An AEP Company
BOUNDLESS ENERGY™

Legal Department

American Electric Power
1 Riverside Plaza
Columbus, Ohio 43215-2373
AEP.com

October 26, 2020

Chairman Samuel Randazzo
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, OH 43215-3793

Re: **In the Matter of the Application of**	**)**	
Jem Stores, LLC	**)**	
and Ohio Power Company	**)**	**Case No. 20-1097-EL-EEC**
for Approval of a Special Arrangement	**)**	
Agreement with a Mercantile Customer	**)**	

Tanner Wolffram
Legal Fellow
Regulatory Services
(614) 716-2914 (T)
tswolffram@aep.com

Dear Chairman Randazzo,

Attached please find the Joint Application of Ohio Power Company (AEP Ohio) and the above-referenced mercantile customer for approval of a Special Arrangement of the commitment of energy efficiency/peak demand reduction (EE/PDR) resources toward compliance with the statutory benchmarks for 2020 (hereinafter "Joint Application").

Amended Substitute Senate Bill 221, codified at R.C. 4928.66, sets forth EE/PDR benchmarks that electric distribution utilities are required to meet or exceed. The statute allows utilities to include EE/PDR resources committed by mercantile customers for integration into the utilities' programs to be counted toward compliance with a utility's EE/PDR benchmarks. The statute also enables the Commission to approve special arrangements for mercantile customers that commit EE/PDR resources to be counted toward compliance with EE/PDR benchmarks.

The Commission's Order in Case No. 10-834-EL-EEC established a streamlined process to expedite review of these special arrangements by developing a sample application process for parties to follow for consideration of such programs implemented during the prior three calendar years. The attached Joint Application and affidavit conforms with AEP Ohio's version of the streamlined sample application. As requested by Commission Staff, any confidential information referenced in the Joint Application has been provided confidentially to Commission Staff for filing in Commission Docket 10-1599-EL-EEC and subject to the confidentially protections of R.C. 4901.16 and OAC 4901-1-24(E). AEP Ohio respectfully requests that the Commission treat the two cases as associated dockets and that any confidential information provided to Staff for filing in connection with the Joint Application be subject to the protective order requested in Docket 10-1599-EL-EEC.

Cordially,

/s/ Tanner Wolffram
Attachment

Ohio | Public Utilities Commission

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

Case No.: 20-1097-**EL-EEC**

Mercantile Customer: JEM STORES LLC

Electric Utility: Ohio Power

Program Title or Description: AEP Ohio Business Incentives for Energy Efficiency: Self Direct Program

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: Company Information

Name: JEM STORES LLC

Principal address: 15 Sandalwood Drive, Dresden, Oh 43821

Address of facility for which this energy efficiency program applies: 71 Mccoy Xing, Dresden, Oh 43821-9581

Name and telephone number for responses to questions:

Julie Casey, Jem Stores Llc, (000) 000-0000

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

☐ The customer uses more than seven hundred thousand kilowatt hours per year at our facility. (Please attach documentation.)

See Confidential and Proprietary Attachment 4 – Calculation of Rider Exemption and UCT which provides the facility consumption for the last three years, benchmark kWh, and the last 12 months usage.

☒ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.) When checked, see Attachment 6 – Supporting Documentation for a listing of the customer's name and service addresses of other accounts in the AEP Ohio service territory.

Section 2: Application Information

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

☐ Individually, on our own.

☒ Jointly with our electric utility.

B) Our electric utility is: Ohio Power Company

The application to participate in the electric utility energy efficiency program is "Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application."

C) The customer is offering to commit (choose which applies):

☐ Energy savings from our 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 demand reduction 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 (choose whichever applies):

☒ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, 4/9/2019 and the date on which the customer would have replaced your equipment if you had not replaced it 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)).

The remaining life of the equipment varies and is not known with certainty. The future replacement date is unknown and has historically been at the end of equipment life. Replacement was completed early to achieve energy savings and to reduce future maintenance costs.

☐ 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 your energy efficiency program:

1) If you checked the box indicating that your 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:

Unit Quantity (watts) = Existing (watts x units) – Installed (watts x units)

kWh Reduction (Annual Savings) = Unit Quantity x (Deemed kWh/Unit)

Annual savings: 19,687 kWh

See Confidential and Proprietary Attachment 5 – Self Direct Program Project Calculation for annual energy savings calculations and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

2) If you checked the box indicating that you 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 the less efficient new equipment that you rejected in favor of the more efficient new equipment.

3) If you checked the box indicating that your 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 you 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):

- Choose one or more of the following 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?

The coincident peak-demand savings are permanent installations that reduce demand through energy efficiency and were installed on the date specified in Section 3 A above.

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

Unit Quantity (watts) = Existing (watts x units) – Installed (watts x units)

KW Demand Reduction = Unit Quantity (watts) x (Deemed KW/Unit (watts))

1.5 kW

See Confidential and Proprietary Attachment 5 – Self Direct Program Project Calculation for peak demand reduction calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

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 cost recovery mechanism implemented by the electric utility.

OR

☐ Commitment payment

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

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

☐ A cash rebate of $_____. (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.)

OR

☒ A cash rebate valued at no more than 50% of the total project cost, which is equal to $ 895.38. (Attach documentation and calculations showing how this payment amount was determined.)

See Confidential and Proprietary Attachment 5 – Self Direct Program Project Calculation for incentive calculations for this mercantile program.

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 an ongoing efficiency program that is practiced by our organization. (Attach documentation that establishes your organization's ongoing efficiency program. In order to continue the exemption beyond the initial 24 month period your organization 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: 5.39 (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 utility's 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 $ 5,467.29

The utility's program costs were $ 118.12

The utility's incentive costs/rebate costs were $ 895.38.

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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

  See Attachment 1 - Self Direct Project Overview and Commitment for a description of the project. See Attachment 6 – Supporting Documentation, for the specifications of the replacement equipment 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed. Due to the length of time since the equipment replacement, the make, model and year of the replaced equipment is not available.

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

  1) any confidentiality requirements associated with the agreement;

     See Attachment 2 – Self Direct Program Project Blank Application including Rules and Requirements. All confidentially requirements are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application.)

  2) a description of any consequences of noncompliance with the terms of the commitment;

     See Attachment 2 – Self Direct Program Project Blank Application including Rules and Requirements. All consequences of noncompliance are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application.

  3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;

     None required because the resources committed are permanent installations that reduce demand through increased efficiency during the Company's peak summer demand period generally defined as May through September and do not require specific coordination and communication to provide demand reduction capabilities to the Company.

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,

   See Attachment 2 – Self Direct Program Blank Application including Rules and Requirements granting such permission pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application.

5) a commitment by you to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

   See Attachment 1 - Self Direct Project Overview and Commitment for the commitment to comply with any information and compliance reporting requirements imposed by rule or as part of the approval of this arrangement by the Public Utilities Commission of Ohio.

- 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.

  The Company applies the same methodologies, protocols, and practices to Self Direct Program retrospective projects that are screened and submitted for approval as it does to prospective projects submitted through its Prescriptive and Custom Programs. The Commission has not published a technical reference manual for use by the Company so deviations can not be identified. The project submitted is a prescriptive project and energy savings are determined as described in Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

Zaid - AEP-19-25357 JEM STORES LLC 20-1097 002.pdf

DocVerify ID:	387592D3-2C3D-4FC2-B084-341DC14CED37
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E-Signature Summary

E-Signature 1: Zaid Shaikh (ZA)
October 07, 2020 12:03:31 -8:00 [FB3D09D84E85] [76.219.105.146]
Zaid.Shaikh@dnvgl.com (Principal) (Personally Known)

E-Signature Notary: Brenda Williamson (BW)
October 07, 2020 12:03:31 -8:00 [BC6250F5A723] [167.239.221.82]
bgwilliamson@aep.com
I, Brenda Williamson, did witness the participants named above electronically sign this document.

Ohio | Public Utilities Commission

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

Case No.: 20-1097-EL-EEC

State of Ohio and County of Franklin :

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

1. I am the duly authorized representative of:

   DNV GL Energy Services USA Inc. agent of Ohio Power

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.

Zaid Shaikh
Signed on 2020/10/07 12:03:31 -8:00
Signature of Affiant & Title

Sworn and subscribed before me this _____ day of 10/07/2020, _____Month/Year

Brenda Williamson
Signed on 2020/10/07 12:03:31 -8:00
Sig administering oath

NOTARY PUBLIC STATE OF OHIO

Brenda G. Williamson
Commission # 2016-RE-579446
Electronic Notary Public
State of Ohio
My Comm Exp. Apr 25, 2021

Notary Stamp 2020/10/07 12:03:31 PST BC6250F5A723

My commission expires on _____

AEP OHIO
A unit of American Electric Power

Self Direct Project Overview & Commitment

The Public Utility Commission of Ohio (PUCO) will soon review your application for participation in AEP Ohio's Energy Efficiency/Peak Demand Response program. Based on your submitted project, please select by initialing one of the two options below, sign and fax to 877-607-0740.

Customer Name	JEM STORES LLC	
Project Number	AEP-19-25357	
Customer Premise Address	71 MCCOY XING, DRESDEN, OH 43821-9581	
Customer Mailing Address	15 SANDALWOOD DRIVE, Dresden, OH 43821	
Date Received	4/20/2020	
Project Installation Date	4/9/2019	
Annual kWh Reduction	19,687	
Total Project Cost	$4,390.70	
Unadjusted Energy Efficiency Credit (EEC) Calculation	$1,193.84	
Simple Payback (yrs)	6.3	
Utility Cost Test (UCT) for EEC	5.39	
Utility Cost Test (UCT) for Exemption	0.08	
		Please Choose One Option Below and Initial
Self Direct EEC: 75%	**$895.38**	☑ Initial: BJM
EE/PDR Rider Exemption	**12 Months (with possible extension up to 46 months after PUCO Approval)**	☐ Initial:

Note: *This is a one time selection. By selecting EEC, the customer will receive payment in the amount stated above. Selection of EE/PDR rider exemption, will result in the customer not being eligible to participate in any other energy efficiency programs offered by AEP Ohio during the period of exemption. In addition, the term of EE/PDR rider exemption is subject to ongoing review for compliance and could be changed by the PUCO.*

If EEC has been selected, will the Energy Efficiency Funds selected help you move forward with other energy efficiency projects?

☑ YES ☐ NO

Note: Exemptions for periods beyond 24 months are subject to look-back or true-up adjustments every year to ensure that the exemption accurately reflects the EEDR savings. Applicants must file for renewal for any exemption beyond 12 months.

Project Overview:

The Self Direct (Prescriptive) project that the above has completed and applied is as follows.

Replaced (5) 2L 4' T8 with (8) 12W LED
Replaced (2) 4L 4' T8 with (3) 2X4 LED
Replaced (15) 3L 4' T8 with (20) 12W LED
Replaced (6) 8W LED with (3) 8W LED
Replaced (10) 2L 8' T12 HO with (9) LED WALL SCONCE
Replaced (8) 100W MH with (8) 12W LED
Replaced (8) 60W INCAND with (1) MCD SIGN
Replaced (7) 12W LED with (7) 12W LED
Replaced (3) 1L 4' T12HO with (3) LED WALL SCONCE
Installed (9) 12W LED OCC SENSOR
Installed (2) EXIT SIGN

The documentation that was included with the application proved that the energy measures applied for were purchased and installed.

By signing this document, the Mercantile customer affirms its intention to commit and integrate the above listed energy efficiency resources into the utility's peak demand reduction, demand response, and energy efficiency programs. By signing, the Mercantile customer also agrees to serve as a joint applicant in any filings necessary to secure approval of this arrangement by the Public Utilities Commission of Ohio, and comply with any information and compliance reporting requirements imposed by rule or as part of that approval.

Ohio Power Company

By: Joe F. Will

Title: Manager

Date: 08/14/2020

JEM STORES LLC

By: B Marcotte

Title: Owner

Date: 8/14/20

Application Guidelines

Final Applications must be submitted before November 15, 2019 in order to qualify for incentives identified in this application. Please read and follow all the steps below to ensure your application is accepted and processed in a timely manner.

Step 1. Verify Eligibility

- Customer must have a valid AEP Ohio account.
- Equipment/measure must be installed at facilities served by the AEP Ohio account.
- Project must produce permanent reduction in electrical energy use (kWh).
- All installed equipment must meet or exceed the specifications in the application.
- Please see Efficient Products for Business, Process Efficiency and New Construction Terms and Conditions or Self-Direct Terms and Conditions for program rules and regulations.

Step 2. Complete Applicant Information

- All fields in customer and project information sections must be completed.
- Contractor information must be completed if project is not self-performed.

Step 3. Complete the Incentive Worksheet(s)

- Find and read specifications related to the project.
- Choose the incentive category on the worksheet based on installed equipment and specifications.
- Complete all fields (fixture description, operating hours, etc.) on the related worksheet.

Step 4. Sign Customer Agreement

- Read the Terms and Conditions before signing and submitting the application.
- Sign Pre-Approval Agreement and submit the application to reserve funds.
- Sign Final Application Agreement and submit the application after the project is completed to receive funds.
- Complete Third Party Payment Release Authorization ONLY if incentive payment is to be paid to an entity other than AEP Ohio customer listed on the Applicant Information page.

