Ohio | Public Utilities Commission

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

Case No.: ____-____-EL-EEC

Mercantile Customer: **Dollar Tree Stores, Inc - Store 1787**

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: **Dollar Tree Stores, Inc**

Principal address: **500 Volvo Parkway Chesapeake, Virginia 23320**

Address of facility for which this energy efficiency program applies:

10581 Springfield Rd, Store 1787, Cincinnati, Ohio 45215

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. (Please attach documentation.)

✓ **The customer is part of a national account involving multiple facilities in one or more states. (Attachment 1 – Appendix 1).**

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: _____

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)). September 2010**

□ 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: _____kWh

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

Annual savings: _____kWh

Please describe any less efficient new equipment that was rejected in favor of the more efficient new equipment.

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: **7456 kWh gross with losses (Attachment 1-Appendix 2)**

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?

September 2010

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

1.44 KW (Attachment 1-Appendix 2)

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 $284.00. Attachment 1-Appendix 3** (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

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

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

OR

□ A commitment payment valued at no more than $_____. (Attach documentation and

calculations showing how this payment amount was determined.)

OR

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

Section 6: Cost Effectiveness

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

□ Total Resource Cost (TRC) Test. The calculated TRC value is: _____ (Continue to Subsection 1, then skip Subsection 2)

✓ **Utility Cost Test (UCT). The calculated UCT value is: Attachment 1-Appendix 4 (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 **$3,178.00 (Attachment 1-Appendix 5)**.

The utility's program costs were **$206.00 (Attachment 1- Appendix 6).**

The utility's incentive costs/rebate costs were **$284.00 (Attachment 1- Appendix 3)**.

Section 7: Additional Information

Please attach the following supporting documentation to this application:

Narrative description of the program including, but not limited to, make, model, and year of any installed and replaced equipment.

A copy of the formal declaration or agreement that commits the program or measure to the electric utility, including:

1) any confidentiality requirements associated with the agreement;
2) a description of any consequences of noncompliance with the terms of the commitment;
3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;
4) permission by the customer to the electric utility and Commission staff and consultants to measure and verify energy savings and/or peak-demand reductions resulting from your program; and,
5) a commitment by the customer to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results. Additionally, identify and explain all deviations from any program measurement and verification guidelines that may be published by the Commission.

Ohio | Public Utilities Commission

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Case No.: ____-____-EL-EEC

State of _____:

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

1. I am the duly authorized representative of:

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

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

_____
Signature of Affiant & Title

Sworn and subscribed before me this _____day of _____, _____Month/Year

_____ _____
Signature of official administering oath Print Name and Title

My commission expires on _____

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	Dollar Tree #1787	Contact		Marcello Crestani	
Phone	215-732-4480 x 234	**Account Number**		45802158067	
Street Address (Where incentive should be mailed)		PO Box #15787 (Dept. 26095)			
City	Philadelphia	State	PA	Zip Code	19103
Installation Street Address	10581 Springfield Pike				
City	Woodlawn	State	OH	Zip Code	45215
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 #	54-1387365
	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	10/18/11	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 x	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 eligible 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 eligible 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# GE432MAX-N+ Lamp model # FO28/841/XP/SS	$2.50	48	Hrs.	4212	9/1/2010	$264.00
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.

X 2 4212 $134.00 9/1/2010 $20.00

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.

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

☒ Rebate is accepted. ☐ Rebate is declined.

By accepting this rebate, Dollar Tree Stores, Inc 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, Dollar Tree Stores, Inc 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, Dollar Tree Stores, Inc 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):

Customer Signature	Keith Johnson	12/16/2011
	Printed Name	Date

Proposed Rebate Amounts

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	T-8 w/ Electronic Ballast – 4ft 4 lamp (Qty – 48)	$264.00
ECM-2	Occupancy Sensor – t <500 W (Qty – 2)	$20.00
ECM-3		
ECM-4		
Total		$284.00

Ohio | Public Utilities Commission

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

Case No.: - -EL-EEC

State of Ohio :

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

1. I am the duly authorized representative of:

_____
[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.

Signature of Affiant & Title

Sworn and subscribed before me this 9th day of November, 2011 Month/Year

Signature of official administering oath

KRISTIN CAIN
NOTARY PUBLIC
Print Name and Title

My commission expires on 4-30-13

Revised October 28th, 2010

FE Rev 4.25.11

Attachment 1 – Dollar Tree #1787

Appendix 1 – Billing History

12 Month Billing History
DOLLAR TREE
65802168 03
10581 SPRINGFIELD RD
CINCINNATI, OH 45215

Date	Days	Read	Actual KWH	Bill KWH
9/28/2011	30	30824	10,900	10,900
8/29/2011	31	30279	15,620	15,620
7/29/2011	30	29498	16,360	16,360
6/29/2011	28	28680	12,380	12,380
6/1/2011	33	28061	10,820	10,820
4/29/2011	30	27520	7,160	7,160
3/30/2011	29	27162	6,600	6,600
3/1/2011	29	26832	6,560	6,560
1/31/2011	32	26504	7,340	7,340
12/30/2010	31	26137	10,060	10,060
11/29/2010	33	25634	13,400	13,400
10/27/2010	29	24964	10,100	10,100
		TOTAL	127,300	

Appendix 2 – Annual kWh losses and annual KW losses

Measure	Annual kWh Gross with losses	Upload Amount	Total Annual kWh Losses	KW Per Measure	Total KW Savings
T-8 w/ Electronic Ballast - 4ft 4 lamp	155.34	48	7456.32	0.03	1.44
Occupancy Sensor - <500 W	525.15	2	1050.3	0.11	0.22
TOTAL			**7456.32**		**1.44**

Appendix 3 – Cash Rebate

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	T-8 w/ Electronic Ballast – 4ft 4 lamp (Qty – 48)	$264.00
ECM-2	Occupancy Sensor – t <500 W (Qty – 2)	$20.00
Total		$284.00

Keith Johnson

Dollar Tree Stores, Inc.

