Ohio | Public Utilities Commission

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

Case No.: 12-0548-**EL-EEC**

Mercantile Customer: **Lakota Schools**

Electric Utility: **Duke Energy**

Program Title or Description: **Lighting**

Rule 4901:1-39-05(F), Ohio Administrative Code (O.A.C.), permits a mercantile customer to file, either individually or jointly with an electric utility, an application to commit the customer's existing demand reduction, demand response, and energy efficiency programs for integration with the electric utility's programs. The following application form is to be used by mercantile customers, either individually or jointly with their electric utility, to apply for commitment of such programs in accordance with the Commission's pilot program established in Case No. 10-834-EL-POR

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the electric utility's energy efficiency and demand reduction (EEDR) rider will be automatically approved on the sixty-first calendar day after filing, unless the Commission, or an attorney examiner, suspends or denies the application prior to that time. Completed applications requesting the exemption from the EEDR rider (Option 2) will also qualify for the 60-day automatic approval so long as the exemption period does not exceed 24 months. Rider exemptions for periods of more than 24 months will be reviewed by the Commission Staff and are only approved up the issuance of a Commission order.

Complete a separate application for each customer program. Projects undertaken by a customer as a single program at a single location or at various locations within the same service territory should be submitted together as a single program filing, when possible. Check all boxes that are applicable to your program. For each box checked, be sure to complete all subparts of the question, and provide all requested additional information. Submittal of incomplete applications may result in a suspension of the automatic approval process or denial of the application.

Any confidential or trade secret information may be submitted to Staff on disc or via email at ee-pdr@puc.state.oh.us.

Section 1: Mercantile Customer Information

Name: **Lakota Local Schools**

Principal address: **6947 Yankee Rd, Liberty Township 45044**

Address of facility for which this energy efficiency program applies:

6040 Princeton Rd, Hamilton Ohio 45011
7630 Bethany Rd, Middletown Ohio 45044
505 Tylersville Rd, Westchester Ohio 45069

Name and telephone number for responses to questions:

Grady Reid, Jr 513-287-1038

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

- ✓ The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (Please attach documentation.)
- □ The customer is part of a national account involving multiple facilities in one or more states. **(See Attachment 1 - Appendix 1)**

Section 2: Application Information

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

- □ Individually, without electric utility participation.
- ✓ **Jointly with the electric utility.**

B) The electric utility is: **Duke Energy**

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

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

Section 3: Energy Efficiency Programs

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

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

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

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

   Annual savings: **3 0 7 , 5 6 4 kWh gross with losses (See Attachment 1 - Appendix 2)**

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

   Annual savings: _____kWh

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

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

Annual savings: _____kWh

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

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

_____

Section 4: Demand Reduction/Demand Response Programs

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

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

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

_____

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

63.47 KW (See Attachment 1 - Appendix 2)

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

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

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

A) The customer is applying for:

✓ **Option 1: A cash rebate reasonable arrangement.**

OR

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

OR

□ Commitment payment

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

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

✓ A cash rebate of **$4920.00 (See Attachment 1 - Appendix 3).** (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

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

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

OR

□ A commitment payment valued at no more than

$_____. (Attach documentation and calculations showing how this payment amount was determined.)

OR

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

Section 6: Cost Effectiveness

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

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

✓ Utility Cost Test (UCT) . The calculated UCT value is: **(See Attachment 1 - Appendix 4)** (Skip to Subsection 2.)

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

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

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

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

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

Our avoided supply costs were **$52,765(See Attachment 1 - Appendix 5).**

The utility's program costs were **$3,444(See Attachment 1 - Appendix 6).**

The utility's incentive costs/rebate costs were **$4,920(See Attachment 1 - Appendix 3).**

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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

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

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

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

Ohio | Public Utilities Commission

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

Case No.: ____-____-EL-EEC

State of _____:

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

1. I am the duly authorized representative of:

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

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

_____
Signature of Affiant & Title

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

_____ _____
Signature of official administering oath Print Name and Title

My commission expires on _____

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-419-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts an/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
1270-0493-20	512,800 kWh		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct incentives are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☒ All sections of appropriate application(s) are completed	☒ Proof of payment.*	☒ Manufacturer's Spec sheets	☒ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Prescriptive Lighting ☐	MSD Prescriptive Lighting ☒
		MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐
Heating & Cooling	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Heating & Cooling ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐	MSD Prescriptive Heating & Cooling ☐	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐
Chillers & Thermal Storage	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Chillers & Thermal Storage ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Motors & Pumps	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Motors, Pumps & Drives ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
VFDs	Not Applicable	MSD Prescriptive Motors, Pumps & Drives ☐	MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐	
Food Service	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Food Service ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Process	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Process ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	
Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐
Behavioral* & No/Low Cost**	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐		

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**

*** Please ensure that you include the age of the replaced equipment for measures classified as “Early Replacement” in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.

**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

MERCANTILE SELF DIRECT Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

Is this application: ☐ **NEW** (original) or ☒ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☒ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☐ Duke Energy Representative	☐ Web Site	☐ Radio
☐ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Lakota City Schools**	Contact		**Robert Fischer**	
Phone	**513-777-3316**	**Account Number**		**1270-0493-20**	
Street Address (Where incentive should be mailed)		**6947 Yankee Rd**			
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
Installation Street Address	**6040 Princeton Road**				
City	**Liberty Township**	State	**Ohio**	Zip Code	**45011**
E-mail Address	**robert.fischer@lakotaonline.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor	**Plug Smart**	Contact		**Lucas Dixon**	
Phone	**614-580-3352**	Fax		**614-453-5743**	
Street Address	**1275 Kinnear Road Suite 229**				
City	**Columbus**	State	**Ohio**	Zip Code	**43212**
E-mail Address	**lucas.dixon@plugsmart.com**				

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☒ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	**31-6000897**
	Vendor Tax ID #	**26-2368277**

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature		Vendor Signature	
Date		Date	
Title		Title	

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are eligible for incentives based on the total measured length of the lamp.)							
T8 8ft 2 lamp replacing T12 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.50		Hrs.			
T8 8ft 1 lamp replacing T12 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T8 4ft 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 3ft 4 lamp replacing T12 3ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$3.25		Hrs.			
T8 3ft 2 lamp replacing T12 3ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 4 lamp replacing T12 2ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T8 2ft 3 lamp replacing T12 2ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$2.10		Hrs.			
T8 2ft 2 lamp replacing T12 2ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are eligible for incentives based on the total measured length of the lamp.)							
T8 HO 8ft 1 lamp replacing T12 HO 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 HO 8ft 2 lamp replacing T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$7.00		Hrs.			
T8 HB 4ft 3L replacing 150-249W HID(retrofit only)	Ballast model# Lamp model #	$15.00		Hrs.			
T8 HB 4ft 4L a replacing 250-399W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
T8 HB 4ft 6L replacing 400-999W HID (retrofit only)	Ballast model# Lamp model #	$25.00		Hrs.			
T8 HB 4ft 8L replacing a 400-999W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
2 fixtures – T8 HB 4ft 8 Lamp (32W) replacing 1,000 W HID (2 for 1 replacement (retrofit only)	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast ***Fixtures must be permanently retrofitted to the lamp count specified. Reflectors may be utilized to maintain necessary lighting levels.***	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 with delamping							
T8 8ft 1 lamp replacing T12 8 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$5.00		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 2 lamp replacing T12 3 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 3 lamp replacing T12 2 ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 2 lamp replacing T12 2 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T12 8ft and 4ft fixture replaced by T8 High Performance Replace T12 and T12 HO 8' fixtures with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
High Performance T8 4ft 2 lamp fixture replacing T12 8ft 1 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 8ft 2 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 High Output 8ft 1 lamp fixture	Ballast model# Lamp model #	$10.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 High Output 8ft 2 lamp fixture	Ballast model# Lamp model #	$12.50		Hrs.			
High Performance T8 4ft 1 lamp fixture replacing T12 4ft 1 lamp	Ballast model# Lamp model #	$3.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 4ft 2 lamp	Ballast model# Lamp model #	$4.00		Hrs.			
High Performance T8 4ft 3 lamp fixture replacing T12 4 ft 3 lamp	Ballast model# Lamp model #	$6.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 4 ft 4 lamp	Ballast model# Lamp model #	$8.00		Hrs.			
T-12 4ft fixture replaced by Reduced Wattage T8 Lighting Replace standard T12 systems with 4' 25W lamps, 28W lamps, and approved CEE ballast. In order to qualify for incentives, bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: Reduced Watt T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T12 4ft 1 lamp – 34 W	Ballast model# Lamp model #	$4.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28 W or less & ballast replacing standard T12 4 ft 2 lamp – 34 W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28 W or less & ballast replacing standard T12 4 ft 3 lamp – 34 W	Ballast model# Lamp model #	$7.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28 W or less & ballast replacing standard T12 4 ft 4 lamp – 34 W	Ballast model# Lamp model #	$9.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Normal or low ballast factor ballasts must be utilized to be eligible.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced with T5 Electronic Ballasts							
T5 4ft (28 watt) 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T5 4ft (28 watt) 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.00		Hrs.			
T5 4ft (28 watt) 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T5 4ft (28 watt) 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.00		Hrs.			
T5 HO 4ft 1 (54 watt) lamp replacing 34W T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 34W T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 60W T12 8 ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 3 (54 watt) lamp replacing 95W T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 60W T12 8ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 95W T12 VHO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO HB 2L replacing 150-249W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$15.00		Hrs.			
T5 HO HB 3L replacing 250-399W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 4L replacing 400-999W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$25.00		Hrs.			
T5 HO HB 6L replacing 400-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 8L replacing 750-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$37.50		Hrs.			
2 fixtures – T5 HO HB 6 Lamp replacing 1,000 W HID (2 for 1 retrofit only) Fixture efficiency	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-5 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- Eligible T5 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%. *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-8 Fixtures replaced by High Performance T8 Lighting Replace standard T8 systems with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
T8 4ft High Performance 1 lamp & ballast replacing standard T8 4ft 1 lamp fixture	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft High Performance 2 lamp & ballast replacing standard T8 4ft 2 lamp fixture	Ballast model# Lamp model #	$3.00		Hrs.			
T8 4ft High Performance 3 lamp & ballast replacing standard T8 4ft 3 lamp fixture	Ballast model# Lamp model #	$3.10		Hrs.			
T8 4ft High Performance 4 lamp & ballast replacing standard T8 4ft 4 lamp fixture	Ballast model# Lamp model #	$6.00		Hrs.			
T-8 Fixtures replaced by Reduced Wattage High Performance T8 Lighting Replace standard T8 systems with 4' 25W lamps, 28W lamps approved CEE ballast OR relamp existing T8 fixtures with reduced wattage T8 lamps 28W or less. In order to qualify for incentives bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: reduced wattage T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T8 4ft 1 lamp – 32W	Ballast model# Lamp model #	$2.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28W or less & ballast replacing standard T8 4ft 2 lamp – 32W	Ballast model# Lamp model #	$3.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28W or less & ballast replacing standard T8 4ft 3 lamp – 32W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28W or less & ballast replacing standard T8 4ft 4 lamp – 32W	Ballast model# Lamp model #	$6.00		Hrs.			
Relamp T8 4ft 32W fixtures with Reduced Wattage T8 lamps 28 watts or less	Ballast model# Lamp model #	$2.50 / lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

CFL Lamps and Fixtures	Incentive	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
42W 8 lamp HB CFL replacing 400W HID (retrofit only) Model Number	$25.00		Hrs.			
CFL – Screw In (lamp only) replacing an incandescent (retrofit only) Model Number	$0.75 / lamp		Hrs.			
CFL – Screw-In dimmable or 3-way bulb replacing an incandescent dimmable or 3-way bulb (retrofit only) Model Number	$1.00 / lamp		Hrs.			
CFL – Hardwired Fixture replacing incandescent fixture (only pin based CFL's qualify) Model Number	$5.00 / fixture		Hrs.			
Up to 30W CFL Flood Lamp with Reflector replacing 100W or less incandescent (retrofit only) Model Number	$1.50 / lamp		Hrs.			
33W – 115W CFL lamp replacing 100 W or more incandescent Model Number	$2.50 / lamp		Hrs.			
Energy Star LED Lamps						
Replace incandescent bulbs with Energy Star LED (retrofit only) *LED lamps must be listed on the Energy Star Qualified Light Bulbs list to qualify.* *http://www.energystar.gov/index.cfm?fuseaction=iledl.display_products_pdf* Model Number	$5.00 / lamp		Hrs.			
Replace 60-100W incandescent with ENERGY STAR qualified LED downlight 18 Watts or less. (retrofit only) *Product must appear on ENERGY STAR Qualified LED Lighting qualified products list, and must contain the word "downlight".* *http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pd*. Model Number	$7.50 / fixture		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.

Metal Halide						
320W Pulse Start Halide replacing 400W HID (retrofit only) **check one ☐R ☐FE Model Number	$12.50		Hrs.			
Ceramic Metal Halide						
20W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 100 W Model Number	$15.00		Hrs.			
39W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 150 W Model Number	$15.00		Hrs.			
50W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 195W Model Number	$15.00		Hrs.			
70W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 225W Model Number	$15.00		Hrs.			
100W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 270W Model Number	$15.00		Hrs.			
150W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 360W Model Number	$15.00		Hrs.			
25 W or less Ceramic Metal Halide with integral ballast replacing 70 W or greater incandescent flood light Model Number	$5.00/lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Incentives for pulse start metal halide fixtures are for 320w pulse start metal halide lamp/ballast combinations. In a retrofit application, the fixture must be hard-wired ballast retrofit or new fixture. Screw in retrofit lamps do not qualify. Pulse start lamp wattage must be lower than existing probe start lamp wattage.
- Ceramic Metal Halide Incentive is for complete hardwired fixtures containing ceramic metal halide lamp and electronic ceramic metal halide ballast.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Measure	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
21" Tubular Skylight/Light Tube (at least one light fixture per light tube must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies) Check One ** ☐R ☐NC ☐FE Model Number	$37.50 / fixture					
LED Exit Signs (replacing or retrofitting existing incandescent or compact fluorescent exit sign) Check one ☐R ☐NC ☐FE Model Number	$5.00 / fixture					
LED Lighting In Reach-in Freezer or Cooler Case (replacing fluorescent fixtures) Model Number	$25.00 / door					
LED Case Lighting Sensor Controls Check one ☐R ☐NC ☐FE Model Number Model Number	5.00 / sensor					
Under 500 W connected to sensor check one ☒R ☐NC ☐FE Model Number	$10.00 / sensor	51	2100	$8,160.00	06/2008	$510.00
Over 500 W connected to sensor check one ☒R ☐NC ☐FE Model Number	$20.00 / sensor	67	2100	$10,720.00	06/2008	$1,340.00

- Replacement must result in energy savings to qualify
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Tubular Skylight requires at least one light fixture per light tube that must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies)
- LED exit signs shall use 5 watts or less including the battery charger when active. They must meet State Fire Marshal codes and be UL rated.
- Occupancy Sensors (under and over 500) must be either wall, ceiling, or fixture mounted. Rapid or programmed start ballasts are recommended for fluorescent fixtures.
- Occupancy Sensors (under 500W) installed on or built into High Bay fixtures are eligible for incentives.
- LED Lighting in Reach-in Freezer or Cooler Case: Must install a LED lighting system and replace (or in lieu of) a fluorescent lighting system for reach-in refrigerated display case.
- Fluorescent magnetic ballasts cannot be used to power the LED case lighting system. Existing fluorescent fixture end connectors and ballasts must be removed.
- LED case lighting system must be a permanently installed luminaire. LED lamps that install into fluorescent lamp sockets are not eligible for incentives.
- LED Case Lighting Sensor Controls may only be installed with LED lighting systems. End of aisle and individual case sensors qualify.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Outdoor Lighting	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
Exterior LED or Induction fixture replacing up to 175W HID Model Number	$20 / fixture					
Exterior LED or Induction fixture replacing 176W – 250W HID Model Number	$25 / fixture					
Exterior LED or Induction fixture replacing 251W – 400W HID Model Number	$40 / fixture					
Exterior LED or Induction fixture replacing > 400 W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing up to 175 W HID Model Number	$50/ fixture					
Garage LED or Induction fixture replacing 176W – 250W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing 251W – 400 W HID Model Number	$125/ fixture					
Garage LED or Induction fixture replacing > 400 W HID Model Number	$200/ fixture					
LED Auto Traffic Signals (replacing incandescent) Model Number	$6.25 / lamp					
LED Pedestrian Signals (replacing incandescent) Model Number	$12.50/ signal					

- Replacement must result in energy savings to qualify
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Outdoor and garage LE**D an**d induction lighting must result in a total power ***red***uction of 40% or more.
- Outdoor and garage LEDs should be listed on either the Energy Star or Design Lights consortium qualifying products lists:
    1. http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pdf
    2. http://www.designlights.org/documents/NEEPDLCQPL.xls
- Traffic and pedestrian signals using LED lights must replace conventional incandescent signals.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Program Requirements

Incentive Eligibility

- Incentives are only available to customers on a Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Incentive will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise incentive levels and/or qualifying efficiency levels at any time.
- Customer may assign the incentive to the vendor who installed/supplied the equipment. The customer's signature is required in the Payment Information section on page 1 of this form to assign the incentive to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the incentive. This assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount.
- Leased equipment is eligible for incentives providing the equipment meets the program requirements and the customer provides the required documentation noted on the Incentive Application Process page of this application.
- Any equipment which, either separately or as part of a project, has or will receive an incentive from any other Duke Energy program is ineligible.
- In no case will Duke Energy pay an incentive above the actual cost of the new equipment.
- Incentive recipient assumes all responsibilities for any tax consequences resulting from Duke Energy incentive payment.
- To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Terms and Conditions

I certify that this premise is served by Duke Energy (or an affiliate of Duke Energy), that the information provided herein is accurate and complete, and that I have purchased and installed the high efficiency equipment (indicated herein) for the business facility listed herein and not for resale. Attached is an itemized invoice for the indicated installed equipment. In understand that the proposed incentive payment from Duke Energy is subject to change based on verification and Duke Energy approval. I agree to Duke Energy verification of both the sales transaction and equipment installation which may include a site inspection from a Duke Energy representative or Duke Energy agent. I understand that I am not allowed to receive more than one incentive from Duke Energy on any piece of equipment. I also understand that my participation in the program may be taxable and that my company is solely responsible for paying all such taxes. I hereby agree to indemnify, hold harmless and release Duke Energy and it's affiliates from any actions or claims in regards to the installation, operation and disposal of equipment (and related materials) covered herein including liability from an incidental or consequential damages. Duke Energy does not endorse any particular manufacturer, product or system design within these programs; does not expressly or implicitly warrant the performance of installed equipment (Contact your contractor for details regarding equipment warranties) and is not liable for any damage caused by the installation of the equipment nor for any damage caused by the malfunction of the installed equipment.

Incentive Application Instructions

IMPORTANT NOTICE
Delays in processing incentive payments will occur if required documentation is not included with completed application(s).

1. Contact Duke Energy toll free at 866-380-9580 to confirm customer eligibility. Applications are available for download at www.duke-energy.com.

2. Review program and equipment requirements on the incentive application. (Page7)

3. Purchase and install eligible energy-efficient equipment.

4. Complete and submit application for equipment that was installed after 1/1/2008.

5. **The following items must be included to verify projects. If they are not included, it will delay payment of incentive.**

   A. Itemized invoice for all equipment installed to include:
      a. Equipment cost
      b. Quantity per equipment type installed
      c. Model # for each equipment type
      d. Manufacturer's data sheet for each equipment model #.

   B. Make sure the account number provided on the cover page (customer information section) is associated with the location where the equipment was installed. If the account # does not match the address where the equipment was installed, the application will be rejected as ineligible.

   C. Provide required tax ID# for payee.

   D. Customer must sign and date the application after reviewing the Terms and Conditions. If customer wishes to **assign payment of the incentive directly to the vendor**, the customer should circle the appropriate payee in the Payment Information section of the application and sign their name to authorize payment.

6. Duke Energy may require site verification of projects that have been self-installed, prior to payment of incentive.

8. Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

8. A percentage of equipment installations will be site verified for quality assurance purposes. Once selected, a Duke Energy representative will contact the customer to arrange for the inspection. All incentive payments related to the project will be withheld until site verification is complete. There is no charge to the customer for these inspections.

Mercantile Self Direct Rebate Program
Requirements for Vendor Participation

Program Overview

- Duke Energy offers it's eligible non-residential customers the opportunity to increase profitability through energy cost savings and contribute to a cleaner environment by participating in our Mercantile Self Direct Incentive Program.

- Under the Duke Energy Mercantile Self Direct Incentive Program, Vendor is defined as any third party who:

  – Promotes the sale and installation of the high efficiency equipment for the customer. The Vendor will ensure that the eligible equipment is installed and operating before submitting the application or assisting the customer in completing the application.

  – Is responsible for the product sale only and is not required to ensure installation of the eligible equipment.

- All license requirements, if any, are solely the Vendor's responsibility. Participating Vendors include equipment contractors, equipment Vendors, equipment manufacturers and distributors, energy service companies, etc. The typical Vendor role is to contact/solicit eligible customers building new or retrofitting existing facilities and encourage the installation of the energy-efficient equipment offered in Duke Energy's program.

- Incentives are paid directly to customers unless the customer assigns the incentive to the Vendor. The assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount. Incentives are taxable to the entity who receives the rebate check. Rebates greater than $600 will be reported to the IRS unless documentation of tax exempt status is provided.

  Vendors can sign up to be on Duke Energy's Web site as a participating Vendor and be added to Duke Energy's e-mail distribution by emailing the Vendor Participation Agreement (VPA) to SelfDirect@duke-energy.com or faxing to **513-419-5572.**

Guidelines for Vendor Activities

- Vendors shall sign and return the attached VPA to Duke Energy prior to soliciting customer participation or when submitting an application. Rebate payments will not be released to a Vendor unless a signed VPA is on file.

- Vendors shall not misrepresent the nature of their role in the program. In particular, Vendors shall not state or imply to customers, or any persons, that the Vendor is employed by or working on Duke Energy's behalf.

- Vendors may not represent to customers that Duke Energy endorses their specific products or services. Duke Energy does not endorse specific products, services, or companies – only energy-efficient technologies.

- Vendors may advise customers of their option to have Duke Energy make their rebate check(s) payable to the Vendor if the customer's rebate amount is being deducted from the total sale price in advance. The customer must complete and sign the Payment Release Authorization section of the Mercantile Self Direct Incentive Program Application.

- Vendors may use the words "Duke Energy's Mercantile Self Direct Incentive Program" in promotional materials or advertisements. Vendors may use the name Duke Energy in a text format to describe the Mercantile Self Direct Incentive Program, but are not permitted to use Duke Energy's logos.

- For Vendors who properly install the qualifying equipment, the equipment shall be installed and operating prior to an application being submitted. A percentage of each Vendor's installations will be subject to inspection by Duke Energy for verifying that the equipment is installed and operating. Vendors demonstrating high failure rates (based on a statistically significant sample) will have 100% of subsequent jobs inspected or may have their participation in the Mercantile Self Direct Incentive Program revoked by Duke Energy in it's sole discretion.

- Vendors shall provide customers with applicable equipment warranty information for all measures installed. Vendors shall provide the required documentation for customers to apply for the rebate (invoices with model numbers and quantities, specification sheets for installed equipment, etc.) and assist customers in filling out the application.

- Vendors shall comply with all applicable local, state, and federal laws and codes when performing installation and related functions.

- Duke Energy reserves the right to revoke a Vendor's participation in Mercantile Self Direct Incentive Program if, in Duke Energy's sole judgment, the Vendor fails to comply with the program's guidelines and requirements.

- Mercantile Self Direct Incentive Program offerings may be modified or terminated without prior notice. Check Duke Energy's Web site for current program status.

For more information, call **1-866.380.9580** or visit **www.duke-energy.com.**

Mercantile Self Direct Incentive Program

Technology	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*	**Technology**	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*
Lighting	☐	☐	Thermal Storage	☐	☐
Heating Ventilation & Cooling	☐	☐	Pumps/Motors/VFD's	☐	☐
Food Service	☐	☐	Chillers	☐	☐
Water Heating	☐	☐	Refrigeration	☐	☐
Process Equipment (air compressors, injection molding, etc.)	☐	☐	Window Film	☐	☐

* Check all that apply

Vendors who wish to be listed as a Mercantile Self Direct Incentive Program participating Vendor shall complete this form. A signed copy of this form must be on file at Duke Energy in order for the Vendor to receive incentive payments. Fax form to **513-419-5572** or email to SelfDirect@duke-energy.com.

I have read and understand the Mercantile Self Direct Incentive Program Requirements for Vendor Participation, and I agree to comply with all requirements set forth therein. By signing this agreement, I agree to provide my customers with information and documentation that is true and accurate to the best of my knowledge. I hereby represent and warrant that the Tax ID and Vendor Tax Status provided below are true and accurate. I agree that any confidential information concerning my customer, including but not limited to Duke Energy service account information, will be used for the sole purpose of facilitating the customer's participation in the Mercantile Self Direct Incentive Program. Further, I understand that I am responsible for making sure everyone working for me understands the requirements prior to soliciting customer participation.

Vendor Federal Tax ID Number	

To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a third-party vendor. The third-party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the third-party vendor have signed confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Vendor Tax Status	☐ Corporation	☐ Individual/Sole Proprietor	☐ Partnership	☐ Other

Contact me via	☐ Phone	☐ E-Mail	☐ Mail	

Company Name	
Mailing Address	
City, State, Zip	
Phone/Fax	
Primary E-mail Address	
Secondary E-mail Address	
Vendor Signature	
Title	
Print Name	
Date	

For more information, call 1-866-380-9580 or visit www.duke-energy.com.

Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to PrescriptiveIncentives@duke-energy.com, mail to: Duke Energy • 431 Charmany Drive • Madison, WI 53719 or fax to 1-866-908-4921

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Select one		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☒ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		

How did you hear about the program? – Select one		
☐ Duke Energy Representative	☐ Web Site	☐ Radio
☒ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Lakota City Schools**	Contact		**Robert Fischer**	
Phone	**513-777-3316**	**Account Number**		**3800-0771-20**	
Street Address (Where incentive should be mailed)		**6947 Yankee Rd**			
City	**Liberty Township**	State	**OH**	Zip Code	**45044**
Installation Street Address	**6040 Princeton Road**				
City	**Liberty Township**	State	**OH**	Zip Code	**45011**
E-mail Address	**robert.fischer@lakotaonline.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor	**Plug Smart**	Contact		**Lucas Dixon**	
Phone	**614-580-3352**	Fax		**614-453-5743**	
Street Address	**1275 Kinnear Road Suite 229**				
City	**Columbus**	State	**OH**	Zip Code	**43212**
E-mail Address	**lucas.dixon@plugsmart.com**				

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☒ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	**31-6000897**
	Vendor Tax ID #	**26-2368277**

Terms and Conditions

I have read and hereby agree to the Terms & Conditions and Program Requirements.

Customer Signature	Robert Fischer	Vendor Signature	
Date	9/23/11	Date	9/23/2011
Title	DIR BLDGS & GRDS	Title	Project Manager

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-419-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts an/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
9720-3641-01	1,367,257 kWh		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct incentives are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☒ All sections of appropriate application(s) are completed	☒ Proof of payment.*	☒ Manufacturer's Spec sheets	☒ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Prescriptive Lighting ☐	MSD Prescriptive Lighting ☒
		MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐
Heating & Cooling	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Heating & Cooling ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐	MSD Prescriptive Heating & Cooling ☐	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐
Chillers & Thermal Storage	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Chillers & Thermal Storage ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Motors & Pumps	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Motors, Pumps & Drives ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
VFDs	Not Applicable	MSD Prescriptive Motors, Pumps & Drives ☐	MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐	
Food Service	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Food Service ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Process	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Process ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	
Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐
Behavioral* & No/Low Cost**	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐		

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**

*** Please ensure that you include the age of the replaced equipment for measures classified as “Early Replacement” in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.

**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

MERCANTILE SELF DIRECT Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

Is this application: ☐ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☒ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☐ Duke Energy Representative	☐ Web Site	☐ Radio
☒ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Lakota City Schools**	Contact		**Robert Fischer**	
Phone	**513-777-3316**	**Account Number**		**9720-3641-01**	
Street Address (Where incentive should be mailed)		**6947 Yanke Rd**			
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
Installation Street Address	**7630 Bethany Road**				
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
E-mail Address	**robert.fischer@lakotaonline.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor	**Plug Smart**	Contact		**Lucas Dixon**	
Phone	**614-580-3352**	Fax		**614-453-5743**	
Street Address	**1275 Kinnear Road Suite 229**				
City	**Columbus**	State	**Ohio**	Zip Code	**43212**
E-mail Address	**lucas.dixon@plugsmart.com**				

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☒ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	**31-6000897**
	Vendor Tax ID #	**26-2368277**

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature		Vendor Signature	
Date		Date	
Title		Title	

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are eligible for incentives based on the total measured length of the lamp.)							
T8 8ft 2 lamp replacing T12 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.50		Hrs.			
T8 8ft 1 lamp replacing T12 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T8 4ft 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 3ft 4 lamp replacing T12 3ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$3.25		Hrs.			
T8 3ft 2 lamp replacing T12 3ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 4 lamp replacing T12 2ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T8 2ft 3 lamp replacing T12 2ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$2.10		Hrs.			
T8 2ft 2 lamp replacing T12 2ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are eligible for incentives based on the total measured length of the lamp.)							
T8 HO 8ft 1 lamp replacing T12 HO 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 HO 8ft 2 lamp replacing T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$7.00		Hrs.			
T8 HB 4ft 3L replacing 150-249W HID(retrofit only)	Ballast model# Lamp model #	$15.00		Hrs.			
T8 HB 4ft 4L a replacing 250-399W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
T8 HB 4ft 6L replacing 400-999W HID (retrofit only)	Ballast model# Lamp model #	$25.00		Hrs.			
T8 HB 4ft 8L replacing a 400-999W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
2 fixtures – T8 HB 4ft 8 Lamp (32W) replacing 1,000 W HID (2 for 1 replacement (retrofit only)	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast ***Fixtures must be permanently retrofitted to the lamp count specified. Reflectors may be utilized to maintain necessary lighting levels.***	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 with delamping							
T8 8ft 1 lamp replacing T12 8 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$5.00		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 2 lamp replacing T12 3 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 3 lamp replacing T12 2 ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 2 lamp replacing T12 2 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T12 8ft and 4ft fixture replaced by T8 High Performance Replace T12 and T12 HO 8' fixtures with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
High Performance T8 4ft 2 lamp fixture replacing T12 8ft 1 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 8ft 2 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 High Output 8ft 1 lamp fixture	Ballast model# Lamp model #	$10.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 High Output 8ft 2 lamp fixture	Ballast model# Lamp model #	$12.50		Hrs.			
High Performance T8 4ft 1 lamp fixture replacing T12 4ft 1 lamp	Ballast model# Lamp model #	$3.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 4ft 2 lamp	Ballast model# Lamp model #	$4.00		Hrs.			
High Performance T8 4ft 3 lamp fixture replacing T12 4 ft 3 lamp	Ballast model# Lamp model #	$6.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 4 ft 4 lamp	Ballast model# Lamp model #	$8.00		Hrs.			
T-12 4ft fixture replaced by Reduced Wattage T8 Lighting Replace standard T12 systems with 4' 25W lamps, 28W lamps, and approved CEE ballast. In order to qualify for incentives, bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: Reduced Watt T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T12 4ft 1 lamp – 34 W	Ballast model# Lamp model #	$4.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28 W or less & ballast replacing standard T12 4 ft 2 lamp – 34 W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28 W or less & ballast replacing standard T12 4 ft 3 lamp – 34 W	Ballast model# Lamp model #	$7.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28 W or less & ballast replacing standard T12 4 ft 4 lamp – 34 W	Ballast model# Lamp model #	$9.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Normal or low ballast factor ballasts must be utilized to be eligible.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced with T5 Electronic Ballasts							
T5 4ft (28 watt) 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T5 4ft (28 watt) 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.00		Hrs.			
T5 4ft (28 watt) 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T5 4ft (28 watt) 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.00		Hrs.			
T5 HO 4ft 1 (54 watt) lamp replacing 34W T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 34W T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 60W T12 8 ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 3 (54 watt) lamp replacing 95W T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 60W T12 8ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 95W T12 VHO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO HB 2L replacing 150-249W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$15.00		Hrs.			
T5 HO HB 3L replacing 250-399W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 4L replacing 400-999W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$25.00		Hrs.			
T5 HO HB 6L replacing 400-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 8L replacing 750-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$37.50		Hrs.			
2 fixtures – T5 HO HB 6 Lamp replacing 1,000 W HID (2 for 1 retrofit only) Fixture efficiency	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-5 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- Eligible T5 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%. *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-8 Fixtures replaced by High Performance T8 Lighting Replace standard T8 systems with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
T8 4ft High Performance 1 lamp & ballast replacing standard T8 4ft 1 lamp fixture	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft High Performance 2 lamp & ballast replacing standard T8 4ft 2 lamp fixture	Ballast model# Lamp model #	$3.00		Hrs.			
T8 4ft High Performance 3 lamp & ballast replacing standard T8 4ft 3 lamp fixture	Ballast model# Lamp model #	$3.10		Hrs.			
T8 4ft High Performance 4 lamp & ballast replacing standard T8 4ft 4 lamp fixture	Ballast model# Lamp model #	$6.00		Hrs.			
T-8 Fixtures replaced by Reduced Wattage High Performance T8 Lighting Replace standard T8 systems with 4' 25W lamps, 28W lamps approved CEE ballast OR relamp existing T8 fixtures with reduced wattage T8 lamps 28W or less. In order to qualify for incentives bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: reduced wattage T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T8 4ft 1 lamp – 32W	Ballast model# Lamp model #	$2.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28W or less & ballast replacing standard T8 4ft 2 lamp – 32W	Ballast model# Lamp model #	$3.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28W or less & ballast replacing standard T8 4ft 3 lamp – 32W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28W or less & ballast replacing standard T8 4ft 4 lamp – 32W	Ballast model# Lamp model #	$6.00		Hrs.			
Relamp T8 4ft 32W fixtures with Reduced Wattage T8 lamps 28 watts or less	Ballast model# Lamp model #	$2.50 / lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

CFL Lamps and Fixtures	Incentive	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
42W 8 lamp HB CFL replacing 400W HID (retrofit only) Model Number	$25.00		Hrs.			
CFL – Screw In (lamp only) replacing an incandescent (retrofit only) Model Number	$0.75 / lamp		Hrs.			
CFL – Screw-In dimmable or 3-way bulb replacing an incandescent dimmable or 3-way bulb (retrofit only) Model Number	$1.00 / lamp		Hrs.			
CFL – Hardwired Fixture replacing incandescent fixture (only pin based CFL's qualify) Model Number	$5.00 / fixture		Hrs.			
Up to 30W CFL Flood Lamp with Reflector replacing 100W or less incandescent (retrofit only) Model Number	$1.50 / lamp		Hrs.			
33W – 115W CFL lamp replacing 100 W or more incandescent Model Number	$2.50 / lamp		Hrs.			
Energy Star LED Lamps						
Replace incandescent bulbs with Energy Star LED (retrofit only) *LED lamps must be listed on the Energy Star Qualified Light Bulbs list to qualify.* *http://www.energystar.gov/index.cfm?fuseaction=iledl.display_products_pdf* Model Number	$5.00 / lamp		Hrs.			
Replace 60-100W incandescent with ENERGY STAR qualified LED downlight 18 Watts or less. (retrofit only) *Product must appear on ENERGY STAR Qualified LED Lighting qualified products list, and must contain the word "downlight".* *http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pd*. Model Number	$7.50 / fixture		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.

Metal Halide						
320W Pulse Start Halide replacing 400W HID (retrofit only) **check one ☐R ☐FE Model Number	$12.50		Hrs.			
Ceramic Metal Halide						
20W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 100 W Model Number	$15.00		Hrs.			
39W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 150 W Model Number	$15.00		Hrs.			
50W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 195W Model Number	$15.00		Hrs.			
70W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 225W Model Number	$15.00		Hrs.			
100W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 270W Model Number	$15.00		Hrs.			
150W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 360W Model Number	$15.00		Hrs.			
25 W or less Ceramic Metal Halide with integral ballast replacing 70 W or greater incandescent flood light Model Number	$5.00/lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Incentives for pulse start metal halide fixtures are for 320w pulse start metal halide lamp/ballast combinations. In a retrofit application, the fixture must be hard-wired ballast retrofit or new fixture. Screw in retrofit lamps do not qualify. Pulse start lamp wattage must be lower than existing probe start lamp wattage.
- Ceramic Metal Halide Incentive is for complete hardwired fixtures containing ceramic metal halide lamp and electronic ceramic metal halide ballast.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Measure	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
21" Tubular Skylight/Light Tube (at least one light fixture per light tube must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies) Check One ** ☐R ☐NC ☐FE Model Number	$37.50 / fixture					
LED Exit Signs (replacing or retrofitting existing incandescent or compact fluorescent exit sign) Check one ☐R ☐NC ☐FE Model Number	$5.00 / fixture					
LED Lighting In Reach-in Freezer or Cooler Case (replacing fluorescent fixtures) Model Number	$25.00 / door					
LED Case Lighting Sensor Controls Check one ☐R ☐NC ☐FE Model Number Model Number	5.00 / sensor					
Under 500 W connected to sensor check one ☒R ☐NC ☐FE Model Number	$10.00 / sensor	67	2200	$10,720.00	01/2009	$670.00
Over 500 W connected to sensor check one ☒R ☐NC ☐FE Model Number	$20.00 / sensor	78	2200	$12,480.00	01/2009	$1,560.00

- Replacement must result in energy savings to qualify
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Tubular Skylight requires at least one light fixture per light tube that must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies)
- LED exit signs shall use 5 watts or less including the battery charger when active. They must meet State Fire Marshal codes and be UL rated.
- Occupancy Sensors (under and over 500) must be either wall, ceiling, or fixture mounted. Rapid or programmed start ballasts are recommended for fluorescent fixtures.
- Occupancy Sensors (under 500W) installed on or built into High Bay fixtures are eligible for incentives.
- LED Lighting in Reach-in Freezer or Cooler Case: Must install a LED lighting system and replace (or in lieu of) a fluorescent lighting system for reach-in refrigerated display case.
- Fluorescent magnetic ballasts cannot be used to power the LED case lighting system. Existing fluorescent fixture end connectors and ballasts must be removed.
- LED case lighting system must be a permanently installed luminaire. LED lamps that install into fluorescent lamp sockets are not eligible for incentives.
- LED Case Lighting Sensor Controls may only be installed with LED lighting systems. End of aisle and individual case sensors qualify.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Outdoor Lighting	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
Exterior LED or Induction fixture replacing up to 175W HID Model Number	$20 / fixture					
Exterior LED or Induction fixture replacing 176W – 250W HID Model Number	$25 / fixture					
Exterior LED or Induction fixture replacing 251W – 400W HID Model Number	$40 / fixture					
Exterior LED or Induction fixture replacing > 400 W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing up to 175 W HID Model Number	$50/ fixture					
Garage LED or Induction fixture replacing 176W – 250W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing 251W – 400 W HID Model Number	$125/ fixture					
Garage LED or Induction fixture replacing > 400 W HID Model Number	$200/ fixture					
LED Auto Traffic Signals (replacing incandescent) Model Number	$6.25 / lamp					
LED Pedestrian Signals (replacing incandescent) Model Number	$12.50/ signal					

- Replacement must result in energy savings to qualify
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Outdoor and garage LE**D an**d induction lighting must result in a total power ***red***uction of 40% or more.
- Outdoor and garage LEDs should be listed on either the Energy Star or Design Lights consortium qualifying products lists:
    1. http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pdf
    2. http://www.designlights.org/documents/NEEPDLCQPL.xls
- Traffic and pedestrian signals using LED lights must replace conventional incandescent signals.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Program Requirements

Incentive Eligibility

- Incentives are only available to customers on a Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Incentive will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise incentive levels and/or qualifying efficiency levels at any time.
- Customer may assign the incentive to the vendor who installed/supplied the equipment. The customer's signature is required in the Payment Information section on page 1 of this form to assign the incentive to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the incentive. This assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount.
- Leased equipment is eligible for incentives providing the equipment meets the program requirements and the customer provides the required documentation noted on the Incentive Application Process page of this application.
- Any equipment which, either separately or as part of a project, has or will receive an incentive from any other Duke Energy program is ineligible.
- In no case will Duke Energy pay an incentive above the actual cost of the new equipment.
- Incentive recipient assumes all responsibilities for any tax consequences resulting from Duke Energy incentive payment.
- To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Terms and Conditions

I certify that this premise is served by Duke Energy (or an affiliate of Duke Energy), that the information provided herein is accurate and complete, and that I have purchased and installed the high efficiency equipment (indicated herein) for the business facility listed herein and not for resale. Attached is an itemized invoice for the indicated installed equipment. In understand that the proposed incentive payment from Duke Energy is subject to change based on verification and Duke Energy approval. I agree to Duke Energy verification of both the sales transaction and equipment installation which may include a site inspection from a Duke Energy representative or Duke Energy agent. I understand that I am not allowed to receive more than one incentive from Duke Energy on any piece of equipment. I also understand that my participation in the program may be taxable and that my company is solely responsible for paying all such taxes. I hereby agree to indemnify, hold harmless and release Duke Energy and it's affiliates from any actions or claims in regards to the installation, operation and disposal of equipment (and related materials) covered herein including liability from an incidental or consequential damages. Duke Energy does not endorse any particular manufacturer, product or system design within these programs; does not expressly or implicitly warrant the performance of installed equipment (Contact your contractor for details regarding equipment warranties) and is not liable for any damage caused by the installation of the equipment nor for any damage caused by the malfunction of the installed equipment.

Incentive Application Instructions

IMPORTANT NOTICE
Delays in processing incentive payments will occur if required documentation is not included with completed application(s).

1. Contact Duke Energy toll free at 866-380-9580 to confirm customer eligibility. Applications are available for download at www.duke-energy.com.

2. Review program and equipment requirements on the incentive application. (Page7)

3. Purchase and install eligible energy-efficient equipment.

4. Complete and submit application for equipment that was installed after 1/1/2008.

5. **The following items must be included to verify projects. If they are not included, it will delay payment of incentive.**

   A. Itemized invoice for all equipment installed to include:
      a. Equipment cost
      b. Quantity per equipment type installed
      c. Model # for each equipment type
      d. Manufacturer's data sheet for each equipment model #.

   B. Make sure the account number provided on the cover page (customer information section) is associated with the location where the equipment was installed. If the account # does not match the address where the equipment was installed, the application will be rejected as ineligible.

   C. Provide required tax ID# for payee.

   D. Customer must sign and date the application after reviewing the Terms and Conditions. If customer wishes to **assign payment of the incentive directly to the vendor**, the customer should circle the appropriate payee in the Payment Information section of the application and sign their name to authorize payment.

6. Duke Energy may require site verification of projects that have been self-installed, prior to payment of incentive.

8. Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

8. A percentage of equipment installations will be site verified for quality assurance purposes. Once selected, a Duke Energy representative will contact the customer to arrange for the inspection. All incentive payments related to the project will be withheld until site verification is complete. There is no charge to the customer for these inspections.

Mercantile Self Direct Rebate Program
Requirements for Vendor Participation

Program Overview

- Duke Energy offers it's eligible non-residential customers the opportunity to increase profitability through energy cost savings and contribute to a cleaner environment by participating in our Mercantile Self Direct Incentive Program.

- Under the Duke Energy Mercantile Self Direct Incentive Program, Vendor is defined as any third party who:

  – Promotes the sale and installation of the high efficiency equipment for the customer. The Vendor will ensure that the eligible equipment is installed and operating before submitting the application or assisting the customer in completing the application.

  – Is responsible for the product sale only and is not required to ensure installation of the eligible equipment.

- All license requirements, if any, are solely the Vendor's responsibility. Participating Vendors include equipment contractors, equipment Vendors, equipment manufacturers and distributors, energy service companies, etc. The typical Vendor role is to contact/solicit eligible customers building new or retrofitting existing facilities and encourage the installation of the energy-efficient equipment offered in Duke Energy's program.

- Incentives are paid directly to customers unless the customer assigns the incentive to the Vendor. The assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount. Incentives are taxable to the entity who receives the rebate check. Rebates greater than $600 will be reported to the IRS unless documentation of tax exempt status is provided.

  Vendors can sign up to be on Duke Energy's Web site as a participating Vendor and be added to Duke Energy's e-mail distribution by emailing the Vendor Participation Agreement (VPA) to SelfDirect@duke-energy.com or faxing to **513-419-5572.**

Guidelines for Vendor Activities

- Vendors shall sign and return the attached VPA to Duke Energy prior to soliciting customer participation or when submitting an application. Rebate payments will not be released to a Vendor unless a signed VPA is on file.

- Vendors shall not misrepresent the nature of their role in the program. In particular, Vendors shall not state or imply to customers, or any persons, that the Vendor is employed by or working on Duke Energy's behalf.

- Vendors may not represent to customers that Duke Energy endorses their specific products or services. Duke Energy does not endorse specific products, services, or companies – only energy-efficient technologies.

- Vendors may advise customers of their option to have Duke Energy make their rebate check(s) payable to the Vendor if the customer's rebate amount is being deducted from the total sale price in advance. The customer must complete and sign the Payment Release Authorization section of the Mercantile Self Direct Incentive Program Application.

- Vendors may use the words "Duke Energy's Mercantile Self Direct Incentive Program" in promotional materials or advertisements. Vendors may use the name Duke Energy in a text format to describe the Mercantile Self Direct Incentive Program, but are not permitted to use Duke Energy's logos.

- For Vendors who properly install the qualifying equipment, the equipment shall be installed and operating prior to an application being submitted. A percentage of each Vendor's installations will be subject to inspection by Duke Energy for verifying that the equipment is installed and operating. Vendors demonstrating high failure rates (based on a statistically significant sample) will have 100% of subsequent jobs inspected or may have their participation in the Mercantile Self Direct Incentive Program revoked by Duke Energy in it's sole discretion.

- Vendors shall provide customers with applicable equipment warranty information for all measures installed. Vendors shall provide the required documentation for customers to apply for the rebate (invoices with model numbers and quantities, specification sheets for installed equipment, etc.) and assist customers in filling out the application.

- Vendors shall comply with all applicable local, state, and federal laws and codes when performing installation and related functions.

- Duke Energy reserves the right to revoke a Vendor's participation in Mercantile Self Direct Incentive Program if, in Duke Energy's sole judgment, the Vendor fails to comply with the program's guidelines and requirements.

- Mercantile Self Direct Incentive Program offerings may be modified or terminated without prior notice. Check Duke Energy's Web site for current program status.

For more information, call **1-866.380.9580** or visit **www.duke-energy.com.**

Mercantile Self Direct Incentive Program

Technology	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*	**Technology**	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*
Lighting	☐	☐	Thermal Storage	☐	☐
Heating Ventilation & Cooling	☐	☐	Pumps/Motors/VFD's	☐	☐
Food Service	☐	☐	Chillers	☐	☐
Water Heating	☐	☐	Refrigeration	☐	☐
Process Equipment (air compressors, injection molding, etc.)	☐	☐	Window Film	☐	☐

* Check all that apply

Vendors who wish to be listed as a Mercantile Self Direct Incentive Program participating Vendor shall complete this form. A signed copy of this form must be on file at Duke Energy in order for the Vendor to receive incentive payments. Fax form to **513-419-5572** or email to SelfDirect@duke-energy.com.

I have read and understand the Mercantile Self Direct Incentive Program Requirements for Vendor Participation, and I agree to comply with all requirements set forth therein. By signing this agreement, I agree to provide my customers with information and documentation that is true and accurate to the best of my knowledge. I hereby represent and warrant that the Tax ID and Vendor Tax Status provided below are true and accurate. I agree that any confidential information concerning my customer, including but not limited to Duke Energy service account information, will be used for the sole purpose of facilitating the customer's participation in the Mercantile Self Direct Incentive Program. Further, I understand that I am responsible for making sure everyone working for me understands the requirements prior to soliciting customer participation.

Vendor Federal Tax ID Number	

To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a third-party vendor. The third-party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the third-party vendor have signed confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Vendor Tax Status	☐ Corporation	☐ Individual/Sole Proprietor	☐ Partnership	☐ Other

Contact me via	☐ Phone	☐ E-Mail	☐ Mail	

Company Name	
Mailing Address	
City, State, Zip	
Phone/Fax	
Primary E-mail Address	
Secondary E-mail Address	
Vendor Signature	
Title	
Print Name	
Date	

For more information, call 1-866-380-9580 or visit www.duke-energy.com.

Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to PrescriptiveIncentives@duke-energy.com, mail to: Duke Energy • 431 Charmany Drive • Madison, WI 53719 or fax to 1-866-908-4921

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Check one		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☒ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? Check one		
☐ Duke Energy Representative	☐ Web Site	☐ Radio
☒ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Lakota City Schools**	Contact		**Robert Fischer**	
Phone	**513-777-3316**	**Account Number**		**9720-3641-01-3**	
Street Address (Where incentive should be mailed)		**6947 Yankee Rd**			
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
Installation Street Address	**7630 Bethany Road**				
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
E-mail Address	**robert.fischer@lakotaonline.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor	**Plug Smart**	Contact		**Lucas Dixon**	
Phone	**614-580-3352**	Fax		**614-453-5743**	
Street Address	**1275 Kinnear Road Suite 229**				
City	**Columbus**	State	**Oh**	Zip Code	**43212**
E-mail Address	**lucas.dixon@plugsmart.com**				

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☒ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	**316000897**
	Vendor Tax ID #	**262368277**

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature	Robert Fischer	Vendor Signature	
Date	9/23/11	Date	9/23/2011
Title	DIR. BLDGS + GRDS	Title	Project Manager

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.

Email this form along with completed Mercantile Self Direct Prescriptive or Custom applications, proof of payment, energy savings calculations and spec sheets to SelfDirect@Duke-Energy.com. You may also fax to 1-513-419-5572.

Mercantile customers, defined as using at least 700,000 kWh annually are eligible for the Mercantile Self Direct program. Please indicate mercantile qualification:

- ☒ a single Duke Energy Ohio account
- ☐ multiple accounts in Ohio (energy usage with other utilities may be counted toward the total)

Please list Duke Energy account numbers below (attach listing of multiple accounts an/or billing history for other utilities as required):

Account Number	Annual Usage	Account Number	Annual Usage
9860-677-01	702,638 kWh		
4090-2053-01	504,054 kWh		

Self Direct rebates are available for completed Custom projects that have not previously received a Duke Energy Smart $aver® Custom Incentive. Self Direct incentives are applicable to Prescriptive measures that were installed more than 90 days prior to submission to Duke Energy and have not previously received a Duke Energy Prescriptive rebate.

Self Direct Program requirements dictate that certain projects that may be Prescriptive in nature under the Smart $aver program must be evaluated using the Custom process. Use the table on page two as a guide to determine which Self Direct program fits your project(s). Apply for Self Direct projects using the appropriate application forms in conjunction with this cover sheet. Where Mercantile Self Direct Prescriptive applications are listed, please refer to the measure list on that application. If your measure is not listed, you may be eligible for a Self Direct Custom rebate. Self Direct Custom applications, like Smart $aver Custom applications, should include detailed analysis of pre-project and post-project energy usage and project costs. Please indicate which type of rebate applications are included in the table provided on page two.

Please check each box to indicate completion of the following program requirements:

☒ All sections of appropriate application(s) are completed	☒ Proof of payment.*	☒ Manufacturer's Spec sheets	☒ Energy model/calculations and detailed inputs for Custom applications

* If a single payment record is intended to demonstrate the costs of both Prescriptive & Custom projects, please include an additional document with an estimated breakout of costs for each Prescriptive and Custom energy conservation measure.

Application Type	Replaced equipment at end of lifetime or because equipment failed**	Replaced fully operational equipment to improve efficiency***	New Construction
Lighting	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Prescriptive Lighting ☐	MSD Prescriptive Lighting ☒
		MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐	MSD Custom Part 1 ☐ Custom Lighting Worksheet ☐
Heating & Cooling	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Heating & Cooling ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐	MSD Prescriptive Heating & Cooling ☐	MSD Custom Part 1 ☐ MSD Custom General and/or EMS Worksheet(s) ☐
Chillers & Thermal Storage	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Chillers & Thermal Storage ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Motors & Pumps	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Motors, Pumps & Drives ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
VFDs	Not Applicable	MSD Prescriptive Motors, Pumps & Drives ☐	MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom VFD Worksheet ☐	
Food Service	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Food Service ☐
			MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
Process	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	MSD Prescriptive Process ☐	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐
		MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐	
Energy Management Systems	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐	MSD Custom Part 1 ☐ MSD Custom EMS Worksheet ☐
Behavioral* & No/Low Cost**	MSD Custom Part 1 ☐ MSD Custom General Worksheet ☐		

** Under the Self Direct program, failed equipment and equipment at the end of its useful life are evaluated differently than early replacement of fully functioning equipment. **All equipment replacements due to failure or old age will be evaluated via the Custom program.**

*** Please ensure that you include the age of the replaced equipment for measures classified as “Early Replacement” in your application as well as the estimated date that you would have otherwise replaced the existing equipment if you had not chosen a more energy efficient option.

**** Behavioral energy efficiency and demand reduction projects must be both measurable and verifiable. Provide justification with your application.

MERCANTILE SELF DIRECT Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

Is this application: ☐ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required (check one)		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☒ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		
How did you hear about the program? (check one)		
☐ Duke Energy Representative	☐ Web Site	☐ Radio
☒ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Lakota Local Schools**	Contact		**Robert Fischer**	
Phone	**513-777-3316**	**Account Number**		**9860-0677-01**	
Street Address (Where incentive should be mailed)		**6947 Yankee Road**			
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
Installation Street Address	**5050 Tylersville Road**				
City	**West Chester**	State	**Ohio**	Zip Code	**45069**
E-mail Address	**robert.fischer@lakotaonline.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor	**Plug Smart**	Contact		**Lucas Dixon**	
Phone	**614-580-3352**	Fax		**614-453-5743**	
Street Address	**1275 Kinnear Road Suite 229**				
City	**Columbus**	State	**Ohio**	Zip Code	**43212**
E-mail Address	**lucas.dixon@plugsmart.com**				

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☒ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	
	Vendor Tax ID #	

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature		Vendor Signature	
Date		Date	
Title		Title	

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are eligible for incentives based on the total measured length of the lamp.)							
T8 8ft 2 lamp replacing T12 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.50		Hrs.			
T8 8ft 1 lamp replacing T12 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T8 4ft 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 3ft 4 lamp replacing T12 3ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$3.25		Hrs.			
T8 3ft 2 lamp replacing T12 3ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 4 lamp replacing T12 2ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T8 2ft 3 lamp replacing T12 2ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$2.10		Hrs.			
T8 2ft 2 lamp replacing T12 2ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

NOTE: All Fixtures must be installed indoors, with the exception of Traffic and Pedestrian Signals and where otherwise noted.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 (T8 U tube lamps are eligible for incentives based on the total measured length of the lamp.)							
T8 HO 8ft 1 lamp replacing T12 HO 8ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T8 HO 8ft 2 lamp replacing T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$7.00		Hrs.			
T8 HB 4ft 3L replacing 150-249W HID(retrofit only)	Ballast model# Lamp model #	$15.00		Hrs.			
T8 HB 4ft 4L a replacing 250-399W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
T8 HB 4ft 6L replacing 400-999W HID (retrofit only)	Ballast model# Lamp model #	$25.00		Hrs.			
T8 HB 4ft 8L replacing a 400-999W HID(retrofit only)	Ballast model# Lamp model #	$20.00		Hrs.			
2 fixtures – T8 HB 4ft 8 Lamp (32W) replacing 1,000 W HID (2 for 1 replacement (retrofit only)	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors (heated and cooled enclosed space).
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Eligible T8 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%.
- *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast ***Fixtures must be permanently retrofitted to the lamp count specified. Reflectors may be utilized to maintain necessary lighting levels.***	**Ballast and Model Numbers**	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced by T8 with delamping							
T8 8ft 1 lamp replacing T12 8 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$5.00		Hrs.			
T8 4ft 2 lamp replacing T12 4ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 4ft 1 lamp replacing T12 4ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.50		Hrs.			
T8 3ft 3 lamp replacing T12 3ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 2 lamp replacing T12 3 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 3ft 1 lamp replacing T12 3 ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$2.00		Hrs.			
T8 2ft 3 lamp replacing T12 2 ft 4 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 2 lamp replacing T12 2 ft 3 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			
T8 2ft 1 lamp replacing T12 2ft 2 lamp (retrofit only)*	Ballast model# Lamp model #	$1.50		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%. For 8-foot fluorescent ballasts, the total harmonic distortion shall not exceed 30%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T12 8ft and 4ft fixture replaced by T8 High Performance Replace T12 and T12 HO 8' fixtures with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
High Performance T8 4ft 2 lamp fixture replacing T12 8ft 1 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 8ft 2 lamp fixture	Ballast model# Lamp model #	$5.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 High Output 8ft 1 lamp fixture	Ballast model# Lamp model #	$10.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 High Output 8ft 2 lamp fixture	Ballast model# Lamp model #	$12.50		Hrs.			
High Performance T8 4ft 1 lamp fixture replacing T12 4ft 1 lamp	Ballast model# Lamp model #	$3.00		Hrs.			
High Performance T8 4ft 2 lamp fixture replacing T12 4ft 2 lamp	Ballast model# Lamp model #	$4.00		Hrs.			
High Performance T8 4ft 3 lamp fixture replacing T12 4 ft 3 lamp	Ballast model# Lamp model #	$6.00		Hrs.			
High Performance T8 4ft 4 lamp fixture replacing T12 4 ft 4 lamp	Ballast model# Lamp model #	$8.00		Hrs.			
T-12 4ft fixture replaced by Reduced Wattage T8 Lighting Replace standard T12 systems with 4' 25W lamps, 28W lamps, and approved CEE ballast. In order to qualify for incentives, bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: Reduced Watt T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T12 4ft 1 lamp – 34 W	Ballast model# Lamp model #	$4.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28 W or less & ballast replacing standard T12 4 ft 2 lamp – 34 W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28 W or less & ballast replacing standard T12 4 ft 3 lamp – 34 W	Ballast model# Lamp model #	$7.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28 W or less & ballast replacing standard T12 4 ft 4 lamp – 34 W	Ballast model# Lamp model #	$9.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Normal or low ballast factor ballasts must be utilized to be eligible.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-12 fixtures replaced with T5 Electronic Ballasts							
T5 4ft (28 watt) 1 lamp replacing T12 4ft 1 lamp (retrofit only)	Ballast model# Lamp model #	$2.50		Hrs.			
T5 4ft (28 watt) 2 lamp replacing T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.00		Hrs.			
T5 4ft (28 watt) 3 lamp replacing T12 4ft 3 lamp (retrofit only)	Ballast model# Lamp model #	$5.00		Hrs.			
T5 4ft (28 watt) 4 lamp replacing T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.00		Hrs.			
T5 HO 4ft 1 (54 watt) lamp replacing 34W T12 4ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$3.00		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 34W T12 4ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 2 (54 watt) lamp replacing 60W T12 8 ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$4.50		Hrs.			
T5 HO 4ft 3 (54 watt) lamp replacing 95W T12 HO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$5.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 60W T12 8ft 4 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO 4ft 4 (54 watt) lamp replacing 95W T12 VHO 8ft 2 lamp (retrofit only)	Ballast model# Lamp model #	$6.50		Hrs.			
T5 HO HB 2L replacing 150-249W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$15.00		Hrs.			
T5 HO HB 3L replacing 250-399W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 4L replacing 400-999W HID(retrofit only) Fixture efficiency	Ballast model# Lamp model #	$25.00		Hrs.			
T5 HO HB 6L replacing 400-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$20.00		Hrs.			
T5 HO HB 8L replacing 750-999W HID (retrofit only) Fixture efficiency	Ballast model# Lamp model #	$37.50		Hrs.			
2 fixtures – T5 HO HB 6 Lamp replacing 1,000 W HID (2 for 1 retrofit only) Fixture efficiency	Ballast model# Lamp model #	$60.00		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-5 lamps.
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- Eligible T5 High Bays must have specular/mirror like or white reflectors and fixture efficiency must be >90%. *Manufacturers spec sheet is required and must indicate that it is a High Bay fixture and the fixture efficiency is > than 90%. If spec sheet does not list efficiency, a photometric report will be required that indicates total fixture (Luminaire) efficiency rating or the 0-180 degree of lamp rating included in the zonal lumen summary chart.*
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Fixtures = Lamps + Ballast Retrofit fixture replacement – 1:1 ratio (except where otherwise indicated)	Ballast and Model Numbers	Incentive per fixture	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
T-8 Fixtures replaced by High Performance T8 Lighting Replace standard T8 systems with High Performance T8 4ft lamps and ballast. Approved lamps and ballasts must be listed on the CEE High performance T8 qualified product list found on the web at www.cee1.org.							
T8 4ft High Performance 1 lamp & ballast replacing standard T8 4ft 1 lamp fixture	Ballast model# Lamp model #	$2.00		Hrs.			
T8 4ft High Performance 2 lamp & ballast replacing standard T8 4ft 2 lamp fixture	Ballast model# Lamp model #	$3.00		Hrs.			
T8 4ft High Performance 3 lamp & ballast replacing standard T8 4ft 3 lamp fixture	Ballast model# Lamp model #	$3.10		Hrs.			
T8 4ft High Performance 4 lamp & ballast replacing standard T8 4ft 4 lamp fixture	Ballast model# Lamp model #	$6.00		Hrs.			
T-8 Fixtures replaced by Reduced Wattage High Performance T8 Lighting Replace standard T8 systems with 4' 25W lamps, 28W lamps approved CEE ballast OR relamp existing T8 fixtures with reduced wattage T8 lamps 28W or less. In order to qualify for incentives bulbs and ballasts must be from CEE reduced-wattage approved list. To view the CEE Reduced Wattage T8 qualified product list, go to www.cee1.org. **Note**: reduced wattage T8 compatibility varies; consult manufacturer's literature before specifying products.							
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T8 4ft 1 lamp – 32W	Ballast model# Lamp model #	$2.00		Hrs.			
Reduced Wattage T8 4ft 2 lamp of 28W or less & ballast replacing standard T8 4ft 2 lamp – 32W	Ballast model# Lamp model #	$3.00		Hrs.			
Reduced Wattage T8 4ft 3 lamp of 28W or less & ballast replacing standard T8 4ft 3 lamp – 32W	Ballast model# Lamp model #	$5.00		Hrs.			
Reduced Wattage T8 4ft 4 lamp of 28W or less & ballast replacing standard T8 4ft 4 lamp – 32W	Ballast model# Lamp model #	$6.00		Hrs.			
Relamp T8 4ft 32W fixtures with Reduced Wattage T8 lamps 28 watts or less	Ballast model# Lamp model #	$2.50 / lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All fluorescent fixtures shall utilize electronic ballast and T-8 lamps .
- Ballasts shall have a power factor greater than 90%.
- Ballasts, harmonic distortion shall not exceed 20%.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Replacement must result in energy savings to qualify.
- High lumen lamp and low ballast factor ballast combinations are expected.
- Reduced watt T8 lamps should not be used in dimming applications unless the lamp and ballast manufacturers have approved a specific application for dimming or frequent switching. May demonstrate dim light, spiraling, pulsing and other undesirable behavior in cooler temperature rooms and while warming up. System performance varies based on lamp or ballast components.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

CFL Lamps and Fixtures	Incentive	Qty	Annual Operating Hours (minimum of 1800)	Equipment Cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
42W 8 lamp HB CFL replacing 400W HID (retrofit only) Model Number	$25.00		Hrs.			
CFL – Screw In (lamp only) replacing an incandescent (retrofit only) Model Number	$0.75 / lamp		Hrs.			
CFL – Screw-In dimmable or 3-way bulb replacing an incandescent dimmable or 3-way bulb (retrofit only) Model Number	$1.00 / lamp		Hrs.			
CFL – Hardwired Fixture replacing incandescent fixture (only pin based CFL's qualify) Model Number	$5.00 / fixture		Hrs.			
Up to 30W CFL Flood Lamp with Reflector replacing 100W or less incandescent (retrofit only) Model Number	$1.50 / lamp		Hrs.			
33W – 115W CFL lamp replacing 100 W or more incandescent Model Number	$2.50 / lamp		Hrs.			
Energy Star LED Lamps						
Replace incandescent bulbs with Energy Star LED (retrofit only) *LED lamps must be listed on the Energy Star Qualified Light Bulbs list to qualify.* *http://www.energystar.gov/index.cfm?fuseaction=iledl.display_products_pdf* Model Number	$5.00 / lamp		Hrs.			
Replace 60-100W incandescent with ENERGY STAR qualified LED downlight 18 Watts or less. (retrofit only) *Product must appear on ENERGY STAR Qualified LED Lighting qualified products list, and must contain the word "downlight".* *http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pd*. Model Number	$7.50 / fixture		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.