Step 5. Submit Pre-Approval Application[1]

(For Self-Direct applications, skip to Step 6)

- Submitting a Pre-Approval Application to determine qualification and reserve program funds for a project is strongly recommended.
- All process efficiency projects require pre-approval.
- Complete all fields in Pre-Approval Agreement.
- Pre-Approval Application must be submitted with:
  - Proposed scope of work (type and quantity of old and new equipment must be listed)
  - Specification sheets for all proposed equipment
  - W-9 form
- Submit application via email, fax or mail.
- An inspection may be required during application review; applicants requiring inspection will be contacted for scheduling.

Step 6. Submit Final Application

- Complete all fields for Final Application Agreement.
- Update the application if measures/equipment differs from pre-application.
- Final Application must be submitted with:
  - Dated and itemized material invoice
  - External labor invoice (if applicable)
  - If Pre-Approval Application was not submitted, include the documents listed on Step 5
  - If the project has a pre-approval, add the project ID number on the top left field on page 2 as the AEP Application Number
- Submit application via email, fax or mail.
- An inspection may be required during application review; applicants requiring inspection will be contacted for scheduling.
- Self-Direct applications require additional steps. Please see the Self-Direct Terms and Conditions for details.

AEP Ohio Business Incentives Program
700 Morrison Road
Gahanna, OH 43230
877-541-3048 | aepohiosolutions@aep.com
Visit our website at AEPohio.com/solutions

[1]A Pre-Approval Application is not a guarantee of an incentive; the actual incentive will be based on the energy savings and equipment installed as determined in the Final Application. Funds are reserved for 90 days, unless an applicant is granted an extension. The program team reserves the right to contact the customer before the reservation expiration date to ensure that the project is moving forward. If the project is not underway, the reservation may be cancelled. Reserved funds are not transferable to other projects, facilities and/or customers. A waiting list will be established when funds become fully subscribed.

Applicant Information

AEP Application Number AEP - _ _ - _ _ _ _ _

Application Type (Select One)

CUSTOMER INFORMATION

Business Name _____

Taxpayer ID _____ - _____ W-9 Tax Status (Select One) _____

CUSTOMER MAILING ADDRESS

Contact Name _____ Contact Title _____

Mailing Address _____ City _____ State OH Zip _____

Phone _____ Ext. _____ Contact Email _____

How Did You Hear About the Program? _____ AEP OH Energy Advisor _____

PROJECT INFORMATION

Project Name (if applicable) _____

Name as It Appears on Utility Bill _____

AEP Ohio Account Numbers for this Project _____ _____ _____

☐ Check if mailing address and project site address are the same.

Project Site Address _____ City _____ State OH Zip _____

Building Type (Select One) Shift (Select One)

Annual Operating Hours _____ Building Area (sq. ft.) _____

Construction Type (Select One) Does the facility have a data center? (Select One)

Applicant Information

CONTRACTOR INFORMATION

Company Name _____

Contact Name _____ Title of Contact _____

Mailing Address _____ City _____ State OH Zip _____

Phone _____ Ext. _____ Contact Email _____

PRIMARY CUSTOMER CONTACT INFORMATION

Contact Name _____ Title of Contact _____

Phone _____ Ext. _____ Contact Email _____

Who should we contact with questions about the application? ☐ Customer ☐ Contractor ☐ Energy Advisor

Incentive Summary Table

INCENTIVE CATEGORY	TOTAL INCENTIVES
LIGHTING	
HVAC	
MOTORS & DRIVES	
COMPRESSED AIR	
REFRIGERATION/FOOD SERVICE	
MISCELLANEOUS	
PROCESS EFFICIENCY	
NC LIGHTING (SELF-DIRECT ONLY)	
TOTAL INCENTIVES	

AEP Application Number AEP - _ _ - _ _ _ _ _

Customer Agreement

APPLICATION AGREEMENT

By signing this document, I agree to program requirements outlined in the measure specifications, Terms and Conditions for the applicable program and Final Application Agreement. As an eligible customer, I verify the information is correct and request consideration for participation under this program. Furthermore, I concur that I meet all eligibility criteria in order to receive payment under this program.

Link to Efficient Products for Business/Process Efficiency Terms and Conditions, and Final Application Agreement

Link to Self-Direct Terms and Conditions, and Final Application Agreement

☐ **Pre-Application** ☐ **Final-Application**

Project Completion Year (Select One) _____ **Self-Direct** _____

Project Completion Date _____ **Total Project Cost** _____

Total Requested Incentive[1] _____ **Total Self-Direct Requested Incentive**[2] _____

Print Name _____ **Date** _____ **AEP Ohio Customer Signature** _____

PRINT APPLICATION

[1]Incentives have a threshold of 50% of the project cost and total incentives paid to a threshold of $25,000 and Bid4Efficiency above that.
[2]Self-Direct incentives are 75% of Total Requested Incentive, after 50% of the project cost threshold and tiering is applied.

Third Party Payment Release

An AEP Company

THIRD PARTY PAYMENT RELEASE AUTHORIZATION (NOT APPLICABLE TO SELF-DIRECT)

Complete this section ONLY if incentives check should be made out in any way other than to the AEP Ohio customer exactly as their name appears on the AEP Ohio account.

Make checks payable to: Company/Individual _____

Mailing Address _____ City_____ State OH Zip_____

Phone _____ Ext. _____

Taxpayer ID of 3rd Party _____ - _____ W-9 Tax Status _____

By signing this document, I authorize the payment of the incentive to the third party named above and understand that I will not receive the incentive payment from AEP Ohio. I also understand that my release of the payment to a third party does not exempt me from the program requirements outlined in the measure specifications, Terms and Conditions, and Final Application Agreement.

Print Name	**Date**	**AEP Ohio Customer Signature**
_____	_____	_____

NextGen 24" Wordmark

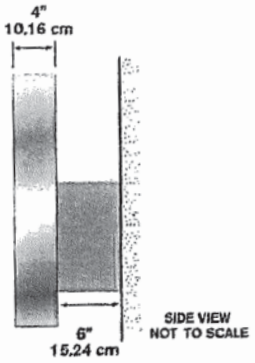
Everbrite

Illumination: LED

Electrical: 1.6 AMPS

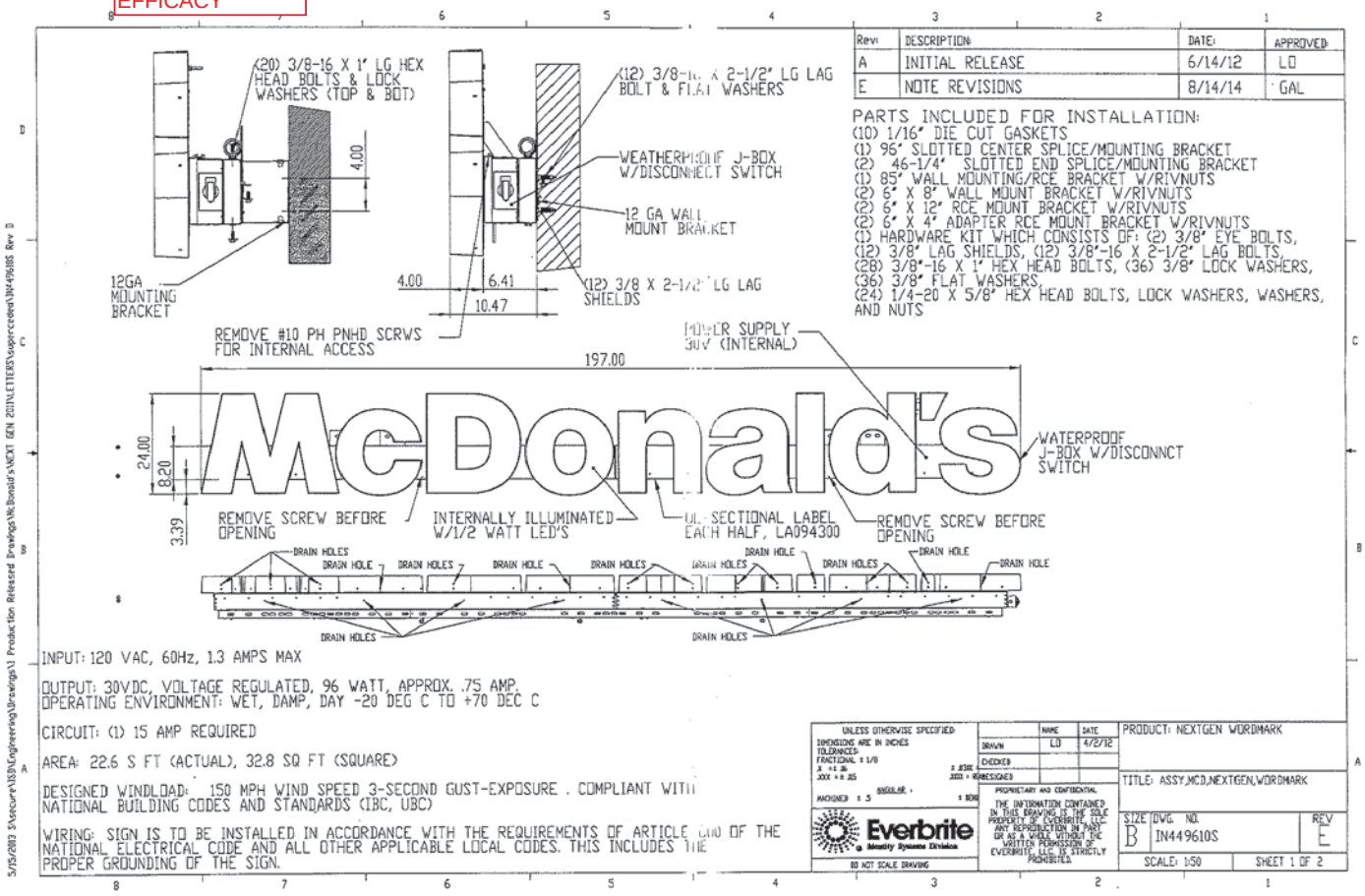
Power Supply: (1) Amperor ANP90-30P1

Ship Weight:



Everbrite, LLC, 315 Marion Ave., South Milwaukee, WI, 53172 P: 888-857-4078 F: 877-430-7363 www.everbrite.com

DNQ - NO CRY EFFICACY



Rev:	DESCRIPTION:	DATE:	APPROVED:
A	INITIAL RELEASE	6/14/12	LD
E	NOTE REVISIONS	8/14/14	GAL

PARTS INCLUDED FOR INSTALLATION:
(10) 1/16" DIE CUT GASKETS
(1) 96" SLOTTED CENTER SPLICE/MOUNTING BRACKET
(2) 46-1/4" SLOTTED END SPLICE/MOUNTING BRACKET
(1) 85" WALL MOUNTING/RCE BRACKET W/RIVNUTS
(2) 6" X 8" WALL MOUNT BRACKET W/RIVNUTS
(2) 6" X 12" RCE MOUNT BRACKET W/RIVNUTS
(2) 6" X 4" ADAPTER RCE MOUNT BRACKET W/RIVNUTS
(1) HARDWARE KIT WHICH CONSISTS OF: (2) 3/8" EYE BOLTS, (12) 3/8" LAG SHIELDS, (12) 3/8"-16 X 2-1/2" LAG BOLTS, (28) 3/8"-16 X 1" HEX HEAD BOLTS, (36) 3/8" LOCK WASHERS, (36) 3/8" FLAT WASHERS
(24) 1/4-20 X 5/8" HEX HEAD BOLTS, LOCK WASHERS, WASHERS, AND NUTS

INPUT: 120 VAC, 60Hz, 1.3 AMPS MAX

OUTPUT: 30VDC, VOLTAGE REGULATED, 96 WATT, APPROX. .75 AMP.
OPERATING ENVIRONMENT: WET, DAMP, DAY -20 DEG C TO +70 DEC C

CIRCUIT: (1) 15 AMP REQUIRED

AREA: 22.6 S FT (ACTUAL), 32.8 SQ FT (SQUARE)

DESIGNED WINDLOAD: 150 MPH WIND SPEED 3-SECOND GUST-EXPOSURE . COMPLIANT WITH NATIONAL BUILDING CODES AND STANDARDS (IBC, UBC)

WIRING: SIGN IS TO BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF ARTICLE 600 OF THE NATIONAL ELECTRICAL CODE AND ALL OTHER APPLICABLE LOCAL CODES. THIS INCLUDES THE PROPER GROUNDING OF THE SIGN.

UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES; TOLERANCES: FRACTIONAL ± 1/8; X ± .25; XXX ± .25; ANGULAR ±; MACHINED ± .5; ± .030; XXXX ± .0050		NAME	DATE	PRODUCT: NEXTGEN WORDMARK
	DRAWN	LD	4/2/12	
	CHECKED			TITLE: ASSY,MCD,NEXTGEN,WORDMARK
	ENGINEER			
Everbrite Identity Systems Division	PROPRIETARY AND CONFIDENTIAL: THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF EVERBRITE, LLC. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF EVERBRITE, LLC IS STRICTLY PROHIBITED	SIZE: B	DWG. NO.: IN449610S	REV: E
DO NOT SCALE DRAWING		SCALE: 1:50		SHEET 1 OF 2

SECURITY LIGHTING™

APPROVED

ES

TYPE A

Type F12S

Prescolite

LB6LEDA10L

LED Downlight Module (1038 Lumens)

12W High Efficacy

Wet Location

120V

APPLICATIONS:

LiteBox LED modules are designed for use in new construction as well as retrofit applications with existing Prescolite or competitive 6" housings. Lumen output and distribution comparable to a 75W PAR while consuming only 12 watts. ENERGY STAR® qualified. Can be used to comply with California Title 24 IECC watts per square foot requirements. Suitable for use with continuous room side ambient temperature up to 25°C. Flicker-free dimming to 15% with most standard dimmers. (See Dimming Notes).

LIGHT ENGINE:

High efficacy LED light engine, 3000K, 3500K and 5000K, 90+ CRI, integrated with durable aluminum heat sink for excellent thermal management. System designed for optimal life and lumen maintenance (60,000 hours at 70% lumen maintenance per TM-21).

LENS/REFLECTOR:

All LiteBox LED modules are provided standard with a diffuse optical grade acrylic lens for uniform illumination and superior glare control. Reflector powder coat finish creates aesthetic ceiling appearance and visually comfortable 55° cutoff.

LED DRIVER:

Integral high efficiency LED driver 120V, >0.9 power factor, dimmable to 15% with standard incandescent or electronic low voltage dimmers. (See Dimming Notes for recommended dimmers.) Output over-voltage, over-current, and short circuit protection. Life expectancy of 60,000 hours minimum at recommended ambient temperatures.

INSTALLATION:

For New Construction: Use with Prescolite DBX QuickLink LED housings. QuickLink connector mates directly to housing connector without a screw base adapter for California Title 24 compliance.

For Retrofit: Use in Prescolite or other compatible 6" recessed housings using supplied screw base adapter.

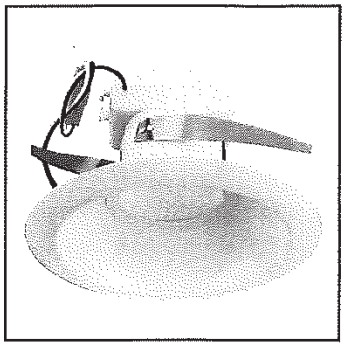
Easy installation with (3) stainless steel spring clips (pre-installed).

CERTIFICATIONS:

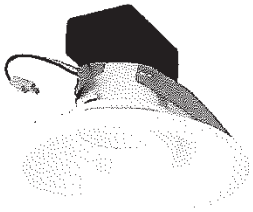
UL/cUL Classified for use in Prescolite or other 6" recessed housings including Halo, Juno, and Lithonia. (See page 3 for more details) Suitable for wet locations. ENERGY STAR qualified. Meets California Title 24 with DBXQL

WARRANTY:

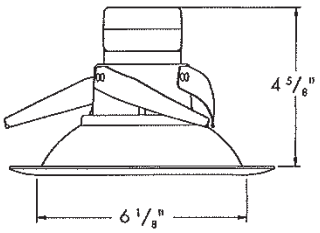
5 year warranty
Additional information on page 3
See www.prescolite.com for details.

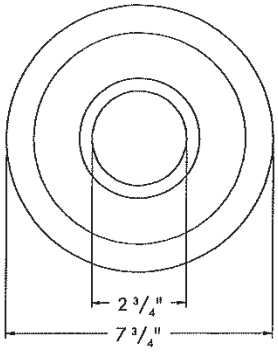


Aperture: Nominal 6"
See Housing Specification Sheet for ceiling cutout requirements
Not to Scale



Wall Wash - LB6LEDA10L35K9WW WH





CATALOG NUMBER

EXAMPLE: LB6LEDA10L30K WH

TRIM	LED COLOR	CRI	TRIM	TRIM COLOR	-	ACCESSORIES
❑ **LB6LEDA10L** 6"1000 Lumen Litebox LED Module with dimming to 15% 120V	❑ **30K** 3000 Kelvin ❑ **35K** 3500 Kelvin ❑ **50K** 5000 Kelvin	❑ **Blank** 80+ CRI ❑ **9** 90+ CRI	❑ **Blank** Open ❑ **WW** Wall Wash	❑ **WH** White ❑ **BL** Black ❑ **SA** Silver Anodized ❑ **GD** Gold		❑ **LiteGear**[1] Inverter, single phase central lighting, 125VA-250VA ❑ **LPS Series**[1] LitePower micro-inverter, 20VA-55VA ❑ **DBXQL** IC/Non-IC Airtight housing with supply wire quick connects ❑ **IBXSQL** IIC/Non-IC Airtight shallow housing with supply wire quick connects

[1] See Central Inverter compatibility note and web links on page 2.

Web: www.securitylighting.com
2100 Golf Road, Suite 460, Rolling Meadows, IL 60008-4704
Phone: 1-800-LIGHT IT, 1-800-544-4848, Fax: 847-279-0642

HUBBELL Lighting

SECURITY LIGHTING™

PHOTOMETRIC DATA

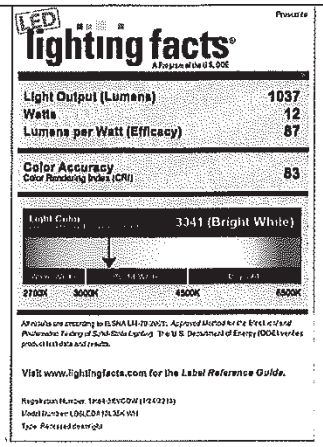
prescolite

LB6LEDA10L

LED Downlight Module (1038 Lumens)
12W High Efficacy
Wet Location
120V

ELECTRICAL DATA	LB6LEDA
Input Voltage	120V
Input Frequency	43-63 Hz
Input Current	0.10A
Input Power	12.0W
Constant Current Output	700mA
Power Factor	>0.90
THD	<20%
EMI Filtering	FCC 47CFR Part 15, Class B
Operating Temperature	-30°C to 60°C
Dimming	Yes*

Over-voltage, over-current, short-circuit protected
*See Dimming Notes for more information



Central Inverters

For full fixture output in back-up mode, we recommend you visit www.dual-lite.com for your Central Lighting Inverter options. Please contact your local Hubbell representative for any assistance with proper sizing and loading of your inverter selection. Central lighting inverters must be ordered separately.

LiteGear: www.dual-lite.com/products/litegear_lg_series
LPS Series: www.dual-lite.com/products/lps

NOTES
Refer to www.prescolite.com for additional photometric tests (IES Files).

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HUBBELL Lighting

SECURITY LIGHTING™

prescolite

LB6LEDA10L

LED Downlight Module (1038 Lumens)
12W High Efficacy
Wet Location
120V

DIMMING NOTES:
LiteBox LED integral driver is compatible with existing 2-wire dimming circuits and is designed to operate with most standard dimmers including incandescent 120V line voltage (forward phase-leading edge) dimmers as well as 120V electronic low voltage (ELV) (reverse phase-trailing edge) dimmers. Dimming capabilities will vary depending upon the dimmer control used.

A 120V Electronic Low Voltage (ELV) dimmer can typically operate a single LED unit and are recommended for use with LB6LEDA Series.

Recommended Electronic Low Voltage Dimmers:
Lutron Nova T Series (Part number NTELV-600)
Lutron Faedra (Part Number FAELV-T00-XX)
Leviton Acenti (Part Number ACE06-XXX)
Leviton Vizia (Part Number VZE04)

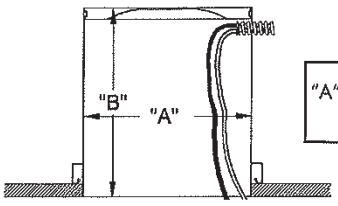
Most incandescent line voltage dimmers have minimum load requirements of approximately 40W and may require multiple LED modules per control. (See dimmer control manufacturer's instructions for specific requirements.)

Recommended Incandescent Line Voltage Dimmers:
Leviton, Illumitech Series (Part Numbers IPI06-XXX)
Leviton, Trimatron Series (Part Numbers 6602-X, 6681-X, 6683-X, 6684-X, 700-X and 705-X)
Leviton, SureSlide Series (Part Numbers 6631)
Leviton, True Touch Series (Part Number 66061LM)
Lutron Skylark Series (Part Number S-600, S2-LH)
Lutron, Maestro Sereis (Part Numbers MAW-600)
Cooper, Aspire Series (Part Numbers 9530XXX)

Digital dimmers are not compatible with LiteBox LED modules.

COMPATIBILITY OF 6" RECESSED HOUSINGS:
LiteBox LED modules are UL/cUL classified for use with Prescolite and most competitive recessed cans (with "A" and "B" dimensions) including:

Prescolite
Capri
Commercial Electric
Elco
Emerald
Halo
Intense
Jimway
Juno
Lithonia
Lumapro
Luminaire
Nora
Progress
Sea Gull
WAC



"A"= 6 5/16 MIN. 7 1/8 MAX
"B"= 5-1/2 MIN.

NOTES
1. Operation in ambient temperatures higher than those specified will shorten life and void warranty.
2. Warranty is limited to repair and replacement of defective parts of the LED system and does not include labor or installation. See www.prescolite.com for details.

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HUBBELL Lighting

SECURITY LIGHTING™

RWSC

RADIUS LED WALL SCONCE

Type S1H

The RWSC LED radius wall sconce series offers a combination of light distributions that wash the building facade while the radial soft form housing accentuates building architectural design elements in all commercial and residential applications.

The RWSC LED provides excellent illumination with a high efficiency LED light source of 72 or 36 mid power LEDS that deliver up to 2,835 lumens and up to 109 lumens per watt.

The RWSC LED fixture has become a building standard and is stocked as a quick ship item in many colors and distributions.

Features

- Durable cast aluminum housing
- Available in various lighting distributions for maximum versatility
- Integrated design eliminates high angle brightness
- Luminaire finished in weatherproof powder-coat paint
- Completely sealed, flat tempered glass lenses, UL listed for use in wet locations
- DLC, Downlight only, full cut-off
- Dark Sky compliant, Downlight only

APPROVED

Operating Temperature
- -30°C to 40°C

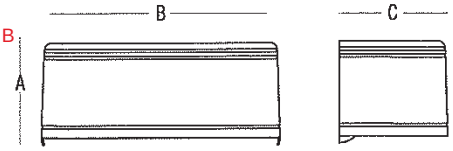
Electrical:
- Dimming is an option (consult factory)

Mounting
RWSC features Intelligent Mounting Bracket which helps save time and money by allowing only one person to easily install. The small mounting bracket is very user friendly and features an integrated level bubble on the bracket ensuring fixture installation will always be perfect.

Dimensions

DLC

TYPE B



A	B	C
7.25"	18.0"	9.0"

Certifications/Listings

Ordering Information Ordering Example: RWSC - XXL - XK - XX - U - XX - XX

RWSC

Series		# of LED's		CCT		Distribution		Voltage		Finish		Options	
RWSC	Radius Wall Sconce	36L[1]	36 Mid-Power LED's	3K	3000K	DO	Down only	U	Universal 120/277V	DB	Dark Bronze	PC	Photocontrol
		72L[2]	72 Mid-Power LED's	5K	5000K	UD	Up/Down			WH	White		
										BK	Black		
										PS	Platinum Silver		
										RA	RAL Color[4]		
										CC	Custom Color[5]		

[1] 36L Only available in DO distribution
[2] 72L Only available in UD distribution
[3] One remote inverter required to operate every 8 down only or 5 up/down fixtures requiring EM operation
[4] Must provide RAL color at time of ordering.
[5] Must provide color sample at time of ordering

Quick Ship:
RWSC36LU5KDOBK
RWSC36LU5KDOWH
RWSC36LU5KDODB
RWSC36LU5KDOPS
RWSC72L5KUDUWH
RWSC72LU5KUDBK
RWSC72LU5KUDDB
RWSC72LU5KUDPS

Accessories	
LG125T	Remote Emergency Inverter (grid mount only)[3]
LG125S	Remote Emergency Inverter (surface mount only)[3]

Web: www.securitylighting.com
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Phone: 1-800-LIGHT IT, 1-800-544-4848, Fax: 847-279-0642

HUBBELL Lighting

SECURITY LIGHTING™

RWSC

RADIUS LED WALL SCONCE

Performance Data

				5K (5000K nominal, 80 CRI)					3K (3000K nominal, 80 CRI)				
# of LEDS	Drive Current (Milliamps)	System Watts	Distribution Type	Lumens	LPW[1]	B	U	G	Lumens	LPW[1]	B	U	G
36	350	14.4	down	1565	108.7	0	0	0	1561	109.1	0	0	0
72	350	25	up/down	2400	96	n/a	n/a	n/a	2391	97.6	n/a	n/a	n/a

[1]Lumen values are from photometric tests performed in accordance with IESNA LM-79-08. Data is considered to be representative of the configurations shown. Actual performance may differ as a result of end-user environment and application.

