Description	# of Bulbs	Power Factor	Ballast Factor
99655	GE228MVPS-A	1	99.0	1.09
99653	GE228MVPSH-A	1	99.0	1.21

⚠ CAUTIONS & WARNINGS

See list of cautions & warnings.



Lumen Maintenance



YOU MIGHT ALSO BE INTERESTED IN...

For Energy

GE Ecolux® Starcoat® T5
Product code: 71653

• Passes TCLP, which can lower disposal costs.

COMPARE

*Click on product for more specification details

Return To Top

Product Number: 20893

Order Abbreviation: CF13DT/E/835/ECO

General Description: DULUX 13W triple compact fluorescent lamp with 4-pin base, integral EOL, 3500K color temperature, 82 CRI, for use with electronic and dimming ballasts, ECOLOGIC

Product Information

Abbrev. With Packaging Info.	CF13DTE835ECO 50/CS 1/SKU
Average Rated Life (hr)	12000
Base	GX24Q-1
Bulb	T4
Color Rendering Index (CRI)	82
Color Temperature/CCT (K)	3500
Diameter (in)	0.000
Diameter (mm)	0.00
Family Brand Name	Dulux® T/E
Industry Standards	IEC 60901- 3413
Mean Lumens at 25C	774
Maximum Overall Length - MOL (in)	4.2
Maximum Overall Length - MOL (mm)	106
NEMA Generic Designation (old)	CFM13W/GX24Q/835
Nominal Wattage (W)	13.00

Additional Product Information

Product Documents, Graphics, and Images

Compatible Ballast

Packaging Information

Footnotes

- Approximate initial lumens after 100 hours operation.
- Minimum starting temperature is a function of the ballast; consult the ballast manufacturer.
- There is a NEMA supported, industry issue where T2, T4, and T5 fluorescent and compact fluorescent lamps operated on high frequency ballasts may experience an abnormal end-of-life phenomenon. This end-of-life phenomenon can resultin one or both of the following: 1. Bulb wall cracking near the lamp base. 2. The lamp can overheat in the base area and possibly melt the base and socket. NEMA recommends that high frequency compact fluorescent ballasts have an end-of-life shutdown circuit which will safely and reliably shut down the system in the rare event of an abnormal end-of-life failure mode described above. The final requirements of this system are yet to be defined by ANSI. For additional information refer to NEMA papers on their WEBSITE at www.NEMA.org.
- 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
- This 4-pin DULUX lamp has an internal end-of-life mechanism (EOL) that shuts down the lamp preventing abnormal end-of life failure modes. This lamp was designed for use with high frequency ballasts that do not have their own end-of-life (lamp)sensing circuits, but it is also compatible with high frequency ballasts that have their own end-of-life (lamp) sensing circuits.
- 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.
- Rule of Thumb for Compact Fluorescent Lamps: Divide wattage of incandescent lamp by 4 to determine approximate wattage of compact fluorescent lamp that will provide similar light output.

LITHONIA LIGHTING®

Catalog Number	
2ES8-232L-MP6647	
Notes	Type
	A

FEATURES & SPECIFICATIONS

INTENDED USE

Recessed frame-in rated Non-IC.

Approved for all ceiling and wiring types.

Remodel applications.

CONSTRUCTION

Steel frame. Cutout section on frame for remodel applications.

Galvanized bar hangers span up to 24" o.c. and feature built in nailer and T-bar clips.

Galvanized steel junction box with four built in romex clamps; six ¾" knockouts with slots for pryout.

Rated for through branch wiring.

Maximum 8 (4in 4out) No 12 AWG conductors. Rated for 90° C.

Ground wire provided.

Removable J-box doors for easy access.

ELECTRICAL SYSTEM

Durable two-pin positive latch thermoplastic socket mounted in socket cup.

Socket assembly attaches to reflector to ensure proper and consistent lamp position.

Thermal protection provided against improper insulation use.

Encased-and-potted, normal power factor (NPF) electromagnetic ballast is standard.[1]

INSTALLATION

2 x 8 wood joist or T-bar installation.

Expandable bar hangers allow for off center mounting in wood joist or T-bar ceilings.

