



Public Utilities Commission

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

Case No.: 13-0853-EL-EEC

Mercantile Customer: Defiance College

Electric Utility: The Toledo Edison Company

Program Title or Description: Energy Efficiency - LED Summer Energy Project for 2011

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: Defiance College

Principal address: 701 N. Clinton St., Defiance, OH 43512

Address of facility for which this energy efficiency program applies:

701 N. Clinton St., Defiance, OH 43512

Name and telephone number for responses to questions:

Lois McCullough- VP of Finance and Management(419-783-2317)

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

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

Section 2: Application Information

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

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

B) The electric utility is: The Toledo Edison Company

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

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

Section 3: Energy Efficiency Programs

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

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

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

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

Annual savings: 74,317 kWh

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

Annual savings: _____ kWh

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

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

Annual savings: _____ kWh

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

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

Section 4: Demand Reduction/Demand Response Programs

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

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

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

See Exhibit 2

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

19 kW

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

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

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

A) The customer is applying for:

☒ Option 1: A cash rebate reasonable arrangement.

OR

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

OR

☐ Commitment payment

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

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

☒ A cash rebate of \$2,787. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

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

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

OR

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

OR

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

Section 6: Cost Effectiveness

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

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

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

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

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

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

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

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

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

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

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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



Public Utilities Commission

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

Case No.: 13-0853-EL-EEC

State of Ohio :

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

1. I am the duly authorized representative of:

Defiance College

[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.

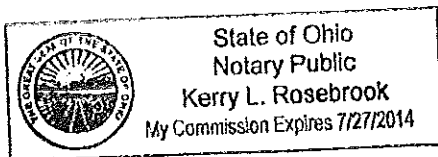
by: Lois McCullough, VP for Finance & Mgmt.
Signature of Affiant & Title

Sworn and subscribed before me this 3rd day of May, 2013 Month/Year

Kerry L. Rosebrook
Signature of official administering oath

Kerry L. Rosebrook, Notary Public
Print Name and Title

My commission expires on 7-27-14



Customer Legal Entity Name: Defiance College

Site Address: Defiance College

Principal Address: 701 North Clinton Street

Project No.	Project Name	Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment:	Description of methodologies, protocols and practices used in measuring and verifying project results	What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date.	Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment.
1	Summer LED Energy Project	LED lighting upgrade - Defiance College utilized LED lighting technology with a project to update its outdoor lighting in four campus locations: a) Sidewalk LEDs; b) Parking Lot LEDs; c) Wall Pack LEDs and d) Signage LEDs. Cash rebate calculated at \$0.05 per kWh saved = 71,233 x \$0.05 = \$3562 x .75 (reduction for mercantile customer program) = \$2672.	Deemed lighting calculations - Please refer to attachment: Lighting Calculator - Defiance College - May 2013.xls	5 years.	N/A

Exhibit 2

Customer Legal Entity Name: Defiance College
Site Address: Defiance College
Principal Address: 701 North Clinton Street

	Unadjusted Usage, kwh (A)	Weather Adjusted Usage, kwh (B)	Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (c) <i>Note 1</i>
2012	2,833,375	2,833,375	2,907,489
2011	3,017,589	3,017,589	3,055,053
2010	3,373,128	3,373,128	3,373,128
Average	3,074,697	3,074,697	3,111,890

Project Number	Project Name	In-Service Date	Project Cost \$	50% of Project Cost \$	KWh Saved/Year (D) counting towards utility compliance	KWh Saved/Year (E) eligible for incentive	Utility Peak Demand Reduction Contribution, KW (F)	Prescriptive Rebate Amount (G) \$	Eligible Rebate Amount (H) \$ <i>Note 2</i>	Commitment Payment \$
1	Summer LED Energy Project	07/01/2011	\$95,602	\$47,801	74,317	74,317	19	\$3,716	\$2,787	
					-	-	-			
					-	-	-			
					-	-	-			
					-	-	-			
					-	-	-			
					-	-	-			
		Total	\$95,602		74,317	74,317	19	\$3,716	\$2,787	\$0

Docket No. 13-0853
Site: 701 North Clinton Street

Notes

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

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

Exhibit 3 Utility Cost Test

UCT = Utility Avoided Costs / Utility Costs

Project	Total Annual Savings, MWh (A)	Utility Avoided Cost \$/MWh (B)	Utility Avoided Cost \$ (C)	Utility Cost \$ (D)	Cash Rebate \$ (E)	Administrator Variable Fee \$ (F)	Total Utility Cost \$ (G)	UCT (H)
1	74	\$ 308	\$ 22,910	\$ 4,050	\$2,787		\$ 6,837	3.4
Total	74	\$ 308	22,910	4,050	\$2,787	\$0	6,837	3.4

Notes

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

Defiance College ~ Defiance College
Docket No. 13-0853

Site: 701 North Clinton Street

Defiance College - 2011 Summer Energy Project



Outside Lighting	Quantity	Old lamp HPS/HID	New lamp LED	Savings per lamp	Old Lamp kW	Total LED Watts	New LED kW	Annual hours	kWh
a Sidewalk lights	88	150	77	73	16.5	6,424	6.8	3833	37,340
b Parking lights	10	400	138	262	4.7	2,620	1.4	3833	12,534
c Wall pack lights	30	100	30	70	4.1	2,100	0.9	3833	12,483
d Sign flood lights	27	100	26	74	3.4	1,998	0.6	3833	11,960
					28.7	13,142	13.1		

kWh saved **74,317**

[illegible]

Project Estimated Annual Savings Summary

Lighting

Estimated Annual kWh Savings	74,317
Total Change in Connected Load	19.39

Annual Estimated Cost Savings	\$7,431.70
Annual Operating Hours	3,833

Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$0.00
Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs)	\$3,715.85
Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior)	\$0.00
Total retrofit LED Exit Incentive @ \$10/exit sign	\$0.00
Total Lighting Controls Incentive @ \$25/occupancy sensor and \$25/daylight sensor (includes all Lighting Controls, both interior and exterior)	\$0.00

Total Calculated Incentive	\$3,715.85
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Total Fixture Quantity excluding retrofit CFLs and LED Exit Signs	155
Total Lamp Quantity for retrofit Screw-In CFLs	0

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

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

Demand Savings (For Internal Use Only)	0.00
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XENM3 / XINM3 / XLXM3 LED Decorative Pedestrian / Area Fixture

Crossover[®]
GENERATION 3

Leading Selling Features

- ▣ SmartTec™ Control Technology – “Industry First”
- ▣ Low Total Cost of Ownership
- ▣ Outstanding Uniformity & Visual Comfort
- ▣ Leading Selection of Light Output Options
- ▣ Unparalleled Speed & Ease of Installation
- ▣ Exceptional Reliability in Pedestrian/Area Lighting
- ▣ Enhances Architectural Styling of any Site

Marketing Positioning Statement

The XENM3, XINM3 and XLXM3 LED decorative pedestrian/area fixtures are designed for lighting pathways, walkway areas and campus sites. Exceptional uniformity creates a brighter environment at lower light levels. Provides equal to or better performance than existing standard HID alternatives.

lsi
Industries™
A Company with a *Smart Vision*

SmartTec Control Technology - "Industry First"

Thermal Management

LSI proprietary SmartTec heat dissipation system
 Fixture temperature lowered automatically when needed in imperceptible 5% increments until safe operating temperature is reached.
 Finless heat sink design to more effectively dissipate heat over time
 Increases lifespan of fixture due to control of potential overheating

Annual Energy & Maintenance Savings

Low Total Cost of Ownership

\$1045 savings for (12) XENM3/XINM3/XLXM3 63 LED (350mA) fixtures replacing (12) 175W MH fixtures.
 Based upon 12 hour daily operation @ \$.10kWh



Clear Flat Optical Grade Tempered Glass Lens

Outstanding Uniformity & Visual Comfort

Superior performance & value through sealed lens, precision reflectors and industry's best LEDs
 5 times more impact resistant than standard glass.
 Acrylic lenses can discolor, craze or cloud up
 Cleans easily

Lumen Output

Wide range of lumen outputs available through varying reflector types, mounting styles and drive currents
 Customer has a wide lumen range of 4120 to 7060 available
 Provides a choice of lumen outputs for the customer's specific requirements

LIGHT OUTPUT - XENM3						
	# of LEDs	Type 2	Lumens (Nominal)		Type 5	Watts
			Type 3	Type FT		
Arm Mount	63	5535	4925	5710	4530	75
	63	7060	5590	6890	5230	98
Post Top	63	5015	4180	5125	4120	75
	63	6400	4740	6180	4760	98

*Preliminary data

LIGHT OUTPUT - XINM3						
	# of LEDs	Type 2	Lumens (Nominal)		Type 5	Watts
			Type 3	Type FT		
Arm Mount	63	5535	4925	5710	4530	75
	63	7060	5590	6890	5230	98
Post Top	63	5015	4180	5125	4120	75
	63	6400	4740	6180	4760	98

*Preliminary data

LIGHT OUTPUT - XLXM3						
	# of LEDs	Type 2	Lumens (Nominal)		Type 5	Watts
			Type 3	Type FT		
Post Top	63	5015	4180	5125	4120	75
	63	6400	4740	6180	4760	98

*Preliminary data

Leading Selection of Light Output Options

Multitude of Distribution Patterns

Exceptional uniformity creates bright environment at lower light levels
By increasing drive current from 350mA to 450mA, light distribution patterns are enhanced with greater lumen output
Application department staff available to determine best distribution pattern
LM79 and LM80 reports available

63 LED array

75 or 98 watt choice

Color Rendering Index

CRI of 70 facilitates recognition of specific colors of various objects
Meets industry standards

Color Temperature

Cool white – 5800K nominal
Cool white reduces average foot candle levels while still providing bright and pleasing area lighting

Temperature Range

-40° to +50°C (-40°F to 122°F)
Life expectancy remains constant through the rated range

Two Drive Currents

350mA and 450mA available
350mA is the most energy efficient, while higher drive current can be utilized to drive for greater lumen output.

Input Voltage

Available with universal voltage 120V thru 277V (50/60hz input) 347V and 480V also available

Unparalleled Speed & Ease of Installation

Mounting

XENM3 & XINM3: Post Top and Side Mount / XLXM3: Post Top
Offers two standard mounting solutions for your specific architectural area lighting requirement

Maintenance-Free

Once installed, XENM3, XINM3 & XLXM3 are virtually maintenance free



Exceptional Reliability in Pedestrian/Area Lighting



American Made

All products designed and manufactured in the U. S.

