Ohio | Public Utilities Commission

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

Case No.: 14-1409-EL-EEC

Mercantile Customer: **City of Cincinnati, Ohio**

Electric Utility: **Duke Energy Ohio**

Program Title or Description: **Partial street light upgrade**

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: **City of Cincinnati**

Principal address: **801 Plum St., Cincinnati, Ohio 45202**

Address of facility for which this energy efficiency program applies: Multiple

Name and telephone number for responses to questions: **Larry Falkin, 513/352-5325**

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: Duke Energy Ohio

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)).

Fully functional equipment would have been replaced as individual fixtures fail beyond economical repair over the next 20 years.

☐ 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: **3,292,541 kWh**

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

Annual savings: _____kWh

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

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

Annual savings: _____kWh

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

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

_____

Section 4: Demand Reduction/Demand Response Programs

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

☒ Coincident peak-demand savings from the customer's energy efficiency program.

☐ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)

☐ Potential peak-demand reduction (check the one that applies):

☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.

☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

B) On what date did the customer initiate its demand reduction program?
January 15, 2014

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

778.4 kW

1,182.7 existing connected kW

- 404.3 kW

= 778.4 connected kW reduction

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 **$298,255.00**. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

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

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

OR

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

calculations showing how this payment amount was determined.)

OR

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

Section 6: Cost Effectiveness

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

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

☒ Utility Cost Test (UCT) . The calculated UCT value is: **3.40** (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 **$1,015,025**.

The utility's program costs were **$0**.

The utility's incentive costs/rebate costs were **$298,255**.

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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

Ohio | Public Utilities Commission

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

Case No.: 14-1409-EL-EEC

State of Ohio:

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

1. I am the duly authorized representative of:

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

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

[signature], Interim City Mgr.
Signature of Affiant & Title

Sworn and subscribed before me this 13th day of August, 2014 Month/Year

[signature]
Signature of official administering oath

Amira Beer, Administrative Assistant
Print Name and Title

My commission expires on 9/23/18

NOTARIAL SEAL STATE OF OHIO

Amira Beer
Notary Public, State of Ohio
My Commission Expires 09-23-2018

BEFORE
THE PUBLIC UTILITIES COMMISSION OF OHIO

In the matter of the Application of the **City of Cincinnati**, for approval of a Reasonable Arrangement	)))	Case No. 14-1409-EL-EEC

APPLICATION TO COMMIT ENERGY EFFICIENCY/PEAK DEMAND REDUCTION PROGRAM

SECTION 7 RESPONSES

I. PROGRAM NARRATIVE

A. Introduction

In 2013, the City of Cincinnati (the "City") initiated a formal program to spend nearly $7 million to implement a variety of energy efficiency improvements on a variety of City-owned facilities (the City "Program"). A significant portion of the Program is an upgrade of approximately 4,500 streetlights from High Intensity Discharge to Light Emitting Diode ("LED") technology. The Program was formally launched on January 15, 2014, when the City Council approved the project, based in part on funding that included the anticipated rebates under Duke Energy Ohio's ("Duke") Efficient Outdoor Lighting SmartSaver® Prescriptive Incentive Program. A copy of the City Council Resolution is attached hereto as Attachment 2. Approximately one-half of the upgrades will be achieved with fixture replacements, while the remainder of the upgrades will be achieved through qualifying retrofits. All upgrades will use new equipment to cause the early replacement of fully functioning equipment. These upgrades will result in an average reduction in consumption of more than 65% over the existing fixtures.

The installation of the street lighting upgrades began on May 29, 2014, and completion of this phase of the Project is scheduled to be completed by the end of calendar year 2014. The

material cost of the street lighting upgrade portion of the Program is expected to exceed $2.2 million.

The City is requesting that the full value of the rebates, as published in Duke Energy Ohio's Efficient Outdoor Lighting SmartSaver® Prescriptive Incentive Program, be granted as a result of this application. This is the established, documented, and Commission-approved value for the City's street lighting upgrade project.

The City is seeking a cash rebate reasonable arrangement with Duke through this mercantile customer EEC filing rather than by a direct application with Duke because Duke has indicated to the City that the City's street lighting retrofit project does not qualify for Duke's Efficient Outdoor Lighting SmartSaver® Prescriptive Incentive Program. However, in all technical respects, the equipment being installed as part of the City's street lighting upgrade project qualifies under Duke's Efficient Outdoor Lighting SmartSaver® Prescriptive Incentive Program, and should be treated accordingly, as requested herein. The Commission should take note that the City has over 600 active accounts with Duke consuming over 267,000 MWh per year and each year pays in excess of $360,000 for Rider EE/PDR.

B. Program Description

The City's street lighting upgrade project consists of the replacement of current streetlights with the following specific products, all of which are listed in either the Energy Star or Design Lights Consortium qualified product lists as required by Duke SmartSaver® Prescriptive Incentive Program:

Cree_XSP2
Cree_XSPR
RAB_ALED5T78
Lithonia_DSXF1
Lithonia_DSXF2
LumenPulse_LBXL (not DLC listed)
LumenPulse_LBG (not DLC listed)
Relume_UAG2-RF14-0030
Relume_UAG2-RF14-0031
Relume_UAG2-RF14-0032
Relume_P-ID40-RF14-0033
Relume_P-ID40-RF14-0034
Relume_UAG2-RF14-0035
Relume_UAG2-RF14-0036
Relume_P-ID40-RF14-0037
Relume_P-ID40-RF14-0038
Relume_UAG2-RF14-0073
Relume_RPSWP3 (not DLC listed)
Relume_RPSWP4 (not DLC listed)
Relume_RPSWP5

Specific quantities of each measure from Duke's prescriptive lighting application are detailed below. Annual burn hours for all fixtures are 4,160 because each fixture is controlled by photocell and 4,160 hours is the basis of Duke charges for such equipment in any of their unmetered tariffs for outdoor lighting.

SmartSaver® Prescriptive Incentive Measure	Incentive	Quantity	Annual Operating Hrs. (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
Exterior LED or Induction fixture replacing up to 175 lamp watt HID fixture	$45 / fixture	1,213	4,160	$278,100	12/15/14	$54,585
Exterior LED or Induction fixture replacing 176-250 lamp watt HID fixture	$65 / fixture	2,351	4,160	$1,073,546	12/15/14	$152,815
Exterior LED or Induction fixture replacing 251-400 lamp watt HID fixture	$120 / fixture	571	4,160	$426,525	12/15/14	$68,520
Exterior LED Floodlight replacing >100W Incandescent	$50 / fixture	12	4,160	$5,505	12/15/14	$600
					Total	**$276,520**

II. PROGRAM COMMITMENTS

A. *Commitment of Savings*

By signing and submitting this application, the City affirms its intention to commit and integrate the energy efficiency program described in this application towards Duke's peak

demand reduction and/or energy efficiency programs for the life of the equipment used in the program.

Additionally, the City agrees to make any future or supplemental filings necessary to secure approval of this arrangement as required by the Public Utilities Commission of Ohio ("PUCO" or "Commission") and to comply with any reporting requirements imposed by rule or as part of the Commission's approval of this application.

Finally, the City affirms that all application information submitted as part of this application is true and accurate. The information presented in this application includes, but is not limited to, project scope, equipment specification, equipment operation details, project costs, project completion dates, and the quantity of energy conservation measures installed.

B. Confidentiality

The City has no confidentiality requirements associated with the program.

C. Coordination Requirements Between City of Cincinnati and Duke Energy Ohio

The City has no coordination requirements with Duke.

D. Permission to Measure

The City agrees to provide Duke and the Commission, and any associated consultants access to data and access to the proposed project for inspection and verification so long as such parties adhere to the City's safety and insurance requirements. Additionally, a written request for access must be provided to the City, electronically or by certified mail, at least ten (10) business days prior to the desired access date.