Metal Halide						
320W Pulse Start Halide replacing 400W HID (retrofit only) **check one ☐R ☐FE Model Number	$12.50		Hrs.			
Ceramic Metal Halide						
20W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 100 W Model Number	$15.00		Hrs.			
39W Ceramic Metal Halide fixture replacing ☐ Incandescent or ☐ Halogen of at least 150 W Model Number	$15.00		Hrs.			
50W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 195W Model Number	$15.00		Hrs.			
70W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogen for a total of 225W Model Number	$15.00		Hrs.			
100W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 270W Model Number	$15.00		Hrs.			
150W Ceramic Metal Halide fixture replacing ☐ Incandescents or ☐ Halogens for a total of 360W Model Number	$15.00		Hrs.			
25 W or less Ceramic Metal Halide with integral ballast replacing 70 W or greater incandescent flood light Model Number	$5.00/lamp		Hrs.			

- Replacement must result in energy savings to qualify.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Incentives for pulse start metal halide fixtures are for 320w pulse start metal halide lamp/ballast combinations. In a retrofit application, the fixture must be hard-wired ballast retrofit or new fixture. Screw in retrofit lamps do not qualify. Pulse start lamp wattage must be lower than existing probe start lamp wattage.
- Ceramic Metal Halide Incentive is for complete hardwired fixtures containing ceramic metal halide lamp and electronic ceramic metal halide ballast.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Measure	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
21" Tubular Skylight/Light Tube (at least one light fixture per light tube must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies) Check One ** ☐R ☐NC ☐FE Model Number	$37.50 / fixture					
LED Exit Signs (replacing or retrofitting existing incandescent or compact fluorescent exit sign) Check one ☐R ☐NC ☐FE Model Number	$5.00 / fixture					
LED Lighting In Reach-in Freezer or Cooler Case (replacing fluorescent fixtures) Model Number	$25.00 / door					
LED Case Lighting Sensor Controls Check one ☐R ☐NC ☐FE Model Number Model Number	5.00 / sensor					
Under 500 W connected to sensor check one ☐R ☐NC ☐FE Model Number	$10.00 / sensor					
Over 500 W connected to sensor check one ☒R ☐NC ☐FE Model Number OMNI-DT	$20.00 / sensor	42	2200	$6,720.00	01/2009	$840.00

- Replacement must result in energy savings to qualify
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Lighting circuits should be installed with a neutral wire that has the same size conductor as the line load.
- All fixtures shall be installed indoors except where specifically stated.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- Tubular Skylight requires at least one light fixture per light tube that must be controlled by a "daylight" sensor (no additional daylight sensor incentive applies)
- LED exit signs shall use 5 watts or less including the battery charger when active. They must meet State Fire Marshal codes and be UL rated.
- Occupancy Sensors (under and over 500) must be either wall, ceiling, or fixture mounted. Rapid or programmed start ballasts are recommended for fluorescent fixtures.
- Occupancy Sensors (under 500W) installed on or built into High Bay fixtures are eligible for incentives.
- LED Lighting in Reach-in Freezer or Cooler Case: Must install a LED lighting system and replace (or in lieu of) a fluorescent lighting system for reach-in refrigerated display case.
- Fluorescent magnetic ballasts cannot be used to power the LED case lighting system. Existing fluorescent fixture end connectors and ballasts must be removed.
- LED case lighting system must be a permanently installed luminaire. LED lamps that install into fluorescent lamp sockets are not eligible for incentives.
- LED Case Lighting Sensor Controls may only be installed with LED lighting systems. End of aisle and individual case sensors qualify.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Outdoor Lighting	Incentive	Qty	Annual Operating Hrs (minimum of 1800)	Equipment cost (w/o labor)	Date Installed and Operable (mm/yy)	Total Incentive
Exterior LED or Induction fixture replacing up to 175W HID Model Number	$20 / fixture					
Exterior LED or Induction fixture replacing 176W – 250W HID Model Number	$25 / fixture					
Exterior LED or Induction fixture replacing 251W – 400W HID Model Number	$40 / fixture					
Exterior LED or Induction fixture replacing > 400 W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing up to 175 W HID Model Number	$50/ fixture					
Garage LED or Induction fixture replacing 176W – 250W HID Model Number	$75/ fixture					
Garage LED or Induction fixture replacing 251W – 400 W HID Model Number	$125/ fixture					
Garage LED or Induction fixture replacing > 400 W HID Model Number	$200/ fixture					
LED Auto Traffic Signals (replacing incandescent) Model Number	$6.25 / lamp					
LED Pedestrian Signals (replacing incandescent) Model Number	$12.50/ signal					

- Replacement must result in energy savings to qualify
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- All fixtures must operate a minimum of 1,800 hours to be eligible.
- All equipment must be **new** to be eligible for incentives. Used equipment is ***not*** eligible for incentives.
- Outdoor and garage LE**D an**d induction lighting must result in a total power ***red***uction of 40% or more.
- Outdoor and garage LEDs should be listed on either the Energy Star or Design Lights consortium qualifying products lists:
    1. http://www.energystar.gov/index.cfm?fuseaction=ssl.display_products_com_pdf
    2. http://www.designlights.org/documents/NEEPDLCQPL.xls
- Traffic and pedestrian signals using LED lights must replace conventional incandescent signals.
- Incentive capped at 50% of the equipment cost.
- New construction or replacement of failed equipment must apply for Self Direct Custom program.

Program Requirements

Incentive Eligibility

- Incentives are only available to customers on a Duke Energy Ohio non-residential rate.
- Duke Energy Customers who purchase electric generation from an alternative supplier are eligible to participate.
- Incentive will not be paid until eligible equipment has been installed, is available to operate, and verification has been completed by Duke Energy staff as noted in the Term & Conditions stated below.
- Duke Energy reserves the right to revise incentive levels and/or qualifying efficiency levels at any time.
- Customer may assign the incentive to the vendor who installed/supplied the equipment. The customer's signature is required in the Payment Information section on page 1 of this form to assign the incentive to the vendor. Customer agrees that such an action constitutes an irrevocable assignment of the incentive. This assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount.
- Leased equipment is eligible for incentives providing the equipment meets the program requirements and the customer provides the required documentation noted on the Incentive Application Process page of this application.
- Any equipment which, either separately or as part of a project, has or will receive an incentive from any other Duke Energy program is ineligible.
- In no case will Duke Energy pay an incentive above the actual cost of the new equipment.
- Incentive recipient assumes all responsibilities for any tax consequences resulting from Duke Energy incentive payment.
- To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a 3rd party vendor. The 3rd party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the 3rd party vendor have signed a confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Terms and Conditions

I certify that this premise is served by Duke Energy (or an affiliate of Duke Energy), that the information provided herein is accurate and complete, and that I have purchased and installed the high efficiency equipment (indicated herein) for the business facility listed herein and not for resale. Attached is an itemized invoice for the indicated installed equipment. In understand that the proposed incentive payment from Duke Energy is subject to change based on verification and Duke Energy approval. I agree to Duke Energy verification of both the sales transaction and equipment installation which may include a site inspection from a Duke Energy representative or Duke Energy agent. I understand that I am not allowed to receive more than one incentive from Duke Energy on any piece of equipment. I also understand that my participation in the program may be taxable and that my company is solely responsible for paying all such taxes. I hereby agree to indemnify, hold harmless and release Duke Energy and it's affiliates from any actions or claims in regards to the installation, operation and disposal of equipment (and related materials) covered herein including liability from an incidental or consequential damages. Duke Energy does not endorse any particular manufacturer, product or system design within these programs; does not expressly or implicitly warrant the performance of installed equipment (Contact your contractor for details regarding equipment warranties) and is not liable for any damage caused by the installation of the equipment nor for any damage caused by the malfunction of the installed equipment.

Incentive Application Instructions

IMPORTANT NOTICE
Delays in processing incentive payments will occur if required documentation is not included with completed application(s).

1. Contact Duke Energy toll free at 866-380-9580 to confirm customer eligibility. Applications are available for download at www.duke-energy.com.

2. Review program and equipment requirements on the incentive application. (Page7)

3. Purchase and install eligible energy-efficient equipment.

4. Complete and submit application for equipment that was installed after 1/1/2008.

5. **The following items must be included to verify projects. If they are not included, it will delay payment of incentive.**

   A. Itemized invoice for all equipment installed to include:
      a. Equipment cost
      b. Quantity per equipment type installed
      c. Model # for each equipment type
      d. Manufacturer's data sheet for each equipment model #.

   B. Make sure the account number provided on the cover page (customer information section) is associated with the location where the equipment was installed. If the account # does not match the address where the equipment was installed, the application will be rejected as ineligible.

   C. Provide required tax ID# for payee.

   D. Customer must sign and date the application after reviewing the Terms and Conditions. If customer wishes to **assign payment of the incentive directly to the vendor**, the customer should circle the appropriate payee in the Payment Information section of the application and sign their name to authorize payment.

6. Duke Energy may require site verification of projects that have been self-installed, prior to payment of incentive.

8. Email the complete, signed application with all required documents to SelfDirect@duke-energy.com or fax to 513-419-5572.

8. A percentage of equipment installations will be site verified for quality assurance purposes. Once selected, a Duke Energy representative will contact the customer to arrange for the inspection. All incentive payments related to the project will be withheld until site verification is complete. There is no charge to the customer for these inspections.

Mercantile Self Direct Rebate Program
Requirements for Vendor Participation

Program Overview

- Duke Energy offers it's eligible non-residential customers the opportunity to increase profitability through energy cost savings and contribute to a cleaner environment by participating in our Mercantile Self Direct Incentive Program.

- Under the Duke Energy Mercantile Self Direct Incentive Program, Vendor is defined as any third party who:

  – Promotes the sale and installation of the high efficiency equipment for the customer. The Vendor will ensure that the eligible equipment is installed and operating before submitting the application or assisting the customer in completing the application.

  – Is responsible for the product sale only and is not required to ensure installation of the eligible equipment.

- All license requirements, if any, are solely the Vendor's responsibility. Participating Vendors include equipment contractors, equipment Vendors, equipment manufacturers and distributors, energy service companies, etc. The typical Vendor role is to contact/solicit eligible customers building new or retrofitting existing facilities and encourage the installation of the energy-efficient equipment offered in Duke Energy's program.

- Incentives are paid directly to customers unless the customer assigns the incentive to the Vendor. The assigned incentive must reduce the purchase price paid for the equipment by an equivalent amount. Incentives are taxable to the entity who receives the rebate check. Rebates greater than $600 will be reported to the IRS unless documentation of tax exempt status is provided.

  Vendors can sign up to be on Duke Energy's Web site as a participating Vendor and be added to Duke Energy's e-mail distribution by emailing the Vendor Participation Agreement (VPA) to SelfDirect@duke-energy.com or faxing to **513-419-5572.**

Guidelines for Vendor Activities

- Vendors shall sign and return the attached VPA to Duke Energy prior to soliciting customer participation or when submitting an application. Rebate payments will not be released to a Vendor unless a signed VPA is on file.

- Vendors shall not misrepresent the nature of their role in the program. In particular, Vendors shall not state or imply to customers, or any persons, that the Vendor is employed by or working on Duke Energy's behalf.

- Vendors may not represent to customers that Duke Energy endorses their specific products or services. Duke Energy does not endorse specific products, services, or companies – only energy-efficient technologies.

- Vendors may advise customers of their option to have Duke Energy make their rebate check(s) payable to the Vendor if the customer's rebate amount is being deducted from the total sale price in advance. The customer must complete and sign the Payment Release Authorization section of the Mercantile Self Direct Incentive Program Application.

- Vendors may use the words "Duke Energy's Mercantile Self Direct Incentive Program" in promotional materials or advertisements. Vendors may use the name Duke Energy in a text format to describe the Mercantile Self Direct Incentive Program, but are not permitted to use Duke Energy's logos.

- For Vendors who properly install the qualifying equipment, the equipment shall be installed and operating prior to an application being submitted. A percentage of each Vendor's installations will be subject to inspection by Duke Energy for verifying that the equipment is installed and operating. Vendors demonstrating high failure rates (based on a statistically significant sample) will have 100% of subsequent jobs inspected or may have their participation in the Mercantile Self Direct Incentive Program revoked by Duke Energy in it's sole discretion.

- Vendors shall provide customers with applicable equipment warranty information for all measures installed. Vendors shall provide the required documentation for customers to apply for the rebate (invoices with model numbers and quantities, specification sheets for installed equipment, etc.) and assist customers in filling out the application.

- Vendors shall comply with all applicable local, state, and federal laws and codes when performing installation and related functions.

- Duke Energy reserves the right to revoke a Vendor's participation in Mercantile Self Direct Incentive Program if, in Duke Energy's sole judgment, the Vendor fails to comply with the program's guidelines and requirements.

- Mercantile Self Direct Incentive Program offerings may be modified or terminated without prior notice. Check Duke Energy's Web site for current program status.

For more information, call **1-866.380.9580** or visit **www.duke-energy.com.**

Mercantile Self Direct Incentive Program

Technology	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*	**Technology**	Responsible for sales and **not** installs*	Responsible for sales **and** Installation*
Lighting	☐	☐	Thermal Storage	☐	☐
Heating Ventilation & Cooling	☐	☐	Pumps/Motors/VFD's	☐	☐
Food Service	☐	☐	Chillers	☐	☐
Water Heating	☐	☐	Refrigeration	☐	☐
Process Equipment (air compressors, injection molding, etc.)	☐	☐	Window Film	☐	☐

* Check all that apply

Vendors who wish to be listed as a Mercantile Self Direct Incentive Program participating Vendor shall complete this form. A signed copy of this form must be on file at Duke Energy in order for the Vendor to receive incentive payments. Fax form to **513-419-5572** or email to SelfDirect@duke-energy.com.

I have read and understand the Mercantile Self Direct Incentive Program Requirements for Vendor Participation, and I agree to comply with all requirements set forth therein. By signing this agreement, I agree to provide my customers with information and documentation that is true and accurate to the best of my knowledge. I hereby represent and warrant that the Tax ID and Vendor Tax Status provided below are true and accurate. I agree that any confidential information concerning my customer, including but not limited to Duke Energy service account information, will be used for the sole purpose of facilitating the customer's participation in the Mercantile Self Direct Incentive Program. Further, I understand that I am responsible for making sure everyone working for me understands the requirements prior to soliciting customer participation.

Vendor Federal Tax ID Number	

To qualify for Duke Energy incentives, applicants who provide their social security number as their federal tax identification number for tax purposes must sign and return the "Customer consent to release personal information" form ("Consent Form") along with the application. Incentive applications are processed by a third-party vendor. The third-party vendor is responsible for mailing the 1099 form at the end of the calendar year for tax filing. Duke Energy and the third-party vendor have signed confidentiality agreement to protect your personal information. If your social security number is your federal tax ID number and you elect not to sign the Consent Form, please do not send Duke Energy the application, as you will not be qualified to participate in the incentive program.

Vendor Tax Status	☐ Corporation	☐ Individual/Sole Proprietor	☐ Partnership	☐ Other

Contact me via	☐ Phone	☐ E-Mail	☐ Mail	

Company Name	
Mailing Address	
City, State, Zip	
Phone/Fax	
Primary E-mail Address	
Secondary E-mail Address	
Vendor Signature	
Title	
Print Name	
Date	

For more information, call 1-866-380-9580 or visit www.duke-energy.com.

Ohio Lighting Incentive Application

Questions? Call 1-866-380-9580 or visit www.duke-energy.com.
Email the complete, signed application with all required documents to PrescriptiveIncentives@duke-energy.com, mail to: Duke Energy • 431 Charmany Drive • Madison, WI 53719 or fax to 1-866-908-4921

Is this application: ☒ **NEW** (original) or ☐ **REVISED** (changes made to original application)

Building Type – Required – Check one		
☐ Data Centers	☐ Full Service Restaurant	☐ Office
☒ Education/K-12	☐ Healthcare	☐ Public Assembly
☐ Education Other	☐ Industrial	☐ Public Order/Safety
☐ Elder Care/Nursing Home	☐ Lodging	☐ Religious Worship/Church
☐ Food Sales/Grocery	☐ Retail (Small Box)	☐ Service
☐ Fast Food Restaurant	☐ Retail (Big Box)	☐ Warehouse
☐ Other:		

How did you hear about the program? – Check one		
☐ Duke Energy Representative	☐ Web Site	☐ Radio
☒ Contractor / Vendor	☐ Other _____	

Please check each box to indicate completion of the following program requirements:

☒ All sections of application	☒ Invoice with make, model number, quantity and equipment manufacturer	☒ Tax ID number for payee	☒ Customer/vendor agree to Terms and Conditions

Customer Information					
Customer/Business	**Lakota City Schools**	Contact		**Robert Fischer**	
Phone	**513-777-3316**	**Account Number**		**9860-0677-01**	
Street Address (Where incentive should be mailed)		**6947 Yankee Rd**			
City	**Liberty Township**	State	**Ohio**	Zip Code	**45044**
Installation Street Address	**5050 Tylersville Road**				
City	**West Chester**	State	**Ohio**	Zip Code	**45069**
E-mail Address	**robert.fischer@lakotaonline.com**				

Failure to provide the account number associated with the location where the installation took place will result in rejection of the application.

Vendor Information					
Vendor	**Plug Smart**	Contact		**Lucas Dixon**	
Phone	**614-580-3352**	Fax		**614-453-5743**	
Street Address	**1275 Kinnear Road Suite 229**				
City	**Columbus**	State	**Oh**	Zip Code	**43212**
E-mail Address	**lucas.dixon@plugsmart.com**				

If Duke Energy has questions about this application, who should we contact? ☐ **Customer** ☒ **Vendor**

Payment Information		
Who should receive incentive payment?	☒ Customer	☐ Vendor (Customer must sign below)
I hereby authorize payment of incentive directly to the vendor:	Customer Signature (written signature)	
	Date	
Provide Tax ID Number for Payee	Customer Tax ID #	**316000897**
	Vendor Tax ID #	**262368277**

Terms and Conditions

I have read and hereby agree to the Terms & Conditions and Program Requirements.

Customer Signature	Robert Fischer	Vendor Signature	
Date	9/23/11	Date	9/28/2011
Title	DIR. BLDGS + GRDS	Title	project manager

Incentives are subject to change and may be discontinued at the sole discretion of Duke Energy. Equipment must be installed and operable to be eligible for incentives. As Federal Energy Policy Law changes, equipment efficiency requirements are subject to change.

DUKE ENERGY CORPORATION
Mercantile Self Direct Program
139 East Fourth Street
Cincinnati, OH 45202

513 629 5572 fax

January 4, 2011

Mr. Robert Fisher
Lakota Local Schools
6947 Yankee Rd
Liberty Township, Oh 45044

Subject: Your Application for a Duke Energy Mercantile Self-Direct Rebate

Dear Mr. Fisher:

Thank you for your Duke Energy Mercantile Self Direct rebate application. As noted in the Energy Conservation Measure (ECM) chart on page three, a total rebate of $4,920.00 has been proposed for your lighting projects completed in the 2008 and 2009 calendar years. All Self Direct Rebates are contingent upon approval by the Public Utilities Commission of Ohio (PUCO).

At your earliest convenience, please indicate if you accept this rebate by

- providing your signature on page two
- completing the PUCO-required affidavit on page four.

Please return the documents to my attention via fax at 513-629-5572 or e-mail to SelfDirect@Duke-Energy.com. Upon receipt, Duke Energy will submit the necessary documentation to PUCO. Following PUCO's approval, Duke Energy will remit payment.

At Duke Energy, we value your business and look forward to working with you on this and future energy efficiency projects. We hope you will consider our Smart $aver® incentives, when applicable. Please contact me if you have any questions.

Sincerely,

Grady Reid, Jr
Product Manager
Mercantile Self Direct Rebates

cc: Mike Heath, Duke Energy
Rob Yung, WECC
Lucas Dixon, Plug Smart

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

☒ Rebate is accepted. ☐ Rebate is declined.

By accepting this rebate, Lakota Local Schools affirms its intention to commit and integrate the energy efficiency projects listed on the following pages into Duke Energy's peak demand reduction, demand response and/or energy efficiency programs.

Additionally, Lakota Local Schools also agrees to serve as joint applicant in any future filings necessary to secure approval of this arrangement as required by PUCO and to comply with any information and reporting requirements imposed by rule or as part of that approval.

Finally, Lakota Local Schools affirms that all application information submitted to Duke Energy pursuant to this rebate offer is true and accurate. Information in question would include, but not be limited to, project scope, equipment specifications, equipment operational details, project costs, project completion dates, and the quantity of energy conservation measures installed.

If rebate is accepted, will you use the monies to fund future energy efficiency and/or demand reduction projects?

☒ YES ☐ NO

If rebate is declined, please indicate reason (optional):

Robert Fischer	ROBERT FISCHER	1/5/12
Customer Signature	Printed Name	Date

Proposed Rebate Amounts

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	Occupancy Sensors - <500 Watts (Quantity – 51) 6040 Princeton Rd	$510.00
ECM-2	Occupancy Sensors - >500 Watts (Quantity – 67) 6040 Princeton Rd	$1340.00
ECM-3	Occupancy Sensors - <500 Watts (Quantity – 67) 7630 Bethany Rd	$670.00
ECM-4	Occupancy Sensors - >500 Watts (Quantity – 78) 7630 Bethany Rd	$1560.00
ECM-5	Occupancy Sensors - >500 Watts (Quantity – 42) 5050 Tylersville Rd	$840.00
Total		**$4920.00**

Ohio | Public Utilities Commission

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

Case No.: ____-____-EL-EEC

State of OHIO :

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

1. I am the duly authorized representative of:

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

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

3. I am aware of fines and penalties which may be imposed under Ohio Revised Code Sections 2921.11, 2921.31, 4903.02, 4903.03, and 4903.99 for submitting false information.

Robert Fischer DIR. BLDGS & GRDS
Signature of Affiant & Title

Sworn and subscribed before me this 5th day of January, 2012 Month/Year

Linda J. Gold
Signature of official administering oath

LINDA J GOLD
Print Name and Title
EXECUTIVE SECRETARY

My commission expires on 9.19.2015

LINDA J. GOLD
Notary Public, State of Ohio
Commission Expires 9.19.2015

Lakota Local
School District

5572 Princeton Rd
Liberty Township, OH 45011
Phone: 513-874-5505

COMPLETION DATE: January 1, 2009

JOB: **Early Childhood**

INSTALL ADDRESS: 6040 Princeton Rd
Liberty Township OH 45011

BILL TO: Robert Fischer
Lakota City Schools
6947 Yankee Rd
Liberty Township OH 45044
Phone: 513-777-3316

DESCRIPTION	QUANTITY	PRICE/FIXTURE	AMOUNT
OMNI-DT200 Lighting Control System	118	N/A	$18,880.00
		TOTAL	**$18,880.00**

Authorized Signature: Robert Fischer Date: 12/15/11

Lakota Local
School District

5572 Princeton Rd
Liberty Township, OH 45011
Phone: 513-874-5505

COMPLETION DATE: January 1, 2009

JOB: **East Freshman**

INSTALL ADDRESS: 7630 Bethany Rd
Liberty Township OH 45044

BILL TO: Robert Fischer
Lakota City Schools
6947 Yankee Rd
Liberty Township OH 45044
Phone: 513-777-3316

DESCRIPTION	QUANTITY	PRICE/FIXTURE	AMOUNT
Hubbell LHIRD2 Lighting Control System	67	N/A	$10,720.00
OMNI-DT200-RP Lighting Control System	78	N/A	$12,480.00
		TOTAL	**$23,200.00**

Authorized Signature: Robert Fischer Date: 12/15/11

Lakota Local
School District

5572 Princeton Rd
Liberty Township, OH 45011
Phone: 513-874-5505

COMPLETION DATE: January 1, 2009

JOB: **West Chester**

INSTALL ADDRESS: 5050 Tylersville Rd
West Chester OH 45069

BILL TO: Robert Fischer
Lakota City Schools
6947 Yankee Rd
Liberty Township OH 45044
Phone: 513-777-3316

DESCRIPTION	QUANTITY	PRICE/FIXTURE	AMOUNT
OMNI-DT200-RP Lighting Control System	42	N/A	$6,720.00
		TOTAL	**$6,720.00**

Authorized Signature: Robert Fischer Date: 12/15/11

GENERAL NOTES

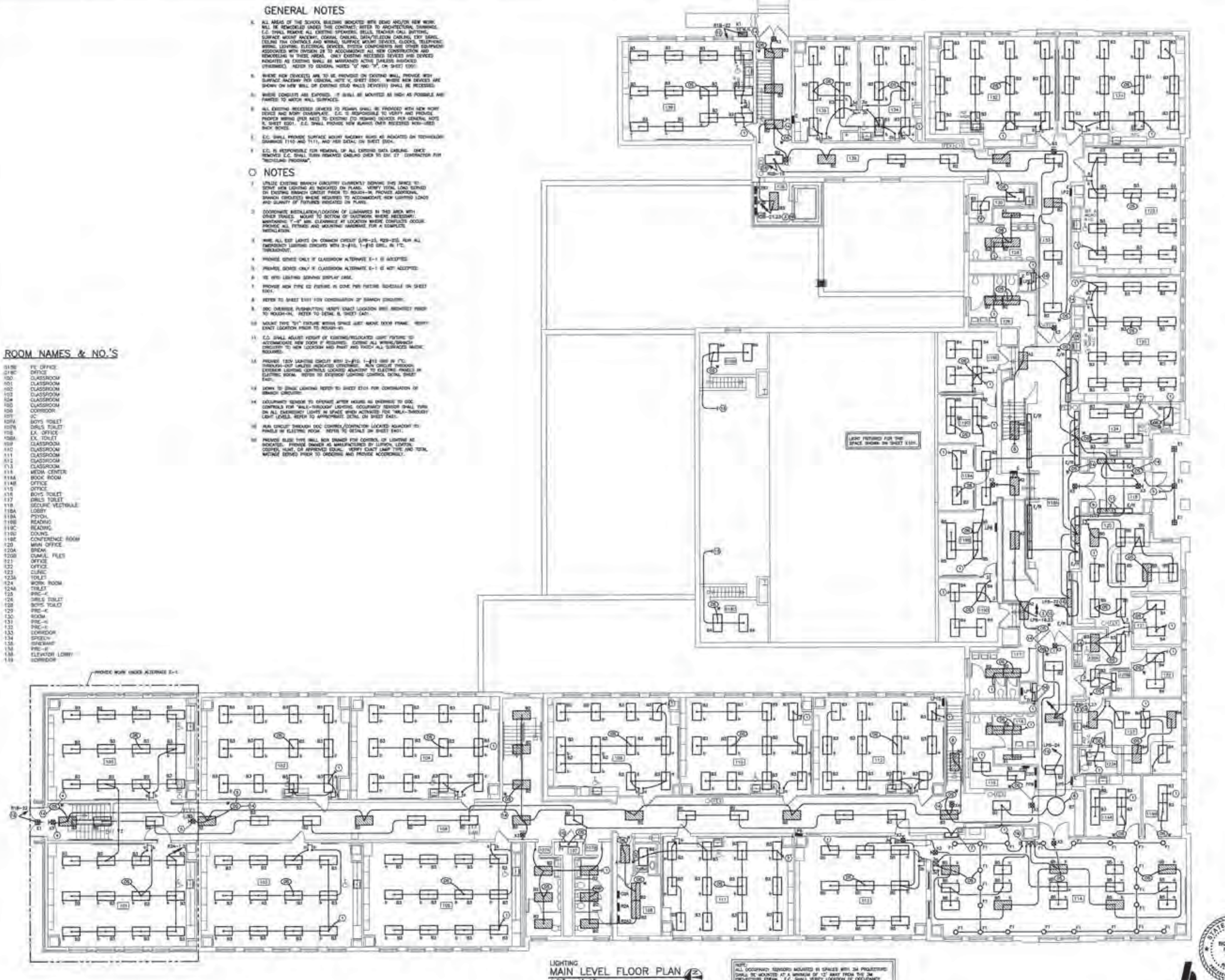
[illegible]

NOTES

[illegible]

ROOM NAMES & NO.'S

015B	P.E. OFFICE
016C	OFFICE
100	CLASSROOM
101	CLASSROOM
102	CLASSROOM
103	CLASSROOM
104	CLASSROOM
105	CLASSROOM
106	CORRIDOR
107	I/C
107A	BOYS TOILET
107B	GIRLS TOILET
108	EX. OFFICE
108A	EX. TOILET
109	CLASSROOM
110	CLASSROOM
111	CLASSROOM
112	CLASSROOM
113	CLASSROOM
114	MEDIA CENTER
114A	BOOK ROOM
114B	OFFICE
115	OFFICE
116	BOYS TOILET
117	GIRLS TOILET
118	SECURE VESTIBULE
118A	LOBBY
119A	PSYCH.
119B	READING
119C	READING
119D	COUNS.
119E	CONFERENCE ROOM
120	MAIN OFFICE
120A	BREAK
120B	CUMUL. FILES
121	OFFICE
122	OFFICE
123	CLINIC
123A	TOILET
124	WORK ROOM
124A	TOILET
125	PRE-K
126	GIRLS TOILET
128	BOYS TOILET
129	PRE-K
130	ROOM
131	PRE-K
132	PRE-K
133	CORRIDOR
134	SPEECH
135	[illegible]
136	PRE-K
138	ELEVATOR LOBBY
139	CORRIDOR



LIGHTING
MAIN LEVEL FLOOR PLAN
1/8" = 1'-0"

NOTE: ALL OCCUPANCY SENSORS MOUNTED IN SPACES WITH 3M PROJECTORS [illegible]

HEAPY ENGINEERING

Steed | Hammond | Paul

82 Williams Avenue • Hamilton, Ohio 45015 513.863.5441
1014 Vine Street, Suite 2100 • Cincinnati, Ohio 45202 513.381.2112
250 Civic Center Drive • Columbus, Ohio 43215 614.233.2124

ADDITIONS AND RENOVATIONS
LIBERTY EARLY CHILDHOOD SCHOOL
LAKOTA LOCAL SCHOOL DISTRICT
6040 PRINCETON ROAD LIBERTY TOWNSHIP, OHIO 45011

CONSTRUCTION DOCUMENTS
04-15-08

MAIN LEVEL FLOOR PLAN NEW WORK - LTG

DATE	APRIL 2008
COMM NO.	2005008.04

E102

GENERAL NOTES

A. ALL AREAS OF THE SCHOOL BUILDING INDICATED WITH DEMO AND/OR NEW WORK WILL BE REMODELED UNDER THIS CONTRACT. REFER TO ARCHITECTURAL DRAWINGS. E.C. SHALL REMOVE ALL EXISTING SPEAKERS, BELLS, TEACHER CALL BUTTONS, SURFACE MOUNT RACEWAY, COAXIAL CABLING, DATA/TELECOM CABLING, EXIT SIGNS, CEILING FAN CONTROLS AND WIRING, SURFACE MOUNT DEVICES, CLOCKS, TELEPHONE WIRING, LIGHTING, ELECTRICAL DEVICES, SYSTEM COMPONENTS AND OTHER EQUIPMENT ASSOCIATED WITH DIVISION 26 TO ACCOMMODATE ALL NEW CONSTRUCTION AND REMODELING IN THESE AREAS. ONLY EXISTING RECESSED DEVICES AND DEVICES INDICATED AS EXISTING SHALL BE MAINTAINED ACTIVE (UNLESS INDICATED OTHERWISE). REFER TO GENERAL NOTES "D" AND "R", ON SHEET E001.

B. WHERE NEW DEVICE(S) ARE TO BE PROVIDED ON EXISTING WALL, PROVIDE WITH SURFACE RACEWAY PER GENERAL NOTE "K", SHEET E001. WHERE NEW DEVICES ARE SHOWN ON NEW WALL OR EXISTING STUD WALLS DEVICE(S) SHALL BE RECESSED.

C. WHERE CONDUITS ARE EXPOSED, IT SHALL BE MOUNTED AS HIGH AS POSSIBLE AND PAINTED TO MATCH WALL SURFACES.

D. ALL EXISTING RECESSED DEVICES TO REMAIN SHALL BE PROVIDED WITH NEW IVORY DEVICE AND IVORY COVERPLATE. E.C. IS RESPONSIBLE TO VERIFY AND PROVIDE PROPER WIRING (PER NEC) TO EXISTING (TO REMAIN) DEVICES PER GENERAL NOTE R, SHEET E001. E.C. SHALL PROVIDE NEW BLANKS OVER RECESSED NON-USED BACK BOXES.

E. E.C. SHALL PROVIDE SURFACE MOUNT RACEWAY RUNS AS INDICATED ON TECHNOLOGY DRAWINGS T110 AND T111, AND PER DETAILS ON SHEET E00A.

F. E.C. IS RESPONSIBLE FOR REMOVAL OF ALL EXISTING DATA CABLING. ONCE REMOVED E.C. SHALL TURN REMOVED CABLING OVER TO DIV. 27 CONTRACTOR FOR "RECYCLING PROGRAM".

◯ NOTES

1. UTILIZE EXISTING BRANCH CIRCUITRY CURRENTLY SERVING THIS SPACE TO SERVE NEW LIGHTING AS INDICATED ON PLANS. PROVIDE SWITCHING ARRANGEMENT AS INDICATED. VERIFY TOTAL LOADS SERVED ON EXISTING BRANCH CIRCUIT PRIOR TO ROUGH-IN. PROVIDE ADDITIONAL BRANCH CIRCUIT(S) WHERE REQUIRED TO ACCOMMODATE NEW LIGHTING LAYOUTS AND QUANTITY OF FIXTURES INDICATED ON PLANS. UPDATE PANEL DIRECTORY CARD ACCORDINGLY.

2. COORDINATE INSTALLATION/LOCATION OF LUMINAIRES IN THIS AREA WITH OTHER TRADES. MOUNT TO BOTTOM OF DUCTWORK WHERE NECESSARY, MAINTAINING 7'-6" MIN. CLEARANCE AT LOCATION WHERE CONFLICTS OCCUR. PROVIDE ALL FITTINGS AND MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.

3. UP TO 2ND OFFICES, REFER TO SHEET E102 FOR CONTINUATION OF BRANCH CIRCUITRY.

4. PROVIDE DEVICE ONLY IF CLASSROOM ALTERNATE E-1 IS ACCEPTED.

5. PROVIDE DEVICE ONLY IF CLASSROOM ALTERNATE E-1 IS NOT ACCEPTED.

6. OCCUPANCY SENSOR TO OPERATE AFTER HOURS AS OVERRIDE TO EDC CONTROLS FOR "WALK-THROUGH" LIGHTING. OCCUPANCY SENSOR SHALL TURN ON ALL EMERGENCY LIGHTS IN SPACE WHEN ACTIVATED FOR "WALK-THROUGH" LIGHT LEVELS. REFER TO APPROPRIATE DETAIL ON SHEET E401.

7. E.C. SHALL REMOVE ALL "EXISTING" LIGHTING AND ASSOCIATED BRANCH CIRCUITRY LOCATED IN EXISTING STAGE FLOOR POCKETS BACK TO SOURCE OR LAST ACTIVE DEVICE. UPDATE PANEL DIRECTORY CARD ACCORDINGLY.

8. REFER TO SHEET E102 FOR CONTINUATION OF BRANCH CIRCUITRY.

9. PROVIDE DEVICE WITH APPROPRIATE WIRE GUARD CASING.

10. PENDANT MOUNT TYPE C1 LIGHT FIXTURES IN STAGE AREA AT APPROXIMATELY 12'. VERIFY EXACT MOUNTING HEIGHT WITH ARCHITECT PRIOR TO ROUGH-IN. INTENT IS TO AVOID ALL CURTAINS INSTALLED ON STAGE. REFER TO NOTES ON SHEET E001.

11. TIE INTO RECEPTACLE CIRCUIT SERVING THIS ROOM REFER TO SHEET E201 FOR FURTHER INFORMATION.

12. WIRE ALL EXIT LIGHTS ON COMMON CIRCUIT (R1B-1E). RUN ALL EXIT LIGHTING CIRCUITS WITH 2-#12, 1-#12 GRD. IN 3/4"C THROUGHOUT.

13. MOUNT TYPE C3 FIXTURE ON BACK OF PROSCENIUM WALL. REFER TO DETAIL G, SHEET E401.

14. PROVIDE 120V LIGHTING CIRCUIT WITH 2-#12, 1-#12 GRD IN 1"C THROUGH-OUT UNLESS INDICATED OTHERWISE. RUN CIRCUIT THROUGH EXTERIOR LIGHTING CONTROLS LOCATED ADJACENT TO ELECTRIC PANELS IN ELECTRIC ROOM. REFER TO EXTERIOR LIGHTING CONTROL DETAIL SHEET E401.

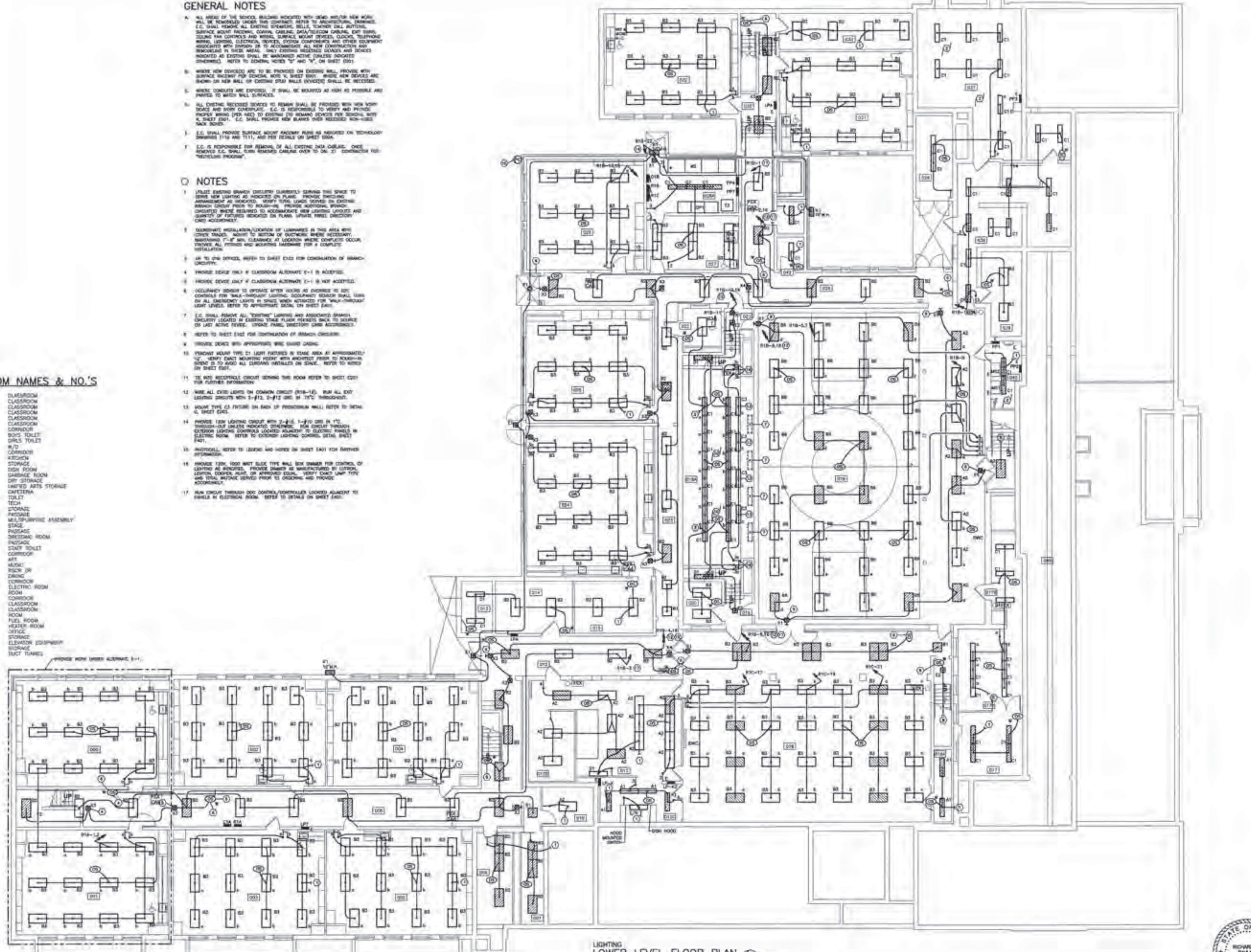
15. PHOTOCELL. REFER TO LEGEND AND NOTES ON SHEET E401 FOR FURTHER INFORMATION.

16. PROVIDE 120V, 1000 WATT SLIDE TYPE WALL BOX DIMMER FOR CONTROL OF LIGHTING AS INDICATED. PROVIDE DIMMER AS MANUFACTURED BY LUTRON, LEVITON, COOPER, HUNT, OR APPROVED EQUAL. VERIFY EXACT LAMP TYPE AND TOTAL WATTAGE SERVED PRIOR TO ORDERING AND PROVIDE ACCORDINGLY.

17. RUN CIRCUIT THROUGH DDC CONTROL/CONTROLLER LOCATED ADJACENT TO PANELS IN ELECTRICAL ROOM. REFER TO DETAILS ON SHEET E401.

ROOM NAMES & NO.'S

000	CLASSROOM
001	CLASSROOM
002	CLASSROOM
003	CLASSROOM
004	CLASSROOM
005	CLASSROOM
006	CORRIDOR
007	BOYS TOILET
008	GIRLS TOILET
010	W/D
011	CORRIDOR
012	KITCHEN
012B	STORAGE
012C	DISH ROOM
013	GARBAGE ROOM
014	DRY STORAGE
015	UNIFIED ARTS STORAGE
016	CAFETERIA
016A	TOILET
017	TECH
017A	STORAGE
017B	PASSAGE
018	MULTIPURPOSE ASSEMBLY
018A	STAGE
019	PASSAGE
020	DRESSING ROOM
021	PASSAGE
022	STAFF TOILET
023	CORRIDOR
024	ART
025	MUSIC
026	RISER [illegible]
027	DINING
028	CORRIDOR
028A	ELECTRIC ROOM
029	ROOM
030	CORRIDOR
031	CLASSROOM
032	CLASSROOM
033	ROOM
037	FUEL ROOM
038	HEATER ROOM
039	OFFICE
040	STORAGE
041	ELEVATOR EQUIPMENT
042	STORAGE
099	DUCT TUNNEL



LIGHTING
LOWER LEVEL FLOOR PLAN
1/8" = 1'-0"

NOTE:
ALL OCCUPANCY SENSORS MOUNTED IN SPACES WITH 3M PROJECTORS SHALL BE MOUNTED AT A MINIMUM OF 12' AWAY FROM THE 3M PROJECTORS BEAM. E.C. SHALL VERIFY LOCATION OF OCCUPANCY SENSOR WITH OWNER AND 3M PROJECTOR AT SITE PRIOR TO ROUGH-IN. INTENT IS TO AVOID OCCUPANCY SENSOR INTERFERING WITH PROJECTOR.

Steed | Hammond | Paul
82 Williams Avenue • Hamilton, Ohio 45015 513.863.5441
1014 Vine Street, Suite 2100 • Cincinnati, Ohio 45202 513.381.2112
250 Civic Center Drive • Columbus, Ohio 43215 614.233.2124

STATE OF OHIO REGISTERED ARCHITECTS

ADDITIONS AND RENOVATIONS
LIBERTY EARLY CHILDHOOD SCHOOL
LAKOTA LOCAL SCHOOL DISTRICT
6040 PRINCETON ROAD LIBERTY TOWNSHIP, OHIO 45011

CONSTRUCTION DOCUMENTS
04-15-08

LOWER LEVEL FLOOR PLAN NEW WORK - LTG

STATE OF OHIO
RICHARD L. PAWLAK
E7382
REGISTERED PROFESSIONAL ENGINEER

PROJECT NO. 2007-07
HEAPY ENGINEERING
MECHANICAL ELECTRICAL CONSULTANTS
DAYTON, OHIO (937)224-0861
COLUMBUS, OHIO (614)457-2886

DATE	APRIL 2008
COMM NO.	2006008.04

E101

LIGHTING FIXTURES

NOTES

LEGEND CONT.

GENERAL NOTES

LEGEND

INDEX OF DRAWINGS

HEAPY ENGINEERING

Steed | Hammond | Paul

82 Williams Avenue • Hamilton, Ohio 45015 513.863.5441
1014 Vine Street, Suite 2100 • Cincinnati, Ohio 45202 513.381.2112
280 Civic Center Drive • Columbus, Ohio 43215 614.233.2124

ADDITIONS AND RENOVATIONS
LIBERTY EARLY CHILDHOOD SCHOOL
LAKOTA LOCAL SCHOOL DISTRICT
6040 PRINCETON ROAD
LIBERTY TOWNSHIP, OHIO 45011

CONSTRUCTION DOCUMENTS
04-15-08

LEGEND SCHEDULES AND DETAILS

DATE APRIL 2008
COMM NO. 2005008.04

E001

Submitted by: [illegible]

Job Name:
Lakota Local School District – East Freshman School

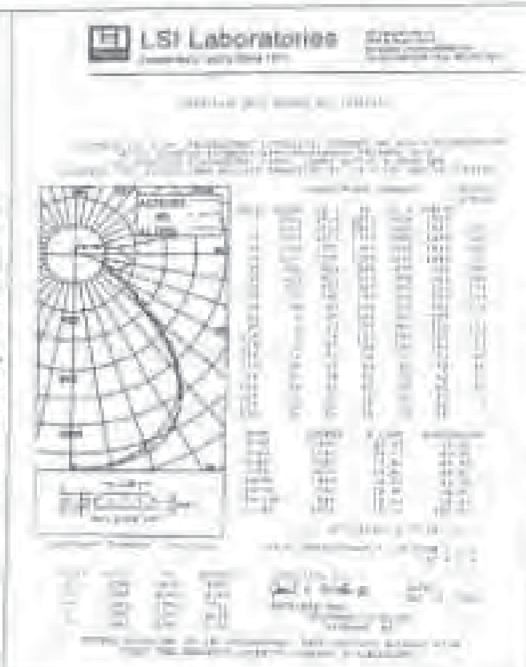
Catalog Number:
WC4-232-EB8PRSLH277

Notes:

Type:
A1

[illegible]

Photometric Report No. [illegible]



Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance: 20

RC RW	80 70	80 50	80 30	80 10	70 70	70 50	70 30	70 10	50 50	50 30	50 10	0 0
1	82	78	75	72	79	75	72	70	70	68	66	56
2	75	69	64	60	72	67	62	59	62	59	56	45
3	65	62	56	51	66	60	54	50	58	52	48	42
4	64	56	49	44	61	54	48	43	50	46	42	37
5	58	46	43	38	56	48	42	38	45	40	36	32
6	54	45	38	34	52	43	37	33	41	36	32	28
7	50	40	34	30	48	39	33	29	37	32	28	25
8	46	36	30	28	45	35	31	25	34	28	25	23
9	43	33	27	23	41	32	28	22	30	25	22	18
10	40	30	24	20	38	29	24	20	28	23	19	17

Energy Data

LER: FW-67 | **Energy Cost: $3.58***
Input Watts: 59.2 | **BF: .88**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $.08 per KWH.

Ordering Information

Example Complete Catalog Ordering Number: **WC 4-240- LE120 GLR**

WC 4 - 2 32 - EB8PRSLH 277 - ___ - ___

Series
WC

Length
2 - 2'
4 - 4'
8 - 8'

No. of Lamps in Cross Section
2 - Two Lamps

Lamp Type
17 - 17W T8 - 2'
20 - 20W T12 - 2'
32 - 32W T8 - 4' or 8'
40 - 40W T12 - 4' or 8'

Ballast
Blank - HPF (2')
L - LPF (2')
OCT - HPF Magnetic T8 Option
EB8 - Electronic T8*
EB12 - Electronic T12*
4EB8 - 4 Lamp Electronic T8*
*For <10% THD add suffix LH (e.g. EB8LH).
For a specific ballast vendor, show as option.

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Voltage
120 - 120V
277 - 277V
347 - 347V

Wraparound Options
GLR - Fast Blow Fuse
GMF - Slow Blow Fuse
RL - Intermediate Base Lamp holder for T 6½ Lamp (120V only) (Lamp not included)
EL - Emergency Battery Pack
CSA - Approved, Canadian Standards Association
PAF - Paint After Fabrication

Wraparound Accessories
Order Separately
HB4 - Tee Bar Hanger
S18 - 18" Stem, Canopy
SS18 - 18" Swivel Stem - 45° Swivel
WC5 - 5" x ¾" Canopy - for Outlet Box Mounting

Type A1

ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
*F32T8	2	32	32/00	0.25	63	0.88	10	0.99	1.7	1.40

Wiring Diagram

Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

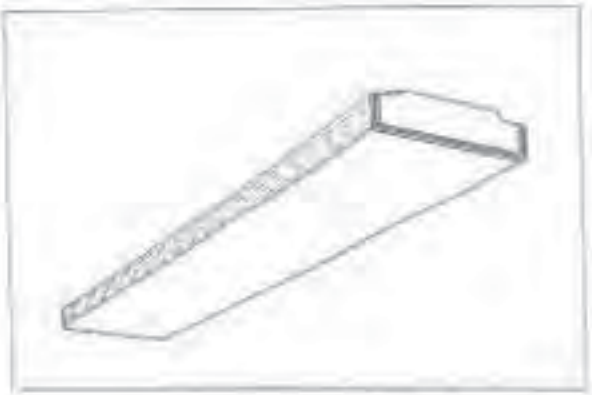
Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-323-2068

Submitted by: Lewinski Sales			
	Job Name: Lakota Local School District - East Frasmmer School	**Catalog Number:** WCW4-432-4EB8PRSLH277 Notes:	**Type:** A2

WCW2-4
WCW4-4
WCW8-4
PRODIGY
FOUR LAMP WRAPAROUND



Type: _____

Job Description: _____

FEATURES:

- Clear acrylic prismatic diffuser. Hinges from either side. Flat bottom and vertical sides.
- Linear side prisms control visual brightness and direct light into adjacent ceiling area.
- Injection molded decorative glow ends on diffuser models.
- Heavy gauge steel housing, die embossed for maximum rigidity.
- Heat sink embossments and leveling projections allow direct mounting of HPF fixtures on combustible low density cellulose fiberboard ceilings.

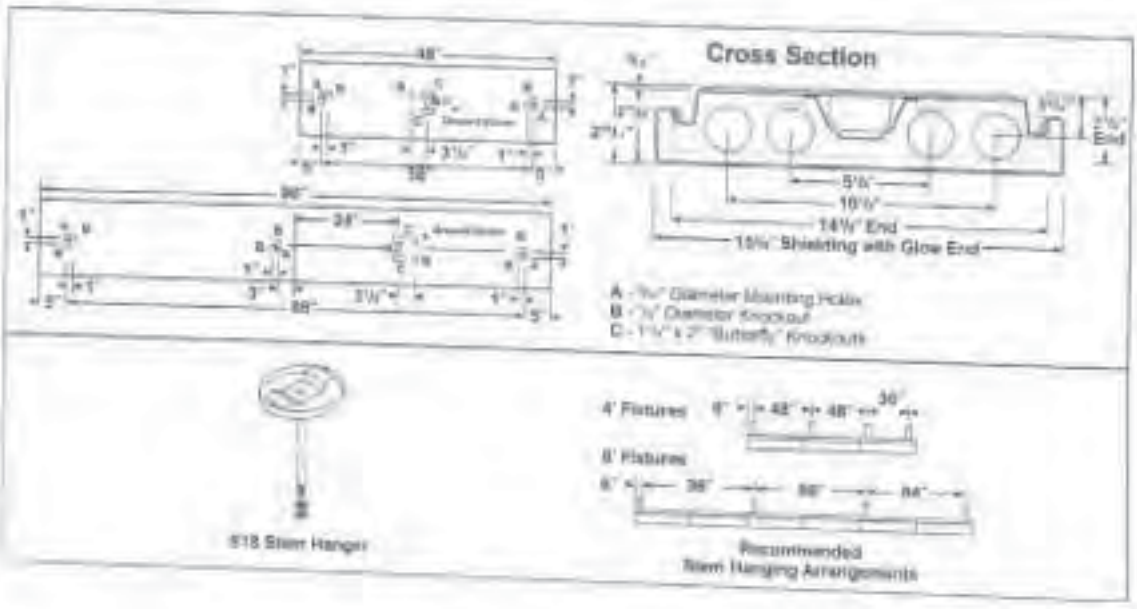
SPECIFICATIONS:

Ballasts
Energy efficient ballasts are thermally protected, automatic resetting, Class P, high power factor, CBM, sound rated A. 20 watt ballasts are trigger start. Class P, U.L. listed.

Finish
All parts are pre-painted with high gloss baked white enamel, minimum reflectance 80%, applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

Shielding
.125" clear prismatic acrylic.

Labels
All fixtures carry the U.L. label and HPF fixtures are listed for direct mounting on a combustible low density cellulose fiberboard ceiling. CSA approval available. Use Suffix "CSA".