Housing

Housing, mounting arms on side mount versions, access cover and support arms for post-top versions are die-cast aluminum

Easily withstands extreme temperature changes

Excellent surface finishing and dimensional consistency

Weather-tight

Available in two mounting styles: Post-top and Side Mount

Housing top-cap is heavy-duty spun aluminum

IP65 rated unit



Pressure Stabilizing Vent/Breather

Equalizes pressure in fixture optical unit preventing pressure buildup due to ambient temperature changes, protecting gaskets and seals over the life of the fixture

Finish/Colors

LSI's DuraGrip[®] polyester powder coat – resists corrosion and is scratch and ding resistant

Withstands extreme weather changes without cracking or peeling

Exhibits excellent durability and resistance to ultraviolet rays

Long-life

Up to 100,000 hours of expected life

Equates to 11.4 years when burning 24/7

Once installed, XENM3, XINM3 and XLXM3 are virtually maintenance free

Protection

IP65 rated luminaire assembly provides total dust ingress protection, protection from low pressure jets of water, with limited water ingress permitted

Surge Protector

Meets IEEE C62.41.2, scenario 1, location category C-medium standards (10KV, 5KA)

Prevents damage to fixture due to unexpected “surge” or “swell” in AC Line Voltage

Warranty

Limited 5-year warranty

Options/Accessories

Button type photocell

Tool-less housing entry

Enhances Architectural Styling of any Site

Attractive Design

Sleek modern or traditional design

Exceptional beauty to complement surroundings

Makes a first impression as well as a lasting one to the customer

Sell when design aesthetics are highly desired



A Company with a *Smart Vision*

(513)793-3200

www.lsi-industries.com

Crossover[®] to LED Decorative Pedestrian Area Lighting with LSI

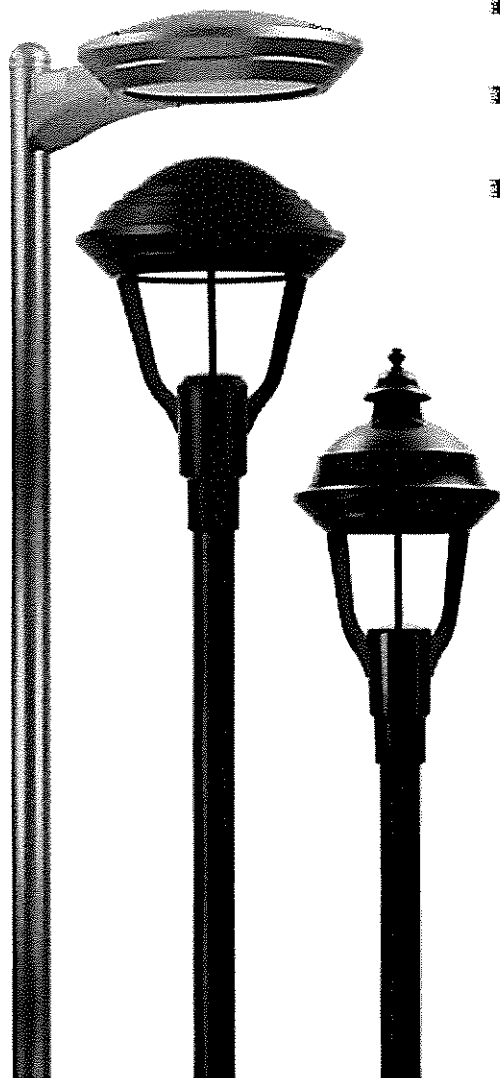
Retrofit Now
& Start Saving
Energy Today

Crossover

Enterprise,
Intrepid and
Lexington

Embrace high-performance lighting, aesthetics and the value of new technology for pathways, walkway areas and campus sites.

- Tremendous energy savings – *up to 42% compared to metal halide.*
- Expected life: *Minimum 60,000 to 100,000 hours depending upon the ambient temperature of the installation location. See LSI website for specific information.*
- Sleek traditional & modern designs with no finned heat sinks to spoil the looks or collect dirt, grime and films.
- Interchangeable modular components and a variety of mounting options give you complete design control.
- Designed for real world applications with tempered glass lens to resist impacts and facilitate cleaning.
- U.S. and international patents pending
- IP65
- 5-year warranty



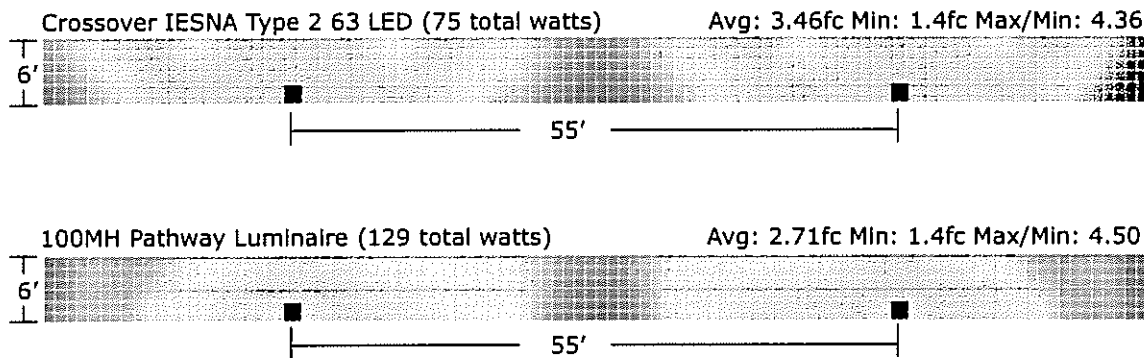
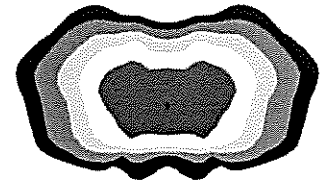


Designed to Perform

The *Crossover* LED Decorative Pedestrian Area Light provides equal to or better performance than existing standard HID alternatives.

Crossover IESNA Type 2 63 LED

The *Crossover* Pedestrian Area Light in a typical pathway application can provide a higher average level of illumination, equal minimum illumination, and an excellent uniformity while providing an energy savings of 42% for the typical project.



Designed and built around LSI's own **SmartTec** technology platform, the *Crossover* XINM, XENM & XLXM contain intelligent components designed, engineered and manufactured by LSI specifically to work in unison to deliver the most efficient and reliable lighting solution possible.

SmartTec ensures optimum fixture performance, energy efficiency, delivered lumens per watt, longevity and an impressive ROI. Innovative driver design ensures the highest attainable levels of energy efficiency.

LSI – Leading Today > Lighting Tomorrow

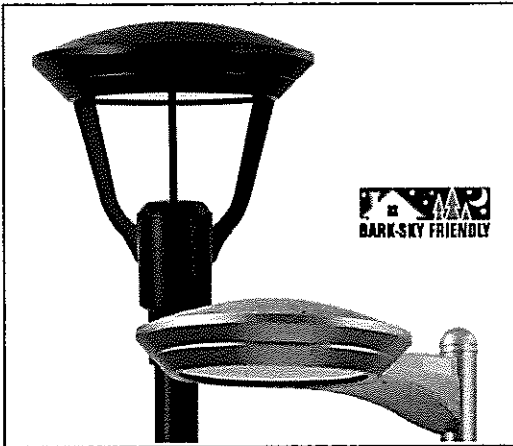


A Company with a *Smart Vision*

LSI LIGHTING SOLUTIONS PLUS
10000 Alliance Road Cincinnati, Ohio 45242
(513)793-3200 FAX (513)793-0147 www.lsi-industries.com

LED ENTERPRISE DECORATIVE AREA LIGHTS (XENM3)

Crossover
LED LIGHTING TECHNOLOGY



US patent 782456 and US & Int'l. patents pending

SMARTTEC™ THERMAL CONTROL - Sensors in the driver enclosure reduce drive current when ambient temperatures exceed 50°C. Current is lowered in imperceptible 5% increments every 5 minutes until safe operating temperature is reached.

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDs - Select high-brightness LEDs in Cool White (5800°K nominal) or Neutral White (4000°K nominal) color temperature, 70CRI (nominal).

DISTRIBUTION/PERFORMANCE - Types 2, 3, FT, and 5. Exceptional uniformity creates bright environment at lower light levels. Improved backlight cutoff minimizes light trespass.

HOUSING - Modular fixture is available in two mounting styles - Post Top and Side Mount. One piece housing/support frame is die-cast aluminum. Combination mounting arm/driver enclosure on side mount versions is die-cast with integral ribs for heat dissipation. Access cover and support arms for post top versions are die-cast aluminum.

HOUSING TOP CAP - Removable spun aluminum cap/post top driver enclosure is retained by captive stainless steel fasteners and safety cables. Housing and top cap interface is sealed with a one-piece extruded silicone gasket. Tool-less entry option is available.

SEALED OPTICAL UNIT - Lens is clear, flat tempered glass, sealed to aluminum optics housing. Pressure stabilizing breather allows super-tight protection while preventing temperature cycling from building up internal pressures and vacuums that can stress optical unit seals and components.

FASTENERS - All exposed fasteners are black oxide coated stainless steel. Internal fasteners are stainless steel or zinc electroplated steel.

ELECTRICAL - A terminal block for attachment of incoming primary wiring is supplied. Two-stage surge protection (including separate surge protection built into electronic driver) meets IEEE C62.41.2-2002, Location Category C. Available with universal voltage power supply 120-277VAC (50/60Hz input), 347VAC and 480VAC. Optional button-type photocells (PCI) are available in 120, 208, 240, 277 or 347 volt (supply voltage must be specified). Fixture Watts: 350mA - 75, 450mA - 98 nominal.

DRIVER - Available in 350mA and 450mA drive currents (Drive currents are factory programmed). State-of-the-art driver technology designed specifically for LSI LED light sources provides unsurpassed system efficiency. Components are fully encased in potting material for IP65 moisture resistance. Driver complies with IEC and FCC standards.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard colors include bronze, black, platinum plus, graphite, satin verde green, metallic silver and white.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com

LISTING - Listed to U.S. and Canadian safety standards. Suitable for wet locations.

lighting facts^{CM} A Program of the U.S. DOE

Light Output (Lumens) **5712**
Watts **77.3**
Lumens per Watt (Efficacy) **73**

Color Accuracy
Color Rendering Index (CRI) **70**



All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: KGGH-ASP4UF
Model Number: XENM3A FT LED 63 CW UE
Type: Outdoor decorative fixture

LIGHT OUTPUT - XENM3

ARM MOUNT		Lumens (Nominal)			
	# of LEDs	Type 2	Type 3	Type FT	Type 5
Cool White	350 mA 63	5500	4900	5700	4500
	450 mA 63	6300	5600	6400	5100
Neutral White	350 mA 63	5300	4700	5500	4300
	450 mA 63	6100	5400	6100	4900

POST TOP MOUNT		Lumens (Nominal)			
	# of LEDs	Type 2	Type 3	Type FT	Type 5
Cool White	350 mA 63	5000	4200	5100	4100
	450 mA 63	6100	5300	6300	5000
Neutral White	350 mA 63	4800	4000	4900	4000
	450 mA 63	5900	5100	6000	4800

Also available in traditional light sources

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.

ROHS
COMPLIANT

DESIGNLIGHTS
CONSORTIUM

America's Innovation
American Made

IP65

ETL
Intertek
Suitable for wet locations

ARRA
Funding Compliant

LSI
Industries™
America's Innovation Through Technology

Project Name _____ Fixture Type _____
Catalog # _____

04/15/13

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LSI INDUSTRIES INC.

LED ENTERPRISE DECORATIVE AREA LIGHTS (XENM3)

Crossover
LED LIGHTING TECHNOLOGY

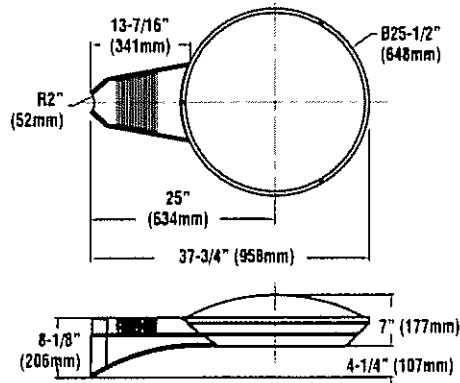
LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XENM3 PT 5 LED 63 450 CW UE MSV PCI120**

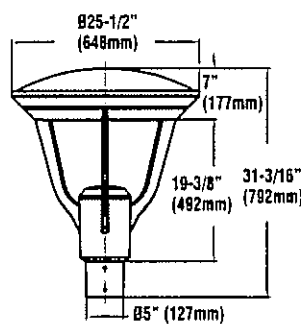
Prefix	Mounting Style	Distribution	Light Source	# of LEDs	Drive Current	Color Temperature	Input Voltage	Finish	Options
XENM3	PT - Post Top SA4 - Side Arm Mount for 4" Poles ¹ SA5 - Side Arm Mount for 5" Poles ¹	2 - Type II 3 - Type III FT - Forward Throw 5 - Type V	LED	63	350 - 350 mA 450 - 450 mA	CW - Cool White (5800°K nom.) NW - Neutral White (4000°K nom.)	UE - Universal Electronic (120-277V 50/60Hz) 347-480	BRZ - Bronze BLK - Black PLP - Platinum Plus WHT - White SVG - Satin Verde Green GPT - Graphite MSV - Metallic Silver	Button Type Photocells PCI120 - 120v PCHV208-277 - 208-277v PCI347 - 347v TE - Tool-less Entry Accessories SPA - Square Pole Adaptor (SA only) WM - Wall Mount (PT only) SAWM - Side Arm Wall Mount (SA4 or SA5) BK MPT B04 - Medium Bolt on Bracket (for PT 180) For 4" Dia. Round Poles ^{1,2} BK MPT B05 - Medium Bolt on Bracket (for PT 180) For 5" Dia. Round Poles ^{1,2}

FOOTNOTES:

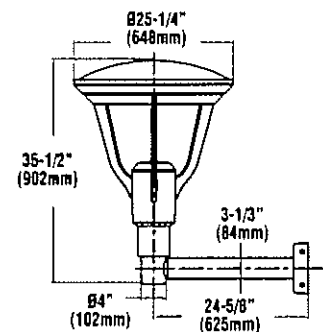
- For correct mounting, order poles with 3" reduced drilling pattern.
- For PT mounting configurations other than D180, consult factory. Order one bracket per fixture.



