Legal Department

American Electric Power
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Columbus, OH 43215-2373
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September 5, 2014

Chairman Thomas W. Johnson
Ohio Power Siting Board
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, OH 43215-3793

Yazen Alami
Regulatory Services
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Re:	**In the Matter of the Application of**	**)**	
	Kings Daughter Medical Center	**)**	
	and Ohio Power Company	**)**	**Case No. 14-1491-EL-EEC**
	for Approval of a Special Arrangement	**)**	
	Agreement with a Mercantile Customer	**)**	

Dear Chairman Johnson,

Attached please find the Joint Application of Ohio Power Company (OPCo) and mercantile customer Kings Daughter Medical Center 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 2014.

Amended Substitute Senate Bill 221 sets forth in R.C. 4928.66 EE/PDR benchmarks that electric distribution utilities shall be 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. Attached is OPCo's version of that application and accompanying affidavit. Any confidential information referenced in the Joint Application has been provided to the Commission Staff for filing in Commission Docket 10-1799-EL-EEC, under a request for protective treatment. OPCo respectfully requests that the Commission treat the two cases as associated dockets.

Cordially,

/s/ Yazen Alami
Yazen Alami

Attachments

Ohio | Public Utilities Commission

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

Case No.: 14-1491-**EL-EEC**

Mercantile Customer: KINGS DAUGHTER MEDICAL CENTER

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: KINGS DAUGHTER MEDICAL CENTER

Principal address: 2001 Scioto Trail, Portsmouth, Oh 45662

Address of facility for which this energy efficiency program applies: 2001 Scioto Trl Rear, Portsmouth, Oh 45662-2845

Name and telephone number for responses to questions:

Doug Pelphrey, Kings Daughter Medical Center, (740) 352-9888

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, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).

☐ 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): 12/28/2012

☐ 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:

Annual savings: kWh

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:

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

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

Annual savings: 141,647 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.

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

The less efficient new equipment is the minimum required by Ohio State code or Federal Standard whichever is more stringent. For those measures where no code applies the baseline equipment is assumed to be the least efficient equipment available in the marketplace or standard practice, whichever results in the most conservative annual savings. Any information available describing the less efficient new equipment option is provided in 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures.

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 (choose which 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))

23.3 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 seeking is:

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

☒ A cash rebate of $ 6,684.20. (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.)

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: 5.96 (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 $ 44,913.30

The utility's program costs were $ 849.88

The utility's incentive costs/rebate costs were $ 6,684.20.

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.

Ohio | Public Utilities Commission

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

Case No.: 14-1491-EL-EEC

State of Ohio :

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

1. I am the duly authorized representative of:

   KEMA Services, 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.

Amanda M Craig, Energy Efficiency Engineer
Signature of Affiant & Title

Sworn and subscribed before me this 26th day of August, 2014 Month/Year

Brenda Walke
Signature of official administering oath

Brenda Walke, Notary
Print Name and Title

My commission expires on 01-16-2018

NOTARIAL SEAL STATE OF OHIO

Brenda Walke
Notary Public, State of Ohio
My Commission Expires 01-16-2018

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	**KINGS DAUGHTER MEDICAL CENTER**	
Project Number	**AEP-14-13402**	
Customer Premise Address	**2001 SCIOTO TRL REAR, PORTSMOUTH, OH 45662-2845**	
Customer Mailing Address	**2001 Scioto Trail, Portsmouth, OH 45662**	
Date Received	**6/5/2014**	
Project Installation Date	**12/28/2012**	
Annual kWh Reduction	**141,647**	
Total Project Cost	**$18,938.58**	
Unadjusted Energy Efficiency Credit (EEC) Calculation	**$8,912.27**	
Simple Payback (yrs)	**3.8**	
Utility Cost Test (UCT) for EEC	**5.96**	
Utility Cost Test (UCT) for Exemption	**0.14**	
		Please Choose One Option Below and Initial
Self Direct EEC: 75%	**$6,684.20**	[X] **Initial:** J.M.
EE/PDR Rider Exemption	**12 Months (with possible extension up to N/A months after PUCO Approval)**	[ ] **Initial:** N/A

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?

_X_ 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 and Custom) project that the above has completed and applied is as follows.

Lighting Power Density (LPD) reduction over ASHRAE 90.1 2007 baseline
Interior reduction: 16,645.40 Watts
Exterior reduction: 5,635.28 Watts

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: Jo F. Will

Title: Manager

Date: 8/12/2014

KINGS DAUGHTER MEDICAL CENTER

By: Jeff Mundhenk

Title: Director of Facilities

Date: 8/11/14

Self-Direct
Program Application

ENERGY IS PRECIOUS. ***LET'S NOT WASTE IT.***

STEPS FOR SUBMITTING YOUR APPLICATION

Step 1: Verify Project, Equipment and Customer Eligibility

- ✓ Project must be a facility improvement that produces a permanent reduction in electrical energy usage (kWh).
- ✓ Facilities must be AEP electric customers that are considered "mercantile" under the definition of the Public Utilities Commission of Ohio (PUCO).
- ✓ Projects must operate at least 2,245 hours per year to qualify for cash rebates. Projects with annual energy (kWh) savings greater than the facility's annual energy (kWh) consumption are not eligible.
- ✓ All installed equipment must meet or exceed the specifications outlined in the application.
- ✓ Equipment must be installed in facilities served by AEP Ohio.
- ✓ Customer must have a valid AEP Ohio account number on an eligible AEP Ohio non-residential account.
- ✓ The Self-Direct program applies to customer facilities served by AEP Ohio's retail electric distribution rates that are defined as "mercantile" and meet the minimum energy usage requirements of 700,000 kWh per year, or that are part of a national account involving multiple facilities in one or more states.

Step 2: Submit Application

- ✓ Complete the Checklist page.
- ✓ Agree to the Terms and Conditions and Final Payment Agreement.
- ✓ Attach the documentation listed:
  - Completed Applicant Information form
  - Completed and signed Customer Agreement form
  - Measure worksheet(s)
  - Scope of work (type, quantity, and specifications of old and new equipment)
  - Dated and itemized invoices for the purchase and installation of all equipment installed
  - Specifications for all installed equipment installed showing that it meets program specifications
- ✓ Submit the signed Final Application via email, fax or mail prior to November 14, 2014, for any projects completed on or after January 1, 2011. Any applications received after the deadline may not be submitted to the Public Utilities Commission of Ohio (PUCO) by December 31, 2014, which may jeopardize approval.

Step 3: Project Review

- ✓ The program team will review your application. The review of some projects will require an inspection; the team will contact applicants requiring an inspection for scheduling.
- ✓ After approval by AEP Ohio, the customer will receive an Overview and Commitment form to sign and return. The project will then be submitted to the PUCO for consideration. The PUCO will assign a case number and review the project details prepared by AEP Ohio. The PUCO may request additional information, or approve or reject the energy efficiency cash rebates.

Step 4: Receive Energy Efficiency Cash Rebates

- ✓ The program team will issue energy efficiency cash rebates four to six weeks after the PUCO approves a project.
- ✓ In lieu of a one-time energy efficiency cash rebate, you may elect to seek an exemption from the Energy Efficiency/ Peak Demand Reduction (EE/PDR) rider for the associated electric account(s) for a defined period of time as will be stated in this filing. For this exemption, the energy efficiency cash rebate amount (Option 1) is compared to the estimated value of the EE/PDR obligation (Option 2), as calculated by AEP Ohio. If exemption is elected, the affected account is not eligible for other programs offered by AEP Ohio during the exemption period. Unless additional energy efficiency projects are undertaken, you will, after the specified number of months exempted, again be subject to the EE/PDR rider. New construction projects are not eligible to elect Option 2. Major renovation projects that do not have a representative billing history for three years prior to the project installation also are not eligible to elect Option 2.
- ✓ If the energy efficiency cash rebate is elected, you remain in the EE/PDR rider for the period of time that an exemption would have been in effect and may also participate in AEP Ohio programs. However, during that period of time, you are not allowed to elect the Option 2 exemption for any additional self-direct projects for the same account number.
- ✓ You are allowed and encouraged to consider using all or a portion of the energy cash rebates, as received from AEP Ohio under this program, to help fund other energy efficiency and demand-reduction projects you choose to initiate in the future. Current year and future projects may also qualify for higher cash rebates under the prescriptive or custom programs.

AEP Ohio Business Incentives Program
2740 Airport Drive, Suite 160
Columbus, OH 43219
Phone: (877) 607-0739
Fax: (877) 607-0740
aepohioincentives@dnvkema.com
Visit our website at aepohio.com/solutions.

Self-Direct
Program Application

ENERGY IS PRECIOUS. ***LET'S NOT WASTE IT.***

CHECKLIST

FINAL APPLICATION

Required Attachments

- ☐ Completed and signed Applicant Information form
- ☐ Completed Final Payment Agreement form including Energy Efficiency Cash Rebates Requested section
- ☐ Itemized invoices
- ☐ Equipment specifications
- ☐ Scope of work
- ☐ W-9 (required for LLC, individual, partnership, property management companies)

Cash Rebate Worksheets[1]

- ☐ Lighting
- ☐ HVAC
- ☐ Motors & Drives
- ☐ Compressed Air
- ☐ Refrigeration/Food Service
- ☐ Agriculture & Miscellaneous
- ☐ Transformers
- ☐ UPS
- ☐ Custom
- ☐ New Construction Lighting

Application date _____

Estimated incremental project cost _____

Expected completion date _____

[1]Incomplete applications will delay processing and receipt of energy efficiency cash rebates.

Revised Submittal

Please complete below if this is a revised submittal.

Submittal date_____ AEP Project Number (if known) AEP - 1 __ - __ __ __ __ __

AEP Ohio Business Incentives Program
2740 Airport Drive, Suite 160
Columbus, OH 43219
Phone: (877) 607-0739
Fax: (877) 607-0740
aepohioincentives@dnvkema.com
Visit our website at aepohio.com/solutions.

TERMS AND CONDITIONS

AEP Ohio offers prescriptive and custom cash rebates under the AEP Ohio Business Incentives Program to recognize the implementation of past cost-effective energy efficiency improvements for non-residential customers. AEP Ohio provides energy efficiency cash rebates (EEC) for the purchase and installation of qualifying cost-effective equipment in the customer's facility under the Terms and Conditions provided in this application and subject to regulatory approvals. EEC will only be provided in the form of a check or an Energy Efficiency/Peak Demand Reduction (EE/PDR) rider exemption under this program.

Please note that funds are limited and subject to availability.

Program Effective Dates

AEP Ohio Business Incentives Program offers cash rebates until approved funds are exhausted or November 14, 2014, whichever comes first. The effective dates of the current AEP Ohio Business Incentives Program and application submittal requirements are as follows:

- Self-direct projects are projects completed since January 1, 2011. Self-direct projects are eligible to apply for EEC with this application. Current or future projects should apply using a prescriptive or custom application.
- All 2014 AEP Ohio Business Incentives Program applications should be received no later than November 14, 2014. Any applications received after the deadline may not be submitted to the Public Utility Commission of Ohio (PUCO) by December 31, 2014, which may jeopardize approval. AEP Ohio reserves the right to extend or shorten this timeline.

Program and Project Eligibility

The AEP Ohio Business Incentives Program offers both prescriptive cash rebates for some of the more-common energy efficiency measures and custom cash rebates for other eligible improvements not included on the list of prescriptive measures. Cash rebates available under the AEP Ohio Business Incentives Program include non-residential accounts served on AEP Ohio's regulated retail rates.

Qualifying projects must be installed in a facility in AEP Ohio's electric service territory in Ohio. Cash rebates are available to all non-residential accounts that pay into the EE/PDR rider and receive their electricity over AEP Ohio wires, regardless from which retail electric supplier the customer has chosen to purchase power. A customer may neither apply for nor receive cash rebates for the same measure, equipment or service from more than one electric distribution utility.

The Self-Direct program applies only to customer facilities served by AEP Ohio's retail electric distribution rates, which are defined as "mercantile" and meet the minimum energy usage requirements of 700,000 kWh per year, or that are part of a national account involving multiple facilities in one or more states.

All applications are subject to review and approval by AEP Ohio, its contractor(s)/agent(s) and the PUCO prior to any EEC payments or exemptions from the EE/PDR rider in this program.

Projects must involve measures that result in a reduction in electric energy usage due to an improvement in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a custom cash rebate. The project simple payback for custom projects prior to the cash rebate payment generally should fall between 1 to 7 years, or pass cost-effectiveness test(s) determined by AEP Ohio to qualify for a cash rebate. Incentives are based on energy savings during the first 12 months following installation.

Projects involving measures covered by the prescriptive cash rebate portion of the program are not eligible for a custom cash rebate. However, the applicant has the option to apply for a custom cash rebate for whole building integrated projects or systems, even if they include prescriptive measures. Prescriptive elements of a whole building integrated project may be paid at the deemed savings and/or cash rebate level.

Project requirements under the AEP Ohio Business Incentives Program include the following:

- Projects must involve a new facility improvement with capital improvements that results in a permanent reduction in electrical energy usage (kWh). Existing/old lighting equipment must be functional and in operation at the time of replacement.
- Any measures installed at a facility must produce verifiable and persistent energy reduction and must be sustainable and provide 100% of the energy benefits as stated in the application for a period of at least five (5) years or for the life of the measure, whichever is less. If the customer ceases to be a delivery service customer of AEP Ohio or removes the equipment or systems at any time during the 5-year period or the life of the measure, the customer may be required to return a prorated amount of cash rebate funds to AEP Ohio.
- All equipment must be new. In rare circumstances, AEP Ohio reserves the right to allow used or rebuilt equipment if the customer can prove the existing equipment cannot be replaced with new equipment.
- All installed equipment must exceed state, federal and local codes and requirements.
- Equipment must be purchased, installed and operating (or capable of operating in the case of seasonal uses) prior to

TERMS AND CONDITIONS

submitting an application for a cash rebate.
- AEP Ohio will issue cash rebate payments in the form of checks or an energy efficiency Peak Demand Reduction Rider Exemption.
- The cash rebate is paid as a one-time, one-program offer and cannot be combined with incentive payments from other AEP Ohio programs. The customer may be eligible to participate in other programs offered by AEP Ohio, as long as no single project receives more than one cash rebate or incentive.

Confidential information contained in any documents associated with this application will be protected from public filings. However, this information will be disclosed to the PUCO and AEP's independent evaluators for further review and approval. Customers who require a non-disclosure agreement ("NDA") will be required to permit disclosure of certain information to support the submission of their application to the PUCO to be eligible to participate.

Projects that are NOT eligible for a cash rebate include the following:

- Fuel switching (e.g., electric to gas or gas to electric)
- Changes in operational and/or maintenance practices or simple control modifications not involving capital costs (Please visit aepohio.com/solutions for Retro-Commissioning Program or Continuous Improvement Program)
- Removal or termination of existing processes, facilities and/or operations
- On-site electricity generation
- Projects involving gas-driven equipment in place of or to replace electric equipment (such as a chiller)
- Projects focused primarily on power factor improvement
- Projects that involve only peak-shifting without kWh savings
- Renewables (Please visit aepohio.com/save for Renewables Program)
- Projects required by state or federal law, building or other codes, or projects that are standard industry practice
- Projects easily reverted/removed
- Projects installed entirely for reasons other than improving energy efficiency
- Other conditions as may be determined by AEP Ohio

Energy Efficiency Cash Rebate Limits

For both prescriptive and custom measures in this application, the **total EEC shall be 75% of the lesser of:** 1) The calculated cash rebate as approved by AEP Ohio or 2) 50% of incremental project cost (not including internal labor). In calculating the savings and EEC for custom measures, please contact the AEP Ohio Business Incentives Program office to determine an appropriate baseline for savings. In addition to the above incremental project cost limit, cash rebate payment rates vary when a customer's calculated cash rebate exceeds the tiers listed in the chart.

PROGRAM ENERGY EFFICIENCY CASH REBATES	
Energy efficiency cash rebate levels for one-year energy savings	See tables for prescriptive cash rebates. Custom cash rebates: $0.08/ kWh x 75%.
Minimum/maximum simple payback before energy efficiency cash rebate applied	Must pass cost effectiveness test(s) determined by AEP Ohio; generally between one and seven years
Maximum payout	75% of 50% of the incremental project cost, excluding internal labor (additional caps and tiering may also apply)
Energy efficiency cash rebate levels for projects completed since 1/1/2011	Calculated amount on the prescriptive or custom worksheets attached and subject to funding limits
Cash rebate limit	See Cash Rebate Limits and Tiering section
Cash rebate calculation order	Measure cash rebate caps are applied first. Project-cost cash rebate limits are applied second. Cash rebate tiering is applied third. Lastly, 75% factor is applied to cash rebate.

Energy Efficiency Cash Rebate Tiering

The total cash rebate paid for any self-direct application cannot exceed 50% of the incremental project cost (not including internal labor). In addition to the above incremental project cost limit, cash rebate payment rates vary when a customer's calculated cash rebate exceeds the tiers listed below:

- Tier 1 $0 - $100,000 = 100% of eligible calculated cash rebate value
- Tier 2 $100,001 - $300,000 = 50% of eligible calculated cash rebate value
- Tier 3 $300,001 - $500,000 = 25% of eligible calculated cash rebate value
- Tier 4 $500,001 - beyond = 10% of eligible calculated cash rebate value

Application Review Process

Applications are not a guarantee of program acceptance and energy efficiency cash rebates. AEP Ohio will review applications for eligibility and completeness. Completed applications will be reviewed in the order received. Funds are reserved for the project when AEP Ohio receives a completed application and determines that the project meets the program eligibility requirements. Upon review of the application, the program will notify applicants who submit incomplete applications of deficiencies; applicants may lose their place in the review process until receipt of all requested information. Applications must be completed and all information received by the deadlines defined above to begin processing. Applicants are encouraged to call the program hotline with any questions about documentation requirements.

TERMS AND CONDITIONS

Application

Projects completed on or after January 1, 2011, must submit an application and all required supporting documentation by November 14, 2014, to be applicable for the 2014 program year. Any applications received after the deadline may not be submitted to the PUCO by December 31, 2014, and could jeopardize approval.

A signed application with supporting project documentation verifying project installation and capital improvements must be submitted to AEP Ohio prior to application approval. Project documentation, such as (but not limited to) copies of dated invoices for the purchase and installation of the measures, equipment specification sheets, energy-savings analysis, complete application and W-9 forms (LLC, individual, partnership, property management companies), is required. The invoice should be itemized sufficiently to separate the project cost from the costs of other services not related to the energy efficiency project and other repairs. The location or business name on the invoice must be consistent with the application information. Requested information such as proof of project completion could include equipment purchase dates, installation dates, proof that the equipment was operational, manufacturer specifications, warranty information, invoices and proof of owner co-payment.

Inspections

The AEP Ohio Business Incentives Program reserves the right to inspect all projects to verify compliance with the program rules and verify the accuracy of project documentation. This may include installation inspections, verification of detailed lighting layout descriptions, metering, data collection, interviews and utility bill or monitoring data analysis. Customers are required to allow access to project documents and the facility where the measures were installed for a period of five years after receipt of cash rebate payment by AEP Ohio. In the event a building(s) is turned over to a new account holder/owner before AEP Ohio officially measures and verifies incentivized equipment, AEP Ohio reserves the right to do so under new ownership. Customer understands and agrees that program installations may also be subject to inspections by the PUCO, its designee or AEP's independent evaluators, and photographs of installation may be required.