Columbia

Type AZ

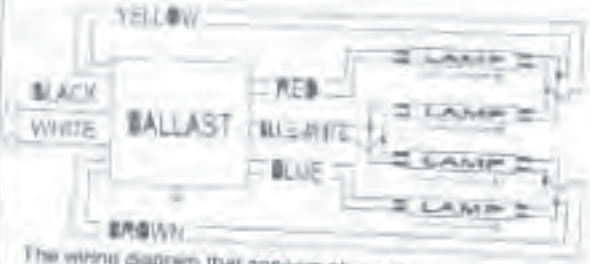
ADVANCE

VCN-4S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
*F17T8	4	17	32/00	0.28	79	1.00	10	0.99	1.7	1.27
F25T8	4	25	32/00	0.36	101	0.96	10	0.99	1.7	0.94
F32T8	4	32	32/00	0.45	121	0.88	10	0.99	1.7	0.73

Wiring Diagram



The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (Inches)

	In	cm
Black	22L	55.9
White	22L	55.9
Blue	36R	91.4
Red	36R	91.4
Yellow	46L	116.8
Gray		0
Violet		0

	In	cm
Yellow/Blue		0
Blue/White	36R	91.4
Brown	46L	116.8
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.16 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2007

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Submitted by Lassman Sales

	Job Name:	**Catalog Number:**	**Type:**
	Lakota Local School District - East Freshman School	WCW4-332-3EB8PRSLH277	**A3**
		Notes:	

Columbia

Environmental Laboratories

Photometric Report

CONTACT FACTORY

Coefficients of Utilization

Energy Data

CONTACT FACTORY

Ordering Information

Example: WCW4-332-3EB8120

WC W 4 - 3 32 -3EB8PRSLH 277 - ___ - ___

Series
WC

Wirebody
W

Length
4 - 4'
8 - 8'

No. of Lamps in Cross Section
3 - Three Lamps

Lamp Type
32 - 32W T8
40 - 40W T12

Ballast

- LS - HPF Magnetic T12
- EB12 - Electronic T12*
- 3EB12 - 3 Lamp Electronic T12*
- OCT - HPF Magnetic T8 (Octron)
- EB8 - Electronic T8*
- 3EB8 - 3 Lamp Electronic T8*
- 24EB8 - (1) 2 Lamp & (1) 4 Lamp Electronic T8*

*For < 10% THD add suffix LH (e.g. EB8LH)
For a specific ballast vendor, show as option

Voltage
- 120 - 120V
- 277 - 277V
- 347 - 347V

Wraparound Options
- GLR - Fast Blow Fuse
- GMF - Slow Blow Fuse
- NL - Intermediate Base Lamp Holder for T8 Lamp (120V only) (Lamp not included)
- EL - Emergency Battery Pack
- CSA - Approved, Canadian Standards Association
- PAF - Paint After Fabrication

Wraparound Accessories

Order Separately
- ITB4 - Tee Bar Hanger
- S18 - 18" Stem, Canopy (Requires SB3)
- SS18 - 18" Swivel Stem - 45° Swivel (Requires SB3)
- SB3 - Stem Mounting Bracket
- WC5 - 5" x ½" Canopy - for Outlet Box Mounting

Type A3

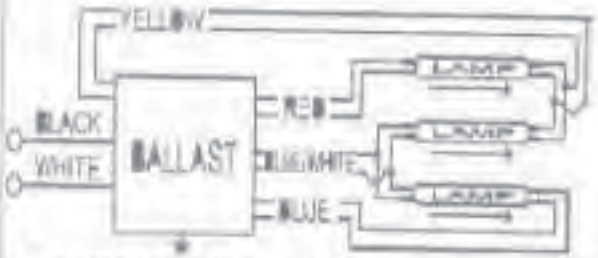
ADVANCE

VCN-3S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	3	17	32/00	0.22	61	1.00	10	0.99	1.7	1.84
F25T8	3	25	32/00	0.28	77	0.95	10	0.99	1.7	1.23
*F32T8	3	32	32/00	0.34	91	0.88	10	0.99	1.7	0.97

Wiring Diagram



The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	In	cm.
Black	22L	55.9
White	22L	55.9
Blue	46R	116.8
Red	36R	91.4
Yellow	36L	91.4
Gray		0
Violet		0

	In	cm.
Yellow/Blue		0
Blue/White	36R	91.4
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2007

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of multiple performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER 10275 WEST HIGGINS ROAD ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2086

Submitted by Lowenthal Sales

Job Name:
Lakota Local School District - East Freshman School

Catalog Number:
WCW4-332-3EB8PRSLH277

Notes:

Type:
A3
2 Ballast

Photometric Report

Columbia

Environmental Laboratories

CONTACT FACTORY

Coefficients of Utilization

Energy Data

CONTACT FACTORY

Ordering Information

Example: WCW4-332-3EB8120

WC W 4 - 3 32 - 3EB8PRSLH 277 - ____ - ____

Series
WC

Wattbody
W

Length
4 - 4'
8 - 8'

No. of Lamps in Cross Section
3 - Three Lamps

Lamp Type
32 - 32W T8
40 - 40W T12

Ballast
LE - HPF Magnetic T12
EB12 - Electronic T12*
3EB12 - 3 Lamp Electronic T12*
DCT - HPF Magnetic T8 (Octron)
EB8 - Electronic T8*
3EB8 - 3 Lamp Electronic T8*
2/4EB8 - (1) 2 Lamp & (1) 4 Lamp Electronic T8*

*For more, PRS add suffix ... For a specific ballast ... show as option

3EB8PRSLH - 3 Lamp T8 Program Rapid Start Low Harmonic

Voltage
120 - 120V
277 - 277V
347 - 347V

Wraparound Options
GLR - Fast Blow Fuse
GMF - Slow Blow Fuse
NI - Intermediate Base Lamp Holder for T8 Lamp (120V only) (Lamp not included)
EL - Emergency Battery Pack
CSA - Approved, Canadian Standards Association
PAF - Paint After Fabrication

Wraparound Accessories
Order Separately
ITB4 - Tee Bar Hanger
S18 - 18" Stem, Canopy (Requires SB3)
SS18 - 18" Swivel Stem - 45° Swivel (Requires SB3)
SB3 - Stem Mounting Bracket
WC5 - 5" x ½" Canopy - for Outlet Box Mounting

Columbia Lighting
3808 North Sullivan Rd. • Spokane, WA 99216 • (509) 924-7000 • www.columbia-ltg.com

Type A3-2BAL

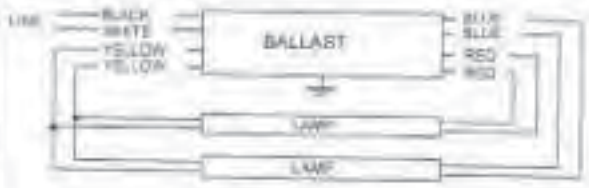
ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.18	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.26	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram



Diag 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in	cm
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Over All (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone 800-372-3331 · Fax 630-307-3071
Corporate Offices: Phone 800-322-2086

Type A3 - 2BAL

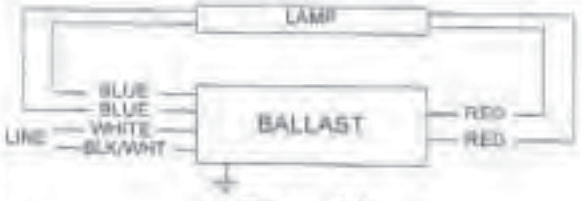
ADVANCE

Electrical Specifications

VCN-1S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	1	17	32/00	0.08	22	1.00	10	0.97	1.7	4.55
F25T8	1	25	32/00	0.10	28	0.95	10	0.98	1.7	3.39
* F32T8	1	32	32/00	0.13	34	0.90	10	0.96	1.7	2.65

Wiring Diagram



Diag. 20

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in	cm
Black		0
White	22L	55.9
Blue	36L	91.4
Red	26R	66
Yellow		0
Gray		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White	22L	55.9
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2086

Submitted by Leviton Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: ST824-232G-FAA12.125-EB8PRSLH277-FO735 Notes:	Type: B2

ST824-232 — 2' x 4', 2 T8 Lamps — SPECIFICATION GRADE TROFFER

ST824-232G-FSA12-EB8-PAF

Report No. 12583 Efficiency 85.6 Max. Ratio: 1.23 Across 1.26

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance .2

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	94	87	[illegible]	[illegible]	87	[illegible]	[illegible]	[illegible]	85	83	81	77
2	87	81	76	72	85	79	75	71	76	73	[illegible]	65
3	80	72	66	61	78	71	66	61	69	64	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	68	59	51	46	66	57	[illegible]	[illegible]	53	50	[illegible]	[illegible]
6	63	52	45	40	61	52	43	40	50	44	40	37
7	58	47	40	35	57	47	40	[illegible]	[illegible]	39	35	33
8	51	42	35	31	52	42	35	30	41	36	30	28
9	47	38	31	28	48	38	31	28	37	31	28	24
10	46	32	28	23	[illegible]	34	28	25	39	27	23	[illegible]

Zonal Summary

Zone	Lumens	Lamp	Fixt.
0-30	1392	26.9	31.5
0-40	2558	44.1	51.5
0-60	4228	72.9	85.1
0-90	4965	85.6	100.0
90-180	0	0.0	0.0
0-180	4965	85.6	100.0

Energy Data

LER: FL-76 Energy Cost: $3.[illegible]
Input Watts: 58 BF: .88

The above energy calculations were conducted using a specific lamp ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $.08 per kWh.

Ordering Information

Example: ST824-232G-FSA12-EB8120-F0735-C388

ST8 | 24 - 2 32 G - FA A12 125 - EB8PRSLH 277 - FO735

Series

Fixture Size
24 - 2' x 4'

No. of Lamps
2 - Two

Lamp Type
32 - 4', T8, 32 Watt

Ceiling Type
G - Grid/Exposed Tee
F - Overlap Flange

Door Style
FS - Flush Steel
RA - Regressed Aluminum, White
BRA - Black Regressed Aluminum
SRA - Silver Regressed Aluminum
FA - Flush Aluminum, White
BFA - Black Flush Aluminum
SFA - Silver Flush Aluminum

Ballast
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
For a specific ballast vendor (from all types)
EB8PRSLH - T8 Programmed Rapid Start Low Harmonic (selected)

Shielding
A12 - Pattern 12 Acrylic .125" Assured (Minimum)
A12.125 - Pattern 12 Acrylic .125" Assured
A12.156 - Pattern 12 Acrylic .156" Assured
A19 - Pattern 19 Acrylic .125" Male Prism
UVA - .125 Injection Molded Acrylic .156" Male Prism
DOP - White Opal Acrylic
PL1 - Silver Parabolic Louver ½" x ½" x ½"
PCG1 - Gold Parabolic Louver ½" x ½" x ½"
PC2 - Silver Parabolic Louver 1½" x 1½" x 1"
PCG2 - Gold Parabolic Louver 1½" x 1½" x 1"
For complete list of lenses and louvers, see options and accessories section.

Voltage
120 - 120V
277 - 277V
347 - 347V
UNV - 120V/277V (T8 and Wire only)

Options
SLL - Spring Loaded Latch
GMF - Slow Blow Fuse
GLR - Fast Blow Fuse
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 - ⅜" Flex with 4 No. 14 Wires
FO730 - T8, 75CRI, 3000K Lamps, Furnished/Installed
FO735 - T8, 75CRI, 3500K Lamps, Furnished/Installed
FO741 - T8, 75CRI, 4100K Lamps, Furnished/Installed
CSA - Approved to Canadian Standards Association
EL - Emergency Battery Pack
PAF - Painted After Fabrication
For complete list of options, see options and accessories section.

Submitted by [illegible]

	Job Name: [illegible]	Catalog Number: ST824-232G-FAA12 125-EB8PRSLH277-FO735 Notes:	Type: **B2**

ST824-232

2' x 4', 2 T8 Lamps

SPECIFICATION GRADE TROFFER

ST824-232G-FSA12-EB8-PAF

Report No. [illegible] Efficiency: 85.6 [illegible]

Coefficients of Utilization

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	94	91	88	86	92	89	86	83	86	83	81	79
2	87	81	76	72	85	79	75	71	76	73	69	65
3	80	73	69	61	78	71	66	61	69	64	60	57
4	74	65	58	53	72	64	58	53	62	58	[illegible]	[illegible]
5	68	58	51	46	66	57	50	46	56	52	[illegible]	[illegible]
6	63	52	45	40	61	52	45	40	50	44	40	37
7	58	47	40	35	57	47	40	35	45	39	35	33
8	54	42	36	31	52	42	36	31	41	35	31	29
9	49	38	31	26	48	38	31	26	37	31	28	24
10	46	35	28	23	45	34	28	23	33	27	23	22

Zonal Summary

Zone	Lumens	Lamp	Fixt.
0-30	1582	26.9	31.8
0-40	2558	44.1	51.5
0-60	4200	72.9	85.1
0-90	4965	85.6	100.0
90-180	0	0.0	0.0
0-180	4965	85.6	100.0

Energy Data

LER: FL-76 Energy Cost: [illegible]
Input Watts: 58 BF: .88

[illegible]

Ordering Information

Example: ST824-232G-FSA12-EB8120-F0735-C388

ST8 24 - 2 32 G - FA A12 125 - EB8PRSLH 277 - FO735

Series

Fixture Size
24 - 2' x 4'

No. of Lamps
2 - Two

Lamp Type
32 - 4', T8, 32 Watt

Ceiling Type
G - Inverted T-Bar
F - [illegible] Flange

Door Style
FS - Flush Steel
RA - Regressed Aluminum, White
BRA - Black Regressed Aluminum
SRA - Silver Regressed Aluminum
FA - Flush Aluminum, White
BFA - Black Flush Aluminum
SFA - Silver Flush Aluminum

Voltage
120 - 120V
277 - 277V
347 - 347V
UNV - 120V/277V (T8 w/LH only)

Ballast
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
For a specific ballast [illegible]
EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Shielding
A12 - Pattern 12 Acrylic .100" [illegible] (Standard)
A12(125) - Pattern 12 Acrylic .125" Nominal
A12 (156) - Pattern 12 Acrylic .156" Nominal
A19 - Pattern 19 Acrylic .125" Male Prism
IMA - .150 Injection Molded Acrylic .156" Male Prism
DOP - White Opal Acrylic
PC1 - Silver Parabolic Louver [illegible]
PCG1 - Gold Parabolic Louver [illegible]
PC2 - Silver Parabolic Louver [illegible]
PCG2 - Gold Parabolic Louver [illegible]
For complete list of lenses and louvers, see options and accessories section.

Options
SLL - Seismic Limited Label
GMF - Slow Blow Fuse
GLR - Fast Blow Fuse
C388 - 3/8" Flex with 3 No. 18 Wires
C384 - 3/8" Flex with 3 No. 14 Wires
C488 - 3/8" Flex with 4 No. 18 Wires
C484 - 3/8" Flex with 4 No. 14 Wires
FO730 - T8, 70CRI, 3000K Lamps, Furnished/Installed
FO735 - T8, 70CRI, 3500K Lamps, Furnished/Installed
FO741 - T8, 70CRI, 4100K Lamps, Furnished/Installed
CSA - Approved for Canadian Standards Association
EL - Emergency Battery Pack
PAF - Painted After Fabrication
For complete list of options, see options and accessories section.

Type B2

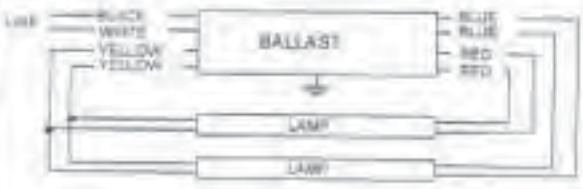
ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.58
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	60	0.88	10	0.89	1.7	1.40

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in	cm
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.55 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
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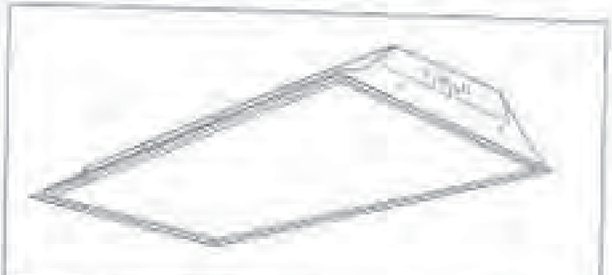
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-317-3071
Corporate Offices: Phone: 800-322-3668

Submitted by Leeman Sales

	Job Name:	Catalog Number:	Type:
	Lakota Local School District - East Freshman School	ST824-332G-FAA12-125-3EB8PRSLH277-FD735 Notes:	B3

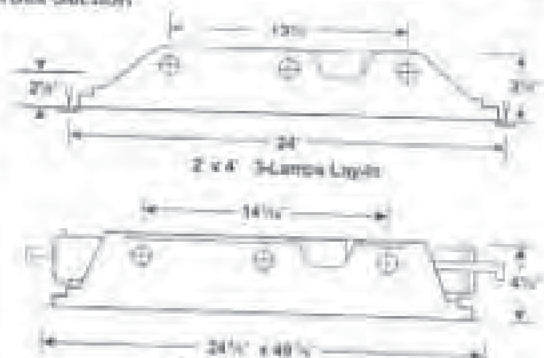


ST824-332
SPECIFICATION GRADE T8 TROFFER 2' x 4', 3 T8 Lamps

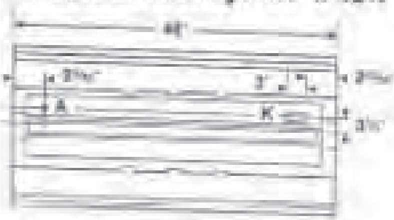
Type: ______________________

Job Description: ______________________

Cross Section



Flanged cut out dimensions for single unit only: 24" x 48⅞"



A - ½" Diameter Knockout

K - 2" x 3" Pass-through hole for access plate

NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

Optional Flush Aluminum Frame - FA

Optional Regressed Aluminum Frame - RA

Features

- Optical performance designed for T8 lamp technology.
- 2⅝" minimum spacing from bottom of lamp to bottom of lens.
- Mechanical light seal.
- Attractive, post-painted door frame with positive action latches.
- 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-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. Integral T-bar clips are located in the end of the housing. Flanged housings for hard ceilings feature overlap flange trim and swing hangers.

Ballasts

Energy efficient, thermally protected, automatic resetting, Class P, high power factor, CBM, sound rated A, magnetic or electronic ballasts.

Finish

All parts pre-painted with high gloss baked white enamel, minimum reflectance 88%, applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

Shielding

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

Labels

All fixtures carry the UL label. (CSA approval available. Use Suffix "CSA").

Submitted by Lieberman Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: ST824-332G-FAA12-125-3EB8PRSLH277-FO735 Notes:	Type: B3

ST824-332 2' x 4', 3 T8 Lamps SPECIFICATION GRADE TROFFER

ST824-332G-FSA12-3EB8-PAF

Report No: 12581 Efficiency: 84.7 S/MH: Par 1.26 Horiz 1.38

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance: 20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	93	90	87	84	91	88	85	83	84	82	80	76
2	86	80	75	71	84	79	74	70	75	72	68	66
3	79	71	65	60	77	70	64	60	68	63	59	56
4	73	64	57	52	71	63	57	52	61	56	51	49
5	67	57	50	45	65	56	49	44	54	48	44	42
6	62	51	44	39	60	50	44	39	49	43	38	36
7	57	46	39	34	56	45	39	34	44	38	33	31
8	52	41	34	29	51	41	34	29	40	33	29	27
9	48	37	30	25	47	36	30	25	35	29	25	23
10	45	34	27	22	44	33	27	22	32	26	22	21

Zonal Summary

Zone	Lumens	Lamp	Fixt.
0-30	2211	26.4	30.0
0-40	3854	42.0	49.6
0-60	6235	71.7	84.6
0-90	7371	84.7	100.0
90-180	0	0.0	0.0
0-180	7371	84.7	100.0

Energy Data

LER: FL-77 Energy Cost*: $3.12
Input Watts: 84 BF: .88

The above energy calculations were conducted using a specific lamp ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: ST824-332G-FSA12-EB8120-F0735-C488

ST 8 24 - 3 32 G - FA A12125 - 3EB8PRSLH 277 - FO735

Series

Fixture Size
24 - 2' x 4'

No. of Lamps
3 - Three

Lamp Type
32 - F, T8, 32Watt

Ceiling Type
G - Inverted T-Bar
F - Overlap Flange

Door Style
FS - Flush Steel
RA - Regressed Aluminum, White
BRA - Black Regressed Aluminum
SRA - Silver Regressed Aluminum
FA - Flush Aluminum, White
BFA - Satin Flush Aluminum
SFA - Silver Flush Aluminum

Shielding
A12 - Pattern 12 Acrylic .125" Nominal (Standard)
A12.125 - Pattern 12 Acrylic .125" Nominal
A12.125M - Pattern 12 Acrylic .125" Minimum
A19 - Pattern 19 Acrylic .156" Male Prism
IMA - .150 Injection Molded Acrylic .150" White Frame
DOP - White Diffused Acrylic
PC1 - Silver Parabolic Louver ½" x ½" x ½"
PCG1 - Gold Parabolic Louver ½" x ½" x ½"
PC2 - Silver Parabolic Louver 1½" x 1½" x 1"
PCG2 - Gold Parabolic Louver 1½" x 1½" x 1"
For complete list of lenses and louvers see options and accessories section

Ballast
2EB8 - 2 Lamp Electronic T8
3EB8LH - 3 Lamp Electronic T8 <10% THD
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
OCT - Magnetic T8 (Outdoor)
For a specific ballast vendor, show an option.

3EB8PRSLH - 3 Lamp T8 Program Rapid Start Low Harmonic

Voltage
120 - 120V
277 - 277V
347 - 347V

Options
SLL - Spring Loaded Latch
SMF - Slow Blow Fuse
GLR - Fast Blow Fuse
C388 - 6' Flex with 3 No. 18 Wires
C488 - 6' Flex with 4 No. 18 Wires
FO735 - T8, 70CRI, 3500K Lamps Furnished/Installed
FO835 - T8, 80CRI, 3500K Lamps Furnished/Installed
FO741 - T8, 70CRI, 4100K Lamps Furnished/Installed
CSA - Approved for Canadian Standards Association
EL - Emergency Battery Pack
PAF - Painted After Fabrication
MSS - Master/Slave Pair with 6' harness
For complete list of options, see options and accessories section.

Columbia Lighting
[illegible] • Spokane, WA 99216 • (509) 924-7000 • www.columbialighting.com

Type B3

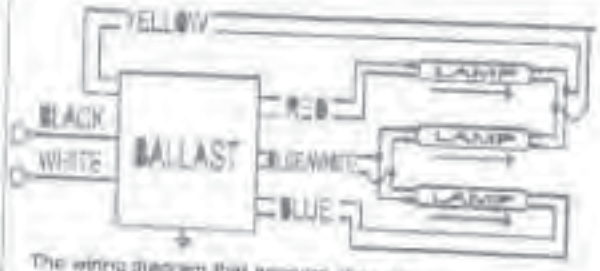
ADVANCE

Electrical Specifications

VCN-3S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	3	17	32/00	0.22	61	1.00	10	0.99	1.7	1.64
F25T8	3	25	32/00	0.28	77	0.95	10	0.99	1.7	1.23
*F32T8	3	32	32/00	0.34	91	0.88	10	0.99	1.7	0.97

Wiring Diagram



The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	46R	116.8
Red	36R	91.4
Yellow	36L	91.4
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White	36R	91.4
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1.7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2007

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

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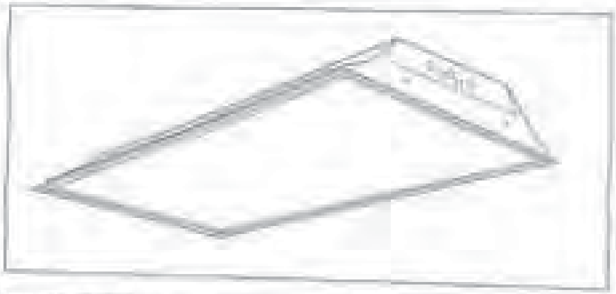
ADVANCE
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2666

Submitted by Leesman Sales

	Job Name: Lakota Local School District - East Freshman School	**Catalog Number:** ST824-332G-FAA12.125-EB8PRSLH277-FO735 Notes:	**Type:** **B3-2BAL**



ST824-332

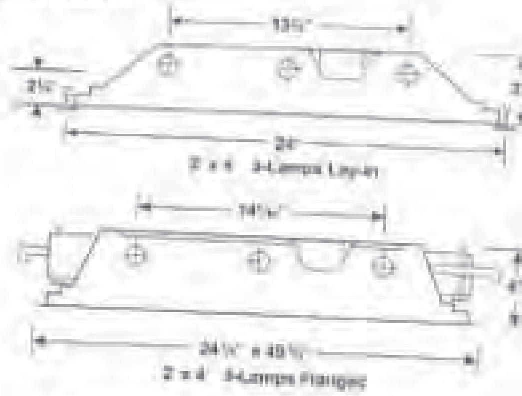
SPECIFICATION GRADE T8 TROFFER

2' x 4', 3 T8 Lamps

Type: ____________________

Job Description: ____________________

Cross Section



Flanged cut out dimensions for single unit only: 24" x 48⅞"

A - ⅞" Diameter Knockout

K - 2" x 3" through hole for access plate

NOTE: All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.

Optional Flush Aluminum Frame - FA

Optional Regressed Aluminum Frame - RA

[illegible]

Features

- Optical performance designed for T8 lamp technology.
- 2⅛" minimum spacing from bottom of lamp to bottom of lens.
- Mechanical light seal.
- Attractive, post-painted door frame with positive action latches.
- 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-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 "⅞" 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, CBM, sound rated A, magnetic or electronic ballasts.

Finish

All parts pre-painted with high gloss baked white enamel, minimum reflectance 88%. Applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

Shielding

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

Labels

All fixtures carry the UL label. (CSA approval available. Use Suffix "CSA".)

Submitted by Leedmac Sales

Job Name:	Catalog Number:	Type:
Lakota Local School District - East Freshman School	ST824-332G-FAA12.125-EB8PRSLH277-FO735 Notes:	B3-2BAL

ST824-332

2' x 4', 3 T8 Lamps

SPECIFICATION GRADE TROFFER

ST824-332G-FSA12-3EB8-PAF

Report No: 12881 Efficiency: 84.7 SMH Par 1.26 Nor 1.28

Coefficients of Utilization

Zonal Cavity Method; Floor Reflectance: .20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	50	80	87	84	87	88	85	83	84	82	80	75
2	86	80	75	71	84	78	74	70	75	72	69	64
3	79	71	65	60	77	70	64	60	68	63	59	56
4	73	64	57	52	71	63	57	52	61	55	51	48
5	67	57	50	45	65	56	49	44	54	48	44	41
6	62	51	44	39	60	50	44	39	49	43	38	35
7	57	46	39	34	56	45	39	34	44	38	32	31
8	52	41	34	29	51	41	34	29	40	33	29	27
9	48	37	30	25	47	36	30	25	35	29	25	23
10	45	34	27	22	44	33	27	22	32	26	22	21

Zonal Summary

Zone	Lumens	Lamp	Fixt.
0-30	2211	25.4	30.0
0-40	3654	42.0	49.6
0-60	6235	71.6	84.6
0-90	7371	84.7	100.0
90-180	0	0.0	0.0
0-180	7371	84.7	100.0

Energy Data

LER: FL-77 Energy Cost: $3.17
Input Watts: 94 BF: .88

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

Ordering Information

Example: ST824-332G-FSA12-EB8120-F0735-C488

STR 24 - 3 32 G - FA A12125 - EB8PRSLH 277 - FO735

Series

Fixture Size
24 - 2' x 4'

No. of Lamps
3 - Three

Lamp Type
32 - F T8, 32 Watt

Ceiling Type
G - Inverted T-Bar
F - Flange

Door Style
FS - Flush Steel
RA - Regressed Aluminum, White
BRA - Black Regressed Aluminum
SRA - Silver Regressed Aluminum
FA - Flush Aluminum, White
BFA - Black Flush Aluminum
SFA - Silver Flush Aluminum

Ballast
3EB8 - 3 Lamp Electronic T8
- 1 Lamp Electronic T8 <10% THD
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
OCT - Magnetic T8 (Octron)
For a specific ballast vendor, state as option.

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Voltage
120 - 120V
277 - 277V
347 - 347V

Options
SLL - Spring Loaded Latch
GMF - Slow Blow Fuse
GLF - Fast Blow Fuse
C388 - 3/8" Flex with 3 No. 18 Wires
C488 - 3/8" Flex with 4 No. 18 Wires
FO730 - T8, 70CRI, 3000K Lamps Furnished/Installed
FO735 - T8, 70CRI, 3500K Lamps Furnished/Installed
FO741 - T8, 70CRI, 4100K Lamps Furnished/Installed
CSA - Approved by Canadian Standards Association
EL - Emergency Battery Pack
PAF - Painted After Fabrication
MSS - Mason/Stone Pan with 3" Nipples
For complete list of options, see options and accessories section.

Shielding
A12 - Pattern 12 Acrylic, .156" Nominal (Standard)
A12.125 - Pattern 12 Acrylic, .125" Nominal
A12 .098 - Pattern 12 Acrylic, .098" Minimum
A19 - Pattern 19 Acrylic, .156" Male Prism
IMA - .130 Injection Molded Acrylic, .156" Male Prism
DOP - White Diffused Acrylic
PC1 - Silver Parabolic Louver
PCG1 - Gold Parabolic Louver
PC3 - Silver Parabolic Louver
PCG2 - Gold Parabolic Louver
For complete list of lenses and louvers, see options and accessories section.

Type B3-2BAL

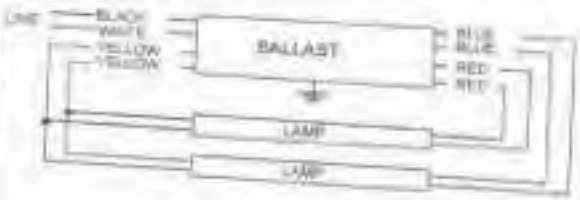
ADVANCE

Electrical Specifications

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	30	1.00	10	0.98	1.7	2.50
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.70
* F32T8	2	32	32/00	0.33	63	0.88	10	0.99	1.7	1.40

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Grey		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-387-3071
Corporate Offices: Phone: 800-322-2086

Type B3-2BAL

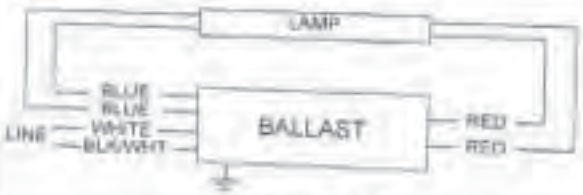
ADVANCE

Electrical Specifications

VCN-1S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	1	17	32/00	0.06	22	1.00	10	0.97	1.7	4.55
F25T8	1	25	32/00	0.10	28	0.95	10	0.98	1.7	3.39
* F32T8	1	32	32/00	0.13	34	0.90	10	0.98	1.7	2.65

Wiring Diagram



Diag. 20

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*).

Standard Lead Length (inches)

	in	cm
Black		0
White	22L	55.9
Blue	36L	91.4
Red	26R	66
Yellow		0
Grey		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White	22L	55.9
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of reliable performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-373-3181 Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2666

Submitted by Lewman Sales

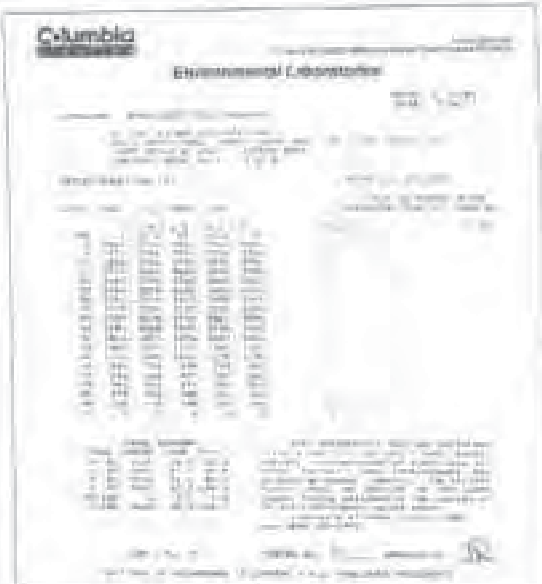
Job Name: Lakota Local School District - Lakota Freshman School

Catalog Number: ST824-432G-FAA12.125-EB8PRSLHUNV-FO735

Notes:

Type: B4-2BAL

ST824-432 2' x 4', 4 T8 Lamps SPECIFICATION GRADE TROFFER



ST824-432G-FSA12-4EB8-PAF

Report No. 12582 Efficiency 83.3 S/MH: Par 1.23 Norm 1.30

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance - 20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	92	88	85	83	90	87	84	81	85	81	79	73
2	85	79	74	70	83	77	73	69	75	71	67	63
3	78	71	65	60	76	69	64	60	67	62	59	55
4	72	64	57	52	71	62	56	52	60	55	51	48
5	67	57	50	45	65	56	49	45	54	49	44	42
6	62	51	44	39	60	51	44	39	49	43	39	37
7	57	46	39	35	56	46	39	34	44	39	34	32
8	53	42	35	30	51	41	35	30	40	34	30	28
9	48	37	31	26	47	37	31	26	36	30	26	24
10	45	34	28	23	44	34	27	23	33	27	23	21

Zonal Summary

Zone	Lumens	Lamp	Fixt.
0-30	3124	26.6	32.3
0-40	5065	43.7	53.4
0-60	8246	71.1	85.3
0-90	9663	83.3	100.0
90-180	0	0.0	0.0
0-180	9663	83.3	100.0

Energy Data

LER: FL 77 Energy Cost: $3.12*
Input Watts: 110 BF: .88

The above energy calculations were conducted using a specific lamp ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: ST824-432G-FSA12-4EB8LH120-F0741-C388

ST8 24 - 4 32 G - FA A12125 - EB8PRSLH UNV FO735

Series

Fixture Size
- 24 - 2' x 4'

No. of Lamps
- 4 - Four

Lamp Type
- 32 - 4', T8, 32 Watt

Ceiling Type
- G - Inverted "T" Bar
- F - Flanged

Door Style
- FS - Flush Steel
- RA - Regressed Aluminum, White
- BRA - Black Regressed Aluminum
- SRA - Silver Regressed Aluminum
- FA - Flush Aluminum, White
- BFA - Black Flush Aluminum
- SFA - Silver Flush Aluminum

Shielding
- A12 - Pattern 12 Acrylic, .100" Nominal (Standard)
- A12.125 - Pattern 12 Acrylic, .125" Nominal
- A12.125M - Pattern 12 Acrylic, .125" Minimum
- A19 - Pattern 19 Acrylic, .100" Male Prism
- IMA - .150 Injection Molded Acrylic, .100" Male Prism
- DOP - White Opaque Acrylic
- PC1 - Silver Parabolic Louver ½" x ½" x ½"
- PCG1 - Gold Parabolic Louver ½" x ½" x ½"
- PC3 - Silver Parabolic Louver 1½" x 1½" x 1"
- PCG3 - Gold Parabolic Louver 1½" x 1½" x 1"

For complete list of lenses and louvers, see options and accessories section.

Ballast
- 4EB8 - 4-Lamp Electronic T8
- 4EB8LH - 4-Lamp Electronic T8 <10% THD
- EB8 - Electronic T8
- EB8LH - Electronic T8 <10% THD
- OCT - Magnetic T8 (Octron)

For a specific ballast version show as option.

Voltage
- 120 - 120V
- 277 - 277V
- 347 - 347V
- UNV - 120/277

Options
- SLL - Spring Loaded Latch
- GMF - Slow Blow Fuse
- GLR - Fast Blow Fuse
- C388 - 6' Flex with 3 No. 18 Wires
- C384 - 6' Flex with 3 No. 14 Wires
- C488 - 6' Flex with 4 No. 18 Wires
- C484 - 6' Flex with 4 No. 14 Wires
- FO730 - T8, 70CRI, 3000K Lamps, Furnished/Installed
- FO735 - T8, 70CRI, 3500K Lamps, Furnished/Installed
- FO741 - T8, 70CRI, 4100K Lamps, Furnished/Installed
- CSA - Approved for Canadian Standards Association
- EL - Emergency Battery Pack
- PAF - Painted After Fabrication

For complete list of options, see options and accessories section.

Type 134

HIGH FREQUENCY ELECTRONIC BALLASTS

For 30W - 48" Lamps

T8/ES

POWER FACTOR SOUND RATED A

No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power AMPS (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim.	Wiring Dia.
F32T8/ES (30W - 48")											
1	120	IS	Standard	REL-4P32-LW-SC	91	0.75	20	0.76	50/10	B	66
				REL-4P32-SC	104	0.88	20	0.87			138
		PS	Centium	RCN-4S32-SC	114	0.88	10	0.97			
		IS	Optanium	ROP-4P32-LW-SC	89	0.78	10	0.75			66
				ROP-4P32-SC	102	0.88	10	0.88			
				ROP-4P32-HL-90C	133	1.18	10	1.12		A	
	277	IS	Standard	VEL-4P32-LW-SC	91	0.75	20	0.33	50/10	B	66
				VEL-4P32-SC	104	0.88	20	0.36			138
		PS	Centium	VCN-4S32-SC	114	0.88	10	0.42			
		IS	Optanium	VOP-4P32-LW-SC	73	0.63	10	0.32			66
				VOP-4P32-SC	101	0.88	10	0.37			
				VOP-4P32-HL-90C	132	1.18	10	0.48		A	
	120-277	IS	Centium	ICN-4P32-LW-SC	91-89	0.77	10	0.76-0.32	50/10	B	66
				ICN-4P32-SC	105	0.88	10	0.86-0.38			
			Optanium	IOP-4P32-LW-SC	90-88	0.77	10	0.76-0.33			
				IOP-4P32-SC	102-100	0.87	10	0.86-0.37			
				IOP-4P32-HL-90C-D	143-140	1.18	10	1.21-0.51		G	
		PS		IOP-4S32-LW-SC	86-84	0.71	10	0.71-0.31		B	138
				IOP-4S32-SC	102-100	0.88	10	0.86-0.37			
	347	IS	Standard	SEL-4P32-LW	80	0.78	20	0.26	50/10	A	66
				SEL-4P32-RH-TP	102	0.88	20	0.30			

Note: Use one of Optanium 2.0 (IOP) models is recommended to reduce striation in energy-saving T8 lamps (25W, 28W, or 30W). Remote or tandem wiring of energy-saving T8 lamps (25W, 28W or 30W) is only recommended for Optanium 2.0 (IOP) models.

Diag. 20

Diag. 21

Diag. 37

Diag. 39

Diag. 40

Diag. 84

Diag. 85

Diag. 86

Diag. 139

Refer to pages 5-17 to 5-19 for lead lengths and shipping data

See page 1-62 for Dimensions

Type B4-2 BAL

HIGH FREQUENCY ELECTRONIC BALLASTS

For 32W Lamps

T8

HIGH POWER FACTOR EQUIVALENT RATED A

No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim.	Wiring Dia.
F32T8, FB031T8, F32T8/UG (32W)											
1	120	IS	ArchiStar®	REB-2P32-SC	50	0.88	120	0.80	0/-18	B	64
			Standard	REL-2P32-LW-SC	51	0.75	20	0.44			
				REL-2P32-SC	58	0.87	20	0.49			
				REL-2P32-HL-SC	77	1.20	20	0.65			'65
				REL-3P32-LW-SC	59	0.87	20	0.49			
				REL-3P32-SC	65	1.03	20	0.54			
				REL-3P32-HL-SC	85	1.32	20	0.71			
		PS	Centium	RGN-2S32-SC	63	0.88	10	0.53	32/0		21
		RS	PowrKut	RK-2S32-TP	62	0.87	15	0.56	50/10	A	
		IS	Optanium	ROP-2P32-LW-SC	48	0.78	10	0.41	0/-18	B	64
				ROP-2P32-SC	55	0.88	10	0.47			
				ROP-3P32-LW-SC	54	0.85	10	0.45			'65
				ROP-3P32-SC	63	0.94	10	0.53			
	220	RS	PowrKut	RK-2S32-TP	63	0.87	15	0.29	50/10	A	21
	277	IS	Standard	VEL-2P32-LW-SC	51	0.75	20	0.19	0/-18	B	64
				VEL-2P32-SC	58	0.87	20	0.21			
				VEL-2P32-HL-SC	77	1.20	20	0.28			'65
				VEL-3P32-LW-SC	59	0.87	20	0.21			
				VEL-3P32-SC	65	1.03	20	0.24			
				VEL-3P32-HL-SC	85	1.32	20	0.31			
		PS	Centium	VGN-2S32-SC	63	0.88	10	0.23	32/0		21
		RS	PowrKut	VK-2S32-TP	62	0.87	15	0.24	50/10	A	
		IS	Optanium	VOP-2P32-LW-SC	48	0.78	10	0.17	0/-18	B	64
				VOP-2P32-SC	55	0.88	10	0.20			
				VOP-3P32-LW-SC	54	0.85	10	0.20			'65
				VOP-3P32-SC	62	0.94	10	0.24			
	120-277	IS	Centium	ICN-2M32-MC	50	0.88	10	0.50-0.21	0/-18	A2	64
				ICN-2P32-LW-SC	50-49	0.77	10	0.42-0.12			
				ICN-2P32-SC	58	0.88	10	0.49-0.22			'65
				ICN-3P32-LW-SC	57-56	0.86	10	0.48-0.21			
				ICN-3P32-SC	65	1.01	10	0.54-0.24			
			Centronic	IOP-2P32-LW-SC	48	0.77	10	0.41-0.17		A	64
				IOP-2P32-SC	55-54	0.87	10	0.47-0.20			
				IOP-2P32-HL-SC	74-72	1.18	10	0.63-0.28			'65
				IOP-3P32-LW-SC	56-54	0.85	10	0.46-0.20			
				IOP-3P32-SC	63-62	1.00	10	0.53-0.23			
				IOP-3P32-HL-SC	83-79	1.36	10	0.67-0.28			
		PS		IOP-2S32-LW-SC	47-46	0.71	10	0.38-0.17			21
				IOP-2S32-SC	56-55	0.88	10	0.47-0.20			
			Mark 5	SC-2S32-SC	61	0.86	10	0.51-0.23			
	347	IS	Standard	GEL-2P32-LW-SH-TP	52	0.75	20	0.15	0/-18	A	64
				GEL-2P32-SC	59	0.87	20	0.17		B	
		RS		GEL-2S32-RH-TP	62	0.89	20	0.18	32/0	A	21
		IS	Centium	GCN-2P32	58	0.90	10	0.17	0/-18		64
		RS		GCN-2S32	63	0.90	10	0.18	32/0		21
			PowrKut	GK-2S32-TP	63	0.89	15	0.20	50/10		

1 The above ArchiStar ballasts are normal power factor and labelled "For Residential Use Only"

Refer to pages 8-17 to 8-19 for lead length and shipping data

See page 1-62 for Dimension
See page 1-61 for Wiring Diagrams

Submitted by Leasman Sales

Job Name: [illegible] School District - [illegible] Freshman School

Catalog Number: P424-332G-LD36-S-EB8PRSLH277-F0735

Notes:

Type: **B5-2BAL**

Photometric Report

Coefficients of Utilization

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Visual Comfort Probability

VCP

Room Dimensions W	L	Luminaires Lengthwise				Luminaires Crosswise			
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Energy Data

LER: FP-68 **Energy Cost: $3.64***

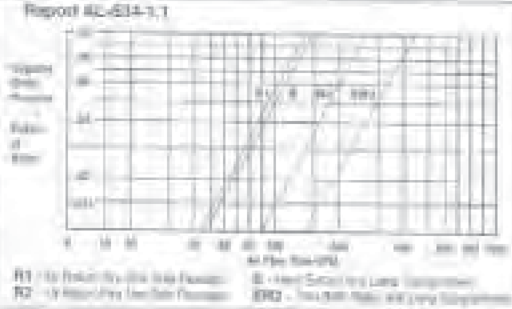
Input Watts: 90 **BF: .87**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per kWh.

Return & Extract Air Data

Report AL-634-1.1



Ordering Information

P4 24 - 3 32 G - LD 3 6 - S - EB8PRSLH 277 - F0735

- Model: P4
- Fixture Size: 24 - 2' x 4'
- No. of Lamps: 3 - 3 Lamps
- Lamp Type: 32 - 4' T8 32 Watt
- Ceiling Type: G - Inverted T-Bar
- No. Cells Longitudinal: 6
- No. Cells Crosswise: 3 - Three
- Louver Finish: LD - Low Iridescent Semi-Specular
- Air Handling Function: S - Static
- Ballast: EB8PRSLH
- Voltage: 277 - 277V
- Options: F0735

P21

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Columbia Lighting

Hubbell Lighting, Inc.

Type B5-2BAL

ADVANCE

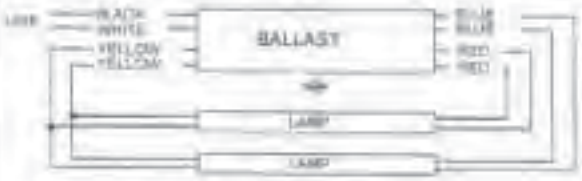
VCN-2S32-SC

Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	In.	cm
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36	91.4
Gray		0
Violet		0

	In.	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-323-2668

Type B5-2BAL

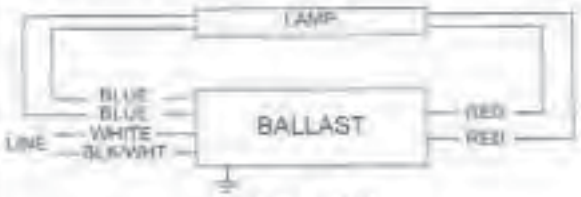
ADVANCE

VCN-1S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F
F17T8	1	17	32/00	0.08	22	1.00	10	0.97	1.7	4.55
F25T8	1	25	32/00	0.10	28	0.95	10	0.98	1.7	3.39
* F32T8	1	32	32/00	0.13	34	0.90	10	0.98	1.7	2.65

Wiring Diagram



Diag. 20

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (Inches)

	in	cm
Black		0
White	22L	55.9
Blue	36L	91.4
Red	20H	66
Yellow		0
Gray		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White	22L	55.9
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

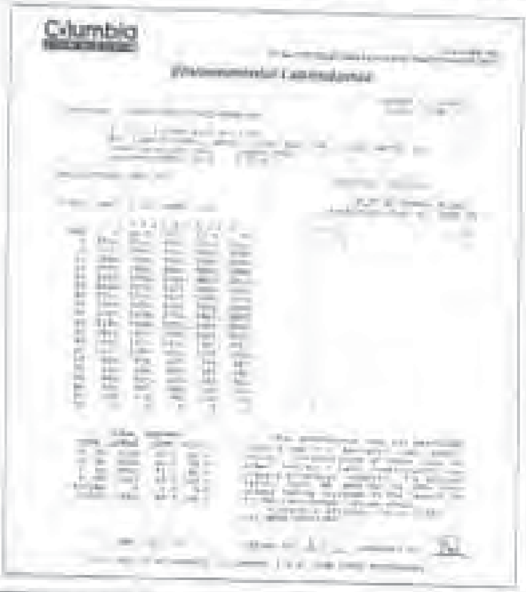
ADVANCE
O'HARE INTERNATIONAL CENTER 10275 WEST HIGGINS ROAD ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2666

Submitted by: [illegible]

Job Name:	Catalog Number:	Type:
[illegible] School District - East Freshman School	ST824-432G-FAA12125-EB8PRSLH377-FO735-G3	B6-2BAL
	Notes:	[illegible]

ST824-432 — 2' x 4', 4 T8 Lamps

SPECIFICATION GRADE TROFFER



ST824-432G-FSA12-4EB8-PAF

Report No. 12040 Efficiency 83.3 S/MH: Par 1.22 Norm 1.30

Coefficients of Utilization

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	92	88	85	81	91	87	84	81	83	81	79	73
2	85	79	74	70	83	77	73	69	75	71	67	60
3	78	71	65	60	76	69	64	60	67	62	59	55
4	72	64	57	52	71	62	56	52	59	55	51	48
5	67	57	50	45	65	56	49	45	54	49	44	42
6	62	51	44	39	60	51	44	39	49	43	39	37
7	57	46	39	35	56	46	39	34	44	39	34	32
8	53	42	35	30	51	41	35	30	40	34	30	28
9	49	37	31	26	47	37	31	26	36	30	26	24
10	45	34	28	23	44	34	27	23	33	27	23	21

Zonal Summary

Zone	Lumens	Lamp	Fixt
0-30	3124	28.9	32.3
0-40	5065	43.7	52.4
0-60	8246	71.1	85.3
0-90	9663	83.3	100.0
90-180	0	0.0	0.0
0-180	9663	83.3	100.0

Energy Data

LER: FL-77 Energy Cost: $3.12*
Input Watts: 118 BF: .88

The above energy calculations were conducted using a specific lamp ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.
*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: ST824-432G-FSA12-4EB8LH120-FO741-C388

ST8 24 - 4 32 G - FA A12125 EB8PRSLH 377 - FO735 G3

Series

Fixture Size
- 24 - 2' x 4'

No. of Lamps
- 4 - Four

Lamp Type
- 32 - 4', T8, 32 Watt

Ceiling Type
- G - Inverted T-Bar
- F - Flange

Door Style
- FS - Flush Steel
- RA - Regressed Aluminum, White
- BRA - Black Regressed Aluminum
- SRA - Silver Regressed Aluminum
- FA - Flush Aluminum, White
- BFA - Black Flush Aluminum
- SFA - Silver Flush Aluminum

Shielding
- A12 - Pattern 12 Acrylic .100" Nominal (Standard)
- A12125 - Pattern 12 Acrylic .125" Nominal
- A12.156 - Pattern 12 Acrylic .156" Nominal
- A19 - Pattern 19 Acrylic .125" Nominal
- IMA - .110 Injection Molded Acrylic .090" Nominal
- DOP - White Diffused Acrylic
- PC1 - Silver Parabolic Louver [illegible]
- PCG1 - Gold Parabolic Louver [illegible]
- PC2 - Silver Parabolic Louver 1 1/2" x 1 1/2" x 1"
- PCG2 - Gold Parabolic Louver 1 1/2" x 1 1/2" x 1"

For complete list of lenses and louvers, see options and accessories section.

Ballast
- 4EB8 - 4-Lamp Electronic T8
- 4EB8LH - 4-Lamp Electronic T8 <10% THD
- EB8 - Electronic T8
- EB8LH - Electronic T8 <10% THD
- OCT - Magnetic T8 (Option)

For a specific ballast vendor, show as option.

Voltage
- 120 - 120V
- 277 - 277V
- 347 - 347V

Options
- SLL - Spring Loaded Latch
- SMF - Slow Blow Fuse
- GLR - Fast Blow Fuse
- C388 - 3/8" Flex with 3 No. 18 Wires
- C384 - 3/8" Flex with 3 No. 14 Wires
- C488 - 3/8" Flex with 4 No. 18 Wires
- C424 - 3/8" Flex with 4 No. 14 Wires
- FO730 - T8, 70CRI, 3000K Lamps, Furnished/Installed
- FO735 - T8, 70CRI, 3500K Lamps, Furnished/Installed
- FO741 - T8, 70CRI, 4100K Lamps, Furnished/Installed
- CSA - Approved for Canadian Standards Association
- EL - Emergency Battery Pack
- PAF - Painted After Fabrication

For complete list of options, see options and accessories section.

G3 - Triple gasketing of lens and housing to ceiling

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Type B6

ADVANCE

Electrical Specifications

VCN-4S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
* F17T8	4	17	32/00	0.29	79	1.00	10	0.99	1.7	1.27
F25T8	4	25	32/00	0.36	101	0.95	10	0.99	1.7	0.94
F32T8	4	32	32/00	0.45	121	0.88	10	0.99	1.7	0.73

Wiring Diagram

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in	cm
Black	22L	55.9
White	22L	55.9
Blue	36R	91.4
Red	36R	91.4
Yellow	46L	116.8
Gray		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White	36R	91.4
Brown	46L	116.8
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2007

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ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-322-3668

Submitted by [illegible]	Job Name: [illegible] Freshman School	Catalog Number: ST822-240TT-G-FAA12125-EBT1277-F40/TB35 Notes:	Type: B7

ST822 2' x 2', 2, 3 & 4 Lamps SPECIFICATION GRADE T8 TROFFER

ST822-232U6G-FSA12-EB8-PAF

Report No. 12367 Efficiency 78.6 [illegible] 1.22 [illegible] 1.21

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance [illegible]

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	87	83	80	78	85	82	79	77	78	76	74	69
2	81	74	70	66	78	72	69	65	70	66	63	60
3	74	66	61	58	72	65	60	56	63	59	55	52
4	68	60	53	49	66	58	53	48	57	52	48	45
5	63	53	47	42	61	52	46	42	51	45	41	39
6	58	48	41	37	56	47	41	36	46	40	36	34
7	53	43	37	32	52	43	36	32	41	36	32	30
8	48	38	32	28	48	38	32	28	37	32	28	26
9	45	35	29	24	44	34	28	24	34	29	24	22
10	42	32	26	21	41	31	25	21	31	25	21	20

Zonal Summary

Zone	Lumens	Lamp	Fixt.
0-30	1408	24.7	31.4
0-40	2287	40.1	51.0
0-60	3791	66.5	84.6
0-90	4482	78.6	100.0
90-180	0	0.0	0.0
0-180	4482	78.6	100.0

Energy Data

LER: FL-73 Energy Cost: $3.29*
Input Watts: 34 BF: .88

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $.08 per KWH.

Ordering Information Example: ST822-232U6G-FSA12-EB8120-EL

ST8 22 - 2 40TT G - FA A12125 - EBTT 277 - F40T/B35

Series

Fixture Size
22 - 2' x 2'

No. of Lamps
2 - Two
3 - Three
4 - Four

Lamp Type (See Product Availability Table)
32U6 - U-bent, T8, 32 Watt, 6" Leg Spacing
31U1 - U-bent, T8, 31 Watt, 1⅝" Leg Spacing
40TT - 40 Watt, Twin Tube Compact Fluorescent
17 - 2', T8, 17 Watt

Ceiling Type
G - Inverted T-Bar

Door Style
FS - Flush Steel
RA - Regressed Aluminum, White
BRA - Black Regressed Aluminum
SRA - Silver Regressed Aluminum
FA - Flush Aluminum, White
BFA - Black Flush Aluminum
SFA - Silver Flush Aluminum

Shielding
A12 - Pattern 12 Acrylic .100" Nominal Thickness
A12125 - Pattern 12 Acrylic .125" Nominal
A12125M - Pattern 12 Acrylic .125" [illegible]
A19 - Pattern 19 Acrylic .156" Male Prism
IMA - 150 Injection Molded Acrylic .156" Male Prism
DOP - White Diffuse Acrylic
PC1 - Silver Parabolic Louver [illegible]
PDG1 - Gold Parabolic Louver [illegible]
PC2 - Silver Parabolic Louver [illegible]
PDG3 - Gold Parabolic Louver [illegible]
For complete list of lenses and louvers, see patterns and accessories section.

Ballast
3EB8 - 3-Lamp Electronic T8
3EB8LH - 3-Lamp Electronic T8 <10% THD
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
EBTT - Electronic Twin Tube
For a special ballast contact [illegible] section.

Voltage
120 - 120V
277 - 277V
347 - 347V
UNV - 120V/277V [illegible] (T8 [illegible] only)

Options
SLL - Spring Loaded Latch
GMF - Slow Blow Fuse
GLR - Fast Blow Fuse
C38 - ⅜" Flex with 3 No. 18 Wires
C314 - ⅜" Flex with 3 No. 14 Wires
C48 - ⅜" Flex with 4 No. 18 Wires
C414 - ⅜" Flex with 4 No. 14 Wires
FO835U1 - T8 U Lamps, 1⅝" Leg Spacing, 80CRI, 3500K, Furnished/Installed
FO835U1 - T8 U Lamps, 1⅝" Leg Spacing, 80CRI, 3500K, Furnished/Installed
FO841U6 - T8 U Lamps, 6" Leg Spacing, 80CRI, 4100K, Furnished/Installed
FO730U6 - T8 U Lamps, 6" Leg Spacing, 70CRI, 3000K, Furnished/Installed
FO735U6 - T8 U Lamps, 6" Leg Spacing, 70CRI, 3500K, Furnished/Installed
FO741U6 - T8 U Lamps, 6" Leg Spacing, 70CRI, 4100K, Furnished/Installed
CSA - Approved for Canadian Standards Association
EL - Emergency Battery Pack
PAF - Painted After Fabrication
For complete list of options, see options and accessories section.

F40TT/B35 - TT 4000 Degree K [illegible] 82CRI, 40 watt, 2G11 Base

Columbia Lighting
[illegible] Sullivan Rd. Bldg 22 • Spokane, WA 99216 • (509) 924-7000 • www.columbia-lighting.com

Type B7

ADVANCE

Electrical Specifications

VCN-2TTP40-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Instant Start
Lamp Connection	Parallel
Input Voltage	277
Input Frequency	50/60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
FT40W/2G11/RS	1	40	0/-18	0.16	44	0.97	15	0.97	1.7	2.20
*FT40W/2G11/RS	2	40	0/-18	0.26	72	0.88	10	0.99	1.7	1.22

Wiring Diagram

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	25.0	
White	25.0	
Blue	30.0	
Red	30.0	
Yellow		
Gray		
Violet		

	in.	cm.
Yellow/Blue		
Blue/White		
Brown		
Orange		
Orange/Black		
Black/White		
Red/White		

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.5 cm

Revised 08/17/2005

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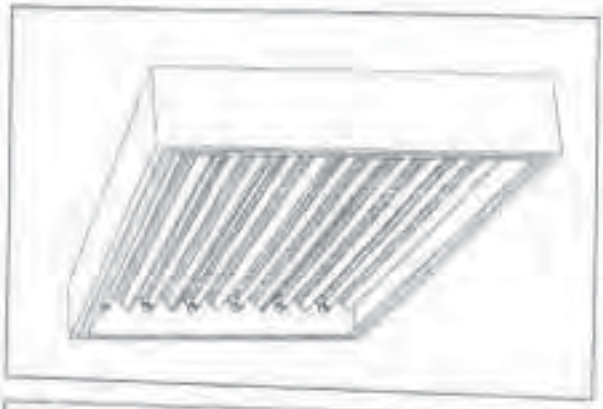
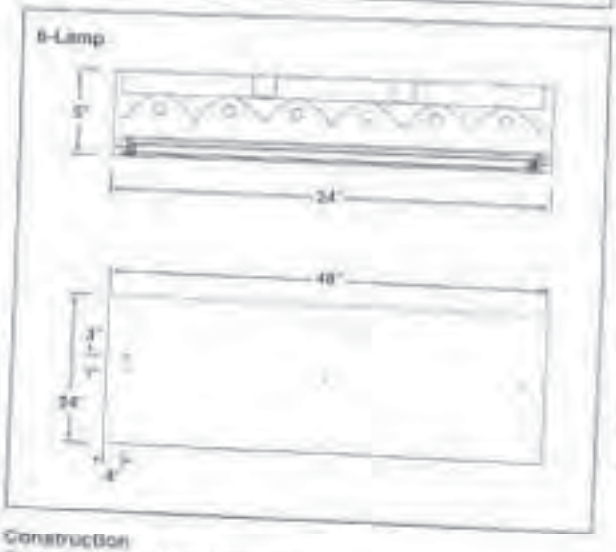
ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 Fax: 888-307-3071
Corporate Offices: Phone: 800-322-2366

Submitted by: Lesman Sales			
	Job Name: Lakota Local School District - East Freshman School B8	**Catalog Number:** LHC24-432-FAA12125-EB8PRSLH277-FO735 Notes:	**Type:** **B8**





LHC

Enclosed & Gasketed Linear Fluorescent Hi-Bay 6-Lamp T8, T5 or T5 HO

Type: _____

Job Description: _____

Features

- Extremely efficient fluorescent luminaire replaces HID in retail and industrial applications
  - Energy savings up to 51%
  - Excellent lumen maintenance (94-95% versus ~65% for typical metal halide)
  - Higher maintained lumens per watt (uz in 80 versus 40 for typical metal halide hi-bay)
  - Instant restrike
  - Consistent color
  - Superior color rendering (82-84 CRI, versus 65-70 for metal halide)
  - Wide choice of lamp color
- Highly specular contoured reflectors drive light down to provide excellent vertical footcandles
- Battery pack option (-EL) provides instant on emergency illumination (not available for wet location)
- Optional damp or wet location listing. WL available July 2005
- Fully sealed housing for Lab or Class I Cleanroom applications
- Anodized extruded aluminum door frame
- One-piece, 18 gauge stainless or cold-rolled steel doors available
- Tool-free access to lamps and ballasts on aluminum door units

Construction
Riveted code gauge steel construction

Shielding
Standard lens is clear, smooth, 100% virgin acrylic. For other available lenses consult lens option sheet or contact your Columbia representative. Stainless flush door is formed anodized aluminum with mitered corners, is retained by wire latches, is easily removed without tools, and hinges from either side.

Reflector
Choice of MIRO 4 99% reflectance multi-faceted specular aluminum reflector, low iridescent specular anodized aluminum, or high reflectance powder coat white paint. Retained with quarter-turn fasteners for tool free ballast access.

Ballast and Electrical
Energy efficient electronic, thermally protected, automatic resetting, Class P, high power factor, CBM, sound rated A. Positive stop, and additional locking lampholders. All configurations have been fully tested to ensure reliable operation and performance under normal conditions.

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

Mounting
Choice of mounting hardware, including the fast and flexible QLH adjustable cable system for simplified mounting to wood, concrete or steel ceiling decks, or to beams, purlins or metal stud. Also available with hardware to mount with jack chain or directly to metal stud. Optional safety tether available.

Certification
Fixtures bear a UL/CUL label for U.S. or Canada.

Type B8

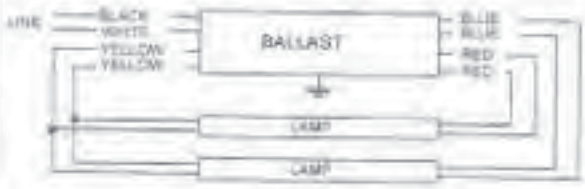
ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	60	0.88	10	0.99	1.7	1.46

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (Inches)

	in	cm
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	In.	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.19 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2386

Submitted by / Lesman Sales

Job Name:
Lakota Local School District - East
Freshman School

Catalog Number:
KL4-232-EB8PRSLH277-KLWG4
(2) SS18
Notes:

Type:
C1

15E07-4281

Photometric Report No. 10180

Columbia Lighting
Environmental Laboratories

Coefficients of Utilization

Zonal Cavity Method — Coefficients of Utilization — Ceiling Reflectance = 80

RC RW	80 70	80 50	80 30	80 10	70 70	70 50	70 30	70 10	50 50	50 30	50 10	0 0
1	94	90	87	83	91	87	84	81	81	78	75	64
2	86	79	73	68	82	76	73	68	70	66	62	53
3	78	69	62	57	75	67	60	56	62	57	52	43
4	72	61	54	48	69	59	53	47	56	48	45	36
5	65	54	46	40	62	52	45	39	49	42	39	32
6	60	48	40	34	57	47	39	34	43	37	32	28
7	55	43	35	30	53	42	34	29	39	33	28	24
8	51	39	31	26	49	37	30	25	35	29	24	20
9	47	35	27	22	45	33	26	22	31	25	21	17
10	43	31	24	19	42	30	24	18	29	23	18	15

Energy Data

LER: FI-67
Input Watts: 74
Energy Cost: $3.58*
BF: .95

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: KL4-240-LE120-GLR-PAF

KL 4 - 2 32 - - EB8PRSLH 277 - KLWG4 SS18

Series
KL

Size
4 - 4'
3 - 3'

No. of Lamps in Cross Section
2 - 2
3 - 3
4 - 4

Ballast
EB8 - Electronic T8
EB12 - Electronic T12
EB12LH - Electronic T12 <10% THD
EB8LH - Electronic T8 <10% THD
4EB8 - 4 Lamp Electronic T8
4EB8LH - 4 Lamp Electronic T8 <10% THD
LE - Magnetic T12
DCT - Magnetic T8

Voltage
120 - 120V
277 - 277V
347 - 347V

Industrial Options

Type C1

ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.70
* F32T8	2	32	32/00	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram

Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*).