Appendix 4 – Utility Cost Test

Measure	UCT
T-8 w/ Electronic Ballast - 4ft 4 lamp	6.27
Occupancy Sensor - <500 W	10.21

Appendix 5 – Avoided Supply Costs

Measure	T&D	Production	Capacity	Upload Amount	Total Avoided Costs
T-8 w/ Electronic Ballast - 4ft 4 lamp	$ 6.00	$ 40.00	$ 13.00	48	$2,832.00
Occupancy Sensor - <500 W	$ 17.00	$ 117.00	$ 39.00	2	$346.00
TOTAL					**$3,178.00**

Appendix – 6 Utility Program Costs

Measure	Qty	Admin Costs	Implementation	Total Costs
T-8 w/ Electronic Ballast - 4ft 4 lamp	48	$ 3.00	$ 1.00	$192.00
Occupancy Sensor - <500 W	2	$ 6.00	$ 1.00	$ 14.00
TOTAL				**$206.00**

Standard Electric - The Power House

Single Invoice: 103319
Date: 6/16/2010

Remit To: Standard Electric Supply
Lockbox # 8666
PO Box 8500
Philadelphia, PA 19178-8666

Cust #: 222000

DOLLAR TREE STORES #1787
500 VOLVO PARKWAY
DEPARTMENT 600
CHESAPEAK VA 23320

Sub: 1787

DOLLAR TREE STORE #1787
10581 SPRINGFIELD PIKE
WOODLAWN OH 45215

Ticket No	Date	Po	Line	Item No	Item Desc	Qty Ord	Qty Ship	UM	Unit Price	Ext Amt
780270400	06/11/2010 38920		1		DT PO #38920	0	0		0.00	0.00
			2	MET2GR8432AUNVA38	TYPE 2X4 2GR8432AUNVA38218GUNV 4 LAMP,T8 TROFFER	36	36	E	41.50	1494.00
			3	METSS232UNV	SS232UNVFBP240MOSQTP2X32T8UNV ISNSC, 4' EMERGENCY FIXTURE,	2	2	E	98.00	196.00
			5	MET2GR8432AUNV3EM	2GR8432AUNVA38318GEL4 2X4 2X4 TROFFER EM BALLAST UNV	12	12	E	88.91	1066.92
			7	CADDTIDS	5/8 SUPPORT CLIP	200	200	E	0.60	120.00
			8	SYLFO28841XPSSECO	SYL FO28/841/XP/SS/ECO FLUOR L T8 FLUORESCENT LAMP	480	480	E	1.89	907.20
			9	LEVOSC10UOW	OSC10-UOW CEILING MOUNT SENSOR	2	2	E	67.00	134.00
			10	LEVOSP20RD0	LEVITON 120/277V POWER PACK W RELAY	2	2	E	25.00	50.00
			11	LEVOSP20D0	OSP20-D0 OCC SENSOR POWER PACK	1	1	E	19.76	19.76
			12	SURCC4WHO	TYPE EM UNIT NO HEADS,WHITE	3	3	E	33.50	100.50
			13	SUR6T8DWGY	TYPE EM HEADS 6V,8W,GREY	3	3	E	27.75	83.25
			14	SURFBP240M	EMERGENCY FLUORESCENT BATTERY PACK, FOR 2x4 TROFFERS, 4FT &	14	14	E	47.41	663.74
			16	FRTOUT	SHIPPING CHARGE	0	0		0.00	500.00
			17	PRO NUMBER	74448594-9	0	0		0.00	0.00
			18		SALES TAX	0	0		0.00	374.75
780301900	06/11/2010 38920		1	CHLOT	CUTLER HAMMER LOT PRICE	1	1	E	528.04	528.04
			2	WESPRL1A3225X42CS	N/TFL 240D/208Y120V 225A 42C I GREEN LABEL FITS	1	1	E	0.00	0.00
			3	WESEZB2048RBS	EZ BOX STOCKING 20W X 48H	1	1	E	0.00	0.00
			4	WESEZT2048S	EZ TRIM SUR UNV 20WX48H BOX	1	1	E	0.00	0.00
			5	WESBKED150T	MAIN OR SUBFEED BRK KIT 240V	1	1	E	0.00	0.00
			6	WESBAB1020	W-HSE BAB1020 20A 1P CKT BRKR	40	40	E	0.00	0.00
			7	WESBAB2030	W-HSE BAB2030 30A 2P CKT BRKR	1	1	E	0.00	0.00
			8	WESISOGROUND	INSULATED/ISOLATED GROUND BAR	1	1	E	0.00	0.00
			9	WESQL1NPL	BREAKER LOCK (SHIPPED W/7802704)	10	10	E	0.00	0.00
			10		SALES TAX	0	0		0.00	40.92

Summary for Single Invoice: 103319

Merchandise Total:	5,363.41
Freight Total:	500.00
Fuel Total:	0.00
Sales Tax Total:	415.67
Total Amt Due:	6,279.08

Occupancy Sensor
Ultrasonic Ceiling Sensor

OSC20-U
OSC10-U
OSC05-U

Microprocessor based, the OSCxx-U has a self adapting feature that compensates for air flow, giving it excellent immunity to air currents and other interference.

THE OSCxx-U OCCUPANCY SENSOR

- ULTRASONIC SENSING TECHNOLOGY (US)
- EXCELLENT RANGE AND SENSITIVITY
- SIMPLE, FAST INSTALLATION
- SELF-ADJUSTING
- DIGITAL TECHNOLOGY, COMPLETE RELIABILITY
- PHOTOCELL CONTROL

GENERAL OPERATION

The OSCxx-U is a low voltage occupancy sensor that controls indoor lighting. The sensor fills the room with continuous high frequency (ultrasonic) sound waves. Any movement within the sensor's range causes a shift in the original emitted frequency. The sensor's receiver identifies any change in frequency as motion and either turns the lights on or maintains lights on.

AUTOMATICALLY ADAPTS

Interference	Symptoms	OSCxx-U Action
Air Flow	Lights on frequently	Auto adjust US threshold Low pass filter
Timer Left In Test Mode	Lights cycle on/off	Auto sets timer to operating mode
US Sensitivity	False-ons	Auto adjust time-out
	False-offs	Auto adjust time-out
Time-out Too Long	Lights on too long	Auto adjust Time Delay

Designed for "install and forget" use, the OSCxx-U automatically analyzes room conditions and adapts to errors or changing environment.