Photometric Data

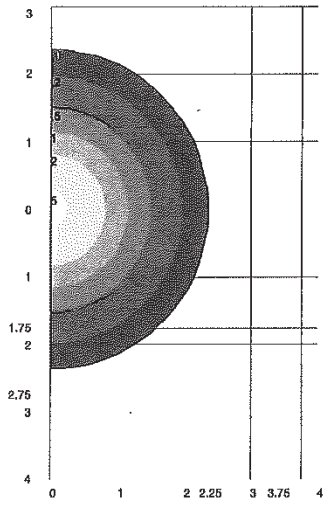
LUMINAIRE DATA

RWSC-36L-5K-DD-U-PS

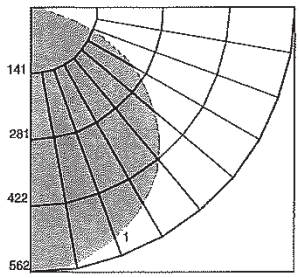
Wall Mounting Outdoor Fixture	
DRIVER	LED30W-085-C0350
Lamp	LED
Lumens	1565
Watts	14.4
Efficacy	109
Mounting	Wall
Spacing Criterion (0-180)	1.20

ZONE	LUMENS	% FIXT.
Front Low (0-30)	218.6	14.0
Front Medium (30-60)	424.2	27.1
Front High (60-80)	135.5	8.7
Front Very High (80-90)	4.2	0.3
Back Low (0-30)	218.6	14.0
Back Medium (30-60)	424.2	27.1
Back High (60-80)	135.5	8.7
Back Very High (80-90)	4.2	0.3
Uplight Low (90-100)	0.0	0.0
Uplight High (100-180)	0.0	0.0

ISOMETRIC FOOT CANDLES



POLAR GRAPH



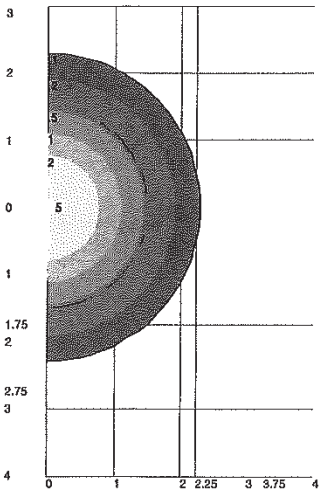
LUMINAIRE DATA

RWSC-72L-5K-UD-U-PS

Wall Mounting Outdoor Fixture	
DRIVER	LED50W-142-C0350
Lamp	LED
Lumens	2400
Watts	25
Efficacy	96
Mounting	Wall
Spacing Criterion (0-180)	1.20

ZONE	LUMENS	% FIXT.
Front Low (0-30)	201.4	8.4
Front Medium (30-60)	387.5	16.1
Front High (60-80)	119.6	5.0
Front Very High (80-90)	3.5	0.1
Back Low (0-30)	201.4	8.4
Back Medium (30-60)	387.5	16.1
Back High (60-80)	119.6	5.0
Back Very High (80-90)	3.5	0.1
Uplight Low (90-100)	5.6	0.2
Uplight High (100-180)	970.7	40.4

ISOMETRIC FOOT CANDLES



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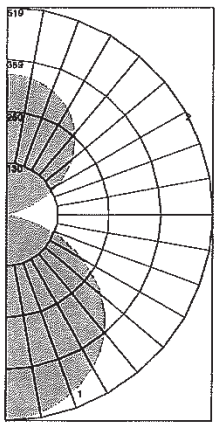

Web: www.securitylighting.com
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Phone: 1-800-LIGHT IT, 1-800-544-4848, Fax: 847-279-0642

HUBBELL Lighting

SECURITY LIGHTING™

METAL SHADE PENDANT

Security Lighting's Metal Shade Pendant offers a unique architectural pendant shape in multiple colors to provide a dramatic impact for all decor.

The cord hung pendant allows for total flexibility in mounting. The powder-coated finish on the spun aluminum shade is extremely easy to clean and well-suited for all high traffic spaces, including the most demanding environments where style and decor cannot be compromised.

Socket assemblies are provided with 8 feet of wire, and LED lamps are GU24 base with 90 CRI for high color rendering ability.

Pendants are available in custom sizes, shapes and colors and are offered with a range of LED lamp options in various lumen packages. Please consult the factory for more information.

Certifications/Listings

Web: www.securitylighting.com
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HUBBELL Lighting

SECURITY LIGHTING™

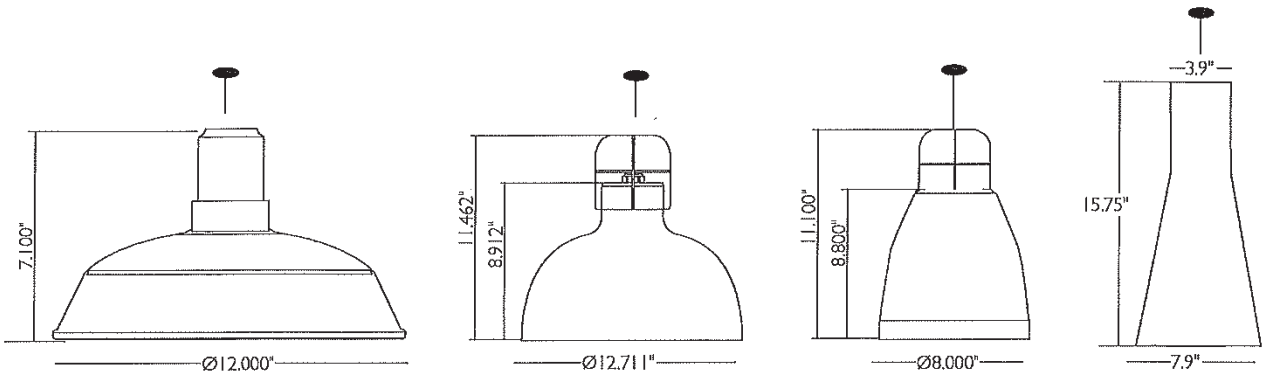
METAL SHADE PENDANT

TYPE C

NO EFFICACY OR WARRANTY

DNQ

Dimensions



Ordering Information Ordering Example: MS-P-X-XX-108LED-XXX

MS — Family
- M: Metal Shade

P — Series
- P: Pendant

Shape
- D: Dome Shape
- C: Cone Shape
- S: Sticks Shape
- A: Shape A

Finish
- AQ: Aqua[1]
- GL: Gold[1]
- WH: White[1]
- BM: Brushed Metal[1]

108LED — Source
- 108LED: (1) 8 watt LED lamp

Mounting Mechanism
- CGC: Canopy & Gold/White Striped Cord[1,4]
- CWC: Canopy & White Cord[2,4]
- CBC: Canopy & Black Cord[3,4]

[1] For Dome & Cone Shape Only
[2] For Sticks Only
[3] For Alphabet Only
[4] Canopy Matches Color of Shade

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HUBBELL Lighting

DUAL-LITE®

APPROVED

TYPE E

EVE Series
LED Exit Sign

FEATURES

Application
The EVE series is a compact architectural LED exit sign designed for fast installation and reliable service. The EVE Series has a flame-rated, UV stable thermoplastic housing with a lightly textured white or black finish. Available in AC only or emergency operation which includes a nickel metal hydride(NiMH) battery and provides a full 90 minutes of emergency exit illumination in the event of power failure. Includes a constant current charger. The EVE accepts 120/277VAC input at 60Hz and optional 220-240VAC input at 50 or 60 Hz with self-diagnostics option. Available with special worded options.

Construction
The EVE series housing and canopy are made from durable injection molded ABS thermoplastic

Installation
EVE can be wall mounted by use of back-plate with molded-in template, ceiling or end mounted with the use of supplied canopy to standard 3-½" or 4" square or octagonal electrical boxes. Pre-stripped AC input leads provided.

Illumination
The EVE series provides bright and uniform exit panel illumination by using energy saving, long-life red or green LEDs with a 10 year lifecycle. The panel face exceeds UL924 requirements for brightness and uniformity.

Compliances
Listed to UL924 Standard
NFPA 101
NFPA 70
UL Damp Location Listed
CEC T20 Compliant

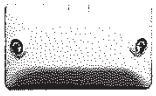
Warranty
EVE Full 5 year warranty
Battery, 3 years full, 7 years pro-rata

Catalog Number	
Comments	Type

ACCESSORIES

EV Unit	2 LED Indoor Emergency Light
EVC	Exit Sign/ LED Emergency Light
VRS3	Vandal Resistant Shield
WGLX	Wire Guard (Wall Mount)
WGLXC	Wire Guard (Ceiling Mount)
PMLXW	12 ½" Pendant Mounting Kit (white)


EVO Outdoor Remote


EVR2 Indoor Remote

EVC Combo Exit/ Light

ORDERING GUIDE

EVE — _____

Model	Faces	Letter Color	Finish	Operation	Self-Diagnostics	Options
	U Universal Face	**R** Red **G** Green	**W** White **B** Black	**Blank** AC Only **E** Emergency	**Blank** No Self-Diagnostics **I** Spectron® Self-Diagnostics [1]	**2C** 2 circuit operation[2,5] **FAP** Fire Alarm Panel[3,5,6,7] **FM** Flasher Module[1,6,7] **AF** Audible Flasher[1,6,7] **DC** Remote DC Operation[2,4,5] **24K** 220-240VAC 50,60 Hz with Spectron® **SW** Special Wording[8,9]

[1] For use with emergency models only
[2] For use with AC models only
[3] Operates with 24 volt AC or DC fire alarm panels
[4] For emergency illumination of sign from remote 6-24 VDC power source
[5] DC option may not be specified with 2C or FAP options
[6] AF,-FM and FAP options may not be specified together
[7] For use with Spectron equipped models only
[8] SW option limited to selections on pg.2
[9] Special worded sign ships as a universal single or double face

HUBBELL Lighting

DUAL LITE®

EVE Series
LED Exit Sign

SPECIFICATIONS

Electronics

- Upon failure of the normal utility power, a solid-state transfer switch automatically activates the exit LEDs. Upon resumption of the normal utility power, the battery is disconnected from the load and recharged through a constant current charger. The battery is a maintenance-free Nickel Metal Hydride(NIMH) type. The EVE series accepts 120/ 277VAC at 60 Hz, or an optional 220-240VAC input (-24K option)at 50 or 60 Hz. A low voltage battery disconnect(LVD) feature protects the battery from damage during prolonged power failures. Manual testing is available at any time using the push-to-test button. Rated LED lifecycle-greater than 100,000hrs. or 10 years.

Standard Features Include:

- External push-to-test switch and AC-on indicator
- Battery re-charge within 24 hours
- AC Lock-out circuit
- Low voltage battery disconnect

Optional Spectron Feature:

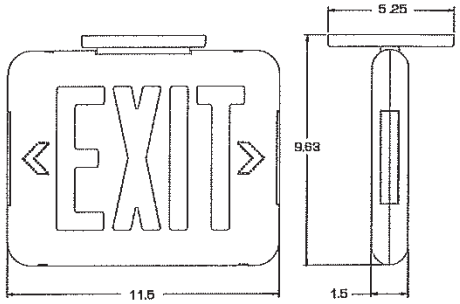
- Self-diagnostics monitors LED status, LED load transfer circuit, battery capacity and charger function and displays any fault detection by means of a flashing code
- Self-Test feature automatically runs a 1 minute test once a month and an alternating 30 or 60 minute test once every 6 months. Multi-color LED indicator provides visible fault detection and charging status User initiated 1 or 90-minute system test feature
- 15 minute re-transfer delay
- Automatic unit transfer in brown-out conditions(below 80% of nominal AC input voltage)

Operating Temperature Range:

20° to 30°C

Weight: 2.5 lbs

DIMENSIONS

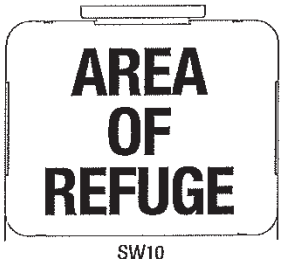


POWER CONSUMPTION

Model	120VAC, 60Hz			277VAC, 60Hz		
	A	W	PF	A	W	PF
Red AC Only	0.02	1.42	0.59	0.009	1.36	0.54
Green AC Only	0.02	1.36	0.57	0.009	1.30	0.57
Red Emergency	0.027	2.01	0.62	0.0127	1.94	0.55
Green Emergency	0.027	2.01	0.62	0.0127	1.94	0.55

Special Worded Option Selection:

SW13



SW10

SW11

SW69

SW3

SW4

** All special worded selections ship as a universal sign for single or double-face application.*

HUBBELL Lighting

H-MOSS® Controls
Adaptive Technology Ultrasonic
Ceiling Sensors

HUBBELL

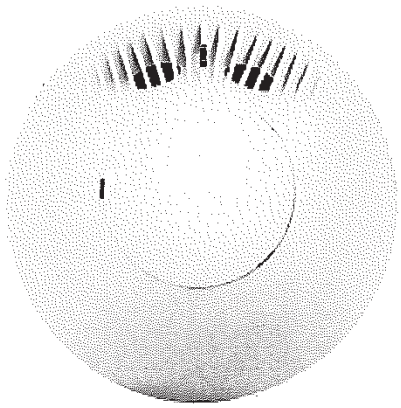
APPROVED

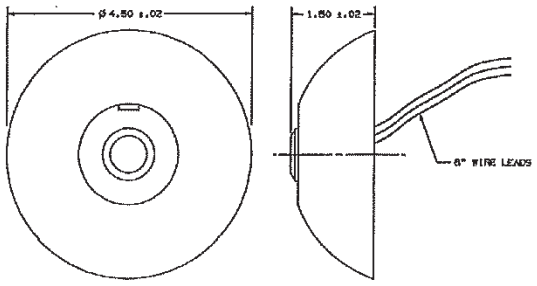
Features

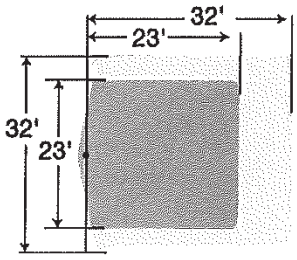
- Coverage 1000 sq. ft. (180°) with photocell and isolated relay, low voltage sensor
- Excellent minor motion detection
- Digital, crystal controlled ultrasonic transmitter and receiver for coverage in each direction for superior sensing of movement
- Office White ABS enclosure blends with ceiling tile
- Relay to interface with auxiliary systems such as HVAC
- Green LED indicates ultrasonic detection
- "Install and Forget" operation. Auto-adjusting adaptive technology eliminates manual adjustments

Ordering Information

Description	Device Color	UPC Number	Catalog Number
Low voltage sensor with photocell and isolated relay	Office White	783585392479	ATU1000CRP







Listings

cULus listed to UL244A
ASHRAE 90.1 compliant
CEC Title 24 compliant

Specifications

Housing	Flame retardant UL 94 V-0 ABS
Lens	Polyethylene
Dimensions	1.5"H x 4.5"D
Mounting Height	8 to 12 feet

Performance

Controls	
Ambient Light	1 to 1000 foot candles
Sensitivity	Adaptive 0 to 100%
Time Delay	Test (8 seconds), adaptive 8 to 40 minutes
Electrical	
Isolated Relay	Normally open and normally closed terminals available
Power Requirements	24V DC nominal, 33mA from Hubbell CU series control unit
Environmental	
Operating Temperature	32°F to 104°F (0°C to 40°C) with rate of change not exceeding 20°F (11°C) per hour
Storage Temperature	-20°F to 150°F (-29°C to 65°C); 0% to 95% non-condensing relative humidity
Sensing Indicators	
Ultrasonic	Green LED

Complementary Products

Control Unit Auto-ON	CU300A
Control Unit Manual-ON	CU300M
Control Unit, HD, Latching, Auto/Manual-ON	CU300HD
Ceiling mount wire guard	ACMG
Ceiling mount raceway adapter	ACMRA

Online Resources

Customer Use Drawing
eCatalog
Installation Instructions

Dimensions in Inches (mm)

Hubbell Wiring Device-Kellems • Hubbell Incorporated (Delaware) • 40 Waterview Drive • Shelton, CT 06484
Phone (800) 288-6000 • Fax (800) 255-1031 • Specifications subject to change without notice.

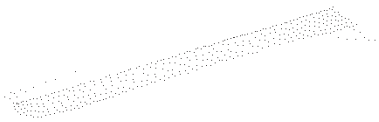
HUBBELL® Wiring Device-Kellems

Columbia LIGHTING

LCAT24

2' x 4' LED Contemporary Architectural Troffer

LED



PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

COMPATIBLE WITH:

SpectraSync™ NX DISTRIBUTED™ INTELLIGENCE

INTERACTIVE MENU

- Ordering Guide
- Product Availability Tables
- Photometric Data
- Dimensional Data

HUBBELL CONTROL SOLUTIONS

- SpectraSync™ Overview
- SpectraSync Product Availability Tables
- NX™ SpectraSync Solution Guide
- NX In-Fixture Solution Guide

EXTERNAL LINKS

- NX Distributed Intelligence Brochure
- SpectraSync Brochure

FEATURES

- High efficiency acrylic center lens features linear prisms for high performance without pixelation
- Appropriate for offices, schools, medical, and public spaces
- High performance reflector with matte white paint standard
- 60,000 hour LEDs at L80 (up to 150,000 projected life) for reduced maintenance
- 83 CRI standard or optional 90 CRI for color sensitive applications
- HE lumen packages available
- LED modules and electrical accessible from below
- Optional architecturally styled integration of daylight and occupancy sensor(s)
- QR code traceability
- Compatible with Dual-Lite inverters
- Optional SpectraSync™ offers three modes of tunable white solutions and integrates seamlessly into a variety of control systems
- NX Distributed Intelligence™ provides options for standalone and networked integrated sensor with wired or wireless connectivity for NX system deployments
- DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations - see www.designlights.org
- Five year warranty (Terms and Conditions apply)

DLC QPL LISTED · DLC QPL LISTED PREMIUM · c SA us

LCAT24

CONSTRUCTION
Luminaire housing, reflectors and end caps are die formed code gauge cold rolled steel. High transmission extruded acrylic enclosed lens features linear prisms with custom frost for high efficacy without pixelation.

SHIELDING
Removable lens for easy access to LED module and electrical components.

FINISH
All reflective surfaces are finished after fabrication with unique formula high reflectivity matte white paint for soft, uniform indirect illumination.

INSTALLATION
An access plate is furnished with each luminaire for fast wiring access without the necessity to open the fixture or wireway.

IC RATING
IC label is standard for recessed products. Note that IC label is void if product is installed on site with a combination of both battery pack plus through wiring or for air return fixtures.

CEILING COMPATIBILITY
Luminaire fits recessed exposed Grid ceilings (G); four integral NEC compliant T-bar clips are standard. Can be placed in Slot Grid (SG) style ceiling with regress ⅜" above ceiling plane. A Flange Kit (FK) accessory is available for recessed hard ceiling applications. Surface Mount (SM) option allows placement below ceiling plane. Cable Mount (CM) option allows suspension below ceiling plane.

CERTIFICATION
All luminaires are built to UL1598 and 2108 standards, and bear appropriate CSA labels. Damp location label standard. Emergency-equipped fixtures labeled UL 924 and Dry Location unless specified. Adheres to LM79, LM80, and TM21 industry standards. DLC® (DesignLights Consortium) Qualified, with some Premium Qualified configurations. Please refer to the DLC website for specific product qualifications at www.designlights.org. NX is available in U.S., Canada and Mexico. For other locations consult factory. The DTS, Dimming Bypass Module, is for emergency circuit control loads including sensors and wireless systems listed to UL924. See page 8 for wiring diagram. Link to Dimming Bypass Module Specification sheet.

WARRANTY
Five year warranty (Terms and Conditions apply).

RETURN TO INTERACTIVE MENU

HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' × 4' LED Contemporary Architectural Troffer

ORDERING INFORMATION

EXAMPLE LCAT24-35MLG-ESDU

YOUR ORDER LCAT24 – ____ – ____ – ____

LCAT 24 – ____ – ____

MODEL
- **LCAT** LED Contemporary Architectural Troffer

SIZE
- **24** 2' × 4'

CRI
- **Blank** >80
- **9** >90[1]

COLOR TEMP
- **30** 3000K
- **35** 3500K
- **40** 4000K
- **50** 5000K
- **2750T** 2700K-5000K SpectraSync™ Tunable White[2]
- **2765T** 2700K-6500K SpectraSync™ Tunable White[2]

LUMEN OUTPUT
- **XW** Extra Low Watt
- **XWHE** Extra Low Watt High Efficacy
- **VW** Very Low Watt
- **VWHE** Very Low Watt High Efficacy
- **MW** Medium Low Watt
- **MWHE** Medium Low Watt High Efficacy
- **LW** Low Watt
- **ML** Medium Lumen
- **HL** High Lumen
- **VL** Very High Lumen[22]
- **XL** Extra High Lumen

See Product Availability Table on following pages.

CEILING TYPE
- **G** Grid Lay-in[3]
- **SM** Surface Mount[4,20]
- **CM** Cable Suspended Mount[4,5]

SHIELDING
- **Blank** Curve
- **R** Rectangular

– ____ – ____

AIR FUNCTION
- **Blank** Static
- **A** Air Return Side Slots

DRIVER
- **E** Fixed Output[18]
- **ED** 0-10V Dimming
- **ED1** 0-10V 1% Dimming
- **EDD** 0-10V Dim-to-Dark[18]
- **ESD** Step Dimming[6,8,18]
- **LUTH** Hi-lume 1% EcoSystem LED driver with Soft-on, Fade-to-Black dimming technology[6,8,18]
- **LUT5** 5-Series EcoSystem LED driver[6,8,18]
- **DALIP** DALI P driver[15,16]

VOLTAGE
- **U** 120V-277V
- **347** 347V[19]

OPTIONS
- **ELL14** Emergency Battery Pack Installed, 1400 Lumens[7,8]
- **DTS** Dimming Bypass Module[9]
- **C388** 3-Wire Flex[21]
- **C488** 4-Wire Flex[21]
- **C588** 5-Wire Flex[21]
- **GLR** Fast Blow Fuse
- **EOR** End of Row (SM and CM only. Provides end wiring access for continuous row mounting.)[14]
- **INT** Intermediate (SM and CM only. Provides ends with wiring access for continuous row mounting.)[14]
- **CP** Chicago Plenum

CONTROL OPTIONS
- **ODPG** Occupancy and Daylight Sensors w/ Grouping, Philips SNS200[8,10,17]
- **ZRE** ControlScope® compatible[11,17]
- **LV** Lutron Vive Attached FCJS POWPAK Fixture Control (RF only for 0-10V drivers)[12,13,14,17]
- **LVS** Lutron Vive Integral Fixture Control DFCSJ-OEM-OCC (RF with daylight and occupancy sensing)[13,15]
- **LVR** Lutron Vive Integral Fixture Control DFCSJ-OEM-RF (RF only)[13,15]

NX Standalone
- **NXS** NX, PIR Occupancy Sensor, Dimming Daylight Harvesting[17,18,19]

NX Networked – Wireless
- **NXSW** NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting[17,18,19,20]
- **NXWE** NX Wireless[17,18,19,20]

NX Networked – Wired
- **NXE** NX, Dual SmartPorts[17,18,19]
- **NXES** NX, PIR Occupancy Sensor, Dimming Daylight Harvesting[17,18,19]

ACCESSORIES (ORDER SEPARATELY)

FK24	2' × 4' Single Flange Kit (Shipped separately)
CM48Y2SC3F-KIT	48" Cable Mount Kit for 2' wide Cable Mount fixtures, 3 Wire

[1] Not available with HE lumen output
[2] Available with ED driver and 80 CRI only, N/A with HE, XL or VL lumen outputs. See pages 9-11 for more information
[3] For drywall, order G with Flange Kit Accessory
[4] Not available with Air Return (A) air function
[5] Order hanger accessories separately
[6] Limitations apply based on lumen packages (see Driver Table)
[7] For compatibility with Dual-Lite LiteGear® inverters, contact Hubbell Lighting Representative
[8] Not available in 347V.
[9] For emergency circuit control loads including sensors and wireless systems listed to UL924. Only available with 0-10V drivers. Universal voltage only. See page 8 for wiring diagram
[10] Only available with 0-10V Dimming (ED) Driver Option
[11] Registered trademark of Daintree Networks, used by permission
[12] Not available with E, ESD, LUTH or LUT5
[13] VIVE is a trademark of Lutron Electronics Co., Inc
[14] Installations controlled solely by the Lutron Pico controller require accessing the LV (Lutron FCJS) module for commissioning after the circuit has been energized
[15] LVS and LVR only available with DALIP
[16] DALIP only available with LVS and LVR Control Options

NX In-Fixture Control Options:
[17] NX controls can only be used with NX Sensor options
[18] NX is available with ED and ED1 drivers only
[19] NX combined with Spectrasync is not available in 347V
[20] NXSW and NXWE cannot be used with surface mount versions
[21] For NX control and Flex Wire together, consult factory
[22] NX control function not available with VL lumen output

For questions about configuration options, contact Hubbell Representative

DRIVER AVAILABILITY TABLE

	XW	XWHE	VW	VWHE	MW	MWHE	LW	ML	HL	VL	XL
E	X	X	X	X	X	X	X	X	X	X	X
ED	X	X	X	X	X	X	X	X	X	X	X
ED1	X	X	X	X	X	X	X	X	X	X	X
EDD			X		X		X	X	X		
ESD	X	X	X	X	X	X	X	X	X	X	X
LUT5	X		X		X		X	X	X		
LUTH	X		X		X		X	X	X		
347	X		X		X		X	X	X		X

RETURN TO INTERACTIVE MENU

HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' × 4' LED Contemporary Architectural Troffer

CONTROLS

NX DISTRIBUTED INTELLIGENCE™:

See separate NX Design and Application Guide for additional details.
See Hubbell Controls Solution NX Brochure.