Standard Lead Length (inches)

	In.	cm
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in.	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.16 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance

Submitted by Leachman Baker

	Job Name:	Catalog Number:	Type:
	Lakota Local School District - East Freshman School	KL4-232-EB8PRSLH277-KLWG4 (2) SS18 Notes:	C1-EM LEBT-KM1

Photometric Report No. 1016[illegible]


Columbia
Environmental Laboratories

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance .20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	94	90	87	83	91	87	84	81	81	78	75	64
2	86	79	73	68	82	76	70	66	75	66	62	53
3	78	69	62	57	75	67	60	55	62	57	52	45
4	72	61	54	48	69	59	52	47	55	49	45	38
5	65	54	46	40	62	52	45	39	49	42	38	32
6	60	48	42	34	57	47	39	34	43	37	32	28
7	55	43	36	30	53	42	34	29	39	33	28	24
8	51	38	31	26	49	37	30	25	35	30	24	20
9	47	35	27	22	45	33	26	22	31	25	21	17
10	43	31	24	19	42	30	24	19	29	27	18	15

Energy Data

LER: FI-67 **Energy Cost: $3.58***

Input Watts: 74 **BF: .95**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per kWH.

Ordering Information

Example: KL4-240-LE120-GLR-PAF

KL 4 - 2 32 - ___ - EB8PRSLH 277 - KLWG4 - SS18 -

Series
- KL

Size
- 4 - 4'
- 8 - 8'

No. of Lamps in Cross Section
- 2 - Two

Lamp Type
- 40 - F T12, 40 Watt
- 32 - F T8, 32 Watt

Reflector Type
- Blank - Aperture Reflector for Uplight (Std.)
- ST - Solid Top (no Uplight)

Ballast
- EB8 - Electronic T8
- EB12 - Electronic T12
- EB12LH - Electronic T12 < 10% THD
- EB8LH - Electronic T8 < 10% THD
- 4EB8 - 4 Lamp Electronic T8
- 4EB8LH - 4 Lamp Electronic T8 < 10% THD
- LE - Magnetic T12
- 2C1 - Magnetic T8
- Z - Zero Degree Magnetic*

[illegible]

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Voltage
- 120 - 120V
- 277 - 277V
- 347 - 347V

Industrial Options
- GLR - Fast Blow Fuse
- GMF - Slow Blow Fuse
- EL - Emergency Battery Pack
- BC - Branch Circuit Plug-in Wiring System (See options section for details.)
- CSA - Approved, Canadian Standards Association
- PAF - Paint After Fabrication

Industrial Accessories

Order Separately
- KZTF - Zip Tie Hanger - flush mounting on tee bar ceiling
- KZT - Zip Tie Hanger - 1-1/2" spacing on tee bar ceiling
- KTH - Slide Clamp Twig Hanger
- S18 - 18" Stem, canopy and 8' angle
- SS18 - 18" 45° Swivel Stem & Canopy
- KHC - 24" Chain Hanging Assembly
- KLPC - Reflector end closure
- KLWG4 - Wire Guard 4 lg. - 2 required per 8' fixture
- SS18 - 18" [illegible]

For complete list of options and accessories, see options and accessories section.

* Not for use with energy saving lamps.

Submitted by Lewman Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: S60F Notes:	Type: C1-EM

S60F

Side-Lite™

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FLUORESCENT EMERGENCY BALLAST

SPECIFICATION GRADE
ONE OR TWO-LAMP EMERGENCY ILLUMINATION

APPLICATION

The S60F fluorescent emergency ballast works in conjunction with the AC ballast to convert new or existing fluorescent fixtures into emergency lighting. The emergency ballast consists of a high-temperature nickel cadmium battery, charger and electronic circuitry in one compact case. The S60F can be used with most 17 W through 215 W (2'–8') T4, T8, T10 or T12 fluorescent lamps without integral starters including U-shaped, HO, VHO, (incline) energy saving, and 4-pin twin, quad and triple twin tube compacts. One or two lamp operation may be selected (see Table 1). It is also compatible with most one-, two-, three- and four-lamp electronic, standard, energy saving and dimming AC ballasts. If used in an emergency-only fixture, no AC ballast is necessary. The S60F is not suitable for use in air handling heated air outlet fixtures and wet, damp, or hazardous locations. For information about specific lamp and ballast compatibility, please call us.

TABLE 1. LAMP COMPATIBILITY

LAMP	BASE TYPE	WATTAGE (LENGTH)	NO. OF LAMPS (EMERGENCY)
T4, T8, T10, T12 (1", 1-1/4", 1-1/2")	SINGLE OR BIPIN	17 - 40 W (2'-4')	1 2
		41 - 215 W (5'-8')	1
LONG COMPACT	4-PIN (2G11)	18 - 39 W	1 2
		40 - 55 W	1
COMPACT	4-PIN (G24q, GX24q)	13 - 42 W	1 2

OPERATION

When AC power fails, the S60F immediately switches to the emergency mode, keeping either one or two lamps illuminated at a reduced lumen output for a minimum of 90 minutes. When AC power is restored, the S60F automatically returns to the charging mode.

INSTALLATION

The S60F does not affect normal fixture operation and may be used with either a switched or unswitched fixture. If a switched fixture is used, an unswitched hot lead must be connected to the emergency ballast. The emergency ballast must be fed from the same branch circuit as the AC ballast.

The S60F may be installed inside, on top of, or remote from the fixture. The emergency ballast may be remote installed up to half the distance the AC ballast manufacturer recommends remoting the AC ballast from the lamp, or up to 50 feet, whichever is less. Installation is not recommended with fixtures where the ambient temperature may fall below 0°C for extended periods.

Primary circuit only. Lamp leads not shown.

UL and CODE COMPLIANCE

The S60F has been tested by Underwriters Laboratories in accordance with the standards set forth in UL924 – "Emergency Lighting and Power Equipment" and is UL Listed for factory installation or field retrofit. Emergency illumination time exceeds the National Electrical Code (NEC), Life Safety Code (NFPA-101) and UL 90-minute requirements.

UL LISTED

Type CI-EM

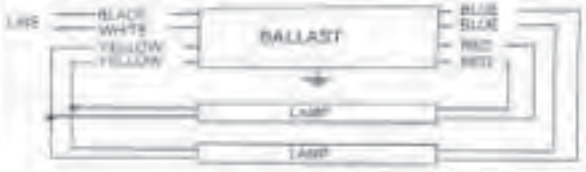
ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*).

Standard Lead Length (Inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

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ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Offices: Phone: 630-322-2666

Submitted by Lecamon Sales

Job Name:
Lakota Local School District - East Freshman School

Catalog Number:
KL-232-EB8PRSLH277-(4)KLWG4 (4) SS18
Notes:

Type:
C2

LEED7-4251

Photometric Report No. 10183

Columbia

Environmental Laboratories

Coefficients of Utilization

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance .20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	84	80	87	83	81	87	84	81	81	78	75	64
2	88	79	73	68	82	76	70	66	70	66	62	53
3	78	69	62	57	75	67	60	55	62	57	52	45
4	72	61	54	48	69	59	52	47	55	49	45	38
5	65	54	46	40	62	52	45	39	49	42	38	32
6	60	48	40	34	57	47	39	34	43	37	32	28
7	55	43	35	30	53	42	34	29	39	33	28	24
8	51	39	31	25	49	37	30	25	35	29	24	20
9	47	35	27	22	45	33	26	22	31	25	21	17
10	43	31	24	19	42	30	24	19	28	23	19	15

Energy Data

LER: FI-67 **Energy Cost: $3.58***
Input Watts: 74 **BF: .95**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: KL4-240-LE120-GLR-PAF

KL 8 - 2 32 - ___ - EB8PRSLH 277 - (2) KLWG4 (4) SS18

Series
KL

Size
4 - 4'
8 - 8'

Ballast
EB8 - Electronic T8
EB12 - Electronic T12
EB12LH - Electronic T12 <10% THD
EB8LH - Electronic T8 <10% THD
4EB8 - 4 Lamp Electronic T8

Voltage
120 - 120V
277 - 277V
347 - 347V

Submitted by Lowman Sales

Job Name:	Catalog Number:	Type:
Lakota Local School District - East Freeman School	S60F	C2
	Notes:	LSGF-4281

Side-Lite™

S60F

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Order Entry / Customer Service • TOLL-FREE 888-496-4848 • FAX 863-349-0798
www.sidelite.com

FLUORESCENT EMERGENCY BALLAST

SPECIFICATION GRADE
ONE OR TWO-LAMP EMERGENCY ILLUMINATION

APPLICATION

The S60F fluorescent emergency ballast works in conjunction with the AC ballast to convert new or existing fluorescent fixtures into emergency lighting. The emergency ballast consists of a high temperature nickel cadmium battery, charger and electronic circuitry in one compact case. The S60F can be used with most 17 W through 215 W (2'-8') T8, T9, T10, or T12 fluorescent lamps without integral starters, including U-shaped, HO, VHO, slimline, energy saving, and 4-pin twin, quad and triple twin mini compacts. One or two lamp operation may be selected (see Table 1). It is also compatible with most one-, two-, three- and four-lamp electronic, standard, energy saving, and dimming AC ballasts. If used in an emergency-only fixture, an AC ballast is necessary. The S60F is not suitable for use in air handling heated air outlet fixtures and wet, damp, or hazardous locations. For information about specific lamp and ballast compatibility, please call us.

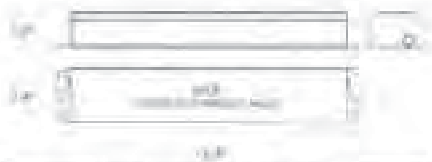


TABLE 1: LAMP COMPATIBILITY

LAMP	BASE TYPE	WATTAGE (LENGTH)	NO. OF LAMPS (EMERGENCY)
T8, T9, T10, T12 (1", 1-1/4", 1-1/2")	SINGLE OR BIPIN	17 - 40 W (2'-4')	1 / 2
		40 - 215 W (2'-8')	1
LONG COMPACT	4-PIN (2G11)	18 - 39 W	1 / 2
		40 - 55 W	1
COMPACT	4-PIN (G24q, GX24q)	18 - 42 W	1 / 2

OPERATION

When AC power fails, the S60F immediately switches to the emergency mode, keeping either one or two lamps illuminated at a reduced lumen output for a minimum of 90 minutes. When AC power is restored, the S60F automatically returns to the charging mode.

INSTALLATION

The S60F does not affect normal fixture operation and may be used with either a switched or unswitched fixture. If a switched fixture is used, an unswitched hot lead must be connected to the emergency ballast. The emergency ballast must be fed from the same branch circuit as the AC ballast.

The S60F may be installed inside, on top of, or remote from the fixture. The emergency ballast may be remote-installed up to half the distance the AC ballast manufacturer recommends remoting the AC ballast from the lamps or up to 50 feet, whichever is less. Installation is not recommended with fixtures where the ambient temperature may fall below 0°C for extended periods.

Primary circuit only.
Lamp leads not shown.

UL and CODE COMPLIANCE

The S60F has been tested by Underwriters Laboratories in accordance with the standards set forth in UL924 "Emergency Lighting and Power Equipment" and is UL Listed for factory installation or field retrofit. Emergency illumination time exceeds the National Electrical Code (NEC), Life Safety Code (NFPA-LSC) and UL 90-minute requirements.

UL LISTED

Type CZ

ADVANCE

VCN-4S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
* F17T8	4	17	32/00	0.29	79	1.00	10	0.99	1.7	1.27
F25T8	4	25	32/00	0.36	101	0.95	10	0.99	1.7	0.94
F32T8	4	32	32/00	0.45	121	0.88	10	0.99	1.7	0.73

Wiring Diagram

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	36R	91.4
Red	36R	91.4
Yellow	46L	116.8
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White	36R	91.4
Brown	46L	116.8
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.19 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2007

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 Fax: 630-307-3071
Corporate Offices: Phone: 800-232-2086

Submitted by Leeman Sales

Job Name:
Lakota Local School District - East Freshman School

Catalog Number:
LUN8-244-4EB8LH277-DR-TP

Notes:

Type:
C3

Photometric Report No. 7097

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance - 20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	74	70	66	63	71	67	64	61	63	60	58	51
2	66	60	55	50	64	58	53	49	54	50	47	41
3	60	52	46	41	58	51	45	41	48	43	39	34
4	55	46	40	35	53	45	39	34	42	37	33	29
5	50	41	34	29	48	39	33	29	37	32	28	24
6	46	36	30	25	44	35	29	25	33	28	24	21
7	42	33	26	22	41	32	26	21	30	24	21	18
8	38	29	23	19	36	28	22	18	27	22	18	15
9	36	26	20	16	35	26	20	16	24	19	15	13
10	34	24	19	14	32	23	18	14	22	17	14	11

Energy Data

LER: 50 **Energy Cost: $4.60***
Input Watts: 85 **BF: .95**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: LU4-240-LE120-WL-GLR

LUN 8 - 2 44 - 4EB8LH 277 - DR - TP - ___

Series

Size
8 - 8'

No. of Lamps in Cross Section
2 - Two

Lamp Type
40 - 4' T12, 40 Watt
32 - 4' T8, 32 Watt

Ballast
LE - Energy Saving Magnetic T12
Z - Zero Degree Magnetic T12*
EB12 - Electronic T12
EB12LH - Electronic T12 <10% THD
DCT - Magnetic Dimmer T8
EB8 - Electronic T8
4EB8 - 4 Lamp Electronic T8
4EB8LH - 4 Lamp Electronic T8 <10% THD
For a specific ballast vendor, show as option.

Voltage
120 - 120V
277 - 277V
347 - 347V

Nautilus Options
WL - Wet Location
GLR - Fast Blow Fuse
GMF - Slow Blow Fuse
CSA - Approved Canadian Standards Association
DR - 100% DR Acrylic Lens

Nautilus Accessories
Order Separately
SSHK - Stainless Steel Hanging Kit (chain not included)
HUBK - Stem Hanging Kit, consists of 2 die cast hubs "O" rings and locknuts. Hubs threaded for ½" pipe. (pipe not included)

Note: Emergency ballasts not available for wet location enclosed and gasketed fixtures. For damp rated battery pack use DMR (see page 135).

TP - Tamperproof Screws

* Not for use with energy saving lamps.
For complete list of options and accessories, see options and accessories section.

44 - 2 Lamp T8 High Output Electronic Ballast

Type C3

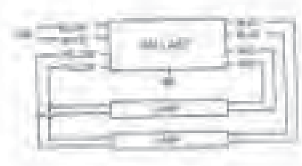
HIGH FREQUENCY ELECTRONIC BALLASTS

T8/HO

For 44 - 86W Lamps

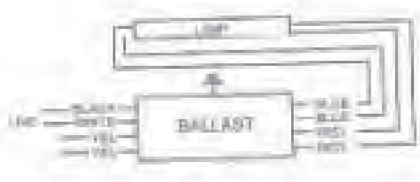
...WER FACTOR   SOUND RATED A

No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim.	Wiring Dia.
F48T8/HO (44W)											
1	120-277	PS	Centium	ICN-2S86	59	1.02	20	0.50-0.23	-20/-29	C	39A
2	120-277	PS	Centium	ICN-2S86	98	0.96	10	0.84-0.36	-20/-29	C	21
F60T8/HO (55W)											
1	120-277	PS	Centium	ICN-2S86	70	1.00	20	0.58-0.26	-20/-29	C	39A
2	120-277	PS	Centium	ICN-2S86	118	0.92	10	1.04-0.45	-20/-29	C	21
F72T8/HO (65W)											
1	120-277	PS	Centium	ICN-2S86	81	1.00	15	0.68-0.30	-20/-29	C	39A
2	120	RS	Standard	REL-2S86	130	0.92	20	1.11	50/10	C	21
2	277	RS	Standard	VEL-2S86	130	0.92	20	0.48	50/10	C	21
2	120-277	PS	Centium	ICN-2S86	140	0.94	10	1.21-0.54	-20/-29	C	21
F96T8/HO (86W)											
1	120-277	PS	Centium	ICN-2S86	100	1.00	10	0.84-0.36	-20/-29	C	39A
2	120	RS	Standard	REL-2S86	160	0.88	20	1.38	50/10	C	21
2	277	RS	Standard	VEL-2S86	160	0.88	20	0.60	50/10	C	21
2	120-277	PS	Centium	ICN-2S86	185	0.95	10	1.57-0.68	-20/-29	C	21



Diag. 21

Fig. C



Diag. 39A

For single lamp operation insulate yellow leads individually for 1000V

Refer to pages 8-17 to 8-19 for lead lengths and shipping data

Submitted by: [illegible]

Job Name: Lakota Local School District - East Freshman School

Catalog Number: CS4-232-EB8PRSLH277-CSRA4

Notes: (2) S18

Type: **C4**

LEB07-4201


Photometric Report No. [illegible]

Columbia
Environmental Laboratories

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance: 20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	97	93	89	86	95	91	87	84	87	84	82	79
2	88	81	74	69	86	79	73	68	76	71	67	62
3	80	71	63	57	78	69	62	57	66	61	56	52
4	73	62	54	48	71	61	53	47	59	52	47	44
5	66	54	46	40	64	53	45	39	51	44	39	36
6	61	48	40	34	59	47	39	34	46	39	33	31
7	56	43	35	29	54	42	35	29	41	34	29	26
8	51	38	30	25	50	38	30	25	37	30	25	22
9	47	34	27	21	46	34	26	21	33	26	21	19
10	44	31	24	19	43	31	25	19	30	23	18	17

Energy Data

LER: FI-77 — **Energy Cost: $3.12***
Input Watts: 60 — **BF: .88**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: CSR4-240-U-LE120-EL

CS 4 - 2 32 - ____ - EB8PRSLH 277 - ____ - ____ - ____ CSRA4 (2) S18

Series

Size
4 - 4'
8 - 8'

No. of Lamps in Cross Section
2 - Two

Lamp Type
40 - 4' T12, 40 Watt
32 - 4' T8, 32 Watt

Reflector Type
Blank - Solid Reflector, No Uplight
U - Apertured Reflector for 5% Uplight

Ballast
LE - Energy Saving Magnetic T12
Z - Zero Degree Magnetic T12[1]
EB8 - Electronic T8
EB8LH - Electronic T8 ≤10% THD
4EB8 - 4-Lamp Electronic T8
4EB8LH - 4-Lamp Electronic T8 ≤10% THD
For a specific ballast vendor, show as option.

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Voltage
120 - 120V
277 - 277V
347 - 347V
UNV - 120V/277V (T8 w/LH only)

Industrial Options
GLR - Fast Blow Fuse
GMF - Slow BLow Fuse
EL - Emergency Battery Pack
BC - Branch Circuit Plug-in Wiring System (See options section for details.)
CSA - Approved, Canadian Standards Association
PAF - Paint After Fabrication

Industrial Accessories

Order Separately
CSZTF - Zip Tee Hanger - Flush Mounting on Tee Bar Ceiling
CSZT - Zip Tee Hanger - 1 1/2" Spacer on Tee Bar Ceiling
CSTH - Slide Clamp Tong Hanger
S18 - 18" Stem, Canopy and 8' Aligner
SS18 - 18", 45° Swivel Stem & Canopy
ITB4 - Close Mounting on T Bar Ceiling
CSHC - 14" Chain Hangers

[1] Not for use with energy saving lamps.
For complete list of options and accessories, see options and accessories section.

CSRA4 - 4' Asymmetric Reflector

Type CH

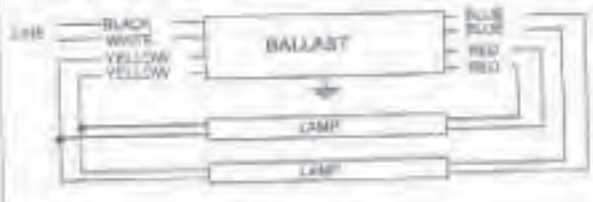
ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.16 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

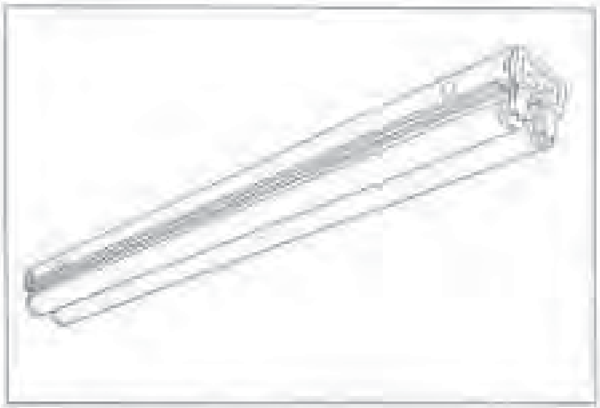
Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

Submitted by Leesman Sales

Job Name:	Catalog Number:	Type:
[illegible] School District - East Freshman School	CS8-232-4EB8PRSLH277-[2]CSRA4 Notes: (3)518	C4-8FT

CS2-2, CS3-2
CS4-2, CS8-2
STRAIGHTLINER
CHANNEL TWO LAMP TS & RS



Type: ____________________

Job Description: ____________________

FEATURES:

- Available 2', 3', 4' or 8'
- Heavy die formed steel channel
- Rotary lock lampholders for positive lamp contact.
- Channel ends double as joiners
- Individual or row mounting. Surface or suspended
- Ballast covers on 4' and 8' units are secured with 1/4-turn fasteners.

SPECIFICATIONS:

Ballasts
Energy efficient ballasts are thermally protected, automatic resetting, Class P, high power factor, CBM, sound rated A, unless otherwise specified. 20 watt ballasts are trigger start, low power factor, Class P. All are U.L. listed.

Housing
Die formed steel with heat sink embossments for cooler running ballasts. Socket saddles are factory installed.

Finish
All parts pre-painted with high gloss baked white enamel, minimum reflectance 88%, applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

Labels
All fixtures carry the U.L. label. 2', 3' and 4' units are listed for use on combustible low density cellulose fiberboard ceilings. (CSA approval available. Use Suffix "CSA").

Cross Section

A - 7/8" Diameter Knockout
B - .570 x .656 Strain Relief Knockout
F - 2" Diameter Knockout
R - 1 1/8" Diameter Knockout
Note 1: All Non-Shielded (strip) fixtures - Deduct 1/8" from overall dimension for continuous row mounting. Dimensions shown include end plate.

Mounting Data

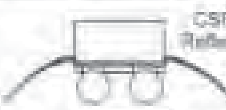
CSZTF
Flush Mount

CSZT
1 1/2" Space

CSTH
Slide Clamp
Tong Hanger

Accessories

CSWG4 Wire Guards
CSWG3 Wire Guards



CSRx
Reflector

CSRA4
Reflector

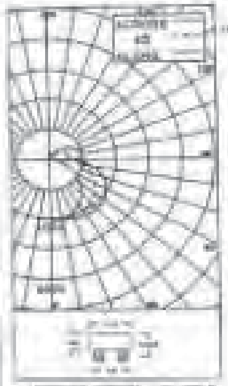
Columbia

Submitted by Lakeside Sales

Job Name:	Catalog Number:	Type:
Lakota Local School District - East Freshman School	CS8-232-4EB8PRSLH277-(2)CSRA4 Notes: (3)S18	C4-8FT

Photometric Report No. LSI11142

LSI Laboratories



Coefficients of Utilization

Coefficients of Utilization

Zonal Cavity Method — Floor Reflectance: .20

RC	80				70				50			0
RW	70	50	30	10	70	50	30	10	50	30	10	0
1	98	91	86	84	94	89	84	80	81	79	78	60
2	88	79	72	66	84	76	69	64	69	64	59	48
3	80	69	60	54	76	66	58	52	60	56	49	40
4	73	60	52	45	69	58	50	43	53	46	41	33
5	66	53	44	37	62	51	42	36	46	39	34	27
6	60	47	38	32	57	45	37	30	41	34	29	23
7	55	42	33	27	53	40	32	26	37	30	25	20
8	51	37	29	23	48	36	28	22	33	26	21	17
9	47	34	25	20	45	32	25	19	30	23	18	14
10	44	31	22	17	42	29	22	17	27	20	16	12

Energy Data

LER: FS-79 **Energy Cost: $3.04***
Input Watts: 62 **BF: .88**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Ordering Information

Example: CS4-240-LE120-GLR

CS 8 - 2 32 - 4EB8PRSLH 277 - (2)CSRA4 - (3)S18 -

Series
CS

Size
2 - 2'
3 - 3'
4 - 4'
8 - 8'

No. of Lamps In Cross Section
2 - Two

Lamp Type
40 - 4', T12, 40 Watt
32 - 4', T8, 32 Watt
30 - 3', T12, 30 Watt
25 - 3', T8, 25 Watt
20 - 2', T12, 20 Watt
17 - 2', T8, 17 Watt

For complete list of options and accessories, see options and accessories section.

Ballast
Blank - HPF, Non Energy-Saving
PH - Pre-heat (2' only)
L - Low Power Factor
LE - Energy Saving Magnetic T12
Z - Zero Degree Magnetic T12
EB12 - Electronic T12
EB12LH - Electronic T12 <10% THD
DCT - Magnetic Octron T8
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
4EB8 - 4 Lamp Electronic T8
4EB8LH - Electronic T8 <10% THD
For a specific ballast version, show as option.

* Not for use with energy saving lamps.

4EB8PRSLH - 4 Lamp Electronic T8 Program Rapid Start Low Harmonic Ballast

Voltage
120 - 120V
277 - 277V

Strip & Channel Options
GLR - Fast Blow Fuse
GMF - Slow Blow Fuse
EL - Emergency Battery Pack
BC - Branch Circuit Plug-on Wiring System. See options section for details.
CSA - Approved, Canadian Standards Association
PAF - Paint After Fabrication

Strip & Channel Accessories

Order Separately
ITB4 - Hanger for Close Mounting on a Tee Bar Ceiling
CSZTF - Zip Tee Hanger - Flush Mount on Tee Bar Ceiling
CSZT - Zip Tee Hanger - 1½" Spacer on Tee Bar Ceiling
CSTH - Slide Tong Hanger with ⅞" Hole
CSWG4 - 4' Wire Guard, 2 Required for 8' Fixture
CSWG3 - 3' Wire Guard
CSRA4 - 4' Asymmetric Reflector
CSR4 - 4' Symmetric Reflector

Columbia Lighting
3808 North Sullivan Rd. • Spokane, WA 99216 • (509)924-7000 • www.columbia-ltg.com

Type C4-8ft.

ADVANCE

VCN-4S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series/Parallel
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
*F17T8	4	17	32/00	0.29	79	1.00	10	0.99	1.7	1.27
F25T8	3	25	32/00	0.35	101	0.95	10	0.99	1.7	0.94
F32T8	4	32	32/00	0.45	121	0.88	10	0.99	1.7	0.73

Wiring Diagram

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm
Black	22L	55.9
White	22L	55.9
Blue	36R	91.4
Red	36R	91.4
Yellow	46L	116.8
Gray		0
Violet		0

	in.	cm
Yellow/Blue		0
Blue/White	36R	91.4
Brown	46L	116.8
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 03/01/2007

Data is taken upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Submitted by Lawrence Sales

	Job Name:	Catalog Number:	Type:
	Lakota Local School District - East Freshman School	WAL3-2UD25-EB8PRSLH277 Notes:	D1 LB8013-4391

Photometric Report No. 11838

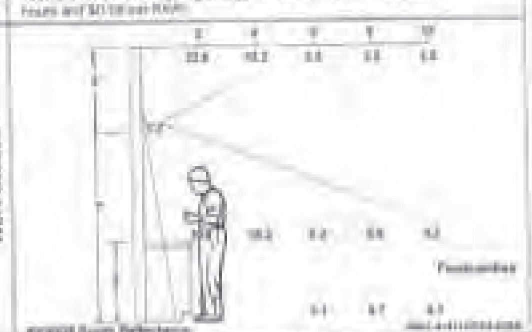
Energy Data

LER: 66 **Energy Cost: $3.84***

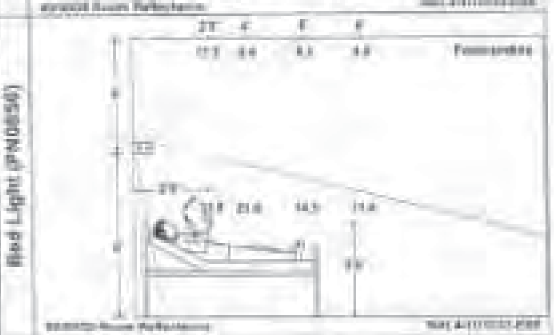
Input Watts: 57 **BF: .88**

The above energy calculations were computed using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice. *Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Work Station



Bed Light (PN0850)



Ordering Information

Example: WAL4-2UD32-EB8120

WAL 3 -2UD25 -EB8PRSLH 277 - ____ - ____

Series

WAL

Length

2 - 2'
3 - 3'
4 - 4'

Lamp Type (Cross Section)

2UD17 - 2/17W, T8 - 2'
2UD20 - 2/20W, T12 - 2'
2UD25 - 2/25W, T8 - 3'
2UD30 - 2/30W, T12 - 3'
2UD32 - 2/32W, T8 - 4'
2UD40 - 2/40W, T12 - 4'
2UD40TT - 2/40W, TT

Ballast

Blank - HPF, T12, 20 Watt
L - LPF
LB - HPF Magnetic T12
EB8 - Electronic T8
EB8LH - Electronic T8 <10% THD
TT - Compact Fluorescent (40W)
EBTT - Electronic Compact Fluorescent (40W)

For a specific ballast version, show as option

EB8PRSLH = T8 Program Rapid Start Low Harmonic Ballast

Voltage

120 - 120V
277 - 277V
347 - 347V
UNV - 120V/277V (T8 w/o H only)

Options

2/L - Two 1-Lamp Ballasts
GLR - Fast Blow Fuse
GMF - Slow Blow Fuse
EL - Emergency Battery Pack
CSA - Approved, Canadian Standards Association
GCO - Grounded Convenience Outlet (120V only)
RSW - Rotary Switch, One Circuit (120V only)
PSW - Pull Switch, One Circuit (120V only)
RSWD - Rotary Switch, Wired to the Downlight Circuit on a Two Circuit Unit (120V only)
PSWD - Pull Switch, Wired to the Downlight Circuit on a Two Circuit Unit (120V only)
4PSW - Four-Way Pull Switch, for Two Circuit Two Lamp Unit (120V only)
LLUB - Less Longth Baffle

WAL 1

Type D1

ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/0	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/0	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/0	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram

Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*).

Standard Lead Length (Inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	In	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.19 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 800-307-3071

Submitted by Lessman Sales

Job Name:	Catalog Number:	Type:
Leipsic Local School District - East Freshman School	WAL4-2UD32-EB8PRSLH277	D2
	Notes:	

Photometric Report No. 11630


Columbia

Environmental Laboratories

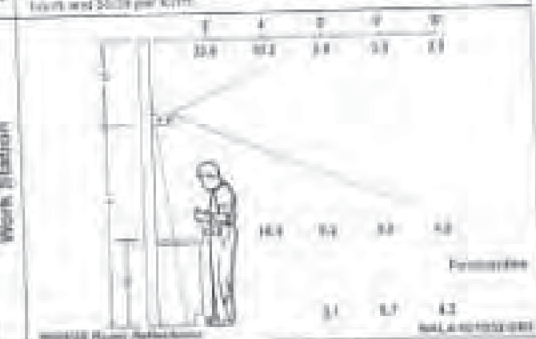
Energy Data

LER: 68 **Energy Cost: $3.64***

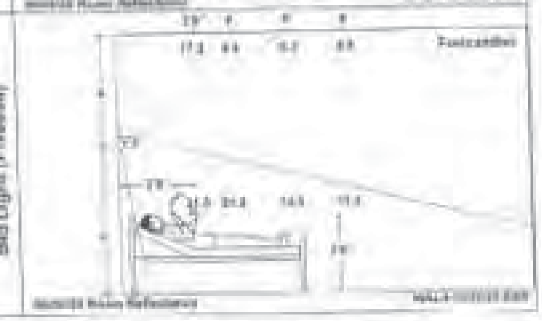
Input Watts: 57 **BF: .88**

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice. *Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH.

Work Station



Bed Light (PN0858)



Ordering Information

Example: WAL4-2UD32-EB8120

WAL 4 -2UD32 -EB8PRSLH 277 - ______ - ______

Series

WAL

Length

2 - 2'
3 - 3'
4 - 4'

Lamp Type (Cross Section)

- 2UD17 - 2) 17W, T8 - 2'
- 2UD20 - 2) 20W, T12 - 2'
- 2UD25 - 2) 25W, T8 - 3'
- 2UD30 - 2) 30W, T12 - 3'
- 2UD32 - 2) 32W, T8 - 4'
- 2UD40 - 2) 40W, T12 - 4'
- 2UD40TT - 2) 40W, TT -

Ballast

- **Blank** - HPF T12, 34 Watt
- **L** - LPF
- **LE** - HPF Magnetic T12
- **EB8** - Electronic T8
- **EB8LH** - Electronic T8 <10% THD
- **TT** - Compact Fluorescent (40W)
- **EBTT** - Electronic Compact Fluorescent (40W)

For a specific ballast vendor show as option.

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Voltage

- 120 - 120V
- 277 - 277V
- 347 - 347V
- UNV - 120V/277V (T8 w/LH only)

Options

- 2/1L - Two 1-Lamp Ballasts
- GLR - Fast Blow Fuse
- GMF - Slow Blow Fuse
- EL - Emergency Battery Pack
- CSA - Approved Canadian Standards Association
- GCO - Grounded Convenience Outlet (120V only)
- RSW - Rotary Switch, One Circuit (120V only)
- PSW - Pull Switch, One Circuit (120V only)
- RSWD - Rotary Switch, Wired to the Downlight Circuit on a Two Circuit Unit (120V only)
- PSWD - Pull Switch, Wired to the Downlight Circuit on a Two Circuit Unit (120V only)
- 4PSW - Four-Way Pull Switch, for Two Circuit Two Lamp Unit (120V only)
- LUB - Less Uplight Baffle

Type D2

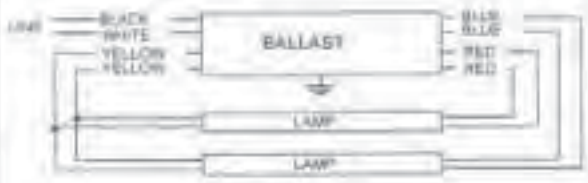
ADVANCE

Electrical Specifications

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	39	1.00	10	0.99	1.7	2.56
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.23	63	0.88	10	0.99	1.7	1.40

Wiring Diagram



Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*).

Standard Lead Length (Inches)

	in	cm
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in	cm
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

Overall (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.16 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 · Fax: 630-307-3071
Corporate Office: Phone: 800-323-2686

Submitted by Lakeshore Sales

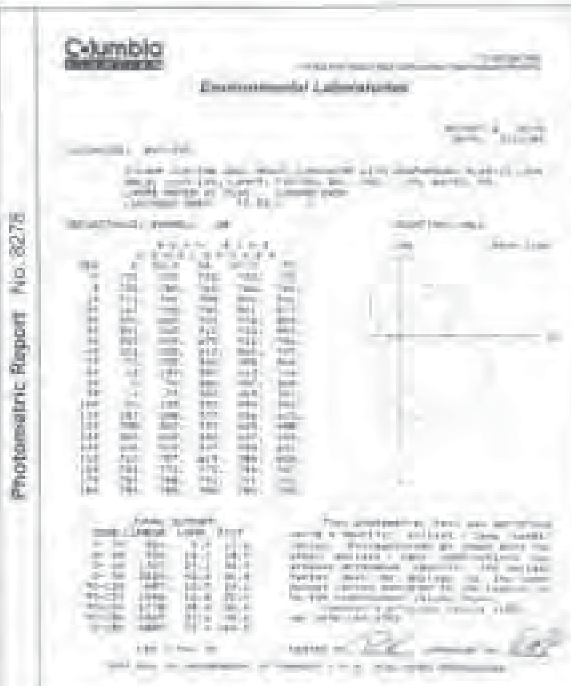
Job Name:
Lakota Local School District - East Freshman School

Catalog Number:
SA4-232-EB8PRSLH277

Notes:

Type:
D3

Photometric Report No. 8278

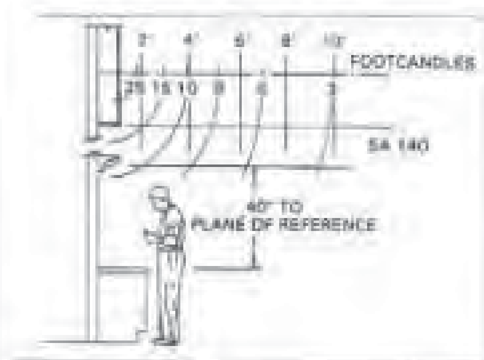


LER: FW-52 **Energy Cost: $4.62***
Input Watts: 90 **BF: .95**

Energy Data

The above energy calculations were conducted using a specific lamp/ballast combination. Actual results may vary depending upon the lamp and ballast used. Lamp and ballast specifications are subject to change without notice.

*Comparative annual lighting energy cost per 1000 lumens based on 3000 hours and $0.08 per KWH



Ordering Information

Example: SA4-232-EB8120-PAF

SA 4 - 2 32 - EB8PRSLH 277 - ____ - ____

Series
SA

Length
2 - 2'
3 - 3'
4 - 4'

No. of Lamps
2 - Two Lamps

Lamp Type
17 - 17W T8 - 2'
20 - 20W T12 - 2'
25 - 25W T8 - 3'
30 - 30W T12 - 3'
32 - 32W T8 - 4'
40 - 40W T12 - 4'

Ballast
Blank - HPF
L - LPF
LE - HPF Magnetic T12
EB12 - Electronic T12*
UCT - HPF Magnetic T8
EB8 - Electronic T8*
*For <10% THD add suffix (i.e. EB8LH)
For a specific ballast vendor, show as suffix

EB8PRSLH - T8 Program Rapid Start Low Harmonic Ballast

Voltage
120 - 120V
277 - 277V
347 - 347V

Suffix
GLR - Fast Blow Fuse
GMF - Slow Blow Fuse
NL - Candelabra Base Lampholder for 7C7 Lamp (not included) 120V Only
EL - Emergency Battery Pack
CSA - Approved, Canadian Standards Association
PAF - Paint After Fabrication
LSW - Line Switch
LCO - Line Grounded Convenience Outlet
OFP - Low Brightness Oval Front Panel

Note: SA Fixture include Rotary Switch (120V only)

For complete list of options and accessories, see options and accessories section

Columbia

Type D3

ADVANCE

VCN-2S32-SC	
Brand Name	CENTIUM
Ballast Type	Electronic
Starting Method	Programmed Start
Lamp Connection	Series
Input Voltage	277
Input Frequency	60 HZ
Status	Active

Electrical Specifications

Lamp Type	Num. of Lamps	Rated Lamp Watts	Min. Start Temp (°F/C)	Input Current (Amps)	Input Power (ANSI Watts)	Ballast Factor	MAX THD %	Power Factor	MAX Lamp Current Crest Factor	B.E.F.
F17T8	2	17	32/00	0.15	28	1.00	10	0.99	1.7	2.50
F25T8	2	25	32/00	0.20	53	0.95	10	0.99	1.7	1.79
* F32T8	2	32	32/00	0.26	62	0.88	10	0.99	1.7	1.40

Wiring Diagram

Diag. 21

The wiring diagram that appears above is for the lamp type denoted by the asterisk (*)

Standard Lead Length (inches)

	in.	cm.
Black	22L	55.9
White	22L	55.9
Blue	26R	66
Red	26R	66
Yellow	36L	91.4
Gray		0
Violet		0

	in.	cm.
Yellow/Blue		0
Blue/White		0
Brown		0
Orange		0
Orange/Black		0
Black/White		0
Red/White		0

Enclosure

Enclosure Dimensions

OverAll (L)	Width (W)	Height (H)	Mounting (M)
9.50 "	1.7 "	1.18 "	8.90 "
9 1/2	1 7/10	1 9/50	8 9/10
24.1 cm	4.3 cm	3 cm	22.6 cm

Revised 11/13/2001

Data is based upon tests performed by Advance transformer in a controlled environment and representative of relative performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice. All specifications are nominal unless otherwise noted.

ADVANCE
CENTRE INTERNATIONAL CENTER 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 Fax: 630-307-3071
Corporate Offices: Phone: 800-322-2066

Submitted by Lighting Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: LFFTWSQ-H6-13EB-6FFR-PKT261 Notes:	Type: E1

PHOTOMETRIC DATA

LiteFrame - 6" Lensed Square CFL Downlight - LFFTWSQ-H6-13EB

BALLAST DATA

13W Twin	120V	277V	347V
Total System Watts	16W	17W	N/A
Input Current (Amps)	0.13	0.06	
Input Frequency in Hz	50/60	50/60	
Power Factor	>97%	>97%	
Ballast Factor	1	1	
Total Harmonic Distortion	<10%	<10%	
Total Harmonic Distortion	[illegible]	[illegible]	

LAMP DATA

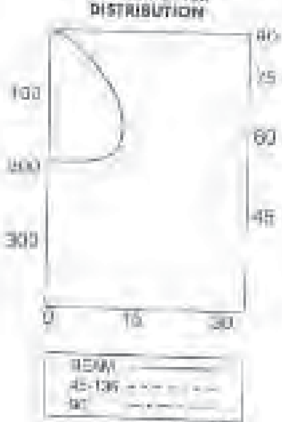
Rated Watts	13W Twin
Rated Lumens	900
Efficacy (LPW)	69
Rated Life	10,000 hours
CRI	82
Min. Starting Temp.	0°F

LFFTWSQ-H6-13EB 6FPR
Lamp: One 13W Twin
Spacing Criteria:
0° = 1.3
90° = 1.3
Efficiency: 49.4%

LUMINANCE DATA IN CANDELA/SQ. METER

Angle In Vertical	Average 0°
45°	6108
55°	3818
65°	2322
75°	2371
85°	1378

CANDLEPOWER DISTRIBUTION



Test No. 113277

CANDLEPOWER SUMMARY

Angle	Mean CP	Lumens
0	183	
5	182	16
15	185	47
25	159	81
35	156	104
45	108	84
55	58	51
65	27	28
75	12	16
85	7	6

AVERAGE INITIAL FOOTCANDLES

McHolay Units (Square Array)
Ceiling 80% Wall 50% Floor 20%

13W Twin

SPACING	RCR1	RCR3	RCR7
4.0	19	16	10
5.0	12	10	7
6.0	9	7	5
7.0	6	5	3
8.0	5	4	2

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method

Effective Floor Cavity Reflectance 20%

RCR	80% 70	80% 50	80% 30	80% 10	70% 70	70% 50	70% 30	70% 10	50% 50	50% 30	50% 10	30% 50	30% 30	30% 10	10% 50	10% 30	10% 10
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
4	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
6	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
8	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
9	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LFFTWSQ-H6-13EB 6FPR

Test No. 113277

Submitted by Lessman Sales

Job Name: Lakota Local School District - East Freshman School

Catalog Number: LFFTWSQ-H6-13EB-6FFR-PKT281
Notes:

Type: E1

PHOTOMETRIC DATA

LiteFrame - 6" Lensed Square CFL Downlight - LFFTWSQ-H6-13EB

BALLAST DATA

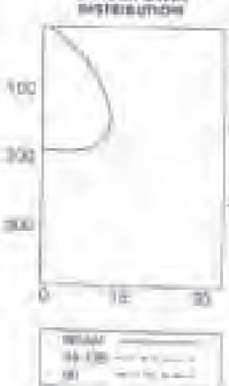
	13W Twin		
	120V	277V	347V
Total System Watts	14W	17W	N/A
Input Current (Amps)	0.11	0.06	
Input Frequency in Hz	50/60	50/60	
Power Factor	>97%	>97%	
Ballast Factor	1	1	
Total Harmonic Distortion	<10%	<10%	
Total Harmonic Distortion	-18°C (0°F)	-18°C (0°F)	

LAMP DATA

Rated Watts	13W Twin
Rated Lumens	900
Efficacy (LPW)	69
Rated Life	10,000 hours
CRI	82
Min. Starting Temp.	0° F

LFFTWSQ-H6-13EB 6FFR
Lamp: One 13W Twin
Spacing Criteria
0° = 1.4
90° = 1.4
Efficiency: 47.1%

CANDLEPOWER DISTRIBUTION



Test No. P3327

CANDLEPOWER SUMMARY

Angle	Mean CP	Lumens
0	183	
5	184	19
15	189	53
25	189	87
35	186	102
45	179	84
55	83	51
65	27	28
75	13	13
85	1	4
90		

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average 0°
45	6108
55	3818
65	3392
75	2221
85	1378

AVERAGE INITIAL FOOTCANDLES

Multiple Units (Square Array)
Ceiling 80% Wall 50% Floor 20%

13W Twin

SPACING	RCR1	RCR3	RCR7
4.0	19	16	10
5.0	12	10	7
6.0	9	7	5
7.0	6	5	3
8.0	5	4	2

COEFFICIENTS OF UTILIZATION

Zonal Cavity Method

% Effective Floor Cavity Reflectance

	80%	70%	50%	30%	10%
	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

LFFTWSQ-H6-13EB 6FFR

Test No. P3327

NOTES

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

Type E1

CT213UNVxxx

APPLICATION and PERFORMANCE SPECIFICATION

Description: Electronic compact fluorescent ballast for (2/1) CFT13W/2GX7 4-pin 1"/arc T4 lamps

- Line Voltage: 120vac to 277vac ±10%, 50-60Hz
- High Power Factor
- Programmed Rapid Start
- Series Lamp Connection

Model	Line Volts	Lamp Type	#	Input Watts	Nominal Line Amps	Ballast Factor	Power Factor	THD	Crest Factor
CT213UNV	120	CFT13W	2	26	0.22	.99	> .99	< 10%	<1.6
	277	CFT13W	2	26	0.10	.98	> .98	< 10%	<1.6
CT213UNV	120	CFT13W	1	15	0.13	.98	> .98	< 10%	<1.6
	277	CFT13W	1	15	0.06	.96	> .97	< 13%	<1.6

Appearance and Performance Specifications Information Subject to Change without Notification

Performance:
- Meets ANSI Standard C82.11
- Meets FCC Part 18 (Non-Consumer), Limits for EMI/RFI
- **Auto-Reset Shutdown Circuit** per NEMA Recommendations
  - Both lamps should be replaced at end of life
  - Lamp relights upon insertion in socket
- Suitable for use in air handling spaces when NEC wiring guidelines are followed

Safety:
- No PCB's
- UL listed (Class P)
  - Type 1 Outdoor, Type CC, Type HC
- CSA Certified

Application:

Minimum Starting Temperature:	0° F, -18° C
Maximum Ambient Temperature:	122° F, 50° C
Maximum Case Temperature (@ tc)	167° F, 75° C
Sound Rated:	A
Lead configuration:	
xxx = SE - Side Exit	
= BE - Bottom Exit	
= BES - Bottom Exit with Studs (2" on center)	
Remote Mounting	12 feet

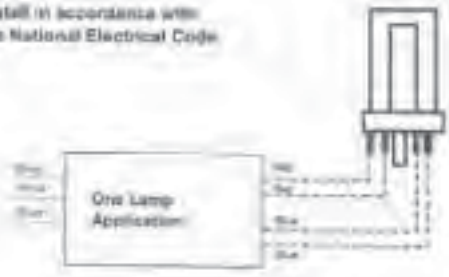
Physical Parameters:

Length:	6.94"
Width:	2.31"
Mounting:	4.81"
Height:	1.00"
Weight:	0.57 lbs
Qty/Carton:	20
Color:	SE-White BE/BES-Black
Can Material:	Metal

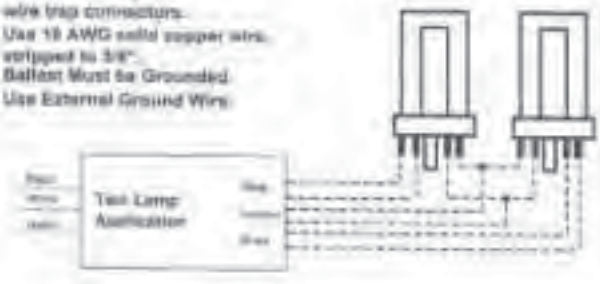
Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Call 1-**800-BALLAST**x**406** for technical assistance.

Manufactured in North America

Install in accordance with the National Electrical Code.



Ballast has plug in wire trap connectors.
Use 18 AWG solid copper wire, stripped to 3/8".
Ballast Must be Grounded.
Use External Ground Wire.



LightGuard

a Genlyte company

GPR

6 and 12 Volt Remote Gimbal Fixtures

Shown: GPR86

Listed to 924

Features

- 6 and 12 volt operation
- Aluminum housing and gimbal assembly
- Utilizes Par 36 sealed beam tungsten and halogen lamps
- Fully recessed design
- Installation in mechanical and sheetrock ceilings

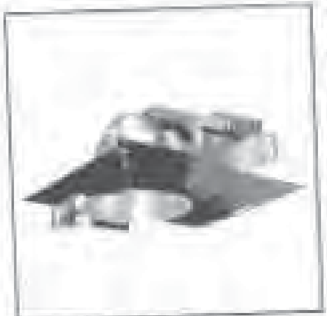
Ordering Information

SERIES
Tungsten **GPR86** = 6 volt, 6 watt **GPR186** = 6 volt, 18 watt **GPR256** = 6 volt, 25 watt **GPR1812** = 12 volt, 18 watt **GPR2512** = 12 volt, 25 watt Halogen **GPR812** = 12 volt, 8 watt

ACCESSORIES (ORDER AS A SEPARATE ITEM)
SC – Bar hanger kit for mechanical ceilings

ALL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Submitted by Leemon Sales	Job Name: Dakota Local School District - Plant Freshman School	Catalog Number: CFT832HEB-STF802H-B24 Notes:	Type: F1 [illegible]



8" Horizontal Open & Wall Wash Downlight

CFT832HEB

One 26W, 32W, or 42W Triple Tube 4-Pin Lamp
Non-IC Rated
120V, 208V, 240V, 277V, or 347V

DATE: [illegible] TYPE: [illegible]
FIRM NAME: [illegible]
PROJECT: [illegible]

Architektūr

Ceiling Cutout: 8 1/2"
Maximum ceiling thickness: 1 1/2"
For conversion to centimeters multiply inches by 2.54
Not to scale

Featuring VirtualSource [illegible]

APPLICATIONS:
The CFT832HEB offers a horizontally lamped compact fluorescent downlight and wall wash fixture that provides superior brightness and glare control. The multiwatt multivolt ballast provides the ability to change wattages by simply changing the lamp. This luminaire is ideal for a wide variety of medium to high ceiling applications including commercial, retail, and hospitality. The CFT832HEB is compatible with the bigpool family of architectural elements.

HOUSING:
[illegible] painted 18-gauge galvanized steel platform. Recessed driver with magnetic cover for easy access. [illegible] and socket for maximum light output. [illegible] housing accommodates downlight and wall wash downlight reflectors.

REFLECTOR:
High purity aluminum Alzak "Virtual Source" [illegible] reflector. [illegible] (ST) standard. [illegible] (WT) [illegible] standard [illegible]

BALLAST:
One (1) compact fluorescent Class "P" electronic multivolt (120V through 277V) ballast suitable for operating all 26W, 32W, and 42W triple tube lamps. [illegible] and EOL protection [illegible]. [illegible] [illegible] rating. 347V available; specify wattage when ordering.

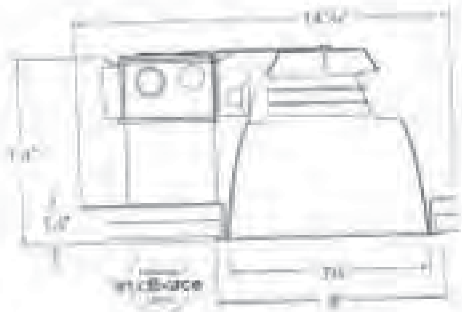
LAMP:
One (1) 26W (GX24q-3 base), 32W (GX24q-3 base), or 42W (GX24q-4 base) 4-pin triple tube compact fluorescent lamp. Lamp furnished by others.

SOCKET:
One (1) injection molded socket suitable for 26W, 32W, and 42W triple tube lamps [illegible].

INSTALLATION:
Universal adjustable housing bracket accommodates 1 1/2" or 1 1/2" [illegible] ceiling channel [illegible] or [illegible] 24" bar hangers (B24 or BH).

LABELS:
UL, CSA listed for damp locations. Approved for through wiring. [illegible] IC.

DIGITAL DIMMING OPTION
3D AddressPro™ Digital Dimming by Universal Lighting Technologies is a ballast-based intelligent control system for use in commercial applications.



Available with
AddressPro™
Digital Dimming System

CATALOG NUMBER: CFT832HEB STF802H B24 — EXAMPLE: CFT832HEB/347V/STF802H/WW

HOUSING	HOUSING OPTIONS	HOUSING OPTIONS	REFLECTORS	REFLECTOR OPTIONS	ACCESSORIES
❑ CFT832HEB 8", (1) 26W/32W/42W Triple tube, multivolt electronic ballast	❑ 347V Specify wattage	❑ DM Electronic analog dimming ballast (consult factory for wall control compatibility)	❑ STF802H 8" Specular Clear Alzak	❑ SS Semi-specular finish	❑ B24 Set of two (2) 24" bar hangers for T-bar ceilings
	❑ CP Chicago Plenum. Fixture construction and ... Refer to Chicago Plenum specification sheets or www.prescolite.com for details. (Prefix housing catalog number)	❑ EM Emergency battery pack with remote test switch and indicator light	❑ STF803H 8" Champagne gold Alzak	❑ L Lensed (flat lens)	❑ BH Set of two (2) bar hangers for ceiling joists up to 24" centers
	❑ 3DM (3) AddressPro™ digital dimming ballast for programmable dimming capability	❑ FSDFA Fuse & fuseholder in fixture	❑ STF804H 8" Pewter Alzak	❑ SL Regressed or [illegible] [illegible] lens	❑ FSDFI Fuse kit for field installation
		❑ RIF1 Radio interference filter (single circuit)	❑ STF802HMFC 8" American [illegible] clear	❑ WW Wall wash reflector (not available with baffle or lensed trims)	❑ SCA8D [illegible] ceiling adapter (see note on back page)
			❑ WTF803H 8" Black baffle	❑ TRG Trim ring gasket factory installed	❑ Signoff Architectural glass elements. Refer to specification sheets ARCH-SG-[illegible] through [illegible]
			❑ WTF803H 8" White baffle	❑ WT Painted white wall flange [illegible] WT for ST	
			❑ WTF803TH 8" Black cone		

prescolite
An Affiliate of Hubbell Lighting, Inc.

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product. Visit: www.prescolite.com • Tech Support: (888) 777-4832

Submitted by Lighting Sales

Job Name:
Lakota Local School District – East Freshman School

Catalog Number:
CFT832HEB-STF802H-B24

Type: F1

PHOTOMETRIC DATA

Architektūr - 8" Horizontal Open & Wall Wash Downlights - CFT832HEB

BALLAST DATA

BALLAST DATA	26W Triple			32W Triple			42W Triple		
	120V	277V	347V	120V	277V	347V	120V	277V	347V
Total System Watts	28W	28W	30W	35W	37W	42W	44W	47W	46W
Input Current (Amps)	0.235	0.1	0.11	0.29	0.13	0.12	0.36	0.17	0.14
Input Frequency in Hz	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60	50/60
Power Factor	>97%	>97%	>97%	>97%	>97%	>97%	>97%	>97%	>97%
Ballast Factor	>98%	>98%	>98%	>98%	>98%	>98%	>98%	>98%	>98%
Total Harmonic Distortion	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%	<10%
Min. Starting Temperature	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)

LAMP DATA

LAMP DATA			
Rated Watts	26W Triple	32W Triple	42W Triple
Rated Lumens	1800	2400	3200
Efficacy (LPW)	69	75	76
Rated Life	10,000 hours	10,000 hours	10,000 hours
CRI	82	82	82
Minimum Starting Temp.	0°F	0°F	0°F

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average 0°	Average 90°
45°	23925	25360
55°	611	887
65°	161	76
75°	0	0
85°	0	0

AVERAGE INITIAL FOOTCANDLES

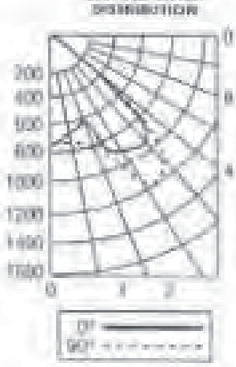
Assumptions:
1. Multiple units (pattern of four)
2. Ceiling 80%, Wall 50%, Floor 20%
3. Four fixtures evenly spaced in the center of the room
4. The room is square and has a width and length equal to twice the fixture spacing
5. The lumen depreciation factor is 0.9
6. The dirt depreciation factor is 0.86
7. The light loss factor is 0.78

32W Triple

SPACING	RCR1	RCR3	RCR7
7.0	3171	2636	1834
8.0	2478	2018	1404
9.0	1958	1596	1109
10.0	1554	1292	899
11.0	1284	1068	743
12.0	1079	897	624
13.0	919	764	532
14.0	793	659	458
15.0	691	574	399

CFT832HEB-STF802H Clear Alzak* Reflector
Lamp: One 32W Triple
Spacing Criteria:
0° = 1.6
90° = 1.1
Efficiency: 75.8%

CANDLEPOWER DISTRIBUTION



Test No. 07-05381

CANDLEPOWER SUMMARY

Angle	0°	90°
0	733	733
5	702	756
10	679	787
15	628	867
20	797	844
25	882	1104
30	804	1177
35	917	1089
40	723	958
45	121	564
50	163	148
55	11	16
60	4	2
65	1	1
70	0	5
75	0	5
80	0	2
85	0	3
90	0	1

COEFFICIENTS OF UTILIZATION — Zonal Cavity Method

Effective Floor Cavity Reflectance

[illegible]

CFT832HEB-STF802H

NOTES

Denotes Virtual Source rating.

Refer to www.prescolite.com for additional photometric data (IES files).

When ordering a sloped ceiling adapter, specify the degree of slope in 5° increments, max. of 25°. For a more precise degree or unit coding applications, please consult factory. Sloped ceiling adapter and housing must be ordered at the same time.