FEATURES

Small Size: Installed sensor appears almost invisible.
Fast, Simple Installation: Easy ceiling mount, three wire connection (low voltage) and twist-lock sensor attachment.
Maximum Reliability, Low Cost: All digital circuitry uses a minimum of components.
Small Motion Sensitivity: The ultrasonic technology provides excellent small motion sensitivity.
Timer Setting: Automatic - and Manual 30 sec. to 30 min. Test mode - 6 sec.
Non-Volatile Memory: Learned and adjusted settings saved in protected memory are not lost during power outages.
Wide Coverage: Units from 500 to 2000 sq. ft. available.
Ambient Light Recognition: The photocell prevents lights from turning on when the room is adequately lit by natural light.

OSCxx-U

HOW THE OSCXX-U AUTOMATICALLY ADAPTS

Condition	Example	Adaptive Reaction
Timer Left In Test Mode - The sensor remains in an 6 sec. test mode.	An installer accidentally leaves the sensor in the 6 sec. timer test mode and the lights may go off or on every 6 sec.	The sensor automatically resets the timer to 10 min after 15 min of test mode.
False-On -The sensor incorrectly turns the lights on.	The sensor detects movement in the corridor or hallway and the room lights turn on.	After an initial movement is sensed, if another movement is not sensed within the timer setting then the delayed off time setting is automatically reduced.
False-Off -The sensor incorrectly turns the lights off.	The sensor does not detect movement because an occupant sits virtually motionless at a desk and the lights turn off.	If motion is sensed within a short period after the lights go off, then the current delayed off-time setting is increased.

A dedicated internal microprocessor continually analyzes the room environment and adjusts itself automatically. The internal timer and ultrasonic sensitivity are automatically adjusted. Once installed, the OSCxx-U does not require manual adjustment or calibration.

LEVITON SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	
JOB NUMBER:		

Leviton Mfg. Co., Inc.
59-25 Little Neck Pkwy • Little Neck, NY 11362-2591 • Tech Line: 1-800-824-3005 • Fax: 1-800-832-9538
Visit our Website at: www.leviton.com

LEVITON® Building a Connected World

Product Specifications

OSCxx-U

PRODUCT SPECIFICATIONS

Models				
Part Number	**Transducer Pairs**	**Coverage**	**Operating Frequency**	**Additional Features**
OSC05-U	One	500 sq. ft.	40kHz	Photocell
OSC10-U	Two	1000 sq. ft.	40kHz	Photocell
OSC20-U	Two	2000 sq. ft.	32kHz	Photocell

CONTROLS

US (Ultrasonic Sensitivity): High to low range.
Self Adjusting Timer: Timer is factory set at 10 minutes. User can easily select 30s, 30 minutes using internal controls. Sensor may increase timer automatically through self-adapting features to meet room or occupancy patterns.

PC (Photocell Adjustment): 20 to 3,000 Lux

INDICATOR

Green LED Lamp: Ultrasonic motion.

DIP switch settings			
Switch	**Switch Functions**		**Switch Settings**
	Bank A	**OFF**	**ON**
A1	N/A	—	—
A2	N/A	—	—
A3	Manual Mode	Auto Adapting Enabled	Auto Adapting Disabled
A4	Walk-Thru Disable	Walk-Thru Enabled	Walk-Thru Disabled
	Bank B		
B1	Override to On	Auto Mode	Lights forced On
B2	Override to Off	Auto Mode	Lights forced Off
B3	Test Mode	OFF→ON→OFF	Enter/Exit Test Mode
B4	LED Disable	LEDS Enabled	LEDS Disabled

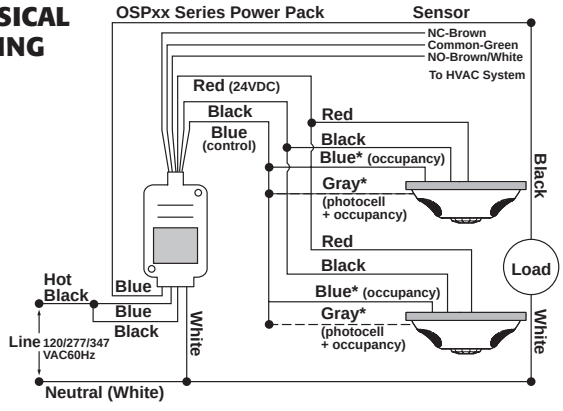
SPECIFICATIONS

Construction: One or two ultrasonic transmitters and one or two narrow bandwidth receivers each 16mm in diameter. Frequency – Crystal controlled to ±.005%. Transducers – Oriented north and south. Housing – Rugged, high-impact, injection molded plastic. Color coded leads 6" (16.24 cm).
Size & Weight: 4.5" dia., 1.5" height; 5 oz. (114 mm dia., 38 mm height; 142 g).
Color: White.
Power Requirements: 24 VDC, from OSPxx power pack.

Model	Power Requirement
OSC05	30MA
OSC10	40MA
OSC20	32MA

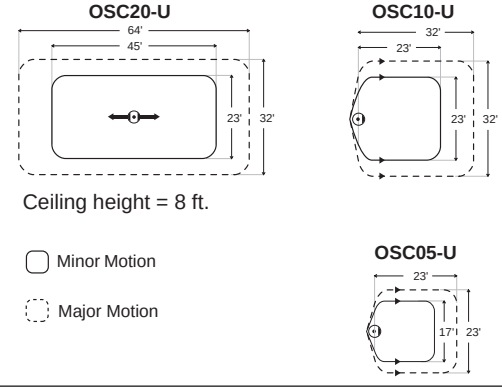
Output: 24 VDC active high logic control signal with short circuit protection.
Operating Environment: 32°F to 104°F (0°C to 40°C); 0% to 95% relative humidity, non-condensing. For indoor use only.
Warranty: 5 years.