E. Annual Report

The City agrees to provide Duke and the Commission an annual report documenting the energy savings and electric utility peak-demand reductions achieved. This report shall be submitted electronically no later than fifteen (15) days after the end of the delivery year and will contain all calculations and measurements to document and support the program's performance.

III. MEASURING AND VERIFYING PROGRAM RESULTS

The City shall utilize International Performance Measurement and Verification Protocol; Option A methodology to verify that anticipated savings are achieved.

Utility Cost Test

UCT = Utility Avoided Costs / Utility Costs

Project	Total Annual Savings, MWh (A)	Utility Avoided Cost (B)	Utility Avoided Cost $ (C)	Utility Cost $ (D)	Cash Rebate $ (E)	Administrative or Variable Fee (F)	Total Cost $ (G)	Total Utility Cost $ (G)	UTC (H)
1	3,293	$308	$1,015,025		$298,255		$298,255		3.40
Total	3,293	$308	$1,015,025		$298,255		$298,255		3.40

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) (8)

(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)

EMERGENCY

ATTACHMENT 2

City of Cincinnati

GWM

An Ordinance No. 8 2014

AUTHORIZING the City Manager to execute an Energy Services Performance Agreement with Honeywell, Inc. in substantially the form as Exhibit A attached hereto; and AUTHORIZING the establishment of Bond Fund 817, "Energy Conservation Improvement Bond Fund," for the purpose of receiving and expending bond proceeds for projects authorized by City Council that are dedicated to energy conservation improvements on City property; and AUTHORIZING the establishment of four new capital improvement program project accounts which are included in Phase 3 of the Honeywell Performance Contracting Program; and AUTHORIZING the transfer and appropriation of the sum of $6,923,654 from the unappropriated surplus of Energy Conservation Improvement Bond Fund 817 to the newly established capital improvement program project accounts according to attached Schedule A; and further AUTHORIZING the City Manager to apply for, accept and appropriate a grant in the approximate amount of $358,777 from the Duke Energy Smart Saver Program in the form of rebates to the newly established capital improvement program project accounts according to attached Schedule B.

WHEREAS, on May 28, 2009, Council approved Ordinance No. 145-2009 authorizing the City Manager to enter into agreements with Ameresco, Inc. and Honeywell International, Inc. for the purpose of implementing energy services performance contracts; and

WHEREAS, the energy efficiency improvements made under these contracts has allowed the City to reduce energy use at several facilities managed by the City; and

WHEREAS, the City wishes to enter into a new contract with Honeywell, Inc. to achieve additional energy savings by installing more efficient HVAC equipment, streetlighting, and lighting in various City facilities, and by replacing certain fleet vehicles with those that run on cleaner, less expensive, domestically sourced fuels; and

WHEREAS, these new improvements will be funded by issuing bonds, the debt service of which will be paid for out of the energy savings these improvements are projected to achieve; and

WHEREAS, the projected energy savings will be guaranteed by Honeywell in the contract; now, therefore,

BE IT ORDAINED by the Council of the City of Cincinnati, State of Ohio:

Section 1. That the City Manager is authorized to execute an Energy Services Performance Agreement with Honeywell, Inc. in substantially the form as Exhibit A attached hereto.

Section 2. That new Bond Fund 817, "Energy Conservation Improvement Bond Fund," is hereby established.

Section 3. That new capital improvement program project account no. 980x255x142520, "Facilities: HVAC, Lighting, Generator," is hereby established.

Section 4. That new capital improvement program project account no. 980x239x142384, "Street Lighting-Performance Contracting," is hereby established.

Section 5. That new capital improvement program project account no. 980x243x142454, "Convention Center Lighting- Performance Contracting," is hereby established.

Section 6. That new capital improvement program project account no. 980x981x142521, "Fleet-Performance Contracting," is hereby established.

Section 7. That the transfer and appropriation of the sum of $6,923,654 from the unappropriated surplus of Energy Conservation Improvement Bond Fund 817 to the newly established capital improvement program project accounts created in Sections 2 through 5 of this ordinance is hereby authorized according to attached Schedule A, which by reference is fully incorporated herein.

Section 8. That the proper City officials are authorized to use and expend the sum of $6,923,654 in accordance with the provisions of Sections 1 through 7 hereof.

Section 9. That the City Manager is hereby authorized to apply for, accept and appropriate a grant in the amount of $358,777 from the Duke Energy Smart Saver Program in the form of rebates to the newly established capital improvement program project accounts established in Sections 2 through 5 of this ordinance, according to attached Schedule B, which by reference is fully incorporated herein.

Section 10. That this ordinance shall be an emergency measure necessary for the preservation of the public peace, health, safety and general welfare and shall, subject to the terms of Article II, Section 6 of the Charter, be effective immediately. The reason for the emergency is the immediate need to fund the capital improvements at the earliest possible time in order to preserve existing price quotes, which are subject to change.

Passed: January 15, 2014

Mayor

Attest: Clerk

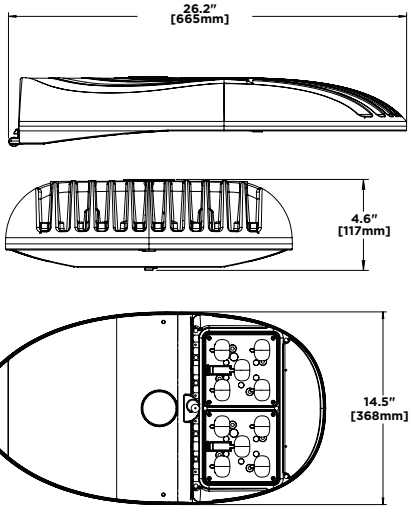
I HEREBY CERTIFY THAT ORDINANCE No. 8-2014
WAS PUBLISHED IN THE CITY BULLETIN
IN ACCORDANCE WITH THE CHARTER ON 1-28-2014
CLERK OF COUNCIL

XSP2™

XSP Series LED Street Light – Horizontal Tenon – Type II

Product Description

Designed from the ground up as a totally optimized LED street light system, the XSP Series delivers incredible efficiency and is designed to provide L70 lifetime over 100,000 hours without sacrificing application performance. Beyond substantial energy savings and reduced maintenance, Cree achieves better optical control with our NanoOptic® Precision Delivery Grid™ optic than a traditional cobra head luminaire. The Cree XSP Series LED Street Light is the best alternative for traditional street lighting with better payback and better performance.



Performance Summary

Utilizes BetaLED® Technology
NanoOptic Precision Delivery Grid optic
CRI: Minimum 70 CRI
CCT: 4000K (+/- 300K), 5700K (+/- 500K)
Warranty years on luminaire/limited 10 years on Colorfast DeltaGuard® finish
Made in the U.S.A. of U.S. and imported parts

Accessories

Field Installed Accessories
XA-SP2BLS Backlight Control Shield - Provides 1/2 Mounting Height Cutoff
XA-SP2BRDSPK Bird Spikes

Ordering Information

Example: BXSPA022A-USF

BXSP	A	0			A	-			
Product	**Version**	**Mounting**	**Optic**	**Modules**	**Input Power**	**-**	**Voltage**	**Color Options**	**Options**
BXSP	**A**	**0** Horizontal Tenon	**2** Type II **G** Type II w/ BLS	**2** Standard 4000K **B** Standard 5700K **H** High Efficacy 4000K* **P** High Efficacy 5700K*	**A** 101W	-	**U** Universal 120–277V **V** Universal 347–480V**	**S** Silver (Standard) **T** Black **Z** Bronze **B** Platinum Bronze **W** White	**A ROAM® Controls** - Installation of ROAM dimming control module only. Services provided by others. - Includes R option **F Fuse** When code dictates fusing, use time delay fuse - Not available with V voltage **K Occupancy Control** - Refer to Occupancy Control spec sheet for details **N Utility Label and NEMA Photocell Receptacle** - Includes Q option - Refer to Field Adjustble Output spec sheet for details **Q Field Adjustable Output** - Refer to Field Adjustable Output spec sheet for details **R NEMA Photocell Receptacle** - Photocell by others **U Utility** - Includes exterior wattage label that indicates the maximum available wattage of the luminaire - Includes Q option - Refer to Field Adjustable Output spec sheet for details

* Available Q3 2012. Preliminary data shown.