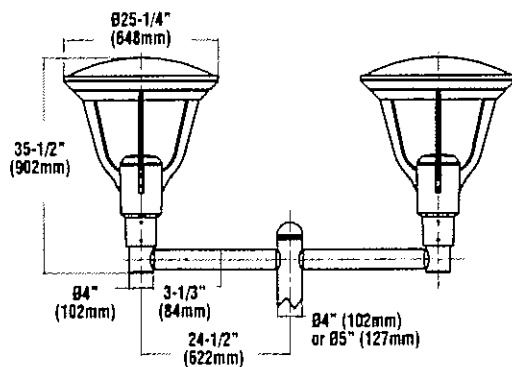
Side Arm Pole Mount
(select 3" reduced drilling pattern)



Post Top
Slipfits 4" Dia. Tenon (4N) or Pole



Post Top with WM Accessory



Post Top with BK MPT B0 (x2)
Mounts to 4" or 5" Dia. D180 Bolt-on Pole
(select 3" reduced drilling pattern)

LUMINAIRE EPA CHART - Crossover Enterprise		
	MOUNTING STYLE	
■ PT Single	PT	1.0
■ PT D180° with BK MPT B0 (2)	PT	2.0
■ Single	SA	1.0
■ D180°	SA	2.1
■ D90°	SA	1.8
■ T90°	SA	2.7
■ T120°	SA	2.8
■ Q90°	SA	3.5

SHIPPING WEIGHTS - Crossover Enterprise

Catalog Number	Est. Weight (kg/lbs.)
XENM3 (PT or SA)	29/64

LED Area Lighting from LSI

Retrofit Now
& Start Saving
Energy Today

- **Lighting Performance, Outstanding Uniformity** – brighter environment at lower light levels; improved backlight cutoff to control light trespass. Available in two sizes to address pedestrian walkways, egress areas and parking lots
- **Life Expectancy** – Up to 100,000 hours expected life depending upon the ambient temperature of the installation location
- **Energy Savings** – 50-70% energy reduction when compared to traditional HID
- **Installation Labor Savings** – Loaded with features like tool-less fasteners, terminal block and access door lanyard to make installation a snap
- **Maintenance-free**
- **5-year warranty**

- **Poles** – exceptionally low EPA for lighter gauge poles – tremendous retrofit opportunities. Choose from quality straight round and straight square poles finished in LSI's DuraGrip® or DuraGrip® Plus powder coat finish

- **IP67**



Seeing is Believing



Available for
New Construction &
Retrofit Projects

When Selecting Your XAS3 and XAM3 Fixtures, Don't Forget the Poles

**Choose from 4" and 5" Poles –
straight round or straight square shafts**

Each pole is finished with DuraGrip®, LSI's baked-on polyester-powder finishing process to give the pole an exceptionally attractive appearance. The process electrostatically applies and thermally fuses a polyester powder to the pole. This unique protection process provides an extremely smooth and uniform finish to withstand extreme weather changes without cracking or peeling. DuraGrip finish features a five-year limited warranty.



Optional DuraGrip Plus features added protection with a 3.0 to 5.0 mil thickness of polyester powder finish plus an inner coating. This specially developed inner coating is a thermal plastic hydrocarbon resin applied to the inside of the pole to seal and protect against atmospheric and corrosive matter. DuraGrip Plus finish features a seven-year limited warranty.

Standard finish colors available for poles are bronze, black, platinum plus, white, satin verde green, metallic silver, and graphite.



Designed and built around LSI's own **SmartTec** technology platform, the **Crossover** XAS3/XAM3 fixtures contain intelligent components designed, engineered and manufactured by LSI specifically to work in unison to deliver the most efficient and reliable lighting solution possible.

SmartTec ensures optimum fixture performance, energy efficiency, delivered lumens per watt, longevity and an impressive ROI. Innovative driver design ensures the highest attainable levels of energy efficiency



Revolutionary Thermal Management System – LSI's unique patented heat-sink design is integrated into the external surfaces of the luminaire, in place of fins found frequently in traditional fixtures, to effectively dissipate heat and ensure a cool-running fixture. Suitable for high ambient temperatures (50°C).



Exceptional Optical Design – Tremendous lighting performance specifically designed for area lighting applications. Available with 2 LED color temperatures (cool white and neutral white) and 4 distributions (2, 3, FT, 5).

Low Profile Housing Design – Lightweight, low profile design gives a clean look when installed.



Innovative Driver Design – Unique high-power driver, 90+% efficient, ensures the highest attainable levels of energy efficiency. Protected by surge protectors that meet location Category C-Medium (10,000 V, 5,000 A) Rated for IP65 Ingress Protection. Available in multiple drive currents (350 mA, 450 mA and 550 mA).



A Company with a *Smart Vision*

LSI – Leading Today > Lighting Tomorrow

LSI LIGHTING SOLUTIONS PLUS
10000 Alliance Road Cincinnati, Ohio 45242
(513)793-3200 FAX (513)793-0147 www.lsi-industries.com

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5/12 3921

XAS3/XAM3 Small & Medium LED Area Lighting

Crossover[®]
GENERATION 3

Leading Selling Features

- ☐ SmartTec™ Control Technology – “Industry First”
- ☐ Low Total Cost of Ownership
- ☐ Outstanding Uniformity & Visual Comfort
- ☐ Leading Selection of Light Output Options
- ☐ Unparalleled Speed & Ease of Installation
- ☐ Exceptional Reliability in Area Lighting
- ☐ Enhances Architectural Styling of any Site

Marketing Positioning Statement

XAS3 and XAM3 LED Area Lighting is designed for lighting parking areas and pedestrian scale walkways. These environmentally friendly fixtures represent the ultimate blend of design sophistication and technological innovation, and create a brighter environment at lower light levels.



A Company with a *Smart Vision*

SmartTec Control Technology - "Industry First"

Thermal Management

LSI proprietary SmartTec heat dissipation system
Fixture temperature lowered automatically when needed in imperceptible 5% increments until safe operating temperature is reached
Finless heat sink design to more effectively dissipate heat over time
Increases lifespan of fixture due to control of potential overheating

Low Total Cost of Ownership

Annual Energy & Maintenance Savings

\$1045 savings for (12) XAS3 63 LED fixtures (350mA) replacing (12) 175W MH fixtures
\$1313 savings for (12) XAM3 119 LED fixtures (450mA) replacing (12) 320W MH fixtures
Based upon 12 hour daily operation @ \$.10kWh



Outstanding Uniformity & Visual Comfort

Clear Flat Optical Grade Tempered Glass Lens

Superior performance & value through sealed lens, precision reflectors and industry's best LEDs
5 times more impact resistant than standard glass.
Acrylic lenses can discolor, craze or cloud up
Cleans easily

Lumen Output

Wide range of lumen outputs available through varying LED quantities, reflector types and drive currents
Wide lumen range of 4423 to 12342 available, providing a choice of lumen outputs for the customer's specific requirements
Create a brighter environment at lower light levels

LIGHT OUTPUT - XAS3							LIGHT OUTPUT - XAM3						
# of LEDS		Lumens (Nominal)				Watts	# of LEDS		Lumens (Nominal)				Watts
		Type 2	Type 3	Type FT	Type 5				Type 2	Type 3	Type FT	Type 5	
63	350 mA	63	4977	4922	5201	4423	75	119	9770	9549	10028	9148	138
	450 mA	63	6347	5582	6276	5110	98	119	11960	10437	12342	10396	184
	550 mA	63	6958	6181	7058	5622	122						

Leading Selection of Light Output Options

Multitude of Distribution Patterns


Choices of type 2, 3, 5 or forward throw for both the XAS3 and XAM3
By increasing drive currents from 350mA to 450mA or 550mA(XAS3 only), light distribution patterns are enhanced with greater lumen output
Exceptional uniformity creates bright environment at lower light levels.
Improved backlight cutoff minimizes light trespass
House side shield available for even more backlight cutoff
Application department staff available to determine best distribution pattern
LM79 and LM80 reports available

63 or 119 LED array choices

XAS3: 63 LEDs at 75 watts (350mA), 98 watts (450 mA), 122 watts (550 mA)
XAM3: 119 LEDs at 138 watts (350mA) or 184 watts (450 mA)
XAS3 is ideal replacement for 100/150/175 watt MH
XAM3 is ideal replacement for 250/320 watt MH

Color Rendering Index	CRI of 70 facilitates recognition of specific colors of various objects Meets industry standards
Color Temperature	Available in cool white 5800K Cool white provides bright and pleasing area lighting at reduced footcandle levels
Temperature Range	-40°C to +50°C (-40°F to 122°F) Life expectation based on rated maximum, not on nighttime average
Two or Three Drive Currents	XAS3: 350mA, 450mA and 550mA available XAM3: 350mA and 450mA available 350mA is the most energy efficient while higher drive currents can be utilized for greater lumen output.
Input Voltage	Universal voltage 120V thru 277V (50/60hz input) - 347V and 480V also available

Unparalleled Speed & Ease of Installation

Mounting	<p>Tapered rear design allows pole mount in a quad pattern without the need for extension arms</p> <p>Use with either round or square poles (order round pole plates separately)</p> <p>Wall mounting capability available to carry the same architectural design throughout the jobsite</p>	
Simple/Fast Installation	<p>Minimal installer tools required for fixture installation</p> <p>Wiring access door with safety lanyard is located underneath utilizing thumbscrew fastener</p> <p>Tool-less removable driver</p> <p>Terminal block - No wire nuts required during mounting</p>	
Maintenance-Free	Once installed, the XAS3 and XAM3 are virtually maintenance free	

Exceptional Reliability in Area Lighting



American Made	<p>All products designed and manufactured in the U. S.</p> <p>With exceptional "green" technology, XAS3 and XAM3 are RoHS compliant</p>
Housing	<p>Superior durability of die-formed aluminum housing</p> <p>Optical unit permanently sealed with robotically applied polyurethane</p>
Weather-tight	<p>Wet location housing contains prewired IP68 driver and field connections</p> <p>Optical unit rated IP67</p>
Gasketing	<p>All external seals are EPDM or silicone rubber for robustness to pressure and temperature changes and are environmental, aging and UV resistant</p> <p>Redundant fail-safe seals used in most areas for additional luminaire protection</p>

Finish/Colors

LSI's DuraGrip® polyester powder coat – resists corrosion and is scratch and ding resistant
Withstands extreme weather changes without cracking or peeling
Exhibits excellent durability and resistance to ultraviolet rays

Long-life

Up to 100,000 hours of expected life equates to 11.4 years
burning 24/7

3x expected life of linear fluorescent and 5x that of HID

Complies with ANSI C136.31-2001 American National Standard for Roadway
Lighting Equipment - Luminaire Vibration 3G Requirements.