NX DISTRIBUTED™ INTELLIGENCE

NX INTEGRATED CONTROLS REFERENCE									
NX OPTION	SENSOR	CATEGORY	NETWORKABLE	SCHEDULING	OCCUPANCY	DAYLIGHT HARVESTING	0-10V DIMMING	ON/OFF CONTROL	BLUETOOTH APP PROGRAMMING
NXS	NXSMP-SMI	Standalone	No	Yes	Yes	Yes	Yes	Yes	Yes
NXSW	NXSMP-SMI	Networked Wireless	Yes	Yes	Yes	Yes	Yes	Yes	Yes
NXWE	N/A	Networked Wireless	Yes	Yes	No	No	Yes	Yes	No[2]
NXE	N/A	Networked Wired	Yes	Yes	No	No	Yes	Yes	Additional Bluetooth® Radio Module needed[1]
NXES	NXSMP-SMI	Networked Wired	Yes	Yes	Yes	Yes	Yes	Yes	Yes

[1] NXBTC/R needs to be plugged into an available SmartPort on the fixture network
[2] To program NXWE option, need to consult factory. If connected to an area controller, programming can be done from that

RETURN TO INTERACTIVE MENU

HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' x 4' LED Contemporary Architectural Troffer

Product Availability 80 CRI					Product Availability 90 CRI				
Lumen Package	Shielding	Lumens	Input Watts	LPW	Lumen Package	Shielding	Lumens	Input Watts	LPW
LCAT24-30XW	Curve	2341	19	123	LCAT24-930XW	Curve	2142	20	106
LCAT24-30XWx-R	Rectangle	2601	20	128	LCAT24-930XWx-R	Rectangle	2212	20	109
LCAT24-30XWHE	Curve	2458	19	129					
LCAT24-30XWHEx-R	Rectangle	2555	20	128					
LCAT24-35XW	Curve	2424	19	127	LCAT24-935XW	Curve	2187	20	108
LCAT24-35XWx-R	Rectangle	2690	20	133	LCAT24-935XWx-R	Rectangle	2259	20	111
LCAT24-35XWHE	Curve	2542	19	134					
LCAT24-35XWHEx-R	Rectangle	2642	20	132					
LCAT24-40XW	Curve	2458	19	129	LCAT24-940XW	Curve	2234	20	110
LCAT24-40XWx-R	Rectangle	2732	20	135	LCAT24-940XWx-R	Rectangle	2308	20	114
LCAT24-40XWHE	Curve	2581	19	136					
LCAT24-40XWHxE-R	Rectangle	2683	20	134					
LCAT24-50XW	Curve	2524	19	132	LCAT24-950XW	Curve	2380	20.3	117
LCAT24-50XWx-R	Rectangle	2805	20	138	LCAT24-950XWx-R	Rectangle	2458	20.3	121
LCAT24-50XWHE	Curve	2650	19	139					
LCAT24-50XWHEx-R	Rectangle	2754	20	138					
LCAT24-30VW	Curve	3124	28	113	LCAT24-930VW	Curve	2655	28	96
LCAT24-30VWx-R	Rectangle	3224	28	114	LCAT24-930VWx-R	Rectangle	2740	28	97
LCAT24-30VWHE	Curve	3310	27	123					
LCAT24-30VWHEx-R	Rectangle	3280	26	126					
LCAT24-35VW	Curve	3217	28	117	LCAT24-935VW	Curve	2717	28	98
LCAT24-35VWx-R	Rectangle	3334	28	118	LCAT24-935VWx-R	Rectangle	2799	28	99
LCAT24-35VWHE	Curve	3409	27	126					
LCAT24-35VWHEx-R	Rectangle	3391	26	130					
LCAT24-40VW	Curve	3267	28	118	LCAT24-940VW	Curve	2780	28	101
LCAT24-40VWx-R	Rectangle	3386	28	120	LCAT24-940VWx-R	Rectangle	2859	28	101
LCAT24-40VWHE	Curve	3462	27	128					
LCAT24-40VWHE-R	Rectangle	3443	26	132					
LCAT24-50VW	Curve	3558	28	129	LCAT24-950VW	Curve	2936	28	106
LCAT24-50VW-R	Rectangle	3476	28	123	LCAT24-950VWx-R	Rectangle	3045	28	108
LCAT24-50VWHE	Curve	3770	27	140					
LCAT24-50VWHE-R	Rectangle	3535	26	136					
LCAT24-30MW	Curve	3363	30	111	LCAT24-930MW	Curve	2859	30	95
LCAT24-30MWx-R	Rectangle	3472	30	115	LCAT24-930MWx-R	Rectangle	2953	30	98
LCAT24-30MWHE	Curve	3717	31	120					
LCAT24-30MWHE-R	Rectangle	3660	29	126					
LCAT24-35MW	Curve	3464	30	115	LCAT24-935MW	Curve	2926	30	97
LCAT24-35MWx-R	Rectangle	3590	30	119	LCAT24-935MWx-R	Rectangle	3015	30	100
LCAT24-35MWHE	Curve	3829	31	124					
LCAT24-35MWHE-R	Rectangle	3785	29	131					
LCAT24-40MW	Curve	3518	30	116	LCAT24-940MW	Curve	2993	30	99
LCAT24-40MWx-R	Rectangle	3646	30	121	LCAT24-940MWx-R	Rectangle	3080	30	102
LCAT24-40MWHE	Curve	3888	31	125					
LCAT24-40MWHE-R	Rectangle	3843	29	133					
LCAT24-50MW	Curve	3831	30	127	LCAT24-950MW	Curve	3161	30	105
LCAT24-50MWx-R	Rectangle	3744	30	124	LCAT24-950MWx-R	Rectangle	3280	30	109
LCAT24-50MWHE	Curve	4234	31	137					
LCAT24-50MWHEx-R	Rectangle	3946	29	136					

RETURN TO INTERACTIVE MENU

HUBBELL Lighting

Columbia LIGHTING

APPROVED

DLC

TYPE D

LCAT24

2' x 4' LED Contemporary Architectural Troffer

Product Availability 80 CRI					Product Availability 90 CRI				
Lumen Package	Shielding	Lumens	Input Watts	LPW	Lumen Package	Shielding	Lumens	Input Watts	LPW
LCAT24-30LW	Curve	4268	36	118	LCAT24-930LW	Curve	3628	36	100
LCAT24-30LWx-R	Rectangle	4420	36	122	LCAT24-930LWx-R	Rectangle	3759	36	104
LCAT24-35LW	Curve	4396	36	122	LCAT24-935LW	Curve	3713	36	103
LCAT24-35LWx-R	Rectangle	4570	36	127	LCAT24-935LWx-R	Rectangle	3838	36	106
LCAT24-40LW	Curve	4465	36	124	LCAT24-940LW	Curve	3798	36	105
LCAT24-40LWx-R	Rectangle	4642	36	129	LCAT24-940LWx-R	Rectangle	3920	36	109
LCAT24-50LW	Curve	4861	36	135	LCAT24-950LW	Curve	4012	36	111
LCAT24-50LWx-R	Rectangle	4766	36	132	LCAT24-950LWx-R	Rectangle	4175	36	116
LCAT24-30ML	Curve	4771	39	123	LCAT24-930ML	Curve	4055	39	105
LCAT24-30MLx-R	Rectangle	4923	39	127	LCAT24-930MLx-R	Rectangle	4186	39	108
LCAT24-35ML	Curve	4914	39	127	LCAT24-935ML	Curve	4150	39	107
LCAT24-35MLx-R	Rectangle	5091	39	131	LCAT24-935MLx-R	Rectangle	4274	39	110
LCAT24-40ML	Curve	4990	39	129	LCAT24-940ML	Curve	4246	39	109
LCAT24-40MLx-R	Rectangle	5170	39	133	LCAT24-940MLx-R	Rectangle	4366	39	113
LCAT24-50ML	Curve	5434	39	140	LCAT24-950ML	Curve	4484	39	116
LCAT24-50MLx-R	Rectangle	5308	39	137	LCAT24-950MLx-R	Rectangle	4651	39	120
LCAT24-30HL	Curve	5443	44	124	LCAT24-930HL	Curve	4810	43	112
LCAT24-30HLx-R	Rectangle	5533	43	128	LCAT24-930HLx-R	Rectangle	4704	43	109
LCAT24-35HL	Curve	5606	44	127	LCAT24-935HL	Curve	4913	43	114
LCAT24-35HLx-R	Rectangle	5721	43	133	LCAT24-935HLx-R	Rectangle	4803	43	111
LCAT24-40HL	Curve	5694	44	129	LCAT24-940HL	Curve	5019	43	116
LCAT24-40HLx-R	Rectangle	5810	43	135	LCAT24-940HLx-R	Rectangle	4907	43	114
LCAT24-50HL	Curve	6200	44	141	LCAT24-950HL	Curve	5346	43	124
LCAT24-50HLx-R	Rectangle	5966	43	138	LCAT24-950HLx-R	Rectangle	5227	43	121
LCAT24-30VL	Curve	6999	59	119	LCAT24-930VL	Curve	5883	58	102
LCAT24-30VLx-R	Rectangle	6952	58	121	LCAT24-930VLx-R	Rectangle	5912	58	103
LCAT24-35VL	Curve	7209	59	122	LCAT24-935VL	Curve	6007	58	104
LCAT24-35VLx-R	Rectangle	7189	58	125	LCAT24-935VLx-R	Rectangle	6036	58	105
LCAT24-40VL	Curve	7321	59	124	LCAT24-940VL	Curve	6136	58	107
LCAT24-40VLx-R	Rectangle	7301	58	127	LCAT24-940VLx-R	Rectangle	6166	58	107
LCAT24-50VL	Curve	7972	59	135	LCAT24-950VL	Curve	6537	58	114
LCAT24-50VLx-R	Rectangle	7496	58	130	LCAT24-950VLx-R	Rectangle	6568	58	114
LCAT24-30XL	Curve	8168	74	111	LCAT24-930XL	Curve	7058	75	95
LCAT24-30XLx-R	Rectangle	8112	75	109	LCAT24-930XLx-R	Rectangle	6895	75	92
LCAT24-35XL	Curve	8412	74	114	LCAT24-935XL	Curve	7207	75	97
LCAT24-35XLx-R	Rectangle	8388	75	112	LCAT24-935XLx-R	Rectangle	7043	75	94
LCAT24-40XL	Curve	8547	74	116	LCAT24-940XL	Curve	7362	75	99
LCAT24-40XLx-R	Rectangle	8519	75	114	LCAT24-940XLx-R	Rectangle	7194	75	96
LCAT24-50XL	Curve	9304	74	126	LCAT24-950XL	Curve	7842	75	105
LCAT24-50XLx-R	Rectangle	8747	75	117	LCAT24-950XLx-R	Rectangle	7664	75	103

RETURN TO INTERACTIVE MENU

HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' x 4' LED Contemporary Architectural Troffer

PHOTOMETRIC DATA

Test 16519 Test Date 6/13/2016

LUMINAIRE DATA

Luminaire	LCAT24-35LWG-EU LCAT Led Architectural Troffer, Recessed Architectural 2 x 4 led with frosted linear prismed lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4396
Watts	36.10
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.22 90° = 1.32
Luminous Opening in Feet	Length: 3.92 Width: 1.92 Height: 0.00

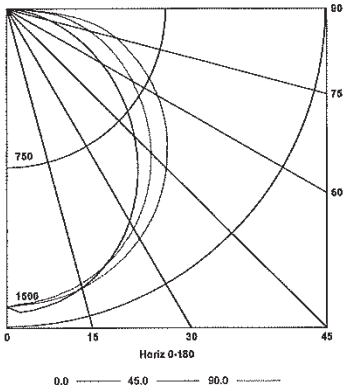
ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	1098	25.0	25.0
0-40	1804	41.0	41.0
0-60	3240	73.7	73.7
0-90	4396	100.0	100.0
0-180	4396	100.0	100.0

ENERGY DATA

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	122
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	$1.97 based on 3000 hrs. and $0.08 per KWH

INDOOR CANDELA PLOT



Test 16522 Test Date 7/27/2016

LUMINAIRE DATA

Luminaire	LCAT24-35MLG-EU LCAT Led Architectural Troffer, Recessed Architectural 2 x 4 led with frosted linear prismed lens
Ballast	XI040C110V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	4914
Watts	38.80
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.22 90° = 1.30
Luminous Opening in Feet	Length: 3.92 Width: 1.92 Height: 0.00

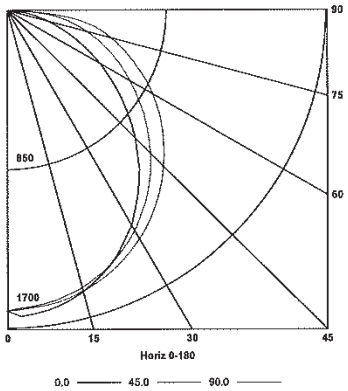
ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	1250	25.4	25.4
0-40	2049	41.7	41.7
0-60	3648	74.2	74.2
0-90	4914	100.0	100.0
0-180	4914	100.0	100.0

ENERGY DATA

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	127
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	$1.90 based on 3000 hrs. and $0.08 per KWH

INDOOR CANDELA PLOT



Test 16525 Test Date 8/25/2016

LUMINAIRE DATA

Luminaire	LCAT24-35HLG-EU LCAT Led Architectural Troffer, Recessed Architectural 2 x 4 led with frosted linear prismed lens
Ballast	XI054C150V054BST1
Ballast Factor	1.00
Lamp	LED
Fixture Lumens	5607
Watts	44.00
Mounting	Recessed
Shielding Angle	0° = 90 90° = 90
Spacing Criterion	0° = 1.22 90° = 1.31
Luminous Opening in Feet	Length: 1.75 Width: 1.83 Height: 0.00