** 347–480V utilizes magnetic step-down transformer. For input power for 347–480V, refer to the Lumen Output, Electrical, and Lumen Maintenance data table below.

BetaLED TECHNOLOGY

RoHS

c UL us

Rev. Date: 9/14/2012

CREE®

Product Specifications

CONSTRUCTION & MATERIALS

- Die cast aluminum housing
- Tool-less entry
- Mounts on 1.25" IP (1.66" [42mm] O.D.) or 2" IP (2.375" [60mm] O.D.) horizontal tenon (minimum 8" [203mm] in length) and is adjustable +/- 5˚ to allow for fixture leveling (includes two axis T-level to aid in leveling)
- Designed with 0–10V dimming capabilities. Controls by others
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Standard is silver. Black, bronze, platinum bronze and white are also available

ELECTRICAL SYSTEM

- **Input Voltage:** 120–277V or 347–480V, 50/60Hz
- Class 2 output
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C/D breaker should be used

REGULATORY & VOLUNTARY QUALIFICATIONS

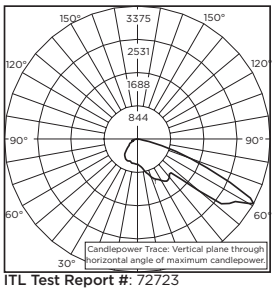
- cULus Listed
- Suitable for wet locations
- Product qualified on the DesignLights Consortium ("DLC") Qualified Products List ("QPL"). Exceptions apply when N, U, or Q options are ordered - see Field Adjustable Output spec sheet for details.
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Meets CALTrans 611 Vibration testing and GR-63-CORE Section 4.4.1/5.4.2 C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- RoHS Compliant
- Meets Buy American requirements within ARRA

PATENTS

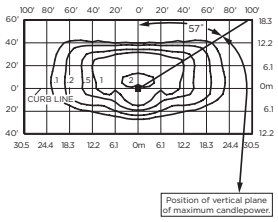
- Visit website for patents that cover these products: Patents http://www.cree.com/patents

Photometry

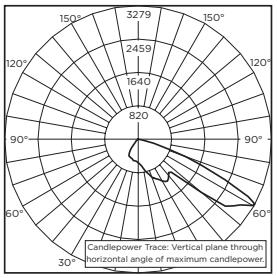
All published luminaire photometric testing performed to IESNA LM-79-08 standards by Independent Testing Laboratories, a NVLAP certified laboratory.



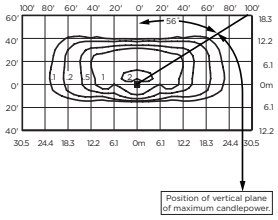
ITL Test Report #: 72723
BXSPA*21A-U
Initial Delivered Lumens: 3,954



BXSPA*22A-U
Mounting Height: 25' (7.6m)
Initial Delivered Lumens: 7,000
Initial FC at grade.



ITL Test Report #: 72722
BXSPA*G1A-U
Initial Delivered Lumens: 3,427



BXSPA*G2A-U
Mounting Height: 25' (7.6m)
Initial Delivered Lumens: 6,130
Initial FC at grade.

Lumen Output, Electrical, and Lumen Maintenance Data

Type 2 Distribution														
Module	Input Power Designator	4000K		5700K		System Watts 120–277V	TOTAL CURRENT				System Watts 347–480V	TOTAL CURRENT		50K Hours Calculated Lumen Maintenance Factor @ 15˚C (59˚F)***
		Initial Delivered Lumens	BUG Ratings** Per TM-15-11	Initial Delivered Lumens	BUG Ratings** Per TM-15-11		120V	208V	240V	277V		347V	480V	
Standard	A	7,000	B2 U0 G1	7,700	B2 U0 G2	101	0.84	0.50	0.44	0.39	106	0.31	0.22	91%
High Efficacy*	A	9,612	B2 U0 G2	10,680	B2 U0 G2	101	0.84	0.50	0.44	0.39	106	0.31	0.22	91%

Type 2 Distribution w/ BLS														
Module	Input Power Designator	4000K		5700K		System Watts 120–277V	TOTAL CURRENT				System Watts 347–480V	TOTAL CURRENT		50K Hours Calculated Lumen Maintenance Factor @ 15˚C (59˚F)***
		Initial Delivered Lumens	BUG Ratings** Per TM-15-11	Initial Delivered Lumens	BUG Ratings** Per TM-15-11		120V	208V	240V	277V		347V	480V	
Standard	A	6,130	TBD	6,742	TBD	101	0.84	0.50	0.44	0.39	106	0.31	0.22	91%
High Efficacy*	A	8,417	TBD	9,352	TBD	101	0.84	0.50	0.44	0.39	106	0.31	0.22	91%

* Available Q3 2012. Preliminary data shown.

** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf

*** Projected L_{70} (6K) Hours: >36,000. For recommended lumen maintenance factor data see TD-13

EPA and Weight

Input Power Designator	Weight 120–277V	Weight 347–480V	EPA				
			1@90	2@90	2@180	3@90	4@90
A	26 lbs (12kg)	29 lbs (13.2kg)	0.692	1.140	1.384	1.832	2.280

www.cree.com/lighting T (800) 236-6800 F (262) 504-5415

XSPR™ BXSPRA02

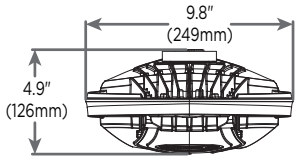
XSP Series LED Street Light – Horizontal Tenon Mount – Type II

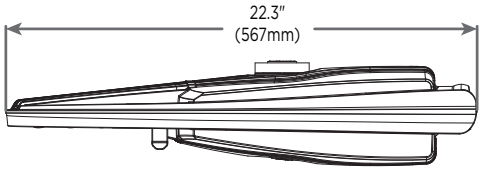
Product Description

Designed from the ground up as a totally optimized LED street light system, the XSP Series delivers incredible efficiency without sacrificing application performance. Beyond substantial energy savings and reduced maintenance, Cree achieves better optical control with our NanoOptic® Precision Delivery Grid™ optic than a traditional cobra head luminaire. The Cree XSP Series LED Street Light is the best alternative for traditional street lighting with better payback and better performance.

Performance Summary

- Utilizes BetaLED® Technology
- NanoOptic® Precision Delivery Grid™ optic
- Made in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT**: 4000K (+ / - 300K), 5700K (+ / - 500K)
- **Limited Warranty**†: 10 years on luminaire / 10 years on Colorfast DeltaGuard® finish





Ordering Information

Example: BXSPRA02FC-US-OPTIONS

BXSPR	A	0							
Product	**Version**	**Mounting**	**Optic**	**Modules**	**Input Power Designator**	**–**	**Voltage**	**Color**	**Options**
BXSPR	**A**	**0** Horizontal Tenon	**2** Type II	**F** Module 4000K **M** Module 5700K	**C** 42W **G** 25W	**-** US * Canada	**U** Universal 120–277V	**S** Silver	**Y 0–10V Dimming** - Control by others - Available with Input Power Designator C only **N Utility Label and NEMA Photocell Receptacle** **R NEMA Photocell Receptacle** - Photocell by others **U Utility** - Label per ANSI C136.15 - Includes exterior wattage label that indicates the maximum available wattage of the luminaire

† See www.cree.com/lighting/products/warranty for warranty terms.