PHYSICAL WIRING



**When the photocell function is not being used, connect the Blue Occupancy Sensor lead to the Blue Power Pack lead. When using the Photocell function, connect the Gray Occupancy Sensor lead to the Blue Power pack lead–Do not use the Blue Occupancy Sensor lead for the photocell function.*

RANGES (APPROXIMATE)



LEVITON SPECIFICATION SUBMITTAL

JOB NAME:	CATALOG NUMBERS:	
JOB NUMBER:		

Leviton Mfg. Co., Inc.
59-25 Little Neck Pkwy • Little Neck, NY 11362-2591 • Tech Line: 1-800-824-3005 • Fax: 1-800-832-9538

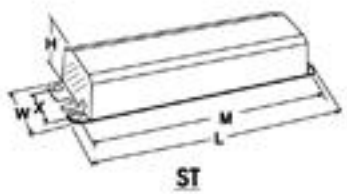
LEVITON® Building a Connected World

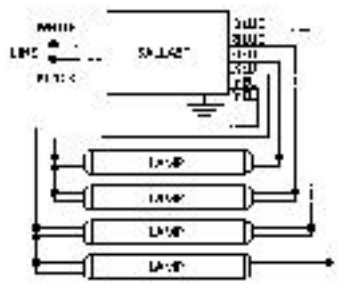
GE Lighting

71423 - GE432MAX-N+

GE LFL UltraMax™ Electronic High Efficiency Multivolt Instant Start Ballast

- Energy saving high efficiency instant start electronic ballast (> 90%)
- Multi-Voltage Technology handles voltage from 120 to 277V
- UL Type CC Rating provides protection against arcing in electrical devices.
- Active Current Regulation regulates the output to each lamp with individual lamp inverter modules.
- Anti-Striation Control for better light quality, with no striations.
- Cold temperature -20F Minimum Starting Temperature





GENERAL CHARACTERISTICS

Application	4 or 3- F32T8 120 to 277 "N+" 1.0 BF
Category	Linear Fluorescent
Ballast Type	Electronic - High Efficiency Multivolt Instant Start
Starting Method	Instant start
Lamp Wiring	Parallel
Line Voltage Regulation (+/-)	10 %
Case Temperature	70 °C(158 °F)
Ballast Factor	Normal-High (1.0)
Power Factor Correction	Active
Sound Rating	A (20-24 decibels)
Additional Info	Anti-striation control/Auto-restart/Thermally protected

PRODUCT INFORMATION

Product Code	71423
Description	GE432MAX-N+
Standard Package	Case
Standard Package GTIN	10043168714232
Standard Package Quantity	10
Sales Unit	Standard Pack
No Of Items Per Sales Unit	1
No Of Items Per Standard Package	10
UPC	043168714235

DIMENSIONS

Case dimensions	
Length (L)	9.5 in(241.30 mm)
Width (W)	2.4 in(60.45 mm)
Height (H)	1.6 in(39.37 mm)
Mounting dimensions	
Mount Length (M)	8.9 in(225.81 mm)
Mount Width (X or F)	1.7 in(42.93 mm)
Mount Slots (MS)	0.3 in(7.92 mm)
Weight	2.16 lb
Exit Type	Side
Remote Mounting Distance	18 ft
Remote Mounting Wire Gauge	18 AWG

Lead lengths	Qty	Exit	Length (± 1 in.)
Black	1	Left	25 (635mm)
Blue	2	Right	31.0 (787mm)
Red	2	Right	31.0 (787mm)
White	1	Left	25.0 (635mm)
Yellow	2	Left	39.0 (991mm)

ELECTRICAL CHARACTERISTICS

Supply Current Frequency	50 Hz/60 Hz

SAFETY & PERFORMANCE

- cUL Listed
- FCC - CLASS A Non-Consumer
- UL Class P
- UL Listed
- UL Type 1 Outdoor
- UL Type CC
- UL Type HL
- RoHs Compliant
- NEMA Premium®
- High Temperature Rated: Suitable for high temperature applications
- 70C max case temp 5 yr warranty or 90C max case temp 3 yr warranty

SPECIFICATIONS BY LAMP & WATTAGE

Lamp	# of Lamps	Line Volts	System Watts	Nom. Line Current	System Ballast Factor	Ballast Efficacy Factor	Power Factor% (>=)	Crest Factor (<=)	THD% (<=)	Min. Starting Temp (°F/°C)
FE15T8	3	120	50	0.42 A	1.01	2.02	99	1 1/2	12	0.0 / -18
FE15T8	3	277	51	0.2 A	1.02	2.00	93	1 1/2	24	0.0 / -18
FE15T8	4	120	62	0.52 A	1.00	1.61	99	1 1/2	11	0.0 / -18
FE15T8	4	277	62	0.24 A	1.00	1.61	94	1 1/2	22	0.0 / -18
F40T8	3	120	107	0.89 A	0.88	0.82	99	1 1/2	10	0.0 / -18
F40T8	3	277	105	0.4 A	0.88	0.84	97	1 1/2	16	0.0 / -18
F32T8/WM	3	120	92	0.77 A	1.00	1.09	99	1 1/2	10	50.0 / 10
F32T8/WM	3	277	92	0.35 A	1.00	1.09	97	1 1/2	18	50.0 / 10
F32T8/WM	4	120	119	1.0 A	1.00	0.84	99	1 1/2	10	50.0 / 10
F32T8/WM	4	277	117	0.44 A	1.00	0.85	98	1 1/2	15	50.0 / 10
F32T8/25W	3	120	78	0.0 A	1.00	1.28	99	1.4	10	60.0 / 16

F32T8/25W	3	277	77	0.0	A	1.00	1.30	97	1.4	15	60.0 / 16
F32T8/25W	4	120	101	0.0	A	1.00	0.99	99	1.4	10	60.0 / 16
F32T8/25W	4	277	100	0.0	A	1.00	1.00	98	1.4	15	60.0 / 16
F32T8	3	120	97	0.81	A	0.97	1.00	99	1 1/2	10	-22.0 / -30
F32T8	3	277	96	0.36	A	1.00	1.04	97	1 1/2	18	-22.0 / -30
F32T8	4	120	124	1.03	A	1.00	0.81	99	1 1/2	10	-22.0 / -30
F32T8	4	277	121	0.45	A	1.00	0.83	98	1 1/2	15	-22.0 / -30
F28T8	3	120	89	0.74	A	1.00	1.12	99	1 1/2	10	50.0 / 10
F28T8	3	277	88	0.33	A	1.00	1.14	96	1 1/2	19	50.0 / 10
F28T8	4	120	114	0.95	A	1.00	0.88	99	1 1/2	10	50.0 / 10
F28T8	4	277	112	0.36	A	1.00	0.89	97	1 1/2	18	50.0 / 10
F25T8	3	120	81	0.68	A	1.05	1.30	99	1 1/2	10	-22.0 / -30
F25T8	3	277	80	0.31	A	1.05	NaN	96	1 1/2	20	-22.0 / -30
F25T8	4	120	103	0.86	A	1.04	1.01	99	1 1/2	10	-22.0 / -30
F25T8	4	277	101	0.38	A	1.04	1.03	97	1 1/2	16	-22.0 / -30
F25T12	3	120	86	0.72	A	0.97	1.13	99	1 1/2	10	0.0 / -18
F25T12	3	277	86	0.32	A	0.97	1.13	96	1 1/2	19	0.0 / -18
F25T12	4	120	110	0.92	A	0.96	0.87	99	1 1/2	10	0.0 / -18
F25T12	4	277	108	0.4	A	0.96	0.89	97	1 1/2	16	0.0 / -18
F17T8	3	120	60	0.51	A	1.08	1.80	99	1 1/2	11	-22.0 / -30
F17T8	3	277	61	0.24	A	1.08	1.77	94	1 1/2	22	-22.0 / -30
F17T8	4	120	76	0.63	A	1.07	1.41	99	1 1/2	10	-22.0 / -30
F17T8	4	277	75	0.29	A	1.07	1.43	96	1 1/2	19	-22.0 / -30