Requirements for Custom Project Electricity Savings Calculation

The annual electricity savings must be calculated for custom projects using industry-accepted engineering algorithms or simulation models. The applicant may estimate the annual electricity usage of both the existing and proposed equipment based on the current operation of the facility. A listing of the pre-existing information requirements is provided at the end of the custom application section. If equipment is replaced prior to the end of its rated service life in order to achieve energy savings, the existing equipment performance may be used as the baseline in the energy-savings calculations. Documentation of early replacement decision and/or actual equipment energy usage will be required. If equipment is replaced due to failure or for other reasons (such as obsolescence or a need for more capacity), the baseline performance used in the savings calculation must be either the minimum performance that would be required by code in effect for that equipment type at the time of installation and application (where a code applies) or industry standard when a code does not apply.

If the previous equipment was at the end of its useful life, the applicant must use, as the baseline, the equipment that would meet the applicable federal and local energy codes in effect at the time of installation or industry standard, if no code exists.

The applicant must be able to clearly describe the method used to calculate the savings. The applicant must provide all assumptions used in the calculations and document the sources for these assumptions. If no savings analysis is provided by the customer/contractors, AEP Ohio reserves the right to utilize its approved methodology and analysis to determine energy savings.

The method and assumptions used by the applicant to calculate the annual savings will be reviewed by AEP Ohio. AEP Ohio is solely responsible for the final determination of the annual energy savings and peak-demand reduction used in calculating the cash rebate amount. AEP Ohio also reserves the right to require specific measurement and verification activities, including monitoring the retrofit to determining the cash rebate. Verification of the pre-existing consumption may also be required.

For custom projects, the applicant is required to provide information in order to allow AEP Ohio to verify the baseline usage of the pre-existing equipment in order to use the existing equipment as the baseline. AEP Ohio may need to conduct inspections of projects to verify equipment and operating conditions.

Customers are encouraged to contact the hotline to speak with program staff prior to submitting projects that warrant special treatment. These non-typical projects will be considered on a case-by-case basis by AEP Ohio.

Tax Liability

Cash rebates are taxable and, if more than $600, will be reported to the IRS unless the customer is exempt. AEP Ohio is not responsible for any taxes that may be imposed on your business as a result of your receipt of cash rebate. A W-9 for LLC, individual, partnership and property management companies must be provided with all applications.

TERMS AND CONDITIONS

Disclaimer

Any and all energy savings and coincident demand generated by the project described in this application are hereby committed to AEP Ohio. That retained demand can be used to count against AEP Ohio's benchmark requirements in S.B. 221, regardless; any retained demand provided to PJM generation auctions must be done so by AEP Ohio only.

Peak-demand reduction is defined as the reduction in average load over the performance hours as a result of replacing existing electrical equipment with more-efficient electrical equipment. Peak performance hours are defined as the time between June 1 and August 31 on weekdays and non-holidays, between the hours 3:00 p.m. and 6:00 p.m. Eastern Standard Time. PJM Peak Hours are defined as the time between June 1 and August 31 on weekdays and non-holidays, between the hours 2:00 p.m. and 6:00 p.m. Eastern Standard Time.

AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measures eligible for cash rebates under this program. AEP Ohio has no obligations regarding and does not endorse or guarantee any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures. AEP Ohio is not responsible for the proper disposal/recycling of any waste generated as a result of this project. AEP Ohio is not liable for any damage caused by the operation or malfunction of the installed equipment.

Self-Direct
Program Application

ENERGY IS PRECIOUS. ***LET'S NOT WASTE IT.***

AEP OHIO®

APPLICANT INFORMATION

Important: Please read the Terms and Conditions before signing and submitting this application. Complete all information and provide required documentation to avoid processing delays.

Project Information

Building Type (click here for Building Type definitions)	**W-9 Tax Status**	**How Did You Hear About the Program?**
(Select One)	(Select One)	(Select One)
Shift	**Affected Area Square Footage**	**Dodge Report Number** (if applicable)
(Select One)		
Building Operating Hours	**Equipment Operating Hours**	**Does the Facility Have a Data Center?**
		(Select One)

Name of Applicant's Business _____

Project Name (if applicable)_____ Name as It Appears on Utility Bill_____

AEP Ohio Account Number Where Measure Installed _____ Taxpayer ID (SSN/FEIN) _____

Mailing Address _____ City_____ State OH Zip_____

☐ Check if mailing address and installation address are the same.

Installation Address _____ City_____ State OH Zip_____

Customer Contact

Please provide all contacts we may need to process this project. List the project decision-maker, the technical contact, etc. as the contractor contact.

Name of Contact(s) (preferred contact for documentation)_____

Title of Contact_____ Phone #_____ Ext._____

Contact Fax #_____ Contact Email_____

Solution Provider/Contractor Information[1]

Name of Contracting Company _____

Name of Contact Person_____ Title of Contact_____

Mailing Address _____ City_____ State OH Zip_____

Phone #_____ Ext._____ Contact Fax #_____ Contact Email_____

If there are questions about the application who should we contact? ☐ Customer ☐ Contractor

[1]Solution provider/contractor is the party involved in the application submittal (i.e., specs, scope of work, etc.).

FINAL PAYMENT AGREEMENT

Final Payment Agreement

I understand that the application and all required documentation should be received by the AEP Ohio Business Incentives Program by November 14, 2014, for any projects completed on or after January 1, 2011. Any applications received after the deadline may not be submitted to the PUCO by December 31, 2014, and could jeopardize approval of any cash rebate by the PUCO. All equipment must be purchased, installed and fully operational prior to submitting the application.

I understand that AEP Ohio or its representatives have the right to ask for additional information at any time. AEP Ohio Business Incentives Program will make the final determination of cash rebate levels for this project.

I understand that this project must involve a facility improvement that results in improved energy efficiency.

As an eligible AEP Ohio account holder, I certify that decisions to acquire and install the indicated energy efficiency measures, which will be demonstrated with supporting documentation required by AEP Ohio, were made after January 1, 2011, and that work was completed on this project on or after January 1, 2011. The energy efficiency measures are for use in my business facility and not for resale.

I understand that the location and business name on the project documentation must be consistent with the application information. Project documentation, measure specification sheets and details of measure installation are included. Documentation indicating contract dates prior to January 1, 2011, may render this application ineligible. I understand that all submissions become the property of AEP Ohio. It is recommended to keep a copy of the application for your records.

I agree that if: (1) I did not install the related measure(s) identified in my application or (2) I remove the related measure(s) identified in my application before a period of five (5) years or the end of the measure life, whichever is less, I shall refund a prorated amount of energy efficiency cash rebates to AEP Ohio based on the actual period of time the related measure(s) were installed and operating. This is necessary to assure that the project's related energy benefits will be achieved. (3) AEP Ohio will pay 75% of the lesser of: 1) The calculated cash rebate as approved by AEP Ohio, subject to funding limits or 2) 50% of the incremental project cost (subject to application caps). I understand that AEP Ohio or its representatives have the right to ask for additional information at any time. AEP Ohio Business Incentives Program will make the final determination of energy efficiency cash rebate levels for this project.

I agree to be responsible to comply with any applicable codes or ordinances. I also understand that all materials removed, including lamps and PCB ballasts, must be permanently taken out of service and disposed of in accordance with local codes and ordinances. I understand it is my responsibility to be aware of any applicable codes or ordinances. Information about hazardous waste disposal can be found at epa.gov/epawaste/hazard/index.htm.

I agree to verification by the utility or its representatives of both sales transactions and equipment installation. I understand that these cash rebates are available to all non-residential accounts that pay into the Energy Efficiency and Demand Response (EE/PDR) rider and receive their electricity over AEP Ohio wires, regardless from which retail electric distribution supplier the customer has chosen to purchase power.

I understand that AEP Ohio reserves the right to refuse payment and participation if the customer or contractor violates program rules and requirements. AEP Ohio is not liable for energy efficiency cash rebates promised to customers as a result of misrepresentation of the program.

I understand that AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measure eligible for energy efficiency cash rebates under this program. Furthermore, AEP Ohio has no obligations regarding any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures and does not endorse or guarantee same.

Energy efficiency cash rebates will be based upon the Final Application and program terms and conditions, as well as the availability of funds.

I understand that the program has a limited budget. Applications will be processed until allocated funds are reserved or spent. Final Applications should be received by November 14, 2014, to be eligible for funding under the current program period.

I certify that the information on this application is true and correct, and that the taxpayer ID number, tax status and W-9 are the applicant's. I understand that cash rebates exceeding $600 will be reported to the IRS, unless the payee is exempt. I understand that cash rebates assume related energy benefits over a period of five (5) years or for the life of the measure, whichever is less.

I understand that the program may be modified or terminated at any time without prior notice.

FINAL PAYMENT AGREEMENT

I understand and agree that all other terms and conditions as specified in the application, including all attachments and exhibits attached to this application, will serve as a contract for the customer's commitment of energy and demand resources to AEP Ohio and shall apply.

I understand that any and all energy savings and coincident demand generated by the project described in this application are hereby committed to AEP Ohio. That retained demand can be used to count against AEP Ohio's benchmark requirements in S.B. 221, regardless; any retained demand provided to PJM generation auctions must be done so by AEP Ohio only.

CUSTOMER AGREEMENT

☐ I have read and understand the program requirements, measure specifications, and Terms and Conditions and Final Application Agreement and agree to abide by those requirements. Furthermore, I concur that I meet all eligibility criteria in order to receive payment under this program. For final applications, sign and submit only after all equipment is installed and operational. A customer signature is required for payment. Signed applications received by email or fax will be treated the same as original applications received by mail.

☐ As an eligible customer, I verify the information is correct and request consideration for participation under this program.

Digital Signature Instructions

1. Click in the signature box.
2. Follow the digital signature directions displayed in the "Add Digital ID" pop-up box.
3. Establish a digital ID and password.
4. In the "Sign Document" pop-up box, you can select to change the signature appearance from typed font to an imported graphic.
5. Follow directions to save signed application; signature and verification information will appear in the signature box.

Total Incremental Project Cost

_____

Total Cash Rebates Requested

_____

Customer Signature (AEP Ohio Customer)

_____

Print Name

_____

Date

05 September 2014

Project Completion Date

_____

SUBMIT VIA EMAIL

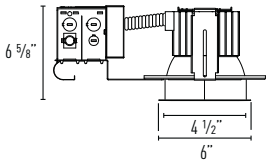
PRINT APPLICATION

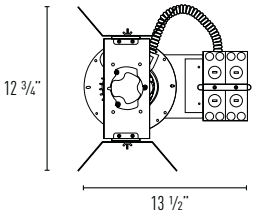
	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** SS4-700-35-27-I100 / IC420-C-SF Notes:
		Type: D1

SS4700 / IC420

4" Architectural LED Round 700lm/ Open Reflector

JOB NAME		CATALOG NUMBER	
NOTES		TYPE	





Cut-out: 4 3/4"

Order Matrix | Example: SS470035-I200

A	B	C	D	E

A – Series

SS4	4" LED Recessed

B – Module Lumen Output

700	700lm 14W

C – Color Temperature

~~30~~	~~3000K~~
35	3500K

D – Power Supply

blank	120V Electronic Driver
-27	277V Electronic Driver
-DIM	120V 0-10V Dimming
-DIM-27	277V 0-10V Dimming
-LUT	120V Lutron Hi-lume®
-LUT-27	277V Lutron Hi-lume®

E – Options

~~-EM~~	~~Emergency Backup~~
-I100	C-Channel Bar Hanger
~~-I200~~	~~Flat Bar Hanger~~
-I400	Wood Joist Bar Hanger

Reflector Matrix | Example: IC420HZ-SF

A	B	C

A – Series

IC420	4" Open Reflector

B – Reflector Finish

C	Clear Reflector
HZ	Haze Reflector

C – Trim

-SF	Self Flanged
-SFW	Self Flanged White

LED Light Engine:
- Powered by Osram Sylvania DLM Directional LED Module
- No Visible Phosphor
- Nominal input power = 14W
- Nominal delivered lighting output = 700lm
- 3000/3500K color temperature 83 CRI
- LED's mounted to die cast aluminum heat sink
- 50,000 hours average rated life at 70% output
- Fixture should not be installed in applications with an ambient temperature above 50°C. Applications with an installation above 50°C will result in reduced lamp life and void warranty
- LED module is easily upgradable to accommodate future solid state lighting technology

Optical System:
Specification grade reflector with 1.2mm thickness. Reflector available in clear specular or haze. Architectural, discrete polished self flange standard. Optional painted white flange is available. Meets RP-1 requirements with controlled light distribution at a 55° cut off.

Electrical System:
- 120V/277V 50/60Hz input
- 700mA constant current output
- Class 2 power supply
- Over-voltage, over current and short circuit protection: auto recovery
- MTBF > 100,000 hours

Dimming Options:
- 0-10V dimming down to 5%
- Lutron Hi-lume® down to 1%

Installation:
Luminaire is type Non-IC. Insulation must be kept at a minimum of 3" away from fixture. Universal mounting brackets included. Compatible with C-channel, flat bar, wood joist bar hanger and EMT. Bar hangers must be ordered separately. C-channel are recommended for T-bar ceilings. Bar hangers must be ordered separately.

Emergency Backup:
Remote test switch included. Emergency driver operates LED load of up to 4.5 Watts at a maximum rated current (410 mA) for a minimum of 90 minutes. See submittal sheet IB-BSL23C for specifications.

Accessories:
Open reflector only compatible with Infuz™ accessories. See accessories specification sheet.

Listing/Warranty:
- UL listed to US and Canadian standards for damp locations.
- Luminaire is tested to LM-79 IESNA standards.
- LM-80 Certified
- Energy Star Qualified
- Lighting Facts Registration # L5DN-TPV67T
- 5 Year Limited Warranty

Intense Lighting | 2861. E La Palma Ave. | Anaheim, CA 92806 | **Phone:** 1.800.961.5321 | **Fax:** 1.800.961.5322 | www.**intenselighting**.com

	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** SS4-700-35-27-I100 / IC420-C-SF Notes:	**Type:** **D1**

JOB NAME		CATALOG NUMBER	
NOTES		TYPE	

Catalog #: SS4700 / IC420C-SF

4" LED Round 700lm/ Open Reflector

Report #: 1209-05A

Reflector Finish: Specular Clear

Color Temperature: 3500K

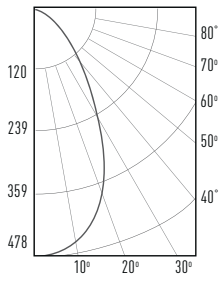
Total Lumen Output: 542 lm

Wattage: 15.75W

Efficiency: 34 lumens per watt

Spacing: 0.94

Distribution Curve



Coefficients of Utilization

Effective Floor Cavity Reflectance = .20

RC	80				70				50				30			0
	Wall Reflectance															
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
1	112	109	106	103	110	107	104	102	103	100	98	99	97	95	91
2	105	99	95	91	103	98	93	90	94	91	88	91	88	86	82
3	99	91	85	80	97	90	84	80	87	82	78	84	80	77	74
4	93	84	77	72	91	82	76	72	80	75	71	78	74	70	67
5	87	77	70	65	85	76	70	65	74	69	64	72	67	64	61
6	82	71	64	59	80	70	64	59	69	63	59	67	62	58	56
7	77	66	59	54	75	65	59	54	64	58	54	63	57	54	52
8	73	62	55	50	71	61	54	50	60	54	50	59	53	49	48
9	69	58	51	46	67	57	51	46	56	50	46	55	50	46	44
10	65	54	47	43	64	54	47	43	53	47	43	52	46	43	41

Room Cavity Ratio

Zonal Lumens and Percentages

Zone	Lumens	%Fixture
0-30	295.5	54.5
0-40	399.81	73.7
0-60	519.58	95.8
0-90	542.42	100
90-180	0	0
0-180	542.42	100

Multiple Unit Data

Spacing on ctr.	Initial Footcandles	Watts/ Sq. Ft.	Number of Luminaires
4	29.6	0.9	36
6	13.4	0.4	16
8	7.6	0.2	9

25' x 25' x 9' Room
Workplace 2 ½' above floor
80/50/20% Reflectances

Zonal Lumen Summary

Zone	CP	Lumens
0	477	36.78
10	466	121.63
20	380	137.09
30	246	104.31
40	135	85.16
50	63	34.61
60	28	15.18
70	16	3.6
80	3	4.06
90	0	0

Luminaire is tested to IESNA standards LM-79-08. Tested to absolute photometry.

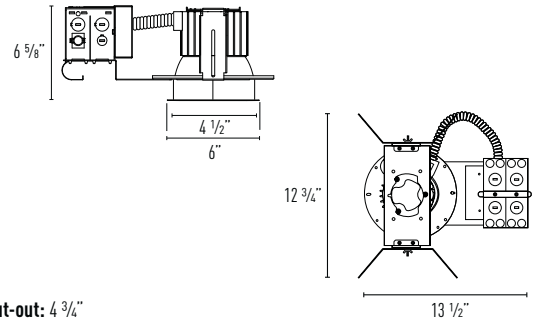
Intense Lighting | 2861. E La Palma Ave. | Anaheim, CA 92806 | **Phone:** 1.800.961.5321 | **Fax:** 1.800.961.5322 | www.**intenselighting**.com
Note: Specifications and dimensions subject to change without notice.

	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ILM4-700-35-DIM-I100 /IC422-HZ-SFW Notes:	**Type:** D4

ILM4700 / IC422

4" Architectural LED Round 700lm / Regressed Lensed Reflector

JOB NAME		CATALOG NUMBER	
NOTES		TYPE	



Cut-out: 4 3/4"

Order Matrix | Example: ILM470035-DIM-I100

A	B	C	D	E

A	Series
ILM4	4" LED Recessed

B	Module Lumen Output
700	700lm 14W

C	Color Temperature
27	2700K [1]
30	3000K [1]
35	3500K
40	4000K [1]

D	Power Supply
blank	120V Electronic Driver
-27	277V Electronic Driver
-DIM	120V 0-10V Dimming
-DIM-27	277V 0-10V Dimming
-LUT	120V Lutron Hi-lume®
-LUT-27	277V Lutron Hi-lume®

E	Options
-EM	Emergency Backup
-I100	C-Channel Bar Hanger
-I200	Flat Bar Hanger
-I400	Wood Joist Bar Hanger

Notes:
1 - 2700K, 3000K and 4000K color temperatures available by special order only. Consult Factory.

Reflector Matrix | Example: IC422HZ-SF-SB

A	B	C	D

A	Series
IC422	4" Regressed Lensed Reflector

B	Reflector Finish
C	Clear Reflector
HZ	Haze Reflector

C	Trim
-SF	Self Flanged
-SFW	Self Flanged White

D	Lens Type
-SB	Sand Blasted
-CR	Clear Tempered

LED Light Engine:
- Powered by Intense LED Modules utilizing Cree® XPG LED's
- No Visible Phosphor
- Nominal input power = 14W
- Nominal delivered lighting output = 700lm
- 2700K/3000K/3500K/4000K color temperatures
- 85 CRI
- LED's mounted to die cast aluminum heat sink
- 50,000 hours average rated life at 70% output
- Fixture should not be installed in applications with an ambient temperature above 50°C. Applications with an installation above 50°C will result in reduced lamp life and void warranty
- LED module is easily upgradable to accommodate future solid state lighting technology

Optical System:
Specification Grade Reflector, 1.2mm thickness. 1 ½" regressed lens. Reflector available in clear specular or haze. Architectural, discrete polished self flange standard. Optional painted white flange is available.

Electrical System:
- 120V/277V 50/60Hz input
- 700mA constant current output
- Class 2 power supply
- Over-voltage, over current and short circuit protection: auto recovery
- MTBF > 100,000 hours

Dimming Options:
- 0-10V dimming down to 5%
- Lutron Hi-lume® down to 1%

Installation:
Luminaire is type Non-IC. Insulation must be kept at a minimum of 3" away from fixture. Universal mounting brackets included. Compatible with C-channel, flat bar, wood joist bar hanger and EMT. Bar hangers must be ordered separately. C-channel are recommended for T-bar ceilings. Bar hangers must be ordered separately.