Product Specifications

CONSTRUCTION & MATERIALS

- Die cast aluminum housing w/ UV stabilized polymeric door for long weathering and reliability
- Tool-less entry
- Mounts on 1.25" IP, 1.66" (42mm) O.D. or 2" IP, 2.375" (60mm) O.D. horizontal tenon (minimum 8" [203mm] in length) and is adjustable + /- 5˚ to allow for fixture leveling
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Standard is silver

ELECTRICAL SYSTEM

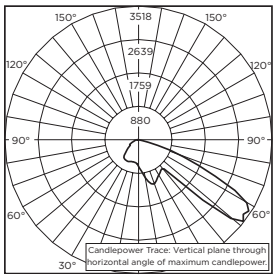
- **Input Voltage:** 120–277V, 50 / 60Hz
- Class 2 output
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral 10kV surge suppression protection standard
- To address inrush current, slow blow fuse or type C / D breaker should be used

REGULATORY & VOLUNTARY QUALIFICATIONS

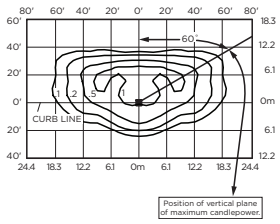
- cULus Listed
- Suitable for wet locations
- Product qualified on the DesignLights Consortium ("DLC") Qualified Products List ("QPL")
- Pending certification to ANSI C136.31-2001, 3G bridge and overpass vibration standards
- Pending CALTrans 611 Vibration testing
- 10kV surge suppression protection tested in accordance with IEEE / ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- Meets Buy American requirements within ARRA

Photometry

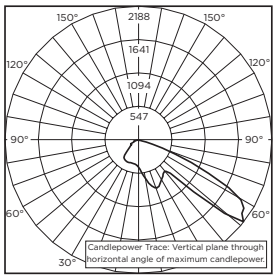
All published luminaire photometric testing performed to IESNA LM-79-08 standards by a NVLAP certified laboratory.



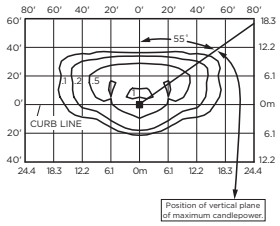
CESTL Test Report #: 2013-0151
BXSPRA*2FC-U
Initial Delivered Lumens: 3,759



BXSPRA*2FC-U
Mounting Height: 25' (7.6m)
Initial Delivered Lumens: 3,819
Initial FC at grade



CESTL Test Report #: 2013-0154
BXSPRA*2FG-U
Initial Delivered Lumens: 2,480



BXSPRA*2FG-U
Mounting Height: 25' (7.6m)
Initial Delivered Lumens: 2,529
Initial FC at grade

EPA and Weight

Weight	EPA				
	1	2@180	2@90	3@90	4@90
13.9 lbs (6.3kg)	0.57	1.14	0.85	1.42	1.56

Lumen Output, Electrical, and Lumen Maintenance Data

Type II Distribution										
Input Power Designator	5700K		4000K		System Watts 120–277V Nominal	TOTAL CURRENT				50K Hours Calculated Lumen Maintenance Factor @ 15˚C (59˚F)***
	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11	Initial Delivered Lumens*	BUG Ratings** Per TM-15-11		120V	208V	240V	277V	
C	4,109	B1 U0 G1	3,819	B1 U0 G1	42	0.34	0.20	0.18	0.16	92%
G	2,722	B1 U0 G1	2,529	B1 U0 G1	25	0.21	0.12	0.10	0.10	93%

* Actual production yield may vary between -4 and +10% of initial delivered lumens.
** For more information on the IES BUG (Backlight-Uplight-Glare) Rating visit www.iesna.org/PDF/Erratas/TM-15-11BugRatingsAddendum.pdf. Valid with no tilt.
*** For recommended lumen maintenance factor data see TD-13. Calculated L70 based on 6,000 hours LM-80-08 testing: > 100,000 hours.

US: www.cree.com/lighting T (800) 236-6800 F (262) 504-5415 **Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507**

D-Series Size 1
LED Flood Luminaire

d-series

Catalog Number

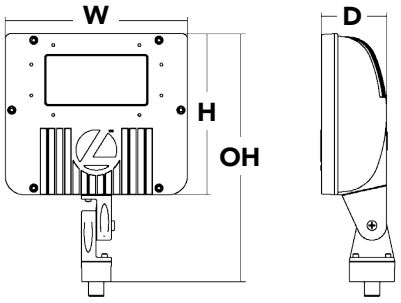
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.6 ft² *(0.05 m²)*
Depth:	3-1/8″ *(8.0 cm)*
Width:	8-7/8″ *(22.4 cm)*
Height:	7-3/4″ *(19.8 cm)*
Overall Height	12″ *(30.5 cm)*
Weight:	7.2 lbs *(3.3 kg)*



Introduction

The D-Series Size 1 Flood features precision optics to beautifully illuminate a variety of applications while its sleek, compact styling blends seamlessly with the environment.

The D-Series Flood reflector systems and cutting-edge chip-on-board LED technology produce low field-to-beam ratios for minimal spill light and incredible photometric performance. It's the ideal long-life replacement for 50 - 150W metal halide floods, with typical energy savings of 72% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSXF1 LED 2 A530/40K MSP MVOLT THK DDBXD

DSXF1 LED							
Series	**Light Engines**	**Performance Package**	**Distribution**	**Voltage**	**Mounting**	**Options**	**Finish** *(required)*
DSXF1 LED	1 One COB engine 2 Two COB engines	**530 mA options:** A530/30K 3000K A530/40K 4000K A530/50K 5000K	NSP Narrow spot MSP Medium spot MFL Medium flood FL Flood WFL Wide flood WFR Wide flood, rectangular HMF Horizontal flood	MVOLT [1] 120 [1] 208 [1] 240 [1] 277 [1]	**Shipped included** THK Knuckle with 1/2″ NPS threaded pipe	**Shipped installed** PE Photocontrol, button style [2] SF Single fuse (120, 277V) [3] **Shipped separately** [4] UBV Upper/bottom visor (universal) FV Full visor VG Vandal guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number
DSXF1 LED 1 A530/40K WFL MVOLT THK DDBXD	DSXF1 LED 1 40K
DSXF1 LED 1 A530/50K WFL MVOLT THK DDBXD	DSXF1 LED 1 50K
DSXF1 LED 2 A530/40K WFL MVOLT THK DDBXD	DSXF1 LED 2 40K
DSXF1 LED 2 A530/50K WFL MVOLT THK DDBXD	DSXF1 LED 2 50K

Accessories

Ordered and shipped separately.

DSXF1/2TS DDBXD U	Slipfitter for 1-1/4″ to 2-3/8″ OD tenons; mates with 1/2″ threaded knuckle (specify finish)
FRWB DDBXD U	Radius wall bracket, 2-3/8″ OD tenon (specify finish)
FSPB DDBXD U	Steel square pole bracket, 2-3/8″ OD tenon (specify finish)
DSXF1UBV DDBXD U	Upper/bottom visor accessory (specify finish)
DSXF1FV DDBXD U	Full visor accessory (specify finish)
DSXF1VG U	Vandal guard accessory

For more mounting options, visit our Floodlighting Accessories pages.

NOTES

1. MVOLT driver operates on any line voltage from 120-277V (50/60 Hz). Specify 120, 208, 240 or 277 options only when ordering with fusing (SF option) or photocontrol (PE).
2. Photocontrol (PE) requires 120, 208, 240 or 277 voltage option.
3. Single fuse (SF) requires 120 or 277 voltage option.
4. Also available as separate accessories; see Accessories information at left.