WARRANTY INFORMATION

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

OCTRON® FO28 800XP® SUPERSAVER® ECOLOGIC®3

EXtended Performance Fluorescent Lamps

SYLVANIA 28 Watt OCTRON FO28 XP SUPERSAVER ECOLOGIC3 lamps operate on standard T8 instant start systems and provide 12.5% energy savings over standard 32 Watt OCTRON lamps. At $0.10/kWh and 4000 hours of operation per year, the 12.5% savings translates to a savings of $5.70 per fixture per year for a 4-lamp fixture with a normal ballast factor, instant start ballast. The 95% lumen maintenance of the OCTRON FO28/800XP/SS/ECO3 lamp assures that light levels are maintained while energy is saved. These lamps pass the Federal TCLP test, classifying them as non-hazardous waste in most states. Group re-lamp to realize the benefits of these OCTRON lamps in your facility.

Key Features & Benefits

- 28 Watt, 4-foot, SUPERSAVER energy saving, T8 lamp
- 12.5% energy savings compared to standard 32W T8 lamp
- A member of the SYLVANIA ECOLOGIC3 family of lamps
- Initial lumens – 2725 (850 is 2600)
- 95% lumen maintenance at 8000 hours
- 3000K, 3500K, 4100K & 5000K
- 85 CRI (850 is 80 CRI)
- Retrofit lamp for existing T8 instant start systems
  - 24,000 hours average rated life @ 3 hrs per start
  - 36,000 hours average rated life @ 12 hrs per start
- Approved on OSRAM SYLVANIA QUICK-TRONIC® PSX and PSN ballasts
  - 36,000 hours average rated life @ 3 hrs per start
  - 42,000 hours average rated life @ 12 hrs per start
- Minimum operating temperature: 60°F
- Not dimmable
- Not for use in air handling fixtures

SYLVANIA OCTRON T8 ECOLOGIC3 fluorescent lamps are designed to satisfy the Federal Toxicity Characteristic Leaching Procedure (TCLP[1]) criteria for classification as non-hazardous waste in most states.[2]

ECOLOGIC3 represents a more comprehensive approach to sustainability encompassing high efficiency, long life and RoHS/TCLP compliance.

ECOLOGIC®

ecologic®3

1. TCLP test results are based on NEMA LL Series standards and are available on request.
2. Lamp disposal regulations may vary; check your local & state regulations.

Product Offering

Lamp Type	Wattage	Color Temperature	CR
FO28/830XP/SS/ECO3	28	3000K	85
FO28/835XP/SS/ECO3	28	3500K	85
FO28/841XP/SS/ECO3	28	4100K	85
FO28/850XP/SS/ECO3	28	5000K	80

Application Information

Applications

Retail
Office
Schools
Hospitals
Industrial
Many applications with T8 instant start ballasts currently using 32W T8 lamps

Fixtures

Contact your local fixture agent for available fixtures.

Ballast Information

Contact your OSRAM SYLVANIA representative for a list of compatible electronic operating systems.

Specification Data

Catalog #	Type
Project	
Comments	
Prepared by	Date

Ordering Information

Item Number	Ordering Abbreviation	Watts	Bulb	Base	Initial Lumens	Mean Lumens[1]	Avg. Rated Life (hrs.)[2]	CCT	CRI
22177	FO28/830XP/SS/ECO3	28	T8	Medium bi-pin	2725	2590	24,000	3000K	85
22178	FO28/835XP/SS/ECO3	28	T8	Medium bi-pin	2725	2590	24,000	3500K	85
22179	FO28/841XP/SS/ECO3	28	T8	Medium bi-pin	2725	2590	24,000	4100K	85
22184	FO28/850XP/SS/ECO3	28	T8	Medium bi-pin	2600	2470	24,000	5000K	80

1. Measured @ 8000 hours, 94% of initial lumens at 9600 hours, and 93% of initial lumens at 14,400 hours.
2. Based on 3 hours/start on instant start ballasts. At 12 hours/start, average rated life = 36,000 hours on instant start ballasts.

Ordering Guide

FO	28	/	8	35	XP	/	SS	/	ECO3
Fluorescent OCTRON	Wattage = 28		CRI ≥ 80	Color Temperature 30 = 3000K 35 = 3500K 41 = 4100K 50 = 5000K	EXtended Performance		SUPERSAVER		ECOLOGIC3

System Comparison

4-Lamp Systems: FO28/800XP/SS/ECO3 vs FO32/700/ECO

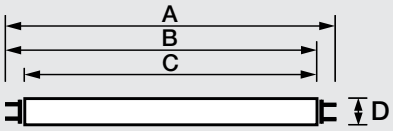
Lamp Type	Initial Lumens	Average Rated Life (hrs.)	Ballast	Ballast Factor	System Watts	System Lumens @ 8000 hrs.	Relative Lumens	Relative Lamp Life	% Energy Savings
FO32/741/ECO	2800	15,000	4-lamp IS	.88	114	8870	100%	100%	–
FO28/841XP/SS/ECO3	2725	24,000	4-lamp IS	.88	100	9112	103%	160%	12.5
FO32/741/ECO	2800	15,000	4-lamp IS-L	.77	98	7761	100%	100%	–
FO28/841XP/SS/ECO3	2725	24,000	4-lamp IS-L	.77	86	7973	103%	160%	12.5
FO28/841XP/SS/ECO3	2725	36,000	4-lamp PSX	.71	82/80[1]	7352	95%	240%	17/19