Once installed, virtually maintenance free



Protection

IP67 on optical unit provides total dust ingress protection, temporary liquid
submersion protection

Surge Protector

Two-stage surge protection including separate surge protection built into electronic driver
Meets IEEE C62.41.2-2002, Scenario 1, Location Category C

Prevents damage to fixture due to unexpected “surge” or “swell” in AC Line Voltage

Pressure Stabilizing Vent/Breather

Equalizes pressure in fixture optical unit preventing pressure buildup due to ambient
temperature changes, protecting gaskets and seals over the life of the fixture

Warranty

Limited 5-year warranty

Options/Accessories

Button Type Photocell

Twist-lock Photoelectric Control Receptacle and Photocell

House side and direct view shields available for specific job site light cutoff
requirements

Extension arms available if desired

Enhances Architectural Styling of any Site

Low Profile Housing Design

Lightweight and aerodynamic resulting in exceptionally low EPA values enabling the
use of lighter gauge, lower price poles

Tremendous retrofit opportunities by being able to utilize almost any existing poles

Professional and clean look after installation for superior design aesthetics



A Company with a Smart Vision

(513)793-3200

www.lsi-industries.com

LED AREA LIGHTS - MEDIUM (XAM3)

US patents D598160, D598161 & 7828456 and CN patents 13006 & 13007 and MX patents 30416 & 30418 and US & Int'l. patents pending



SMARTTEC™ THERMAL CONTROL - Sensors in both optical unit and driver enclosure reduce drive current when ambient temperatures exceed 50°C. Current is lowered in imperceptible 5% increments every 5 minutes until safe operating temperature is reached.

EXPECTED LIFE - Minimum 60,000 hours to 100,000 hours depending upon the ambient temperature of the installation location. See LSI web site for specific guidance.

LEDS - Select high-brightness LEDs in Cool White (5800°K nominal) or Neutral White (4000°K nominal) color temperature. 70 CRI (nominal).

DISTRIBUTION/PERFORMANCE - Types 2, 3, FT and 5. Exceptional uniformity creates bright environment at lower light levels. Improved backlight cutoff minimizes light trespass.

HOUSING - Die-formed aluminum. Weather-tight housing contains factory prewired driver and field connections. Wiring access door (with safety lanyard) is located underneath and utilizes tool-less thumbscrew fastener.

OPTICAL UNIT - Clear tempered optical grade flat glass lens sealed to aluminum optics housing creates an IP67 rated, sealed optical unit. Pressure stabilizing breather allows super-tight IP67 protection while preventing temperature cycling from building up internal pressures and vacuums that can stress optical unit seals and components. Optical unit lanyard serves dual purposes of safety and provides positive ground between unit and housing.

MOUNTING - Tapered rear design allows fixtures to be mounted in a quad pattern without the need for extension arms. Use with 3" reduced drilling pattern on our steel round and steel square poles. See separate data sheets.

ELECTRICAL - A terminal block for attachment of incoming primary wiring is supplied. Two-stage surge protection (including separate surge protection built into electronic driver) meets IEEE C62.41.2-2002, Scenario 1, Location Category C. Available with universal voltage power supply 120-277VAC (50/60Hz input), 347VAC and 480VAC. Optional twistlock photocell receptacle is available. Photocell must be ordered separately. Optional button-type photocells (PCI) are available in 120, 208, 240, 277 or 347 volt (supply voltage must be specified). Fixture watts; 350mA - 138, 450mA - 184 nominal.

DRIVER - Available in 350mA and 450mA drive currents (Drive currents are factory programmed). State-of-the-art driver technology designed specifically for LSI LED light sources provides unsurpassed system efficiency. Components are fully encased in potting material for IP65 moisture resistance. Driver complies with IEC and FCC standards. Driver can be easily accessed and removed without the use of tools.

OPERATING TEMPERATURE - -40°C to +50°C (-40°F to +122°F).

FINISH - Fixtures are finished with LSI's DuraGrip® polyester powder coat finishing process. The DuraGrip finish withstands extreme weather changes without cracking or peeling, and is guaranteed for five full years. Standard colors include bronze, black, platinum plus, graphite, satin verde green, metallic silver and white.

WARRANTY - LSI LED fixtures carry a limited 5-year warranty.

PHOTOMETRICS - Application layouts are available upon request. Contact LSI Applications Group at lighting.apps@lsi-industries.com

SHIPPING WEIGHT (in carton) - 34.6 lbs (16 kg)

LISTING - ETL listed to U.S. and International safety standards. Suitable for wet locations.

Crossover LED Lighting

lighting facts®

A Program of the U.S. DOE

Light Output (Lumens)	10028
Watts	138
Lumens per Watt (Efficacy)	72

Color Accuracy Color Rendering Index (CRI)	70
--	-----------

Light Color
Correlated Color Temperature (CCT) **6223 (Daylight)**

2700K 3000K 4500K 6500K

All results are according to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting. The U.S. Department of Energy (DOE) verifies product test data and results.

Visit www.lightingfacts.com for the Label Reference Guide.

Registration Number: KGGN-4DA3KS
Model Number: XAM3 FT LED 119 350 CW UE
Type: Outdoor area/roadway fixture

LIGHT OUTPUT - XAM3						
	# of LEDs	Lumens (Nominal)				
		Type 2	Type 3	Type FT	Type 5	
Cool White	350 mA	119	9800	9500	10000	9100
	450 mA	119	12000	10400	12300	10400
Neutral White	350 mA*	119	9400	9200	9600	8800
	450 mA	119	11500	10000	11800	10000

*Preliminary Data

This product, or selected versions of this product, meet the standards listed below. Please consult factory for your specific requirements.



IP67



Suitable for wet locations

ARRA
Funding Compliant

ROHS
COMPLIANT



DESIGNLIGHTS
CONSORTIUM



Fixtures comply with ANSI C136.31-2001 American National Standard for Roadway Lighting Equipment - Luminaire Vibration 3G requirements.

LED AREA LIGHTS - MEDIUM (XAM3)

LUMINAIRE ORDERING INFORMATION

TYPICAL ORDER EXAMPLE: **XAM3 2 LED 119 350 CW UE WHT PCI120**

Prefix	Distribution	Light Source	# of LEDs	Drive Current	Color Temperature	Input Voltage	Finish	Options
XAM3 - LED Area Medium	2 - Type II 3 - Type III FT - Forward Throw 5 - Type V	LED	119	350 - 350mA 450 - 450mA	CW - Cool White (5800°K nom.) NW - Neutral White (4000°K nom.)	UE - Universal Voltage (120-277) 347-480	BLK - Black BRZ - Bronze GPT - Graphite MSV - Metallic Silver PLP - Platinum Plus SVG - Satin Verde Green WHT - White	Button Type Photocells PCI 120 - 120v PCI 208 - 208v PCI 240 - 240v PCI 277 - 277v PCI 347 - 347v PCR - Twistlock Photoelectric Control Receptacle¹

LUMINAIRE EPA CHART ² - XAM3		
	Single	1.2
	D180°	2.4
	D90°	2.0
	T90°	3.4
	TN120°	3.4
	Q90°	4.0

ACCESSORY ORDERING INFORMATION (Accessories are field installed)

Description	Order Number
BKA-XBO-EC-6-CLR 6" Extension Arm	382136CLR
BKS-XBO-WM-* - CLR Wall Mounting Bracket	382132CLR
XAM3 2/3/FT/5 HSS13 - House Side Shield ^{2,3}	439436BLK
XAM3 2/3/FT/5 HSS8 - House Side Shield ^{2,3}	454586BLK
DVS - Direct View Shield (rear mount only) ³	390687CLR
X4RPP Round Pole Plate for 4" Poles	379967CLR
X5RPP Round Pole Plate for 5" Poles	379968CLR
PC 120 - Photocell for use w/ PCR option (120V) ⁴	122514
PC 208-277 - Photocell for use w/ PCR option (208V, 240V or 277V) ⁴	122515
PC 347 - Photocell for use w/ PCR option (347V) ⁴	159516
PC 480 - Photocell for use w/ PCR option (480V) ⁴	1225180

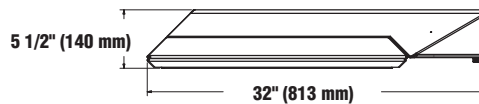
NOTES:

- 1- Photocell must be ordered separately. See Accessories.
- 2- Black only. Rear mount. Photometry available for HSS13 on XAM3.
- 3- Direct View Shield and House Side Shields add to fixture EPA. Consult factory.
- 4- Factory installed PCR option required. See Options.

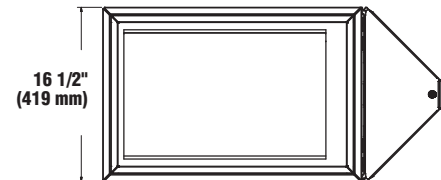
DIMENSIONS



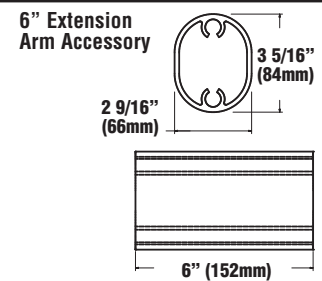
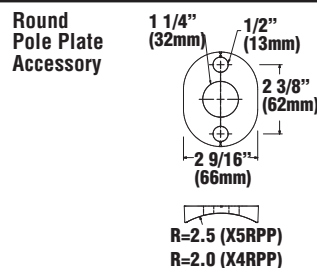
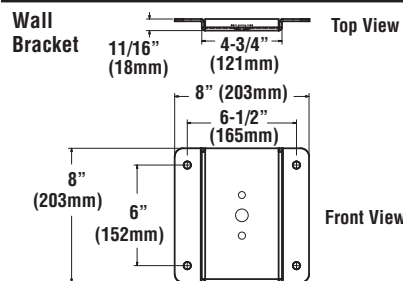
Front View



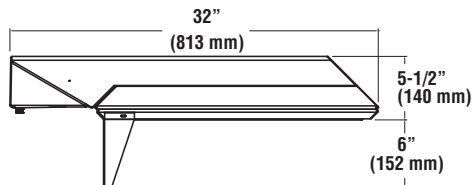
Side View



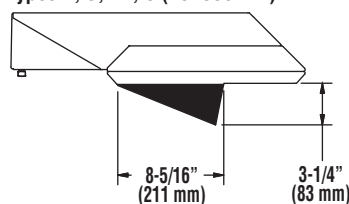
Bottom View



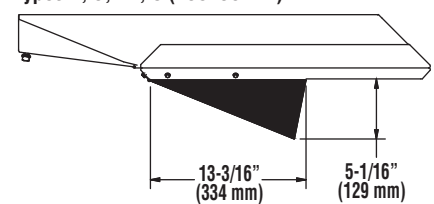
DVS - Direct View Shield (390687CLR)



HSS8 - House Side Shield Types 2, 3, FT, 5 (454586BLK)



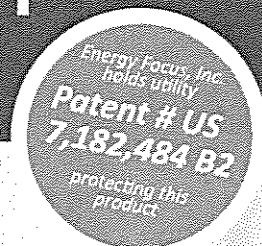
HSS13 - House Side Shield Types 2, 3, FT, 5 (439436BLK)