LITHONIA LIGHTING

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

Light Engines	Drive Current (mA)	Performance Package	System Watts	Dist. Type	Field Angle		Beam Angle		40K (4000K, 70 CRI)			50K (5000K, 67 CRI)		
					°H	°V	°H	°V	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW
1	530	A530/--K	21W	NSP	48	49	19	19	7300	1388	66	7277	1383	66
				MSP	50	48	24	23	6740	1555	74	6719	1550	74
				MFL	60	60	47	46	2806	1662	79	2797	1657	79
				FL	85	84	63	62	1855	1807	86	1849	1802	86
				WFL	106	106	71	72	1391	1900	90	1387	1894	90
				WFR	107	88	85	64	1386	1943	93	1381	1937	92
				HMF	100	62	80	13	1259	613	29	1255	611	29
2	530	A530/--K	41W	NSP	48	49	19	19	13,803	2624	64	13,760	2616	64
				MSP	50	48	24	23	12,744	2941	72	12,704	2932	72
				MFL	60	60	47	46	5305	3143	77	5288	3133	76
				FL	85	84	63	62	3507	3418	83	3496	3407	83
				WFL	106	106	71	72	2630	3593	88	2622	3582	87
				WFR	107	88	85	64	2620	3674	90	2612	3663	89
				HMF	100	62	80	13	2381	1159	28	2374	1156	28

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXF1 LED 2 A530** platform in a **40°C ambient**, based on 8400 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.94	0.90	0.84

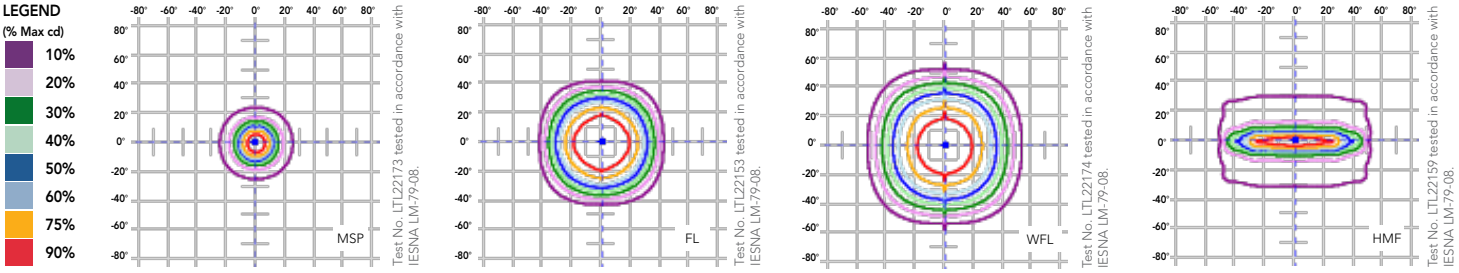
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
1	530	21W	0.19	0.11	0.10	0.08	-	-
2	530	41W	0.38	0.22	0.19	0.16	-	-

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Flood Size 1 homepage.

Isocandela plots for the DSXF1 LED 2 A530/40K.



FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 1 Flood reflects the embedded high performance LED technology. It is ideal for landscape, signage and accent lighting in many commercial and residential applications.

CONSTRUCTION

Die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (0.6 ft^2) for optimized wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

A variety of precision-molded vacuum-metallized specular reflectors are engineered for superior field-to-beam ratios, uniformity and spacing. Light engines are available in 3000K (80 CRI min.), 4000K (70 CRI min.) or 5000K (67 CRI min.) configurations. Optional visors offer additional versatility.

ELECTRICAL

Light engine(s) consist of chip-on-board (COB) LEDs directly coupled to the housing to maximize heat dissipation and promote long life (100,000 hrs at 40°C, L84). Single-engine unit uses a Class 2 electronic driver; dual-engine unit uses a Class 1 electronic driver. Both drivers have a power factor >90%, THD <20%, and an expected life of 100,000 hours. Surge protection meets a minimum Category C Low for 120-277V operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Integral adjustable knuckle with 1/2-14 NPS threaded pipe facilitates quick and easy installation to a variety of mounting accessories. This secure connection enables the D-Series Size 1 to withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

WARRANTY

Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

LITHONIA LIGHTING

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Rev. 8/21/12

d-series

D-Series Size 2
LED Flood Luminaire

Catalog Number

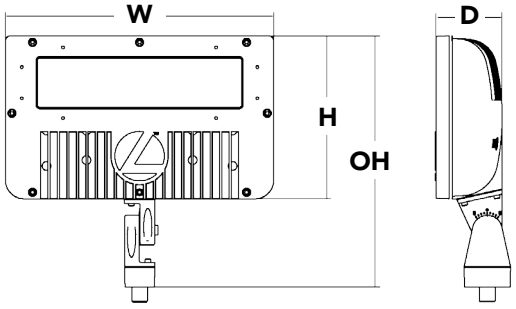
Notes

Type

Hit the Tab key or mouse over the page to see all interactive elements.

Specifications

EPA:	0.8 ft² (0.05 m²)
Depth:	3-1/8" (8.0 cm)
Width:	12-7/8" (32.6 cm)
Height:	7-3/4" (19.8 cm)
Overall Height	12" (30.5 cm)
Weight:	10.5 lbs (4.8 kg)



Introduction

The D-Series Size 2 Flood features precision optics to beautifully illuminate a variety of applications as its sleek, compact styling blends seamlessly with its environment.

The D-Series Flood reflector systems and cutting-edge chip-on-board LED technology produce low field-to-beam ratios for minimal spill light and incredible photometric performance. It's the ideal long-life replacement for 150 - 250W metal halide floods, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSXF2 LED 4 A530/40K MSP MVOLT THK DDBXD

DSXF2 LED							
Series	**Light Engines**	**Performance Package**	**Distribution**	**Voltage**	**Mounting**	**Options**	**Finish** *(required)*
DSXF2 LED	3 Three COB engines [1] 4 Four COB engines	**530 mA options:** A530/30K 3000K A530/40K 4000K A530/50K 5000K	NSP Narrow spot MSP Medium spot MFL Medium flood FL Flood WFL Wide flood WFR Wide flood, rectangular HMF Horizontal flood	MVOLT [2] 120 [2] 208 [2] 240 [2] 277 [2] 347 480	**Shipped included** THK Knuckle with 1/2" NPS threaded pipe YKC62 Yoke with 16-3 SO cord	**Shipped installed** PE Photocontrol, button style [3] DMG 0-10V dimming driver (no controls) [1,4] SF Single fuse (120, 277, 347V) [5] DF Double fuse (208, 240, 480V) [5] **Shipped separately** [6] UBV Upper/bottom visor (universal) FV Full visor VG Vandal guard	DDBXD Dark bronze DBLXD Black DNAXD Natural aluminum DWHXD White

Stock configurations are offered for shorter lead times:

Standard Part Number	Stock Part Number
DSXF2 LED 3 A530/40K WFL MVOLT THK DDBXD	DSXF2 LED 3 40K
DSXF2 LED 3 A530/50K WFL MVOLT THK DDBXD	DSXF2 LED 3 50K
DSXF2 LED 4 A530/40K WFL MVOLT THK DDBXD	DSXF2 LED 4 40K
DSXF2 LED 4 A530/50K WFL MVOLT THK DDBXD	DSXF2 LED 4 50K

Accessories

Ordered and shipped separately.

DSXF1/2TS DDBXD U	Slipfitter for 1-1/4" to 2-3/8" OD tenons; mates with 1/2" threaded knuckle (specify finish)
FTS CG6 DDBXD U	Slipfitter for 2-3/8" to 2-7/8" OD tenons; mates with yoke mount (specify finish)
FRWB DDBXD U	Radius wall bracket, 2-3/8" OD tenon (specify finish)
FSPB DDBXD U	Steel square pole bracket, 2-3/8" OD tenon (specify finish)
DSXF2UBV DDBXD U	Upper/bottom visor accessory (specify finish)
DSXF2FV DDBXD U	Full visor accessory (specify finish)
DSXF2VG U	Vandal guard accessory

For more mounting options, visit our Floodlighting Accessories pages.

NOTES

1. Not available with 347 or 480V.
2. MVOLT driver operates on any line voltage from 120-277V. Specify 120, 208, 240 or 277 options only when ordering with fusing (SF, DF options) or photocontrol (PE).
3. Photocontrol (PE) requires 120, 208, 240, 277 or 347 voltage option.
4. Not available with three-engine product (DSXF2 LED 3).
5. Single fuse (SF) requires 120, 277 or 347 voltage option. Double fuse (DF) requires 208, 240 or 480 voltage option.
6. Also available as separate accessories; see Accessories information at left.