Emergency Backup:
Remote test switch included. Emergency driver operates LED load of up to 4.5 Watts at a maximum rated current (410 mA) for a minimum of 90 minutes. See submittal sheet IB-BSL23C for specifications.

Listing/Warranty:
- ETL listed to US and Canadian standards for wet locations
- LM-80 Certified
- 5 Year Limited Warranty

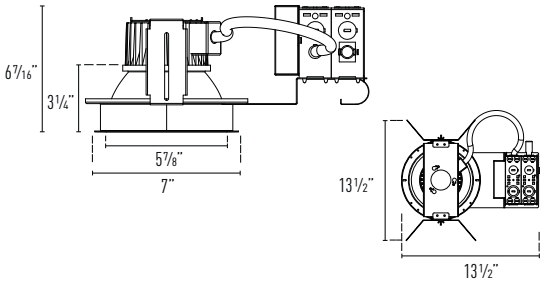
Intense Lighting | 2861. E La Palma Ave. | Anaheim, CA 92806 | **Phone:** 1.800.961.5321 | **Fax:** 1.800.961.5322 | www.**intenselighting**.com
Note: Specifications and dimensions subject to change without notice.

	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ILM6-700-35-DIM27 / I100 / (2) IC622-HZ-SFW Notes:
		Type: **D5**

ILM6700 / IC622

6" Architectural LED Round 700lm / Regressed Lensed Reflector

JOB NAME		CATALOG NUMBER	
NOTES		TYPE	



Cut-out: 6 ½"

Order Matrix | Example: ILM670035-I200

A	B	C	D	E

A	Series
ILM6	6" LED Recessed

B	Module Lumen Output
700	700lm 14W

C	Color Temperature
27	2700K [1]
30	3000K [1]
35	3500K
40	4000K [1]

D	Power Supply
blank	120V Electronic Driver
-27	277V Electronic Driver
-DIM	120V 0-10V Dimming
-DIM-27	277V 0-10V Dimming
-LUT	120V Lutron Hi-lume®
-LUT-27	277V Lutron Hi-lume®

E	Options
-EM	Emergency Backup
-I100	C-Channel Bar Hanger
-I200	Flat Bar Hanger
-I400	Wood Joist Bar Hanger

Notes:
1 - 2700K, 3000K and 4000K color temperatures available by special order only. Consult Factory.

Reflector Matrix | Example: IC622HZ-SF-SB

A	B	C	D

A	Series
IC622	6" Regressed Lensed Reflector

B	Reflector Finish
C	Clear Reflector
HZ	Haze Reflector

C	Trim
-SF	Self Flanged
-SFW	Self Flanged White

D	Lens Type
-SB	Sand Blasted
-CR	Clear Tempered

LED Light Engine:
- Powered by Intense LED Modules utilizing Cree® XPG LED's
- No Visible Phosphor
- 700lm LED Light Engine:
- Nominal input power = 14W
- Nominal delivered lighting output = 700lm
- 2700K/3000K/3500K/4000K color temperatures
- 83 CRI
- LED's mounted to die cast aluminum heat sink
- 50,000 hours average rated life at 70% output
- Fixture should not be installed in applications with an ambient temperature above 50°C. Applications with an installation above 50°C will result in reduced lamp life and void warranty
- LED module is easily upgradable to accommodate future solid state lighting technology

Optical System:
Specification Grade Reflector, 1.2mm thickness. 1 ½" regressed lens. Reflector available in clear specular or haze. Architectural, discrete polished self flange standard. Optional painted white flange is available.

Electrical System:
- 120V/277V 50/60Hz input
- 700mA constant current output
- Class 2 power supply
- Over-voltage, over current and short circuit protection: auto recovery
- MTBF > 100,000 hours

Dimming Options:
- 0-10V dimming down to 5%
- Lutron Hi-lume® down to 1%

Installation:
Luminaire is type Non-IC. Insulation must be kept at a minimum of 3" away from fixture. Universal mounting brackets included. Compatible with C-channel, flat bar, wood joist bar hanger and EMT. Bar hangers must be ordered separately. C-channel are recommended for T-bar ceilings. Bar hangers must be ordered separately.

Emergency Backup:
Remote test switch included. Emergency driver operates LED load of up to 4.5 Watts at a maximum rated current (410 mA) for a minimum of 90 minutes. See submittal sheet IB-BSL23C for specifications.

Listing/Warranty:
- ETL listed to US and Canadian standards for wet locations.
- LM-80 Certified
- 5 Year Limited Warranty

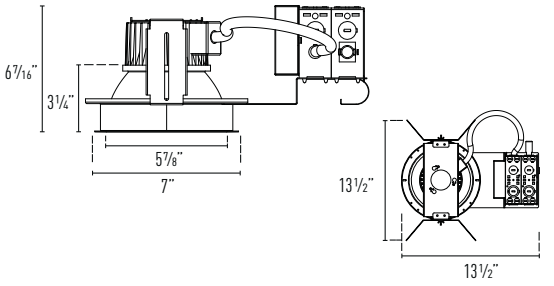
Intense Lighting | 2861. E La Palma Ave. | Anaheim, CA 92806 | **Phone:** 1.800.961.5321 | **Fax:** 1.800.961.5322 | www.**intenselighting**.com
Note: Specifications and dimensions subject to change without notice.

	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ILM6-700-35-DIM27 / I100 / IC620-HZ SFW Notes:
		Type: **D6**

ILM6700 / IC620

6" Architectural LED Round 700lm / Open Reflector

JOB NAME		CATALOG NUMBER	
NOTES		TYPE	



Cut-out: 6 ½"

Order Matrix | Example: ILM670035-I200

A	B	C	D	E

A	Series
ILM6	6" LED Recessed

B	Module Lumen Output
700	700lm 14W

C	Color Temperature
27	2700K [1]
30	3000K [1]
35	3500K
40	4000K [1]

D	Power Supply
blank	120V Electronic Driver
-27	277V Electronic Driver
-DIM	120V 0-10V Dimming
-DIM-27	277V 0-10V Dimming
-LUT	120V Lutron Hi-lume®
-LUT-27	277V Lutron Hi-lume®

E	Options
-EM	Emergency Backup
-I100	C-Channel Bar Hanger
-I200	Flat Bar Hanger
-I400	Wood Joist Bar Hanger

Notes:
1 - 2700K, 3000K and 4000K color temperatures available by special order only. Consult Factory.

Reflector Matrix | Example: IC620HZ-SF

A	B	C

A	Series
IC620	6" Open Reflector

B	Reflector Finish
C	Clear Reflector
HZ	Haze Reflector

C	Trim
-SF	Self Flanged
-SFW	Self Flanged White

LED Light Engine:
- Powered by Intense LED Modules utilizing Cree® XPG LED's
- No Visible Phosphor
- 700lm LED Light Engine:
- Nominal input power = 14W
- Nominal delivered lighting output = 700lm
- 2700K/3000K/3500K/4000K color temperatures
- 83 CRI
- LED's mounted to die cast aluminum heat sink
- 50,000 hours average rated life at 70% output
- Fixture should not be installed in applications with an ambient temperature above 50°C. Applications with an installation above 50°C will result in reduced lamp life and void warranty
- LED module is easily upgradable to accommodate future solid state lighting technology

Optical System:
Specification grade reflector with 1.2mm thickness. Reflector available in clear specular or haze. Architectural, discrete polished self flange standard. Optional painted white flange is available. Meets RP-1 requirements with controlled light distribution at a 55° cut off.

Electrical System:
- 120V/277V 50/60Hz input
- 700mA constant current output
- Class 2 power supply
- Over-voltage, over current and short circuit protection: auto recovery
- MTBF > 100,000 hours

Dimming Options:
- 0-10V dimming down to 5%
- Lutron Hi-lume® down to 1%

Installation:
Luminaire is type Non-IC. Insulation must be kept at a minimum of 3" away from fixture. Universal mounting brackets included. Compatible with C-channel, flat bar, wood joist bar hanger and EMT. Bar hangers must be ordered separately. C-channel are recommended for T-bar ceilings. Bar hangers must be ordered separately.

Emergency Backup:
Remote test switch included. Emergency driver operates LED load of up to 4.5 Watts at a maximum rated current (410 mA) for a minimum of 90 minutes. See submittal sheet IB-BSL23C for specifications.

Accessories:
Open reflector compatible with decorative drop and Infuz™ accessories. See accessories specification sheet.

Listing/Warranty:
- ETL listed to US and Canadian standards for damp locations.
- LM-80 Certified
- 5 Year Limited Warranty

Intense Lighting | 2861. E La Palma Ave. | Anaheim, CA 92806 | **Phone:** 1.800.961.5321 | **Fax:** 1.800.961.5322 | www.**intenselighting**.com
Note: Specifications and dimensions subject to change without notice.

DISCONTINUED SEE NEXT PAGE REPLACEMENT

TYPE D13

KIRLIN

RECESSED ROUND: 250 WATT MRI ADJUSTABLE EYEBALL

RR60934

Qualifying ASHRAE 90.1 2007 9.2.2.3 (c) exemption

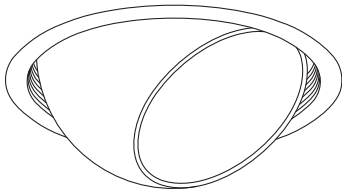
Healthcare: MRI

RR60934

NON-MAGNETIC CONSTRUCTION FOR MRI USE

Fixture shall be built of non-magnetic materials and suitable for use in M.R.I. (Magnetic Resonance Imaging) Rooms.

Lamp to be suitable for operation on D.C. circuits.



9" **250 WATT**

Adjustable Spot or Flood

Features

Lamp
- Designed for: Q250 Par 38 flood / spot lamps.
- For operation on D.C. circuits.

Socket
- Adjustable. Medium base.
- Glazed porcelain.
- Nickel-plated brass screw shell. Silicone leads.

Eyeball
- Seamless, tapered black OptiGroove with white flange.
- Self-flanged trim.
- Stainless steel springs retain snug fit to ceiling.

Housing
- Acrylic enameled aluminum.
- Cool: Dissipates heat across entire surface area.
- Rustproof: Exceeds 1000 hour ASTM 5% salt spray test.
- Entire luminaire serviced through eyeball opening.
- Built-in plaster frame.

Outlet Box
- 100% aluminum.

Installation
- 27" aluminum channel bar hangers supplied (2).
- Fully adjustable non-magnetic universal mounting brackets supplied (2).

UL, C-UL (Canada) Listings
- Wet, damp or dry locations, covered ceilings.
- Through-branch circuit conductors (up to 6#12).

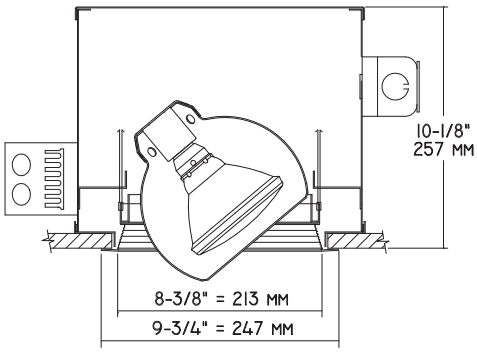
Three Year Limited Warranty
- Complete standard fixture.

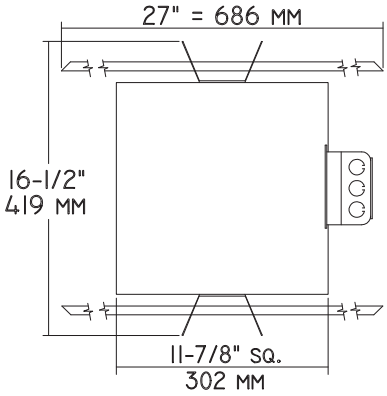
Thermal Protection
- Per current NEC.

NOT RESTRICTED TO END-OF-RUN USE

Performance at a Glance

RR60934





THE KIRLIN COMPANY

3401 EAST JEFFERSON AVENUE • DETROIT, MICHIGAN 48207-4232
(313) 259-6400 • Fax: (313) 259-9409 OR (313) 259-3121

	LAMP	MAXIMUM WATTAGE	CATALOG NUMBERS
MRI INCANDESCENT HEALTHCARE LIGHTING	**Q250 PAR38**	**250**	**RR60934**

HEALTHCARE
MARCH 1996

TYPE P1

L O W - V O L T A G E P E N D A N T S

Playa Pendant

DESCRIPTION
Elegant multi-toned cylindrical shade comprised of natural shell panels. The shells are burnished to remove rough edges, meticulously polished, cut to size, and carefully adhered by hand to an inner glass cylinder. Includes low-voltage, 50 watt halogen bi-pin lamp or 6 watt replaceable LED module and six feet of field-cuttable suspension cable.

INSTALLATION
Socket terminates with FreeJack male connector, which may be installed into a system connector. Elements ordered with a system prefix include a connector for that system.

WEIGHT
1.5lb / 0.68kg ±

brown

COLOR OPTIONS

brown natural white

700FJPLA-XXX-S-LED-120V

ADVISE COLOR ←

ORDERING INFORMATION

700 SYSTEM **PLA**

		COLOR	FINISH	LAMP
FJ	FREEJACK (MONO POINT)	**B** BROWN	**Z** ANTIQUE BRONZE	12 VOLT HALOGEN
KL	KABLE LITE	**N** NATURAL	**C** CHROME	**-LED** 12 VOLT LED 3000K
MO	MONORAIL	**W** WHITE	**S** SATIN NICKEL	**-24** 24 VOLT HALOGEN
MO2	TWO-CIRCUIT MONORAIL			

VOLTS =120V

Note: LED option not available on MO2 at this time.

Antique Bronze is not available for Kable Lite.

TECH LIGHTING®
7400 Linder Avenue
Skokie, Illinois 60077
T 847.410.4400
F 847.410.4500

www.techlighting.com

700 ____ PLA ____ ____ ____

FIXTURE TYPE: _____

JOB NAME: _____

NOTES: _____

_____

_____

Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** CJ22A-2BX40-G1-UNV-1C-W Notes:	**Type:** R1

PINNACLE ARCHITECTURAL LIGHTING™

CONVERJ 2X2

Biax, T5, T5HO, T8 ARCHITECTURAL RECESSED LUMINAIRE

US Patent Pending

CONSTRUCTION Formed 20 gauge cold rolled steel housing. Highly reflective die-formed white painted reflector. Wiring access available on both side and top of housing.

OPTICS Unique twin-arched wings and articulated center spine utilize a proprietary layered lens creating a fully luminous housing with optimal glare control. High reflective white reflectors maintain uniform lens brightness.

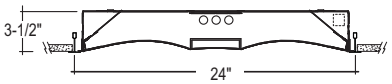
ELECTRICAL T5, T5HO: Program start 120/277 volt integral electronic ballast with less than 10% THD. Standard 55W Biax: Program start 120/277 volt integral electronic ballast with less than 15% THD. Standard 40W Biax: Instant start 120/277 volt electronic ballast with less than 10% THD. T8: Instant start 120/277V electronic ballast with less than 10% THD. Standard single circuit. Each ballast provided with disconnects to meet luminaire disconnect code requirement.

MOUNTING Converj is designed to install flush into acoustical grid and inaccessible ceilings. Specify G1, G9 or GS for acoustical grid ceiling. Specify FL for inaccessible ceilings. Consult factory for detailed installation instructions.

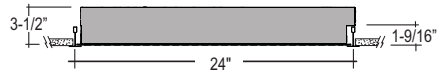
FINISH Powder-coat white painted finish on exposed trim.

LABELS UL and cUL Listed, approved for dry/damp location unless otherwise noted.

QuickShip

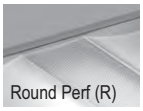


Side View




Satine Lens (A)

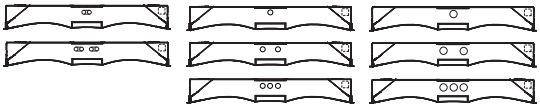

Baffle (B)


Round Perf (R)


Linear Slot (L)

Lamp Options

1 and 2 lamp Biax | 1, 2, 3 T5 / T5HO | 1, 2, 3 T8



LUMINAIRE SPECIFICATION

Sample Catalog #: CJ22A-2T5HO-G1-120-1C-W

CJ22_- _____**-** __**-** ___**-** __**-** **W-** ___

HOUSING	LAMPS	MOUNTING	VOLTAGE	CIRCUIT/WIRING[9]	FINISH	OPTIONS
CJ22A- Converj 2X2 Recessed with Satine Lens	**1BX40-** (1) 40W Biax **2BX40-** (2) 40W Biax	**Acoustical Grid Ceiling** **G1-** 1" Ceiling Grid	**120-** 120V **277-** 277V	**1C-** Single Circuit, Normal	**W-** White	**QS-** Quick Ship[5]
CJ22R- Converj 2X2 Recessed with Round Perf	**1BX55-** (1) 55W Biax **2BX55-** (2) 55W Biax	**G9-** 9/16" Ceiling Grid	**347-** 347V[1]	**2C-** Dual Circuit, Normal[3]		**TW-** Through-Wired[6]
CJ22L- Converj 2X2 Recessed with Linear Slot	**1T5-** (1) 14W T5 **2T5-** (2) 14W T5 **3T5-** (3) 14W T5	**GS-** Screw Slot Ceiling Grid	**UNV-** UNV[2] (120/277)	**1D-** Single Circuit Dimming[3,9] **2D-** Dual Circuit Dimming[3,9]		**SW-** Step Switching (T5, T8)[9]
CJ22B- Converj 2X2 Recessed with Baffle	**1T5HO-** (1) 24W T5HO **2T5HO-** (2) 24W T5HO **3T5HO-** (3) 24W T5HO	**Inaccessible Ceiling** **FL-** Standard Flange (Separate drywall kit)		**1E-** Single Circuit with Emergency Circuit[4,9] **1B-** Single Circuit with Battery Pack[4,8,9]		**DSM-** Integral Daylight Sensor Master - Sensor Included (T5, BX, T8)[7] **DSS-** Integral Daylight Sensor Satellite - Sensor Not Included (T5, BX, T8)[7] **GLR-** Internal Fast-Blow Fuse **AR-** Air Return **CP-** Chicago Plenum **FW6-** 6', 18-gauge, Flex Whip **FW12-** 12', 18-gauge, Flex Whip **AM-** Antimicrobial Paint **SI-** Seismic Clips
	1T8- (1) 17W T8 **2T8-** (2) 17W T8 **3T8-** (3) 17W T8					

[1] Consult factory for 347 volt ballast.

[2] Not available for use with a battery pack.

[3] Dual circuit available for 2 (side-by-side) and 3 (inboard/outboard) lamp configurations.

[4] Emergency circuit or battery pack to be on center lamp with 3 lamp configurations.

[5] Quick Ship includes T5, T5HO, T8 and Biax, Universal voltage, white finish, Chicago Plenum, single and dual circuit. Consult factory for dimming, battery packs and sensors.

[6] Individual fixtures are through-wired for continuous pattern. Fixtures cannot be joined.

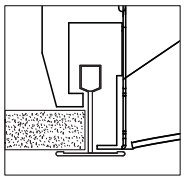
[7] See back page for ordering information. Requires 0-10 volt dimming.

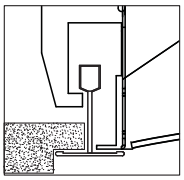
[8] Battery Pack must be remote mounted with 3T5 and 3T5HO.

[9] Some Converj configurations will not accommodate all options. Consult factory.