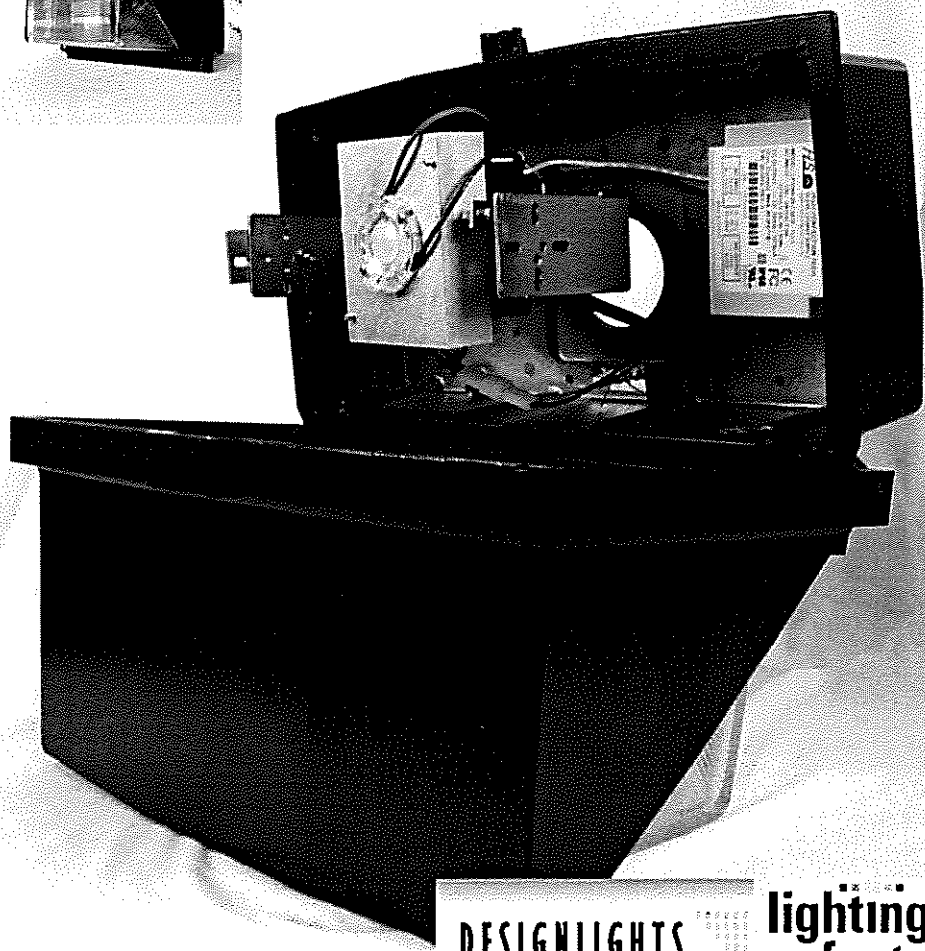
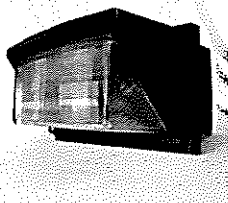


PROVIDING ENERGY EFFICIENT
LIGHTING SOLUTIONS

LED RETROFIT KIT For Wallpack

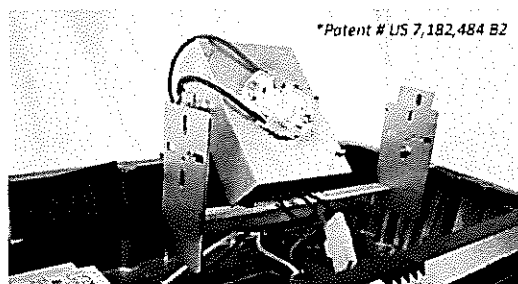


- Directional LED module efficiently delivers the most usable light on target
- Patented thermal management system*
- Easy to install retrofit kit fits many standard wallpack fixtures
- Autoranging voltage; 100-277 VAC
- Easily pivots on bracket for optimal positioning
- Rated life of 50,000 hrs to 70% lumen maintenance
- Listed on Design Lights Consortium Qualified Product List
- LTL tested in accordance with LM-79 standards for electrical and photometric measurements of LED fixtures
- Bridgelux LED array tested in accordance with LM-80 standards for measuring lumen maintenance of SSL sources
- Standard 5 year warranty



DESIGNLIGHTS
CONSORTIUM

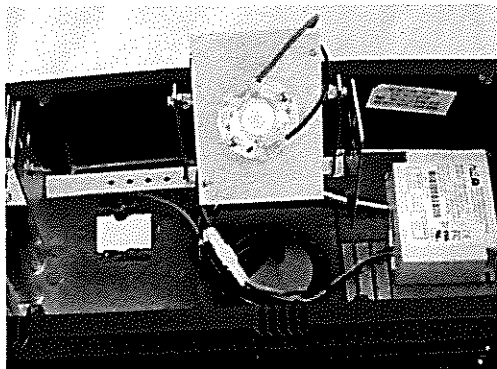
lighting facts
LED Product Partner



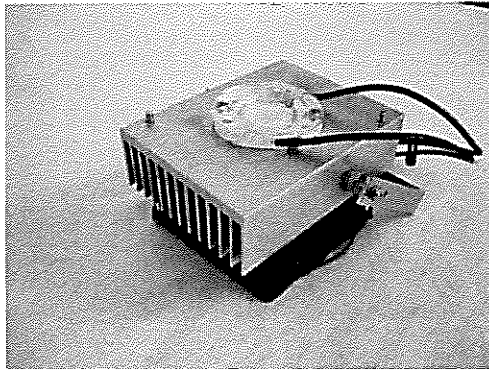
Reduce Your Energy Consumption Dramatically

The Energy Focus LED Retrofit Kit for Wallpacks offers a fast and easy method of upgrading existing area lighting fixtures without the added cost of purchasing new fixtures.

Our LED Retrofit Kit for Wallpacks uses high output LED technology rated to 50,000 hour life to eliminate maintenance associated with those hard to reach luminaires. The kit installs inside your existing fixture keeping your look the same while reducing your energy consumption dramatically.



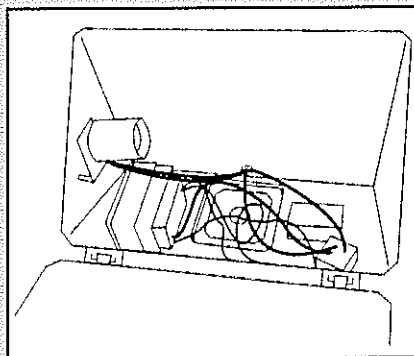
Adjustable bracket ensures LED module is centered inside luminaire



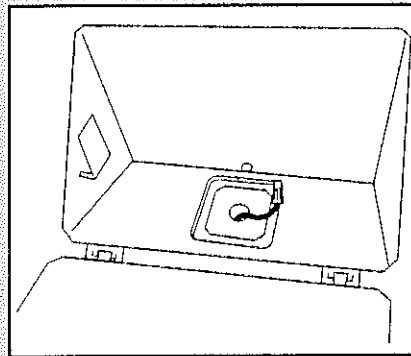
Patented active cooling system ensures optimal performance in up to 50°C ambient temperature

lighting facts® <small>A Program of the U.S. DOE</small>	
Light Output (Lumens)	2073
Watts	29.44
Lumens per Watt (Efficacy)	70
Color Accuracy Color Rendering Index (CRI)	84
Light Color Correlated Color Temperature (CCT)	5734 (Daylight)
<small>All results are according to IESNA LM-79-2008: Approved Method for the Laboratory and Fieldable Testing of Solid State Lighting. The U.S. Department of Energy (DOE) neither endorses nor disavows the results.</small>	
<small>Visit www.lightingfacts.com for the Label/Reference Guide.</small>	
<small>Registration Number: 848V-ADG22 (10/13/2011)</small>	
<small>Model Number: LEDWP-REFKIT-RFK</small>	
<small>Type: Outdoor wall pack</small>	

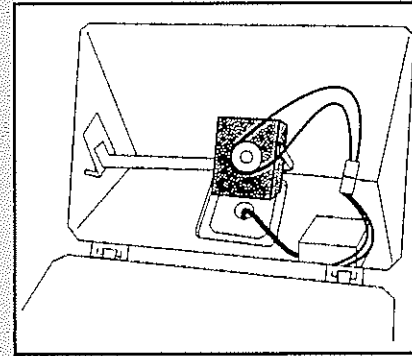
Quick Installation Guide



Open existing wallpack



Remove all electrical components



Install retrofit kit

LED Retrofit Kit - Wallpack

Ordering Guide

Model	Color Temp	Beam Spread	Type
LEDWP	656 65 CRI, 5600K	VFL* 120° Beam	RFK Retrofit Kit

**Row unit data; performance inside wallpack luminaire will vary*

TYPE:

ORDERING CODE:

APPROVAL:

JOB:

DATE:

SPECIFICATIONS

LED Light Engine:

- (1) Bridgelux LED array chip
- (1) Extruded aluminum heat sink
- (1) LED holder w/ protective polycarbonate lens
- (1) Thermal Interface compound
- (1) 24 VAC Air circulation fan (2,100rpm max, 34 cfm max, 26dbA max)

Driver: AC-to-DC constant current Class 2 power supply

Universal Mounting Bracket: Galvanized steel. Multiple mounting configurations allow for perfect placement in many standard housings.

Swivel yoke allows for perfect aiming.

Fasteners: Steel, non-corrosive bright zinc plate

Weight: Complete package: 2.3 lb (36.8 oz)

LED Light Engine assembly w/ yoke = .90 lb (14.4 oz)

Driver = .85 lb (13.6 oz)

Main bracket = .55 lb (8.8 oz)

Input Voltage: 100 – 240Vac, 0.5A or 277Vac, 0.2A @ 50/60Hz

Electrical Connection: Hard wire into electrical, existing connection. Molex polarized 3 pin connector plugs between Light Engine and Driver

Power Consumption: 30 Watts (typical)

Optical System: Very wide flood 120° beam spread

Initial Lumen output: 2100 Lumen (typical)

Typical CRI / CCT: 65 CRI at 5600K

Efficacy: 70 lpw (typical)

Lamp Life: 50,000 hours to 70% lumen maintenance

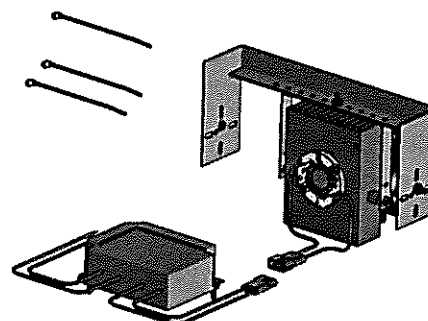
Location / IP Rating: dry location only. Complete installation exposure rating is dependent upon the integrity of the existing enclosure.

ETL class: LED retrofit class, ETL listed for North America Recognition label

Operating Temp Range: -20°C to 50°C

Note: drilling through the enclosure wall is not required or recommended, thus preserving the original IP / outdoor rating of the enclosure.

DESIGNLIGHTS
CONSORTIUM



lighting facts [®]	
A Program of the U.S. DOE	
Light Output (Lumens)	2073
Watts	29.44
Lumens per Watt (Efficacy)	70
Color Rendering Index (CRI)	64
Color Accuracy	
Color Rendering Index (CRI)	
Light Color	5734 (Daylight)
All models are qualified by the U.S. DOE LED-TO-2007 program for the Product and	
Photometric Testing or State-Block Lighting. The U.S. Department of Energy (DOE) certifies	
product test data and results.	
Visit www.lightingfacts.com for the Label Reference Guide.	
Registration Number: (888) 464-2276 (707) 308-1111	
Model Number: LED-RFK-464-2276, 464	
Type: (Indicate full data)	

LED Retrofit Kit - Wallpack

Ordering Guide

Model
LEDWP

Color Temp
656 60 CRI, 5600K

Beam Spread
VFL* 120° Beam

Type
RFK Retrofit Kit

TYPE:

ORDERING CODE:

APPROVAL:

JOB:

DATE:

SPECIFICATIONS

LEDWP-656VFL-RFK

Lumen output: 2,073

Wattage: 29

Efficacy: 70 lpw

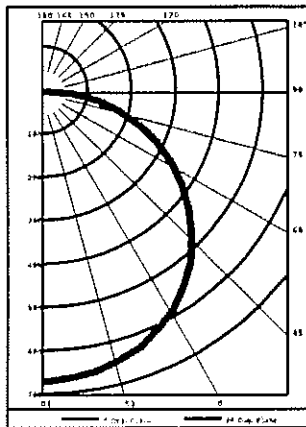
Beam Spread: 120°

CRI: 65

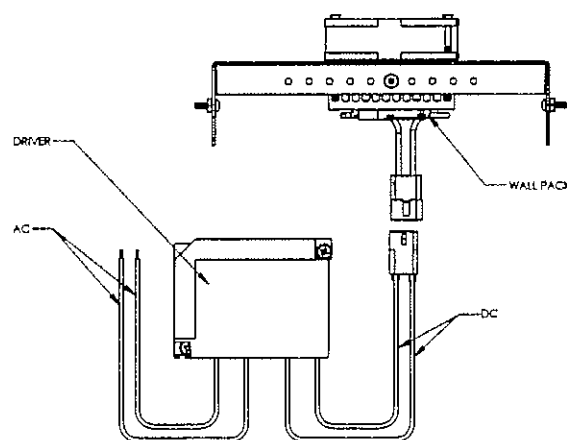
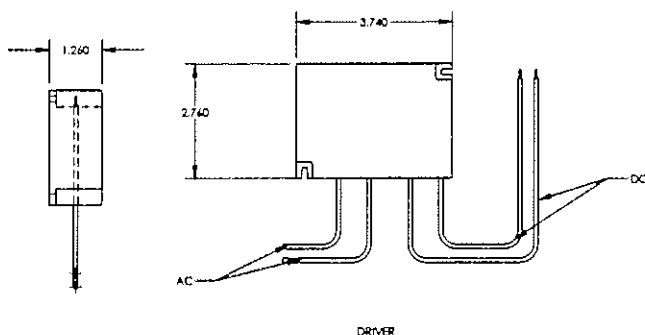
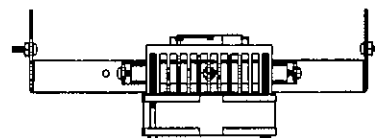
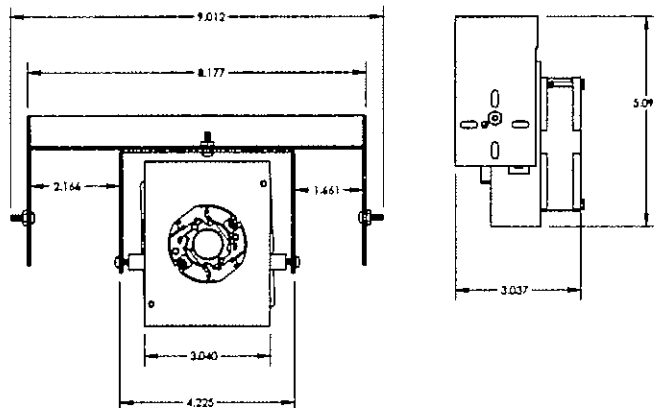
CCT: 5,700 K

CBCP: 730

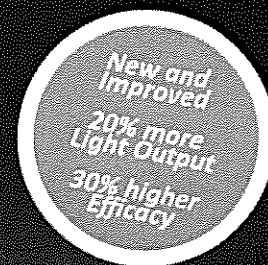
LTL test report: 24108 & 24109



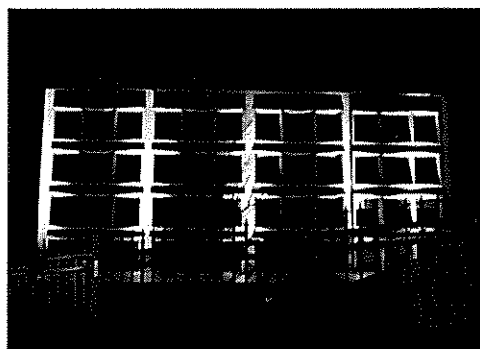
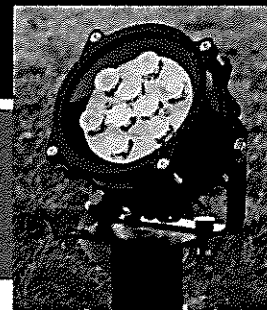
Zonal Lumen Summary			
Zone	Lumens	% of Lamp	% of Luminaire
0-30	665	N/A	32%
0-40	1056	N/A	51%
0-60	1798	N/A	87%
0-90	2073	N/A	100%
90-180	0	N/A	0%
0-180	2073	N/A	100%



SCHEMATIC



LED LandScape Light



Cuyahoga County Gerber Building



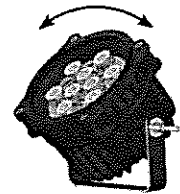
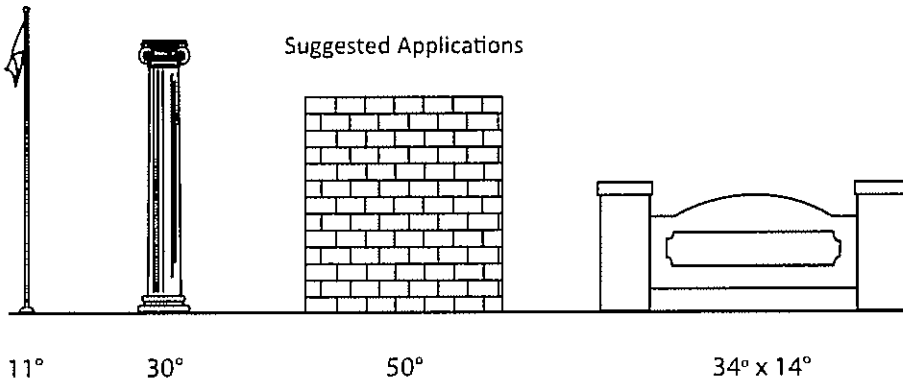
Mantua Manufacturing Headquarter

- High output LED with minimal power consumption
- Rugged exterior to hold up to nature's forces
- Rated life of 50,000 hrs to 70% lumen maintenance
- Bright white light illuminating your building for increased visibility and safety
- Tilt adjustability to highlight or evenly illuminate your façade
- Easy retrofit with slip fitter mount and hard wire ready
- NEW options! Available in 15 or 26 watt with spot (11°), narrow flood (30°), wide flood (50°) or oval (34° x 14°) beam angles
- LTL tested in accordance with LM-79 standards for electrical and photometric measurements of LED fixtures
- Cree™ LEDs tested in accordance with LM-80 standards for measuring lumen maintenance of SSL sources
- UL listed for wet locations
- Standard 5 year warranty

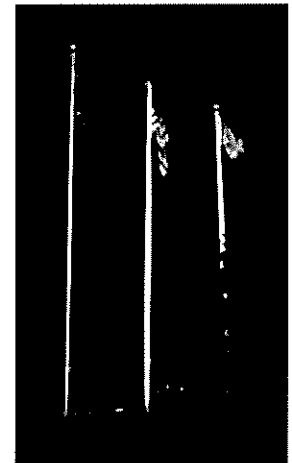
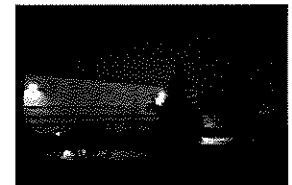


Energy Focus' products comply with the Buy America Act and are manufactured in the North American Free Trade Zone.

SPECIFICATIONS

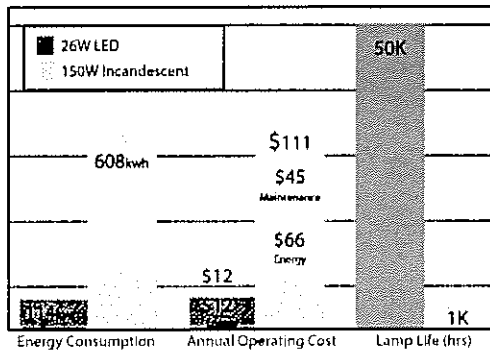
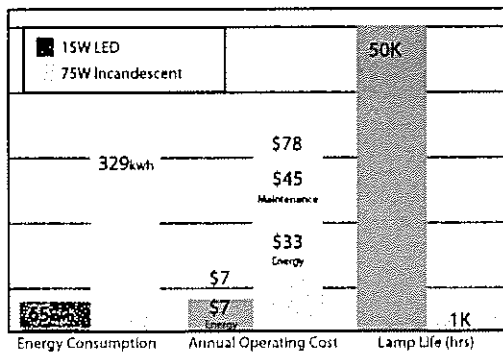


Full 0° - 180° Positioning



COMPARISON

Assumptions: Annual Hours = 4,368 (12/7x365) Energy Cost = 10¢/kwh Cost to change lightbulb = \$5.00 each



LED LandScape



Ordering Guide

Model	Color Temp	Beam Spread	Size	Electrical Connection	Color
LEDLS	765 75 CRI, 6500K 835 80 CRI, 3000K	NSP 11° Beam NFL 30° Beam FLD 50° Beam OVL 34° x 14° Beam	15 Small Fixture 15Watt 26 Large Fixture 26Watt	HWC 6' Cord, hardwire leads HWD Direct hardwire	AB Architectural Bronze BK Gloss Black

TYPE:

ORDERING CODE:

APPROVAL:

JOB:

DATE:

SPECIFICATIONS

Housing: Die cast aluminum for thermal management

Lens: Impact resistant, optically clear acrylic Lens with silicone gasket

Swivel: Friction joint to allow for 180° angle adjustment

Finish: Architectural Bronze or black powder coat paint

Fasteners: Steel, non-corrosive bright zinc plate

Weight: 9.2 lbs

Input Voltage: 100-240,277 Volts, 50-60 Hz

Electrical Connection: Hard wire with or without cord (6')

Power Consumption: 26 Watts (typical)

Driver: Constant current electronic driver

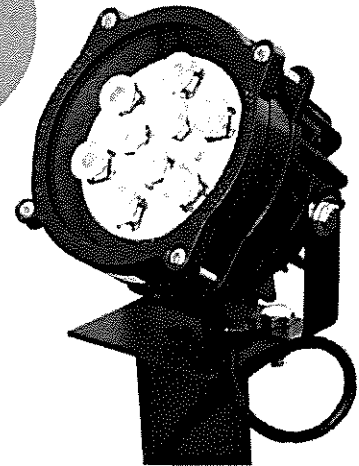
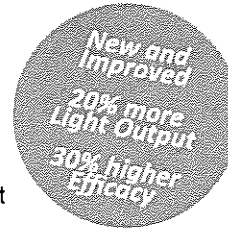
Optical System: 9 Cree™ high intensity LED emitters with custom focusing optics

CRI / CCT: 75CRI at 6500K or 80 CRI at 3000K

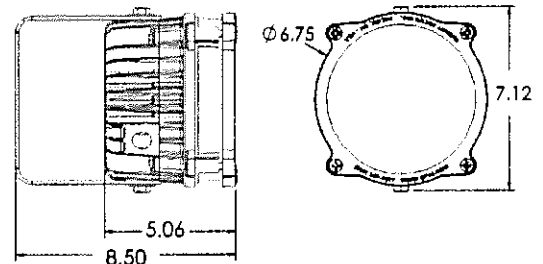
Lamp Life: 50,000 hours to 70% lumen maintenance

UL / IP Rating: wet locations / IP 65, NEMA3 compliant

Operating Temp Range: -20°C to 45°C



**lighting
facts**
LED Product Partner



LED LandScape

Ordering Guide

Model	Color Temp	Beam Spread	Size	Electrical Connection	Color
LEDLS	765 75 CRI, 6500K 835 80 CRI, 3000K	NSP 11° Beam NFL 30° Beam FLD 50° Beam OVL 34° x 14° Beam	15 Small Fixture 15Watt 26 Large Fixture 26Watt	HWC Cord, hardwire leads HWD Direct hardwire	AB Architectural Bronze BK Gloss Black

TYPE:

ORDERING CODE:

APPROVAL:

JOB:

DATE:

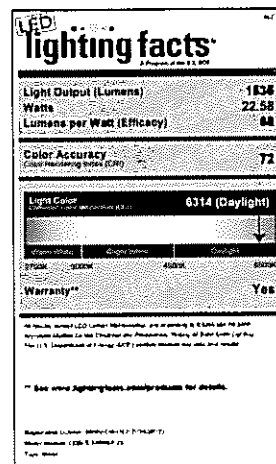
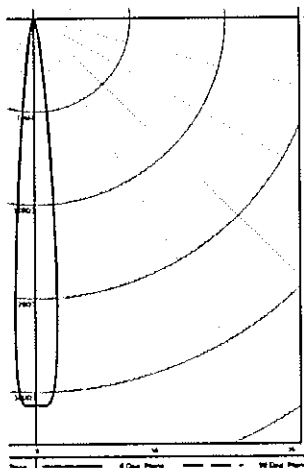
SPECIFICATIONS