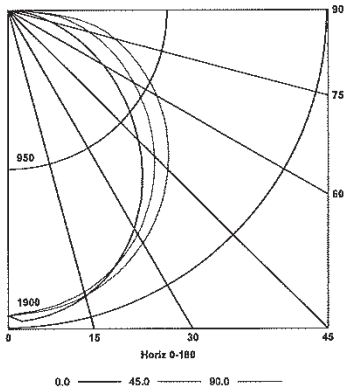
ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	1422	25.4	25.4
0-40	2333	41.6	41.6
0-60	4161	74.2	74.5
0-90	5607	100.0	100.0
0-180	5607	100.0	100.0

ENERGY DATA

Total Luminaire Efficiency	100.0%
Total Lumens per Watt	127
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	$1.89 based on 3000 hrs. and $0.08 per KWH

INDOOR CANDELA PLOT

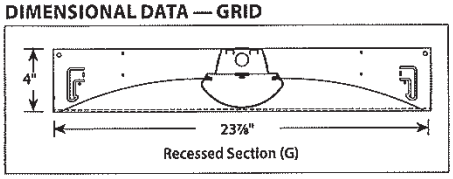


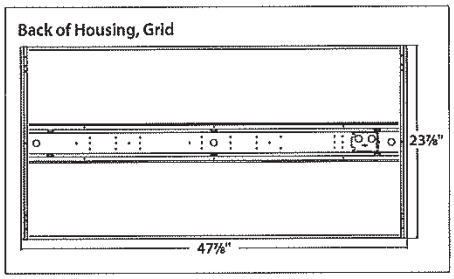
Columbia LIGHTING

LCAT24

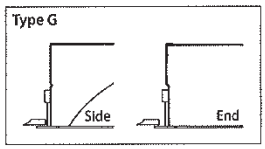
2' × 4' LED Contemporary Architectural Troffer

DIMENSIONAL DATA — GRID

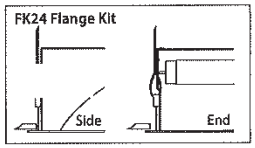




CEILING COMPATIBILITY

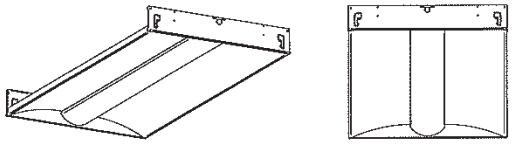


For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.

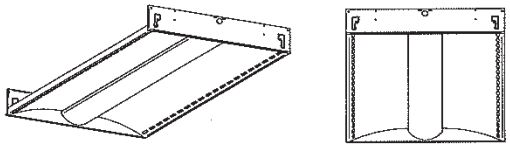


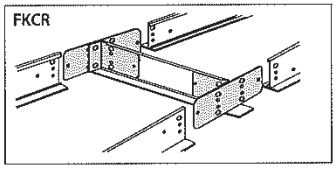
For hard ceiling applications, order FK24 flange kit. Flange kit wires directly into concealed ceiling opening for a clean, finished appearance.

GRID, STATIC



GRID, AIR RETURN



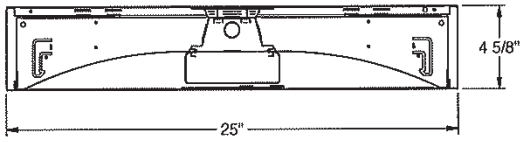


For flanged fixtures in row configurations, the FKCR adapter bracket kit is required in addition to the FK24 kit. Order one less FKCR than the total number of fixtures in row. (Example: Row of two, order (2) FK24 & (1) FKCR)

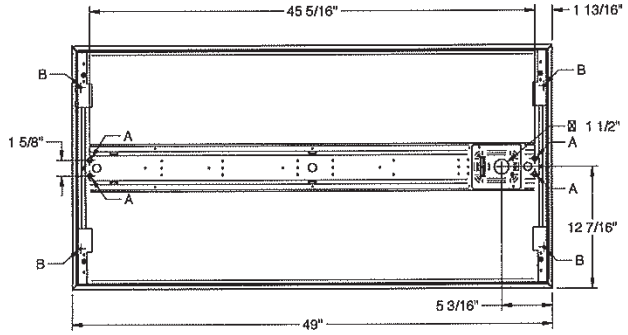
Row cut out dimensions using FK24s & FKCR adapters:
Width 24⅜", Length [48" × (# in row)] + ⅜".
Example: (48" × 2) + ⅜" = 96⅜"
Flange kit cut out dimension for single unit only: 24⅜" × 48⅜"

DIMENSIONAL DATA — SURFACE MOUNT OR CABLE MOUNT, STATIC ONLY

Surface Section (SM) – Image shown with rectangular lens



Back of Housing, Surface Mount (SM) and Cable Mount (CM)



Surface Mount:
Order SM ceiling type. Mounting collar required for surface mounting. (4) Mounting knock-outs, ⅜", provided in center channel as indicated at left, marked A.

Cable Mount:
Order CM ceiling type.
Use CM48Y2SC3F-KIT 48" Cable Mount Kit for 2' wide CM trim fixtures. Mounting holes are provided in diagonal straps shown at left, marked B.

* For Cable Mount a 2" x 3" access plate with (4) ⅞" KOs provided in place of Mounting Collar shown.
NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

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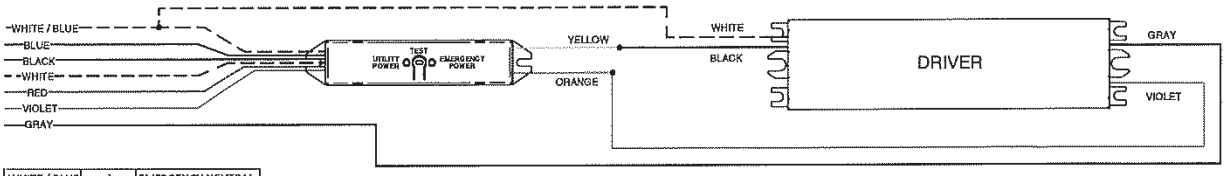
HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' × 4' LED Contemporary Architectural Troffer

DTS WIRING DIAGRAM



WHITE / BLUE	→	EMERGENCY NEUTRAL
BLUE	→	EMERGENCY LINE
BLACK	→	UTILITY LINE
WHITE	→	UTILITY NEUTRAL
RED	→	SWITCHED HOT
VIOLET	→	DIMMING
GRAY	→	DIMMING

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HUBBELL Lighting

Columbia LIGHTING SpectraSync™

LCAT24

2' × 4' LED Contemporary Architectural Troffer

SPECTRASYNC™ COLOR TUNING TECHNOLOGY

Control your space based on the needs of the application, specific activities throughout the day and preferences of the occupants with distinct SpectraSync Color Tuning Technologies.

Dim to Warm

Dim to Warm mimics the familiar warming effect that occurs with traditional incandescent sources as they are dimmed. (Available with 2200K-3000K)

Tunable White

Tunable White offers users the ability to tailor CCT to their personal preference, enhancing task visibility, material and colors, or the aesthetics of the space. (Available with 2700K-5000K or 2700K-6500K)

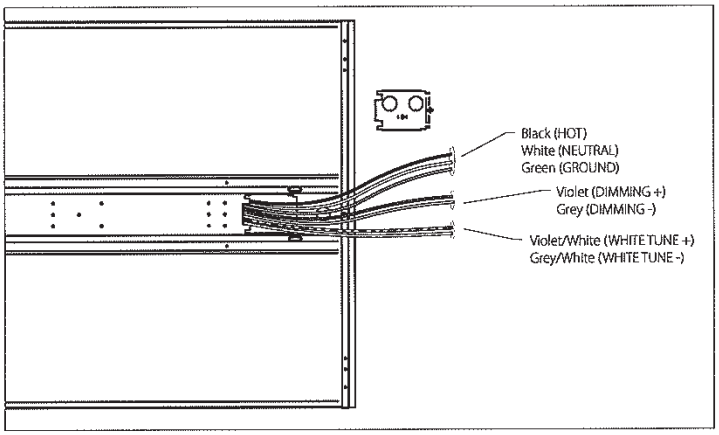
Scheduled White

Scheduled White creates an environment that mimics the rhythms of natural light throughout the day, enhancing occupant's mood and well-being. (Available with 2700K-5000K or 2700K-6500K)

SPECTRASYNC TUNABLE WHITE

2750T OR 2765T- SPECTRASYNC LINEAR TUNABLE WHITE, 2700K-5000K OR 2700K-6500K

Requires (2) 0-10V controllers, (1) for intensity and (1) for CCT. Minimum 5% dimming.



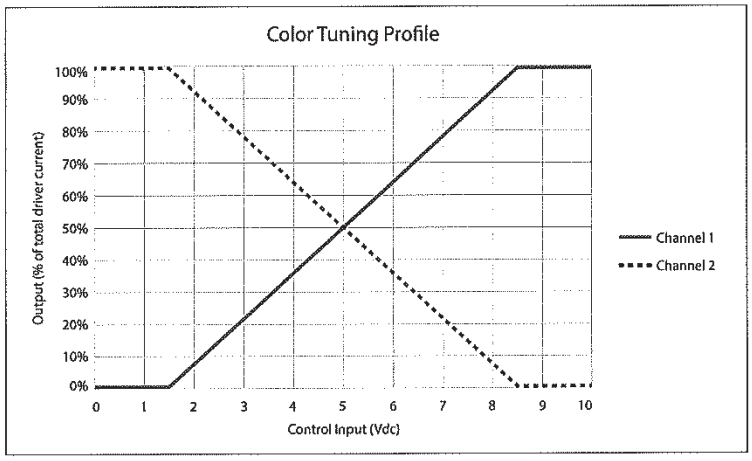
SpectraSync tunable white luminaires are provided with (2) 0-10V circuits. The violet and grey circuit is for wiring to any qualified 0-10V controller for dimming. The violet/white and grey/white circuit is for wiring to any qualified 0-10V controller for tunable white CCT control.

CONTROLLER MANUFACTURER DATA

Suggested controllers to be used with SpectraSync:

SpectraSync tunable white was designed to be used with sinking style dimmers (provided by others) and is compatible with:

- Hubbell Control Solutions (HCS): NX Distributed Intelligence Room Controllers (NXRC) and In-fixture Controllers (NXFM)
- Lutron: DVTV, DVSTV, and NFTV dimmers
- Wattstopper: ADF120277 and CD4BL (Titan) dimmers



To enable scheduling and for use with NX wall control preset stations please refer to Hubbell Control Solutions NX SpectraSync technical sheet.

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HUBBELL Lighting

Columbia LIGHTING SpectraSync™

LCAT24

2' × 4' LED Contemporary Architectural Troffer

Shielding	Lumen Output	Watts	2700		3000		3500		4000		5000		6500	
			Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW	Lumens	LPW
Curve	XW	19	2240	117	2341	123	2383	125	2414	126	2493	131	2456	129
	VW	28	2990	108	3124	113	3180	115	3221	117	3327	121	3277	119
	MW	30	3218	107	3363	111	3424	113	3467	115	3582	119	3528	117
	LW	36	4084	113	4268	118	4345	120	4400	122	4545	126	4477	124
	ML	39	4566	118	4771	123	4857	125	4919	127	5081	131	5005	129
	HL	44	5209	118	5443	124	5541	126	5612	128	5797	132	5710	130
Rectangle	XW	20	2489	123	2601	128	2648	130	2682	132	2770	136	2728	134
	VW	28	3085	109	3224	114	3282	116	3324	118	3434	122	3382	120
	MW	30	3323	110	3472	115	3534	117	3580	119	3698	122	3642	121
	LW	36	4230	117	4420	122	4500	125	4557	126	4707	130	4637	128
	ML	39	4711	121	4923	127	5012	129	5076	131	5243	135	5164	133
	HL	43	5295	123	5533	128	5633	131	5705	132	5893	137	5804	135

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Columbia LIGHTING

LCAT24

2' × 4' LED Contemporary Architectural Troffer

HUBBELL Control Solutions

NX DISTRIBUTED INTELLIGENCE

NX™ SOLUTION GUIDE FOR SPECTRASYNC™ COLOR TUNING TECHNOLOGY

When paired with SpectraSync™ enabled luminaires, NX Distributed Intelligence lighting control delivers a comprehensive color control solution, simplifying setup and code compliance through self-configuration and an optional Bluetooth® interface with mobile application.

- Complete control solutions using SpectraSync color tuning technology
- Device auto-configuration and plug-n-play connectivity
- Intuitive app interface and user-friendly wall stations

NX™ Distributed Intelligence Accesories for SpectraSync Control	
CATALOG NUMBER	**DESCRIPTOR**
NXAC-120	NX Area Controller, NEMA 1, HubbNET, BACnet™, 120 Volt
NXHNB	NX Network Bridge Module
NXRC-2RD-UNV	NX Room Controller, 2 Relay, 0-10V Dimming, Universal Voltage
NXSW-CCT-xx	NX Digital CCT Scene Switch, 6 Buttons, 4 Presets, Raise/Lower
NXSW-SS-xx	NX Digital Scene Switch, 6 Buttons, 4 Presets, Raise/Lower
NXSW-ORLO-xx	NX Digital Switch Station, On/Raise/Lower/Off
NXSW-RL-xx	NX Digital Switch Station, 2 Buttons, Raise/Lower
NXSW-OO-xx	NX Digital Switch Station, On/Off
NXSW-TO-xx	NX Digital Switch Station, Timed-On, Pilot

Order as separate catalog number. Visit www.hubbellcontrolsolutions.com

Note: 'xx' = color; Black (BK), Gray (GY), Ivory (IV), Light Almond (LA), Red (RD), White (blank).