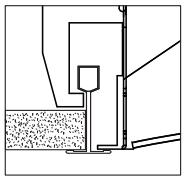
MOUNTING DETAIL

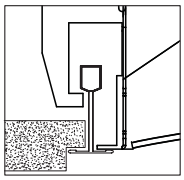
G1 (1"Ceiling Grid) Mounting Options


1" Grid with Standard Tile

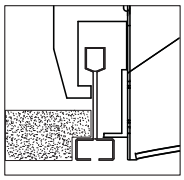

1" Grid with Tegular Tile

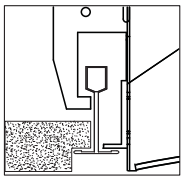
G9 (9/16"Ceiling Grid) Mounting Options


9/16" Grid with Standard Tile


9/16" Grid with Tegular Tile

GS (Screw Slot Grid) Mounting Options


Screw Slot Grid


9/16" Grid with Tegular Tile
(fixture flush with tile)

PINNACLE ARCHITECTURAL LIGHTING® 12655 East 42nd Avenue, Suite 50 Denver, Colorado 80239 **Ph** 303.322.5570 **Fax** 303.322.5568 www.pinnacle-ltg.com

September 2010

	Job Name:	Catalog Number:	Type:
	King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	CJ24A-2T5-G1-UNV-1D-W Notes:	R2

PINNACLE ARCHITECTURAL LIGHTING™

CONVERJ 2X4

T5, T5HO, T8 ARCHITECTURAL RECESSED LUMINAIRE

US Patent Pending

CONSTRUCTION Formed 20 gauge cold rolled steel housing. Highly reflective die-formed white painted reflector. Wiring access available on both side and top of housing.

OPTICS Unique twin-arched wings and articulated center spine utilize a proprietary layered lens creating a fully luminous housing with optimal glare control. High reflective white reflectors maintain uniform lens brightness.

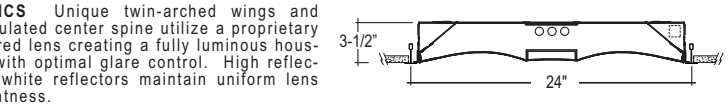
ELECTRICAL T5, T5HO: Program start 120/277 volt integral electronic ballast with less than 10% THD. T8: Instant start 120/277V electronic ballast with less than 10% THD. Standard single circuit. Each ballast provided with disconnects to meet luminaire disconnect code requirement.

MOUNTING Converj is designed to install flush into acoustical grid and inaccessible ceilings. Specify G1, G9 or GS for acoustical grid ceiling. Specify FL for inaccessible ceilings. Consult factory for detailed installation instructions.

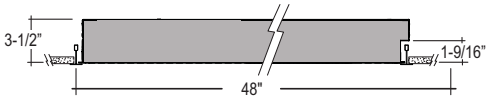
FINISH Powder-coat white painted finish on exposed trim.

LABELS UL and cUL Listed, approved for dry/damp location unless otherwise noted.

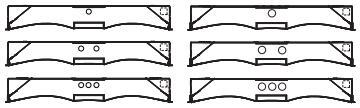
QuickShip

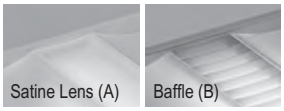


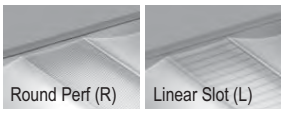
Side View



Lamp Options







LUMINAIRE SPECIFICATION

Sample Catalog #: CJ24A-2T5HO-G1-120-1C-W

CJ24_- _____- __- ___- __- **W-** ___

HOUSING	LAMPS	MOUNTING	VOLTAGE	CIRCUIT/WIRING[8]	FINISH	OPTIONS
CJ24A- Converj 2X4 Recessed with Satine Lens	**1T5-** (1) 28W T5	**Acoustical Grid Ceiling**	**120-** 120V	**1C-** Single Circuit, Normal	**W-** White	**QS-** Quick Ship[5]
CJ24R- Converj 2X4 Recessed with Round Perf	**2T5-** (2) 28W T5	**G1-** 1" Ceiling Grid	**277-** 277V	**2C-** Dual Circuit, Normal[3]		**TW-** Through-Wired[6]
CJ24L- Converj 2X4 Recessed with Linear Slot	**3T5-** (3) 28W T5	**G9-** 9/16" Ceiling Grid	**347-** 347V[1]	**1D-** Single Circuit Dimming[8]		**SW-** Step Switching (T5, T5HO, T8)[8]
CJ24B- Converj 2X4 Recessed with Baffle	**1T5HO-** (1) 54W T5HO	**GS-** Screw Slot Ceiling Grid	**UNV-** UNV[2] (120/277)	**2D-** Dual Circuit Dimming[3,8]		**DSM-** Integral Daylight Sensor Master - Sensor Included (T5, T5HO, T8)[7]
	2T5HO- (2) 54W T5HO	**Inaccessible Ceiling**		**1E-** Single Circuit with Emergency Circuit[4,8]		**DSS-** Integral` Daylight Sensor Satellite - Sensor Not Included (T5, T5HO, T8)[7]
	3T5HO- (3) 54W T5HO	**FL-** Standard Flange (Separate drywall kit)		**1B-** Single Circuit with Battery Pack[4,8]		**GLR-** Internal Fast-Blow Fuse
	1T8- (1) 32W T8					**AR-** Air Return
	2T8- (2) 32W T8					**CP-** Chicago Plenum
	3T8- (3) 32W T8					**FW6-** 6', 18-gauge, Flex Whip
						FW12- 12', 18-gauge, Flex Whip
						AM- Antimicrobial Paint
						SI- Seismic Clips

[1] Consult factory for 347 volt ballast.

[2] Not available for use with a battery pack.

[3] Dual circuit available for 2 (side-by-side) and 3 (inboard/outboard) lamp configurations.

[4] Emergency circuit or battery pack to be on center lamp with 3 lamp configurations.

[5] Quick Ship includes T5, T5HO, T8, Universal voltage, white finish, Chicago Plenum, single and dual circuit. Consult factory for dimming, battery packs and sensors.

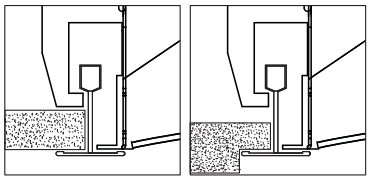
[6] Individual fixtures are through-wired for continuous pattern. Fixtures cannot be joined.

[7] See back page for ordering information. Requires 0-10 volt dimming.

[8] Some Converj configurations will not accommodate all options. Consult factory.

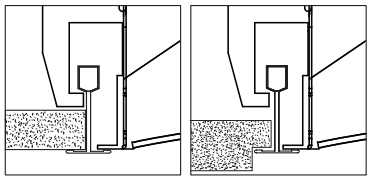
MOUNTING DETAIL

G1 (1"Ceiling Grid) Mounting Options



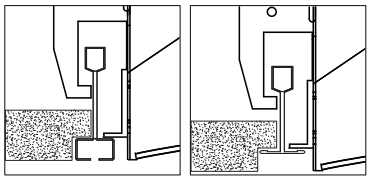
1" Grid with Standard Tile | 1" Grid with Tegular Tile

G9 (9/16"Ceiling Grid) Mounting Options



9/16" Grid with Standard Tile | 9/16" Grid with Tegular Tile

GS (Screw Slot Grid) Mounting Options



Screw Slot Grid | 9/16" Grid with Tegular Tile (fixture flush with tile)

PINNACLE ARCHITECTURAL LIGHTING® 12655 East 42nd Avenue, Suite 50 Denver, Colorado 80239 **Ph** 303.322.5570 **Fax** 303.322.5568 www.pinnacle-ltg.com

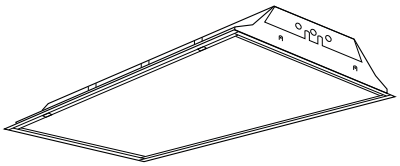
	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ST824-228G-FAA12125-EPU-F5835 Notes:

Type: **R3**

Columbia LIGHTING

ST824-2, ST824-3

2' × 4' Shallow Specification Troffer / 2 or 3-Lamp T5, T5HO, T8



PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

FEATURES

- Optical performance designed for T8 and T5 lamp technology
- 2⅛" minimum spacing from bottom of lamp to bottom of lens
- Mechanical light seal
- Mitered corners on door present a clean uninterrupted appearance
- Spring loaded latches optional
- Rolled fixture edges reduce risk of injury during fixture handling and installation
- Integral T-Bar clips quickly secure fixture to grid system without the need for time consuming loose parts
- Snap-on ballast covers can be removed with lamps installed
- Corner hinging for easy insertion and removal of door frame from either side
- Optional flush or regressed aluminum shielding frames available with positive action or spring loaded latches
- Housing ends secured by unique corner interlock and screws

HOUSING
Heavy gauge steel. Die formed for extra rigidity. Grid housings are designed for installation in standard 15/16" T-Bar ceilings. Integral T-Bar clips are located in the end of the housing. Flanged housings for hard ceilings feature overlap flange trim and wing hangers.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P," thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH
All parts are pre-painted with high gloss baked white enamel, minimum reflectance 86%, applied over iron phosphate pretreatment for maximum adhesion and resistance.

SHIELDING
100% clear prismatic acrylic, extruded and roll-embossed, diagonally oriented female prisms, unless otherwise specified.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE ST824-232G-FSA12-EU-F0735-C388

ST8 24 – – – – –

MODEL
- **ST8** Shallow Specification Troffer

SIZE
- **24** 2' × 4'

NO. OF LAMPS
- **2** Two
- **3** Three

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO: 54 or 51 Watt

CEILING TYPE
- **G** Inverted T-Bar (Std.)
- **F** Overlap Flange (4½" overall fixture height)

DOOR STYLE
- **FS** Flush Steel
- **FA** Flush Aluminum
- **RA** Regressed Aluminum
- **PS** Premium Steel

SHIELDING
- **A12** Pattern 12 Acrylic 0.100" Nominal (Standard)
- **A12.125** Pattern 12 Acrylic 0.125" Nominal
- **A19** Pattern 19 Acrylic 0.15" Male Prism
- **PC1** Silver Parabolic Louver ½" × ½" × ½"
- **PC2** Silver Parabolic Louver 1½" × ½" × 1"

For more shielding see Options and Accessories.

BALLAST
- **E** Electronic T8, Instant Start
- **ELW** 2-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **3E** 3-Lamp Electronic T8, Instant Start
- **3ELW** 3-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **EP** Electronic T5HO or T8, Programmed Start
- **3EP** 3-Lamp Electronic T5HO or T8, Programmed Start

For specific ballast vendor, show as option.

VOLTAGE
- **U** 120V-277V
- **347** 347V

OPTIONS
- **F0730** T8, 70CRI, 3000K Lamps, Furnished/Installed
- **F0735** T8, 70CRI, 3500K Lamps, Furnished/Installed
- **F0741** T8, 70CRI, 4100K Lamps, Furnished/Installed
- **GLR** Fast Blow Fuse
- **EL** Emergency Battery Pack
- **PAF** Paint After Fabrication
- **SLL** Spring Loaded Latches
- **MS9** Master/Satellite Pair w/9' Harness
- **C388** ⅜" Flex with 3 No. 18 Wires
- **C384** ⅜" Flex with 3 No. 14 Wires
- **C488** ⅜" Flex with 4 No. 18 Wires
- **C424** ½" Flex with 4 No. 14 Wires
- **M4R** Miro®-4 Aluminum Reflector
- **SAR** Low Iridescent Specular Alum Reflector
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label

F5835 - T5 82CRI, 3500K Lamps

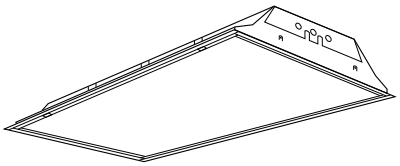
	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ST824-328G-FAA12125-EPU-F5835 Notes:

Type: **R4**

Columbia LIGHTING

ST824-2, ST824-3

2' × 4' Shallow Specification Troffer / 2 or 3-Lamp T5, T5HO, T8



PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

FEATURES

- Optical performance designed for T8 and T5 lamp technology
- 2⅛" minimum spacing from bottom of lamp to bottom of lens
- Mechanical light seal
- Mitered corners on door present a clean uninterrupted appearance
- Spring loaded latches optional
- Rolled fixture edges reduce risk of injury during fixture handling and installation
- Integral T-Bar clips quickly secure fixture to grid system without the need for time consuming loose parts
- Snap-on ballast covers can be removed with lamps installed
- Corner hinging for easy insertion and removal of door frame from either side
- Optional flush or regressed aluminum shielding frames available with positive action or spring loaded latches
- Housing ends secured by unique corner interlock and screws

HOUSING
Heavy gauge steel. Die formed for extra rigidity. Grid housings are designed for installation in standard 1⅝" T-Bar ceilings. Integral T-Bar clips are located in the end of the housing. Flanged housings for hard ceilings feature overlap flange trim and wing hangers.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P," thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH
All parts are pre-painted with high gloss baked white enamel, minimum reflectance 86%, applied over iron phosphate pretreatment for maximum adhesion and resistance.

SHIELDING
100% clear prismatic acrylic, extruded and roll-embossed, diagonally oriented female prisms, unless otherwise specified.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE **ST824-232G-FSA12-EU-F0735-C388**

ST8 24 – – – – –

MODEL
- **ST8** Shallow Specification Troffer

SIZE
- **24** 2' × 4'

NO. OF LAMPS
- **2** Two
- **3** Three

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO: 54 or 51 Watt

CEILING TYPE
- **G** Inverted T-Bar (Std.)
- **F** Overlap Flange (4½" overall fixture height)

DOOR STYLE
- **FS** Flush Steel
- **FA** Flush Aluminum
- **RA** Regressed Aluminum
- **PS** Premium Steel

SHIELDING
- **A12** Pattern 12 Acrylic 0.100" Nominal (Standard)
- **A12.125** Pattern 12 Acrylic 0.125" Nominal
- **A19** Pattern 19 Acrylic 0.15" Male Prism
- **PC1** Silver Parabolic Louver ½" × ½" × ½"
- **PC2** Silver Parabolic Louver 1½" × ½" × 1"

For more shielding see Options and Accessories.

BALLAST
- **E** Electronic T8, Instant Start
- **ELW** 2-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **3E** 3-Lamp Electronic T8, Instant Start
- **3ELW** 3-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **EP** Electronic T5HO or T8, Programmed Start
- **3EP** 3-Lamp Electronic T5HO or T8, Programmed Start

For specific ballast vendor, show as option.

VOLTAGE
- **U** 120V-277V
- **347** 347V

OPTIONS
- **F0730** T8, 70CRI, 3000K Lamps, Furnished/Installed
- **F0735** T8, 70CRI, 3500K Lamps, Furnished/Installed
- **F0741** T8, 70CRI, 4100K Lamps, Furnished/Installed
- **GLR** Fast Blow Fuse
- **EL** Emergency Battery Pack
- **PAF** Paint After Fabrication
- **SLL** Spring Loaded Latches
- **MS9** Master/Satellite Pair w/9' Harness
- **C388** ⅜" Flex with 3 No. 18 Wires
- **C384** ⅜" Flex with 3 No. 14 Wires
- **C488** ⅜" Flex with 4 No. 18 Wires
- **C424** ½" Flex with 4 No. 14 Wires
- **M4R** Miro®-4 Aluminum Reflector
- **SAR** Low Iridescent Specular Alum Reflector
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label

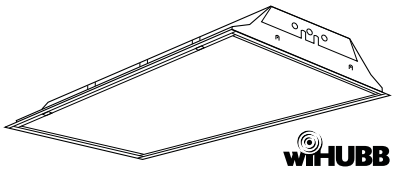
F5835 - T5 82CRI, 3500K Lamps

	Job Name:	Catalog Number:	Type:
	King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	ST824-428G-FAA12.125-EPU-F5835 Notes:	R5

Columbia LIGHTING

ST824-4

2' × 4' Shallow Specification Troffer / 4-Lamp T5, T5HO, T8



PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

FEATURES

- Optical performance designed for T8 and T5 lamp technology
- 2⅛" minimum spacing from bottom of lamp to bottom of lens
- Mechanical light seal
- Mitered corners on door present a clean uninterrupted appearance
- Spring loaded latches optional
- Rolled fixture edges reduce risk of injury during fixture handling and installation
- Integral T-Bar clips quickly to secure fixture to grid system without the need for time-consuming loose parts
- Snap-in ballast covers can be removed with lamps installed
- Corner hinging for easy insertion and removal of door frame from either side
- Optional flush or regressed aluminum shielding frames available with positive action or spring loaded latches
- Housing ends secured by unique corner interlock and screws
- Available with exclusive wiHUBB technology preinstalled
  - Peer to peer, self-healing wireless mesh network
  - Integrated control system for 0-10VDC or step dimming, or On/Off

HOUSING
Heavy gauge steel. Die formed for extra rigidity. Grid housings are designed for installation in standard 1⅝" T-Bar ceilings. Integral T-Bar clips are located at the end of the housing. Flanged housings for hard ceilings feature overlap flange trim and wing hangers.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P," thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH
All parts pre-painted with high gloss baked white enamel, minimum reflectance 86%, applied over iron phosphate pretreatment for maximum adhesion and rust resistance.

SHIELDING
100% clear prismatic acrylic, extruded and roll-embossed, diagonally oriented female prisms, unless otherwise specified.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE ST824-432G-FSA12-4EU-F0741-C388

ST8 24 – – – – –

MODEL
- **ST8** Shallow Specification Troffer

SIZE
- **24** 2' × 4'

NO. OF LAMPS
- **4** Four
- **6** Six

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO: 54 or 51 Watt

CEILING TYPE
- **G** Inverted T-Bar
- **F** Overlap Flange

DOOR STYLE
- **FS** Flush Steel
- **FA** Flush Aluminum
- **RA** Regressed Aluminum
- **PS** Premium Steel

SHIELDING
- **A12** Pattern 12 Acrylic 0.100" Nominal (Std.)
- **A12.125** Pattern 12 Acrylic 0.125" Nominal
- **A19** Pattern 19 Acrylic 0.15" Male Prism
- **PC1** Silver Parabolic Louver ½" × ½" × ½"
- **PC2** Silver Parabolic Louver 1½" × 1½" × 1"

For complete list of lenses and louvers, see Options and Accessories.

BALLAST
- **E** Electronic T8, Instant Start
- **ELW** 2-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **4E** 4-Lamp Electronic T8, Instant Start
- **4ELW** 4-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **EP** Electronic T5 or T8, Programmed Start
- **4EP** 4-Lamp Electronic T5HO (N/A 347V) or T8, Programmed Start

For specific ballast vendor, show as option.

VOLTAGE
- **U** 120V-277V
- **347** 347V

OPTIONS
- **F0730** T8, 70CRI, 3000K Lamps, Furn/Inst.
- **F0735** T8, 70CRI, 3500K Lamps, Furn/Inst.
- **F0741** T8, 70CRI, 4100K Lamps, Furn/Inst.
- **GLR** Fast Blow Fuse
- **EL** Emergency Battery Pack
- **PAF** Paint After Fabrication
- **SLL** Spring Loaded Latches
- **C388** ⅜" Flex with 3 No. 18 Wires
- **C384** ⅜" Flex with 3 No. 14 Wires
- **C488** ⅜" Flex with 4 No. 18 Wires
- **C424** ½" Flex with 4 No. 14 Wires
- **M4R** Miro®-4 Aluminum Reflector
- **SAR** Low Iridescent Specular Alum Reflector
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label
- **WIH** wiHUBB Enabled [1]

For a complete set of options, see Options and Accessories.

F5835 - T5 82CRI, 3500K Lamps

[1] Not available with Surface Mount Ceiling Types.

Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ML-F-1-2X4-4/T5HO-UNV-2/CIR-ANTI MICROBIAL FINISH Notes:	**Type:** R7

Qualifying ASHRAE 90.1 2007 9.2.2.3 (c) exemption

Med Lock Series

ML04

2x2 and 2x4 Recessed Flanged Luminaires for Surgical Suites
For Use in Continuous Row, Rectangle and Individual Layouts

Specifications:

Housing: Lapped and spot welded 20-gauge zinc coated CRS construction. All seams of hole-free housing silicone sealed.