1. Ballast is universal input, data is presented 120V/277V

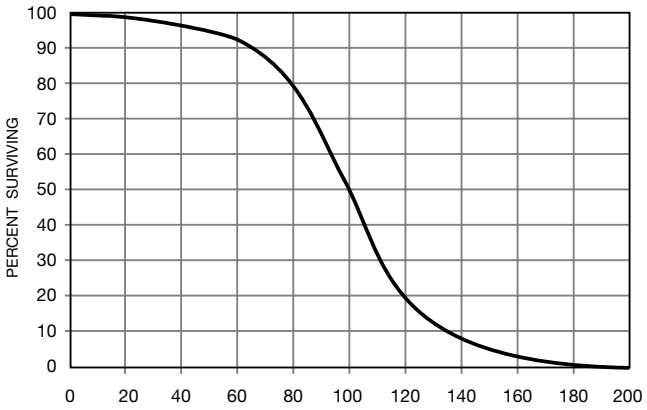
Technical Information

Dimensions

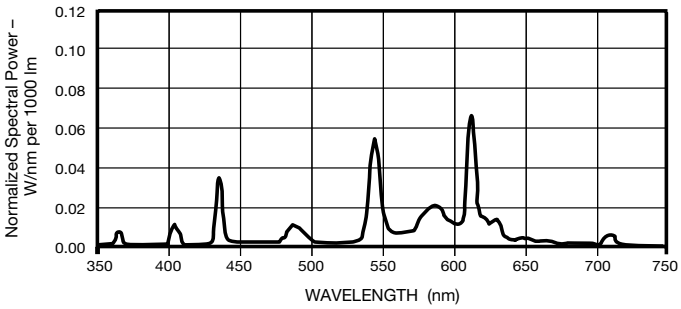
Lamp Type	(A) Max. Overall Length (in.)	(B) Base Face to Opposite Pin (in.)	(C) Max. Base Face to Base Face (in.)	(D) Max. Outside Diameter (in.)
F028	47.78“	Min. 47.41“ Max. 47.50“	47.22“	1.1“



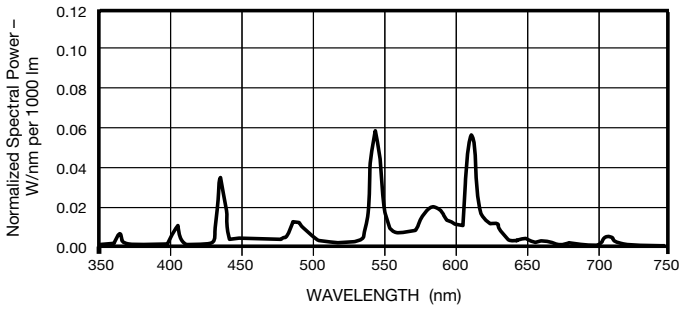
Typical Fluorescent Lamp Mortality



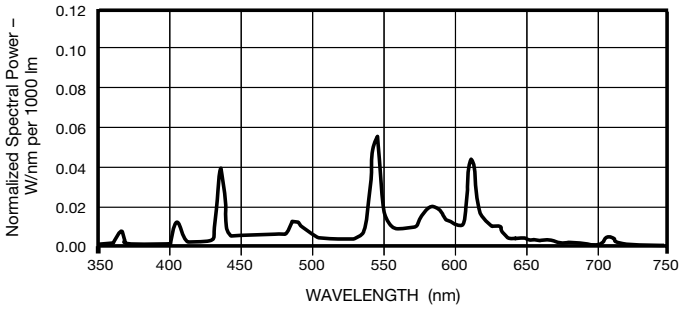
OCTRON 830



OCTRON 835



OCTRON 841



Application Information (continued)

Application Notes

1. Recommended to be used on T8 F32 Instant or Programmed Start ballasts with minimum open circuit voltage of 550V RMS at the lamp.
   a. Electronically ballasted fixture configurations which operate lamps remotely, such as Master/Satellite applications, can cause reduction of lamp open circuit voltage, in the remote fixture, below the minimum required for reliable lamp starting. For more information, please call 1-800-LIGHTBULB and ask for Ballast Technical Assistance or call your fixture manufacturer.
   b. Not recommended to be used: (1) in remotely ballasted fixtures with lamp open circuit voltages below 550V, (2) with Rapid Start ballasts unless the lamp open circuit voltage is greater than 570V, (3) at lamp ambient temperatures below 60°F or in drafty locations, (4) in air handling fixtures, (5) on low power factor ballasts, (6) dimming ballasts, or (7) inverter operated emergency lighting systems unless any of the above equipment is specifically listed for 28 watt lamps. Any of the above situations could result in lamp starting and stabilization problems or system compatibility issues.
2. If an operating lamp is exposed to drafts and/or the ambient temperature falls below 60°F, striation (a rhythmic pulsing pattern of light running down the tube) and/or reduction in lamp brightness may occur. While visually disconcerting, neither behavior is damaging to the lamp and removing the cause (draft or temperature) will return the lamp to normal operation.
3. Fixture must conform to ANSI C78.81 – 2005 requirements for luminaire design.

Sample Specification

Lamp(s) shall be OCTRON® FO28 XP® SUPERSAVER® ECOLOGIC®3 4-foot lamp(s) having medium bi-pin bases. Lamp(s) shall be designed to pass the Federal TCLP test in force at the time of manufacture. Lamp(s) shall have an average rated life of 24,000 hours at 3 hours per start when operated on T8 instant start ballasts, 2725 initial lumens (2600 for 5000K), 95% lumen maintenance at 8000 hours, a correlated color temperature of (3000K, 3500K, 4100K or 5000K) and a CRI of (80, 85). The OCTRON SUPERSAVER ECOLOGIC3 lamp(s) shall be operated on QUICKTRONIC electronic, high frequency ballasts with complete system warranty from the manufacturer covering lamps and ballast.

Warranty

QUICK 60+® warranty for OSRAM SYLVANIA lamp and ballast combination

Limited 36 month lamp warranty and a five year ballast warranty is possible if both lamps and ballast are provided by OSRAM SYLVANIA. See the QUICK 60+ warranty for details and restrictions.