NX USER INTERFACES

Wall stations for personalized control of light and color

NX mobile app offers user-friendly configuration tool

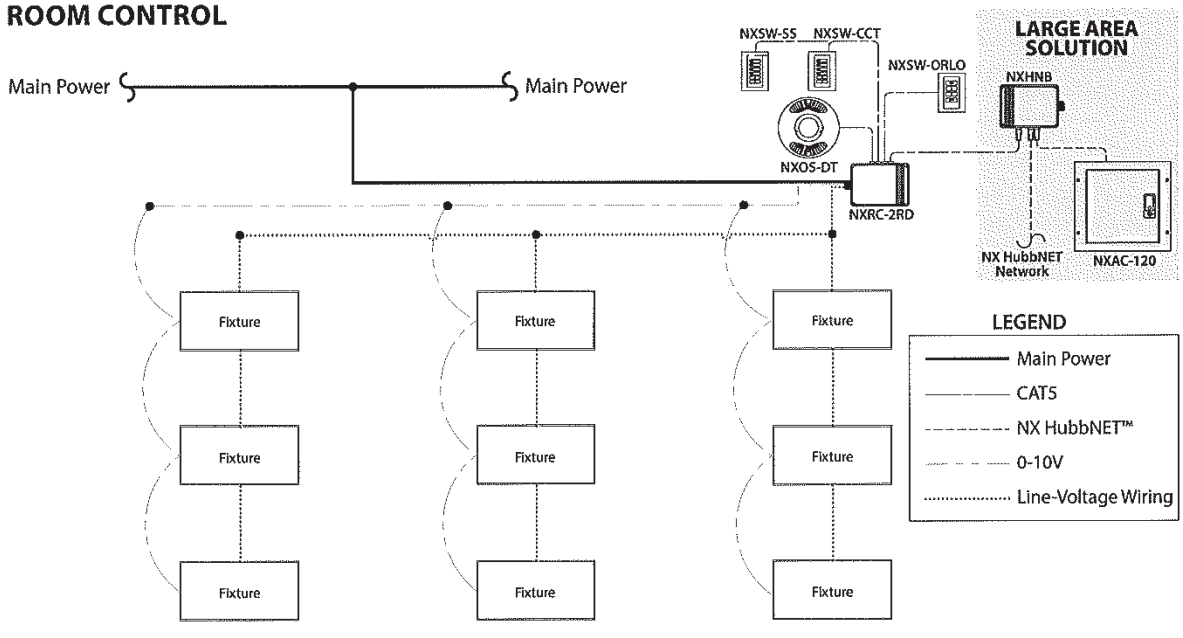
Area Controller GUI provides simple and intuitive programming

Android

Free Bluetooth® enabled mobile app for ease of configuration

Apple

TYPICAL NX DISTRIBUTED INTELLIGENCE™ LAYOUT FOR STAND-ALONE OR NETWORKED ROOM CONTROL



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HUBBELL Lighting

Columbia LIGHTING

LCAT24

2' × 4' LED Contemporary Architectural Troffer

HUBBELL® Control Solutions

NX DISTRIBUTED™ INTELLIGENCE

NX DISTRIBUTED INTELLIGENCE™ IN-FIXTURE SOLUTION GUIDE

NX Distributed Intelligence enables Hubbell's portfolio of commercial, industrial and architectural luminaires to further reduce energy consumption and total cost of ownership for simple to complex control environments.

NX-enabled luminaires provides you the breadth and flexibility to address all your project requirements today and in the future. For a complete list of luminaires with integrated NX options please visit our website.

NX Distributed Intelligence™ In-Fixture Options			
NX CONTROL OPTIONS	**DESCRIPTOR**	**CONNECTIVITY**	**APPLICATION SPACE**
NXSP14F	NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'	Standalone	Both
NXSPL	NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, Low Mount	Standalone	Indoor
NXOS	NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, OMNI	Standalone	Indoor
NXS	NX, PIR Occupancy Sensor, Dimming Daylight Harvesting	Standalone	Indoor
NXSPH	NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, High Mount	Standalone	Indoor
NXSP30F	NX, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'	Standalone	Outdoor
NXESPL	NX Enabled, PIR Occupancy Sensor, Dimming Daylight Harvesting, Low Mount	Wired	Indoor
NXE	NX Enabled, Dual SmartPorts	Wired	Indoor
NXEOS	NX Enabled, PIR Occupancy Sensor, Dimming Daylight Harvesting, OMNI	Wired	Indoor
NXES	NX Enabled, PIR Occupancy Sensor, Dimming Daylight Harvesting	Wired	Indoor
NXESPH	NX Enabled, PIR Occupancy Sensor, Dimming Daylight Harvesting, High Mount	Wired	Indoor
NXSPW14F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 14'	Wireless	Both
NXWE	NX Wireless Enabled	Wireless	Both
NXSPWL	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, Low Mount	Wireless	Indoor
NXOSW	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, OMNI	Wireless	Indoor
NXSPWH	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, High Mount	Wireless	Indoor
NXSW	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting	Wireless	Indoor
NXSPW30F	NX Wireless, PIR Occupancy Sensor, Dimming Daylight Harvesting, 30'	Wireless	Outdoor

Visit www.hubbellcontrolsolutions.com for additional information on the NX platform. For information on NX options available with specific Hubbell Lighting luminaires please reference specification sheets.

NX Distributed Intelligence™ Accessories	
CATALOG NO.	**DESCRIPTOR**
NXAC-120	NX Area Controller, NEMA 1, HubbNET, BACnet, 120 Volt
NXHNB	NX Network Bridge Module
NXRC-2RD-UNV	NX Room Controller, 2 Relay, 0 - 10V Dimming, Power Monitoring, Universal Voltage
NXOFM-1R1D-UNV	On-fixture Module (7-pin), On / Off / Dim, Daylight Sensor with HubbNET Radio and Bluetooth® Radio, 120-480VAC
NXSW-CCT-xx	NX Digital CCT Scene Switch, 6 Buttons, 4 Presets, Raise/Lower
NXSW-SS-xx	NX Digital Scene Switch, 6 Buttons, 4 Presets, Raise/Lower
NXSW-ORLO-xx	NX Digital Switch Station, On/Raise/Lower/Off
NXSW-RL-xx	NX Digital Switch Station, 2 Buttons, Raise/Lower
NXSW-OO-xx	NX Digital Switch Station, On/Off
NXSW-TO-xx	NX Digital Switch Station, Timed-On, Pilot

Note: 'xx' = color; Black (BK), Gray (GY), Ivory (IV), Light Almond (LA), Red (RD), White (blank).

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HUBBELL Lighting

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LCAT24

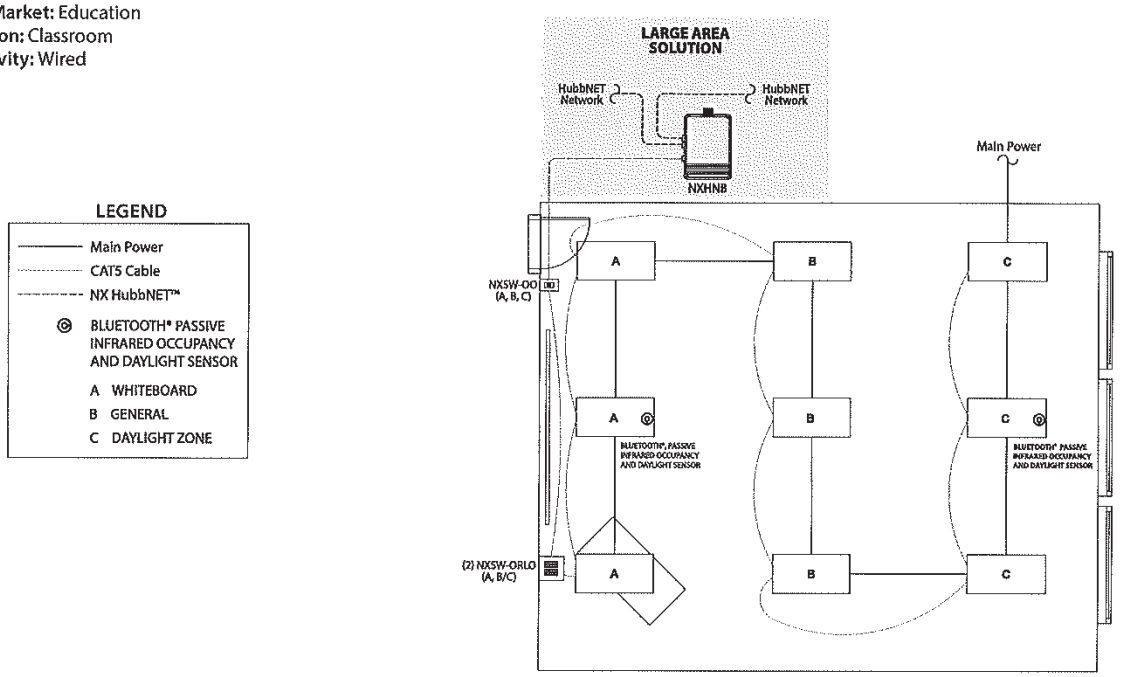
2' × 4' LED Contemporary Architectural Troffer

HUBBELL® Control Solutions

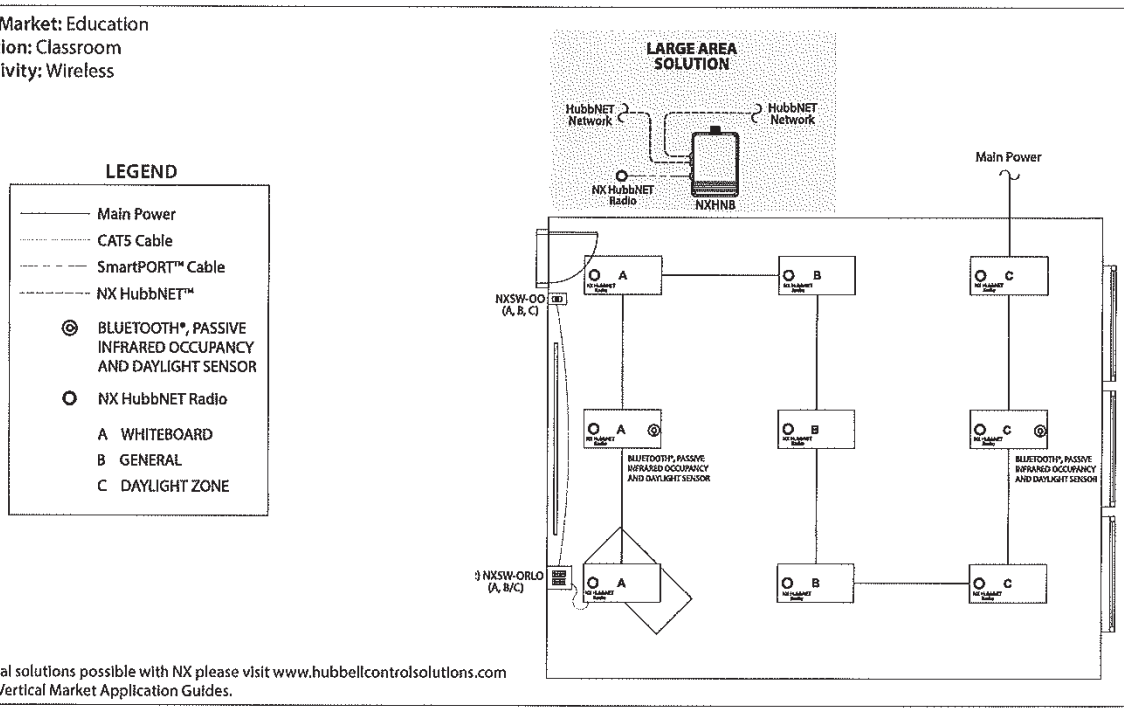
NX DISTRIBUTED INTELLIGENCE

TYPICAL NX DISTRIBUTED INTELLIGENCE™ LAYOUT FOR WIRELESS OR WIRED NETWORKED IN-FIXTURE CONTROL

Vertical Market: Education
Application: Classroom
Connectivity: Wired



Vertical Market: Education
Application: Classroom
Connectivity: Wireless



For additional solutions possible with NX please visit www.hubbellcontrolsolutions.com to view our Vertical Market Application Guides.

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HUBBELL Lighting

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

10/26/2020 11:55:49 AM

in

Case No(s). 20-1097-EL-EEC

Summary: Application -Jem Stores, LLC and Ohio Power Company for approval of a special arrangement agreement with a mercantile customer
electronically filed by Tanner Wolffram on behalf of Ohio Power Company