Type F1

Universal Lighting Technologies

C2642UNVxxx

APPLICATION and PERFORMANCE SPECIFICATION

Description: Electronic compact fluorescent ballast(s) for (1) CFM42W/GX24q or (1) CFTR32W/GX24q or (2/1) CFQ/TR26W/GX24q or (1) CFS28W/GR10q (2D) 4-pin lamps or (1) FC9T5-22W or (1) FC12T5-40W or (1) CFS38W/GR10q or (1) CFM36W/2G10

- Line Voltage: 120vac to 277vac, ±10%, 50-60Hz
- High Power Factor
- Programmed Rapid Start
- Series Lamp Connection

Model	Line Volts	Lamp Type	#	Input Watts*	Nominal Line Amps	Ballast Factor	Power Factor	THD	Crest Factor
C2642UNV	120	CFQ/TR26W	2	56	0.47	98	> 0.98	< 10%	<1.5
	277	CFQ/TR26W	2	56	0.21	98	> 0.98	< 10%	<1.5
C2642UNV	120	CFQ/TR26W	1	28	0.25	1.02	> 0.98	< 10%	<1.5
	277	CFQ/TR26W	1	28	0.11	1.02	> 0.98	< 10%	<1.5
C2642UNV	120	CFM42W	1	48	0.41	98	> 0.98	< 10%	<1.5
	277	CFM42W	1	48	0.18	98	> 0.98	< 10%	<1.5
C2642UNV	120	CFTR32W	1	38	0.30	1.00	> 0.98	< 10%	<1.6
	277	CFTR32W	1	38	0.13	1.00	> 0.95	< 10%	<1.5
C2642UNV	120	CFS28WWGR10q	1	31	0.27	98	> 0.98	< 10%	<1.6
	277	CFS28WWGR10q	1	31	0.12	98	> 0.95	< 10%	<1.6
C2642UNV	120	FC9T5-22W	1	25	0.21	1.00	> 0.98	< 10%	<1.5
	277	FC9T5-22W	1	25	0.10	1.00	> 0.98	< 10%	<1.5
C2642UNV	120	FC12T5-40W	1	42	0.35	98	> 0.98	< 10%	<1.5
	277	FC12T5-40W	1	42	0.16	98	> 0.98	< 10%	<1.5
C2642UNV	120	CFS38WWGR10q	1	33	0.27	98	> 0.95	< 10%	<1.6
	277	CFS38WWGR10q	1	33	0.12	98	> 0.95	< 10%	<1.6
C2642UNV	120	CFM36W2G10	1	32	0.27	98	> 0.98	< 10%	<1.7
	277	CFM36W2G10	1	32	0.12	98	> 0.98	< 10%	<1.7

* ANSI measured wattage, 25°C ambient, nominal lamp current

Application and Performance Specification Information Subject to Change without Notification

Performance:
- Meets ANSI Standard C82.11
- Meets FCC Part 18 (Non-Consumer), Limits for EMI/RFI
- Operating Frequency Range: Above 60 kHz
- **Auto-Reset Shutdown Circuit** per NEMA Recommendations
  - Both lamps should be replaced at end of life
  - Lamp relights upon insertion in socket
- Suitable for use in air handling spaces when NEC wiring guidelines are followed
- ME version: Input Terminals L N G intended for one supply connection only

Safety:
- No PCB's
- UL listed (Class P) Type 1 Outdoor, Type CC, Type HL
- CSA Certified

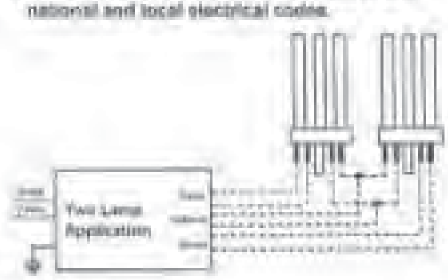
Application:
- Minimum Starting Temperature: 0° F, -18° C
- Maximum Case Temperature (UL): 167° F, 75° C
- Sound Rated: A
- Lead configuration:
  - xxx = SE - Side Exit
  - = BE - Bottom Exit
  - = BES - Bottom Exit with Studs (3" on center)
  - = ME - Multi-Exit Replacement Kit for Distribution
- Remote Mounting: 10 feet
- Also operates on 125VDC input (+)L (-)N

Physical Parameters

Overall Length:	5.64"
Width:	2.31"
Mounting:	4.61"
Height:	1.00"
Weight:	0.57 lbs
Qty/Carton:	20
Color:	SE-White BE/BES-Black ME-White
Can Material:	Metal

Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Call **1-800-BALLAST x400** for technical assistance.

- **Manufactured in North America**
- **Ballast has plug in wire trap connectors.**
- **Use 18 AWG solid copper wire, stripped to 3/8".**
- **Ballast must be grounded in accordance with national and local electrical codes.**



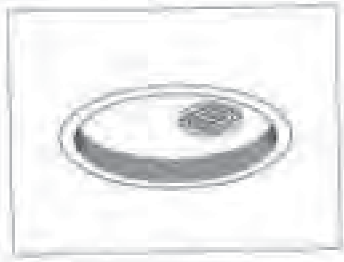
KIRLIN

Lighting Since 1895

CATALOG # FRR-07037-45-46	TYPE F2
JOB NAME LAKOTA EAST FRESHMAN	WATTAGE Click here i VOLTAGE Click h

7" 1 Triple 42 WATT MAXIMUM **FRR-07037**

Type IC (Air Tight Optional) Regressed Lens Shallow Plenum Downlight



Recessed Round
Regressed Lens
Shallow Plenum
Type IC

Features

Lamp
- Designed for one 4 pin triple tube amalgam or quad compact fluorescent lamp 42/32/26W triple or 26W quad

Ballast: Multi-Wattage/Voltage
- Electronic high power factor, thermally protected. For lower wattages: Option -41
- 120-277 multi-volt, 50/60 Hz
- ClickQuick connectors for easy service
- Cold weather -22°F (-30°C)
- End of lamp life protection circuit, RFI filter, THD less than 10%
- Thermally fused. Also see Option -FS

Reflector
- Specular Alzak® aluminum

Trim Assembly
- [illegible]
- [illegible]

Aluminum Housing
- Acrylic enameled. Rustproof. Exceeds 1000 hour ASTM 5% salt spray test
- Lightweight. Minimizes ceiling load
- Cool operation. Extends component life
- Entire luminaire serviced through aperture
- Built in plaster frame
- Air Tight design: See Option -AT

Outlet Box
- Prewired 14 GA (NEC) galvanized steel. UL listed. 1/2" and 3/4" knockouts

Installation
- 27" galvanized hanger bars with adjustable mounting brackets (2) supplied
- Recessed indoor or outdoor in covered locations

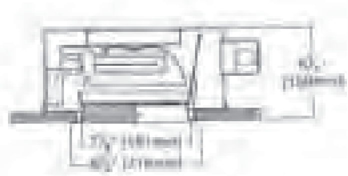
UL, C-UL (Canada) Listings
- Wet, damp or dry locations, enclosed ceilings
- Type IC (non-dimming). Approved for direct contact with insulation
- Through-branch conductors [illegible]

Three Year Limited Warranty
- [illegible]

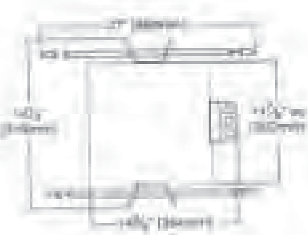
Selected Optional Trims:
- Opal Diffuser Option -18
- White Groveless Flare Option -40
- Fresnel Lens Option -FR

Performance at a Glance

FRR-07037



Option -40 Also Shown



Ceiling Cut-out 8"

FRR-07037 (1 Triple 42W)

Cone of Light¹

Dist.	FC	Dia.
6	[illegible]	[illegible]
8	[illegible]	[illegible]
10	[illegible]	[illegible]
12	[illegible]	[illegible]
14	[illegible]	[illegible]
16	[illegible]	[illegible]

FRR-07037-40 (1 Triple 42W)

Cone of Light¹

Dist.	FC	Dia.
6	27.4	[illegible]
8	15.5	[illegible]
10	[illegible]	[illegible]
12	[illegible]	[illegible]
14	[illegible]	[illegible]
16	[illegible]	[illegible]

Cone of Light Key
- Ht. Distance from fixture
- FC Illumination at center of Ht
- Dia. Cone of light at 50% of FC
- ¹ [illegible]

THE KIRLIN COMPANY

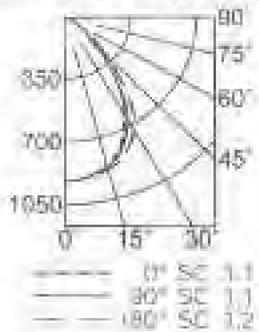
3401 EAST JEFFERSON AVENUE • DETROIT, MICHIGAN 48207-4222
(313) 259-6400 • Fax (313) 259-3909 or (313) 259-3121 • www.kirlinlighting.com

RENAISSANCE SERIES COMPACT FLUORESCENT LIGHTING	MAXIMUM WATTAGE	CATALOG NUMBER
	1 Triple 42	FRR-07037

Detailed Photometry - Installed Fixture

Photometry from I.T.L., Boulder, CO

FRR-07037 (1 Triple 42)



0° SC 1.1
90° SC 1.1
180° SC 1.2

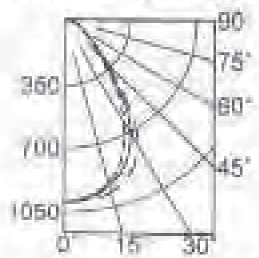
EFFICIENCY 44.8%

CANDLEPOWER DISTRIBUTION					
	0.0	45.0	90.0	135.0	180.0
0	919	919	919	919	919
5	910	910	910	911	912
15	860	862	864	871	881
25	729	732	756	765	799
35	514	543	527	565	522
45	261	233	270	280	318
55	122	125	118	120	143
65	48	53	57	54	39
75	15	17	17	16	19
85	0	0	0	0	0
90	0	0	0	0	0

COEFFICIENTS OF UTILIZATION							
RF	20						
RC	80				50		
RW	70	50	30	10	50	30	10
1	50	48	47	46	46	45	44
2	47	44	42	40	42	40	39
3	44	40	37	35	38	36	34
4	41	37	34	31	35	32	31
5	38	34	30	28	32	30	27
6	36	31	28	25	30	27	25
7	33	28	26	23	27	25	23
8	31	26	23	21	26	23	21
9	30	24	21	19	24	21	19
10	28	23	20	18	22	19	18

ITL TEST #55413 *LER=33.6 •AEC=$7.14

FRR-07037-40 (1 Triple 42 - White Flare)



0° SC 1.0
90° SC 1.1
180° SC 1.2

EFFICIENCY 50.1%

CANDLEPOWER DISTRIBUTION					
	0.0	45.0	90.0	135.0	180.0
0	988	988	988	988	988
5	976	977	980	986	987
15	914	922	931	949	969
25	751	787	808	831	874
35	512	555	570	600	644
45	278	293	306	314	338
55	139	157	167	169	165
65	80	90	93	94	91
75	38	43	42	44	40
85	7	7	6	7	8
90	0	0	0	0	0

COEFFICIENTS OF UTILIZATION							
RF	20						
RC	80				50		
RW	70	50	30	10	50	30	10
1	56	55	53	51	51	50	49
2	52	49	45	44	46	44	43
3	49	44	41	38	42	40	37
4	45	40	37	34	39	36	33
5	42	37	33	30	35	32	30
6	40	34	30	27	33	25	27
7	37	31	27	25	30	27	24
8	35	29	25	23	28	25	22
9	33	27	23	21	26	23	21
10	31	25	21	19	24	21	19

ITL TEST #55414 *LER=38.0 •AEC=$0.31

* LER = Luminaire Efficiency Rating
LER = Luminaire Eff. x Total Lamp Lumens x Ballast Factor / Input Watts

• AEC = Annual Energy Cost per 1000 lumens (based on 3000 hours use @ $0.08 KWH)

Options

Ballast, Wattage and Voltage

- -38 Isolated electronic dimming ballast. Wall type (C-listed). Interior use only. 10°C (50°F) minimum start. Please specify wattage and voltage; consult factory to request brand.
- -43 Lower wattage for 4-pin 18W triple or 18/13W quad. Specify wattage.
- -71 Internal emergency battery pack. Test switch and indicator light in reflector. Damp location. Ambient temp. limits: 0° to 50°C (32° to 122°F). Test switch and indicator light in reflector. Damp location. Ambient temp. limits: -20° to 55°C (-4° to 131°F). Specify voltage.

Lenses and Trims

- -13 Vandal resistant tempered prismatic C#1/J spread lens above 1/8" polycarbonate.
- -7 .187" prismatic high strength acrylic lens.
- -16 Opal flat glass diffuser.
- -20 White aluminum 1/2" cube egg crate louver.
- -21 White flat polycarbonate diffuser.
- -32 White overspill trim ring. Specify O.D.
- -SS Sloped ceiling adapter. Specify slope in 5° increments up to 30°.
- -BH Custom color/finish. Specify. Consult factory.
- -CF High temperature color filter. Specify color.
- -FR Fresnel tempered glass lens.
- -FT Flat white trim.
- -UV UV filter. Consult factory.

Other

- -SP Special modification. Consult factory.
- -AT Air tight with Type IC. Meets / exceeds ASTM

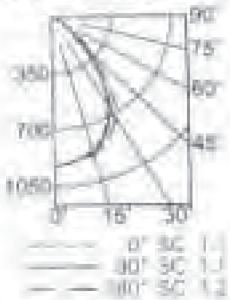
KIRLIN
Since 1893

FRR-07037 7" 1 Triple 42 WATT MAXIMUM

Detailed Photometry - Installed Fixture

Photometry from I.T.L., Boulder, CO

FRR-07037 (1 Triple 42)



0° SC 1.1
90° SC 1.1
180° SC 1.2

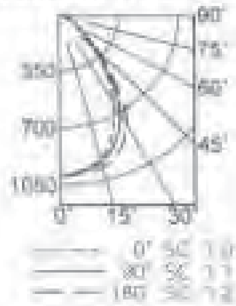
EFFICIENCY 14.8%

CANDLEPOWER DISTRIBUTION					
	0.0	45.0	90.0	135.0	180.0
0	919	919	919	919	919
5	910	910	910	911	912
15	859	862	864	870	881
25	728	752	750	765	799
35	514	543	527	565	622
45	261	273	270	288	318
55	122	125	118	128	143
65	48	53	57	51	49
75	15	11	13	16	15
85	0	0	0	0	0
90	0	0	0	0	0

COEFFICIENTS OF UTILIZATION							
RF	20						
RC	80				50		
RW	70	50	30	10	50	30	10
1	50	48	47	46	46	45	44
2	47	44	42	40	42	40	39
3	44	40	37	35	38	36	34
4	41	37	34	31	35	33	31
5	38	34	30	28	32	30	27
6	36	31	28	25	30	27	25
7	33	28	25	23	27	25	23
8	31	26	23	21	26	23	21
9	30	24	21	19	24	21	19
10	28	23	20	18	22	19	18

ITL TEST #55413 *LER=33.6 •AEC=$7.14

FRR-07037-40 (1 Triple 42 - White Flare)



0° SC 1.0
90° SC 1.1
180° SC 1.2

EFFICIENCY 50.7%

CANDLEPOWER DISTRIBUTION					
	0.0	45.0	90.0	135.0	180.0
0	989	988	988	989	989
5	976	977	980	986	987
15	914	922	931	949	965
25	751	781	808	831	874
35	512	555	570	600	644
45	278	293	304	314	333
55	138	157	167	169	153
65	80	90	93	94	81
75	38	43	47	44	40
85	7	7	6	1	1
90	0	0	0	0	0

COEFFICIENTS OF UTILIZATION							
RF	20						
RC	80				50		
RW	70	50	30	10	50	30	10
1	55	55	53	51	51	50	49
2	52	49	46	44	46	44	43
3	49	44	41	38	42	40	37
4	45	40	37	34	39	36	33
5	42	37	33	30	35	32	30
6	40	34	30	27	33	29	27
7	37	31	27	25	30	27	24
8	35	28	25	23	28	25	22
9	33	27	22	21	26	23	21
10	31	25	21	19	24	21	19

ITL TEST #55414 *LER=38.6 •AEC=$6.31

* LER = Luminaire Efficiency Rating

• AEC = Annual Energy Cost per 1000 lumens (based on 3000 hours use @ $0.08 KWH)

Options

Ballast, Wattage and Voltage

- -[illegible] Instaliing electronic dimming ballast. Not Type IC Rated. House use only. 10°C (50°F) minimum start. Please specify wattage and voltage. Consult factory to requests brand.
- -40 Lower wattage (to 4-pin 18W triple or 13-15W quad). Specify wattage.
- -[illegible] Internal emergency battery pack. Test switch and indicator light in reflector. Damp location. Ambient temp. limits 0° to 50°C (32° to 122°F). Specify voltage. Also see Option -[illegible]. Test switch and indicator light in reflector. Damp location. Ambient temp. limits -20° to 50°C (-4° to 131°F). Specify voltage.
- -[illegible] Specify other voltage. Consult factory.
- -[illegible] 347 volt, 50/60 Hz input. Consult factory.
- -[illegible] Cold weather internal emergency battery pack.

Lenses and Trims

- -[illegible] Vandal resistant tempered prismatic CR73 ... [illegible] polycarbonate.
- -11 .187" prismatic high strength acrylic lens.
- -18 Opal flat glass diffuser.
- -20 White aluminum [illegible]
- -21 White flat polycarbonate diffuser.
- -39 White washable trim ring. Specify O.D.
- -40 White [illegible] flare trim. [illegible]
- -45 Gasket between ceiling and trim flange.
- -46 Gasket between [illegible] and lens.
- -[illegible] Extension collar for ceilings up to [illegible] thick.
- -[illegible] Sloped ceiling adapter. Specify slope in 5° increments up to 30°.
- -[illegible] Custom color/finish. Specify. Consult factory.
- -[illegible] High temperature color filter. Specify color.
- -FR Fresnel compound glass lens.
- -FT Flat white trim.
- -UV UV filter. Consult factory.

Other

- -[illegible] [illegible] Consult factory.
- -AT Air tight with Type IC. Meets / exceeds ASTM E283 [illegible] airflow of 2 CFM maximum.
- -[illegible] Additional [illegible]
- -LC With 4-pin electronic lamp. 3500°K standard, 82 CRI and 12,000 hour life. Specify wattage, style and color temperature.

SUBMITTAL DATA

APPROVAL STAMP

JOB NAME: *LAKOTA EAST FRESHMAN*

TYPE: *F2*

WATTAGE: *Click here to edit* VOLTAGE: *Click here to edit*

FIXTURE NUMBER: *FRR-07037-45-46*

Type F2

T4

For 26 - 32W Triple Lamps

No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power (ANSI) (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim.	Wiring Dia.
CFTR26W/GX24q - 26W CFL Triple Tube Lamp (PL-T26W/4P, F26T8X/4P, CF26DT/E)											
1	120	IS	Matchbox*	RMB-1P26-SC	29	0.95	125	0.35	0°/-18°	52	180
		QS	AmbiStar	RCF-2S26-H1-LD-QS	29	1.10	10	0.24		Size 1	
				RCF-2S26-M1-BS-QS							
				RCF-2S26-M1-LS-QS							
	120-277		SmartMate	ICF-2S26-H1-LD-QS	29	1.10	10	0.24-0.11			
				ICF-2S26-M1-BS-QS							
				ICF-2S26-M1-LS-QS							
		PS		ICF-2S26-H1-LD	29	1.10	10	0.24-0.11			
				ICF-2S26-H1-LD-K ①							
				ICF-2S26-M1-BS							
				ICF-2S26-M1-LS							
2	120	QS	AmbiStar	RCF-2S26-H1-LD-QS	54	1.00	10	0.45		Size 1	150
				RCF-2S26-M1-BS-QS							
				RCF-2S26-M1-LS-QS							
	120-277		SmartMate	ICF-2S26-H1-LD-QS	54	1.00	10	0.45-0.20			
				ICF-2S26-M1-BS-QS							
				ICF-2S26-M1-LS-QS							
		PS		ICF-2S26-H1-LD	54	1.00	10	0.45-0.20	0°/-18°		
				ICF-2S26-H1-LD-K ①							
				ICF-2S26-M1-BS							
				ICF-2S26-M1-LS							
				ICF-2S42-M2-BS	55	1.00	10	0.46-0.21		Size 2	
				ICF-2S42-M2-LD							
				ICF-2S42-M2-LD-K ①							
				ICF-2S42-M2-LS							
				ICF-2S42-90C-M2-BS	55	1.00	10	0.46-0.21			
				ICF-2S42-90C-M2-LD							
				ICF-2S42-90C-M2-LS							
CFTR32W/GX24q - 32W CFL Triple Tube Lamp (PL-T32W/4P, F32T8X/4P, CF32DT/E)											
1	120	QS	AmbiStar	RCF-2S26-H1-LD-QS	39	0.98	10	0.31	0°/-18°	Size 1	180
				RCF-2S26-M1-BS-QS							
				RCF-2S26-M1-LS-QS							
	120-277		SmartMate	ICF-2S26-H1-LD-QS	39	0.98	10	0.31-0.13			
				ICF-2S26-M1-BS-QS							
				ICF-2S26-M1-LS-QS							
		PS		ICF-2S26-H1-LD	39	0.98	10	0.31-0.13			
				ICF-2S26-H1-LD-K ①							
				ICF-2S26-M1-BS							
				ICF-2S26-M1-LS							
2	120-277	PS	SmartMate	ICF-2S42-M2-BS	68	0.98	10	0.57-0.25	0°/-18°	Size 2	180
				ICF-2S42-M2-LD							
				ICF-2S42-M2-LD-K ①							
				ICF-2S42-M2-LS							
				ICF-2S42-90C-M2-BS	68	0.98	10	0.57-0.25			
				ICF-2S42-90C-M2-LD							
				ICF-2S42-90C-M2-LS							

* Matchbox ballasts are normal power factor except -H models which are high power factor.

Replacement/Retrofit ballast kits indicated by Bold Type with suffix K are available to distributors. Refer to page 1-24 for details.

Refer to pages 8-17 to 8-19 for lead lengths and shipping data

See page 1-26 for Dimensions
See page 1-26 for Wiring Diagrams

KIRLIN
Lighting Since 1895

CATALOG #: *FRR-11040-43-46*	TYPE: *F3*
JOB NAME: *LAKOTA EAST FRESHMAN*	WATTAGE: *Click here t* VOLTAGE: *Click h*

11" 2 Triple 57 WATT MAXIMUM **FRR-11040**

2-Lamp High Wattage with Regressed Lens

Recessed Round Regressed Lens

Features

Lamp
- Designed for two 4-pin triple/four tube amalgam compact fluorescent lamps.
- 57W triple/four tube.

Ballast: Multi-Voltage
- Electronic high power factor, thermally protected. For lower wattages, Option -43.
- 120-277 multi-volt 50/60 Hz.
- Click/Quick connectors for easy service.
- Single circuit wiring or see Option -44.
- Cold weather -20°F (-30°C).
- End of lamp life protection circuit, 80 Max. THD less than 10%.
- Internally fused. Also see Options -F5, -F6.

Reflector
- Specular Alzak® aluminum.

Trim Assembly
- Tapered aluminum one piece black Opti/Groove with white flange or all white smooth self flanged trim (Option -40) as shown in section view.
- Regressed tempered prismatic C#73 lens.

Aluminum Housing
- Acrylic enameled. Rustproof. Exceeds 1000 hour ASTM 5% salt spray test.
- Lightweight. Minimizes ceiling load.
- Cool operation. Extends component life.
- Entire luminaire serviced through aperture.
- Built-in plaster frame.

Outlet Box
- Prewired 14 GA (NEC) galvanized steel, UL listed. 1/2" and 3/4" knockouts.

Installation
- 27" galvanized hanger bars with adjustable mounting brackets (2) supplied.
- Recesses indoor or outdoor in covered locations.

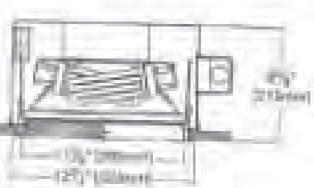
UL, C-UL (Canada) Listings
- Wet, damp or dry locations, covered ceilings.
- Through-branch conductors (6 #12).

Three Year Limited Warranty
- Complete standard fixture and ballast.

Selected Optional Trims
- Opal Diffuser Option -18
- White Grooveless Flare Option -40
- Fresnel Lens Option -FR

Performance at a Glance

FRR-11040

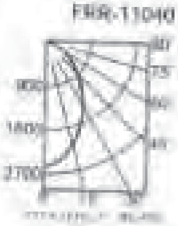


Option -40 Also Shown

Ceiling Cut-out 12¼"

Cone of Light Key
Ht. Distance from fixture
FC Footcandles at center
Dia. Cone of light in feet
[illegible]

FRR-11040 (2 Triple 57W)



Cone of Light*

Dist.	FC	Dia.
[illegible]	[illegible]	[illegible]

FRR-11040-43 (2 Triple 42W)

Cone of Light*

Dist.	FC	Dia.
6	[illegible]	[illegible]
8	[illegible]	[illegible]
10	[illegible]	[illegible]
12	[illegible]	[illegible]
14	[illegible]	[illegible]
16	[illegible]	[illegible]

THE KIRLIN COMPANY

3401 EAST JEFFERSON AVENUE • DETROIT, MICHIGAN 48207-4232
(313) 259-6400 • Fax: (313) 259-9408 or (313) 259-3121 • www.kirlinlighting.com

Type F3

HIGH FREQUENCY ELECTRONIC BALLASTS

For 42 - 70W Lamps

HIGH POWER FACTOR · SOUND RATED A

No. of Lamps	Input Volts	Lamp Starting Method	Ballast Family	Catalog Number	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Line Current (Amps)	Min. Starting Temp. (°F/°C)	Dim	Wiring Dia.
CFTR42W/GX24q - 42W CFL Triple Tube Lamp (PL-T42W/4P, F42TBX/4P, CF42DT/E)											
1	120	QS	AmbiStar	RCF-2S26-H1-LD-QS	46	0.98	10	0.38	0/-18	Size 1	160
				RCF-2S26-M1-BS-QS							
				RCF-2S26-M1-LS-QS							
	120-277		SmartMate	ICF-2S26-H1-LD-QS	46	0.98	10	0.38-0.17			
				ICF-2S26-M1-BS-QS							
				ICF-2S26-M1-LS-QS							
		PS		ICF-2S26-H1-LD	46	0.98	10	0.38-0.17			
				ICF-2S26-H1-LD-K ①							
				ICF-2S26-M1-BS							
				ICF-2S26-M1-LS							
2	120-277	PS	SmartMate	ICF-2S42-M2-BS	93	0.97	10	0.78-0.33	0/-18	Size 2	169
				ICF-2S42-M2-LD							
				ICF-2S42-M2-LD-K ①							
				ICF-2S42-M2-LS							
				ICF-2S42-90C-M2-BS	93	0.97	10	0.78-0.33			
				ICF-2S42-90C-M2-LD							
				ICF-2S42-90C-M2-LS							
CFTR57W/GX24q - 57W CFL Lamp (F57QBX/4P, CF57DT/E)											
1	120-277	PS	SmartMate	ICF-2S42-M2-BS	59	0.94	10	0.80-0.21	14/-10	Size 1	160
				ICF-2S42-M2-LD							
				ICF-2S42-M2-LD-K ①							
				ICF-2S42-M2-LS							
				ICF-2S42-90C-M2-BS	59	0.94	10	0.80-0.21			
				ICF-2S42-90C-M2-LD							
				ICF-2S42-90C-M2-LS							
2	120-277	PS	SmartMate	ICF-2S70-M4-BS	128-126	1.00	10	1.07-0.46	0/-18	Size 4	169
				ICF-2S70-M4-LD							
CFTR70W/GX24q - 70W CFL Lamp (F70QBX/4P)											
1	120-277	PS	SmartMate	ICF-2S42-M2-BS	75	0.96	10	0.63-0.27	14/-10	Size 2	160
				ICF-2S42-M2-LD							
				ICF-2S42-M2-LD-K ①							
				ICF-2S42-M2-LS							
				ICF-2S42-90C-M2-BS	75	[illegible]	10	0.63-0.27			
				ICF-2S42-90C-M2-LD							
				ICF-2S42-90C-M2-LD							
2	120-277	PS	SmartMate	ICF-2S70-M4-BS	150-157	1.00	10	1.30-0.58	0/-18	Size 1	169
				ICF-2S70-M4-LD							

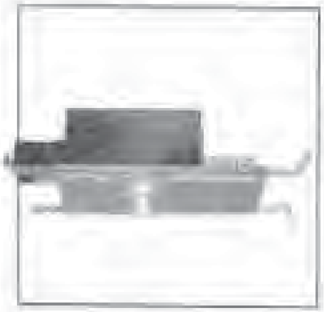
① Replacement/Retrofit ballast kits indicated by **Bold Type** with suffix K are available to distributors. Refer to page 1-24 for details.

See page 1-33 for Dimensions and Wiring Diagrams

Refer to pages 8-17 to 8-19 for lead lengths and shipping data

Submitted by Lakeman Sales

	Job Name:	Catalog Number:	Type:
	Lakota Local School District - Lakota Freshman School	LVH4-277V-LV2C	F4
		Notes	



4" Accent Luminaires
LVH4

20-75W MR-16
Non-IC Rated
120V, 277V, or 347V
11.5V Secondary

DATE | TYPE
FIRM NAME
PROJECT

Architektar

Aperture: Nominal 4"
Ceiling Cutout: 4⅝"
Maximum Ceiling Thickness: 1"
For conversion to millimeters, multiply inches by 25.4
Not to Scale

APPLICATIONS:
The Architektar LVH4 series provides a 4" specification grade, accent luminaire for a wide variety of commercial and high-end residential projects. Suitable for new construction where insulation, if present, is not installed above or within 3" of the fixture. The LVH4 is ideal for applications that require low-profile, unobtrusive ceiling planes and dramatic illumination of featured items such as artwork and furnishings. Specify the LVH4 commercially in office, retail, and hospitality spaces, and residentially in bedrooms, living rooms, foyers, and hallways.

HOUSING:
20 gauge painted steel housing in matte black. 20 gauge galvanized steel plaster flange.

OPTICS/REFLECTOR:
Stainless steel lamp retention springs. Borosilicate clear glass lens provided. May be replaced with optional accessories (spread lens, softening lens, beam elongation, or hood louver). All trims are made of diecast aluminum and reflectors are Alzak® which will not yellow, crack or warp. Matte white trim ring standard. Select trims available with (Z) Zer (metallic silver) finish or (37) white trim ring.

LAMP/SOCKET:
Steatite bi-pin socket with teflon leads. Integral heat shield. Thermal protector prevents fixture from overheating when improperly installed or overlamped. Accommodates 20-75W MR-16 lamps. Lamps furnished by others.

TRANSFORMER:
Magnetic encased transformer, 75VA, 11.5V secondary. Transformer serviceable from below ceiling.

INSTALLATION:
Self-aligning 3/4" bar hangers with integral locks and self-squaring nail tabs. Expands to 24" joist spacing. Bar hangers are rotatable for 90° orientation to housing.

J-BOX:
Prewired 18 gauge galvanized steel junction box with snap-on cover. Box is accessible from below ceiling.

LABELS:
UL approved for all ceiling types. Insulation, if present, must be kept 3" away from housing. UL listed for damp locations and through wiring. CSA certified. Thermally protected. H.V. City standard.

CATALOG NUMBER LV H4 LV2C LV2(B)(C)(G) EXAMPLE: LVH4277V-LV1

HOUSINGS
- ☐ **LVH4** 120V 4", 11.5V 20-75W MR-16 Non-IC, low voltage accent luminaire 120V, 11.5V secondary
- ☐ **LVH4** 277V 4", 11.5V 20-75W MR-16 Non-IC, low voltage accent luminaire 277V, 11.5V secondary
- ☐ **LVH4** 347V 4", 11.5V 20-75W MR-16 Non-IC, low voltage accent luminaire 347V, 11.5V secondary

TRIMS
ADJUSTABLE
- ☐ **LV2** Black Baffle
- ☐ **LV2B** Black Alzak
- ☐ **LV2C** Clear Alzak
- ☐ **LV2G** Gold Alzak
- ☐ **LV2W** Matte White
- ☐ **LV2WBF** White Baffle
- ☐ **LV2Z** Zer Baffle

SELF TRIM ADJUSTABLE
- ☐ **STLV2B** Black Alzak
- ☐ **STLV2C** Clear Alzak
- ☐ **STLV2G** Gold Alzak
- ☐ **STLV2Z** Zer

TRIMS
OVAL SLOT ADJUSTABLE
- ☐ **LV3** Matte White
- ☐ **LV3Z** Zer

PINHOLE ADJUSTABLE
- ☐ **LV5** Matte White
- ☐ **LV5Z** Zer

EYEBALL ADJUSTABLE
- ☐ **LV7** Matte White
- ☐ **LV7Z** Zer

RECESSED EYEBALL ADJUSTABLE
- ☐ **LV8** Black
- ☐ **LV8BZ** Zer eyeball, black trim ring
- ☐ **LV8Z** Zer

TRIMS
MIRROR LIGHT
- ☐ **LV9** Matte White
- ☐ **LV9Z** Zer

FRAMING PROJECTOR
- ☐ **LV30** Matte White
- ☐ **LV30Z** Zer

BAFFLE
- ☐ **LV1** Black
- ☐ **LV1WBF** White
- ☐ **LV1Z** Zer

PINHOLE
- ☐ **LV4** Matte White
- ☐ **LV4Z** Zer

TRIMS
LENSED
- ☐ **LV50L** Matte White
- ☐ **LV50LG** Gold
- ☐ **LV50LZ** Zer

OPEN
- ☐ **LV1B** Black Alzak
- ☐ **LV1C** Clear Alzak
- ☐ **LV1G** Gold Alzak
- ☐ **LV1W** Matte White

SELF TRIM
- ☐ **STLV1B** Black Alzak
- ☐ **STLV1C** Clear Alzak
- ☐ **STLV1G** Gold Alzak
- ☐ **STLV1Z** Zer

WALL WASH
- ☐ **LV6** White
- ☐ **LV6Z** Zer

ACCESSORIES
- ☐ **LV10** Linear Spread Lens
- ☐ **LV12** Hooded spot (for LV8, LV8BZ, LV8Z only)
- ☐ **LV17** Diffusion lens
- ☐ **LV18** Hood louver
- ☐ **LV19** Softening lens
- ☐ **LV20** Hood Kit - replaces shutter assembly in LV30, LV30Z
- ☐ **LV701** U.V. filter

ACCESSORIES
COLOR FILTERS
- ☐ **LV711** Medium Pink
- ☐ **LV721** Light Blue
- ☐ **LV741** Medium Blue
- ☐ **LV751** Medium Amber
- ☐ **LV761** Medium Green

ACCESSORIES
- ☐ **Pocket #301** Converts 3/4" bar hangers to supports for T grids
- ☐ **SCA** Sloped ceiling adapter
- ☐ **TCA2** Thick ceiling adapter allows for use of trims in up to 2½" thick ceilings (install prior to housing installation)

Submitted by Lowenthal Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: 1062M11-FSDFA-400MHFE-120/277V PULSE START BALLAST-WT847-B24 Notes	Type: F6

12" Ellipsoidal One Lamp MH Downlights

1062M11

One 400W ED-37 or BT-37 MH Lamp
120V or 277V

DATE: TYPE:
FIRM NAME:
PROJECT:

Architektur

Ceiling Cutout: 12 7/8"
Maximum Ceiling Thickness: 1 1/2"
For conversion to millimeters multiply inches by 25.4
Metric Table

APPLICATIONS:
The Architektur 1061M Series offers a high wattage faceted ellipsoidal metal halide downlight that provides superior brightness and glare control. This luminaire is ideal for a wide variety of high ceiling applications including commercial, retail and hospitality lobbies.

HOUSING:
Diecast aluminum plaster flange and heat sink. .050" spun aluminum diffuse Alzak® upper reflector. Prewired j-box. Thermal protector. Thumbnuts (2 at 180°) allow housing to be removed for access to junction box or ballast.

REFLECTOR:
High purity aluminum Alzak reflector. Removable one-piece baffle or cone with white polypropylene trim ring.

BALLAST:
Encased and potted H.P.F. dual tapped ballast with constant wattage auto transformer (CWA). Accessible from below ceiling.

LAMP:
One (1) 400W ED-37 or BT-37 coated metal halide lamp. Lamp furnished by others. Tap adjustable.

SOCKET:
Mogul base porcelain socket with nickel plated screw shell.

INSTALLATION:
Universal mounting brackets accept 1/2" EMT conduit or 1 1/2" furring channels (by others), or Prescolite 24" bar hangers (B24 or BG).

LABELS:
UL, CSA listed
Suitable for damp locations
Approved for through wiring
Thermally protected
Non-IC rated

Ballasts are not symmetrical about unit center line.
Top View

	A	B
Silent Pak	8 1/2"	17"
FE Ballast	11 7/16"	21 1/16"

1062M11 FSDFA 400MFE 120/277V WT847 B24

HOUSING
- ☐ **1062M11** 12" (1) 400W ED37/BT37 MH fixture

HOUSING OPTIONS
- ☐ **DCS** Auxiliary socket (see note on back page)
- ☐ **FSDFA** Fuse kit installed at factory
- ☐ **QR** Quartz restrike (see note on back page)
- ☐ **347V** Contact factory

BALLAST
- ☐ **400MHFE** 400W 120V/277V FE magnetic ballast
- ☐ **Silent Pak** For Silent Pak ballasts, remove "FE" from ordering code

REFLECTORS
- ☐ **ST847** Specular clear Alzak reflector
- ☐ **WT846** Black Alzak cone
- ☐ **WT840** Black baffle

REFLECTOR OPTIONS
- ☐ **TRG** Trim ring gasket (factory installed)
- ☐ **WT** Painted white trim (substitute WT for ST)

ACCESSORIES
- ☐ **B24** Set of two (2) 24" bar hangers for T-bar ceilings
- ☐ **BG** Set of two (2) bar hangers for ceiling joists up to 24" centers
- ☐ **FSDFI** Fuse kit for field installation
- ☐ **SCA12D** Sloped ceiling adapter (see note on back page)

120/277V PULSE START BALLAST

prescolite
An Affiliate of Hubbell Lighting, Inc.

In a continuing effort to offer the best product possible we reserve the right to change, without notice, specifications or materials that in our opinion will not alter the function of the product.
Web: **www.prescolite.com** • Tech Support: **(888) 777-4832**

Type F6

Universal Lighting Technologies

Specification Sheet

Catalog Number: 1110-247SC-TC
Date: 9/27/2002

400W METAL HALIDE

Lamp Type	400W MH
ANSI Designation	M59 or H33
Line Voltage	120/277
Regulation	+/-10%
Frequency	60 HZ
Recommended Fuse	10/5
Circuit Type	CWA
Insulation Class	Class A (90°C)
Capacitor Value	INTERNAL
Capacitor Volt Rating	N/A
Capacitor Part Number	N/A
Lamp Starter	N/A

Replaces Catalog #	N/A
Samples Available	Yes
Production Available	YES
Agency Certification	UL/CSA
Maximum Distance to Lamp	See Catalog

Wiring Diagram 34

FEATURES: Thermally protected
Enclosed in fluorescent style ballast can
Anchor bracket / Tab provided for splice box (SB-4 Not included)

Electrical Characteristics

Line Volt	Power Factor	Line Current in Amps			Input Watts	Open Circuit Volts	Drop Out Volts	Min. Start Temp.	Sound Rating
		Oprtng	Open	Start					
120	High	3.90	3.25	2.50	455	300	66	-30°C	C
277	High	1.70	1.50	1.00	455	300	152	-30°C	C

Reference Drawing

Type F6

Universal Lighting Technologies

Specification Sheet

Catalog Number: 1110-247SC-TC
Date: 9/27/2002

400W METAL HALIDE

Lamp Type	400W MH
ANSI Designation	M59 or H33
Line Voltage	120/277
Regulation	+/-10%
Frequency	60 HZ
Recommended [illegible]	

Replaces Catalog #	N/A
Samples Available	Yes
Production Available	YES
Agency Certification	UL/CSA
Maximum Distance to [illegible]	

Type F6

Universal Lighting Technologies

Specification Sheet

Catalog Number: 1110-247SC-TC
Date: 9/27/2002

400W METAL HALIDE

Lamp Type	400W MH
ANSI Designation	M59 or H33
Line Voltage	120/277
Regulation	+/-10%
Frequency	60 HZ
Recommended Fuse	10/5
Circuit Type	CWA
Insulation Class	Class A (90°C)
Capacitor Value	INTERNAL
Capacitor Volt Rating	N/A
Capacitor Part Number	N/A
Lamp Starter	N/A

Replaces Catalog #	N/A
Samples Available	Yes
Production Available	YES
Agency Certification	UL/CSA
Maximum Distance to Lamp	See Catalog

Wiring Diagram 34

FEATURES:
- Thermally protected
- Enclosed in fluorescent style ballast can
- Anchor bracket / Tab provided for splice box (SB-4 Not Included)

Electrical Characteristics

Line Volt	Power Factor	Line Current in Amps			Input Watts	Open Circuit Volts	Drop Out Volts	Min Start Temp.	Sound Rating
		Op/trtg	Open	Start					
120	High	3.90	3.25	2.50	455	300	86	-30°C	C
277	High	1.70	1.50	1.00	455	300	182	-30°C	C

Reference Drawing

Physical Characteristics

Overall Dimensions (In.)			Case Length	Mounting Holes (In.)			Bracket Mnting Dim		Ballast Net Weight	Lead Length Inches
Length	Width	Height		Length	Width	Hole	Length	Width		
19.25	3.19	2.63	18.06	18.63	2.00	0.23	-	-	23.00	12-14

For samples, contact your Universal Lighting Technologies Representative
Specification and Performance Information Subject to Change without Notification

KIRLIN

RECESSED ROUND: Q500 WATT (MAX.) TUNGSTEN HALOGEN DOWNLIGHTS

RR30612
RR30613

High Light Output: Mall, Convention Center, Church

For Higher Ceilings
Four Distributions Offered
10 Optional Lower Cone Finishes

Features

Lamp
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Lampholder
- [illegible]

Reflectors
- [illegible]
- [illegible]
- [illegible] See Options.

Lens
- RR30612: [illegible]
- RR30613: [illegible]

Housing
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

Outlet Box
- [illegible]
- [illegible]

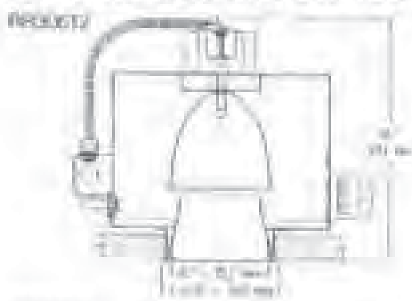
Installation
- [illegible]
- [illegible]
- [illegible]
- See "MARKED SPACINGS CAUTION" below

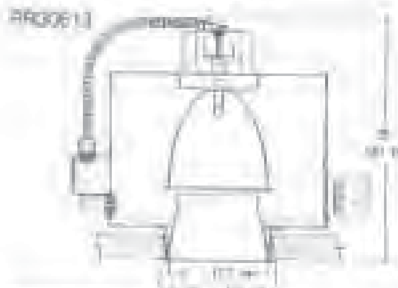
UL, C-UL (Canada) Listings
- [illegible]
- [illegible] AWG [illegible]

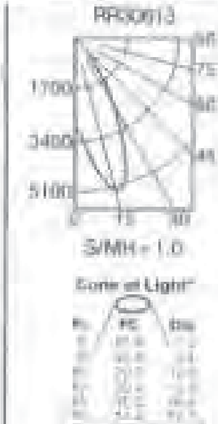
Three Year Limited Warranty
- [illegible]

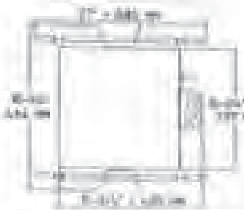
Thermal Protection (Per Current NEC)
- [illegible]

Performance at a Glance









"MARKED SPACINGS CAUTION"
INSTALL WITH MINIMUM SPACINGS AS FOLLOWS: 2 FEET BETWEEN CENTERS OF ADJACENT FIXTURES; 1/2" BETWEEN FIXTURE TOP AND OVERHEAD BUILDING MEMBER; 1 FOOT BETWEEN FIXTURE CENTER AND SIDE WALL.

Cone of Light Key
Ft. [illegible]
FC [illegible]
Dia. [illegible]

[illegible]

THE KIRLIN COMPANY

[illegible] EAST JEFFERSON AVENUE • DETROIT, MICHIGAN [illegible]
[illegible] • Fax [illegible]

NEW MILLENNIUM

Church, Retail, Office Q250 Halogen Lighting

Features

Lamp
- [illegible]

Lampholder
- [illegible]

Reflectors
- Upper: Specular Alzak® [illegible]
- Lower: [illegible]
- [illegible]

Lens
- RR30610: [illegible]
- RR30611: Tempered [illegible]

Housing
- [illegible]

Outlet Box
- [illegible]
- 1/2" and 3/4" knockouts.

Installation
- [illegible]
- Fully adjustable [illegible]
- [illegible] ceilings.

Inconspicuous 6" Apertures
Shallow Plenum Applications
Four Distributions Offered

10 Optional Lower Cone Finishes

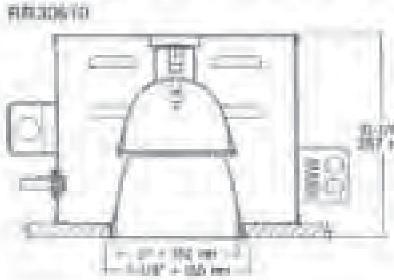
UL, C-UL (Canada) Listings
- Wet, damp or dry locations, [illegible] ceilings.
- Through-branch circuit conductors [illegible]

Three Year Limited Warranty
- Complete standard fixture.

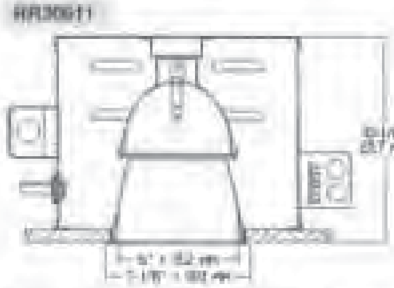
Thermal Protection (Per Current NEC)
- Thermal protector [illegible]

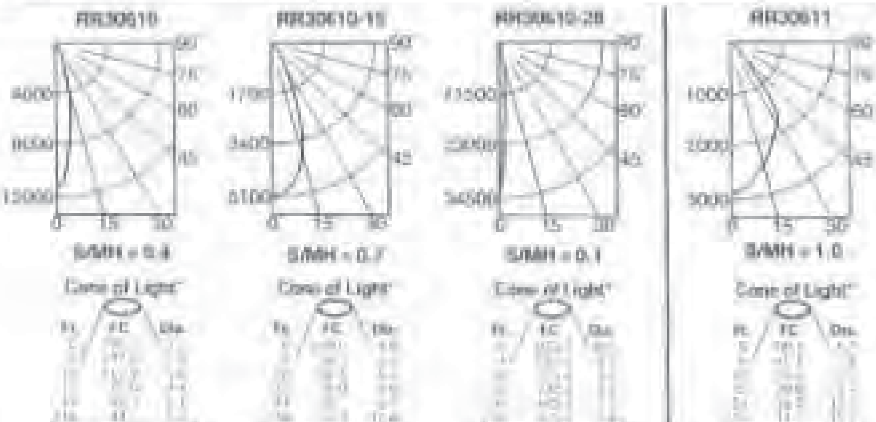
Performance at a Glance

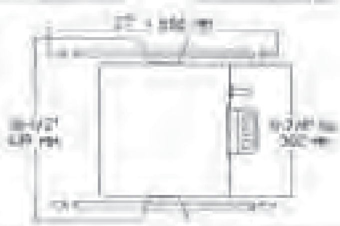
RR30610



RR30611







Cone of Light Key
[illegible]

THE KIRLIN COMPANY
[illegible] EAST JEFFERSON AVENUE • DETROIT, MICHIGAN [illegible]
[illegible]

Recessed Lensed T-6 Bi-Pin Ellipsoidal and Parabolic Downlights: 39 to 150 Watt

4"	150W	**HRR-04050**
6"	150W	**HRR-06051**
6"	150W	**HRR-06052**

Multiple Beam Spreads Available

Features

Lamp
- [illegible]

Socket
- [illegible]

Reflector
- [illegible]

Lens
- [illegible]

Ballast Assembly: Specify Voltage
- [illegible]

Fuse
- [illegible]

Housing
- [illegible]

Outlet Box
- [illegible]

Installation
- [illegible]

UL, C-UL (Canada) Listings
- [illegible]

Three Year Limited Warranty
- [illegible]

Thermal Protection
- [illegible]

Wattage Availability and Cut-Out Dimensions

Catalog No.	Lamp/Base	Standard Wattage Pulse MH	Option -43: Lower Wattage Pulse MH	Max. Standby Wattage (-49-65-66)	Ceiling Cut-Out Diameter	Optical Style
HRR-04050	T-6/G12 bi-pin	150	39-70	[illegible]	[illegible]	Ellipsoidal
HRR-06051	T-6/G12 bi-pin	150	39-70	100	6.5"	Ellipsoidal
HRR-06052	T-6/G12 bi-pin	150	39-70	100	6.5"	Parabolic

Options

Ballasts

[illegible]

Wattage and Voltage

[illegible]

Relays, Standbys, Lamps (See Chart) (-49, -65, -66 NA for HRR-04050)

[illegible]

Reflectors and Trims (Self-Flanged)

[illegible]

Lenses

[illegible]

Mounting Options

[illegible]

Other Options

[illegible]

F9

PULSE and PROBE START METAL HALIDE BALLAST ELECTRICAL and SOUND DATA

	39W		50W		70W		70W (T6 lamp)		100W		125W		150W	
For Lamp Type	PULSE		PULSE		PULSE		PULSE		PULSE		PULSE		PULSE	
Power Factor	>90%		>95%		>95%		>95%		>95%		>95%		>95%	
Min. Start Temp.	-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Ballast Type	HX-HPF	R-HPF	HX-HPF	R-HPF	HX-HPF	R-HPF	HX-HPF		HX-HPF	R-HPF	S-CWA	R-HPF	HX-HPF	R-HPF
Max. Input Amps*	0.9	0.6	1.0	0.5	1.9	0.8	1.6	0.7	1.6	1.2	1.3	0.9	3.7	1.6
Total System Watts**	56	48	72	62	90	82	94		129	118	150	141	185	173
Sound Ratings*** Kirlin WhisperPack	A	A	A	A	A	A	A		A	A	A	A	A	A
Equivalent F-Can	B	B	B	B	B	B	D		B	B	Not Available		B	B

	175W		175W		200W		250W		250W		300W		320W		350W	
For Lamp Type	PULSE		PROBE		PULSE		PULSE		PROBE		PULSE		PULSE		PULSE	
Power Factor	>93%		>95%		>95%		>95%		>95%		>95%		>95%		>95%	
Min. Start Temp.	-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Ballast Type	S-CWA	LR-HPF	CWA		S-CWA	LR-HPF	S-CWA	LR-HPF	CWA		S-CWA	LR-HPF	S-CWA	LR-HPF	S-CWA	LR-HPF
Max. Input Amps*	1.6	1.1	1.8	0.8	2.0	1.1	2.5	1.5	2.5	1.1	2.8	1.6	3.3	1.9	3.8	2.1
Total System Watts**	208	194	210		232	216	280	272	295		341	334	368	342	400	393
Sound Ratings*** Kirlin WhisperPack	B	A	A		B	A	C	A	C		C	A	C	A	C	A
Equivalent F-Can	B		B		Not Available		B		C		Not Available		C		C	

	400W		400W		450W		750W		875W		1000W		1000W	
For Lamp Type	PULSE		PROBE		PULSE		PULSE		PULSE		PULSE		PROBE	
Power Factor	>95%		>90%		>95%		>95%		>95%		>95%		>95%	
Min. Start Temp.	-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Ballast Type	S-CWA	LR-HPF	CWA		S-CWA		S-CWA		S-CWA		S-CWA		CWA	
Max. Input Amps*	3.8	2.1	4.0	1.7	4.5	1.9	7.0	3.0	8.0	3.5	9.0	3.9	9.0	3.9
Total System Watts**	452	475	458		508		816		940		1080		1080	
Sound Ratings*** Kirlin WhisperPack	C	A	B		Not Available - Indoor Enclosed Ballast Provided									
Equivalent F-Can	C		C											

* For open core & CWA, figure is operating current. For R, LR and HX ballasts, figure is highest of starting, operating, or open circuit (empty socket) or faded lamp current. [illegible]
** For 277 volt systems [illegible] for direct comparison to F-Can and other [illegible]
*** As [illegible] by Advance Transformer. [illegible]

HIGH PRESSURE SODIUM BALLAST ELECTRICAL DATA

	35W*		50W		70W		100W		150W**		250W		400W	
Power Factor	>95%		>95%		>95%		>95%		>95%		>95%		>95%	
Min. Start Temp.	-40C = -40F		-40C = -40F		-40C = -40F		-40C = -40F		-40C = -40F		-40C = -40F		-40C = -40F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Ballast Type	R-HPF	NA	R-HPF	HX-HPF	R-HPF	HX-HPF	R-HPF	HX-HPF	R-HPF	HX-HPF	CWA		CWA	
Max. Input Amps***	0.9	NA	1.0	0.6	1.2	0.7	1.8	0.5	2.4	1.3	2.5	1.1	3.8	1.7
Total System Watts	46	NA	62	66	86	91	115	130	190	188	292		464	

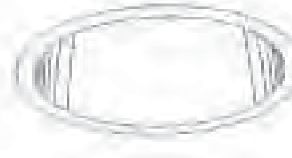
* 277 volt available in 35 watts [illegible]
** designed for 55 volt lamps only
*** For CWA figure is operating current. For R & HX ballasts, figure is highest of starting, operating or open circuit (empty socket) or faded lamp current.

TYPE F10

KIRLIN *lighting since 1895*

Features and Options

Recessed Lensed T-6 Bi-Pin Ellipsoidal and Parabolic Downlights: 39 to 150 Watt



4"	150W	**HRR-04050**
6"	150W	**HRR-06051**
6"	150W	**HRR-06052**

Multiple Beam Spreads Available

Features

Lamp
- Designed for vertical T-6 bi-pin metal halide lamps. See chart below for standard and optional wattages.
- See Option -43 and chart below for lower wattage.

Socket
- [illegible] G12 bi-pin. Pulse rated.
- Porcelain body. Silicone leads.

Reflector
- Upper: Ellipsoidal or parabolic specular Alzak aluminum.
- [illegible] specular Alzak aluminum, self flanged.
- Fourteen optional reflector finishes available.

Lens
- UV absorbing tempered Microlux glass, mounted to upper reflector. Also see Options.

Ballast Assembly: Specify Voltage
- WhisperPack™ fully encapsulated 180°C rated HPF pulse start ballast.
- Class H, high reactance for 120 volt and Options [illegible] linear reactor for 277 volt.
- Capacitor and ignitor supplied.
- Dimming (-30) and electronic (-96) ballasts available. See Options.
- Cool, quiet, long life. Silicone leads.
- [illegible]

Fuse
- Fused primary. Renewable. Aids servicing.

Housing
- [illegible] aluminum.
- [illegible] ventilation.
- Rustproof. Exceeds 1000 hour ASTM [illegible] salt spray test.

- Entire luminaire serviced from below through removable reflectors.
- Built-in plaster frame.

Outlet Box
- Provided 14 GA (NEC) galvanized steel. UL listed, with removable insulated cover.
- 1/2" and 3/4" knockouts.

Installation
- 27" galvanized hanger bars supplied (2).
- Fully adjustable universal mounting brackets supplied (2).
- [illegible] locations.

UL, C-UL (Canada) Listings
- [illegible]
- Through branch circuit conductors [illegible]

Three Year Limited Warranty
- Complete, standard fixture [illegible]

Thermal Protection
- Per current NEC.

Wattage Availability and Cut-Out Dimensions

Catalog No.	Lamp/Base	Standard Wattage Pulse MH	Option -43: Lower Wattage Pulse MH	Max. Standby Wattage (-49-65-66)	Ceiling Cut-Out Diameter	Optical Style
HRR-04050	T-6/G12 bi-pin	150	39-70	—	5.0"	Ellipsoidal
HRR-06051	T-6/G12 bi-pin	150	39-70	100	6.5"	Ellipsoidal
HRR-06052	T-6/G12 bi-pin	150	39-70	100	6.5"	Parabolic

Options

Ballasts
- 30 Electronic dimming ballast instead of pulse start metal halide. Consult factory for wattage and voltage availability.
- [illegible]

socket. [illegible] provides light upon restoration [illegible]. Also see Option -65.

- 64 With lamp. Specify wattage and color temperature. [illegible] standard for T-6 MH.
- 65 With [illegible] halogen standby lamp [illegible] only with Options -49, -65 or -66.

Reflectors and Trims (Self-Flanged)
- [illegible] Champagne Gold specular Alzak lower cone [illegible]

- [illegible]
- [illegible] specular Alzak lower cone [illegible]
- [illegible] specular Alzak lower cone [illegible]
- 94 Custom [illegible] baffle. Consult factory.
- [illegible] White trim [illegible]

Lenses
- [illegible]

TYPE F10

KIRLIN *lighting since 1895*

Features and Options

Recessed Lensed T-6 Bi-Pin Ellipsoidal and Parabolic Downlights: 39 to 150 Watt

Multiple Beam Spreads Available

4"	150W	HRR-04050
6"	150W	HRR-06051
6"	150W	HRR-06052

Features

Lamp
- [illegible]

Socket
- [illegible]

Reflectors
- [illegible]

Lens
- [illegible]

Ballast Assembly: Specify Voltage
- [illegible]

Fuse
- [illegible]

Housing
- [illegible]

Outlet Box
- [illegible]

Installation
- [illegible]

UL, C-UL (Canada) Listings
- [illegible]

Three Year Limited Warranty
- [illegible]

Thermal Protection
- [illegible]

Wattage Availability and Cut-Out Dimensions

Catalog No.	Lamp/Base	Standard Wattage Pulse MH	Option -42: Lower Wattage Pulse MH	Max. Standby Wattage (-49-65-66)	Ceiling Cut-Out Diameter	Optical Style
HRR-04050	T-6/G12 bi-pin	150	70-75	—	5.0"	Ellipsoidal
HRR-06051	T-6/G12 bi-pin	150	39-70	100	6.5"	Ellipsoidal
HRR-06052	T-6/G12 bi-pin	150	70-75	100	6.5"	Parabolic

Options

Ballasts

[illegible]

Wattage and Voltage

[illegible]

Relays, Standbys, Lamps (See Chart) (-49, -65, -66 NA for HRR-04050)

[illegible]

Reflectors and Trims (Self-Flanged)

[illegible]

Lenses

[illegible]

Mounting Options

[illegible]

Other Options

[illegible]

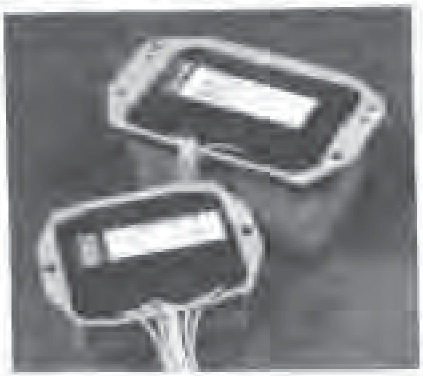
KIRLIN

THE KIRLIN COMPANY
3401 EAST JEFFERSON AVENUE • DETROIT, MICHIGAN [illegible]
[illegible]

Kirlin WhisperPack™ Ballasts

For more information, including specification sheets and photometry, on these products and all other Kirlin products, please visit **www.kirlinlighting.com** or call your local Kirlin Sales Representative for the **Metal Halide Lighting catalog (02PS)**

Pulse and Probe Start HID Ballast Electrical and Sound Guide



WhisperPack™ vs. F-Can Encapsulated Ballasts

Kirlin's exclusive WhisperPack encased and potted ballasts are sound rated. This allows you to **quantify the benefits of WhisperPack's ultra-quiet design** when compared to competitors' F-Can style encapsulated ballasts. The HID Ballast Guide below lists sound ratings for all WhisperPack (pulse and probe start) ballasts, as well as those for available F-Can ballasts.

Note WhisperPack's superior performance over F-Can's sound ratings. Furthermore, **WhisperPack ballasts are available in all wattages from 39 to 400 watts**, unlike F-Can ballasts, which are not available in several popular wattages.

F10

	39W		50W		70W		70W (1.8 amp)	100W		125W		150W	
For Lamp Type	PULSE		PULSE		PULSE		PULSE	PULSE		PULSE		PULSE	
Power Factor	>90%		>90%		>90%		>90%	>90%		>90%		>90%	
Min. Start Temp	-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F	-30C = -22F		-30C = -22F		-30C = -22F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V / 277V	120V	277V	120V	277V	120V	277V
Ballast Type	HX-HPF	R-HPF	HX-HPF	R-HPF	HX-HPF	R-HPF	HX-HPF	HX-HPF	R-HPF	S-CWA	R-HPF	HX-HPF	R-HPF
Max. Input Amps*	0.9	0.6	1.0	0.6	1.9	0.8	1.6 / 0.7	2.6	1.2	1.3	0.9	3.7	1.6
Total System Watts**	56	48	72	62	90	85	95	128	118	150	147	190	173
Sound Ratings*** Kirlin WhisperPack	A	A	A	A	A	A	A	A	A	A	A	A	A
Equivalent F-Can	B	B	B	B	B	B	B	B	B	Not Available		B	B

	175W		175W		200W		250W		250W		300W		320W		350W	
For Lamp Type	PULSE		PROBE		PULSE		PULSE		PROBE		PULSE		PULSE		PULSE	
Power Factor	>90%		>90%		>90%		>90%		>90%		>90%		>90%		>90%	
Min. Start Temp	-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Ballast Type	S-CWA	LR-HPF	CWA		S-CWA	LR-HPF	S-CWA	LR-HPF	CWA		S-CWA	LR-HPF	S-CWA	LR-HPF	S-CWA	LR-HPF
Max. Input Amps*	1.9	1.1	1.8	0.8	2.0	1.3	2.3	1.4	2.5	1.1	2.8	1.8	3.3	1.9	3.4	2.1
Total System Watts**	208	194	210		232	218	288	272	295		342	324	368	342	400	375
Sound Ratings*** Kirlin WhisperPack	B	A	A		B	A	C	A	C		C	A	C	A	C	B
Equivalent F-Can	B		B		Not Available		B				Not Available		C		C	

	400W		400W		450W		750W		875W		1000W		1000W	
For Lamp Type	PULSE		PROBE		PULSE		PULSE		PULSE		PULSE		PROBE	
Power Factor	>90%		>90%		>90%		>90%		>90%		>90%		>90%	
Min. Start Temp	-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F		-30C = -22F	
Nom. Input Volts	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V	120V	277V
Ballast Type	S-CWA	LR-HPF	CWA		S-CWA		S-CWA		S-CWA		S-CWA		CWA	
Max. Input Amps*	3.8	2.1	4.0	1.7	4.3	1.9	7.0	3.0	8.0	3.5	9.5	3.9	9.0	3.9
Total System Watts**	452	435	458		508		815		946		1080		1080	
Sound Ratings*** Kirlin WhisperPack	C	A	B		Not Available - Indoor Enclosed Ballast Provided									
Equivalent F-Can	C		C											

* For CWA and S-CWA, figure is operating current. For R, LR and HX ballasts, figure is highest of starting, operating or open circuit (empty socket) [illegible]

** For 277 volt systems with electronic quiet-restrike [illegible] also use 120 volt data for circuit design.

*** As tested by Advance Transformer, for direct comparison to F-Can and other potted ballast designs.

THE KIRLIN COMPANY

3401 East Jefferson Avenue • Detroit, MI 48207-4222

313-259-6400 • FAX 313-259-3121 • [illegible] • www.kirlinlighting.com

Type F12

6" Recessed A-Line Downlight

INC600

One 100W A23 or 150W A21 Lamp
120V or 277V

Featuring VirtualSource® Reflectors

Architektur

Ceiling Cutout: 6"
Maximum Ceiling Thickness: 1"
For conversion to millimeters, multiply inches by 25.4
Not to Scale

APPLICATIONS:
The Architektur INC600 provides a 6" specification grade downlight and wall wash luminaire for a wide variety of applications including commercial, retail, and hospitality.