LITHONIA LIGHTING

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Performance Data

Lumen Output

Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown, within the tolerances allowed by Lighting Facts. Actual performance may differ as a result of end-user environment and application. Contact factory for performance data on any configurations not shown here.

Light Engines	Drive Current (mA)	Performance Package	System Watts	Dist. Type	Field Angle		Beam Angle		40K (4000K, 70 CRI)			50K (5000K, 67 CRI)		
					°H	°V	°H	°V	Max Cd	Lumens	LPW	Max Cd	Lumens	LPW
3	530	A530/--K	58W	NSP	48	49	19	19	20,166	3834	66	20,103	3822	66
				MSP	50	48	24	23	18,619	4296	74	18,561	4283	74
				MFL	60	60	47	46	7751	4591	80	7726	4577	79
				FL	85	84	63	62	5124	4993	87	5108	4978	86
				WFL	106	106	71	72	3842	5250	91	3830	5233	91
				WFR	107	88	85	64	3828	5368	93	3816	5351	93
				HMF	100	62	80	13	3479	1694	29	3468	1688	29
4	530	A530/--K	79W	NSP	48	49	19	19	26,893	5112	64	26,809	5096	64
				MSP	50	48	24	23	24,830	5730	72	24,752	5712	72
				MFL	60	60	47	46	10,336	6123	77	10,304	6104	77
				FL	85	84	63	62	6833	6659	84	6811	6638	84
				WFL	106	106	71	72	5124	7001	88	5108	6979	88
				WFR	107	88	85	64	5105	7159	90	5089	7136	90
				HMF	100	62	80	13	4639	2259	28	4625	2252	28

Lumen Ambient Temperature (LAT) Multipliers

Use these factors to determine relative lumen output for average ambient temperatures from 0-40°C (32-104°F).

Ambient		Lumen Multiplier
0°C	32°F	1.05
10°C	50°F	1.03
20°C	68°F	1.01
25°C	**77°F**	**1.00**
30°C	86°F	0.99
40°C	104°F	0.97

Projected LED Lumen Maintenance

Data references the extrapolated performance projections for the **DSXF LED 4 A530** platform in a **25°C ambient**, based on 8400 hours of LED testing (tested per IESNA LM-80-08 and projected per IESNA TM-21-11).

To calculate LLF, use the lumen maintenance factor that corresponds to the desired number of operating hours below. For other lumen maintenance values, contact factory.

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.94	0.90	0.84

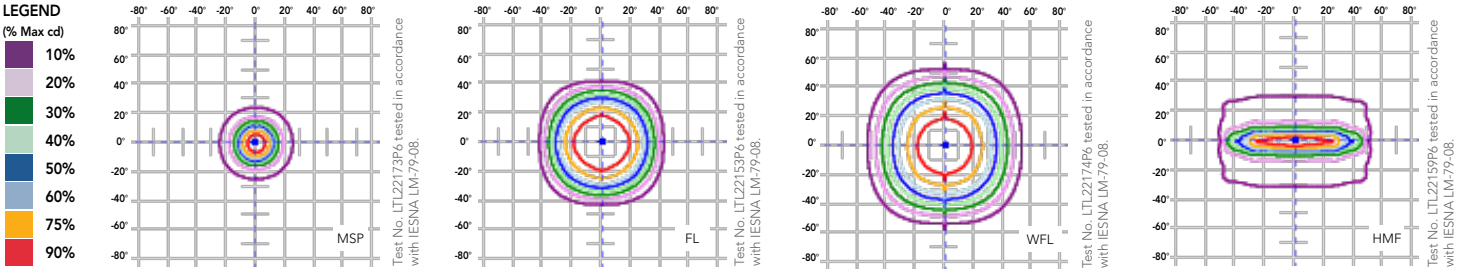
Electrical Load

Light Engines	Drive Current (mA)	System Watts	Current (A)					
			120	208	240	277	347	480
3	530	58W	0.54	0.31	0.27	0.23	0.19	0.13
4	530	79W	0.73	0.42	0.37	0.32	0.25	0.18

Photometric Diagrams

To see complete photometric reports or download .ies files for this product, visit Lithonia Lighting's D-Series Flood Size 2 homepage.

Isocandela plots for the DSXF2 LED 4 A530/40K.



FEATURES & SPECIFICATIONS

INTENDED USE

The sleek design of the D-Series Size 2 Flood reflects the embedded high performance LED technology. It is ideal for larger signage, facade and flagpole lighting in many commercial and residential applications.

CONSTRUCTION

Die-cast aluminum housing has integral heat sink fins to optimize thermal management through conductive and convective cooling. The LED driver is mounted in direct contact with the casting to promote low operating temperature and long life. Housing is completely sealed against moisture and environmental contaminants (IP65). Low EPA (0.8 ft²) for optimized wind loading.

FINISH

Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering. A tightly controlled multi-stage process ensures a minimum 3 mils thickness for a finish that can withstand extreme climate changes without cracking or peeling.

OPTICS

A variety of precision-molded vacuum-metallized specular reflectors are engineered for superior field-to-beam ratios, uniformity and spacing. Light engines are available in 3000K (80 CRI min.), 4000K (70 CRI min.) or 5000K (67 CRI min.) configurations. Optional visors offer additional versatility.

ELECTRICAL

Light engine(s) consist of chip-on-board (COB) LEDs directly coupled to the housing to maximize heat dissipation and promote long life (100,000 hrs at 25°C, L84). Class 1 electronic driver has a power factor >90%, THD <20%, and has an expected life of 100,000 hours with <1% failure rate. Surge protection meets a minimum Category C Low for 120-277V operation (per ANSI/IEEE C62.41.2).

INSTALLATION

Integral adjustable knuckle with 1/2-14 NPS threaded pipe, or yoke mounting, facilitates quick and easy installation to a variety of mounting accessories. This secure connection enables the D-Series Size 2 to withstand up to a 1.5 G vibration load rating per ANSI C136.31.

LISTINGS

CSA certified to U.S. and Canadian standards. Luminaire is IP65 rated. Rated for -40°C minimum ambient.

WARRANTY

Five year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Note: Specifications subject to change without notice.

LITHONIA LIGHTING

One Lithonia Way • Conyers, Georgia 30012 • Phone: 800.279.8041 • Fax: 770.918.1209 • www.lithonia.com

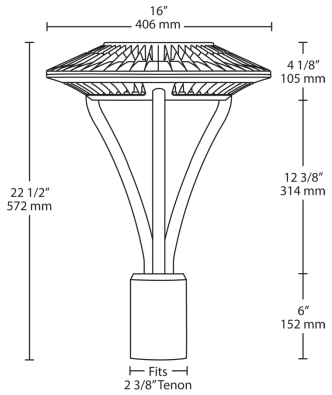
Rev. 8/22/12

ALED5T78

High output LED pole top area light with IES type V circular distribution. Wide and uniform 360 degree pattern ideal for large outdoor areas such as parking lots, corporate parks, and retail settings.

Color: Bronze

Weight: 21.8 lbs



LED Info

Watts:	78W
Color Temp:	5000K (Cool)
Color Accuracy:	64
L70 Lifespan:	100000
LM79 Lumens:	7,021
Efficacy:	79 LPW

Driver Info

Type:	Constant Current
120V:	0.74A
208V:	0.47A
240V:	0.41A
277V:	0.35A
Input Watts:	89W
Efficiency:	88%

Technical Specifications

UL Listing:
Suitable for wet locations.

LEDs:
6x13W high-output, long-life LEDs.

Lifespan:
100,000-hour LED lifespan based on IES LM-80 results and TM-21 calculations.

IP Rating:
Ingress Protection rating of IP66 for dust and water.

Drivers (3):
Constant Current, 720mA, Class 2 with 6kV surge protection, 100-277VAC, 50/60 Hz.