Length of 25-1/4" maximum 13-1/4" minimum or cut to fit 10-1/2" on center joist construction.

Retaining clips hold finishing trim secure and snug to ceiling.

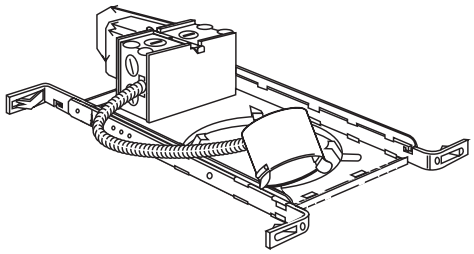
Maximum ceiling thickness determined by finishing trim. See specific trim page.

Ceiling cutout 5-3/4".

LISTING

UL Listed (standard). CSA Certified (see Options).

Damp location listing (See trim selection for wet location listing).



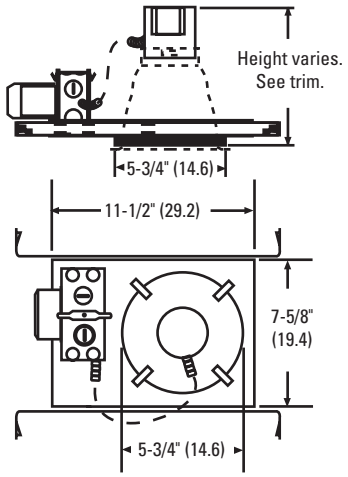
5" Frame-in

LQJ

FLUORESCENT
Non-IC
New Construction

Specifications

Height: 3-1/2 (8.9)
Trim height varies
Length: 13 (33.0)
Width: 11-5/8 (29.5)



All dimensions are inches (centimeters).

ORDERING INFORMATION

Example: **LQJ 13DTT 120 J01**

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

LQJ

Series	Lamp	Volt	Options		Reflector[2]	
LQJ	**13DTT**	**120**	**HPF**	High Power factor (90% power factor for 120 , 277 and 347 volt).	Open Narrow Flange	
		277			**J01**	White Open
		347	**GEBIO**	Generic electronic ballast, THD (total harmonic distortion) <10%. Requires four-pin lamp (13DTT only).	**J01A**	Clear Specular Open
					J01G	Gold Specular Open
			GMF	Single slow-blow fuse.	**JB1**	Black Metal Baffle
			LRC	Provides compatibility with Lithonia Reloc System. Lithonia Reloc System can be installed less this option with connectors provided by others.	**JB1W**	White Metal Baffle
					JB4	Black Baffle
					JB4W	White Baffle
					JC1BL	Black Specular Cone

Accessories:

Order as separate catalog number.

LBH 22" extended bar hangers, set of two

LSMC T-bar mounting clips, set of four

NOTES:

1 Not recommended for use with occupancy sensors, device may reduced lamp life or premature failure. Consult lamp manufacturer.

2 Trim ring white as standard.

See trim summary on reverse side for maximum wattages.

J Series 5" Fluorescent LQJ Full Reflector Trims

Description — Maximum wattage
Catalog number — Sheet number

General/Task

Open Narrow Flange
JO1 White
JO1AZ Clear Specular
JO1GZ Gold Specular

13 DTT

Non-IC COPN-170

Cone Narrow Flange
JC1AZ Clear Specular
JC1BLZ Black Spedular
JC1GZ Gold Specular

13 DTT

Non-IC COPN-180

Metal Baffle Narrow Flange
JB1 Black
JB1W White

13 DTT

Non-IC CBAF-180

Baffle Narrow Flange
JB4 Black
JB4W White

13 DTT

Non-IC CBAF-190

NOTES:
1 Maximum wattage listed. Lower wattage lamps may be used.

LITHONIA LIGHTING®
An AcuityBrands Company

Sheet #: LQJ-COM

Lithonia Lighting
Recessed Downlighting
One Lithonia Way, Conyers, GA 30012
Phone: 800-315-4935 Fax: 770-918-1209
www.lithonia.com

Summary: Application Application to Commit Energy
Efficiency/Peak Demand
Reduction Programs
(Mercantile Customers Only)- Kohls electronically filed by Carys Cochern on behalf of Duke Energy