HOUSING:
One piece painted, cold rolled steel platform with trapeze retaining springs to secure optical system. Maximum 1" ceiling thickness. Prewired J-Box with snap on cover for easy below ceiling access. Die-cast aluminum heat sink.

REFLECTOR:
High purity aluminum Alzak reflector line featuring Virtual Source® optical design for optimum efficiency and superior brightness control. Self-trim standard.

LAMP:
One (1) 150W A21 or 100W A23 lamp. Lamp furnished by others.

SOCKET:
One (1) medium base porcelain socket with nickel plated screw shell. Socket adjusts to two positions to maintain proper lamp position when using A23 or A21 lamps.

INSTALLATION:
Universal mounting brackets accept ½" EMT conduit or ½" fishing channels (by others), or Pascolite 24" bar hangers (B24 or B6). Specified with B6 bar hangers.

LABELS:
UL, CSA listed for damp locations.
Approved for through wiring.
Thermally protected.
NomIC rated and N.Y. City approved.

EXAMPLE: INC600-WT802-B24

CATALOG NUMBER

HOUSING	HOUSING OPTION	REFLECTOR	REFLECTOR FINISH	REFLECTOR COLOR	REFLECTOR OPTIONS	ACCESSORIES
☐ **INC600** 6", (1) 150W A21 or 100W A23	☐ **CP** Omnidirectional (120V only)	☐ **ST1602** Clear Alzak reflector w/ painted	☐ **Blank** Specular	☐ **Blank** Clear Alzak	☐ **WT** Painted white w/diffusing	☐ **B24** Set of two (2) 24" bar hangers for T-bar ceilings
	☐ **277V** J-Box mounted transformer MW60A19		☐ **SS** Semi-Specular	☐ **CO** Champagne Gold Alzak	☐ **BC** Painted black cone	☐ **B6** Set of two (2) bar hangers for ceiling cuts up to 24"
	☐ **MW60A19** Max Wattage Label, 60W		☐ **HZ** Haze Diffused & Buffed	☐ **BL** Black Alzak	☐ **WC** Painted white cone	☐ **SCA60__** Sloped ceiling adapter (see note on back page)
	☐ **MW75A19** Max Wattage Label, 75W		☐ **MFC** American Matte	☐ **WE** Wheat Alzak	☐ **BB** Painted black baffle	☐ **Signos 6** Architectural glass elements. Refer to specification sheets ARCH-SIG-001-004
	☐ **MW75A21** Max Wattage Label, 75W			☐ **LW** Light Wheat Alzak	☐ **WB** Painted white baffle	
	☐ **MW100A21** Max Wattage Label, 100W			☐ **PW** Pewter Alzak	☐ **WW** Wall wash reflector	

Submitted by Loveman Sales	Job Name: Lakota Local School District East Freshman School	Catalog Number: CFT632EB-STF602-BB-B24 Notes:	Type: F13-ALTE2

Features VirtualSource® Reflectors

6" Vertical Triple Open & Wall Wash Downlight

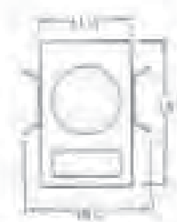
CFT632EB

One 26W, 32W, or 42W Triple Tube 4-Pin Lamp
Non-IC Rated
120V, 208V, 240V, 277V, or 347V

DATE: TYPE:
FIRM NAME:
PROJECT:

Architektur

Ceiling Cutout: [illegible]
Maximum Ceiling Thickness: [illegible]
For conversion to millimeters, multiply inches by 25.4
Not to Scale



APPLICATIONS:
The CFT632EB offers a vertical lamped compact fluorescent downlight and wall wash fixture that provides superior brightness and glare control. [illegible] ballast provides the ability to change wattages by simply replacing the lamp. This luminaire is ideal for a wide variety of low to medium height ceiling applications including commercial, retail, and hospitality. The CFT632EB is compatible with the [illegible] family of architectural elements.

HOUSING:
One-piece painted 18 gauge cold rolled steel platform. [illegible]

REFLECTOR:
High purity aluminum Alzak Virtual Source[illegible] [illegible]

BALLAST:
One (1) compact fluorescent Class P, [illegible] 120V through 277V ballast suitable for operating all 26W, 32W and 42W triple tube lamps. [illegible] 347V available (specify voltage when ordering).

LAMP:
Use one (1) 26W (GX24q-3 base), 32W (GX24q-3 base), or 42W (GX24q-4 base) 4-pin triple tube compact fluorescent lamp. Lamp furnished by others.

SOCKET:
One (1) [illegible] socket suitable for 26W, 32W and 42W triple tube lamps [illegible]

INSTALLATION:
Universal adjustable mounting brackets accommodate 1 1/2" or 3/4" ceiling channel or [illegible] or Prescolite 24" bar hangers (B24 or B6).

LABELS:
UL, CSA listed for damp locations. Approved for through wiring. Non-type I.C.

CATALOG NUMBER | EXAMPLE: [illegible]

HOUSING
- ☐ **CFT632EB** 6" (1) 26W/32W/42W triple tube, multi-volt electronic ballast

HOUSING OPTIONS
- ☐ **347V** Specify wattage
- ☐ **CP** Chicago Plenum [illegible]
- ☐ **DM** [illegible] Dimming Ballast to [illegible] (120V through 277V)
- ☐ **5DM** Lutron Compact SE Dimming Ballast to 5% [illegible]
- ☐ **HDM** Lutron Hi-lume Dimming Ballast to 1% [illegible]

HOUSING OPTIONS
- ☐ **2DM** Lutron [illegible] Dimming Ballast to [illegible]
- ☐ **7DM** Advance Mark 7 dimming ballast for 100% to [illegible]
- ☐ **XDM (120V, 277V)** Advance Mark 10 dimming ballast for 100% to [illegible]
- ☐ **EM** Emergency battery pack [illegible]
- ☐ **FSDFA** [illegible]
- ☐ **RIF1** [illegible]
- ☐ **MW26** Max Wattage label: 26W
- ☐ **MW32** Max Wattage label: 32W

REFLECTORS
- ☐ **STF602** 6" Alzak reflector

REFLECTOR COLOR
- ☐ **Blank** Clear Alzak
- ☐ **CG** Champagne Gold Alzak
- ☐ **BL** Black Alzak
- ☐ **WH** Wheat Alzak
- ☐ **LW** Light Wheat Alzak
- ☐ **PW** Pewter Alzak

REFLECTOR OPTIONS
- ☐ **Blank** Specular
- ☐ **SS** Semi-specular
- ☐ **HZ** Haze (Diffused & Buffed)
- ☐ **AWC** American White

REFLECTOR OPTIONS
- ☐ **WF** Formed white self-flange
- ☐ **BC** Formed black cone
- ☐ **WC** Formed white cone
- ☐ **BB** Formed black baffle
- ☐ **WB** Formed white baffle
- ☐ **WW** Wall wash reflector
- ☐ **TRG** Trim Ring Gasket (factory installed)

ACCESSORIES
- ☐ **B24** Set of two (2) 24" bar hangers for T-bar ceilings
- ☐ **B6** Set of two (2) bar hangers for ceiling joists up to 24" centers
- ☐ **FSDPI** [illegible]
- ☐ **SCA60** Sloped ceiling adapter [illegible]
- ☐ **Signbord** [illegible] Refer to specification sheets ARCH-SIG-001 through 005

[illegible]

prescolite
A Division of Hubbell Lighting, Inc.

[illegible] we reserve the right to change, without notice, specifications [illegible]
Web: www.prescolite.com • Tech Support: (888) 777-4833

ARCH-CFT-007

Type H1

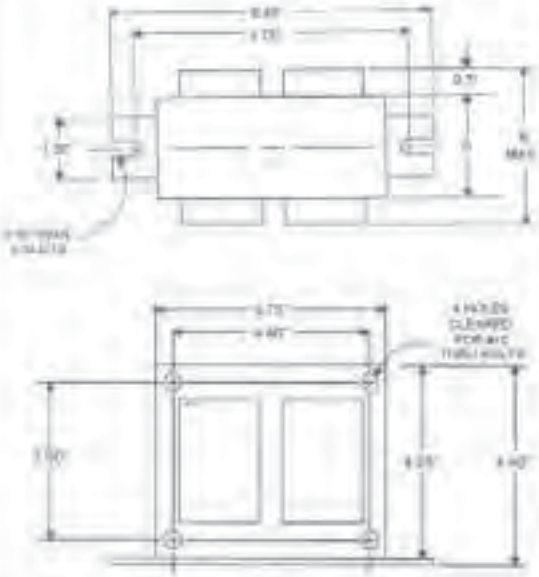
ADVANCE

Metal Halide Lamp Ballast

Catalog Number 71A6092A
For 400W M135/M155 (P.S.)
60 Hz SUPER-CWA
Status: Active

DIMENSIONS AND DATA

4 1/4 X 4 3/4 CORE - 2 COIL UNIT

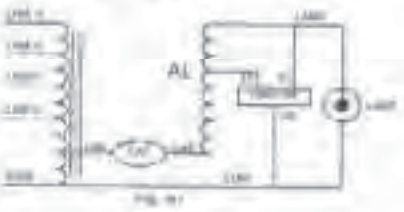


INPUT VOLTS		120	208	240	277
CIRCUIT TYPE	SUPER-CWA				
POWER FACTOR (min)	90%				
REGULATION					
Line Volts	±10%				
Lamp Watts	±10%				
LINE CURRENT (Amps)					
Operating		3.80	2.20	1.90	1.65
Open Circuit		2.20	1.30	1.10	0.95
Starting		2.85	1.65	1.45	1.25
UL TEMPERATURE RATINGS					
Insulation Class	(180°C)				
Coil Temperature Code	1020	D	C	D	D
MIN. AMBIENT STARTING TEMP	-20°F or -30°C				
NOM. OPEN CIRCUIT VOLTAGE	265				
INPUT VOLTAGE AT LAMP DROPOUT		80	104	120	138
INPUT WATTS	462				
RECOMMENDED FUSE (Amps)		10	7	5	5
CORE and COIL					
Dimension (A)					
Dimension (B)					
Weight (lbs.)					
Lead Lengths	12"				
CAPACITOR REQUIREMENT					
Microfarads					
Volts (min.)					
Fault Current Withstand (amps)					
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)					
High Potential Test (Volts)					
1 minute					
2 seconds					
Open Circuit Voltage Test (Volts)					
Short-Circuit Current Test (Amps)					
Secondary Current					
Input Current		2.20-3.35	1.30-1.85	1.10-1.65	0.95-1.45

Capacitor: 7C260P33-H

Capacitance:	26
Dia/Oval Dim:	1.75
Height:	3.13
Temp Rating:	105°C

Wiring Diagram



Ignitor: I-533-HM

Ballast to Lamp Distance (BTL): + 2 feet
Temp Rating: 105°C

Typical Ordering Information

(please call Advance for suffix availability)

Order Suffix	Description
500D	Ballast With Ignitor and Dry Film Capacitor
510D	Ballast w/Welded Bracket, Ignitor, & Dry Film Capacitor
900	Ballast and Ignitor, No Capacitor
910	Ballast with Welded Bracket and Ignitor, No Capacitor

Data is based upon tests performed by Advance Transformer in a controlled environment and representative of ballasts performance. Actual performance can vary depending on operating conditions. Specifications are subject to change without notice.

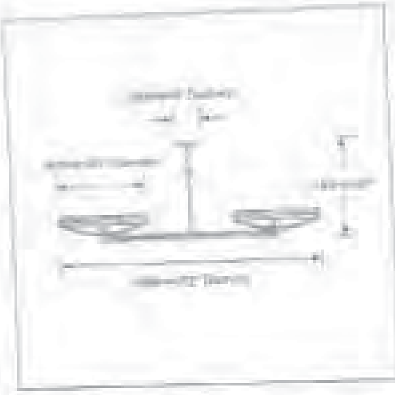
ADVANCE
O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018
Customer Support/Technical Service: Phone: 800-372-3331 Fax: 800-307-3071
Canada Offices: Phone: 800-322-2066

02/17/05

Submitted by Lowman Sales

	Job Name: Lakota Local School District - East Freshman School	**Catalog Number:** 63-2442-4A-OP-DC-2-OT BLACK / SN STEM Notes:	**Type:** **H2** [illegible]

TRILOGY CRADLE



GENERAL SPECIFICATION

[illegible]

Diffuser: Opal acrylic

Dust cover (optional): [illegible]

[illegible]

Approvals: UL CSA

A. SPECIFY LAMP CONFIGURATION/LUMINAIRE TYPE

Cat Ref / Lamp type / Photometry: [illegible]

OP - Opal Diffusers

B. SPECIFY NUMBER OF ARMS

Approximate Weights: [illegible]

4A Quad arm

C. SPECIFY FINISH

OT [illegible] — Black

D. SPECIFY VOLTAGE

2 [illegible]

E. SPECIFY OPTIONS

DC Dust cover [illegible]

SN STEM - Satin Nickle Stem

DC - Dust cover (opal polycarbonate)

SPECIFICATION GUIDE

To specify a complete luminaire select: A) Luminaire, B) Arms, C) Finish, D) Voltage and E) Options

[illegible]

A) Luminaire | B) No. of arms | C) Finish | D) Voltage | E) Options

[illegible]

Type H2

Universal Lighting Technologies

C242UNVxxx

APPLICATION and PERFORMANCE SPECIFICATION

Description: Electronic compact fluorescent ballast(s) for (2) CFM40W/GX24q-4, (2) FC12T5-40W, (2) CFM32W/GX24Q-3, (2) CFTR32W/GX24q, (2) CFM26W/GX24q, (2) CFTR26W/GX24q, (2) FT24W/2G11, (1) FC8T5-22W, (1) FT36W/2G11, (1) CF32W/GX24Q-3, (1) FC8T5-22W & FC12T5-40W, (1) CFM57W/GX24q 4-pin lamps, (1) FC12T5-55W, (1) CFM70W/GX24q, (2) FT39W/2G11, (2) FT40W/2G11

- Line Voltage: 120vac to 277vac, ±10%, 50/60Hz
- High Power Factor

- Programmed Rapid Start
- Series Lamp Connection

Model	Line Volts	Lamp Type	#	Input Watts*	Line Amps	Ballast Factor	Power Factor	THD	Crest Factor
C242UNVxxx	120	CFM40W	2	81	0.75	.88	> 0.98	< 10%	<1.6
	277		2	80	0.32	.88	> 0.98	< 10%	<1.6
C242UNVxxx	120	CFM42W	1	[illegible]	0.40	1.00	> 0.98	< 10%	<1.6
	277		1	45	0.16	1.00	> 0.98	< 10%	<1.6
C242UNVxxx	120	CFM57W	1	58	0.52	1.00	> 0.98	< 10%	<1.6
	277		1	57	0.21	1.00	> 0.98	< 10%	<1.6
C242UNVxxx	120	CFM70W	1	75	0.67	1.00	> 0.98	< 10%	<1.6
	277		1	72	0.27	1.00	> 0.98	< 10%	<1.6
C242UNVxxx	120	FC12T5-40W	2	[illegible]	[illegible]	.95	> 0.98	< 10%	<1.6
	277		2	[illegible]	[illegible]	.95	> 0.98	< 10%	<1.6
C242UNVxxx	120	CFM32W/GX24Q	2	69	0.57	.90	> 0.98	< 10%	<1.7
	277		2	67	0.24	.90	> 0.98	< 10%	<1.7
C242UNVxxx	120	CFM26W/GX24Q	2	[illegible]	[illegible]	.95	> 0.98	< 15%	<1.7
	277		2	[illegible]	[illegible]	.95	> 0.98	< 15%	<1.7
C242UNVxxx	120	CFTR32W	2	[illegible]	0.58	1.00	> 0.98	< 10%	<1.6
	277		2	67	0.25	1.00	> 0.98	< 10%	<1.6
C242UNVxxx	120	CF32W	1	[illegible]	0.54	1.00	> 0.97	< 10%	<1.6
	277		1	[illegible]	0.24	1.00	> 0.97	< 10%	<1.6
C242UNVxxx	120	CFQTR26W	2	[illegible]	0.48	1.02	> 0.98	< 10%	<1.6
	277		2	[illegible]	[illegible]	1.02	> 0.98	< 10%	<1.6
C242UNVxxx	120	FT36W/2G11	1	[illegible]	0.47	.80	> 0.98	< 10%	<1.7
	277		1	[illegible]	[illegible]	.80	> 0.97	< 10%	<1.7
C242UNVxxx	120	FT24W/2G11	2	51	0.43	1.02	> 0.98	< 10%	<1.7
	277		2	50	0.19	1.02	> 0.98	< 10%	<1.7
C242UNVxxx	120	FT39W/2G11	1	48	0.38	.93	> 0.98	< 10%	<1.7
	277		1	48	0.17	.93	> 0.98	< 10%	<1.7
C242UNVxxx	120	FC8T5-22W	1	[illegible]	0.42	1.05	> 0.98	< 10%	<1.7
	277		1	[illegible]	0.18	1.05	> 0.98	< 10%	<1.7
C242UNVxxx	120	FC8T5-22W & FC12T5-40W	1 & 1	[illegible]	0.54	.95	> 0.97	< 10%	<1.7
	277			64	0.25	.95	> 0.97	< 10%	<1.7
C242UNVxxx	120	FC12T5-55W	1	44	0.36	.83	> 0.98	< 10%	<1.7
	277		1	43	0.17	.83	> 0.98	< 10%	<1.7
C242UNVxxx	120	FT36W/2G11	1	[illegible]	0.28	.88	> 0.98	< 15%	<1.7
	277		1	[illegible]	0.14	.88	> 0.98	< 20%	<1.7
C242UNVxxx	120	CFS32W/GX24Q-3	1	32	0.28	.88	> 0.98	< 10%	<1.7
	277		1	32	0.14	.88	> 0.98	< 10%	<1.7
C242UNVxxx	120	FT40W/2G11	1	[illegible]	[illegible]	1.00	> 0.98	< 10%	<1.7
	277		1	[illegible]	0.34	1.00	> 0.98	< 10%	<1.7
C242UNVxxx	120	FT40W/2G11	1	47	0.40	1.00	> 0.98	< 10%	<1.7
	277		1	47	0.18	1.00	> 0.97	< 10%	<1.7

*Input watts at rated voltage, 25°C ambient. [illegible]

Application and Performance Specification information Subject to Change without Notification.

Performance:
- Meets ANSI Standard C82.11
- Meets FCC Part 18 (Non-Consumer) Limits on EMI/RFI
- Operating Frequency Range: 40-50 kHz
- Auto-Reset Shutdown Circuit per NEMA Recommendations
  - Both lamps should be replaced at end of life
  - Lamps relight upon insertion in socket
- Suitable for use in air handling spaces when NEC wiring guidelines are followed

Safety:
- No PCBs
- UL listed (Class P)
  - Type 1 Outdoor, Type CC, Type HL
- CSA Certified

Application:
- Minimum Starting Temperature: 0° F, -18° C
- Maximum Case Temperature (@ U): 167° F, 75° C
- Sound Rated: A
- Lead configuration:
  - xxx = SE - Side Exit
  - = BE - Bottom Exit
  - = BES - Bottom Exit with Studs (2" on center)
- Sidewise Mounting: 12 feet
- 42W applications also operate on 12/VDC input [illegible]

Physical Parameters:
- Overall Length: 4.94"
- Width: 2.56"
- Mounting: 4.61"
- Height: 1.05"
- Weight: 0.9 lbs
- Qty/Carton: 20
- Color: GE-White / Blu-[illegible]
- Can Material: Metal

Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Call 1-800-BALLAST(x800) for technical assistance.

Manufactured in North America

Install in accordance with the National Electrical Code.

Ballast has plug in wire trap connections.
Use 18 AWG solid copper wire, stripped to 3/8".
Ballast Must be Grounded.
Use External Ground Wire.

Submitted by Lemmon Sales

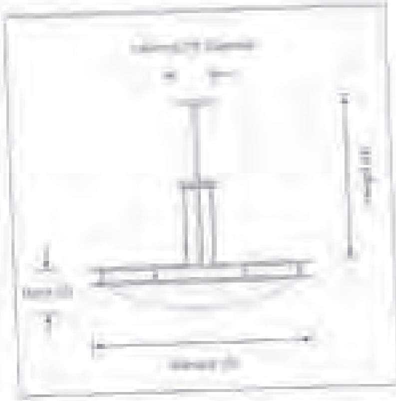
Job Name: Lakota Local School District - Eden Freshman School

Catalog Number: 88-3722-OP-OC-2-OT BLACK/SN STEM MOD 4UP/2D – Swl

Notes:

Type: H3

ZEDOS SR



A. SPECIFY LAMP CONFIGURATION/LUMINAIRE TYPE

Cat Ref	Lamp type	Diameter (A)	Depth (D)	Height (H)	Weight	Photometry
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GENERAL SPECIFICATION

Body and trim: [illegible]

Suspension: [illegible]

Finish: [illegible]

Diffusers: [illegible]

Dust covers: [illegible]

Ballasts: [illegible]

Photometrics: [illegible]

Emergency system: [illegible]

Approvals: UL [illegible]

B. SPECIFY FINISH

- WH White
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- SN Satin nickel
- OT Other painted finish
  [illegible]

Black

C. SPECIFY DIFFUSER

- OP Opal
- [illegible]
- [illegible]

D. SPECIFY VOLTAGE

- 1 120V
- 2 277V
- 3 347V

E. SPECIFY OPTIONS

- EM Emergency system
- OC [illegible]
- OP [illegible]
- [illegible]
- [illegible]
- DB Dimming ballasts (check with factory for availability)
- SW Swivel canopy
- [illegible] additional suspension length
- [illegible] additional suspension length
- [illegible] additional suspension length
- [illegible] additional suspension length

SN STEM - Satin Nickle Stem

Modified 4 Up / 2 Down

SPECIFICATION GUIDE

To specify a complete luminaire select: A) Luminaire, B) Finish, C) Diffuser, D) Voltage and E) Options

For example, to specify: Zedos [illegible] PL-L, white, opal, 277V, EM

A) Luminaire	B) Finish	C) Diffuser	D) Voltage	E) Options
88-[illegible]	WH	OP	2	EM

[illegible]

Wired for dual level switching

Type H3

Product Line Guide - Electronic Ballasts

Item Number	OSRAM SYLVANIA Description	Input Voltage (VAC)	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Input Power (Watts)	System Efficacy (lm/W)
QUICKTRONIC® PROFESSIONAL T5HO PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49101	QTP 1x39-24T5HO/UNV PSN	120-277	0.23/0.10	FP24T5HO	2000	1	1.00	2000	29	70
49111	QTP 2x39-24T5HO/UNV PSN	120-277	0.47/0.20	FP24T5HO	2000	2 1	1.00 1.00	4000 2000	55/54 29	73/74 70
49101	QTP 1x39-24T5HO/UNV PSN	120-277	0.36/0.15	FP39T5HO	3500	1	1.00	3500	42	83
49111	QTP 2x39-24T5HO/UNV PSN	120-277	0.76/0.32	FP39T5HO	3500	2 1	1.00 1.00	7000 3500	85/83 42	82/84 83
49121	QTP 1x54T5HO/UNV PSN	120-277	0.51/0.21	FP54T5HO	5000	1	1.00	5000	62/60	81/83
49131	QTP 2x54T5HO/UNV PSN	120-277	1.00/0.43	FP54T5HO	5000	2 1	1.00 1.00	10000 5000	121/118 61	83/85 82
49151	QTP 1x80T5HO/UNV PSN	120-277	0.74/0.32	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	90 90	78 67
QUICKTRONIC® PROFESSIONAL T5 PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49171	QTP 1x28T5/UNV PSN	120-277	0.09/0.12	FP28T5	2900	1	1.00	2900	32	90
49181	QTP 2x28T5/UNV PSN	120-277	0.55/0.23	FP28T5	2900	2 1	1.00 1.00	5800 2900	65/63 32	89/92 90
QUICKTRONIC® PROFESSIONAL T5HO PROStart® DEDICATED VOLTAGE SYSTEMS										
49653	QT 2x54/120 PHO	120	1.00	FP54T5HO	5000	2	1.00	10000	120	83
49654	QT 2x54/277 PHO	277	0.45	FP54T5HO	5000	2	1.00	10000	117	85
49660	QTP 1x80T5HO/120 PSN-E	120	0.76	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	91 91	77 66
49670	QTP 1x80T5HO/277 PSN-E	277	0.33	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	90 90	78 67
QUICKTRONIC® Instant Start DL40										
40W T5 Instant Start - Normal Ballast Factor - <20% THD										
49641	QT 1x40/120 DL	120	0.33	FT40T5	3150	1	0.96	3020	40	76
49642	QT 1x40/277 DL	277	0.14	FT40T5	3150	1	0.96	3020	40	76
49643	QT 2x40/120 DL	120	0.63	FT40T5	3150	2	0.96	6045	75	81
							0.96	6045	75	81

Submitted by Lakeman Sales

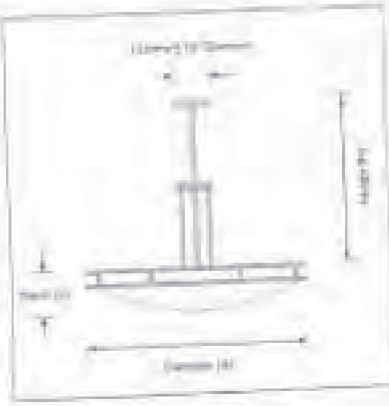
Job Name: Lakota Local School District – East Freshman School

Catalog Number: 68-3722-OP-DC-2-OT BLACK/SN STEM – SN

Notes:

Type: H4

ZEDOS SR



GENERAL SPECIFICATION

Body and arms: [illegible]

Suspension: [illegible]

Finish: [illegible]

Diffusers: [illegible]

Dust covers: [illegible]

Ballasts: [illegible]

Mechanical: [illegible]

***Emergency option:** [illegible]

Approvals: UL, CSA

A. SPECIFY LAMP CONFIGURATION/LUMINAIRE TYPE

Cat Ref:	Lamp type:	Diameter (A):	Depth (D):	Height (H):	Weight:	Photometry:
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible] T5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
68-3722	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible] T5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible] T5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

B. SPECIFY FINISH

- [illegible]
- OT Other special finish [illegible]

Black

C. SPECIFY DIFFUSER

- OP Opal
- [illegible]
- [illegible]

D. SPECIFY VOLTAGE

- 1 [illegible]
- 2 [illegible]
- 3 [illegible]

E. SPECIFY OPTIONS

SN STEM – Satin Nickel Stem

- [illegible]
- DC Dual [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]

SPECIFICATION GUIDE

[illegible]

A) Luminaire	B) Finish	C) Diffuser	D) Voltage	E) Options
[illegible]	[illegible]	OP	[illegible]	[illegible]

* Wired for Dual level switching *

Type H4

Item Number	OSRAM SYLVANIA Description	Input Voltage (VAC)	Input Current (AMPS)	Lamp Type	Ballast Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Input Power (Watts)	System Efficacy (lm/W)
QUICKTRONIC® PROFESSIONAL T5HO PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49101	QTP 1x35-24T5HO/UNV PSN	120-277	0.23/0.19	FP24T5HO	3600	1	1.00	2900	29	73
49111	QTP 2x35-24T5HO/UNV PSN	120-277	0.47/0.39	FP24T5HO	2600	2 1	1.00 1.00	4900 2600	55/54 39	73/74 70
49101	QTP 1x39-24T5HO/UNV PSN	120-277	0.36/0.15	FP28T5HO	3500	1	1.00	3500	42	83
49111	QTP 2x39-24T5HO/UNV PSN	120-277	0.70/0.32	FP28T5HO	3500	2 1	1.00 1.00	7000 3500	85/83 42	82/84 83
49121	QTP 1x54T5HO/UNV PSN	120-277	0.51/0.21	FP54T5HO	5000	1	1.00	5000	62/60	81/83
49131	QTP 2x54T5HO/UNV PSN	120-277	1.00/0.43	FP54T5HO	5000	2 1	1.00 1.00	10000 5000	121/118 61	83/85 82
49151*	QTP 1x80T5HO/UNV PSN	120-277	0.74/0.32	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	90 90	78 67
QUICKTRONIC® PROFESSIONAL T5 PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49171	QTP 1x28T5/UNV PSN	120-277	0.28/0.12	FP28T5	2900	1	1.00	2900	32	90
49181	QTP 2x28T5/UNV PSN	120-277	0.55/0.23	FP28T5	2900	2 1	1.00 1.00	5400 2900	65/63 32	83/92 90
QUICKTRONIC® PROFESSIONAL T5HO PROStart® DEDICATED VOLTAGE SYSTEMS										
49653	QT 2x54/120 PHO	120	1.00	FP54T5HO	5000	2	1.00	10000	120	83
49654	QT 2x54/277 PHO	277	0.45	FP54T5HO	5000	2	1.00	10000	117	85
49666	QTP 1x80T5HO/120 PSN-S	120	0.76	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	91 91	77 66
49670	QTP 1x80T5HO/277 PSN-S	277	0.33	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	90 90	78 67
QUICKTRONIC® Instant Start DL40										
40W T12 Instant Start - Normal Ballast Factor - <20% THD										
49641	QT 1x40/120 DL	120	0.33	FT40T5	3150	1	0.96	3020	40	76
49642	QT 1x40/277 DL	277	0.14	FT40T5	3150	1	0.96	3020	40	76
49643	QT 2x40/120 DL	120	0.63	FT40T5	3150	2	0.96	6045	75	81
49644	QT 2x40/277 DL	277	0.28	FT40T5	3150	2	0.96	6045	75	81
49645	QT 3x40/120 DL	120	0.94	FT40T5	3150	3	0.96	9070	110	82
49646	QT 3x40/277 DL	277	0.42	FT40T5	3150	3	0.96	9070	110	82
QUICKTRONIC® PROFESSIONAL PROStart® DL40										
50320	QTP 1x40T5/120 PSN-F	120	0.33	FT40T5	3150	1	0.88	2770	38	73
50330	QTP 1x40T5/277 PSN-F	277	0.13	FT40T5	3150	1	0.88	2770	37	75
50340	QTP 2x40T5/120 PSN-F	120	0.63	FT40T5	3150	2	0.86	5540	76	73
50350	QTP 2x40T5/277 PSN-F	277	0.27	FT40T5	3150	2	0.88	5545	73	76
50360	QTP 3x40T5/120 PSN-S	120	0.60	FT40T5	3150	3	0.88	8315	110	76
50370	QTP 3x40T5/277 PSN-S	277	0.39	FT40T5	3150	3	0.88	8315	108	77

*New Product. Contact OSRAM SYLVANIA for product availability.

Submitted by Lessman Sales

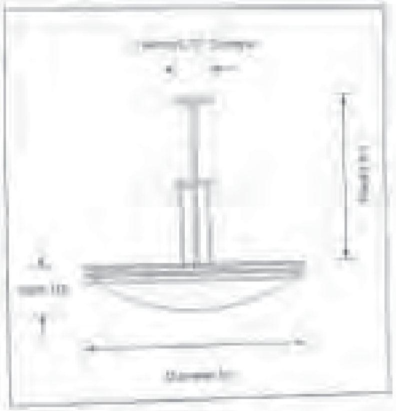
Job Name:
Lakota Local School District - East Freshman School

Catalog Number:
68-3739-OP-OC-2-OT- BLACK / SN STEM -Sw
Notes:

Type:
H5

[illegible]

ZEDOS TSR



A. SPECIFY LAMP CONFIGURATION LUMINAIRE TYPE

Cat No:	Lamp type:	Diameter (A):	Depth (D):	Height (H):	Weight:	Photometry:
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

GENERAL SPECIFICATION

Body and trim: [illegible]
Suspension: [illegible]
Finish: [illegible]
Diffusers: [illegible]
Dual covers: [illegible]
Ballasts: [illegible]
Emergency system: [illegible]
Approvals: [illegible]

B. SPECIFY FINISH

WH [illegible]
[illegible]
CP Polished copper
[illegible]
OT [illegible] BLACK

C. SPECIFY DIFFUSER

OP Opal
[illegible]

D. SPECIFY VOLTAGE

1 [illegible]
2 [illegible]
3 [illegible]

E. SPECIFY OPTIONS

SN STEM - Satin Nickle Stem

[illegible]
OC [illegible]
[illegible]
[illegible] additional suspension length
[illegible] additional suspension length
[illegible] additional suspension length
[illegible] additional suspension length

SPECIFICATION GUIDE

To specify a complete luminaire select: A) Luminaire, B) Finish, C) Diffuser, D) Voltage and E) Options
[illegible]

A) Luminaire	B) Finish	C) Diffuser	D) Voltage	E) Options
[illegible]	[illegible]	OP	[illegible]	[illegible]

[illegible]

Type H5

TRIAD®

C340SI120RH & C340SI277RH

APPLICATION and PERFORMANCE SPECIFICATION

Description:
High frequency electronic ballast designed exclusively for 3 or 2 F40W/2G11 lamps

- Line Voltage: 120vac or 277vac ±10%, 60Hz
- End-of-Lamp-Life Safety Shutdown Circuit
- Instant Start
- Passive Power Factor Correction

Lamp Type	Line Volts	Lamp #	Input Watts	Nominal Line Amps	Power Factor	Ballast Factor	Ballast Efficacy Factor	Harmonic Total	Crest Factor
FT40W/2G11	120	3	98	0.88	> .55	.89	0.90	< 20%	< 1.7
FT40W/2G11	120	2	75	0.68	> .90	.99	1.32	< 20%	< 1.7
FT40W/2G11	277	3	98	0.39	> .95	.85	0.90	< 20%	< 1.7
FT40W/2G11	277	2	75	0.30	> .90	.99	1.32	< 20%	< 1.7

Performance:
- Meets ANSI Standard C82.11-1993
- Meets ANSI Standard C82.41-1991
- Meets FCC Part 18 (Class A) for EMI and RFI Non-Consumer Limits

Application:
- Minimum Starting Temperature: 50° F, 10° C
- Maximum Ambient Temperature: 100° F, 40° C
- Sound Rated: A
- Remote Mounting: 12 ft. max. lead length, 18 AWG

Safety:
- No PCB's
- UL listed (Class P, Type 1 Outdoor)
- CSA Certified

Physical Parameters

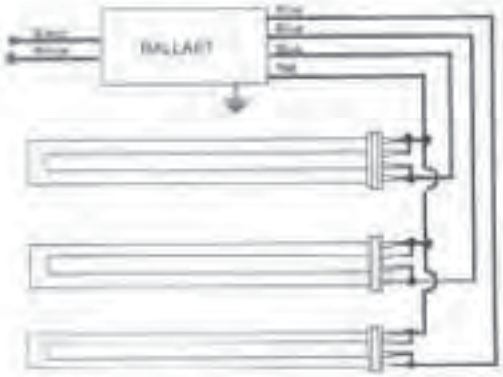
Length:	9.50"
Width:	2.40"
Height:	1.55"
Weight:	2.72 lbs
Lead Length:	White, Black 28" (± 1") Red, Blue 33" (± 1")

This product contains an End of Lamp Life Safety Shutdown circuit. When replacing a lamp, the power to the ballast must be re-cycled for 5 seconds to reset the shutdown circuit.

Warranty:
Universal Lighting Technologies warrants to the purchaser that each electronic ballast will be free from defects in material or workmanship for a period of 5 years from date of manufacture when properly installed and under normal conditions of use. Call **1-800-BALLAST** for service.

Manufactured in North America

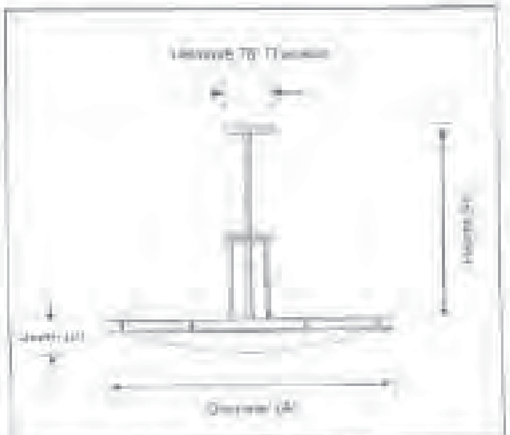
Ballast Must be Grounded



Note: For two lamp application, cap one blue lead.

Submitted by Leesman Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: 68-3027-OP-OC-OT BLACK /SN STEM Notes:	Type: H6 LEE07-4281

ZEDOS SR



GENERAL SPECIFICATION

Body and trim: Steel and aluminum

Suspension: Single tube with four decorative tubes. Custom tube lengths available to special order.

Finish: Clear tint powder coated gloss white. Satin powder coated or various plated finishes are available as listed. Custom finishes available to order.

Diffusers: Opal acrylic. Faux alabaster diffusers supplied with a sandblasted finish as standard.

Dust covers: Clear or opal polycarbonate (optional).

Ballasts: Luminaires supplied with HPF high frequency electronic ballasts wired for a single circuit. *Check with factory for availability.

Mechanical: Luminaires mount directly over a junction box (not supplied).

****Emergency system:** Emergency option provides a 1.5 hour emergency lighting facility. The self contained system includes

A. SPECIFY LAMP CONFIGURATION/LUMINAIRE TYPE

Cat Ref:	Lamp type:	Diameter (A):	Depth (D):	Height (H):	Weight:	Photometry:
68 3022	4 x 36W/39W PL-L 2up/2dn	737mm/29"	165mm/6.5"	559mm/22"	14Kg/31lb	File# 683022
68 3023	8 x 36W/39W PL-L 4up/2dn	737mm/29"	165mm/6.5"	559mm/22"	14Kg/31lb	File# 683023
68 3027	4 x 55W PL-L up, 40W T5 dn	737mm/29"	165mm/6.5"	559mm/22"	14Kg/31lb	File# 683027
68 3720	8 x 40W PL-L 6up/2dn	940mm/37"	178mm/7"	559mm/22"	22Kg/48lb	File# 683720
68 3722	8 x 55W PL-L 6up/2dn	940mm/37"	178mm/7"	559mm/22"	22Kg/48lb	File# 683722
68 3724	8 x 40W PL-L 6up/2dn	940mm/37"	178mm/7"	559mm/22"	22Kg/48lb	File# 683724
68 3726	8 x 40W PL-L up, 40W T5 dn	940mm/37"	178mm/7"	559mm/22"	22Kg/48lb	File# 683726
68 3727	8 x 55W PL-L up, 40W T5 dn	940mm/37"	178mm/7"	559mm/22"	22Kg/48lb	File# 683727
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
68 4724	10 x 40W PL-L 8up/2dn	1194mm/47"	[illegible]	711mm/28"	30Kg/65lb	File# 684724
68 4725	10 x 55W PL-L 8up/2dn	1194mm/47"	[illegible]	711mm/28"	30Kg/65lb	File# 684725
68 4726	12 x 40W PL-L 8up/4dn	1194mm/47"	220mm/9"	711mm/28"	30Kg/65lb	File# 684726
68 4727	12 x 55W PL-L 8up/4dn	1194mm/47"	220mm/9"	711mm/28"	30Kg/65lb	File# 684727

B. SPECIFY FINISH

WH White
MB Metallic black
PB Polished brass
SB Satin brass
AB Antique brass
PC Polished chrome
CP Polished copper
CS Satin copper
AC Antique copper
SN Satin nickel
OT Other painted finish: Black

(please specify an RAL reference or provide a sample paint chip)

C. SPECIFY DIFFUSER

OP Opal
FB Beige faux alabaster
FW White faux alabaster

D. SPECIFY VOLTAGE

1 120V
2 277V
3 347V*

E. SPECIFY OPTIONS

EM Emergency system**

Submitted by Lawrence Sales

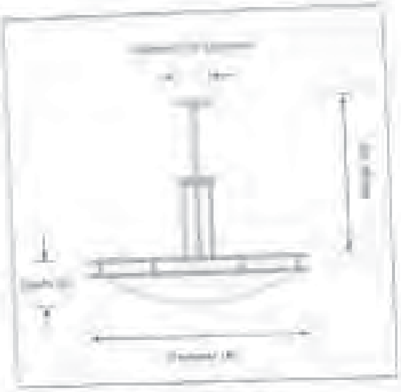
Job Name: Lakota Local School District - East Freshman School

Catalog Number: 68-3027-OP-OC-OT BLACK /SN STEM

Notes:

Type: **H6**

ZEDOS SR



GENERAL SPECIFICATION

Body and trim: [illegible]

Suspension: [illegible]

Finish: [illegible]

Diffuser: [illegible]

Dust cover: [illegible]

Ballasts: [illegible]

Maintenance: [illegible]

***Emergency system:** [illegible]

Approvals: UL, CSA

A. SPECIFY LAMP CONFIGURATION/LUMINAIRE TYPE

Cat Ref.	Lamp type	Diameter (A)	Depth (D)	Height (H)	Weight	Photometrics
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
68-3027	[illegible] PL-L [illegible] T5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible] T5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible] T5 [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible] PL-L [illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

B. SPECIFY FINISH

- [illegible] White
- [illegible] Metallic [illegible]
- [illegible] [illegible]
- [illegible] Satin brass
- [illegible] Antique brass
- [illegible] Polished chrome
- OP Polished copper
- [illegible] Satin copper
- AC Antique copper
- SN Satin Nickel
- OT Other [illegible] finish — Black

[illegible]

C. SPECIFY DIFFUSER

- OP Opal
- [illegible] Beige [illegible]
- [illegible] White [illegible]

D. SPECIFY VOLTAGE

- 1 120V
- 2 277V
- 3 347V

E. SPECIFY OPTIONS

- EM Emergency system*
- [illegible] Dust cover [illegible]
- OC Dust cover [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible]
- [illegible] additional suspension length
- [illegible] additional suspension length
- [illegible] additional suspension length
- [illegible] additional suspension length

SN STEM - Satin Nickle Stem

SPECIFICATION GUIDE

To specify a complete luminaire select: A) Luminaire, B) Finish, C) Diffuser, D) Voltage and E) Options

For example, to specify: Zedos [illegible] PL-L, white, opal, 277V, [illegible]

A) Luminaire	B) Finish	C) Diffuser	D) Voltage	E) Options
[illegible]	[illegible]	OP	[illegible]	[illegible]

Type H6

Product Line Guide - Electronic Ballasts

Item Number	OSRAM SYLVANIA Description	Input Voltage (VAC)	Input Current (AMPS)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Input Power (Watts)	System Efficacy (lm/W)
QUICKTRONIC® PROFESSIONAL T5HO PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49101	QTP 1x39-24T5HO/UNV PSN	120-277	0.23/0.10	FP24T5HO	2000	1	1.00	2000	29	70
49111	QTP 2x39-24T5HO/UNV PSN	120-277	0.47/0.20	FP24T5HO	2000	2	1.00	4000	55/54	73/74
						1	1.00	2000	29	70
49101	QTP 1x39-24T5HO/UNV PSN	120-277	0.38/0.15	FP39T5HO	3500	1	1.00	3500	42	83
49111	QTP 2x39-24T5HO/UNV PSN	120-277	0.78/0.32	FP39T5HO	3500	2	1.00	7000	85/83	82/84
						1	1.00	3500	42	83
49121	QTP 1x54T5HO/UNV PSN	120-277	0.51/0.21	FP54T5HO	5000	1	1.00	5000	62/60	81/83
49131	QTP 2x54T5HO/UNV PSN	120-277	1.00/0.43	FP54T5HO	5000	2	1.00	10000	121/118	83/85
						1	1.00	5000	61	82
49151*	QTP 1x80T5HO/UNV PSN	120-277	0.74/0.32	FP80T5HO	7000	1	1.00	7000	90	78
				FT80T5DL	6000	1	1.00	6000	90	67
QUICKTRONIC® PROFESSIONAL T5 PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49171	QTP 1x28T5/UNV PSN	120-277	0.28/0.12	FP28T5	2900	1	1.00	2900	32	90
49181	QTP 2x28T5/UNV PSN	120-277	0.55/0.23	FP28T5	2900	2	1.00	5800	65/63	89/92
						1	1.00	2900	32	90
QUICKTRONIC® PROFESSIONAL T5HO PROStart® DEDICATED VOLTAGE SYSTEMS										
49003	QT 2x54/120 PHO	120	1.00	FP54T5HO	5000	2	1.00	10000	120	83
49654	QT 2x54/277 PHO	277	0.45	FP54T5HO	5000	2	1.00	10000	117	85
49660	QTP 1x80T5HO/120 PSN-E	120	0.76	FP80T5HO	7000	1	1.00	7000	91	77
				FT80T5DL	6000	1	1.00	6000	91	66
49670	QTP 1x80T5HO/277 PSN-E	277	0.33	FP80T5HO	7000	1	1.00	7000	90	78

Type H6

Item Number	OSRAM SYLVANIA Description	Input Voltage (VAC)	Input Current (Amps)	Lamp Type	Rated Lumens (lm)	No. of Lamps	Ballast Factor (BF)	System Lumens	Input Power (watts)	System Efficacy (lm/W)
QUICKTRONIC® PROFESSIONAL T5HO PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49101	QTP 1x39-24T5HO/UNV PSN	120-277	0.23/0.10	FP24T5HO	2900	1	1.00	2900	29	70
49111	QTP 2x39-24T5HO/UNV PSN	120-277	0.47/0.20	FP24T5HO	2900	2 1	1.00 1.00	4900 2900	59/54 29	73/74 76
49101	QTP 1x39-24T5HO/UNV PSH	120-277	0.35/0.15	FP39T5HO	3500	1	1.00	3500	42	83
49111	QTP 2x39-24T5HO/UNV PSH	120-277	0.70/0.30	FP39T5HO	3500	2 1	1.00 1.00	7000 3500	85/85 42	82/84 83
49121	QTP 1x54T5HO/UNV PSN	120-277	0.51/0.21	FP54T5HO	5000	1	1.00	5000	62/60	81/83
49131	QTP 2x54T5HO/UNV PSN	120-277	1.00/0.43	FP54T5HO	5000	2 1	1.00 1.00	10000 5000	121/116 61	83/85 82
49151*	QTP 1x80T5HO/UNV PSN	120-277	0.74/0.32	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	90 90	78 67
QUICKTRONIC® PROFESSIONAL T5 PROStart® UNIVERSAL VOLTAGE SYSTEMS										
49171	QTP 1x28T5/UNV PSN	120-277	0.28/0.12	FP28T5	2900	1	1.00	2900	32	90
49181	QTP 2x28T5/UNV PSN	120-277	0.56/0.23	FP28T5	2900	2 1	1.00 1.00	5800 2900	65/65 32	89/92 90
QUICKTRONIC® PROFESSIONAL T5HO PROStart® DEDICATED VOLTAGE SYSTEMS										
49653	QT 2x54/120 PHO	120	1.00	FP54T5HO	5000	2	1.00	10000	120	83
49654	QT 2x54/277 PHO	277	0.45	FP54T5HO	5000	2	1.00	10000	117	85
49660	QTP 1x80T5HO/120 PSN-E	120	0.76	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	91 91	77 66
49679	QTP 1x80T5HO/277 PSN-E	277	0.33	FP80T5HO FT80T5DL	7000 6000	1 1	1.00 1.00	7000 6000	90 90	78 67
QUICKTRONIC® Instant Start DL40										
49641	QT 1x40/120 DL	120	0.33	FT40T5	3150	1	0.96	3020	40	76
49642	QT 1x40/277 DL	277	0.14	FT40T5	3150	1	0.96	3020	40	76
49643	QT 2x40/120 DL	120	0.63	FT40T5	3150	2	0.96	6045	79	81
49644	QT 2x40/277 DL	277	0.28	FT40T5	3150	2	0.96	6045	78	81
49645	QT 3x40/120 DL	120	0.94	FT40T5	3150	3	0.96	9070	119	82
49646	QT 3x40/277 DL	277	0.42	FT40T5	3150	3	0.96	9070	116	82
QUICKTRONIC® PROFESSIONAL PROStart® DL40										
50320	QTP 1x40T5/120 PSN-F	120	0.32	FT40T5	3150	1	0.86	2770	38	73
50330	QTP 1x40T5/277 PSN-F	277	0.13	FT40T5	3150	1	0.88	2770	37	73
50340	QTP 2x40T5/120 PSN-F	120	0.63	FT40T5	3150	2	0.88	5540	78	73
50350	QTP 2x40T5/277 PSN-F	277	0.27	FT40T5	3150	2	0.88	5545	73	76
50360	QTP 3x40T5/120 PSN-B	120	0.92	FT40T5	3150	3	0.85	8315	116	76
50370	QTP 3x40T5/277 PSN-B	277	0.39	FT40T5	3150	3	0.88	8315	106	77

*New Product. Contact OSRAM SYLVANIA for product availability

Submitted by Leesman Sales			
	Job Name: Lakota Local School District - East Freshmen School	**Catalog Number:** CF10UD232EB-242EB-277-STD COLOR Notes:	**Type:** **J1**

10" Direct Wall Mount
Up/Down Cylinder

CF10UD

Two 26W, 32W, or 42W CFL
Triple Tube 4-Pin Lamp
120V, 277V, or 347V
Four 26W, 32W, or 42W CFL

DATE TYPE

ITEM NAME

PROJECT

LiteForms

For conversion to millimeters, multiply inches by 25.4

Not to Scale

Submitted by: [illegible]

Job Name: [illegible]

Catalog Number: CF10UD232EB-242EB-277-STD COLOR

Notes:

Type: J1

10" Direct Wall Mount Up/Down Cylinder

CF10UD

Two 26W, 32W, or 42W CFL Triple Tube 4-Pin Lamp
120V, 277V, or 347V
Four 26W, 32W, or 42W CFL Triple Tube 4-Pin Lamp
120V, 277V, or 347V

Featuring VirtualSource® Reflector

LiteForms

APPLICATIONS: [illegible]

HOUSING: [illegible]

REFLECTOR: [illegible]

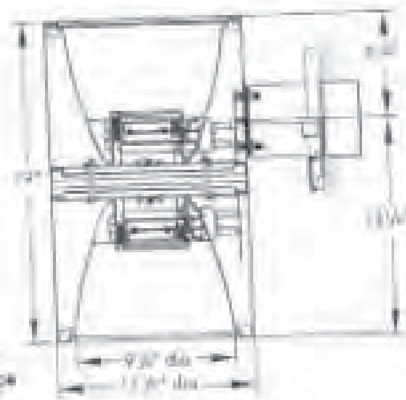
BALLAST: 26W/32W/42W [illegible]

LAMP: [illegible]

SOCKET: [illegible]

INSTALLATION: [illegible]

LABELS: UL, CSA listed [illegible]



CATALOG NUMBER

CYLINDERS	CYLINDER OPTIONS	REFLECTOR FINISHES	CYLINDER FINISHES	ACCESSORIES
❑ **CF10UD226EB** 10" Direct wall mount up/down cylinder, (2) 26W CFL triple tube, electronic ballast, 1 lamp up, 1 lamp down	❑ **347V***	❑ **BR** Black baffle	❑ **BA** Brushed aluminum, standard with black bottom	❑ **SL10** Spread lens
❑ **CF10UD232EB** 10" Direct wall mount up/down cylinder, (2) 32W CFL triple tube, electronic ballast, 1 lamp up, 1 lamp down	❑ **DIM** Electronic dimming ballast [illegible]	❑ **CR** ® Clear Alzak	❑ **BL** Matte black	
❑ **CF10UD242EB** 10" Direct wall mount up/down cylinder, (2) 42W CFL triple tube, electronic ballast, 1 lamp up, 1 lamp down	❑ **FSOFA** [illegible]	❑ **GR** ® Champagne gold	❑ **BZ** Bronze	
❑ **CF10UD426EB** 10" Direct wall mount up/down cylinder, (4) 26W CFL triple tube, electronic ballast, 2 lamps up, 2 lamps down	* 347V option [illegible]		❑ **WH** Matte white	
❑ **CF10UD432EB** 10" Direct wall mount up/down cylinder, (4) 32W CFL triple tube, electronic ballast, 2 lamps up, 2 lamps down			❑ **ZT** "Zet" metallic silver	
❑ **CF10UD442EB** 10" Direct wall mount up/down cylinder, (4) 42W CFL triple tube, electronic ballast, 2 lamps up, 2 lamps down				

Select Standard Color

BZ-Bronze

Special Reflector Finishes: [illegible]

prescolite

[illegible] Web: www.prescolite.com • Tech Support: (888) 777-4832

LFO-CFL-030

Submitted by Lawhorn Sales

Job Name:	Catalog Number:	Type:
Lakota Local School District - East Freshman School	CP10UD232EB-242EB-277-STD COLOR Notes	J1

PHOTOMETRIC DATA

LiteForms™ - 10" Direct Wall Mount Up/Down Cylinder

BALLAST DATA

	26W			32W			42W		
	120V	277V	347V	120V	277V	347V	120V	277V	347V
Total System Watts*	28W	28W	28W	33W	35W	37W	48W	47W	48W
Input Current (Amps)*	0.23	0.1	0.11	0.29	0.13	0.12	0.39	0.17	0.14
Input Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Power Factor	>98%	>98%	>97%	>98%	>98%	>97%	>98%	>98%	>97%
Ballast Factor	1.00%	>1.00%	>98%	98%	98%	>98%	97%	97%	>98%
Total Harmonic Distortion	<10%	<10%	<12%	<10%	<10%	<10%	<10%	<10%	<10%
Minimum Starting Temp. [illegible]	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)	-18°C (0°F)

LAMP DATA (PHILLIPS)

Base Watts	26W Triple	32W Triple	42W Triple
Rated Lumens	1800	2400	3200
Efficacy (LPW)	69	75	76
Rated Life	10,000 hours	10,000 hours	10,000 hours
CRI	82	82	82
Minimum Starting Temp.	0°F	0°F	0°F

LUMINANCE DATA IN CANDELA/SQ. METER

Angle in Vertical	Average 0°	Average 90°
45°	8785	14062
55°	597	757
65°	270	509
75°	124	63
85°	0	0

AVERAGE INITIAL FOOTCANDLES

Assumptions:

1. Multiple Units (Square Array)
2. Ceiling 80% Wall 50% Floor 20%
3. 4 fixtures evenly spaced in the center of the room
4. The room is square and has a width and length equal to twice the fixture spacing
5. The fixture depreciation factor is 0.9
6. The dirt depreciation factor is 0.94

42W Triple CFL

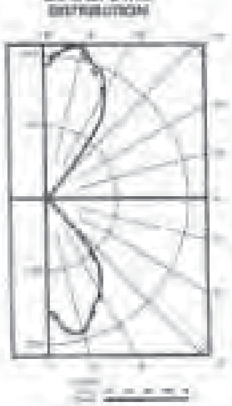
SPACING	RCR1	RCR3	RCR7
7.0	56	45	32
8.0	43	35	24
9.0	34	28	19
10.0	27	23	15
11.0	22	19	13
12.0	19	16	11
14.0	16	13	9
16.0	14	11	8
18.0	12	10	7

CP10UD4K32EBCR

Two 42W Triple Software

Efficiency: 37.6%

CANDLEPOWER DISTRIBUTION



Test No. 200

CANDLEPOWER SUMMARY

Angle	0°	90°
[illegible]	[illegible]	[illegible]

COEFFICIENTS OF UTILIZATION Zonal Cavity Method

[illegible]	[illegible]

NOTES

Denotes a Verified Source reflector.

Refer to www.prescolite.com for additional photometric test (IES files)

TypeJ1

T4

Lamp Data: Number	Lamp Data: Watts	Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	Certifications: UL	Certifications: CSA	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Min. Power Factor	Dim / Wiring Diagram
CFQ13W/G24q - 13W CFL Quad Tube Lamp (PL-C13W/4P, F13DBX/4P, CF13DD/E)												
1	13	0/-18	120	CF-2513-XX-XXX ①	✓	✓	0.13	16	1.00	9	[illegible]	Size 1/ [illegible]
			230				0.07					
			277				0.06					
2	13	0/-18	120	CF-2513-XX-XXX ①	✓	✓	0.25	29	1.00	9	[illegible]	Size 1/ [illegible]
			230				0.13					
			277				0.11					
CFQ18W/G24q - 18W CFL Quad Tube Lamp (PL-C18W/4P, F18DBX/4P, CF18DD/E)												
1	18	0/-18	120	CF-2518-XX-XXX ①	✓	✓	0.16	19	1.00	10	[illegible]	Size 1/ [illegible]
			230				0.08					
			277				0.07					
2	18	0/-18	120	CF-2518-XX-XXX ①	✓	✓	0.30	35	0.95	10	[illegible]	Size 1/ [illegible]
			230				0.16					
			277				0.13					
CFQ26W/G24q - 26W CFL Quad Tube Lamp (PL-C26W/4P, F26DBX/4P, CF26DD/E)												
1	26	0/-18	120	CF-2526-XX-XXX ①	✓	✓	0.23	27	1.00	11	[illegible]	Size 1/ [illegible]
			230				0.12					
			277				0.10					
2	26	0/-18	120	CF-2526-XX-XXX ①	✓	✓	0.43	51	1.00	10	[illegible]	Size 1/ [illegible]
			230				0.22					
			277				0.19					
			120	CF-2542-MD-XXX ①	✓	✓	0.43	52	1.00	11	[illegible]	Size 2/ [illegible]
			230				0.22					
			277				0.18					
CFTR13W/GX24q - 13W CFL Triple Tube Lamp												
1	13	0/-18	120	CF-2513-XX-XXX ①	✓	✓	0.12	16	1.00	10	[illegible]	Size 1/ [illegible]
			230				0.07					
			277				0.06					
2	13	0/-18	120	CF-2513-XX-XXX ①	✓	✓	0.25	29	1.00	10	[illegible]	Size 1/ [illegible]
			230				0.13					
			277				0.11					
CFTR18W/GX24q - 18W CFL Triple Tube Lamp (PL-T18W, F18TBX/4P, CF18DT/E)												
1	18	0/-18	120	CF-2518-XX-XXX ①	✓	✓	0.17	20	1.05	10	[illegible]	Size 1/ [illegible]
			230				0.09					
			277				0.08					
2	18	0/-18	120	CF-2518-XX-XXX ①	✓	✓	0.33	35	1.03	10	[illegible]	Size 1/ [illegible]
			230				0.17					
			277				0.14					
CFTR26W/GX24q - 26W CFL Triple Tube Lamp (PL-T26W, F26TBX/4P, CF26DT/E)												
1	26	0/-18	120	CF-2526-XX-XXX ①	✓	✓	0.24	29	1.10	10	[illegible]	Size 1/ [illegible]
			230				0.13					
			277				0.11					
2	26	0/-18	120	CF-2526-XX-XXX ①	✓	✓	0.45	54	1.03	10	[illegible]	Size 1/ [illegible]
			230				0.27					
			277				0.20					
			120	CF-2542-MB-XXX ①	✓	✓	0.45	50	1.00	10	[illegible]	Size 2/ [illegible]
			230				0.24					
			277				0.21					

① See page [illegible] for current case, mounting selection, dimensions, and wiring diagrams.
② Retrofit/replacement kits available in these models, contact factory.