THD:
7.9% at 120V, 11.0% at 277V

Cold Weather Starting:
Minimum starting temperature is -40°F / -40°C.

Ambient Temperature:
Suitable for use in 40°C (104°F) ambient temperatures.

Effective Projected Area:
EPA = 1.2

Thermal Management:
Superior heat sinking with external air-flow fins.

Housing:
Precision die-cast aluminum, Type V distribution.

Support Arms:
Extruded aluminum.

Lens:
Clear tempered glass lens.

Reflector:
Specular vacuum-metallized polycarbonate, Type V distribution.

Gaskets:
High-temperature silicone.

DLC Listed:
This product is on the Design Lights Consortium (DLC) Qualified Products List and is eligible for rebates from DLC Member Utilities.

Finish:
Our environmentally friendly polyester powder coatings are formulated for high-durability and long-lasting color, and contains no VOC or toxic heavy metals.

Color Consistency:
7-step MacAdam Ellipse binning to achieve consistent fixture-to-fixture color.

Color Stability:
LED color temperature is warrantied to shift no more than 200K in CCT over a 5 year period.

Color Uniformity:
RAB's range of CCT (Correlated Color Temperature) follows the guidelines of the American National Standard for Specifications for the Chromaticity of Solid State Lighting (SSL) Products, ANSI C78.377-2011.

Green Technology:
Mercury and UV free, and RoHS compliant.

IESNA LM-79 & LM-80 Testing:
RAB LED luminaires have been tested by an independent laboratory in accordance with IESNA LM-79 and LM-80, and have received the Department of Energy "Lighting Facts" label.

Patents:
The designs of the ALED5T78 are protected by patents pending in US, Canada, China, Taiwan and Mexico.

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0033

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

Relume designs and builds its products to meet or exceed industry-quality standards and references including American National Standards Institute (ANSI), American Society for Testing and Materials International (ASTM), Council of the European Union (EC), Federal Trade Commission (FTC), Illuminating Engineering Society of North America (IESNA or IES), Institute of Electrical and Electronics Engineers (IEEE), National Electrical Manufacturers Association (NEMA), National Fire Protection Association (NFPA), Underwriters Laboratories (UL), Edison Testing Labs (ETL), Design Lights Consortium (DLC) and International Dark Sky (IDA). In production, each light fixture is certified by Relume's internal QA process. A quality control tracking label, including date of manufacture, is mounted on the inside of each fixture for full ISO 9001:2008 compliance. Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty.

Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	20
Type of LEDs:	Philips-Luxeon Rebel ES CW
Drive Current:	700mA
Delivered Lumens:	~3576
System Watts:	~48.5
Efficacy:	~73.7
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Relume Made in America

ETL Listed c US Intertek

Relume Lighting 7 Year Warranty

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0034

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

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Installation

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Fixture Specifications

# of LEDs:	40
Type of LEDs:	Philips-Luxeon Rebel ES CW
Drive Current:	530mA
Delivered Lumens:	~4521
System Watts:	~60w
Efficacy:	~68.5
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Made in America

Intertek

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0037

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

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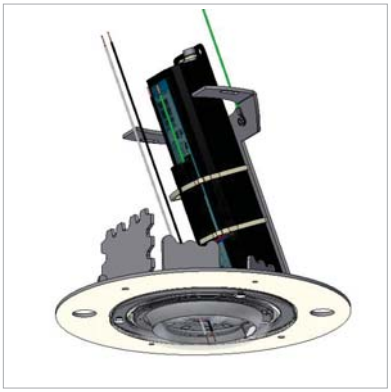
Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	40
Type of LEDs:	Philips-Luxeon Rebel ES CW
Drive Current:	530mA
Delivered Lumens:	~6120
System Watts:	~58w
Efficacy:	~105
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit



ISO 9001:2008 CERTIFIED

Made in America

Intertek

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0038

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

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Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	40
Type of LEDs:	Philips-Luxeon Rebel ES CW
Drive Current:	350mA
Delivered Lumens:	~3562
System Watts:	~41w
Efficacy:	~77.4
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Made in America

Intertek

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

relume PLUS SEVEN SEVEN YEAR WARRANTY

Outdoor Lighting Systems

Wall Pack LED Light Fixtures

Catalog number:
Type:
Notes:

MODEL | RPSWP5

FEATURES & SPECIFICATIONS

Intended Use

Relume's Full Cut-off Wall Pack LED fixture is the energy saving solution for building facades, storage areas, entrances, stairwells, corridors and other pedestrian areas.

Construction

The housing is made as an aluminum die cast with hinged front frame and powder coated with high-performance polyester resin for a rugged and maintenance-free finish. Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life. The LED light engine is protected by a molded prismatic borosilicate glass lens. A light diffusing prismatic lens is also available.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

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Eco-Friendly

All Relume Light Engines and fixtures fully comply with the Restriction of Hazardous Substances Directives (RoHS) adopted in February 2003 by the European Union and are fully recyclable.

Ordering example: RPSWP5 C CW UL PC DB W BB

MODEL	LENS
RPSWP5	C = Clear Glass P = Prismatic Glass

Battery backup mounted external to fixture.

COLOR TEMP	VOLTAGE	CONTROLS	EXTERIOR COLOR	OPTIONS 1	OPTIONS 2
CW = Cool White (5500K) NW = Neutral White (4500 K) WW = Warm White (3500 K)	UL = 120/277 UH = 347/480† † *Not control enabled*	PC = Photocell OC = Occupancy Sensor on/off only X = None	DB = Dark Bronze C = Custom	W = Wire Guard P = Polycarbonate Guard X = None	BB = Battery Back-up SC = Split Circuit X = None

ISO 9001:2008 CERTIFIED

Intertek

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Wall Pack Light Fixtures: Standard Dimensions:

Width: 18 1/4" (463.5 mm)
Height: 9 1/8" (231.8 mm)
Depth: 13 3/4" (349.2 mm)
Weight: 18.5 lbs. (8.4 kg)

Accessories:

Wire Guard

Polycarbonate Guard

DESIGNLIGHTS CONSORTIUM

IDA APPROVED

Relume Wall Pack LED Light Fixtures | FEATURES & SPECIFICATIONS

PHOTOMETRY

RPSWP5

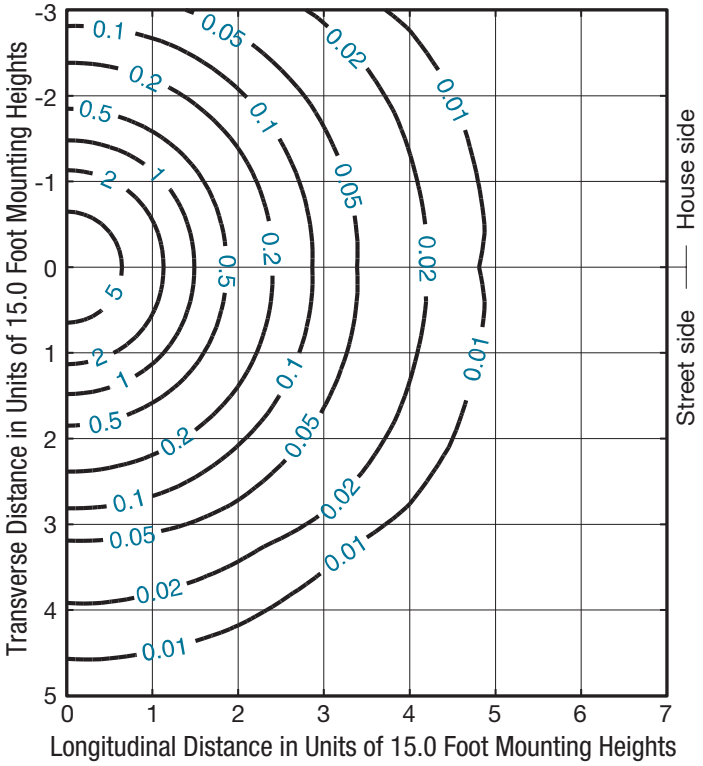
LTL Report #25285

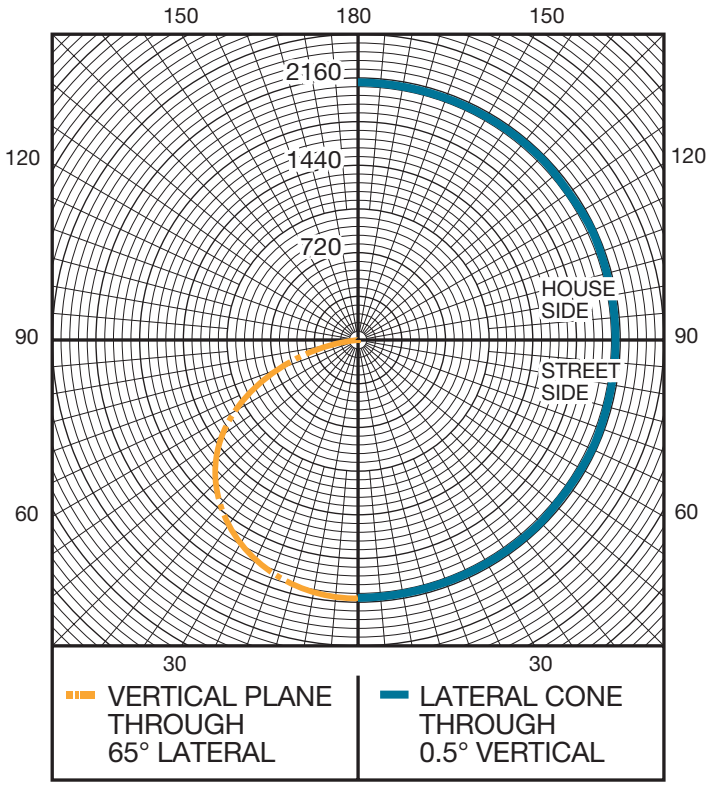
Delivered Lumens: 6760
System Watts: 83.5W

EPA (Effective Projected Area):
1.8 sq. ft. (0.167 m²)

BUG Rating:

B	U	G
2	0	1





All photometric testing was conducted by Luminaire Testing Laboratory, Inc.

Testing was performed in accordance with IES LM-79-08.

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0030

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

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Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	24
Type of LEDs:	Cree XTE CW
Drive Current:	620mA
Delivered Lumens:	~4080
System Watts:	~57w
Efficacy:	~71.6
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Intertek

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0031

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

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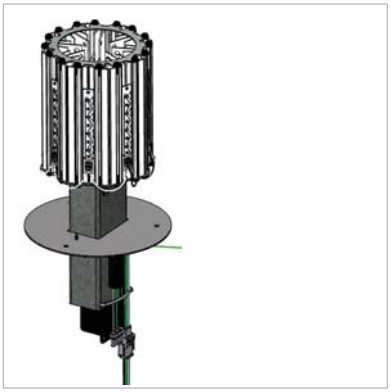
Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	32
Type of LEDs:	Cree XTE CW
Drive Current:	530mA
Delivered Lumens:	~4596
System Watts:	~52w
Efficacy:	~88
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit



ISO 9001:2008 CERTIFIED

Relume Made in America

Intertek

Relume Lighting 7 Year Warranty

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0032

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

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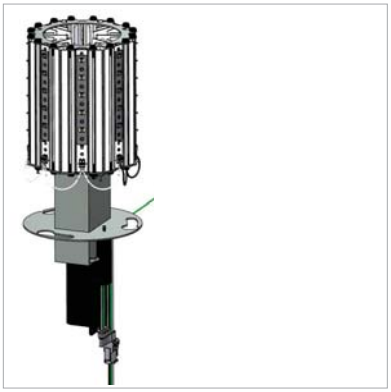
Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	48
Type of LEDs:	Cree XTE CW
Drive Current:	530mA
Delivered Lumens:	~6895
System Watts:	~62w
Efficacy:	~111
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit



ISO 9001:2008 CERTIFIED

Made in America

Intertek

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0035

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

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Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	36
Type of LEDs:	Cree XTE CW
Drive Current:	450mA
Delivered Lumens:	~4651
System Watts:	~53w
Efficacy:	~89.4
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Relume Made in America

Intertek

Relume Lighting 7 Year Warranty

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	Eco Engineering
RF#:	14-0036

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

Relume designs and builds its products to meet or exceed industry-quality standards and references including American National Standards Institute (ANSI), American Society for Testing and Materials International (ASTM), Council of the European Union (EC), Federal Trade Commission (FTC), Illuminating Engineering Society of North America (IESNA or IES), Institute of Electrical and Electronics Engineers (IEEE), National Electrical Manufacturers Association (NEMA), National Fire Protection Association (NFPA), Underwriters Laboratories (UL), Edison Testing Labs (ETL), Design Lights Consortium (DLC) and International Dark Sky (IDA). In production, each light fixture is certified by Relume's internal QA process. A quality control tracking label, including date of manufacture, is mounted on the inside of each fixture for full ISO 9001:2008 compliance. Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty.

Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	32
Type of LEDs:	Cree XTE CW
Drive Current:	450mA
Delivered Lumens:	~4134
System Watts:	~37w
Efficacy:	~111
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Relume Made in America

Intertek

Relume Lighting 7 Year Warranty

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

LED Decorative Streetlight Retrofit Kit

Client Name:	City of Cincinatti
RF#:	RF14-0073

FEATURES & SPECIFICATIONS

Intended Use

Ideal for retrofitting all styles of decorative street lights on main streets, parks, and parking lots.

Construction

Proprietary aluminum composite heat management systems ensures excellent thermal management and low LED junction temperatures—the key to long LED life.

Electrical

Each power supply (driver) operates over voltages ranging from 120-277 or 377-480 volts (50/60 Hz). The driver is highly efficient with a power factor of greater than 0.98 and a total harmonic distortion (THD) of less than 20%. Fluctuations in line voltage have no effect on luminous output. Drivers have voltage surge protection to withstand high repetition noise transients. Unit meets radio frequency interference (RFI) emission limits set forth in FCC Title 47, Subpart B, Section 15.

Quality Assurance

Relume designs and builds its products to meet or exceed industry-quality standards and references including American National Standards Institute (ANSI), American Society for Testing and Materials International (ASTM), Council of the European Union (EC), Federal Trade Commission (FTC), Illuminating Engineering Society of North America (IESNA or IES), Institute of Electrical and Electronics Engineers (IEEE), National Electrical Manufacturers Association (NEMA), National Fire Protection Association (NFPA), Underwriters Laboratories (UL), Edison Testing Labs (ETL), Design Lights Consortium (DLC) and International Dark Sky (IDA). In production, each light fixture is certified by Relume's internal QA process. A quality control tracking label, including date of manufacture, is mounted on the inside of each fixture for full ISO 9001:2008 compliance. Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty.

Installation

Installation usually takes 15 minutes or less and is easily accomplished by one worker. Connection to a photocell, if required, is straight forward.

Fixture Specifications

# of LEDs:	36
Type of LEDs:	Cree XTE
Drive Current:	530mA
Delivered Lumens:	~4868
System Watts:	~62w
Efficacy:	~78
Lumen Maintenance:	
Color Temp:	Cool White

LED Decorative Streetlight Retrofit Kit

ISO 9001:2008 CERTIFIED

Relume Made in America

ETL Listed c US Intertek

Relume Lighting 7 Year Warranty

Warranty

Relume guarantees unsurpassed quality by offering an industry leading 7 year limited warranty. Contact Relume for complete warranty language, exceptions, and limitations.

Relume Retrofit Streetlight System | FEATURES & SPECIFICATIONS

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Case No(s). 14-1409-EL-EEC

Summary: Application of the City of Cincinnati for Approval of a Reasonable Arrangement electronically filed by Teresa Orahood on behalf of Thomas O'Brien