OSRAM SYLVANIA
National Customer
Service and Sales Center
18725 N. Union Street
Westfield, IN 46074 USA

Industrial Commercial
Phone: 1-800-255-5042
Fax: 1-800-255-5043

National Accounts
Phone: 1-800-562-4671
Fax: 1-800-562-4674

OEM/Special Markets
Phone: 1-800-762-7191
Fax: 1-800-762-7192

Display/Optic
Phone: 1-888-677-2627
Fax: 1-800-762-7192

In Canada
OSRAM SYLVANIA LTD
Headquarters
2001 Drew Road
Mississauga, ON L5S 1S4

Industrial Commercial
Phone: 1-800-263-2852
Fax: 1-800-667-6772

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

Visit our website: www.sylvania.com

DESCRIPTION

The GR8 is a T8-dedicated lensed troffer designed to offer premium performance in a low profile housing. T8 dedication and optimized lamp to lens spacing provides the best in energy efficiency and optical control. The GR8's shallow, low profile housing is compatible with even highly restrictive plenums. Luminaires are compatible with today's popular ceiling systems.

Catalog #	Type
Project	
Comments	
Prepared by	Date

APPLICATION

The GR8 offers great performance and great quality. The series is an excellent choice for commercial offices, schools, hospitals, retail merchandising and many other applications.

SPECIFICATION FEATURES

A···Construction

Unitized low profile recessed housing is die formed of code gauge prime cold rolled steel with full length stiffeners and mechanical endplate attachment for added strength. Ballast cover is easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring for easy lampholder replacement. Ample KOs are provided for continuous row wiring. Built-in grid-lock feature for safety and convenience. Standard unit is NYC Approved. (No modifications necessary).

B···Electrical**

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed. Suitable for damp locations.

C···Finish

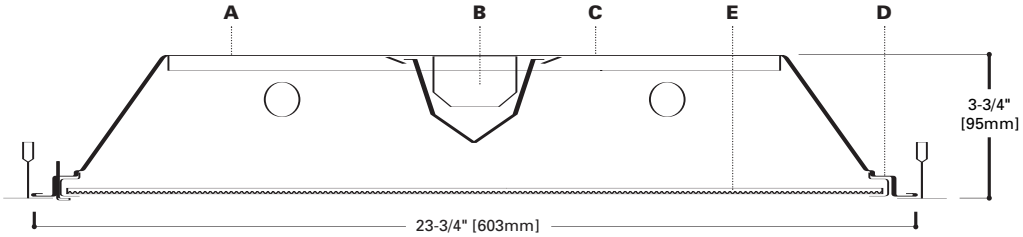
Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibition. Lighting grade baked white enamel finish with premium reflectance for high efficiency.

D···Hinging/Latching

Positive spring loaded cam action steel latches and safety lock T-hinges provide secure, high quality door fit and allow hinging and latching from either side.

E···Frame/Shielding

Heavy gauge flat steel door is die formed with reinforced mitered corners. Housing and door frame assemblies incorporate full length and width mechanical light traps. Light stabilized, acrylic prismatic lens.

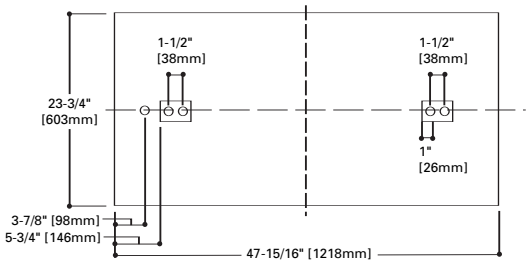


2GR8232 432

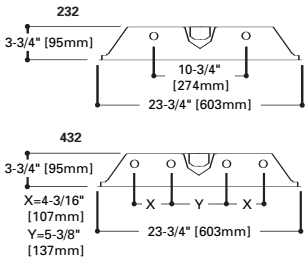
2' X 4' TROFFER
2 OR 4 LAMP

General Purpose
T8 Commercial Troffer

MOUNTING DATA

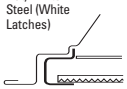


LAMP CONFIGURATIONS



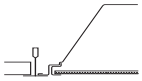
DOOR FRAMES

2GR8
Flat, White
Steel (White
Latches)

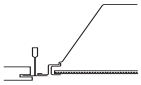


CEILING COMPATIBILITY

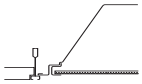
G
Grid/Lay-in
Standard



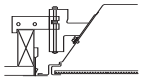
G
Concealed T



G
Slot Grid



F
Flange Trim
With Supporting
Swing Gates



Ceiling Type	Trim Type
Exposed Grid	G
Concealed T	G
Slot Grid	G
Flange	G***

ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
232 (61)
432 (122)

ES Ballast & STD Lamps
232 (71)
432 (142)

Luminaire Efficacy Rating
LER = FL-67
Catalog Number: 2GR8-232A

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.58

Luminaire Efficacy Rating
LER = FL-68
Catalog Number: 2GR8-432A

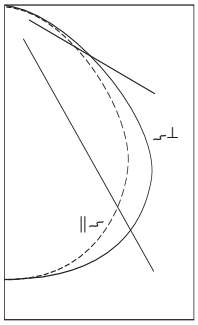
Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.53

*Standard G (Grid) Type Fixtures can be field converted by adding trim kits. See Compatibility Section or Consult Factory.

**Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

***Order FCS-24W-U Flange Kit for installation in drywall ceiling. See options and accessories compatibility section.

PHOTOMETRICS



2GR8-232A
Electronic Ballast
F32T8/35K lamps
2800 lumens
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.4 x mounting height
Efficiency 79.8%
Test Report: 2GR8232A.IES
LER = FL-67
Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.58

Candela

Angle	Along II	45°	Across ⊥
0	1697	1697	1697
5	1689	1696	1705
10	1669	1685	1703
15	1636	1665	1694
20	1586	1632	1673
25	1518	1582	1634
30	1430	1512	1582
35	1320	1427	1517
40	1188	1318	1422
45	1031	1162	1271
50	843	964	1046
55	657	740	796
60	501	528	581
65	378	353	405
70	277	232	294
75	196	172	231
80	143	144	176
85	77	85	97
90	0	0	0