Type J1

Lamp Qty Number	Lamp Watts	Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	UL	CSA	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Min. Power Factor	Dims / Wiring Diagram
CFQ13W/G24q – 13W CFL Quad Tube Lamp (PL-C13W/4P, F13DBX/4P, CF13DS/E)												
1	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFQ18W/G24q – 18W CFL Quad Tube Lamp (PL-C18W/4P, F18DBX/4P, CF18DS/E)												
1	18	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	18	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFQ26W/G24q – 26W CFL Quad Tube Lamp (PL-C26W/4P, F26DBX/4P, CF26DS/E)												
1	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFTR13W/GX24q – 13W CFL Triple Tube Lamp												
1	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFTR18W/GX24q – 18W CFL Triple Tube Lamp (PL-T18W, F18TBX/4P, CF18DT/E)												
1	18	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	18	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFTR26W/GX24q – 26W CFL Triple Tube Lamp (PL-T26W, F26TBX/4P, CF26DT/E)												
1	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
			120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

(1) [illegible]
(2) [illegible]

Lamp Qty Number	Lamp Watts	Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	UL	CSA	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Min. Power Factor	Dims / Wiring Diagram
CFTR32W/GX24q – 32W CFL Triple Tube Lamp (PL-T32W, F32TBX/4P, CF32DT/E)												
1	32	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	32	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFTR42W/GX24q – 42W CFL Triple Tube Lamp (PL-T42W, F42TBX/4P, CF42DT/E)												
1	42	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	42	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFT13W/GX23 – 13W CFL Lamp (F13DBX/23T, CF13DT/E)												
1	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFT7W/G23 – 7W CFL Lamp (F7DBX/4P, CF7DS/E)												
1	7	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	7	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Lamp Qty Number	Lamp Watts	Min. Starting Temp. (°F/°C)	Input Volts	Catalog Number	UL	CSA	Line Current (Amps)	Input Power ANSI (Watts)	Ballast Factor	Max. THD %	Min. Power Factor	Dims / Wiring Diagram
CFQ13W/G24q – 13W CFL Quad Tube Lamp (PL-C13W/4P, F13DBX/4P, CF13DD/E)												
1	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	13	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFQ26W/G24q – 26W CFL Quad Tube Lamp (PL-C26W/4P, F26DBX/4P, CF26DD/E)												
1	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFTR26W/GX24q – 26W CFL Triple Tube Lamp (PL-T26W, F26TBX/4P, CF26DT/E)												
1	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	26	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
CFTR32W/GX24q – 32W CFL Triple Tube Lamp (PL-T32W, F32TBX/4P, CF32DT/E)												
1	32	[illegible]	120 / 208 / 277	[illegible]	✓	✓	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

T4 Qui[illegible] Sta[illegible] Enab[illegible]

Submitted by Leesman Sales

Job Name: Lakota Local School District - East Freshman School

Catalog Number: WD18D2/400SMH277/DB-P/SF

Notes:

Type: **K1**

WD18

18" Wall Director®

revision 4/1/02 • wd18.pdf

KIM LIGHTING

Type:

Job:

Catalog number:

Fixture | Distribution | Lamp | Options

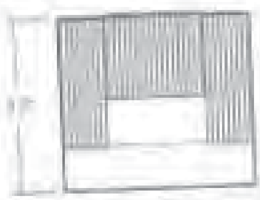
Approvals:

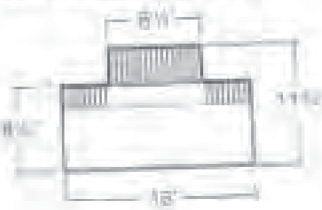
Date:

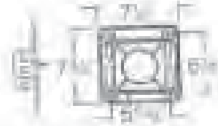
Page: 1 of 4

Specifications

Maximum Fixture Weight (400HPS) = 33 lb







Mounting Plate must be securely attached to wall outside the J-box perimeter

Reflector Housing: One piece die-cast aluminum with integral cooling fins. Rotates against ballast housing to provide 10° of adjustment with degree markers cast into housing. At 0° adjustment, lens is totally concealed from view above horizontal with fixture aimed downward.

Ballast Housing: One piece die-cast aluminum with integral cooling fins. Fastens to mounting plate with keyhole slots freeing both hands for securing and wiring. One stainless steel socket-head screw on each side of housing fixes the reflector housing to rotate for aiming. Tightening the screws locks the two housings together with sealing provided by a silicone gasket. For visual aiming, adjustment may be accomplished with the fixture on.

Lens Frame: One piece die-cast aluminum with integral hinges and stainless steel pins. Two stainless steel quarter-turn fasteners secure lens frame to reflector housing, with sealing provided by a one piece extruded and vulcanized silicone gasket. Lens is clear flat ⅛" thick tempered glass sealed to lens frame with a silicone gasket and retainer clips. For LP models, lens is mounted flush with frame for water run-off, and is silicone sealed.

Type II, III, and IV Reflector Module: Specular Alzak® optical segments are rigidly mounted to an aluminum module which attaches to the housing by a no-tool quick-disconnecting hinge and fastener. All sockets are mogul base with HPS rated 4KV, and MH versions have pin-oriented sockets with molded silicone lamp stabilizers. All modules are factory prewired with a quick-disconnect plug for mating to the ballast. Available in three light distributions, all interchangeable within the same housing.

Wall Grazer Reflector Module: Specular Alzak® optical segment is rigidly formed into a self-contained module which attaches to the housing by a no-tool quick-disconnecting hinge and fastener. Black louver vanes run parallel to the lamp arc for controlling the hot spot directly behind the fixture, and spill light into the atmosphere. All sockets are porcelain mogul base with HPS rated at 4KV, and MH versions having pin-oriented sockets with molded silicone lamp stabilizers. All modules are factory prewired with a quick-disconnect plug for mating to the ballast.

Spot Reflector Module: Specular Alzak® optical spun parabola is rigidly mounted to a self-contained module which attaches to the housing by a no-tool quick-disconnecting hinge and fastener. Black internal louvers are provided to control the beam and prevent hot spots directly behind the fixture and spill light into the atmosphere. All sockets are mogul base with HPS rated 4KV, and MH versions have pin-oriented sockets with molded silicone lamp stabilizers. All modules are factory prewired with a quick-disconnect plug for mating to the ballast.

Electrical Components: High power factor ballasts are rigidly mounted inside the housing and are factory prewired with a quick-disconnect plug for mating to the socket. Starting temperatures are -40°F for HPS lamp modes and -20°F for MH lamp modes.

Mounting Plate: The standard mounting plate is attached to wall [illegible] outside the junction box perimeter. All mounting plates are die-cast aluminum with reinforced ribs. Two studs are provided in each plate with flange nuts to allow fixture mounting by keyhole slots. Sealant must be applied [illegible] between mounting plate and mounting surface to ensure a dry junction box.

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness applied over a chromate conversion coating; 2500 hour salt spray test endurance rating. Standard colors are Black, Dark Bronze, Light Gray, Platinum Silver, or White. Custom colors are available and subject to additional charges, minimum quantities and longer lead times. Consult representative.

Certification: UL listed to U.S. and Canadian safety standards for wet locations. Fixture manufacturer shall employ a quality program that is certified to meet the ISO 9001 standard.

CAUTION: Fixtures must be grounded in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

Submitted by: Lawrence Sheets	Job Name: Lewisville Large School District - East Freshman School	Catalog Number: WD18D2/400MH277/DB-P/SF Notes	Type: K1

WD18

18" Wall Director®

KIM LIGHTING

Type:
Job:

Standard Features

Fixture
Cat. No. designates **WD18** fixture, Up (U) or Down (D) configuration, and light distribution (2, 3, 4, G or S).

WD Fixture

Light Distribution	Type II	Type III	Type IV	Wall Graze	Spot
Cat. No. (Up lit)	☐ WD18U2	☐ WD18U3	☐ WD18U4	☐ WD18UG	☐ WD18US
Cat. No. (Down lit)	☒ WD18D2	☐ WD18D3	☐ WD18D4	☐ WD18DG	☐ WD18DS

Electrical Module
HPS = High Pressure Sodium
MH = Metal Halide
PMH = Pulse Start Metal Halide

Lamp Watts / Lamp Type / Line Volts
400 HPS 277

Cat. Nos. for Electrical Modules available:

	☐ 250HPS120 ☐ 250HPS208 ☐ 250HPS240 ☐ 250HPS277 ☐ 250HPS347 ☐ 250HPS480	☐ 400HPS120 ☐ 400HPS208 ☐ 400HPS240 ☐ 400HPS277 ☐ 400HPS347 ☐ 400HPS480
Lamp	E-18, Clear	E-18, Clear
Socket	Mogul Base	Mogul Base
ANSI Ballast Type	S-50	S-51

	☐ 250MH120 ☐ 250MH208 ☐ 250MH240 ☐ 250MH277 ☐ 250MH347 ☐ 250MH480	☐ 400MH120 ☐ 400MH208 ☐ 400MH240 ☒ 400MH277 ☐ 400MH347 ☐ 400MH480	☐ 250PMH120 ☐ 250PMH208 ☐ 250PMH240 ☐ 250PMH277	☐ 400PMH120 ☐ 400PMH208 ☐ 400PMH240 ☐ 400PMH277 ☐ 400PMH347 ☐ 400PMH480
Lamp	BT-28 or ED-28, Clear	ED-28, Clear	ED-28, Clear	ED-28, Clear
Socket	Mogul Base	Mogul Base	Mogul Base	Mogul Base
ANSI Ballast Type	M-58	M-59	M-138	M-135

Finish
Super TGIC powder coat paint over a chromate conversion coating.

Color:	Black	Dark Bronze	Light Gray	Platinum Silver	White	Custom Color*
Cat. No.:	☐ BL-P	☒ DB-P	☐ LG-P	☐ PS-P	☐ WH-P	☐ CC-P

*Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: ____________

Submitted by: Lawrence Sales

	Job Name:	Catalog Number:	Type:
	Laredo Local School District - East Freshman School	WD18D2/400SMH277/DB-P/SF Notes:	K1 [illegible]

WD18

18" Wall Director®

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KIM LIGHTING

Type:

Job:

Standard Features

Fixture

Cat. No. designates **WD18** fixture, Up (U) or Down (D) configuration, and light distribution (2, 3, 4, G or S).

Light Distribution	Type II	Type III	Type IV	Wall Grazer	Spot
Cat. Nos. (Up 18")	WD18U2	WD18U3	WD18U4	WD18UG	WD18US
Cat. Nos. (Down 18")	**[X] WD18D2**	WD18D3	WD18D4	WD18DG	WD18DS

Electrical Module

HPS = High Pressure Sodium

MH = Metal Halide

PMH = Pulse Start Metal Halide

Cat. Nos. for Electrical Modules available:

	250HPS120	400HPS120
	250HPS208	400HPS208
	250HPS240	400HPS240
	250HPS277	400HPS277
	250HPS347	400HPS347
	250HPS480	400HPS480
Lamp	E-18, Clear	E-18, Clear
Socket	Mogul Base	Mogul Base
ANSI Ballast Type	S-50	S-51

Lamp Watts / Lamp Type / Line Volts

400 HPS 277

	250MH120	400MH120	250PMH120	400PMH120
	250MH208	400MH208	250PMH208	400PMH208
	250MH240	400MH240	250PMH240	400PMH240
	250MH277	**[X] 400MH277**	250PMH277	400PMH277
	250MH347	400MH347		400PMH347
	250MH480	400MH480		400PMH480
Lamp	BT-28 or ED-28, Clear	ED-28, Clear	ED-28, Clear	ED-28, Clear
Socket	Mogul Base	Mogul Base	Mogul Base	Mogul Base
ANSI Ballast Type	M-58	M-59	M-138	M-132

Finish

Super TGIC powder coat paint over a chromate conversion coating.

Color	Black	Dark Bronze	Light Gray	Platinum Silver	White	*Custom Colors
Cat. No.	BL-P	**[X] DB-P**	LG-P	PS-P	WH-P	CC-P

*Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: ______________

[illegible]

Submitted by Eastman Sales	Job Name: Lakota Local School System - East Freshman School	Catalog Number: WD18D2/400SMH277/DB-P/SF Notes:	Type: K1

KIM LIGHTING

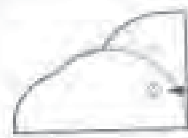
Type:
Job:

Optional Features

Photocell Control
Cat. No.: **(see right)**
☐ **No Option**

Factory installed inside housing with fully gasketed sensor on side wall.

Cat. No.	Line Volts:	Cat. No.	Line Volts:
☐ **A-30**	120V	☐ **A-33**	277V
☐ **A-31**	208V	☐ **A-34**	480V
☐ **A-32**	240V	☐ **A-35**	347V



Houseside Shield
Cat. No.: **(see right)**
☐ **No Option**

Combination louver shield and black end-panel for reflector. Factory installed to reflector module. Reduces light toward wall by the amounts shown.

CAUTION: Do not use the Houseside Shield option with the Wall Cutter as it will interfere with the light distribution.

	Type II	Type III	Type IV
Approximate Light Reduction Toward Wall	-77%	-73%	89%

Cat. No.:
☐ **HS** for flat lens
☐ **HSC** for fixtures with optional convex glass lens

5" Shield
Cat. No.: ☐ **5DS18**
☐ **No Option**

Aluminum shield field-attached to lens frame. Maintains a horizontal cutoff fixture edge when the luminaire is tilted 5°. Finished to match the fixture.

Polycarbonate Shield
Cat. No.: ☐ **LS**
☐ **No Option**

For DOWN fixture models only. Fully gasketed one piece vacuum formed clear UV stabilized polycarbonate shield replaces standard tempered glass lens. 250W max. May be used with 400W HPS only in outdoor locations where ambient air temperature during fixture operation will not exceed [illegible].

NOTE: Use only when vandalism is anticipated to be high. Useful life is limited by UV discoloration from sunlight and MH lamps. A program of regular inspection and periodic replacement is highly recommended to maintain optimum fixture performance.

Convex Glass Lens
Cat. No.: ☐ **CGL**
☐ **No Option**

Tempered convex glass lens replaces standard flat lens.

Submitted by Lesman Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: WD18D2/400SMH277/DB-P/SF Notes:	Type: K1 LBE07-4261

WD18
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KIM LIGHTING

Type:
Job:

Optional Features

Fusing Cat. No. (see right) ☐ No Option	Line Volts: Cat. No.:	120V ☐ SF	208V ☐ DF	240V ☐ DF	277V ☐ SF	347V ☐ SF	480V ☐ DF

Quartz Standby
Cat. No. ☐ QS ☐ No Option

Integral electronic device energizes a T-4 mini-can socket during initial lamp start-up or after a power interruption. De-energizes prior to H.I.D. lamp reaching full brightness. T-4 halogen lamp by others; 250 watt maximum.

Surface Conduit Mount
Cat. No. ☐ SCM18 ☐ No Option

Cast aluminum Junction Box and fixture mount for attachment (by others) to existing walls, beams or columns. **SCM18** has one ¾" NPT conduit tap in each side, top and bottom. Finished to match the fixture. **SCM18** for all fixtures, UP and DOWN.

Wire Guard
Cat. No. ☐ WG ☐ No Option

11 ga. (.12" dia.) BB Wire. 15" x 14W" x 1½" deep. Finish is super TGIC thermoset polyester powder coat paint, over zinc plated wireform.

NOTE: Only available with flat lens applications.

Submitted by Leesman Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: WD18D2/400SMH277/DB-P/SF Notes:	Type: **K1** LEE07-428L

KIM LIGHTING

WD18
18" Wall Director®
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Type:
Job:

Optional Features

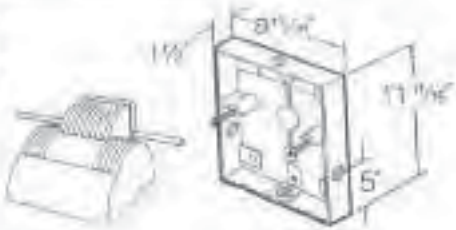
Fusing Cat. No. (see right) ☐ No Option	Line Volts: Cat. No.:	120V ☐ SF	208V ☐ DF	240V ☐ DF	277V ☐ SF	347V ☐ SF	480V ☐ DF

Quartz Standby
Cat. No. ☐ QS ☐ No Option

Integral electronic device energizes a T-4 mini-can socket during initial lamp start-up or after a power interruption. De-energizes prior to H.I.D. lamp reaching full brightness. T-4 halogen lamp by others; 250 watt maximum.

Surface Conduit Mount
Cat. No. ☐ SCM18 ☐ No Option

Cast aluminum junction Box and fixture mount for attachment (by others) to existing walls, beams or columns. **SCM18** has one ½" NPT conduit tap in each side, top and bottom. Finished to match the fixture.
SCM18 for all fixtures, UP and DOWN.



Submitted by Lexington Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: WD18D2/400SMH277/DB-P/SF Notes:	Type: K1

WD18

18" Wall Director®

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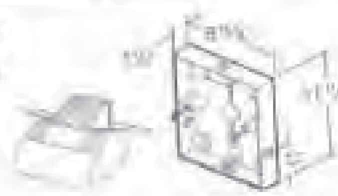
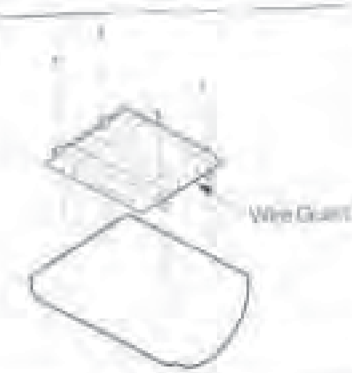
KIM LIGHTING

Type:

Job:

Optional Features

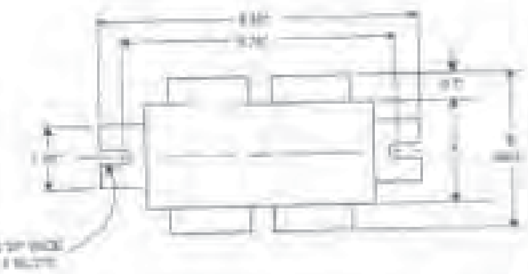
Fusing Cat. No. (see right) ☐ No Option	Line Volts: Cat. No.: 120V ☐ SF; 208V ☐ DF; 240V ☐ DF; **277V ☐ SF**; 347V ☐ SF; 480V ☐ DF	
Quartz Standby Cat. No. ☐ QS ☐ No Option	Integral electronic device energizes a T-4 medium socket during initial lamp start-up or after a power interruption. De-energizes prior to H.I.D. lamp reaching full brightness. T-4 halogen lamp by others. 250 watt maximum.	
Surface Conduit Mount Cat. No. ☐ SCM18 ☐ No Option	Cast aluminum junction box and fixture mount for attachment (by others) to existing walls, beams or columns. **SCM18** has one ½" NPT conduit tap in each side, top and bottom. Finished to match the fixture. **SCM18** for all fixtures UP and DOWN.	
Wire Guard Cat. No. ☐ WG ☐ No Option	11 ga. (.12" dia.) BB Wire, 15" x 14½" x 1½" deep. Finish is super TGIC thermoset polyester powder coat paint, over zinc plated wireform. **NOTE**: Only available with flat lens applications.	

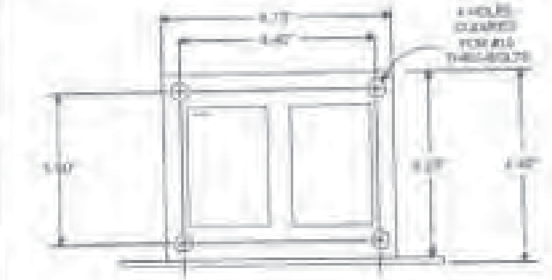
Type K1

ADVANCE	**Metal Halide Lamp Ballast**	**Catalog Number 71A6091** **For 400W M59** **60 Hz CWA** **Status: Active**

DIMENSIONS AND DATA

4 1/4 X 4 3/4 CORE - 2 COIL UNIT





		120	208	240	277
INPUT VOLTS					
CIRCUIT TYPE	CWA				
POWER FACTOR (min)	90%				
REGULATION					
Line Volts	±10%				
Lamp Watts	±10%				
LINE CURRENT (Amps)					
Operating		4.00	2.30	2.00	1.75
Open Circuit		3.00	1.75	1.50	1.30
Starting		3.50	2.00	1.75	1.50
UL TEMPERATURE RATINGS					
Insulation Class	H(180°C)				
Coil Temperature Code	102%	D	E	D	E
MIN. AMBIENT STARTING TEMP	-20°F or -30°C				
NOM. OPEN CIRCUIT VOLTAGE	300				
INPUT VOLTAGE AT LAMP DROPOUT		90	104	120	138
INPUT WATTS	458				
RECOMMENDED FUSE (Amps)		10	7	6	5
CORE and COIL					
Dimension (A)	2.00				
Dimension (B)	3.90				
Weight (lbs.)	12				
Lead Lengths	12"				
CAPACITOR REQUIREMENT					
Microfarads	24.0				
Volts (min.)	400				
Fault Current Withstand (amps)					
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)					
High Potential Test (Volts)					
1 minute	2000				
1 seconds	2500				
Open Circuit Voltage Test (Volts)	270-330				
Short-Circuit Current Test (Amps)					
Secondary Current	3.50-4.30				
Input Current		2.70	1.56	1.35	1.10
		4.20	2.40	2.10	1.80

Capacitor: 7C240P40-R

Capacitance: 24
Dia/Oval Dim: 1.75
Height: 5.125
Temp Rating: 105°C

Ignitor: NA

This ballast does not require the use of an ignitor.

Wiring Diagram

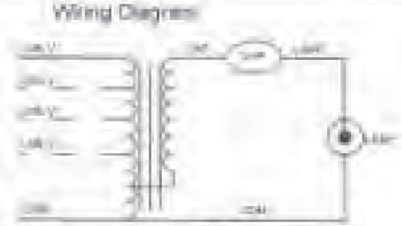


Fig. A

Typical Ordering Information

(please call Advance for suffix availability)

Order Suffix	Description
510D	Ballast w/Welded Bracket & Dry Film Capacitor
600	Ballast Only; No Capacitor

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

ADVANCE

O'HARE INTERNATIONAL CENTER · 10275 WEST HIGGINS ROAD · ROSEMONT, IL 60018

Customer Support/Technical Service: Phone: 800-372-3331 Fax: 630-307-3071

Corporate Offices: Phone: 800-322-2086

07/12/04

Submitted by Leeman Sales	Job Name: Lakota Local School District - East Freshman School	Catalog Number: WD14D2/175SMH277/DB-P/SF/QS Notes:	Type: K3

WD14

14" Wall Director®

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KIM LIGHTING

Type:

Job:

Catalog number:

Fixture / Electrical Module / Finish / Options (see page 3-4)

see page 2

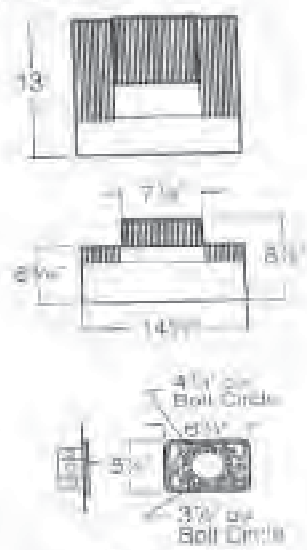
Approvals:

Date:

Page: 1 of 4

Specifications

Maximum Fixture Weight (150HPS) = 26 lb



Mounting Plate

Attaches directly to any standard 4" J-box (by others)

Reflector Housing: One piece die-cast aluminum with integral cooling fins. Rotates against ballast housing to provide 10° of adjustment with degree markers cast into housing. At 0° adjustment, lens is totally concealed from view above horizontal with fixture aimed downward.

Ballast Housing: One piece die-cast aluminum with integral cooling fins. Fastens to mounting plate with keyhole slots freeing both hands for securing and wiring. One stainless steel socket-head screw on each side of housing frees the reflector housing to rotate for aiming. Tightening the screws locks the two housings together with sealing provided by a silicone gasket. For visual aiming, adjustment may be accomplished with the fixture on.

Lens Frame: One piece die-cast aluminum with integral hinges and stainless steel pins. Two stainless steel quarter turn fasteners secure lens frame to reflector housing with sealing provided by a one piece extruded and vulcanized silicone gasket. Lens is clear flat tempered glass sealed to lens frame with a silicone gasket and retainer clips. For LS models lens is mounted flush with frame for water run-off, and is silicone sealed.

Type II, III, and IV Reflector Module: Specular Alzak® optical segments are rigidly mounted to an aluminum module which attaches to the housing by a no-tool quick-disconnecting hinge and fastener. All sockets are porcelain medium base rated 4KV. All modules are factory prewired with a quick-disconnect plug for mating to the ballast. Available in three light distributions, all interchangeable within the same housing.

Wall Grazer Reflector Module: Specular Alzak® optical segment is rigidly formed into a self-contained module which attaches to the housing by a no-tool quick-disconnecting hinge and fastener. Black louver vanes run parallel to the lamp arc for controlling the hot spot directly behind the fixture, and spill light into the atmosphere. All sockets are porcelain medium base rated 4KV. All modules are factory prewired with a quick-disconnect plug for mating to the ballast.

Spot Reflector Module: Specular Alzak® optical spun parabola is rigidly mounted to a self-contained module which attaches to the housing by a no-tool quick-disconnecting hinge and fastener. Black internal louvers are provided to control the beam and prevent hot spots directly behind the fixture and spill light into the atmosphere. All sockets are porcelain medium base rated 4KV. All modules are factory prewired with a quick-disconnect plug for mating to the ballast.

Electrical Components: High power factor ballasts are rigidly mounted inside the housing and are factory prewired with a quick-disconnect plug for mating to the socket. Starting temperatures are -40°F for HPS lamp modes and -20°F for MH lamp modes.

Mounting Plate: Mounting plate attaches directly to any standard 4" Junction Box.

Submitted by Lawsman Sales	Job Name: Lakota Local School District - East Freshmen School	Catalog Number: WD14D2/175SMH277/DB-P/SF/QS Notes:	Type: K3 LEE07-4281

KIM LIGHTING

WD14
14" Wall Director®
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Type:
Job:
Catalog number:

Fixture / Finished Width / Finish / Options (see pages 3-4)

Approvals:

Date:
Page: 1 of 4

Specifications

Maximum Fixture Weight (150HPS) = 26 lb

Reflector Housing: One piece die-cast aluminum with integral cooling fins. Rotates against ballast housing to provide 10° of adjustment with degree markers cast into housing. At 0° adjustment, lens is totally concealed from view above horizontal with fixture aimed downward.

Ballast Housing: One piece die-cast aluminum with integral cooling fins. Fastens to mounting plate with keyhole slots (using both hands for securing and wiring). One stainless steel socket-head screw on each side of housing frees the reflector housing to rotate for aiming. Tightening the screws locks the two housings together with sealing provided by a silicone gasket. For visual aiming, adjustment may be accomplished with the fixture on.

Submitted by Lessman Sales	Job Name:	Catalog Number:	Type:
	Lucia Lucia School District - East Freshman School	WD14D2/175SMH277/DB-P/SF/ QS Hoffest	K3

WD14

14" Wall Director®

[illegible]

KIM LIGHTING

Type:
Job:
Catalog number:

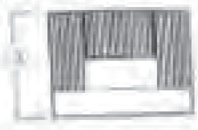
[illegible]

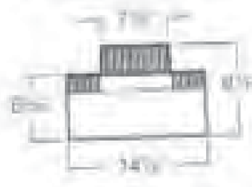
Approvals:

Date:
Page: 1 of 4

Specifications

Maximum Fixture Weight (150HPS) = 26 lb





Mounting Plate
Attaches directly to any standard 4" J-box (by others)

Reflector Housing: One piece die-cast aluminum with integral cooling fins. [illegible] against ballast housing to provide 10° of adjustment with degree markers [illegible] housing. At 0° adjustment, lens is totally concealed from view above horizontal with fixture aimed downward.

Ballast Housing: One piece die-cast aluminum with integral cooling fins. [illegible]

Lens Frame: One piece die-cast aluminum with integral hinges and stainless steel pins. [illegible] tempered glass sealed to lens frame with a silicone gasket and retainer clips. [illegible] lens is mounted flush with frame for water run off, and is silicone sealed.

Type II, III, and IV Reflector Module: Specular Alzak® optical segments are rigidly mounted to an aluminum module which attaches to the housing by a recessed quick-disconnecting hinge and fastener. All sockets are porcelain medium base rated 4KV. All modules are factory prewired with a quick-disconnect plug for mating to the ballast. Available in three light distributions, all interchangeable within the same housing.

Wall Grazer Reflector Module: Specular Alzak® optical segment is rigidly formed into a self-contained module which attaches to the housing by a recessed quick-disconnecting hinge and fastener. Black louver vanes run parallel to the lamp arc for controlling the hot spot directly behind the fixture, and spill light into the atmosphere. All sockets are porcelain medium base rated 4KV. All modules are factory prewired with a quick-disconnect plug for mating to the ballast.

Spot Reflector Module: [illegible]

Electrical Components: High power factor ballasts are rigidly mounted inside the housing and are factory prewired with a quick-disconnect plug for mating to the socket. Starting temperatures are -40°F for HPS lamp modes and -20°F for MH lamp modes.

Mounting Plate: Mounting plate attaches directly to any standard 4" junction box. [illegible]

Finish: Super TGIC thermoset polyester powder coat paint, 2.5 mil nominal thickness, applied over a chromate conversion coating. 2500 hour salt spray test endurance rating. [illegible]

Certification: UL Listed in U.S. and Canadian safety standards for wet locations. [illegible]

CAUTION: Fixtures must be grounded in accordance with local codes or the National Electrical Code. Failure to do so may result in serious personal injury.

Submitted by: Lawrence Sash	Catalog Number:	Type:
Job Name: Lakota Lone School District - East Freshman School	WD14D2/175SMH277/DB-P/SF/QS	K3

KIM LIGHTING

WD14
14" Wall Director®

Type:
Job:

Standard Features

Fixture
Cat. No. designates **WD14** fixture, Up (U) or Down (D) configuration, and Light Distribution (2, 3, 4, G or S).

WD Fixture Light Distribution	Type II	Type III	Type IV	Wall Grazer	Spot
Cat. No. (Up 14")	☐ WD14U2	☐ WD14U3	☐ WD14U4	☐ WD14UG	☐ WD14US
Cat. No. (Down 14")	☐ WD14D2	☐ WD14D3	☐ WD14D4	☐ WD14DG	☐ WD14DS

Electrical Module
HPS = High Pressure Sodium
MH = Metal Halide

Lamp Lamp Line Watts Type Volts
150 HPS 120

Cat. Nos. for Electrical Modules available:

	☐ 70HPS120	☐ 100HPS120	☐ 150HPS120
	☐ 70HPS208	☐ 100HPS208	☐ 150HPS208
	☐ 70HPS240	☐ 100HPS240	☐ 150HPS240
	☐ 70HPS277	☐ 100HPS277	☐ 150HPS277
	☐ 70HPS347	☐ 100HPS347	☐ 150HPS347
Lamp	ED-17, Clear	ED-17, Clear	ED-17, Clear
Socket	Medium Base	Medium Base	Medium Base
ANSI Ballast Type	S-62	S-54	S-55

	☐ 70MH120	☐ 100MH120	☐ 150MH120	☐ 175MH120
	☐ 70MH208	☐ 100MH208	☐ 150MH208	☐ 175MH208
	☐ 70MH240	☐ 100MH240	☐ 150MH240	☐ 175MH240
	☐ 70MH277	☐ 100MH277	☐ 150MH277	☐ 175MH277
	☐ 70MH347	☐ 100MH347	☐ 150MH347	☐ 175MH347
Lamp	ED-17, Clear	ED-17, Clear	ED-17, Clear	ED-17, Clear
Socket	Medium Base	Medium Base	Medium Base	Medium Base
ANSI Ballast Type	M-98	M-98	M-102	M-57

Finish
Super TGIC powder coat paint over a chromate conversion coating.

Color	Black	Dark Bronze	Light Gray	Platinum Silver	White	Custom Colors
Cat. No.	☐ BL-P	☐ DB-P	LG-P	PS-P	☐ WH-P	☐ CC-P

*Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: _____

Submitted by: [illegible]	Job Name: [illegible]	Catalog Number: WD14D2/175SMH277/DB-P/SF/QS	Type: K3

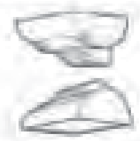
WD14

14" Wall Director®

KIM LIGHTING

Type:

Job:



Standard Features

Feature
Cat. No. designates **WD14** fixture, Up (U) or Down (D) configuration, and light distribution (2, 3, 4, G or S).

WD Fixture Light Distribution	Type II	Type III	Type IV	Wall Grazer	Spot
Cat. No. (Up 14°)	WD14U2	WD14U3	WD14U4	WD14UG	WD14US
Cat. No. (Down 14°)	WD14D2	WD14D3	WD14D4	WD14DG	WD14DS

Electrical Module
HPS = High Pressure Sodium
MH = Metal Halide

Lamp Watts	Lamp Type	Line Volts
150	HPS	120

Cat. Nos. for Electrical Modules available:

	70HPS120 70HPS208 70HPS240 70HPS277 70HPS347	100HPS120 100HPS208 100HPS240 100HPS277 100HPS347	150HPS120 150HPS208 150HPS240 150HPS277 150HPS347
Lamp	ED-17, Clear	ED-17, Clear	ED-17, Clear
Socket	Medium Base	Medium Base	Medium Base
ANSI Ballast Type	S-62	S-54	S-55

	70MH120 70MH208 70MH240 70MH277 70MH347	100MH120 100MH208 100MH240 100MH277 100MH347	150MH120 150MH208 150MH240 150MH277 150MH347	175MH120 175MH208 175MH240 175MH277 175MH347
Lamp	ED-17, Clear	ED-17, Clear	ED-17, Clear	ED-17, Clear
Socket	Medium Base	Medium Base	Medium Base	Medium Base
ANSI Ballast Type	M-98	M-90	M-102	M-57

Finish
Super TGIC powder coat paint over a chromate conversion coating.

Color	Black	Dark Bronze	Light Gray	Platinum Silver	White	*Custom Colors
Cat. No.:	BL-P	DB-P	LG-P	PS-P	WH-P	CC-P

*Custom colors subject to additional charges, minimum quantities and extended lead times. Consult representative. Custom color description: ____________

Submitted by Lakeman Sales		Catalog Number:	Type:
	Job Name: Lakota Local School District - East Freshman School	WD14D2/175SMH277/DB-R/SF/QS Notes	**K3**

KIM LIGHTING

Type:
Job:

Optional Features

Photocell Control
Cat. No. **(see right)**
☐ **No Option**

Factory installed inside housing with fully gasketed sensor on side wall.

Cat. No.	Line Volts	Cat. No.	Line Volts
☐ **A-30**	120V	☐ **A-33**	277V
☐ **A-31**	208V	☐ **A-35**	347V
☐ **A-32**	240V		

Houseside Shield
Cat. No. **(see right)**
☐ **No Option**

Combination louver shield and black end-panel for reflector. Factory installed to reflector module. Reduces light toward wall by the amounts shown.

CAUTION: Do not use the Houseside Shield option with the Wall Grazer as it will interfere with the light distribution.

Approximate Light Reduction Toward Wall	Type II	Type III	Type IV
	-43%	-54%	-77%

Cat. No.
☐ **HS** for flat lens
☐ **HSC** for fixtures with optional convex glass lens.

5° Shield
Cat. No. ☐ **5DS14**
☐ **No Option**

Aluminum shield field-attached to lens frame. Maintains a horizontal cutoff fixture edge when the luminaire is tilted 5°. Finished to match the fixture.

Polycarbonate Shield
Cat. No. ☐ **LS**
☐ **No Option**

For DOWN fixture models only. Fully gasketed one piece vacuum formed clear UV stabilized polycarbonate shield replaces standard tempered glass lens.

Convex Glass Lens
Cat. No. ☐ **CGL**
☐ **No Option**

Tempered convex glass lens replaces standard flat lens.

Submitted by Lieberman Sales	Job Name: Lakota Local School District - East Freeman School	Catalog Number: WD14D2/175SMH277/DB-P/SF/QS Notes:	Type: K3 LF507-4281

WD14
14" Wall Director®
revision 4/1/02 • wd14.pdf

KIM LIGHTING

Type:
Job:

Optional Features

Fusing
Cat. No. (see right)
☐ No Option

Line Volts: 120V 208V 240V 277V 347V
Cat. No.: ☐ SF ☐ DF ☐ DF ☐ SF ☐ SF

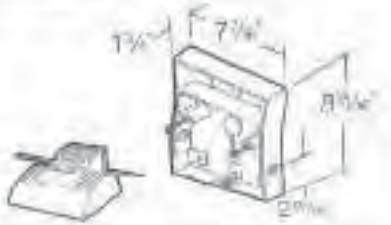
Quartz Standby
Cat. No. ☐ QS
☐ No Option

Integral electronic device energizes a T-4 mini-can socket during initial lamp start-up or after a power interruption. De-energizes prior to H.I.D. lamp reaching full brightness. T-4 halogen lamp by others: 100 watt maximum.

Surface Conduit Mount
Cat. No. ☐ SCM14U
☐ SCM14D
☐ No Option

Cast aluminum junction Box and fixture mount for attachment (by others) to existing walls, beams or columns. SCM14 has one ¾" conduit tap in each side and bottom only. Must be securely mounted to wall surface. Finished to match the fixture.

SCM14U for UP fixtures only.
SCM14D for DOWN options only.



Wire Guard
Cat. No. ☐ WG
☐ No Option

11 ga. (.12" dia.) Bd Wire, 12½" x 10½" x 1" deep. Finish is super TGIC thermoset polyester powder coat paint, over zinc plated wireform.

NOTE: Only available with flat lens applications.

Submitted by Lesman Sales	Job Name: Lakota Local School District - East Freshmen School	Catalog Number: WD14D2/175SMH277/DB-P/SF/QS Notes:	Type: K3 LEED7-4281

KIM LIGHTING

WD14
14" Wall Director®
revision 4/1/02 • wd14.pdf

Type:
Job:

Optional Features

Fusing
Cat. No. (see right)
☐ No Option

Line Volts: 120V 208V 240V 277V 347V
Cat. No.: ☐ SF ☐ DF ☐ DF ☐ SF ☐ SF

Quartz Standby
Cat. No. ☐ QS ☐ No Option

Integral electronic device energizes a 1-4 mini-can socket during initial lamp start-up or after a power interruption. De-energizes prior to H.I.D. lamp reaching full brightness. 1-4 halogen lamps by others. 100 watt maximum.

Surface Conduit Mount
Cat. No. ☐ SCM14U ☐ SCM14D ☐ No Option

Cast aluminum Junction Box and fixture mount for attachment (by others) to existing walls, beams or columns. SCM14 has one ¾" conduit tap in each side and bottom only. Must be securely mounted to wall surface. Finished to match the fixture.

Submitted by: Eastman Sales	Job Name: Lakota Local School District - East Freemont School	Catalog Number: WD14D2/175SMH277/DB-P/SF/Q5 Notes:	Type: K3

WD14
14" Wall Director®

KIM LIGHTING

Type:
Job:

Optional Features

Fusing
Cat. No. (see right)
☐ No Option

Line Volts	120V	208V	240V	277V	347V
Cat. No.:	☐ SF	☐ DF	☐ DF	☐ SF	☐ SF

Quartz Standby
Cat. No. ☐ QS
☐ No Option

Integral electronic device energizes a T-4 mini-can socket during initial lamp start-up or after a power interruption. De-energizes prior to 1/3 O. lamp reaching full brightness. T-4 halogen lamp by others. 150 watt maximum.

Surface Conduit Mount
Cat. No. ☐ SCM14U
☐ SCM14D
☐ No Option

Cast aluminum junction Box and fixture mount for attachment (by others) to existing walls, beams or columns. SCM14 has one ½" conduit up in each side and bottom only, must be securely mounted to wall surface. Finished to match the fixture.

SCM14U for UP fixtures only.
SCM14D for DOWN fixtures only.

Wire Guard
Cat. No. ☐ WG
☐ No Option

11 ga. (.12" dia.) BB Wire, 12¼" x 10½" x 3½" deep. Finish is super TGIC thermoset polyester powder coat paint, over zinc plated wireform.

NOTE: Only available with flat lens applications.

Type K3

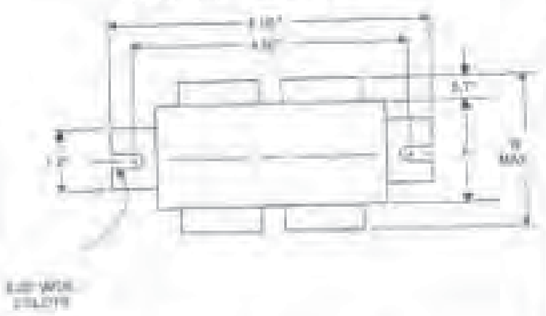
ADVANCE

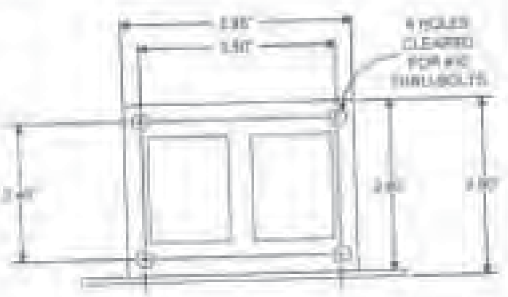
Metal Halide Lamp Ballast

Catalog Number 71A5590
For 175/150W M57/M107
60 Hz CWA
Status: Active

DIMENSIONS AND DATA

3 X 4 CORE - 2 COIL UNIT



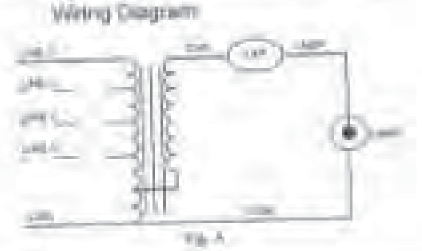


		120	208	240	277
INPUT VOLTS					
CIRCUIT TYPE	CWA				
POWER FACTOR (min)	90%				
REGULATION					
Line Volts	±10%				
Lamp Watts	±10%				
LINE CURRENT (Amps)					
Operating		1.80	1.04	0.90	0.80
Open Circuit		1.60	1.04	0.90	0.80
Starting		1.30	0.75	0.68	0.56
UL TEMPERATURE RATINGS					
Insulation Class	H(180°C)				
Coil Temperature Code	1029	C	D	D	D
MIN. AMBIENT STARTING TEMP	-20°F or -30°C				
NOM. OPEN CIRCUIT VOLTAGE	305				
INPUT VOLTAGE AT LAMP DROPOUT		80	104	120	138
INPUT WATTS	210				
RECOMMENDED FUSE (Amps)		6	5	5	2
CORE and COIL					
Dimension (A)	5.50				
Dimension (B)	3.70				
Weight (lbs.)	8.75				
Lead Lengths	12"				
CAPACITOR REQUIREMENT					
Microfarads	10.0				
Volts (min.)	400				
Fault Current Withstand (amps)					
60 Hz TEST PROCEDURES (Refer to Advance Test Procedure for HID Ballasts - Form 1270)					
High Potential Test (Volts)					
1 minute	2000				
2 seconds	2500				
Open Circuit Voltage Test (Volts)	275-335				
Short Circuit Current Test (Amps)					
Secondary Current	1.50-1.90				
Input Current		0.80	0.48	0.40	0.38
		1.20	0.70	0.60	0.50

Capacitor: 7C100M40-R

Capacitance: 10
Dia/Oval Dim: 1.5
Height: 3.75
Temp Rating: 105°C

Wiring Diagram



Ignitor: NA

This ballast does not require the use of an ignitor.

Typical Ordering Information

(please call Advance for suffix availability)

Order Suffix	Description
510D	Ballast w/Welded Bracket & Dry Film Capacitor
600	Ballast Only, No Capacitor

Data is based upon tests performed by Advance Transformer in a controlled environment [illegible] ballast performance can vary depending on operating conditions. [illegible]

ADVANCE
O'HARE INTERNATIONAL CENTER 10275 WEST HIGGINS ROAD ROSEMONT, IL 60018
Customer Support/Technical Service: Phone 800-372-3331 Fax 630-307-3071
Corporate Offices: Phone 800-322-2086

03/11/99

Submitted by: Lewman Sales	Job Name: Lakota Local School District - Elst Freshman School	Catalog Number: VWX-151 / VCG-15 Notes	Type: L1

VAPORTITE V-SERIES

ENCLOSED/GASKETED

Features

- For wet and dirty environments where enclosed/gasketed fixtures are needed
- Cover selections include pendant, ceiling, bracket and stanchion mounting
- Modular design permits selection of cover, body, globe, guard and reflector for custom applications
- Threaded hubs for attachment to conduit and set screws provided in pendant covers
- Two size housings for 150W and 300W max.
- Colored globes available
- BodyGuard - Copper-free (<0.1%) cast aluminum
- Globe - Standard and tempered glass. Clear polycarbonate for 75W max.
- Reflector - White Polyfrost® plastic
- UL1598 Damp Location
- NEMA 3,4 (when used with VXFC body and tempered globe)
- UL844, Class I, Division 2, Groups A,B,C,D (VXFC only)

Ordering Information

Catalog Number	Maximum Lamp Size	Hub Size	Fixture Components: Body	Cover	Globe
Pendant					
VP-151[1]	150/A-21	1/2"	VPB-15	VP-1	VG-15
VP-152A[1]	150/A-21	3/4"	VPP-15	VP-2	VG-15
VP-301[1]	300/PS-25	1/2"	VPP-30	VP-1	VG-30
VP-302[1]	300/PS-25	3/4"	VPP-30	VP-2	VG-30
Ceiling Outlet Box					
VX-151[1]	150/A-21	1/2"	VPB-15	VX-1/VAP	VG-15
VX-152[1]	150/A-21	3/4"	VPB-15	VX-2/VAP	VG-15
VX-301[1]	300/PS-25	1/2"	VPP-30	VX-1/VAP	VG-30
VX-302[1]	300/PS-25	3/4"	VPP-30	VX-2/VAP	VG-30
Ceiling Plate					
VP-151[1]	150/A-21	—	VPB-15	VAP	VG-15
VP-301[1]	300/PS-25	—	VPB-30	VAP	VG-30
Wall Arm Outlet Box					
VWX-151[1]	150/A-21	1/2"	VPB-15	VW-1/VX-1	VG-15
VWX-152[1]	150/A-21	3/4"	VPB-15	VW-1/VX-2	VG-15
VWX-301[1]	300/PS-25	1/2"	VPB-30	VW-1/VX-1	VG-30
VWX-302[1]	300/PS-25	3/4"	VPB-30	VW-1/VX-2	VG-30
Wall Arm Mount					
VW-151[1]	150/A-21	—	VPB-15	VW-1	VG-15
VW-301[1]	300/PS-25	—	VPB-30	VW-1	VG-30
Stanchion Mount					
VS-158	150/A-21	1 1/4"	VPB-15	VG-4	VG-15
VS-308	300/PS-25	1 1/4"	VPB-30	VG-4	VG-30

1. [illegible]
2. For Class I, Division 2 and NEMA 3R, replace VPB-15 with VPC-150-N34 and VPB-30 with VXFC-200-N34. Order body, cover and globe as components. See Ordering chart.

Ordering Information: Globes - V/NV/NVO

Catalog Number	Globes
150 Watts	
VG-15	Clear, Standard
VCGP-100	Clear, Tempered
VAMGP-100	Amber, Tempered
VGGP-100	Green
VRGP-100	Ruby
VBGP-100	Blue
VGP-15[1]	Polycarbonate
VPLGC-100[1]	Polycarbonate (for NVO)
300 Watts	
VG-30	Clear, Standard
VCGP-300	Clear, Tempered

1. 75W Maximum

VPB-30
VXFC-200-N34

VPB-15
VXFC-100-N34

VAP
Ceiling Box Adapter

HARSH, HAZARDOUS

Submitted by Lederman Sales	Catalog Number:	Type:
Job Name: Laguna Loop School District - East Freshman School Remodel	LHIRD2-STD COLOR Notes:	WALLSWITH

SPECIFICATIONS

InstiADAPT™	• Self-adjusting timer • Self-adjusting passive infrared sensitivity • Automatic false-on, false-off correction • No manual adjustments required
Timer Timeout	• Automatic mode: 4-30 minutes, self adjusts based on occupancy • Fixed mode: 4, 8, 15 and 30 minutes • Test mode: 5 seconds
Passive Infrared	• Dual element pyrometer and 12 element cylindrical RhinoTuff lens
Photocell	• Adjustable ambient light override ranges from 10 foot-candles to 500 foot-candles
Coverage	• 1000 sq. ft., 180°
Power Requirements	• 120/277VAC, 50/60Hz
Electrical Ratings	• 120VAC: 800W Incandescent, 1000W Fluorescent, 1/6 HP • 277VAC: 1800W Fluorescent, 1/6 HP
Load Requirements	• No minimum load
Operating Environment	• Indoor use only • Operating temperature: 32° – 104°F (0° – 40°C) • 0% to 95% relative humidity, non-condensing
Construction	• Housing – high impact, injection-molded plastic (UL-94-5V) • Impact resistant Lens • Color-coded leads are 6" long
Size & Weight	• Size: 4.2" x 1.8" x 2.1", extends out: 3.7" • Weight: 2.9 oz
Color	• White, Ivory, Light Almond, Gray, Black
Mounting	• Single gang NEMA style switch box (Decorator style wall plate not included)
Certifications	• ETL Listed (Conforms to UL STD 508 Certified to CAN/CSA STD C22.2 NO. 14)
Warranty	• 5 years

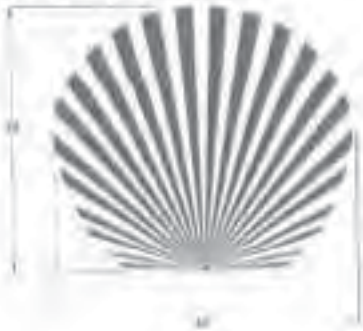
HOW TO ORDER

Catalog Number	Description
LHIRD2*	Passive Infrared Dual Circuit Wall Switch Sensor with InstiADAPT and Automatic/Manual Control, 120/277VAC
LHIRD0*	Passive Infrared Dual Circuit Wall Switch Sensor with InstiADAPT and Automatic Only Control, 120/277VAC

* = W – White, I – Ivory, A – Light Almond, G – Gray, B – Black

RANGE DIAGRAM

*Refer to Application Guide



WIRING DIAGRAM

HUBBELL Building Automation, Inc.

Hubbell Building Automation, Inc.
9601 Dessau Road, Building One, Suite 100
Austin, Texas 78754
(512) 450-1100 (512) 450-1111 fax
www.hubbell-automation.com

Submitted by Lawrenge Sales	Job Name: Lakota Local School District - East Freshman School Sensors	Catalog Number: OMNI-DT2000 - RP Notes:	Type: **CEILING**

lights. Using PIR sensing (high error immunity) with US (high sensitivity) provides good performance. Conventional ceiling mounted dual tech sensors use a simple formula for operation: BOTH for ON, EITHER for KEEP ON. This method requires that both sensors receive fixed-strength signals for ON or a single fixed-level signal for KEEP ON. The OMNI-DT uses a more sophisticated method called a composite signal where the signal strengths are added together to form a composite sum. The advantage of this method is that a weak PIR signal plus a strong US signal will turn the lights on because the sum is enough. The installer need not worry that the signal level be balanced for reliable lights on. This technology eliminates time consuming adjustments and callbacks found in non-intelligent sensors.

The sensor requires a 24V DC, MP Series power pack. The mounting base, provided with the sensor, allows quick and easy mounting.

ADAPTIVE FUNCTIONS

The OMNI constantly analyzes and adapts to changing conditions:

Period	Time	Action
Installation	60 minutes	Timer automatically resets from Test (8 seconds) to 8 minutes
Learning	Four weeks	1. Response to Error Conditions (false-ons, false offs) 2. Air current adaptation 3. Timer optimization Adjustments Made: Ultrasonic sensitivity Infrared sensitivity Timer Air current threshold
Post learning Occupancy Periods (Circadian)	After Four weeks	1. 24 hour occupancy periods learned (circadian) 2. Weekly occupancy periods learned Adjustments Made: a. Generally occupied periods: Threshold+High Sensitivity mode b. Generally unoccupied periods: Threshold+Miser mode

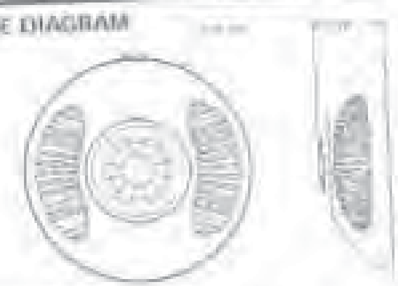
SPECIFICATIONS

LED Lamp:	Red Infrared motion Green Ultrasonic motion
Construction:	Two ultrasonic transmitters and two narrow bandwidth receivers each 16mm in diameter. Frequency — Crystal controlled to ± .005%. Transducers — Oriented north and south (DT2000 only, others use single pairs), angled 30° down from horizontal. Housing — Rugged, high-impact, injection molded plastic. K8 ABS Cycolac (UL-94SVA) flame class rating, UV inhibitors. Color-coded leads are 6".
Size & Weight:	4.5" dia., 1.5" height, 5 oz. (114 mm dia., 38 mm height, 142 g.)
Color:	White
Power Requirements:	24 VDC, 33 mA (use MP series power pack.)
Timer Setting:	Automatic - 8 min. to 32 min., test mode - 8 seconds
Output:	24 VDC active high logic control signal with short circuit protection and optional dry contact (see -RP option).
Operating Environment:	32°F to 104°F (0°C to 40°C), 0% to 95% non-condensing, relative humidity. For indoor use only.
RP Option:	Relay and Photocell Included (both). Relay, NO + NC contacts 500ma rated @ 24vdc, three wire, isolated relay. Photocell, 0-1000 Lux adjustable.
Warranty:	5 years limited.

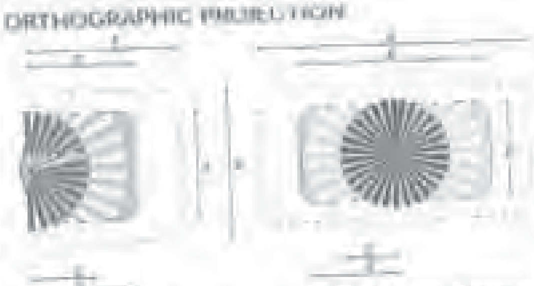
MODELS

Cat. No.	Color	Coverage	Application
OMNI-DT500	Off White	500 sq. ft.	Private Office
OMNI-DT500-RP	Off White	500 sq. ft.	Private Office
OMNI-DT1000	Off White	1000 sq. ft.	Open Office
OMNI-DT1000-RP	Off White	1000 sq. ft.	Open Office
[redacted]	Off White	2000 sq. ft.	Open Office
OMNI-DT2000-RP	Off White	2000 sq. ft.	Open Office

RANGE DIAGRAM

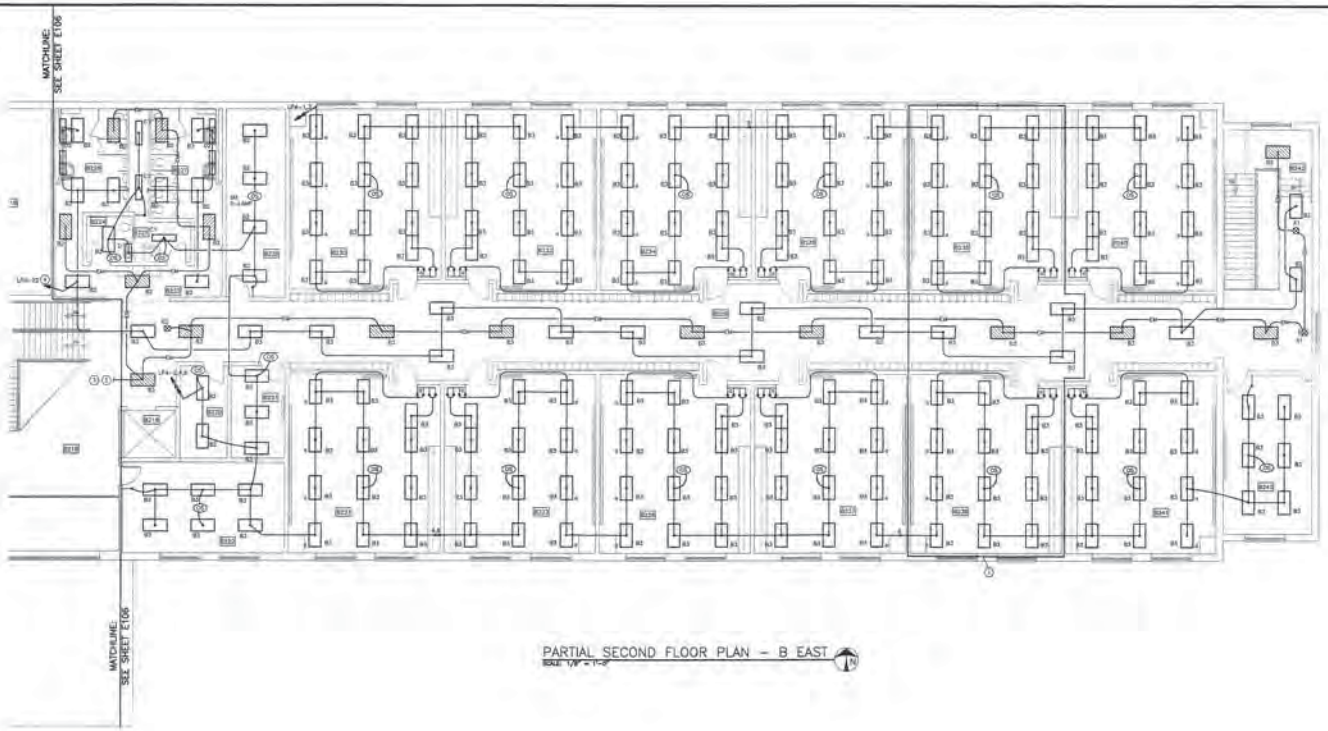


ORTHOGRAPHIC PROJECTION



DT-1000 Range Diagram
DT-500 Range Pattern is not provided

DT-2000 Range Diagram



PARTIAL SECOND FLOOR PLAN – B EAST

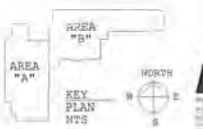
SCALE: 1/8" = 1'-0"

NOTES

1. PROVIDE ALL ELECTRICAL WORK SHOWN ONLY IF ALTERNATE 1-1 IS ACCEPTED.
2. REFER TO SHEET E106 FOR CONFIRMATION OF EMERGENCY BRANCH CIRCUITRY.
3. WIRE ALL EXIT LIGHTS IN THIS AREA ON COMMON CIRCUIT (CP19-4). RUN ALL EMERGENCY AND EXIT LIGHTING CIRCUITS WITH 2-#10, 1-#10 AND 1# COMMON 1"C. THROUGH OUT.
4. EXTEND LIFESAFETY SYSTEMS LIGHTING CONDUCTOR. SEE DETAILS ON SHEET E004.