Door Frame: 20-gauge CRS or stainless steel channel door frame hinged to housing with continuous stainless steel piano hinge. Secured with 2 captive stainless steel fasteners.

Gaskets: Neoprene, 100% pure, closed cell located at interface of door to housing and door to lens. See Option "GG" for SealPro™ NSF Listed closed cell gasketing.

Reflector: Full reflector panel designed to enhance asymmetric distribution. White powder coat finished (minimum reflectivity 88%).

Lens: One piece symmetric/asymmetric acrylic lens gasketed (closed cell 100% pure neoprene) in channel door frame. RFI shielded lens (.375" metallic silver grid) complies with radiated emissions (RE101) of Military Standard 461F. Consult factory for other lens options.

Lamps: See lamp options listed below. Lamps supplied by others.

Electrical: Standard ballasts - Electronic, less than 10% THD high performance instant start universal voltage (120-277 volt). See options for other choices. Each fixture is standard with one RFI line suppressor. Tested to surpass conducted emissions (CE102) of Mil. Std. 461F See Options for additional selections for ballasts and suppressor circuits.

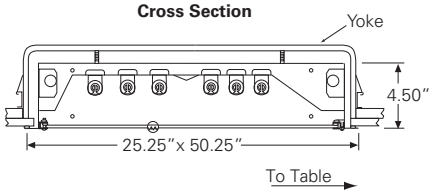
Finish: White DuPont Alesta™ using Agion® silver ion antimicrobial powder coat finish standard. See option SSP for satin polished stainless steel doors.

Installation: Yoke mounting standard. Flanges of adjoining fixtures are factory removed to facilitate the installation in continuous rows mounting (CRM) without overlapping flanges. Four .875" flattened and silicone sealed knockouts for wiring.

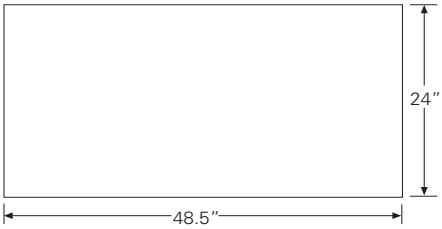
Listings: UL and CUL Listed for Wet Location. IBEW Label. EMC tested and labeled for Mil-Std 461F.

Project: _____
Fixture Type: _____

Cross Section



Ceiling Cutout



Ordering Information:

ML - F - - - - -

Series	Installation Type	Material	Size	Lamps	Voltage	Options
ML	*F* = Flange	*1* = CRS Hsg. & CRS Door *2* = CRS Hsg. & SS Door			*120V* *277V* *347V* *UNV*	*FF* = Fuse & Holder *FD* = Two Fuses & Holders *FT* = Three Fuses & Holders *ESB* = Magnetic Ballast (T8 32W only) *EBPRS*= Program Rapid Start Ballast *DIM* = Electronic Dimming Ballast** *1/EM* = One Lamp Emergency Ballast (700 L) *2/EM* = Two Lamp Emergency Ballast (1300 L) *E/EM*= Two Lamp Emergency Ballast (3000L)† *2/CIR*= Two RFI Protected Switched Circuits *3/CIR*= Three RFI Protected Switched Circuits *GG* = NSF listed SealPro™ Gasket *SSP*= Satin Polished Stainless Steel Door *P12/RFI*= Prismatic P12 Acrylic w/RFI Grid *PF*= Plaster frame (For wet plaster ceilings) *GL2*= Two Green 550nm T8 lamps
2x2 = 2'x2' Housing				*2, 3, 4 or 6/T8* = F17T8 17W T8 (G13) *1 or 2/T8U6* = F32T8/U/6 (6" U-Lamp, G13) *2 or 3/T8U1* = F31T8/U (1.625" U-Lamp, G13) *2, 3 or 4/BX* = 40-Watt Biax (2G11) *2, 3, 4 or 6/T5HO* = F24WT5 24W T5HO (G5)		
2x4 = 2'x4' Housing				*2, 3, 4 or 6/T8* = F32T8 32W T8 (G13) *2, 3, 4 or 6/T5* = F28WT5 28W T5 (G5) *2, 3, 4 or 6/T5HO* = F54WT5 54W T5HO (G5)		

Many installations of these fixtures are in continuous rows. The ML series is unique in that it is designed to be used in this manner though it is standard as an individual fixture. Kurtzon provides a layout guide to facilitate the planning and installation of CRM option fixtures.
See facing page.

**Dimming ballasts are 0-10vdc type by manufacturer of our choice unless specified. Use DIM/(Model Name) to specify a certain dimming system.

†Externally Mounted Emergency ballast is secured to top of fixture housing.

ANTI MICROBIAL FINISH

Standard

WET LOCATION · IP 64 IEC 60529 · Powder Coated AGION™ Finish · EMC MIL-STD-461F · QUICK SHIP · 134 UNION IBEW

Made In The USA

Morris Kurtzon, Incorporated
1420 South Talman Avenue, Chicago, Illinois 60608
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Website - www.kurtzon.com

Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ML-F-1-1X4-2/T5HO-UNV-2/CIR-ANTI MICROBIAL FINISH Notes:	**Type:** R8

Qualifying ASHRAE 90.1 2007 9.2.2.3(c) exemption

Med Lock Series

ML44

1x4 Recessed Flanged Luminaires for Surgical Suites
For Use in Continuous Row, Rectangle and Individual Layouts

Project: _____
Fixture Type: _____

Specifications:

Housing: Lapped and spot welded 20-gauge zinc coated CRS, Aluminum (AL) or stainless steel (SS) construction. All seams of hole-free housing silicone sealed.

Door Frame: 20-gauge CRS, Aluminum or stainless steel channel door frame hinged to housing with continuous stainless steel piano hinge. Secured with 2 captive stainless steel fasteners.

Gaskets: Neoprene, 100% pure, closed cell located at interface of door to housing and door to lens. See Option "GG" for SealPro™ NSF Listed closed cell gasketing.

Reflector: Reflector panel designed to enhance asymmetric distribution. White powder coat finished (minimum reflectivity 88%).

Lens: One piece symmetric/asymmetric acrylic lens gasketed (closed cell 100% pure neoprene) in channel door frame. RFI shielded lens (.375" metallic silver grid) complies with radiated emissions (RE101) of Military Standard 461F. Consult factory for other lens options.

Lamps: See lamp options listed below. Lamps supplied by others.

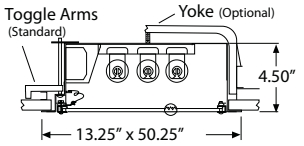
Electrical: Standard ballasts - Electronic, less than 10% THD high performance instant start universal voltage (120-277 volt). See options for other choices. Each fixture is standard with one RFI line suppressor. Tested to surpass conducted emissions (CE102) of Mil. Std. 461F See Options for additional selections for ballasts and suppressor circuits.

Finish: White DuPont Alesta™ using Agion® silver ion antimicrobial powder coat finish standard. See option SSP for satin polished stainless steel doors.

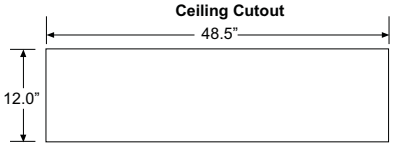
Installation: Yoke mounting standard. Flanges of adjoining fixtures are factory removed to facilitate the installation in continuous rows mounting (CRM) without overlapping flanges. Four .875" flattened and silicone sealed knockouts for wiring.

Listings: UL and CUL Listed for Wet Location. Union IBEW Label. EMC tested and labeled for Mil-Std 461F.

Cross Section



Ceiling Cutout



Ordering Information:

ML - F - - - - -

Series	Installation Type	Material	Size	Lamps	Voltage	Options
ML	*F* = Flange	*1* = CRS Hsg. & CRS Door *2* = CRS Hsg. & SS Door *3* = SS Hsg. & SS Door *4* = AL Hsg. & SS Door *5* = AL Hsg. & AL Door *6* = CRS Hsg. & AL Door	*1x4* = 1'x4' Housing	*1, 2, 3 or 4/T8* = F32T8 32W T8 (G13) *1, 2 or 3/T5* = F28WT5 28W T5 (G5) *1, 2 or 3/T5HO* = F54WT5 54W T5HO (G5)	*120V* *277V* *347V* *UNV*	*FF* = Fuse & Holder *FD* = Two Fuses & Holders *FT* = Three Fuses & Holders *ESB* = Magnetic Ballast (T8 32W only) *EBPRS* = Program Rapid Start Ballast *DIM* = Electronic Dimming Ballast** *1/EM* = One Lamp Emergency Ballast (700 L) *2/EM* = Two Lamp Emergency Ballast (1300 L) *E/EM* = Two Lamp Emergency Ballast (3000L)† *2/CIR* = Two RFI Protected Switched Circuits *3/CIR* = Three RFI Protected Switched Circuits *GG* = NSF listed SealPro™ Gasket *SSP* = Satin Polished Stainless Steel Door *P12/RFI* = Prismatic P12 Acrylic w/RFI Grid *PF* = Plaster frame (For wet plaster ceilings) *GL2* = Two Green 550nm T8 lamps

Many installations of these fixtures are in continuous rows. The ML series is unique in that it is designed to be used in this manner though it is standard as an individual fixture. Kurtzon provides a layout guide to facilitate the planning and installation of CRM option fixtures.
See facing page.

**Dimming ballasts are 0-10vdc type by manufacturer of our choice unless specified. Use DIM/(Model Name) to specify a certain dimming system.

†Externally Mounted Emergency ballast is secured to top of fixture housing.

ANTI MICROBIAL FINISH

Standard

WET LOCATION | IP 64 IEC 60529 | Powder Coated AGION™ Finish | EMC MIL-STD-461F | 134 UNION IBEW

Morris Kurtzon, Incorporated
1420 South Talman Avenue, Chicago, Illinois 60608
773/277-2121 FAX 773/277-9164
Website - www.kurtzon.com

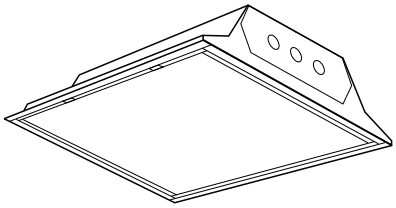
	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** ST822-224G-FAA12.125-EPU-F5835 Notes:

Type: **R10**

Columbia LIGHTING

ST822

2' × 2' Shallow Specification Troffer / 2, 3, or 4-Lamp T8, TT, U-Bent



PROJECT INFORMATION

Project Name

Catalog No.

Type

Date

FEATURES

- Optical performance designed for T8 lamp technology
- 2½" minimum spacing from bottom of lamp to bottom of lens
- Mechanical light seal
- Mitered corners on door present a clean uninterrupted appearance
- Spring loaded latches optional
- Rolled fixture edges reduce risk of injury during fixture handling and installation
- Snap-in ballast covers can be removed when lamps are installed
- Corner hinging for easy insertion and removal of door frame from either side
- Optional flush or regressed aluminum shielding frames available with positive action or spring loaded latches
- Housing ends secured by unique corner interlock and screws

HOUSING
Heavy gauge steel. Die formed for extra rigidity. Grid housings are designed for installation in standard 15/16" T-Bar ceilings. T-Bar clips are available as an option. Flanged housings for hard ceilings feature overlap flange trim and wing hangers.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, unless otherwise specified. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P," thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH
All parts are pre-painted with high gloss baked white enamel, minimum reflectance 86%, applied over iron phosphate pretreatment for maximum adhesion and rust resistance.

SHIELDING
100% clear prismatic acrylic, extruded and roll-embossed, diagonally oriented female prisms, unless otherwise specified.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE **ST822-232U6G-FSA12-EU-EL**

ST8 22 – – – – –

MODEL
- **ST8** Shallow Specification Troffer

NO. OF LAMPS
- **2** Two
- **3** Three
- **4** Four

CEILING TYPE
- **G** Inverted T-Bar
- **F** Overlap Flange

SHIELDING
- **A12** Pattern 12 Acrylic 0.100" Nominal (Standard)
- **A12.125** Pattern 12 Acrylic 0.125" Nominal
- **A19** Pattern 19 Acrylic 0.15" Male Prism
- **PC1** Silver Parabolic Louver ½" × ½" × ½"
- **PC2** Silver Parabolic Louver 1½" × ½" × 1"

For complete list of lenses and louvers, see Options and Accessories.

VOLTAGE
- **U** 120V-277V
- **347** 347V

OPTIONS
- **F0830U1** T8 U Lamps, 1⅝" Leg Spacing, 80CRI, 3000K, Furnished/Installed
- **F0835U1** T8 U Lamps, 1⅝" Leg Spacing, 80CRI, 3500K, Furnished/Installed
- **F0841U6** T8 U Lamps, 6" Leg Spacing, 80CRI, 4100K, Furnished/Installed
- **F0730U6** T8 U Lamps, 6" Leg Spacing, 70CRI, 3000K, Furnished/Installed
- **F0735U6** T8 U Lamps, 6" Leg Spacing, 70CRI, 3500K, Furnished/Installed
- **F0741U6** T8 U Lamps, 6" Leg Spacing, 70CRI, 34100K, Furnished/Installed
- **GLR** Fast Blow Fuse
- **EL** Emergency Battery Pack*
- **PAF** Paint After Fabrication
- **SLL** Spring Loaded Latches
- **C388** ⅜" Flex with 3 No. 18 Wires
- **C384** ⅜" Flex with 3 No. 14 Wires
- **C488** ⅜" Flex with 4 No. 18 Wires
- **C424** ½" Flex with 4 No. 14 Wires
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label

F5835 - T5 82CRI, 3500K Lamps

SIZE
- **22** 2' × 2'

LAMP TYPE
- **14** 2', T5; 14 Watt (2, 3, 4-Lamps)
- **17** 2', T8; 17 Watt (2, 3, 4-Lamps)
- **24** 2', T5HO; 24 Watt (2, 3-Lamps)
- **31U1** U-Bent, 1⅝" Leg Spacing T8: 31 Watt (2, 3-Lamps)
- **32U6** U-Bent, 6" Leg Spacing T8: 32 Watt (2 Lamps)
- **40TT** Twin Tube Compact Fluorescent: 40 Watt (2, 3-Lamps)

DOOR STYLE
- **FS** Flush Steel
- **FA** Flush Aluminum
- **RA** Regressed Aluminum
- **PS** Premium Steel

BALLAST
- **E** Electronic T8, Instant Start
- **EP** Electronic T5 or T8, Programmed Start
- **3E** 3-Lamp Electronic T8, Instant Start
- **3EP** 3-Lamp Electronic T5HO or T8, Programmed Start
- **ETT** Electronic Twin Tube, Instant Start (Specify Voltage)

For specific ballast vendor, show as option.

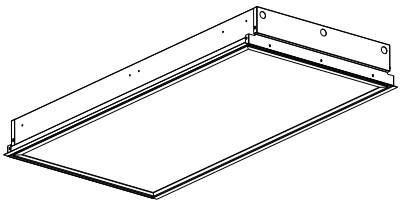
* 3-Lamp fixture utilizes 2 ballast compartments and can mount any standard battery pack. 2- and 4-Lamp fixtures can only mount one ballast and one 9" long or shorter battery pack. All other battery packs must be externally mounted.

	Job Name:	Catalog Number:	Type:
	King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	CRS24-328G-FAA12.125I-EPU-F5835 Notes:	R11

Columbia LIGHTING

CRS-4

1' × 4', 2' × 4' Cleanroom, Class 1 / 2, 3, 4, or 6-Lamp T5, T5HO, T8



FEATURES

- Class 1 Cleanroom certified for any application
- 1½" T-Bar standard, 1" or 2" optional
- Anodized extruded aluminum door frame
- One-piece, 18 gauge stainless or carbon steel doors available
- Meets Federal Standard No. 209E for Class 1 cleanrooms and ISO 14644-1 Class 6 cleanrooms

PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

CONSTRUCTION
Heavy duty channel is constructed of die-formed code gauge steel. All holes in housing are completely closed with silicone sealant. Both housing and door frame are sealed with gasketing. Full length steel ballast cover and socket plates completely enclose all wiring. Fixture is designed for installation into either 1½" wide face T-Bar used in clean rooms as standard with 1" or 2" T-Bar as option.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, unless otherwise specified. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P," thermally protected, auto-resetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH
Painted parts are treated with a five stage phosphate bonding process and finished with a high reflectance baked white enamel.

SHIELDING
Lens is constructed of acrylic material with many pattern and thicknesses available. The door frame is of anodized extruded aluminum material. Also, a one piece 18 gauge stainless steel or carbon steel door is available.

CERTIFICATION
Meets Federal Standard No. 209E for Class 1 cleanrooms and ISO 14644-1 Class 6 cleanrooms. All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard and Wet Location labeling is an option. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE **CRS24-332G-FCSA12125-3EU**

CRS – – – –

MODEL
- **CRS** Cleanroom, Class 1

NO. OF LAMPS IN CROSS SECTION
- **2** Two
- **3** Three
- **4** Four (2 × 4 only)
- **6** Six (2 × 4 only)

CEILING TYPE
- **G** Lay-in Inverted 1½" Grid
- **F** Flange with Wing Hangers
- **S** Surface Mount

DOORS
- **FA** Flush Aluminum
- **FCS** Flush One-Piece Carbon Steel Door[1]
- **FSS** Flush One-Piece Stainless Steel Door[1]

VOLTAGE
- **U** 120V–277V
- **347** 347V

OPTIONS
- **1T** 1" T-Bar
- **2T** 2" T-Bar
- **GLR** Fast Blow Fuse
- **RIF** Radio Interference Filter[3,4]
- **EL** Emergency Battery Pack
- **WL** Wet Location[5]
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label

SIZE
- **14** 1' × 4'
- **24** 2' × 4'

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO; 54 or 51 Watt (not available in 1' × 4' 3-Lamp)

LENS
- **A12** Pattern 12 Acrylic Lens
- **A12125** Pattern 12 Acrylic Lens, 0.125" Nominal
- **A12125M** Pattern 12 Acrylic Lens, 0.125" Minimum
- **A19** Pattern 19 Acrylic Lens, 0.156" Nominal
- **RF12125** Pattern 12 Acrylic Lens, Radio Frequency Suppressed, 0.125" Nominal[3]
- **SASRF** Surgical Symmetric/Asymmetric Configuration with RFI Grounding Overlay[3]

A12.125INV - Pattern 12 Acrylic .125" Thick Inverted

BALLAST[2]
- **E** Electronic T8, Instant Start
- **3E** 3-Lamp Electronic T8, Instant Start
- **4E** 4-Lamp Electronic T8, Instant Start
- **EP** Electronic T5 or T8, Programmed Start
- **3EP** 3-Lamp Electronic T5HO or T8, Programmed Start
- **4EP** 4-Lamp, Electronic T5 (N/A 347V) or T8, Programmed Start

[1] Not available for 1½" or 2" grid, RF12125 or SASRF lens.
[2] Ballasts may not be available in all combinations of lamp/voltage/starting temp/THD shown above. Contact your local Columbia Representative for more details.
[3] When using electronic ballasts, Radio Frequency Interference (RFI) cannot be blocked by an RFI filtering lens to the levels specified by MIL std 461. RFI reflected back onto the primary line by the ballast can be blocked by this RFI filter.
[4] One per ballast.
[5] Not available with emergency battery pack.