Coefficients of Utilization

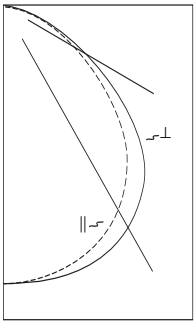
	Effective floor cavity reflectance																			
rc	80%				70%				50%			30%			10%			0%		
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																				
0	95	95	95	95	93	93	93	93	89	89	89	85	85	85	81	81	81	80		
1	88	85	82	79	86	83	80	78	79	77	75	76	74	73	73	72	71	69		
2	81	75	70	66	79	74	69	66	71	67	64	68	65	63	66	64	61	60		
3	75	67	62	57	73	66	61	56	64	59	55	62	58	55	60	56	54	52		
4	69	60	54	49	67	59	53	49	57	52	48	56	51	47	54	50	47	45		
5	63	54	47	42	62	53	47	42	51	46	42	50	45	41	48	44	41	39		
6	58	48	42	37	57	48	41	37	46	41	36	45	40	36	44	39	36	34		
7	54	44	37	32	53	43	37	32	42	36	32	41	35	32	40	35	31	30		
8	50	39	32	28	48	39	32	28	38	32	28	37	31	28	36	31	27	26		
9	46	35	29	24	45	35	28	24	34	28	24	33	28	24	32	27	24	22		
10	42	32	26	21	41	31	25	21	31	25	21	30	25	21	29	24	21	20		

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1360	24.3	30.4
0-40	2249	40.2	50.3
0-60	3788	67.6	84.7
0-90	4471	79.8	100.0
0-180	4471	79.8	100.0

Typical VCP Percentages

	Height Along		Height Across	
Room Size (Ft.)	8.5′	10.0′	8.5′	10.0′
20 x 20	73	77	71	75
30 x 30	68	72	65	69
30 x 60	60	63	56	59
60 x 30	69	73	68	71
60 x 60	60	63	57	60



2GR8-432A
Electronic Ballast
F32T8/35K lamps
2800 lumens
Spacing criterion: (II) 1.2 x mounting height, (⊥) 1.4 x mounting height
Efficiency 75.5%
Test Report: 2GR8432A.IES
LER = FL-68
Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.53

Candela

Angle	Along II	45°	Across ⊥
0	3299	3299	3299
5	3281	3295	3310
10	3241	3274	3306
15	3176	3233	3284
20	3079	3164	3236
25	2946	3059	3145
30	2772	2911	3012
35	2555	2721	2841
40	2296	2480	2612
45	1989	2162	2293
50	1621	1770	1890
55	1262	1357	1442
60	957	970	1043
65	716	649	736
70	520	430	542
75	368	321	427
80	269	269	327
85	147	160	185
90	0	0	0

Coefficients of Utilization

	Effective floor cavity reflectance																			
rc	80%				70%				50%			30%			10%			0%		
rw	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																				
0	90	90	90	90	88	88	88	88	84	84	84	80	80	80	77	77	77	75		
1	83	80	77	75	81	78	76	73	75	73	71	72	71	69	70	68	67	65		
2	77	71	67	63	75	70	66	62	67	64	61	65	62	59	63	60	58	57		
3	71	64	58	54	69	63	58	54	61	56	53	59	55	52	57	54	51	49		
4	65	57	51	47	64	56	51	46	54	50	46	53	49	45	51	48	45	43		
5	60	51	45	40	59	50	44	40	49	44	40	47	43	39	46	42	39	37		
6	56	46	40	35	54	45	39	35	44	39	35	43	38	34	42	37	34	33		
7	51	42	35	31	50	41	35	31	40	34	30	39	34	30	38	33	30	29		
8	47	37	31	27	46	37	31	27	36	30	27	35	30	26	34	30	26	25		
9	43	33	27	23	42	33	27	23	32	27	23	31	26	23	31	26	23	21		
10	40	30	24	21	39	30	24	20	29	24	20	29	24	20	28	23	20	19		

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2634	23.5	31.2
0-40	4327	38.6	51.2
0-60	7184	64.1	85.0
0-90	8452	75.5	100.0
0-180	8452	75.5	100.0

Typical VCP Percentages

	Height Along		Height Across	
Room Size (Ft.)	8.5′	10.0′	8.5′	10.0′
20 x 20	60	65	58	62
30 x 30	54	58	51	55
30 x 60	45	48	40	44
60 x 30	55	59	53	58
60 x 60	45	48	42	45

ORDERING INFORMATION

SAMPLE NUMBER: 2GR8-232A-120V-EB81-U

2=2' Width

Series
GR8=General Purpose T8 Commercial Troffer[1]

Number of Lamps[2]
2 or **4** Lamps
(Not included)

Wattage (Length)
32=32W T8 (48")

A=#12 Pattern Acrylic
A125=#12 Pattern Acrylic (.125" Thick)
A19/156=#19 Pattern Acrylic (.156" Thick)
IMA 48=Injection Moldeed Acrylic (.150" Thick)
PB1S=Silver Parabolic Louver (1/2" x 1/2" x 1/2")
(Additional shielding media available, see accessory section)

Voltage[3]
120V=120 Volt
277V=277 Volt
347V=347 Volt
UNV=Universal Voltage 120-277[4]

Options
GL=Single Element Fuse
GM=Double Element Fuse
Lamps=Lamps Installed
Flex=Flex Installed
Emergency=EM Installed

Ballast Type[3]
Blank=Standard Magnetic Ballast (Biax & 20W)
LEOC8=T8 Magnetic Energy Saving
ER8__=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%
No. of Ballast 1, 2 or 3
EB8__=T8 Electronic Instant Start. Total Harmonic Distortion < 20%
No. of Ballast 1, 2 or 3
EB8__**/PLUS**= T8 Electronic Instant Start. High Ballast Factor >1.13. Total Harmonic Distortion < 20%
No. of Ballast 1, 2 or 3
TEB8__=T8 Electronic Instant Start. Total Harmonic Distortion < 10%
No. of Ballast 1, 2 or 3
DLS=Digital Lighting System Dimming

Options
FCS-24W-U=Field Installed Flange Kit
FR=Suitable for Fire Rated Applications
EQ=T-BAR Safety Earthquake Clips[1]
(See options & accessories)

Packaging
U=Unit Pack

NOTES: [1]An EQ Grid Clip is recommended for all 9/16" ceiling systems. [2]Standard off-center ballast compartment on 3-lamp fixtures. [3]Products also available in non-US voltages and frequencies for international markets. [4]Not available when specifying emergencies, voltage must be specific.

For complete product data, reference the Fluorescent Specification binder. Specifications & dimensions subject to change without notice. Consult your Cooper Lighting Representative for availability and ordering information.

SHIPPING INFORMATION

Catalog No.	Wt.
2GR8-232A	29 lbs.
2GR8-432A	29 lbs.