LEDLS-765NSP-26

Lumen output: 1,536
Wattage: 23
Efficacy: 68.0 lpw
Beam Spread: 11°
CRI: 72
CCT: 6,314 K
CBCP: 31,060
LTL Test Report# 28431 & 28434

Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	1445	94.0%
0-40	1471	95.8%
0-60	1514	98.6%
0-90	1536	100.0%
90-180	0	0.0%
0-180	1536	100.0%



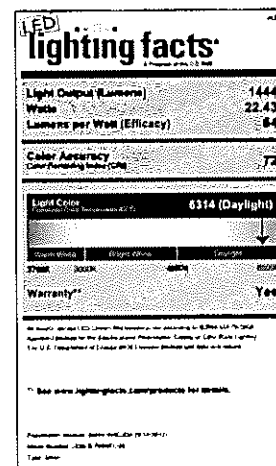
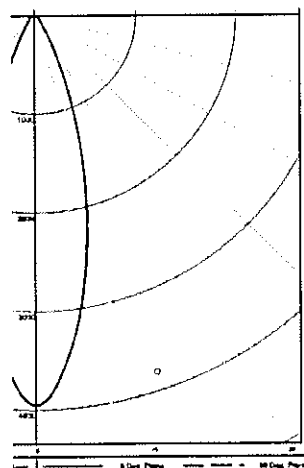
Testing was performed in accordance with IES LM-79-08 in a caliper certified laboratory

LEDLS-765NFL-26

Lumen output: 1,444
Wattage: 22
Efficacy: 64.4 lpw
Beam Spread: 30°
CRI: 72
CCT: 6,314 K
CBCP: 3,953
LTL Test Report# 28434 & 28435

Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	1162	80.5%
0-40	1282	88.7%
0-60	1393	96.4%
0-90	1444	100.0%
90-180	0	0.0%
0-180	1444	100.0%



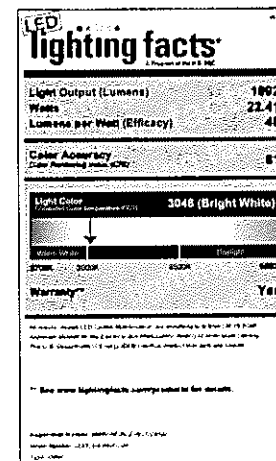
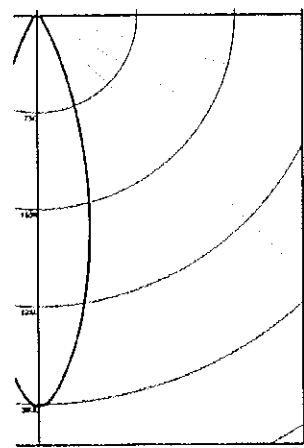
Testing was performed in accordance with IES LM-79-09 in a caliper certified laboratory

LEDLS-835NFL-26

Lumen output: 1,092
Wattage: 22
Efficacy: 48.7 lpw
Beam Spread: 30°
CRI: 81
CCT: 3,048 K
CBCP: 3,013
LTL Test Report# 28432 & 28433

Zonal Lumen Summary

Zone	Lumens	% of Luminaire
0-30	882	80.8%
0-40	971	89.0%
0-60	1054	96.6%
0-90	1092	100.0%
90-180	0	0.0%
0-180	1092	100.0%



Testing was performed in accordance with IES LM-79-08 in a caliper certified laboratory

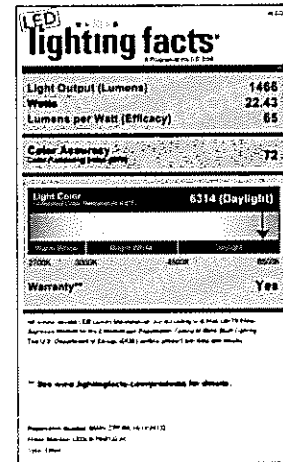
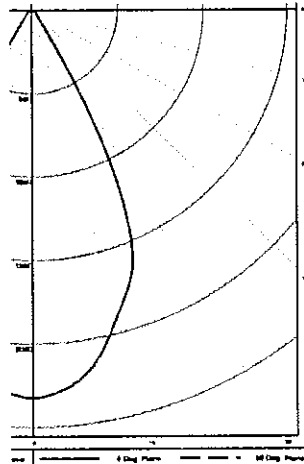
TYPE:	ORDERING CODE:	APPROVAL:
JOB:		DATE:

SPECIFICATIONS

LEDLS-765FLD-26
Lumen output: 1,466
Wattage: 22
Efficacy: 64.4 lpw
Beam Spread: 50°
CRI: 72
CCT: 6,314 K
CBCP: 2,324
LTL Test Report# 28436 & 28435

Zone	Lumens	% of Luminaire
0-30	1267	86.4%
0-40	1378	94.0%
0-60	1441	98.3%
0-90	1466	100.0%
90-180	0	0.0%
0-180	1466	100.0%

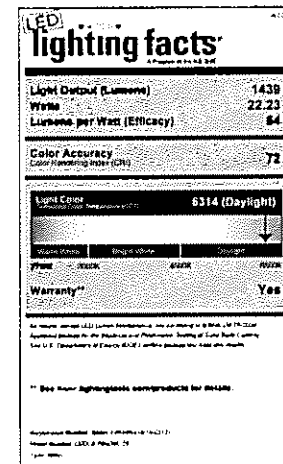
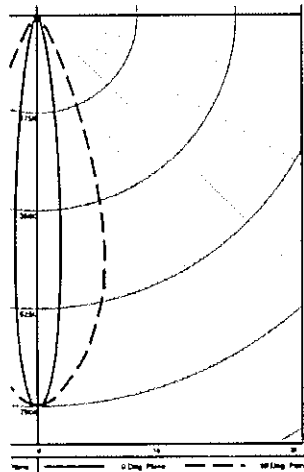
Testing was performed in accordance with IES LM-79-08 in a caliper certified laboratory



LEDLS-765OVL-26
Lumen output: 1,439
Wattage: 22
Efficacy: 64.7 lpw
Beam Spread: 34 x 14°
CRI: 72
CCT: 6,314 K
CBCP: 6979
LTL Test Report# 28437 & 28435

Zonal Lumen Summary		
Zone	Lumens	% of Luminaire
0-30	1210	84.1%
0-40	1301	90.4%
0-60	1397	97.0%
0-90	1439	100.0%
90-180	0	0.0%
0-180	1439	100.0%

Testing was performed in accordance with IES LM-79-08 in a caliper certified laboratory.



TYPE:

ORDERING CODE:

APPROVAL:

JOB:

DATE:

SPECIFICATIONS

LEDLS-SLPFTTR-BLT

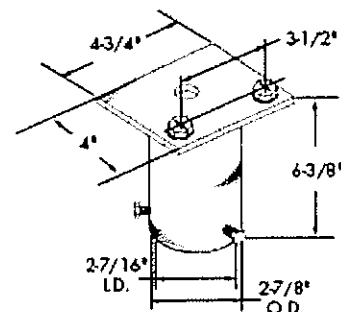
Application: For mounting yoke type Floodlight to 2-3/8" tenon

Material: Steel

Finish: Bronze

Weight: 3 lbs 5 oz

Mounting hardware included



LEDLS-SLPFTTR-BLT

LEDLS-SLPFTTR-NPT

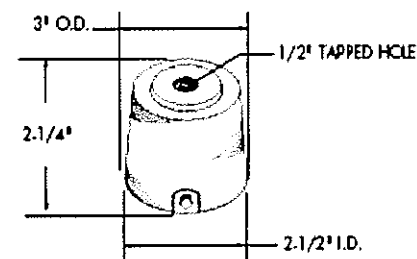
Application: For mounting small yoke type Floodlight to 2-3/8" tenon

Material: Die cast aluminum

Finish: Bronze

Weight: 9 oz

Mounting hardware included



LEDLS-SLPFTTR-NPT

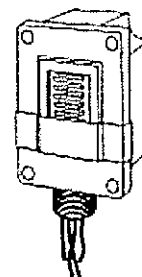
LEDLS-PHTSNSR

Material: Die case aluminum with plastic lens cover

Weight: 7 oz

Application: Field installed photo control with 1/2" pipe nipple

Input Voltage: 120V, 208V, 240V, 277V



LEDLS-PHTSNSR

LED LandScape Accessories

Ordering Guide

Model	Product	Mounting*
LEDLS	SLPFTTR Pole Top Slipfitter	NPT w/ 1/2" tapped holes BLT w/ plate and double mounting bolts
	PHTSNSR Photo Sensor	

* Mounting applies to slipfitter only

TYPE:

ORDERING CODE:

APPROVAL:

JOB:

DATE:

SPECIFICATIONS

LEDLS-Visor

Application: For mounting on Landscape lights to reduce glare

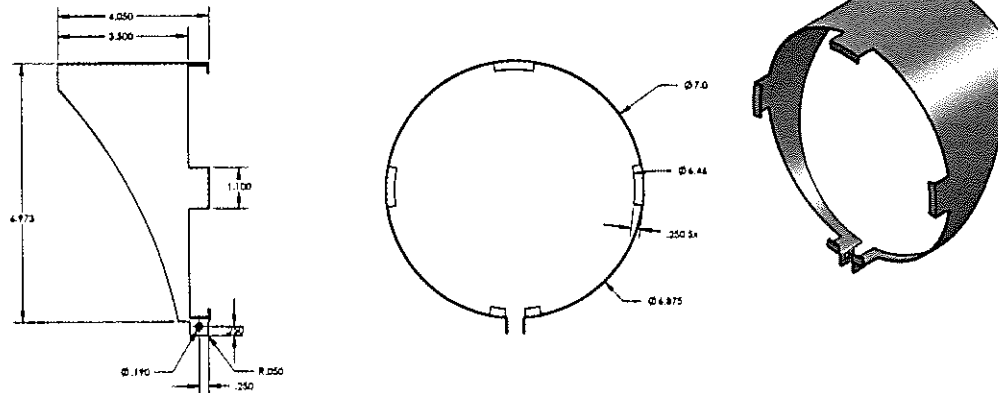
Material: Aluminum 356, die-cut

Finish: Bronze or architectural black

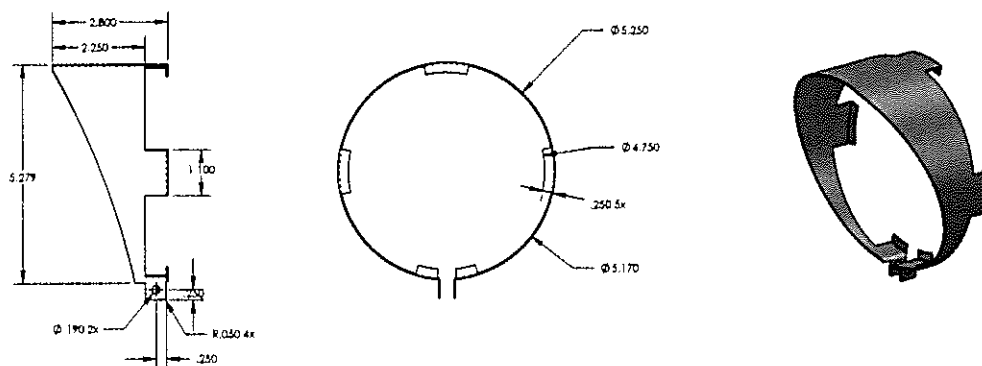
Weight: 0.5Lbs for Large; 0.2Lbs for Small