F5835 - T5 82CRI, 3500K Lamps

g

Job Name:
King's Daughters Medical Center - Alternate to Spec - Reddy Electric -

Catalog Number:
ST824-328G-FAA12125-EPU-F5835

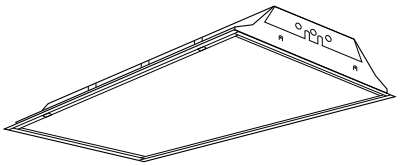
Notes:

Type:
R14

Columbia LIGHTING

ST824-2, ST824-3

2' × 4' Shallow Specification Troffer / 2 or 3-Lamp T5, T5HO, T8



PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

FEATURES

- Optical performance designed for T8 and T5 lamp technology
- 2⅛" minimum spacing from bottom of lamp to bottom of lens
- Mechanical light seal
- Mitered corners on door present a clean uninterrupted appearance
- Spring loaded latches optional
- Rolled fixture edges reduce risk of injury during fixture handling and installation
- Integral T-Bar clips quickly secure fixture to grid system without the need for time consuming loose parts
- Snap-on ballast covers can be removed with lamps installed
- Corner hinging for easy insertion and removal of door frame from either side
- Optional flush or regressed aluminum shielding frames available with positive action or spring loaded latches
- Housing ends secured by unique corner interlock and screws

HOUSING
Heavy gauge steel. Die formed for extra rigidity. Grid housings are designed for installation in standard 15/16" T-Bar ceilings. Integral T-Bar clips are located in the end of the housing. Flanged housings for hard ceilings feature overlap flange trim and wing hangers.

BALLASTS
Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, magnetic or electronic ballasts. CEE NEMA Premium compliant.

ELECTRICAL
Standard class "P," thermally protected, autoresetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH
All parts are pre-painted with high gloss baked white enamel, minimum reflectance 86%, applied over iron phosphate pretreatment for maximum adhesion and resistance.

SHIELDING
100% clear prismatic acrylic, extruded and roll-embossed, diagonally oriented female prisms, unless otherwise specified.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE **ST824-232G-FSA12-EU-F0735-C388**

ST8 24 – – – –

MODEL
- **ST8** Shallow Specification Troffer

NO. OF LAMPS
- **2** Two
- **3** Three

CEILING TYPE
- **G** Inverted T-Bar (Std.)
- **F** Overlap Flange (4½" overall fixture height)

SHIELDING
- **A12** Pattern 12 Acrylic 0.100" Nominal (Standard)
- **A12.125** Pattern 12 Acrylic 0.125" Nominal
- **A19** Pattern 19 Acrylic 0.15" Male Prism
- **PC1** Silver Parabolic Louver ½" × ½" × ½"
- **PC2** Silver Parabolic Louver 1½" × ½" × 1"

For more shielding see Options and Accessories.

VOLTAGE
- **U** 120V-277V
- **347** 347V

OPTIONS
- **F0730** T8, 70CRI, 3000K Lamps, Furnished/Installed
- **F0735** T8, 70CRI, 3500K Lamps, Furnished/Installed
- **F0741** T8, 70CRI, 4100K Lamps, Furnished/Installed
- **GLR** Fast Blow Fuse
- **EL** Emergency Battery Pack
- **PAF** Paint After Fabrication
- **SLL** Spring Loaded Latches
- **MS9** Master/Satellite Pair w/9' Harness
- **C388** ⅜" Flex with 3 No. 18 Wires
- **C384** ⅜" Flex with 3 No. 14 Wires
- **C488** ⅜" Flex with 4 No. 18 Wires
- **C424** ½" Flex with 4 No. 14 Wires
- **M4R** Miro®-4 Aluminum Reflector
- **SAR** Low Iridescent Specular Alum Reflector
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label

F5835 - T5 82CRI, 3500K Lamps

SIZE
- **24** 2' × 4'

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO: 54 or 51 Watt

DOOR STYLE
- **FS** Flush Steel
- **FA** Flush Aluminum
- **RA** Regressed Aluminum
- **PS** Premium Steel

BALLAST
- **E** Electronic T8, Instant Start
- **ELW** 2-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **3E** 3-Lamp Electronic T8, Instant Start
- **3ELW** 3-Lamp Electronic T8, 0.77 Ballast Factor, Low Wattage, Instant Start
- **EP** Electronic T5HO or T8, Programmed Start
- **3EP** 3-Lamp Electronic T5HO or T8, Programmed Start

For specific ballast vendor, show as option.

	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** MS2-2-54-46-E09-U / MSWG46WH Notes:
		Type: **S1**

MS SERIES
Mini Strip

PHOTOMETRIC DATA

Catalog Number: **MS25446-EO9B**
Lamps: Two F54T5HO Rated at 5000 Lumens each

Total Luminaire Efficiency: 92.7%

Coefficients of Utilization - Zonal Cavity Method
Effective Floor Reflectance 20%

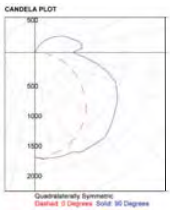
RC	80%				70%				50%			30%			10%			0%
RW	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0%
0	106	106	106	106	102	102	102	102	94	94	94	86	86	86	79	79	79	76
1	94	89	84	79	90	85	80	76	78	74	71	71	68	66	65	63	61	58
2	84	75	68	62	80	72	65	60	66	61	56	60	56	52	55	52	48	45
3	76	65	57	50	72	62	55	48	57	51	45	52	47	42	48	43	40	37
4	69	57	48	41	66	55	46	40	50	43	38	46	40	35	42	37	33	30
5	63	50	41	35	60	48	40	34	44	37	32	41	35	30	37	32	28	26
6	58	45	36	30	55	43	35	29	40	33	28	37	31	26	34	28	24	22
7	54	41	32	26	51	39	31	25	36	29	24	33	27	23	31	25	21	19
8	50	37	29	23	47	35	28	22	33	26	21	30	24	20	28	23	19	17
9	46	34	26	20	44	32	25	20	30	23	19	28	22	18	26	21	17	15
10	43	31	23	18	41	30	23	18	28	21	17	26	20	16	24	19	15	14

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	1456.3	14.6	15.7
0-40	2487.8	24.9	26.8
0-60	4868.6	48.7	52.5
60-90	2727.5	27.3	29.4
0-90	7596.1	76.0	82.0
90-180	1671.5	16.7	18.0
0-180	9267.6	92.7	100.0

Luminance in Candela Per Square Meter

Angle in Deg	Average 0 - Deg	Average 45 - Deg	Average 90 - Deg
0	19627	19627	19627
45	18207	15951	16330
55	17362	15227	15874
65	16591	14809	15781
75	15364	14360	14781
85	15233	10834	11472



ORDERING GUIDE

MS ☐ ☐ ☐ ☐ ☐ ☐ ☐

Series	No. Lamps	Lamp-Style	Length	Ballasts	Volts	Style
MS	1,2	14	22	EO	9	B
MS	1,2	24	22	EO	9	B
MS	1,2	21	34	EO	9	B
MS	1,2	39	34	EO	9	B
MS	1,2	28	46	EO	9	B
MS	1,2	54	46	EO	9	B
MS	1,2	35	58	EO	9	B
MS	1,2	80	58	EO	9	B

LAMPS:
14 - 14 Watt T5
21 - 21 Watt T5
24 - 24 Watt T5 HO
28 - 28 Watt T5
35 - 35 Watt T5
39 - 39 Watt T5 HO
54 - 54 Watt T5 HO
80 - 80 Watt T5 HO

BALLASTS:
EO - Electronic

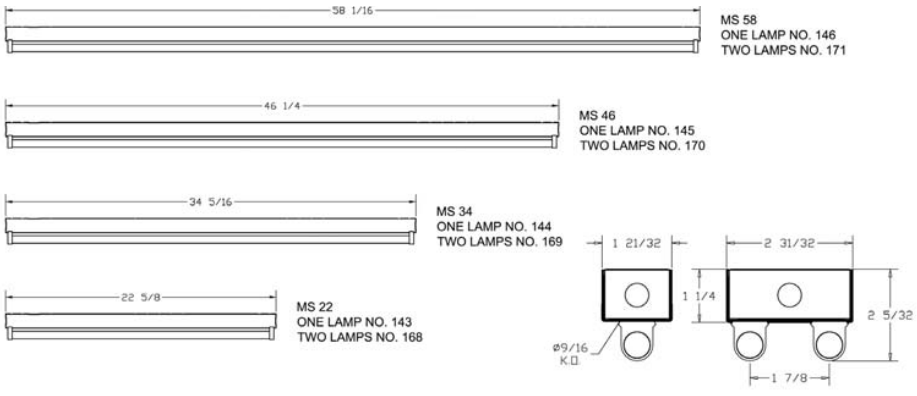
VOLTS:
9 - Universal Voltage

Packaging:
B - Basic
U - Unit

MSWG46WH - 14 GUAGE WHITE WIRE GUARD

DIMENSIONS

specifications and dimensional data subject to change without notice



Number shown indicates mounting / knockouts diagram - see Options & Accessories section of catalog.

	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** MS4-54-T4-C09-U (2) MSWG46WH Notes:

Type: **S2**

MS SERIES
Mini Strip

PHOTOMETRIC DATA

Catalog Number: **MS25446-EO9B**
Lamps: Two F54T5HO Rated at 5000 Lumens each

Total Luminaire Efficiency: 92.7%

Coefficients of Utilization - Zonal Cavity Method
Effective Floor Reflectance 20%

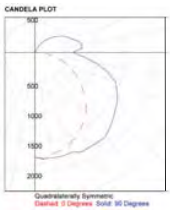
RC	80%				70%				50%			30%			10%			0%
RW	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0%
0	106	106	106	106	102	102	102	102	94	94	94	86	86	86	79	79	79	76
1	94	89	84	79	90	85	80	76	78	74	71	71	68	66	65	63	61	58
2	84	75	68	62	80	72	65	60	66	61	56	60	56	52	55	52	48	45
3	76	65	57	50	72	62	55	48	57	51	45	52	47	42	48	43	40	37
4	69	57	48	41	66	55	46	40	50	43	38	46	40	35	42	37	33	30
5	63	50	41	35	60	48	40	34	44	37	32	41	35	30	37	32	28	26
6	58	45	36	30	55	43	35	29	40	33	28	37	31	26	34	28	24	22
7	54	41	32	26	51	39	31	25	36	29	24	33	27	23	31	25	21	19
8	50	37	29	23	47	35	28	22	33	26	21	30	24	20	28	23	19	17
9	46	34	26	20	44	32	25	20	30	23	19	28	22	18	26	21	17	15
10	43	31	23	18	41	30	23	18	28	21	17	26	20	16	24	19	15	14

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixt
0-30	1456.3	14.6	15.7
0-40	2487.8	24.9	26.8
0-60	4868.6	48.7	52.5
60-90	2727.5	27.3	29.4
0-90	7596.1	76.0	82.0
90-180	1671.5	16.7	18.0
0-180	9267.6	92.7	100.0

Luminance in Candela Per Square Meter

Angle in Deg	Average 0 - Deg	Average 45 - Deg	Average 90 - Deg
0	19627	19627	19627
45	18207	15951	16330
55	17362	15227	15874
65	16591	14809	15781
75	15364	14360	14781
85	15233	10834	11472



ORDERING GUIDE

MS ☐ ☐ ☐ ☐ ☐ ☐ ☐

Series	No. Lamps	Lamp-Style	Length	Ballasts	Volts	Style
MS	1,2	14	22	EO	9	B
MS	1,2	24	22	EO	9	B
MS	1,2	21	34	EO	9	B
MS	1,2	39	34	EO	9	B
MS	1,2	28	46	EO	9	B
MS	1,2	54	46	EO	9	B
MS	1,2	35	58	EO	9	B
MS	1,2	80	58	EO	9	B

LAMPS:
14 - 14 Watt T5
21 - 21 Watt T5
24 - 24 Watt T5 HO
28 - 28 Watt T5
35 - 35 Watt T5
39 - 39 Watt T5 HO
54 - 54 Watt T5 HO
80 - 80 Watt T5 HO

BALLASTS:
EO - Electronic
CO - ELECTRONIC (3 OR 4 LAMP)

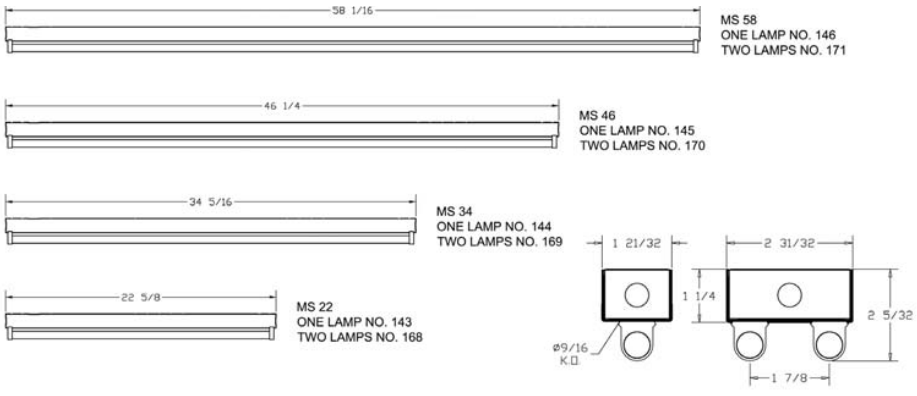
VOLTS:
9 - Universal Voltage

Packaging:
B - Basic
U - Unit

MSWG46WH - 14 GUAGE WHITE WIRE GUARD

DIMENSIONS

specifications and dimensional data subject to change without notice



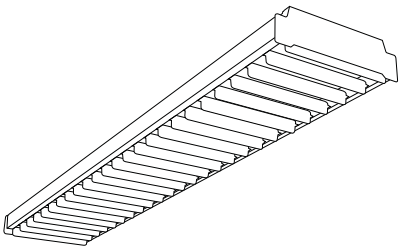
Number shown indicates mounting / knockouts diagram - see Options & Accessories section of catalog.

	Job Name:	Catalog Number:	Type:
	King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	LHEM8-254ST-EPU-LHHB-F5835 Notes:	S3

Columbia LIGHTING

LHEM

Efficient High Bay Medium Body / 2 or 4-Lamp T5, T5HO, T8



PROJECT INFORMATION

Project Name

Type

Catalog No.

Date

FEATURES

- Energy-efficient T5 fluorescent luminaire replaces HID in retail and industrial applications
  - Energy savings up to 47%
  - Excellent lumen maintenance (94% versus ~65% for typical metal halide)
  - Higher maintained lumens per watt (up to 62, versus 40 for typical metal halide high bay)
  - Instant restrike
  - Consistent color
  - Superior color rendering (82 CRI, versus 65-70 for metal halide)
- Optional 12% uplight
- Battery pack option (-EL) provides instant-on emergency illumination
- Tool-free access to lamps and ballasts
- Rounded edges and corners for safe handling and installation

CONSTRUCTION
Code gauge steel construction. Multi-formed housing for rigidity. Tool-free ballast access.

SHIELDING
Available with optional prismatic acrylic wraparound lens or white steel cross baffle. Optional wire guard or wire cage.

BALLAST AND ELECTRICAL
Energy efficient electronic, thermally protected, automatic resetting, Class "P", high power factor, sound rated A. Positive stop, anti-vibrational locking lampholders. All configurations have been heat tested to ensure reliable operation and performance under normal conditions. CEE NEMA Premium compliant.

FINISH
All steel surfaces are pre-painted with high gloss baked white enamel, applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

MOUNTING
Furnished standard with Universal Hanger Bracket for mounting with jack chain or cable. Optional GLH adjustable cable system provides simple, fast, and flexible mounting to wood, concrete, or steel decks, or to beams, purlins, or metal strut. Optional safety tether available.

CERTIFICATION
All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE **LHEM4-454-ST-EPU**

LHEM – – – –

MODEL
- **LHEM** Efficient High Bay Medium Body (9⁵⁄₁₆")

NO. OF LAMPS IN CROSS SECTION
- **2** Two
- **4** Four (T5 lamps only)

SIZE
- **4** 48"
- **8** 96"

LAMP TYPE
- **28** 4', T5: 28 Watt
- **32** 4', T8: 32, 30, 28 or 25 Watt
- **54** 4', T5HO: 54 or 51 Watt

SHIELDING
- **Blank** None
- **WCB** White Steel Cross Baffle*
- **PA** Prismatic Acrylic Wraparound Lens[1]

*N/A with wire guard. May be used with cage guard.

UPLIGHT
- **ST** Solid Top (No Uplight)
- **U** 12% Uplight

VOLTAGE
- **U** 120V-277V
- **347** 347V (HO only)
- **480** 480V (HO only)

BALLAST
- **E** (2 or 3) 2-Lamp Electronic T8, Instant Start
- **4E** 4-Lamp Electronic T8, Instant Start
- **EP** (2 or 4) 2-Lamp Electronic T5, Programmed Start
- **4EP** (1 or 2) 4-Lamp Electronic T5, Programmed Start (N/A 347V or 480V)

For a specific ballast vendor, show as option.

OPTIONS
- **F5835** 35K 85CRI T5 or T5HO Lamps Installed[1]
- **F5841** 41K 85CRI T5 or T5HO Lamps Installed[1]
- **F5850** 50K 82CRI T5HO Lamps Installed
- **F0735** 35K 75CRI T8 Lamps Installed
- **F0741** 41K 75CRI T8 Lamps Installed
- **F0750** 50K 75CRI T8 Lamps Installed
- **C6TL15_** 6' Cord and Twist-Lock™ Plug 15A (Add Voltage: 1=120, 2=277)
- **C6TL20_** 6' Cord and Twist-Lock™ Plug 20A (Specify Voltage 1=120, 2=277)
- **C6P15_** 6' Cord and Straight Blade Plug 15A (Add Voltage: 1=120, 2=277)
- **F3C5** 3-conductor 5' Feed Cord Wired to Fixture
- **F3C10** 3-conductor 10' Feed Cord Wired to Fixture
- **F3C15** 3-conductor 15' Feed Cord Wired to Fixture
- **F4C5** 4-conductor 5' Feed Cord Wired to Fixture
- **F4C10** 4-conductor 10' Feed Cord Wired to Fixture
- **F4C15** 4-conductor 15' Feed Cord Wired to Fixture
- **M4R** 95% Reflective Specular Aluminum Insert (Solid top only)
- **LSR** Specular Anodized Aluminum Insert (Solid top only)
- **GLR** Fast Blow Fuse
- **EL** Emergency Battery Pack
- **PAF** Paint After Fabrication
- **NYC** NYC Compliant
- **NYCU** NYC Compliant, Union Label

ACCESSORIES (ORDER SEPARATELY)
- **GLH5** 5' Adjustable Cable Kit*
- **GLH10** 10' Adjustable Cable Kit*
- **GLH15** 15' Adjustable Cable Kit*
- **LHTF** Fixture Safety Tether
- **LHTWCB** White Cross Baffle Safety Tether
- **LHHB** Universal Hanger Bracket Kit
- **LHEMWG** Wire Guard (Order two for LHEM8)
- **LHEMCG** Cage Guard (Order two for LHEM8)
- **OS1K** Occupancy Sensor Kit, 120/277/347V, one relay**
- **OS2K** Occupancy Sensor Kit, 120/277/347V, two relay**

* Use with LHHB.
**Use programmed start ballast. Not recommended for use with an instant start. For more occupancy/daylight harvesting sensor accessories contact your Columbia Lighting representative.

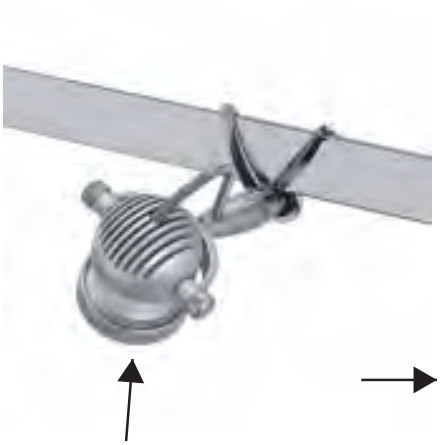
[1] Lamp type in catalog number will determine lamp installed.

Job Name: Contact:

Fixture Type: T1 Part Number: 136701MC/FL

LEDRA MINI

Qualifying ASHRAE 90.1 2007 9.2.2.3 (a) exemption

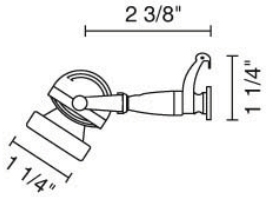


Description:

The Ledra Mini is a adjustable spotlight fixture with a 210° tilt and 360° rotation on fixture head. Compatible with the Ledra Track system, the small size, long life, lack of UV, and cool beam allows for a wide variety of applications. 18 awg wire required to connect Ledra to driver, not included.

Part Numbers:

136701mc/s	matte chrome, white 5000K, 10° lens
136701mc/m	matte chrome, white 5000K, 30° lens
136701mc/fl	matte chrome, white 5000K, 45° lens
136701-1mc/s	matte chrome, white 3000K, 10° lens
136701-1mc/m	matte chrome, white 3000K, 30° lens
136701-1mc/fl	matte chrome, white 3000K, 45° lens



Technical Specs:

Finish: matte chrome
Input voltage: 3.7VDC
Power consumption: 3 Watts
Drive current: 700mA
Lumen output: 65 at 700mA
Lamp life: 70% at 50,000 hrs (white) 100,000 hrs (blue)
Rating: Class II
White 4000K
Warm White 3000K
ETL Listed

Warranty:

All 3 Watt LED fixtures are warranted to be free from defects in material and workmanship for three (3) years from date of delivery.
For full warranty details, please see our terms and conditions here

UPLED22-WH (22")

TYPE U2

11.1.7.1

JUNO

UNDERCABINET LIGHTING

Qualifying ASHRAE 90.1 2007 9.4.1.4 (d) exemption

Project:

Fixture Type:

Location:

Contact/Phone:

PRO-SERIES LED

3000K LEDs, DIMMABLE

UPLED09, UPLED14, UPLED22 and UPLED30

PRODUCT DESCRIPTION

The Pro-Series LED modular series with integral electronic driver operates 3000K LEDs for maintenance free 50,000 hour life using 1/6 the energy and virtually no heat when compared to halogen & xenon. Pro-Series LED fixtures are optimized for fast permanent installation, mounting either flush to the rear backsplash or to the front lip of cabinetry to suit project conditions and homeowner preference. Pro-Series LED fixtures are environmentally friendly and contain no harmful mercury. 5-year limited warranty.

PRODUCT SPECIFICATIONS

LEDs Utilizes warm-white 3000K LEDs tightly binned to within 2-step MacAdam ellipse for superb color consistency • Light output equivalent to Pro-Series Halogen & Pro-Series Xenon fixture series • Provides 50,000 hour service life.

Driver Integral electronic 120-volt constant current driver is accessible without having to remove fixture • Dimmable with most incandescent, magnetic low voltage or electronic low voltage wall box dimmers • For a list of compatible dimmers, refer to next page.

Housing Slim 1" profile • Modular plug-together design • Extruded Aluminum • Designer white, black, brushed bronze, or brushed silver.

Diffuser Clear prismatic tempered glass lens for maximum light transmission • Reverse-angled to minimize perceived brightness.

Switch Convenient integral On/Off rocker switch.

Labels UL Listed.

INSTALLATION

UPLED Series fixtures offer several convenient methods for installation and can be installed as direct wire or portable luminaires. Fixtures may be mounted flush to the backsplash or up against the front lip of the cabinetry using captive mounting screws.

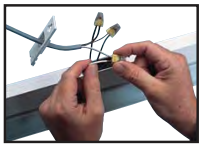
Direct Wire The UPLED14, UPLED22, and UPLED30 are optimized with a center rear wiring access compartment and push-in electrical connectors for quick electrical connection using non-metallic or armored cable • The UPLED14, UPLED22, and UPLED30 also feature multiple off-center knockouts and are supplied with die cast fittings for 3/8" flexible metal conduit • An optional direct-wire module (ULH-DWM sold separately), supplied with a 36" field-shortenable jumper cord to bring power to the fixture, is also available to facilitate code compliant installation of fixture at the front end of cabinetry • Please note that if direct wiring is required for the UPLED09, the ULH-DWM must be utilized.

Portable To install the UPLED09, UPLED14, UPLED22, or UPLED30 as a portable fixture, use the optional 3-wire grounded cord & plug (ULH-CP sold separately)

Electrically Connecting Multiple Fixtures Connect multiple fixtures for up to 5 amps maximum combined operating current • Fixtures may be electrically joined together using either the straight joiner connector supplied with each fixture or the optional JC3 jumper cords • See accessories table for lengths and colors. See engineering data table for input current draw of each fixture size.

PRO-SERIES LED 5 MINUTE DIRECT-WIRE INSTALLATION FOR UPLED14, UPLED22 & UPLED30 ONLY

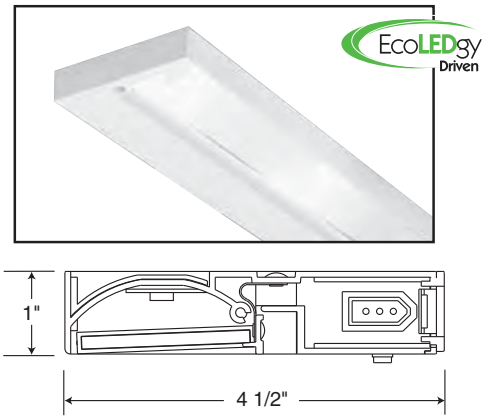
Step 1 Attach supply wires to rear access cover.



Step 2 Connect supply wires to fixture leads using push-in connectors.

Step 3 Mount fixture to cabinet bottom using captive mounting screws.

DIMENSIONS



ENGINEERING DATA

	UPLED09	UPLED14	UPLED22	UPLED30
Total input power (watts)	3.8	6.5	10.0	12.1
Total Operating AMPS	.04	.06	.09	.11

PRODUCT CODES

Catalog Number	Finish	Overall Length	Number of LEDs
UPLED09-BL	Black	9 1/2"	2
UPLED09-BZ	Brushed Bronze	9 1/2"	2
UPLED09-SL	Brushed Silver	9 1/2"	2
UPLED09-WH	Designer White	9 1/2"	2
UPLED14-BL	Black	14"	4
UPLED14-BZ	Brushed Bronze	14"	4
UPLED14-SL	Brushed Silver	14"	4
UPLED14-WH	Designer White	14"	4
UPLED22-BL	Black	22"	6
UPLED22-BZ	Brushed Bronze	22"	6
UPLED22-SL	Brushed Silver	22"	6
UPLED22-WH	Designer White	22"	6
UPLED30-BL	Black	29 1/4"	8
UPLED30-BZ	Brushed Bronze	29 1/4"	8
UPLED30-SL	Brushed Silver	29 1/4"	8
UPLED30-WH	Designer White	29 1/4"	8

ACCESSORIES

Catalog No.	Description
JC3-8-WH,-BL	8" Jumper Cord
JC3-17-WH,-BL	17" Jumper Cord
JC3-26-WH,-BL	26" Jumper Cord
ULH-CONN	3/8" Miniature Die-Cast Electrical Connector
ULH-CP-WH,-BL	3-Wire Grounded Cord & Plug
ULH-DWM-WH,-BL	Direct-Wire Module

JUNO LIGHTING GROUP by Schneider Electric

UPLED30-WH (30")

TYPE U3

11.1.7.1

JUNO

UNDERCABINET LIGHTING

Project: Qualifying ASHRAE 90.1 2007 9.4.1.4 (d) exemption

Fixture Type:

Location:

Contact/Phone:

PRO-SERIES LED

3000K LEDs, DIMMABLE

UPLED09, UPLED14, 22 and UPLED30

PRODUCT DESCRIPTION

The Pro-Series LED modular series with integral electronic driver operates 3000K LEDs for maintenance free 50,000 hour life using 1/6 the energy and virtually no heat when compared to halogen & xenon. Pro-Series LED fixtures are optimized for fast permanent installation, mounting either flush to the rear backsplash or to the front lip of cabinetry to suit project conditions and homeowner preference. Pro-Series LED fixtures are environmentally friendly and contain no harmful mercury. 5-year limited warranty.

PRODUCT SPECIFICATIONS

LEDs Utilizes warm-white 3000K LEDs tightly binned to within 2-step MacAdam ellipse for superb color consistency • Light output equivalent to Pro-Series Halogen & Pro-Series Xenon fixture series • Provides 50,000 hour service life.

Driver Integral electronic 120-volt constant current driver is accessible without having to remove fixture • Dimmable with most incandescent, magnetic low voltage or electronic low voltage wall box dimmers • For a list of compatible dimmers, refer to next page.

Housing Slim 1" profile • Modular plug-together design • Extruded Aluminum • Designer white, black, brushed bronze, or brushed silver.

Diffuser Clear prismatic tempered glass lens for maximum light transmission • Reverse-angled to minimize perceived brightness.

Switch Convenient integral On/Off rocker switch.

Labels UL Listed.

INSTALLATION

UPLED Series fixtures offer several convenient methods for installation and can be installed as direct wire or portable luminaires. Fixtures may be mounted flush to the backsplash or up against the front lip of the cabinetry using captive mounting screws.

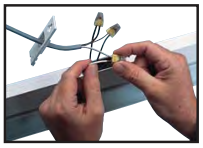
Direct Wire The UPLED14, UPLED22, and UPLED30 are optimized with a center rear wiring access compartment and push-in electrical connectors for quick electrical connection using non-metallic or armored cable • The UPLED14, UPLED22, and UPLED30 also feature multiple off-center knockouts and are supplied with die cast fittings for 3/8" flexible metal conduit • An optional direct-wire module (ULH-DWM sold separately), supplied with a 36" field-shortenable jumper cord to bring power to the fixture, is also available to facilitate code compliant installation of fixture at the front end of cabinetry • Please note that if direct wiring is required for the UPLED09, the ULH-DWM must be utilized.

Portable To install the UPLED09, UPLED14, UPLED22, or UPLED30 as a portable fixture, use the optional 3-wire grounded cord & plug (ULH-CP sold separately)

Electrically Connecting Multiple Fixtures Connect multiple fixtures for up to 5 amps maximum combined operating current • Fixtures may be electrically joined together using either the straight joiner connector supplied with each fixture or the optional JC3 jumper cords • See accessories table for lengths and colors. See engineering data table for input current draw of each fixture size.

PRO-SERIES LED 5 MINUTE DIRECT-WIRE INSTALLATION FOR UPLED14, UPLED22 & UPLED30 ONLY

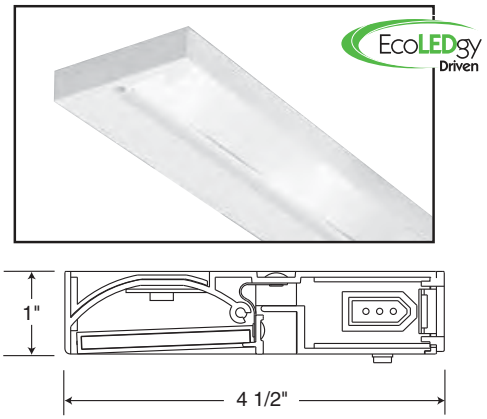
Step 1 Attach supply wires to rear access cover.



Step 2 Connect supply wires to fixture leads using push-in connectors.

Step 3 Mount fixture to cabinet bottom using captive mounting screws.

DIMENSIONS



ENGINEERING DATA

	UPLED09	UPLED14	UPLED22	UPLED30
Total input power (watts)	3.8	6.5	10.0	12.1
Total Operating AMPS	.04	.06	.09	.11

PRODUCT CODES

Catalog Number	Finish	Overall Length	Number of LEDs
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UPLED09-BZ	Brushed Bronze	9 1/2"	2
UPLED09-SL	Brushed Silver	9 1/2"	2
UPLED09-WH	Designer White	9 1/2"	2
UPLED14-BL	Black	14"	4
UPLED14-BZ	Brushed Bronze	14"	4
UPLED14-SL	Brushed Silver	14"	4
UPLED14-WH	Designer White	14"	4
UPLED22-BL	Black	22"	6
UPLED22-BZ	Brushed Bronze	22"	6
UPLED22-SL	Brushed Silver	22"	6
UPLED22-WH	Designer White	22"	6
UPLED30-BL	Black	29 1/4"	8
UPLED30-BZ	Brushed Bronze	29 1/4"	8
UPLED30-SL	Brushed Silver	29 1/4"	8
UPLED30-WH	Designer White	29 1/4"	8

ACCESSORIES

Catalog No.	Description
JC3-8-WH,-BL	8" Jumper Cord
JC3-17-WH,-BL	17" Jumper Cord
JC3-26-WH,-BL	26" Jumper Cord
ULH-CONN	3/8" Miniature Die-Cast Electrical Connector
ULH-CP-WH,-BL	3-Wire Grounded Cord & Plug
ULH-DWM-WH,-BL	Direct-Wire Module

Juno Lighting Group by Schneider Electric

UPLED30WH + UPLED14-14-WH (44" TOTAL)

TYPE U4

11.1.7.1

JUNO

UNDERCABINET LIGHTING

Project: Qualifying ASHRAE 90.1 2007 9.4.1.4 (d) exemption

Fixture Type:

Location:

Contact/Phone:

PRO-SERIES LED

3000K LEDs, DIMMABLE

UPLED09, UPLED14, UPLED22 and UPLED30

PRODUCT DESCRIPTION

The Pro-Series LED modular series with integral electronic driver operates 3000K LEDs for maintenance free 50,000 hour life using 1/6 the energy and virtually no heat when compared to halogen & xenon. Pro-Series LED fixtures are optimized for fast permanent installation, mounting either flush to the rear backsplash or to the front lip of cabinetry to suit project conditions and homeowner preference. Pro-Series LED fixtures are environmentally friendly and contain no harmful mercury. 5-year limited warranty.

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Housing Slim 1" profile • Modular plug-together design • Extruded Aluminum • Designer white, black, brushed bronze, or brushed silver.

Diffuser Clear prismatic tempered glass lens for maximum light transmission • Reverse-angled to minimize perceived brightness.

Switch Convenient integral On/Off rocker switch.

Labels UL Listed.

INSTALLATION

UPLED Series fixtures offer several convenient methods for installation and can be installed as direct wire or portable luminaires. Fixtures may be mounted flush to the backsplash or up against the front lip of the cabinetry using captive mounting screws.

Direct Wire The UPLED14, UPLED22, and UPLED30 are optimized with a center rear wiring access compartment and push-in electrical connectors for quick electrical connection using non-metallic or armored cable • The UPLED14, UPLED22, and UPLED30 also feature multiple off-center knockouts and are supplied with die cast fittings for 3/8" flexible metal conduit • An optional direct-wire module (ULH-DWM sold separately), supplied with a 36" field-shortenable jumper cord to bring power to the fixture, is also available to facilitate code compliant installation of fixture at the front end of cabinetry • Please note that if direct wiring is required for the UPLED09, the ULH-DWM must be utilized.

Portable To install the UPLED09, UPLED14, UPLED22, or UPLED30 as a portable fixture, use the optional 3-wire grounded cord & plug (ULH-CP sold separately)

Electrically Connecting Multiple Fixtures Connect multiple fixtures for up to 5 amps maximum combined operating current • Fixtures may be electrically joined together using either the straight joiner connector supplied with each fixture or the optional JC3 jumper cords • See accessories table for lengths and colors. See engineering data table for input current draw of each fixture size.

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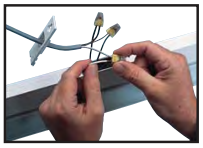
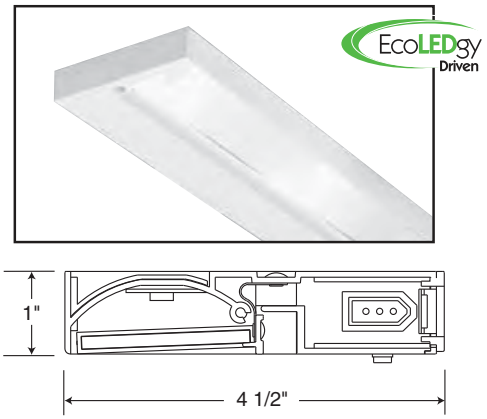


Step 2 Connect supply wires to fixture leads using push-in connectors.

Step 3 Mount fixture to cabinet bottom using captive mounting screws.

DIMENSIONS



ENGINEERING DATA

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Total input power (watts)	3.8	6.5	10.0	12.1
Total Operating AMPS	.04	.06	.09	.11

PRODUCT CODES

Catalog Number	Finish	Overall Length	Number of LEDs
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UPLED09-BZ	Brushed Bronze	9 1/2"	2
UPLED09-SL	Brushed Silver	9 1/2"	2
UPLED09-WH	Designer White	9 1/2"	2
UPLED14-BL	Black	14"	4
UPLED14-BZ	Brushed Bronze	14"	4
UPLED14-SL	Brushed Silver	14"	4
UPLED14-WH	Designer White	14"	4
UPLED22-BL	Black	22"	6
UPLED22-BZ	Brushed Bronze	22"	6
UPLED22-SL	Brushed Silver	22"	6
UPLED22-WH	Designer White	22"	6
UPLED30-BL	Black	29 1/4"	8
UPLED30-BZ	Brushed Bronze	29 1/4"	8
UPLED30-SL	Brushed Silver	29 1/4"	8
UPLED30-WH	Designer White	29 1/4"	8

ACCESSORIES

Catalog No.	Description
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JC3-17-WH,-BL	17" Jumper Cord
JC3-26-WH,-BL	26" Jumper Cord
ULH-CONN	3/8" Miniature Die-Cast Electrical Connector
ULH-CP-WH,-BL	3-Wire Grounded Cord & Plug
ULH-DWM-WH,-BL	Direct-Wire Module

JUNO LIGHTING GROUP by Schneider Electric

HPW24-277-T5HO-21-LC-LED-BD

TYPE W1

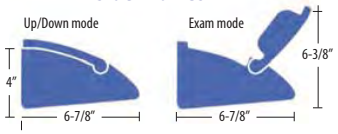
CHRYSALITE

3′ or 4′ (T8, T5 or T5HO)

Qualifying ASHRAE 900.1 2007 9.2.2.3 (c) Exemption

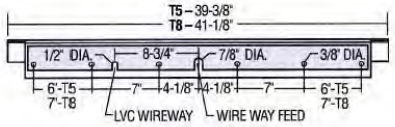
Dimensional Data

Side Profiles

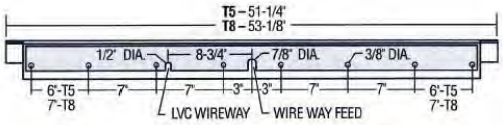


Mounting Dimensions

3′ Back View



4′ Back View



*Ordering Notes

For pull chain and pillow switch, specify left or right location as viewed facing the headwall. Optional LED chart light with rocker switch is installed on opposite end of fixture from pull chain or pillow switch location.

Specifications subject to change. Please visit our web site for updated information.

Specifications

Construction: Extruded aluminum housing with diecast aluminum handles and stamped aluminum end caps.

Electrical: 120 or 277 volt.

Lamp Shield: High impact acrylic lens.

Lamps: 3 foot nominal: 25w T8, 21w T5 or 39w T5HO lamps (by others).
4 foot nominal: 32w T8, 28w T5 or 54w T5HO lamps (by others).

• • ••• • • ••••••••• (1) 1w LED with rocker switch.

Seismic: 3′ and 4′ units OSHPD pre-approved (OPA-2087-07).