Mounting hardware included

LARGE



SMALL



LED LandScape Accessories

Ordering Guide

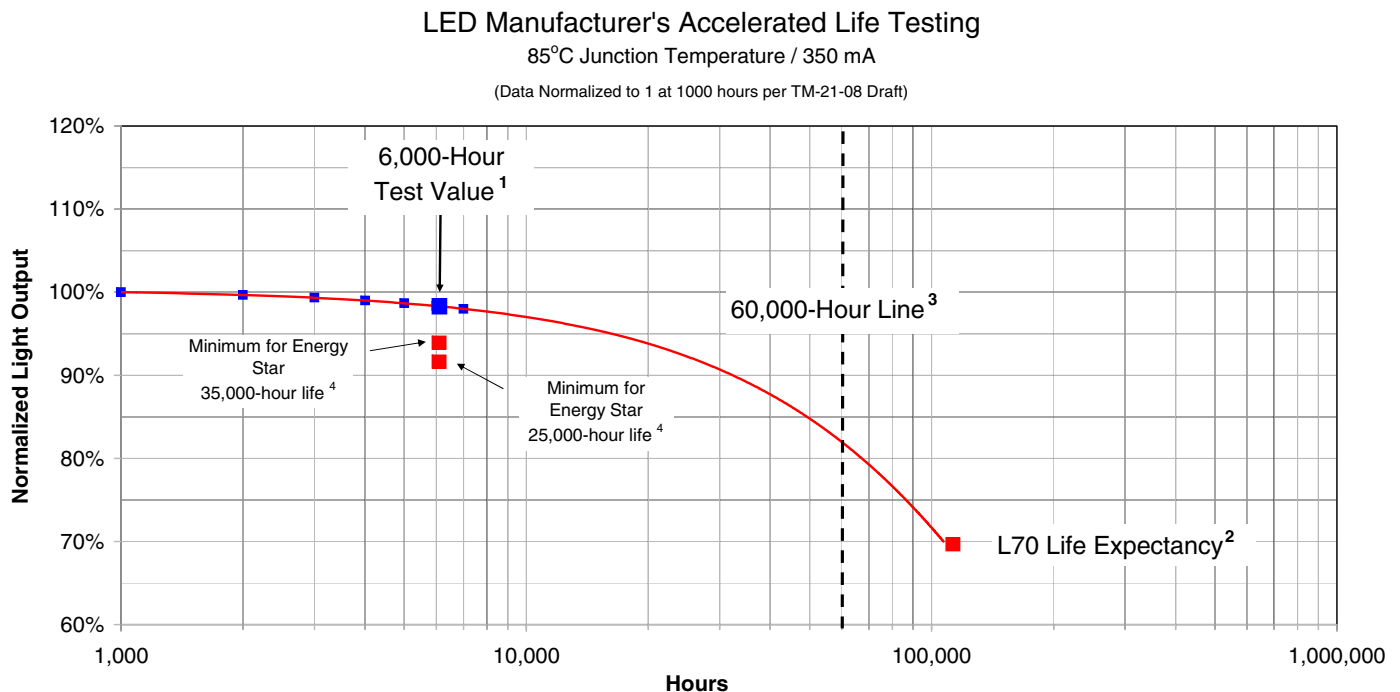
Model	Product	Size	Color
LEDLS	VS Visor	LG Large SM Small	AB Architectural Bronze BK Gloss Black

LSI *Crossover*® Fixture Life Expectancy (Lumen Depreciation)

All LSI *Crossover* fixtures have an expected life of at least 60,000 hours in all applications, up to a continuous-use ambient temperature of 50°C. Rating life based on a maximum ambient frees the user from having to calculate life expectancy for each different application in different temperature zones.

However, the vast majority of *Crossover* fixtures are used in outdoor and temperature-controlled indoor applications where the average ambient temperature is below 40°C. For most such standard installations, the life expectation is greater than 100,000 hours. (For extreme instances where average use temperatures exceed 40°C, contact LSI for a life expectation analysis of the specific application.)

Fixture life estimates are developed based on lumen maintenance data generated by the LED manufacturer through actual life testing. Tests are conducted at 55°C, 85°C and one other junction temperature. LSI, as a fixture manufacturer, uses the data that most closely matches the maximum internal temperature of the fixture (in-situ temperature), in a standard 25°C ambient. LSI estimates are based on 85°C test levels (see graph below); however *Crossover* fixtures are designed with a significant safety margin, with a typical in-situ temperature of 65°C (specific temperatures are available from the factory for each different fixture).



1. Energy Star and LM-80 requirements are based on the test values after 6,000 hours of accelerated life testing.
2. Based on statistical trend analysis (curve-fitting), L70 life expectancy (the point where 50% of fixtures will be expected to have less than 70% lumen maintenance) exceeds 100,000 hours.
3. LSI recommends care be used above 60,000 hours, as any statistical prediction loses accuracy the further it is extended beyond actual test data.
4. *Crossover* lumen maintenance at 6,000 hours = 98.1%. For reference, Energy Star requires 94.1% for 35,000-hour life, 91.8% for 25,000 hours.

Mercantile Customer Project Commitment Agreement
Cash Rebate Option

THIS MERCANTILE CUSTOMER PROJECT COMMITMENT AGREEMENT ("Agreement") is made and entered into by and between The Toledo Edison Company, its successors and assigns (hereinafter called the "Company") and Defiance College, Taxpayer ID No. 34-4430762N its permitted successors and assigns (hereinafter called the "Customer") (collectively the "Parties" or individually the "Party") and is effective on the date last executed by the Parties as indicated below.

WITNESSETH

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

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

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

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

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

WHEREAS, the Customer, pursuant to the Public Utilities Commission of Ohio's ("Commission") September 15, 2010 Order in Case No. 10-834-EL-EEC, desires to pursue a cash rebate of some of the costs pertaining to its Customer Energy Project(s) ("Cash Rebate") and is committing the Customer Energy Project(s) as a result of such incentive.

WHEREAS, Customer's decision to commit its Customer Energy Project(s) to the Company for inclusion in the Company Plan has been reasonably encouraged by the possibility of a Cash Rebate.

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

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

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

- a. By committing the Customer Energy Project(s) to the Company, Customer acknowledges and agrees that the Company shall control the use of the kWh and/or kW reductions resulting from said projects for purposes of complying with the Statute. By committing the Customer Energy Project(s), Customer further acknowledges and agrees that the Company shall take ownership of the energy efficiency capacity rights associated with said Project(s) and shall, at its sole discretion, aggregate said capacity into the PJM market through an auction. Any proceeds from any such bids accepted by PJM will be used to offset the costs charged to the Customer and other of the Company's customers for compliance with state mandated energy efficiency and/or peak demand requirements
 - b. The Company acknowledges that some of Customer's Energy Projects contemplated in this paragraph may have been performed under certain other federal and/or state programs in which certain parameters are required to be maintained in order to retain preferential financing or other government benefits (individually and collectively, as appropriate, "Benefits"). In the event that the use of any such project by the Company in any way affects such Benefits, and upon written request from the Customer, Company will release said Customer's Energy Project(s) to the extent necessary for Customer to meet the prerequisites for such Benefits. Customer acknowledges that such release (i) may affect Customer's cash rebate discussed in Article 3 below; and (ii) will not affect any of Customer's other requirements or obligations.
 - c. Any future Customer Energy Project(s) committed by Customer shall be subject to a separate application and, upon approval by the Commission, said projects shall become part of this Agreement.
 - d. Customer will provide Company or Company's agent(s) with reasonable assistance in the preparation of the Commission's standard joint application for approval of this Agreement ("Joint Application") that will be filed with the Commission, with such Joint Application being consistent with then current Commission requirements.
 - e. Upon written request and reasonable advance notice, Customer will grant employees or authorized agents of either the Company or the Commission reasonable, pre-arranged access to the Customer Energy Project(s) for purposes of measuring and verifying energy savings and/or peak demand reductions resulting from the Customer Energy Project(s). It is expressly agreed that consultants of either the Company or the Commission are their respective authorized agents.
2. **Joint Application to the Commission.** The Parties will submit the Joint Application using the Commission's standard "Application to Commit Energy Efficiency/Peak Demand Reduction Programs" ("Joint Application") in which they will seek the Commission's approval of (i) this Agreement; (ii) the commitment of the Customer Energy Project(s) for inclusion in the Company Plan; and (iii) the Customer's Cash Rebate.

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

- i. A narrative description of the Customer Energy Project(s), including but not limited to, make, model and year of any installed and/or replaced equipment;
- ii. A copy of this Agreement; and
- iii. A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results.

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

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

5. **Confidentiality.** Each Party shall hold in confidence and not release or disclose to any person any document or information furnished by the other Party in connection with this Agreement that is designated as confidential and proprietary ("Confidential Information"), unless: (i) compelled to disclose such document or information by judicial, regulatory or administrative process or other provisions of law; (ii) such document or information is generally available to the public; or (iii) such document or information was available to the receiving Party on a non-confidential basis at the time of disclosure.
 - a. Notwithstanding the above, a Party may disclose to its employees, directors, attorneys, consultants and agents all documents and information furnished by the other Party in connection with this Agreement, provided that such employees, directors, attorneys,

consultants and agents have been advised of the confidential nature of this information and through such disclosure are deemed to be bound by the terms set forth herein.

- b. A Party receiving such Confidential Information shall protect it with the same standard of care as its own confidential or proprietary information.
 - c. A Party receiving notice or otherwise concluding that Confidential Information furnished by the other Party in connection with this Agreement is being sought under any provision of law, to the extent it is permitted to do so under any applicable law, shall endeavor to: (i) promptly notify the other Party; and (ii) use reasonable efforts in cooperation with the other Party to seek confidential treatment of such Confidential Information, including without limitation, the filing of such information under a valid protective order.
 - d. By executing this Agreement, Customer hereby acknowledges and agrees that Company may disclose to the Commission or its Staff any and all Customer information, including Confidential Information, related to a Customer Energy Project, provided that Company uses reasonable efforts to seek confidential treatment of the same.
6. **Taxes.** Customer shall be responsible for all tax consequences (if any) arising from the payment of the Cash Rebate.
7. **Notices.** Unless otherwise stated herein, all notices, demands or requests required or permitted under this Agreement must be in writing and must be delivered or sent by overnight express mail, courier service, electronic mail or facsimile transmission addressed as follows:

If to the Company:

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

If to the Customer:

Defiance College
701 N. Clinton St.
Defiance, OH 43512
Attn: Lois McCullough
Telephone: 419-783-2317
Fax: 419-783-2501
Email: lmccullough@defiance.edu

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

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

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

The Toledo Edison Company_
(Company)

By: J. C. Dargatzis

Title: V.P. Of Energy Efficiency

Date: 5-14-13

Defiance College_
(Customer)

By: Joe McElroy

Title: VP for Finance & Mgt

Date: 5-3-13

Affidavit of Defiance College -- Exhibit __A__

STATE OF OHIO)
) SS:
COUNTY OF DEFIANCE)

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

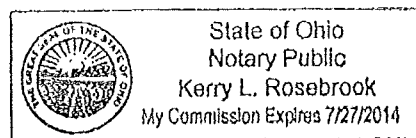
1. I am the VP of Finance and Management of Defiance College ("Customer") As part of my duties, I oversee energy related matters for the Customer.
2. The Customer has agreed to commit certain energy efficiency projects to The Toledo Edison Company ("Company"), which are the subject of the agreement to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

FURTHER AFFIANT SAYETH NAUGHT.

Lois McCullough VP of Finance + Mgmt.

Sworn to before me and subscribed in my presence this 3rd day of May, 2013.

Kerry L. Rosebrook
Notary



This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

6/13/2013 2:39:30 PM

in

Case No(s). 13-0853-EL-EEC

Summary: Application to Commit Energy Efficiency/Peak Demand Reduction Programs of The Toledo Edison Company and Defiance College electronically filed by Ms. Jennifer M. Sybyl on behalf of The Toledo Edison Company and Defiance College