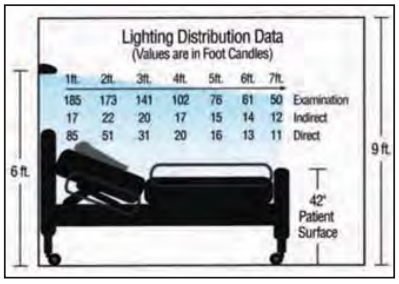
BIM: Building Information Modeling files available for 4′ with T5HO lamps.

Finishes: Polyester powder coated after fabrication with either flat white or designer white antimicrobial finish.

Listings: UL and C-UL (1598: Medical and Dental luminaires).

Warranty: 5-year limited warranty. Made in the USA by Healthcare Lighting's ISO certified facility in Fairview, PA.

Photometric Data



HPW24; data shown with (4) 54w T5HO lamps on three circuits with convenience switch option for all-lamps-on examination lighting.

CHRYSALITE

5yr Warranty · SEISMIC · BIM · c UL us · USA

Ordering Information

Example: HPW24-120-T8EL-21-S4L-LED-CC

1 SERIES	2 VOLTAGE	3 BALLAST	4 LAMPING	5 SWITCHING	6 OPTIONS	7 FINISHES
☐ HPW23 (36″)	☐ 120	☐ T8EL	☐ 21 (2 Up, 1 Down)	☐ LC Class 2 UL® listed Low Voltage Controller (LVC)	☐ CS Convenience switch (Energizes both up and down lights upon rotation of top section into exam mode)	☐ FW Flat white finish
☐ HPW24 (48″)	☐ 277	☐ T5EL	☐ 22 (2 Up, 2 Down)	☐ LC1 LVC with pillow switch controlling down light only	☐ LED 1w white LED Chart Light*	☐ AM Designer white antimicrobial finish
		☐ T5HO**		☐ LC2 LVC with pillow switch controlling up and down light sequentially	☐ BD Bed stop power cut off (Disrupts power to patient bed electrical outlet upon movement of light fixture housing on mounting bracket)	☐ CC Custom Color (please provide color # or sample)
				☐ S2R On/off pull chain on right (120v only)*		
				☐ S2L On/off pull chain on left (120v only)*		
				☐ S4R 4-pos pull chain on right (120v only)*		
				☐ S4L 4-pos pull chain on left (120v only)*	☐ THD <10% THD (T8 only)	
				☐ SX No switch	☐ FH Fast-blo fuse	
					☐ SB Slo-blo fuse	

(1) 2up/2dn T5HO models include (3) ballasts and convenience switch for: (1) lamp up and (1) lamp down, and (4) lamp exam upon movement of top section to examination position.

TYPE W2

HPW348-277-T5HO-11-SX-FW-RIF

Qualifying ASHRAE 900.1 2007 9.2.2.3 (c) Exemption

ARCHER

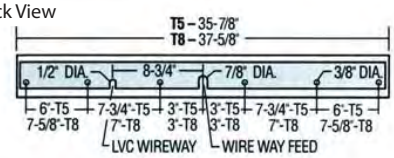
3' or 4' (T8, T5 or T5HO)

Dimensional Data

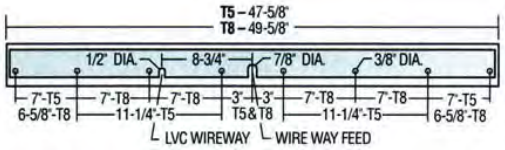
Side Profile

Mounting Dimensions

3' Back View



4' Back View



*Ordering Notes

For pull chain and pillow switch, specify left or right location as viewed facing the headwall. Optional LED chart light with rocker switch is installed on opposite end of fixture from pull chain location.

Specifications subject to change. Please visit our web site for updated information.

Specifications

Construction: Extruded aluminum housing with stamped aluminum end caps.

Electrical: 120 or 277 volt.

Lamp Shield: High impact acrylic lens.

Lamps: 3 foot nominal: 25w T8, 21w T5 or 39w T5HO lamps (by others).
4 foot nominal: 32w T8, 28w T5 or 54w T5HO lamps (by others).

Optional: (1) 1w LED with rocker switch.

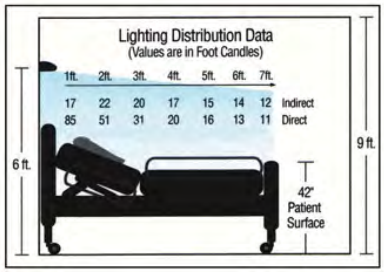
Seismic: 3' and 4' units OSHPD pre-approved (OPA-2087-07).

Finishes: Polyester powder coated after fabrication with either flat white or designer white antimicrobial finish.

Listings: UL and C-UL (1598: Medical and Dental luminaires).

Warranty: 5-year limited warranty. Made in the USA by Healthcare Lighting's ISO certified facility in Fairview, PA.

Photometric Data



***HPW348**; data shown with (4) 54w T5HO lamps.*

ARCHER

5yr Warranty · SEISMIC · c UL us · USA

Ordering Information

Example: HPW348-120-T8EL-22-S4L-LED-FW

1 SERIES	2 VOLTAGE	3 BALLAST	4 LAMPING	5 SWITCHING	6 OPTIONS	7 FINISHES
☐ HPW336 (36")	☐ 120	☐ T8EL	☐ 11 (1 Up, 1 Down)	☐ LC Class 2 UL® rated Low Voltage Controller (LVC)	☐ LED 1w white LED chart light*	☐ FW Flat white finish
☐ HPW348 (48")	☐ 277	☐ T5EL	☐ 21 (2 Up, 1 Down)	☐ LC1 LVC with pillow switch controlling down light only	☐ BD Bed stop power cut off (Disrupts power to patient bed electrical outlet upon movement of light fixture housing on mounting bracket)	☐ AM Designer white antimicrobial finish
		☐ T5HO	☐ 12 (1 Up, 2 Down)	☐ LC2 LVC with pillow switch controlling up and down light sequentially		☐ CC Custom Color (please provide color # or sample)
			☐ 22 (2 Up, 2 Down)	☐ S2R On/off pull chain on right (120v only)*		
				☐ S2L On/off pull chain on left (120v only)*		
				☐ S4R 4-pos pull chain on right (120v only)*	☐ FH Fast-blo fuse	
				☐ S4L 4-pos pull chain on left (120v only)*	☐ SB Slo-blo fuse	
				☐ SX No switch		

☐ RIF = RADIO INTERFERENCE FILTER

HEALTHCARE LIGHTING®

T: (814) 474-4974 | F: (814) 474-4975 | www.healthcare-lighting.com

Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** VPF84-228T5-OPAL-120/277 WET-WHT Notes:	**Type:** **W3 & W7**

Vision 8

VPF 8 Series — Vandal Resistant Fluorescent

Fixture Type

ORDERING INFORMATION

SERIES: VPF 8 — LENGTH — LAMPS — VOLTS — LENS — COLORS — OPTIONS — TX/SD (REQUIRED)

LENGTH
- 2HO - 22"
- 2 - 24"
- 3HO - 34"
- 3 - 36"
- 4HO - 46"
- **4 - 48"**

LAMPS (not included)

22"
- 1F14T5
- 2F14T5
- 3F14T5
- 1F24T5HO
- 2F24T5HO

24"
- 1F17T8
- 2F17T8
- 3F17T8

34"
- 1F21T5
- 2F21T5
- 3F21T5
- 1F39T5HO
- 2F39T5HO

36"
- 1F25T8
- 2F25T8
- 3F25T8

46"
- 1F28T5
- 2F28T5
- 3F28T5
- 1F54T5HO
- 2F54T5HO

48"
- 1F32T8
- 2F32T8
- 3F32T8

228T5

VOLTS
- **120**
- **277**
- 347

LENS
- **CP** Clear Prismatic Standard
- **OP** Opal Optional

COLORS
- **BLK -** Black
- **WHT -** White
- **BRZ -** Bronze
- **GRY -** Gray
- **CUST -** Custom Color Consult Factory

OPTIONS
- JB
- **WET**
- CW
- PRS
- PC
- GLR
- LEDNL
- OCC
- EMB50
- EMB100
- EMB600
- COR
- ST/SC

OPTIONS

JB	Die cast joiner band for continuous row mount. Consult factory for row information.
WET	Silicone and neoprene gasketing for wet location. Surface mount only.
CW	Cold Weather instant ballast, -20ºF minimum starting temperature. Available for 24", 36" and 48" lengths.
PC	Photoelectric switch.
GLR	Fuse and fuse holder.
LEDNL	LED Night Light.
OCC	Microwave occupancy sensor mounted behind the lens. Available for 2-lamp configurations only.
EMB 50	950-1350 lumen self contained 90 minute emergency battery pack. 0 ºC (32 ºF) to 55 ºC (131 ºF) operating range. Available for 24", 36"and 48" lengths. Not available in 347V.
EMB600	1025-1250 lumen self contained 90 minute emergency battery pack. 0 ºC (32 ºF) to 50 ºC (122 ºF) operating range. Available for 22", 34"and 46" lengths. Not available in 347V.
EMB100	350-450 lumen self contained 90 minute emergency battery pack. 0 ºC (32 ºF) to 55 ºC (131 ºF) operating range. Available for 24", 36"and 48" lengths. Not available in 347V.
COR	Corner mounted back box. Constructed from 16 gauge cold rolled zinc coated steel. Finished with white powder coat.
ST/SC	Slotted screws instead of TORX® head
PRS	Programmed rapid start electronic ballast for T8 lamps. Available for 24", 36" and 48" lengths.
TX/SD	TORX® head bit.

7 Olsen Avenue • P.O. Box 2104 • Edison, NJ • 08818
P. 732.549.0056 F. 732.549.9737

Made in

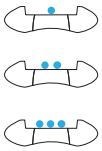
Luminaire Lighting Corporation products are manufactured in the USA with components purchased from USA suppliers, and meet the Buy American requirements under the ARRA.

Luminaire Lighting Corporation
www.luminairelighting.com

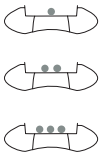
	Job Name: King's Daughters Medical Center - Alternate to Spec - Reddy Electric -	**Catalog Number:** EL27B-1ET5-120/277-NS-PBL-WMT-BW-4FT SECTIONS Notes:	**Type:** **W14**

Ellipse EL27

T5 options



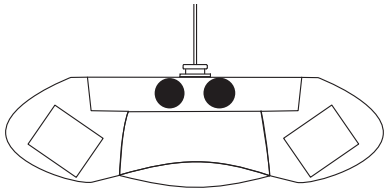
T8 options



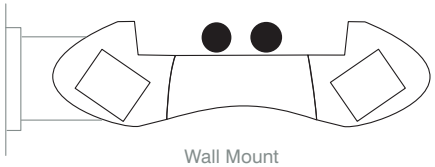
EL27 special shielding options

DR

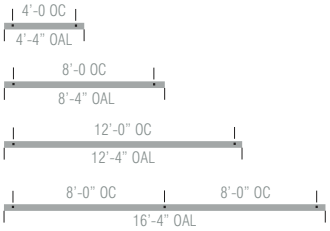
BR



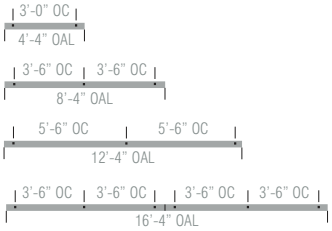
Pendant
2 3/16"H. x 7 5/8"W.



Wall Mount
2 3/16"H. x 7 5/8"W.



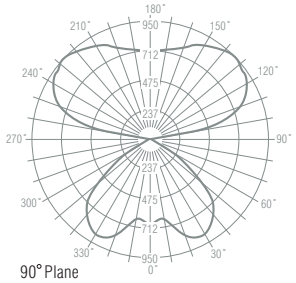
T5 row length



T5 row length

For design use only. Not for construction. See www.linearltg.com for engineering drawings specific to job.

- Extruded aluminum housing
- Bidirectional lighting
- 1, 2, or 3 T5/T5HO or T8 lamps
- Die-cast joiners
- Pre-wired with quick-connect plugs
- UL/CUL labels
- Weight per foot: 3.6 lbs. approx.



90° Plane

EL27-B-2-ET5-PVL

Efficiency: 88.1%

Max. candlepower at 135°: 950

Indirect: 68%
Direct: 32%

See www.linearltg.com for complete photometrics.

Catalog No. | Dir. Lamps Ballast Voltage | Shielding Mounting Color | Add'l options | Row length

EL27 Fixture – **B**- ___ - ___ - ___ – ___/___ Indirect Direct – ___ – ___ – ___ – ___ – ___

Lamps & Electrical Options | Mechanical & Aesthetic Options

Direction
- **B** Bidirectional

Lamps
- **1**, **2** or **3**

Ballast
- **ET5** Electronic T5
- **ET5HO** High Output T5
- **ET8** Electronic T8

Voltage
- **120** or **277**
- **347**

Indirect Shielding
- **NS** No Shielding, **BR**†, **DR**†
- *See tab for top shielding illustrations*

Direct Shielding
- **PBD**, **PRT**, **DIF**, **PVL**, **PXL**, **PBL**, **PVL_IC**, **PVL_IG**
- *See tab for perf and louver illustrations*

Mounting
- **Cxx** Cable
- **Sxx** Stem
- **Bxx** Stem Ball Aligner
- **WMT** Wall Mount
- *xx= inches, ceiling to top of fixture*

Color
- **BW** Baked White
- **AP** Aluminum Paint
- **CC** Custom Color
- *See color selector*

Add'l
- **NO** No Option
- **CB** Checkerboard Circuit"A"or"B"
- **DC** Dust Cover
- **EC** Emergency Circuits
- **ED** Electronic Dimming*
- **EM** Emergency Ballast**
- **FU** Fusing
- **ISB10** Inst Start Blst <10%†
- **LO** Louver Overlay
- **LS** LutronEcoSys Sensor Feed
- **LW** Louver Painted White
- **NL** Night Light
- **PBIS** Prem Blst. Instant Start
- **PBPS** Prem Ballast Prog Start
- **PSB10** Prog Start Blst <10%†
- **SC** Separate Circuits
- **SF** Special Feature
- *Please define*

Row length

Fixture Lengths
2', **3**', **4**', **5**', **6**', **7**', **8**', **9**', **10**', **11**', **12**'

* *Dimming ballasts may not be available for all T5/T5HO lamp lengths. Consult factory.*
** *EM packs may not be available for all T5/T5HO lamp lengths. Consult factory.*

†*ISB10 and PSB10 available with T8 only.*
††*BR and DR not available with 3T8 lamping option.*

See www.linearltg.com for IES files and additional information.

Linear Lighting Corp.
31-30 Hunters Point Ave., Long Island City, NY 11101 ©9/10
718-361-7552 Fax 718-937-2747 Web: www.linearltg.com

Parking lot fixture ballast (all)

P320ML5AC4M

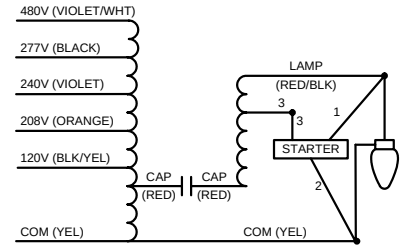
320W M154 / M132

Pulse Start Metal Halide

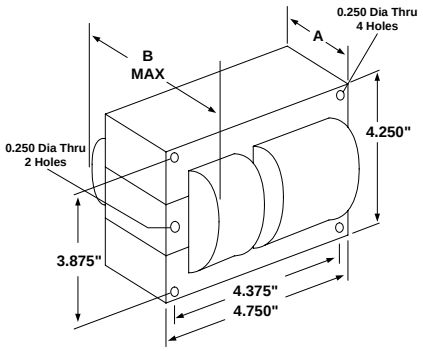
60Hz CWA

Specification Sheet

Input Volts	120	208	240	277	480
Regulation					
Line Volts	±10%	±10%	±10%	±10%	±10%
Lamp Watts	±10%	±10%	±10%	±10%	±10%
Power Factor (min)	90%	90%	90%	90%	90%
Input Watts	370 W	370 W	370 W	370 W	370 W
NOM. Open Circuit Voltage	280 V	280 V	280 V	280 V	280 V
Line Current (Amps)					
Operating	3.30	1.95	1.70	1.45	0.85
Open Circuit	4.00	2.40	2.10	1.85	1.06
Starting	1.10	0.65	0.56	0.49	0.31
Recommended Fuse (Amps)	10	7	5	5	3
Lamp Dropout Voltage (Line)	70 V	120 V	140 V	160 V	285 V
UL Temperature Ratings					
Insulation Class	H (180°C)	H (180°C)	H (180°C)	H (180°C)	H (180°C)
Temperature Code	D	C	D	D	C
MIN. Starting Temperature	-22°F -30°C	-22°F -30°C	-22°F -30°C	-22°F -30°C	-22°F -30°C
CAPACITOR Specifications					
Microfarads	20.5 uf	20.5 uf	20.5 uf	20.5 uf	20.5 uf
Volts (min.)	360 V	360 V	360 V	360 V	360 V
60Hz Test Procedures					
High Potential Test 1 Minute	2000 V	2000 V	2000 V	2000 V	2000 V
High Potential Test 1 Second	2500 V	2500 V	2500 V	2500 V	2500 V
Secondary Open Ckt Voltage (V)	260 - 310	260 - 310	260 - 310	260 - 310	260 - 310
Secondary Current Shorted (A)	2.90 - 3.60	2.90 - 3.60	2.90 - 3.60	2.90 - 3.60	2.90 - 3.60
Input Operating Current (A)	3.00 - 3.66	1.77 - 2.16	1.55 - 1.89	1.32 - 1.61	0.77 - 0.94
Input Open Circuit Current (A)	2.00 - 5.72	1.20 - 3.43	1.05 - 3.00	0.93 - 2.65	0.53 - 1.52
Input Short Circuit Current (A)	0.55 - 1.30	0.33 - 0.77	0.28 - 0.66	0.25 - 0.58	0.12 - 0.37
Core and Coil Specifications					
Dimension A	2.00 in	2.00 in	2.00 in	2.00 in	2.00 in
Dimension B	3.86 in	3.86 in	3.86 in	3.86 in	3.86 in
Weight	11.3 lbs	11.3 lbs	11.3 lbs	11.3 lbs	11.3 lbs
Lead Lengths (inches)	12-14	12-14	12-14	12-14	12-14
Coil Material (Pri. / Sec.):	Cu / Cu	Cu / Cu	Cu / Cu	Cu / Cu	Cu / Cu



Optional 120V Standby Lamp 250 Watts Max.



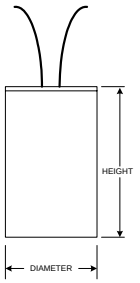
Reference Drawing

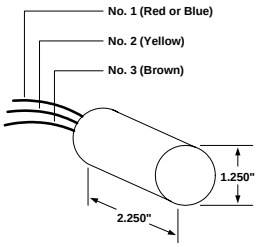
Capacitor: R17058565

Max Case Temp:	100 °C
Height:	3.82 in
Width / Diameter:	1.85 in

Ignitor: MH350-1A

Max Case Temp	105 °C
BTL:	10 ft





Oil Cap. - P/N 005-3262-MF Consult Catalog for Specs.

Document #:	010-9964-07
Date:	11/19/2008
Status:	Production
Replaces Catalog #:	New Design

Data is based upon tests performed by Universal Lighting Technologies in a controlled environment and is representative of relative performance. Actual performance may vary depending on operating conditions. Specifications are subject to change without notice.

11/19/2008

Universal Lighting Technologies
26 Century Blvd. Suite 500 - Nashville, TN 37214
Phone 1-800-225-5278 Fax 1-800-206-0035
www.unvlt.com

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

9/5/2014 3:51:05 PM

in

Case No(s). 14-1491-EL-EFC

Summary: Application Kings Daughter Medical Center and Ohio Power Company for approval of a special arrangement agreement with a mercantile customer electronically filed by Mr. Yazen Alami on behalf of Ohio Power Company