ROOM NAMES & NO'S

8216	ELEVATOR
8217	TECH
8221	SE OFFICE
8222	OFFICE
8223	ALCOVE
8224	ALCOVE
8225	CUSTODIAL
8226	MEN'S TOILET ROOM
8227	WOMENS TOILET ROOM
8228	TESTING/WATER HTR.
8229	CORRIDOR
8230	CLASSROOM
8231	SE RESOURCE ROOM
8232	CLASSROOM
8233	CLASSROOM
8234	CLASSROOM
8235	CLASSROOM
8236	CLASSROOM
8237	CLASSROOM
8238	CLASSROOM
8239	CLASSROOM
8240	CLASSROOM
8241	CORRIDOR
8242	STAIR
8243	DEPARTMENT OFFICE



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Liberty Township, Ohio 45044

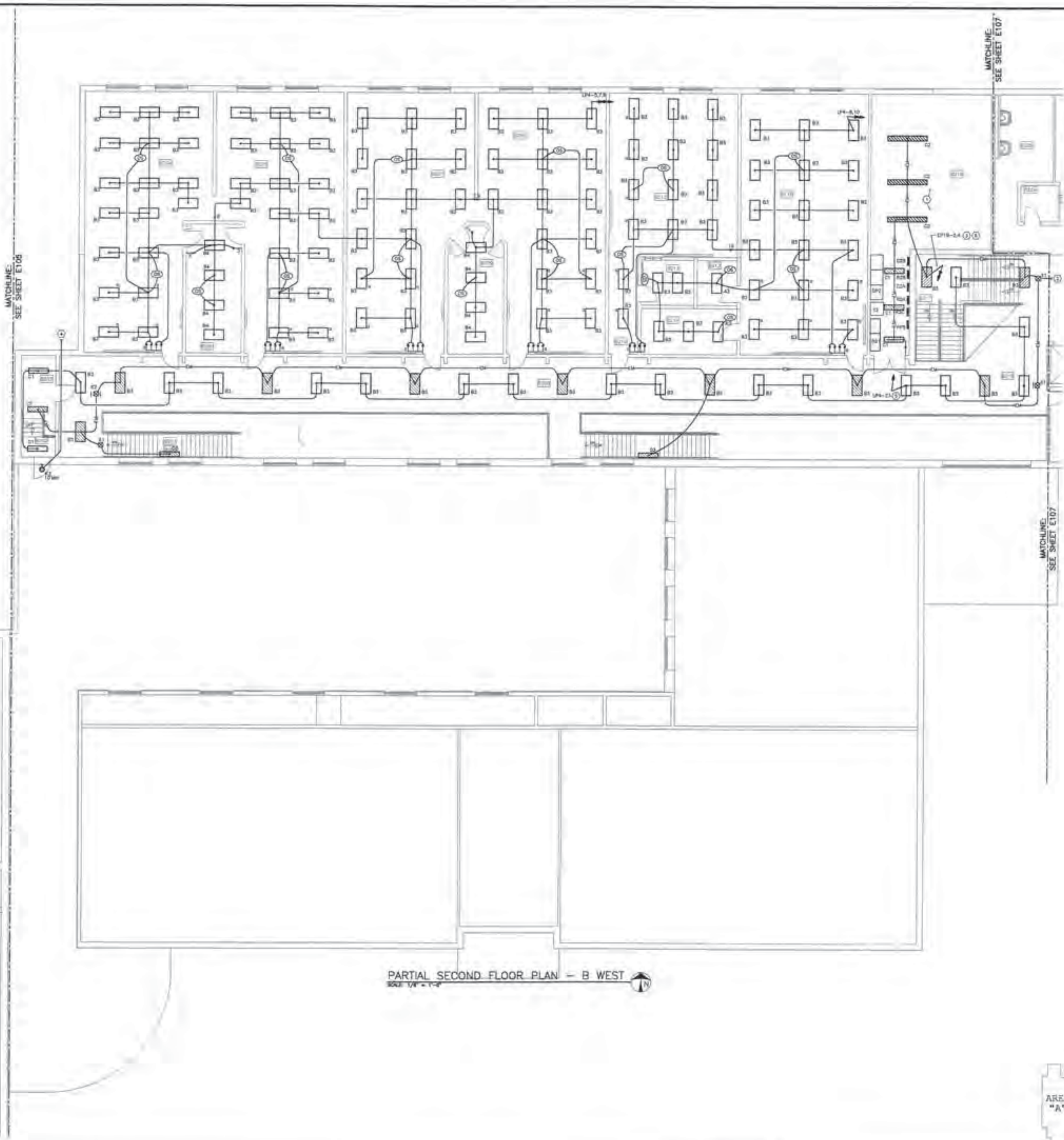
Lakota Local Schools, 5572 Princeton Road, Liberty Township, Ohio 45044-9726, (513) 854-1500

PARTIAL SECOND FLOOR LIGHTING PLAN - B EAST

DATE: DECEMBER 2009

COMM. NO.: 200909.00

E107



PARTIAL SECOND FLOOR PLAN – B WEST
SCALE: 1/8" = 1'-0"

NOTES

1. COORDINATE INSTALLATION LOCATION OF LUMINAIRES IN THIS AREA WITH OTHER TRADES. MOUNT TO BOTTOM OF DUCTWORK WHERE NECESSARY, MAINTAINING 7'6" MIN. CLEARANCE THROUGH-OUT. PROVIDE ALL FITTINGS AND MOUNTING HARDWARE FOR A COMPLETE INSTALLATION. WIRE ALL LIGHTING IN THIS SPACE, AREAS OF LIGHTING CONTACTOR "LC4", FOR INDEPENDENT SWITCHING AS SHOWN.
2. REFER TO SHEET E107, FOR CONTINUATION OF EMERGENCY CIRCUITRY.
3. WIRE ALL EXIT LIGHTS IN THIS AREA ON COMMON CIRCUIT (EP1B-4). RUN ALL EMERGENCY AND EXIT LIGHTING CIRCUITS WITH 2-#10, 1-#10 GND. IN COMMON 1"C. THROUGH OUT.
4. REFER TO SHEET E103, FOR CONTINUATION OF EMERGENCY EXTERIOR LIGHTING BRANCH CIRCUITRY.
5. EXTEND CIRCUITRY THROUGH LIGHTING CONTACTOR, PER DETAILS ON SHEET E004.

ROOM NAMES & NO'S

B200	CORRIDOR
B201	STAIR
B202	STAIR
B203	MECHANICAL ACCESS
B204	SCIENCE LAB
B205	SCIENCE LAB
B206	SCIENCE PREP
B207	SCIENCE LAB
B208	SCIENCE LAB
B209	SCIENCE PREP
B210	CORRIDOR
B211	OFFICE
B212	LAUNDRY
B213	CONNECTIONS LAB
B214	STORAGE
B215	WORK / FAMILY LAB
B216	MECHANICAL / ELECTRICAL
B217	STAIR
B218	LOBBY

AREA "A"
AREA "B"
KEY PLAN NTS
NORTH

STATE OF OHIO — ROBERT L. PAVLAK 47302 — REGISTERED PROFESSIONAL ENGINEER

HEAPY ENGINEERING

STATE OF OHIO REGISTERED ARCHITECTS

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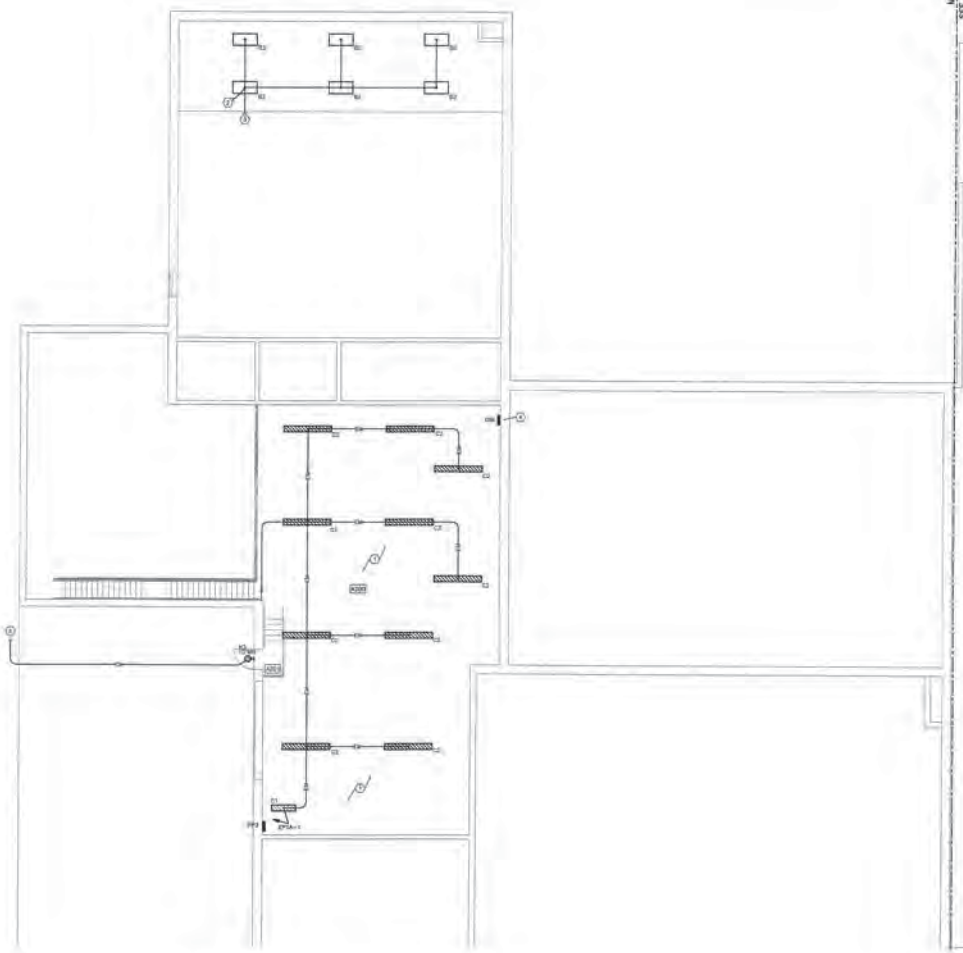
Lakota Local Schools, 5572 Princeton Road, Liberty Township, Ohio 45044-9726, (513) 874-5505

PARTIAL SECOND FLOOR LIGHTING PLAN - B WEST

DATE [illegible]

COMM. NO. [illegible]

E106



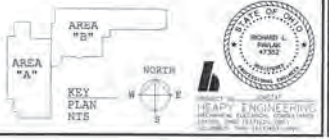
PARTIAL SECOND FLOOR PLAN – A NORTH

NOTES

1. COORDINATE INSTALLATION LOCATION OF LUMINAIRES IN THIS AREA WITH CEILING TRADES. ATTACH TO BOTTOM OF ELECTRICAL WHERE NECESSARY, MAINTAINING 7'6" MIN. CLEARANCE THROUGH-OUT. PROVIDE ALL FITTINGS AND MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.
2. TO SINGLE THLZ SWITCH ON SHEET E102.
3. TO LIGHTING FIXTURE IN ROOM 4155. REFER TO SHEET E103
4. DIMMING PANEL PER SPEC. SECTION 26 09 23. UNDER BASE BID, PANEL TO SERVE THEATRICAL AND HOUSE LIGHTING ON STAGE AND CATWALK AS SHOWN ON SHEET E103. UNDER ALTERNATE E-2, PANEL TO SERVE THEATRICAL AND HOUSE LIGHTING ON STAGE AND AUDITORIUM AS SHOWN ON SHEET E106.
5. REFER TO SHEET, E102 FOR CONTINUATION OF EMERGENCY EXTERIOR LIGHTING BRANCH CIRCUITRY.

ROOM NAMES & NO'S

4202	MEZZANINE
4251	STAGE



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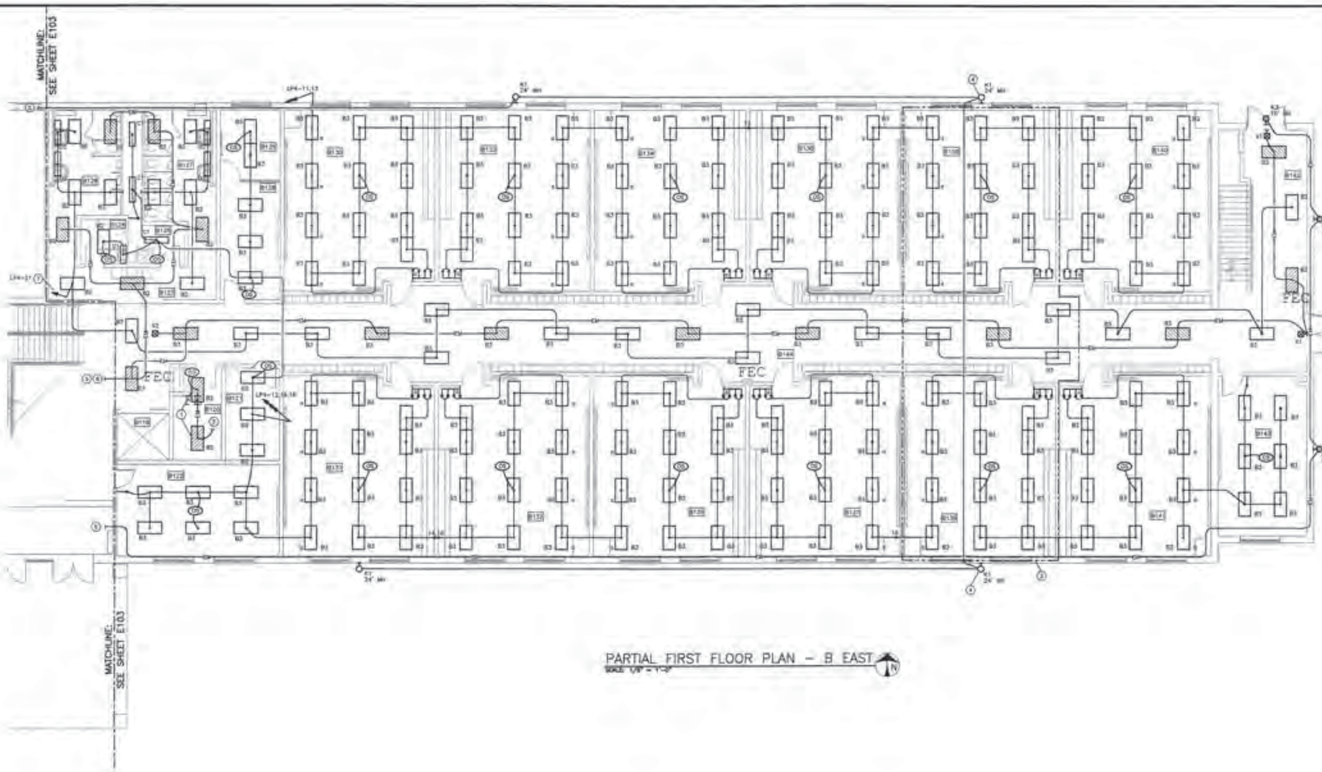
PARTIAL SECOND FLOOR LIGHTING PLAN - A NORTH

DATE

COMM. NO.

E105



PARTIAL FIRST FLOOR PLAN – B EAST

○ NOTES

1. PROVIDE LIGHTING FIXTURE WITH 120V BALLAST IN LIEU OF 277V.
2. REFER TO SHEET E004 FOR CONTINUATION OF BRANCH CIRCUIT.
3. PROVIDE ALL ELECTRICAL WORK SHOWN ONLY IF ALTERNATE E-1 IS ACCEPTED.
4. PROVIDE LIGHTING FIXTURE AS SHOWN UNDER ALTERNATE E-1. UNDER BASE BID, PROVIDE FIXTURES BETWEEN WINDOWS OF ROOMS 140 AND 141.
5. REFER TO SHEET E103 FOR CONTINUATION OF BRANCH CIRCUIT.
6. WIRE ALL EXIT LIGHT IN THIS AREA IN COMMON CIRCUIT (EP1B-2). RUN ALL EMERGENCY AND EXIT LIGHTING CIRCUITS WITH 2-#10, 1-#10 GRD IN COMMON 1"C. THROUGH OUT.
7. EXTEND CIRCUITRY THROUGH LIGHTING CONTACTOR, PER DETAILS ON SHEET E004.

ROOM NAMES & NO'S

B119	ELEVATOR
B120	ELEVATOR MECH.
B121	SE OFFICE
B122	DEPARTMENT OFFICE
B123	WC ALCOVE
B124	TOILET
B125	CUSTODIAL
B126	MENS TOILET ROOM
B127	WOMENS TOILET ROOM
B128	SPEECH LAB
B129	SPEECH PSYCH LAB
B130	CLASSROOM
B131	CLASSROOM
B132	CLASSROOM
B133	CLASSROOM
B134	CLASSROOM
B135	CLASSROOM
B136	CLASSROOM
B137	CLASSROOM
B138	CLASSROOM
B139	CLASSROOM
B140	CLASSROOM
B141	CLASSROOM
B142	STAIR
B143	DEPARTMENT OFFICE
B144	CORRIDOR

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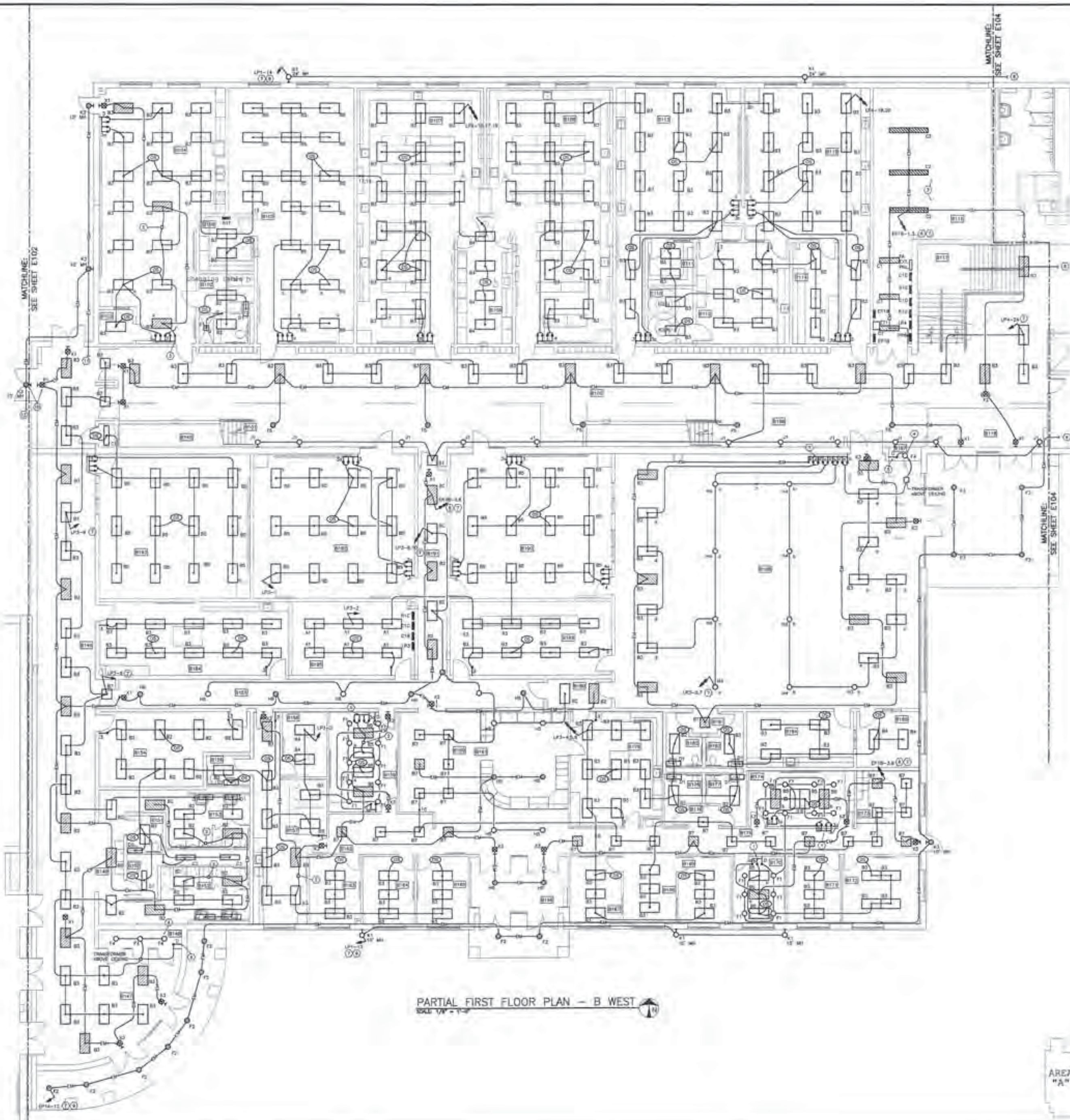
PARTIAL FIRST FLOOR LIGHTING PLAN - B EAST

E104



PARTIAL FIRST FLOOR PLAN – B WEST

NOTES

ROOM NAMES & NO'S

KEY PLAN NTS

AREA "A"

AREA "B"

NORTH

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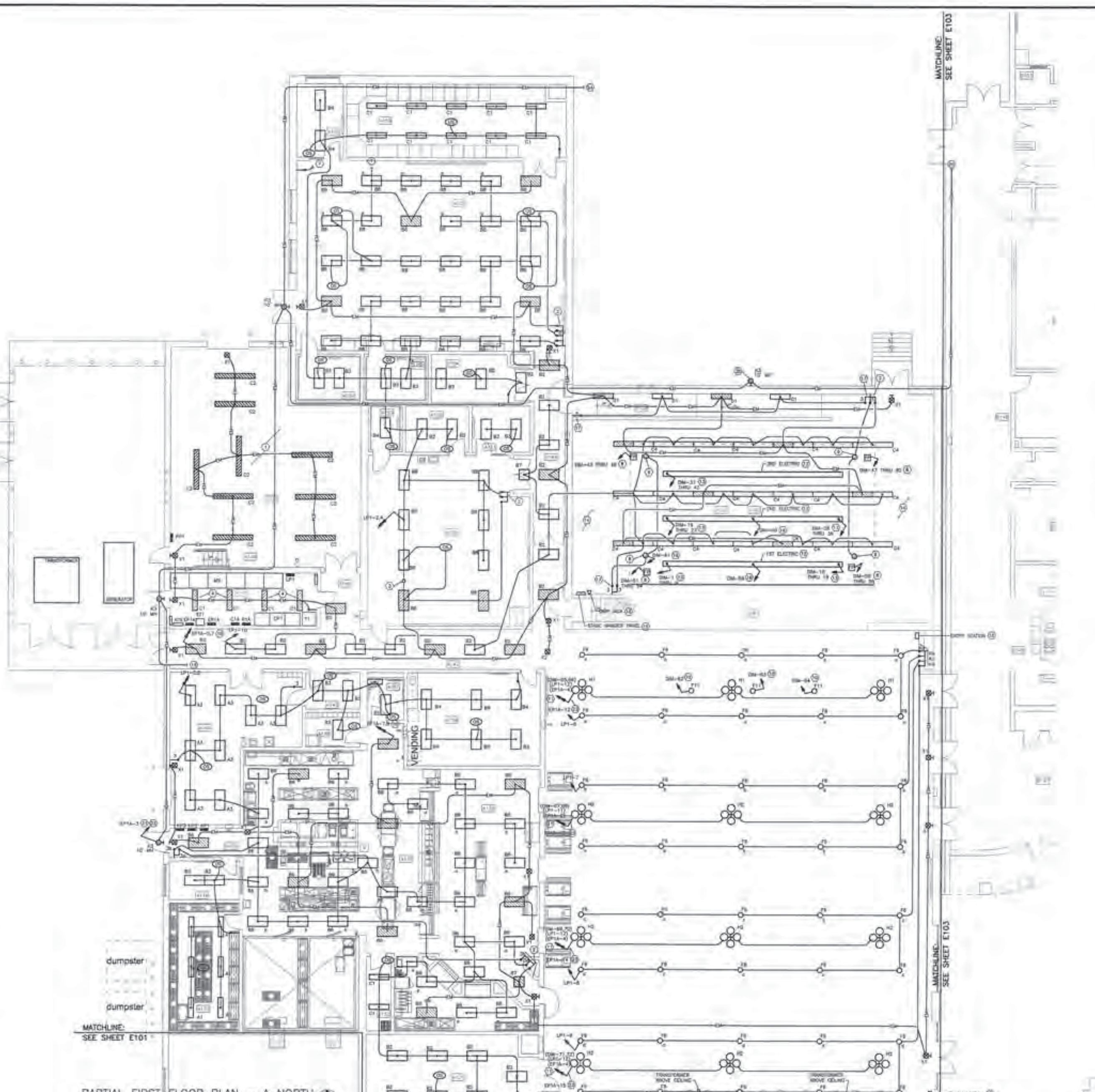
PARTIAL FIRST FLOOR LIGHTING PLAN - B WEST

DATE

COMM. NO.

E103



PARTIAL FIRST FLOOR PLAN – A NORTH

NOTES

1. COORDINATE INSTALLATION LOCATION OF LUMINAIRES IN THIS AREA WITH OTHER TRADES. MOUNT TO BOTTOM OF DUCTWORK WHERE NECESSARY. PROVIDE ALL FITTINGS AND MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.
2. PROVIDE DIVIDER PLATE IN SWITCH ENCLOSURE TO SEPARATE NORMAL AND EMERGENCY BRANCH CIRCUIT.
3. PROVIDE LIGHTING CONTACTOR FOR CONTROL OF EMERGENCY LIGHTING UPON LOSS OF NORMAL POWER. PER DETAIL F, SHEET E003.
4. PROVIDE FIXTURE WITH EMERGENCY BATTERY BALLAST AS MANUFACTURED BY BODINE OR APPROVED EQUAL.
5. REFER TO SHEET A501, FOR EXACT LOCATION OF DOWNLIGHTS.

ROOM NAMES & NO'S

AREA "A"
AREA "B"
KEY PLAN NTS
NORTH

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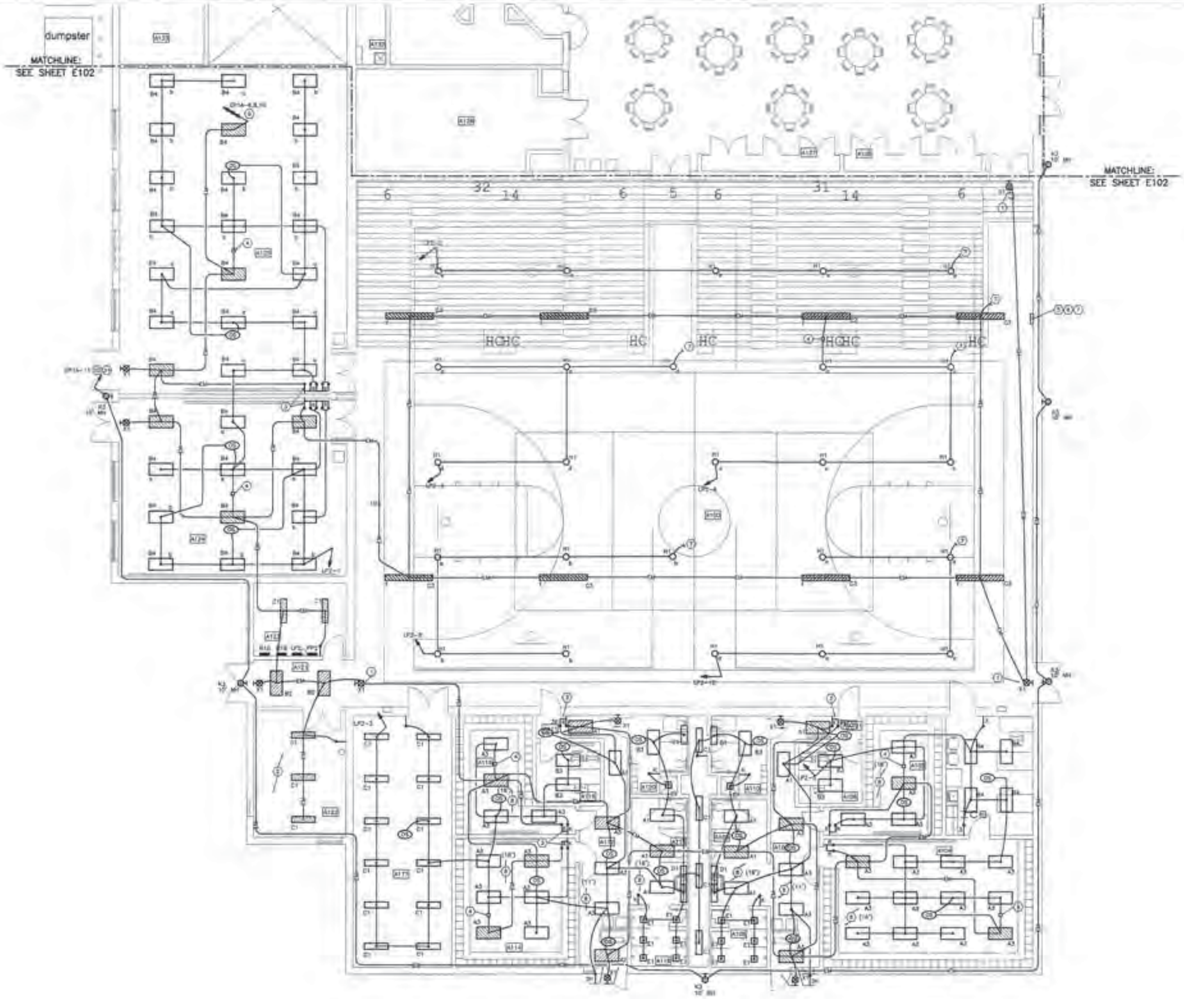
Liberty Township, Ohio 45044

PARTIAL FIRST FLOOR LIGHTING PLAN - A NORTH

DATE
COMM. NO.

E102



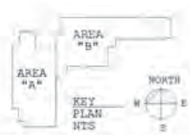
PARTIAL FIRST FLOOR PLAN – A SOUTH

○ NOTES

1. PROVIDE DEVICE WITH APPROPRIATE WIRE GUARD.
2. COORDINATE INSTALLATION AND LOCATION OF LUMINAIRES IN THIS AREA WITH OTHER TRADES. MOUNT TO BOTTOM OF DUCTWORK WHERE NECESSARY, MAINTAINING 7'-6" MIN. CLEARANCE THROUGH-OUT. PROVIDE ALL FITTINGS AND MOUNTING HARDWARE FOR A COMPLETE INSTALLATION.
3. PROVIDE DIVIDER PLATE IN SWITCH ENCLOSURE TO SEPARATE NORMAL AND EMERGENCY BRANCH CIRCUIT.
4. PROVIDE LIGHTING CONTACTOR FOR CONTROL OF EMERGENCY LIGHTING UPON LOSS OF NORMAL POWER. PER DETAIL 7, SHEET E003.
5. PROVIDE FLUSH MOUNTED LOCKABLE ENCLOSURE WITH HINGED COVER AND MOUNT AT 54" A.F.F. KEYED TO MATCH GYM DOORS LOCKS. INSTALL ONE (1) SINGLE POLE SWITCH (SWITCH Y) IN ENCLOSURE FOR CONTROL OF EMERGENCY LIGHTING CIRCUITS AS INDICATED. PROVIDE BANK OF 5 SINGLE POLE SWITCHES FOR CONTROL OF NORMAL LIGHTING CIRCUITS AS INDICATED. PROVIDE ALL SWITCHES WITH ENGRAVED COVERPLATE. PROVIDE 11X17 ENGRAVED PLATE ON INSIDE DOOR WITH PLAN INDICATING SWITCHING ARRANGEMENTS AND IDENTIFYING RESPECTIVE SWITCHES FOR EACH BANK OF LIGHTING. SUBMIT SCALED DRAWINGS OF ENGRAVED PLATE AND COVERPLATE WITH SHOP APPROVAL BY THE ENGINEER.
6. PROVIDE BANK OF 6 SWITCHES INSIDE ENCLOSURE FOR CONTROL/OPERATION OF MOTORIZED BACKBOARDS, POWERED BY CURTAIN AND MOTORIZED BLEACHERS PER NOTE 4, SHEET E201. PROVIDE ENGRAVED COVERPLATE TO IDENTIFY RESPECTIVE BACKBOARD AND ASSOCIATED EQUIPMENT. ENCLOSURE SHALL BE SIZED TO BE ACCOMMODATE ALL CONTROLS.
7. RUN SWITCH LEG TO LIGHTING CONTROLS LOCATED IN ENCLOSURE PER NOTE 5, THIS SHEET.
8. CHAIN MOUNT LIGHTING FIXTURES IN THIS SPACE, AT MOUNTING HEIGHT INDICATED IN BRACKET.
9. WIRE ALL EXIT LIGHTS ON COMMON CIRCUIT (EP14-8). RUN ALL EMERGENCY LIGHTING CIRCUITS WITH 2-#10, 1-#10 GRD. IN 1"C. THROUGHOUT. CHANGE CIRCUIT TO EP14-8 FOR EXIT.
10. EXTEND CIRCUITRY THROUGH LIGHTING CONTACTOR, PER DETAILS ON SHEET E004.
11. RUN CIRCUITRY WITH 2-#10, 1-#10 GRD IN 3/4"C.

ROOM NAMES & NO'S

A100	GYMNASIUM
A101	CORRIDOR
A102	CORRIDOR
A103	ALCOVE
A104	MEN'S VARSITY LOCKER ROOM
A105	MEN'S P.E. LOCKER ROOM
A106	OFFICE
A107	TRAINING
A108	MEN'S SHOWER
A109	MEN'S TOILET ROOM
A110	MEN'S STAFF LOCKER ROOM
A111	CORRIDOR
A112	CORRIDOR
A113	ALCOVE
A114	WOMEN'S VARSITY LOCKER ROOM
A115	WOMEN'S P.E. LOCKER ROOM
A116	OFFICE
A117	P.E. STORAGE
A118	WOMEN'S SHOWER
A119	WOMEN'S TOILET ROOM
A120	WOMEN'S STAFF LOCKER ROOM
A121	CORRIDOR
A122	MECHANICAL
A123	STORAGE
A124	WEIGHT TRAINING
A125	MULTI-PURPOSE P.E. FITNESS



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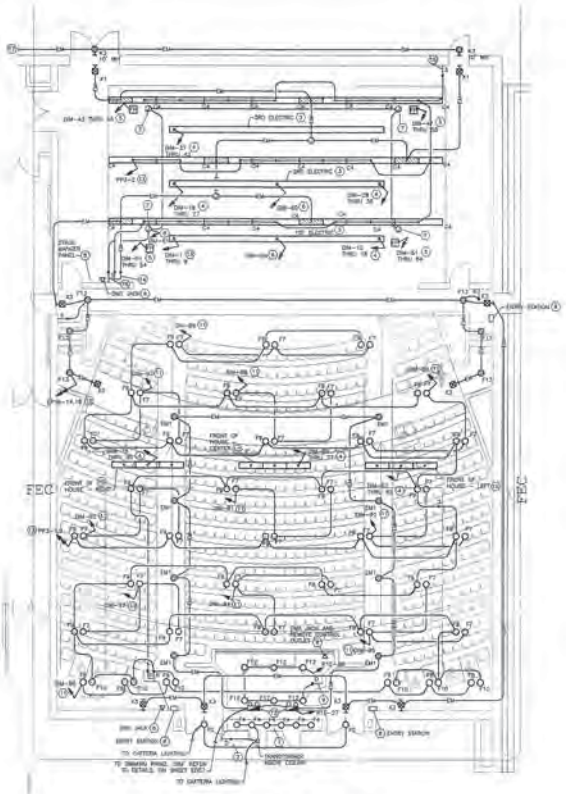
PARTIAL FIRST FLOOR LIGHTING PLAN - A SOUTH

DATE
COMM. NO.

E101



ALTERNATE E2 FLOOR PLAN

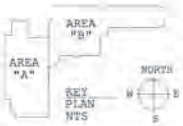
SCALE: 1/8" = 1'-0"

NOTE: ALL WORK SHOWN ON THIS SHEET SHALL BE CREDITED ONLY IF ALTERNATE E-1 IS ACCEPTED

NOTES

1. REFER TO SHEET A0S1, FOR EXACT LOCATION OF STRAIGHTS.
2. PROVIDE MAGNETIC/LOW VOLTAGE WALL BOX DIMMER (LUTRON # MLV-600 OR APPROVED EQUAL BY LEVITON OR LIGHTOLIER) FOR CONTROL OF DOWN LIGHTS.
3. PROVIDE 28 FEET LONG WIREWAY PLUGGING STRIP WITH 1.5" DIA. PIP STICH MOUNT AND SUPPORT DIRECTLY TO STRUCTURAL FRAMING. VERIFY EXACT MOUNTING HEIGHT/LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. PROVIDE ALL SUPPORTS, FITTINGS AND OTHER LABOR AND MATERIAL FOR A COMPLETE AND OPERATIONAL INSTALLATION. PROVIDE EACH 28 FEET LONG WIREWAY WITH SUNSET OF DIMMED LIGHTING CIRCUITS AS INDICATED. PROVIDE ALL WIRING AND CONNECTIONS TO RESPECTIVE CIRCUIT. REFER TO SPECIFICATION SECTION 26 09 93.
4. PROVIDE DIMMED LIGHTING CIRCUITS, EACH CONSISTING OF 3-#8, 1-#8 GRD., IN COMMON CONDUIT, FROM PULLBOX LOCATED AT END OF PLUGSTRIP TERM TO DIMMING PANEL. TAG, LABEL, AND IDENTIFY EACH CIRCUIT IN PULLBOX.
5. PROVIDE FOUR LIGHTING CIRCUITS: THREE DIMMED AND ONE NON-DIMMED, CONSISTING OF 6-#8, 1-#8 GRD., IN 1.5"C. TO DIMMING PANEL. TAG-LABEL AND IDENTIFY EACH CIRCUIT IN PULLBOX.
6. RUN NON-DIMMED WORKLIGHT CIRCUIT CONSISTING OF 3-#12, 1-#10 GRD. IN 0.75"C. FROM PULLBOX LOCATED AT END OF PLUGSTRIP ITEM TO DIMMING PANEL. TAG, LABEL, AND IDENTIFY EACH CIRCUIT IN PULLBOX.

   PROVIDE OUTLET BOX AND INSTALL INDUSTRIAL REFLECTOR WORKLIGHTS AS SPECIFIED IN SPEC. SECTION 26 56 01. PROVIDE SWITCHING AND BRANCH CIRCUITRY AS INDICATED.
8. AUDITORIUM DIMMING SYSTEM EQUIPMENT: REFER TO DETAIL 3, SHEET E207
9. PROVIDE 1000W INCANDESCENT WALL BOX DIMMER, LUTRON #IV-1000-IC OR APPROVED EQUAL BY LEVITON OR LIGHTOLIER.
10. PROVIDE 10'FT LONG WIREWAY PLUGGING STRIP WITH 1.5 DIA. PIPE AT 21" A.F.F. WITH MOUNTED AND SUPPORTED DIRECTLY TO STRUCTURAL FRAMING. VERIFY EXACT MOUNTING HEIGHT/LOCATION WITH ARCHITECT PRIOR TO ROUGH-IN. PROVIDE ALL SUPPORTS, FITTINGS AND OTHER LABOR AND MATERIALS FOR A COMPLETE AND OPERATIONAL INSTALLATION. PROVIDE LABEL ON FACE OF STRIP BELOW EACH RECEPTACLE TO IDENTIFY RESPECTIVE CIRCUIT. REFER TO SPEC. SECTION 26 05 93 AND DETAIL 3, SHEET E003.
11. HOUSE DIMMED LIGHTING CIRCUIT WITH EACH CIRCUIT WITH 2-#12, 1-#12 GRD., #3 1"C. BACK DIMMING PANEL.
12. PROVIDE 200 WATT-12 VOLT EMERGENCY BATTERY PACK (LIGHTGUARD #CA12120 WITH #MB80 MOUNTING BRACKET AND ALL REQUIRED LABOR AND MATERIALS FOR A COMPLETE AND OPERATIONAL INSTALLATION. PROVIDE IN ROOM #107. LOCATION OF BATTERY IS APPROXIMATE. COORDINATE EXACT LOCATION WITH ARCHITECT AND OTHER TRADES. PROVIDE CONNECTION TO EMERGENCY LIGHTING SYSTEM AS DETAILED IN DIMMING SYSTEM RISER DIAGRAM DETAIL 4, THIS SHEET AND SPEC. SECTION 26 09 91. TO PROVIDE MONITORING OF UNSWITCHED LOCAL LIGHTING CIRCUIT CONSISTENT CIRCUIT BREAKER MODULES. BATTERY PACK IS TO POWER THE REMOTE HEADS AS INDICATED ON PLAN. WHERE BATTERY PACK IS MOUNTED ABOVE CEILING, PROVIDE WITH REMOTE TEST/STATUS INDICATOR MOUNTED IN CEILING NEAR EXIT FOR LOCK CONTROL BELOW CEILING.
13. EXTEND SECURITY THROUGH LIGHTING CONTACTOR PER DETAIL ON SHEET E003.
14. PROVIDE ORDER PLACE IN SWITCH ENCLOSURE TO SEPARATE NORMAL AND EMERGENCY BRANCH CIRCUIT
15. PROVIDE SWITCH, BLACK IN FINISH, WITH MATCHING COVERPLATE.
16. WIRE ALL EXIT SIGNS IN THIS AREA IN COMMON CIRCUIT (CP13-16), RUN ALL EMERGENCY LIGHTING CIRCUIT WITH 3-#10, 1-#10 GRD., IN 1"C., THROUGHOUT.
17. REFER TO SHEET E103 FOR CONTINUATION OF DIMMING CIRCUITRY.



STATE OF OHIO — RICHARD L. PAVLAK 47302 — REGISTERED ARCHITECT

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PARTIAL FIRST FLOOR LIGHTING PLAN - ALTERNATE 2

DATE: DELIVERY ISSUE

COMM. NO: 2009604

E108

HF&F ENGINEERING

1 AREA 'C' FIRST FLOOR PLAN
E103 1/8" = 1'-0"

NOTES:

1. MASTER STAGE LIGHTING CONTROL. SEE DETAIL 1E/10 THIS SHEET. WIRE TO CAFE & GYM LIGHTING CONTACTORS.

2. OUTLET FOR DIMMER CONTROL. 3/4" CONDUIT TO DIMMER PANEL IN ELECTRIC ROOM 175. BELDON 9929 CABLE. 5 PIN MALE XLR OUTLET.

3. SQUARE D 8903 LXAC OPEN 30 AMP LIGHTING CONTACTORS. PROVIDE NUMBER OF POLES AS REQUIRED. FIELD CONVERTIBLE CONTACTS NO/NC. MOUNT IN A SQUARE D PANELBOARD ENCLOSURE TO MATCH ELECTRICAL PANELBOARDS. NUMBER AND LABEL ALL WIRES WITHIN THIS PANEL. LAMINATE A COPY OF THE WIRING SCHEMATIC (DETAIL 2/E100) AND MOUNT INSIDE OF PANELBOARD COVER.

LC-1: 4-POLE MAIN CAFE
LC-2: 4-POLE SIDE CAFE LIGHTS
LC-3: 8-POLE GYM LIGHTS

4. EMERGENCY LIGHTING RELAY. WIRE NORMAL CIRCUIT THROUGH LOCAL SWITCHING. EMERGENCY CIRCUIT TO BRING ON LIGHTS UPON FAILURE OF NORMAL CIRCUIT.

5. THROUGH LIGHTING CONTACTOR LC-1

6. THROUGH LIGHTING CONTACTOR LC-2

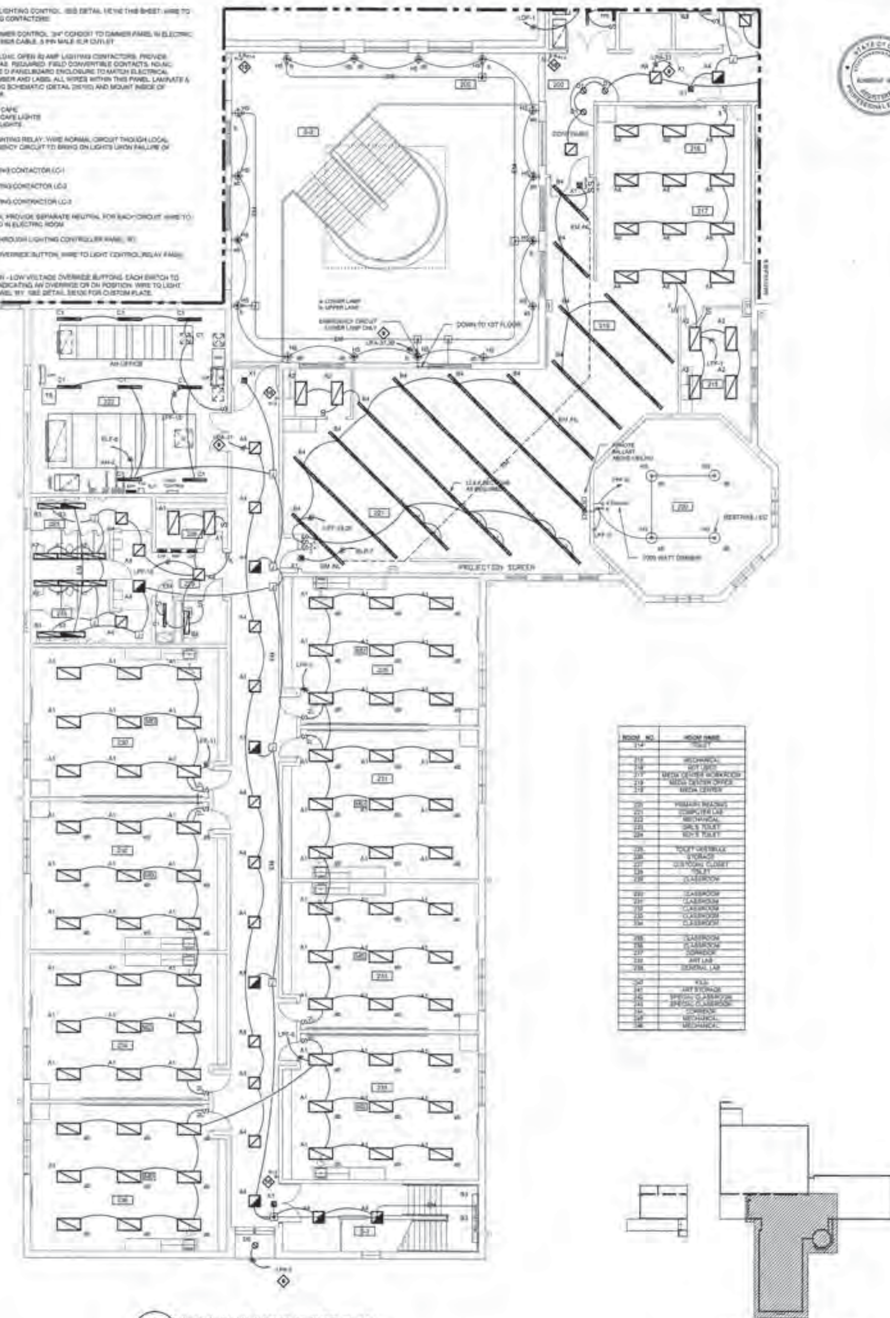
7. THROUGH LIGHTING CONTRACTOR LC-3

8. 3 CIRCUIT TRACK. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT. WIRE TO DIM PANEL LOCATED IN ELECTRIC ROOM.

9. RUN CIRCUITS THROUGH LIGHTING CONTROLLER PANEL 'R1'.

10. LOW VOLTAGE OVERRIDE BUTTON. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'.

11. MASTER STATION - LOW VOLTAGE OVERRIDE BUTTONS. EACH SWITCH TO HAVE PILOT LIGHT INDICATING AN OVERRIDE OR ON POSITION. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'. SEE DETAIL 3/E100 FOR CUSTOM PLATE.



2 AREA 'C' SECOND FLOOR PLAN
E103 1/8" = 1'-0"

AREA "C" KEY PLAN

STATE OF OHIO REGISTERED ARCHITECTS

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LESOURDSVILLE WEST CHESTER ELEMENTARY

Lesourdsville West Chester Road

Lakota Local School District

5572 Princeton Road Liberty Township, Ohio 45011

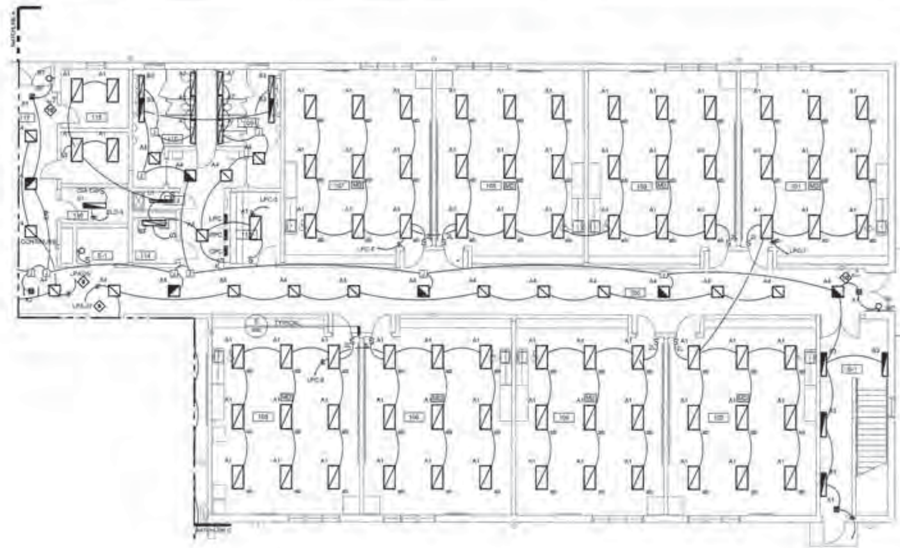
AREA 'C' 1ST & 2ND FLOOR ELECTRIC LIGHTING PLAN

Construction Documents

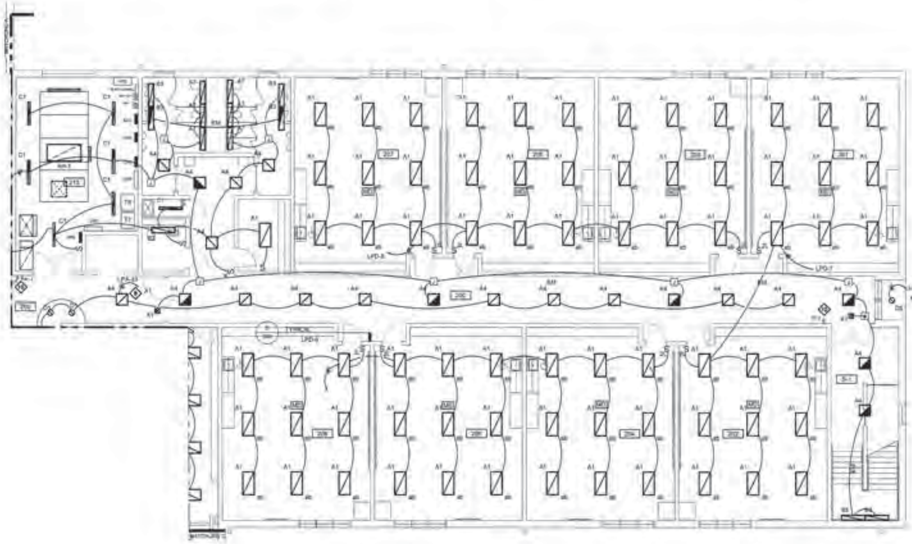
DATE MARCH, 2007

COMM NO. 2005008.06

E103



1 AREA 'B' FIRST FLOOR PLAN
E102 1/8" = 1'-0"



2 AREA 'B' SECOND FLOOR PLAN
E102 1/8" = 1'-0"

ROOM NO.	ROOM NAME
100	CORRIDOR
101	CLASSROOM
102	CLASSROOM
103	CLASSROOM
104	CLASSROOM
105	CLASSROOM
106	CLASSROOM
107	CLASSROOM
108	CLASSROOM
109	GIRL'S TOILET
110	BOY'S TOILET
111	TOILET VESTIBULE
112	STORAGE
113	CUSTODIAL CLOSET
114	FACULTY TOILET
115	PSYCH OFFICE
116	ELEVATOR EQUIP
117	CORRIDOR
118	GUIDANCE OFFICE
119	CONFERENCE ROOM
120	FILES/VAULT
121	PRINCIPAL'S OFFICE

NOTES:

1. MASTER STAGE LIGHTING CONTROL. SEE DETAIL 1/E-101 THIS SHEET. WIRE TO CAFE & GYM LIGHTING CONTACTORS.

2. OUTLET FOR DIMMER CONTROL. 3/4" CONDUIT TO DIMMER PANEL IN ELECTRIC ROOM 175. BELDEN 9825 CABLE. 5 PIN MALE XLR OUTLET.

3. SQUARE D 8903 LOAD. OPEN 30 AMP LIGHTING CONTACTORS. PROVIDE NUMBER OF POLES AS REQUIRED. FIELD CONVERTIBLE CONTACTS. NO-NC. MOUNT IN A SQUARE D PANELBOARD ENCLOSURE TO MATCH ELECTRICAL PANELBOARDS. NUMBER AND LABEL ALL WIRES WITHIN THIS PANEL. LAMINATE A COPY OF THE WIRING SCHEMATIC (DETAIL 2/E150) AND MOUNT INSIDE OF PANELBOARD COVER.

LC-1: 8-POLE MAIN CAFE
LC-2: 4-POLE BRR CAFE LIGHTS
LC-3: 6-POLE GYM LIGHTS

4. EMERGENCY LIGHTING RELAY. WIRE NORMAL CIRCUIT THROUGH LOCAL SWITCHING. EMERGENCY CIRCUIT TO BRING ON LIGHTS UPON FAILURE OF NORMAL CIRCUIT.

5. THROUGH LIGHTING CONTACTOR LC-1

6. THROUGH LIGHTING CONTACTOR LC-2

7. THROUGH LIGHTING CONTRACTOR LC-3

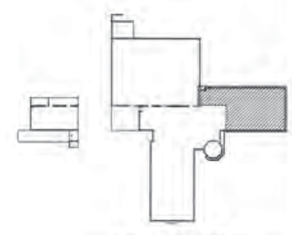
8. 2-CIRCUIT TRACK. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT. WIRE TO DM PANEL LOCATED IN ELECTRIC ROOM.

9. RUN CIRCUITS THROUGH LIGHTING CONTROLLER PANEL 'R1'.

10. LOW VOLTAGE OVERRIDE BUTTON. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'.

11. MASTER STATION - LOW VOLTAGE OVERRIDE BUTTONS. EACH SWITCH TO HAVE PILOT LIGHT INDICATING AN OVERRIDE OR ON POSITION. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'. SEE DETAIL 3/E150 FOR CUSTOM PLATE.

ROOM NO.	ROOM NAME
200	CORRIDOR
201	CLASSROOM
202	CLASSROOM
203	CLASSROOM
204	CLASSROOM
205	CLASSROOM
206	CLASSROOM
207	CLASSROOM
208	CLASSROOM
209	GIRL'S TOILET
210	BOY'S TOILET
211	TOILET VESTIBULE
212	STORAGE
213	CUSTODIAL CLOSET
214	TOILET
215	MECHANICAL
216	NOT USED
217	MEDIA CENTER WORKROOM



AREA "B" KEY PLAN

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1014 Vine Street, Suite 2100 • Cincinnati, Ohio 45202 513.381.2112
4011 Broadway • Grove City, Ohio 43123 614.277.9822

LESOURDSVILLE WEST CHESTER ELEMENTARY
Lesourdsville West Chester Road

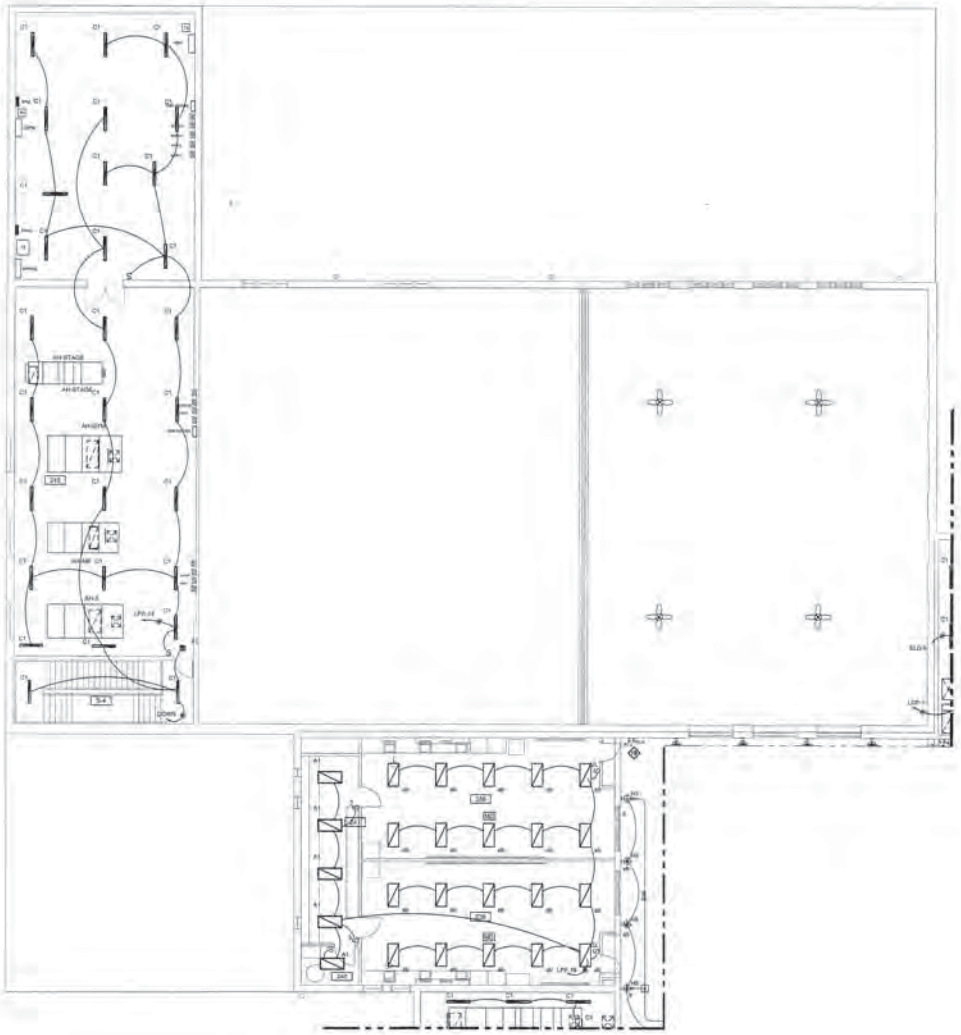
Lakota Local School District
5572 Princeton Road Liberty Township, Ohio 45011

AREA 'B' 1ST & 2ND FLOOR ELECTRIC LIGHTING PLAN

Construction Documents

DATE MARCH, 2007
COMM NO. 2005008.06

E102



NOTES

1. MASTER STAGE LIGHTING CONTROL. SEE DETAIL 1/E100 THIS SHEET. WIRE TO CAFE & GYM LIGHTING CONTACTORS.

2. OUTLET FOR DIMMER CONTROL. 3/4" CONDUIT TO DIMMER PANEL IN ELECTRIC ROOM 175. BELDON 8723 CABLE. 3 PIN MALE XLR OUTLET.

3. SQUARE D 6953 LOAD OPEN (X) AMP LIGHTING CONTACTORS. PROVIDE NUMBER OF POLES AS REQUIRED. FIELD CONVERTIBLE CONTACTS. NO HC. MOUNT IN A SQUARE D PANELBOARD ENCLOSURE TO MATCH ELECTRICAL PANELBOARDS. NUMBER AND LABEL ALL WIRES WITHIN THIS PANEL. LAMINATE A COPY OF THIS WIRING SCHEMATIC (DETAIL 3/E100) AND MOUNT INSIDE OF PANELBOARD COVER.

LC-1: 4-POLE MAIN CAFE
LC-2: 4-POLE WIDE-CAFE LIGHTS
LC-3: 6-POLE GYM LIGHTS

4. EMERGENCY LIGHTING RELAY. WIRE NORMAL CIRCUIT THROUGH LOCAL SWITCHING. EMERGENCY CIRCUIT TO BRING ON LIGHTS UPON FAILURE OF NORMAL CIRCUIT.

5. THROUGH LIGHTING CONTACTOR LC-1.

6. THROUGH LIGHTING CONTACTOR LC-2.

7. THROUGH LIGHTING CONTACTOR LC-3.

8. 2-CIRCUIT TRACK. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT. WIRE TO DIM PANEL LOCATED IN ELECTRIC ROOM.

9. RUN CIRCUITS THROUGH LIGHTING CONTROLLER PANEL 'P1'.

10. LOW VOLTAGE OVERRIDE BUTTON. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'.

11. MASTER STATION / LOW VOLTAGE OVERRIDE SWITCHES. EACH SWITCH TO HAVE PILOT LIGHT INDICATING AN OVERRIDE OR ON POSITION. WIRE TO LIGHT CONTROL RELAY PANEL 'P1'. SEE DETAIL 3/E100 FOR CUSTOM PLATE.

ROOM NO.	ROOM NAME
220	PRIMARY RESOURCE
221	COMPUTER LAB
222	MECHANICAL
223	GIRL'S TOILET
224	BOY'S TOILET
225	
226	ART LAB
230	GENERAL LAB
240	
242	KILN
243	ART STORAGE
244	SPECIAL CLASSROOM
245	SPECIAL CLASSROOM

1 / E101 AREA 'A' SECOND FLOOR PLAN
1/8" = 1'-0"

ALT-1

AREA "A" KEY PLAN

STATE OF OHIO
REGISTERED ARCHITECTS

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LESOURDSVILLE WEST CHESTER ELEMENTARY

Lesourdsville West Chester Road

Lakota Local School District
5572 Princeton Road Liberty Township, Ohio 45011

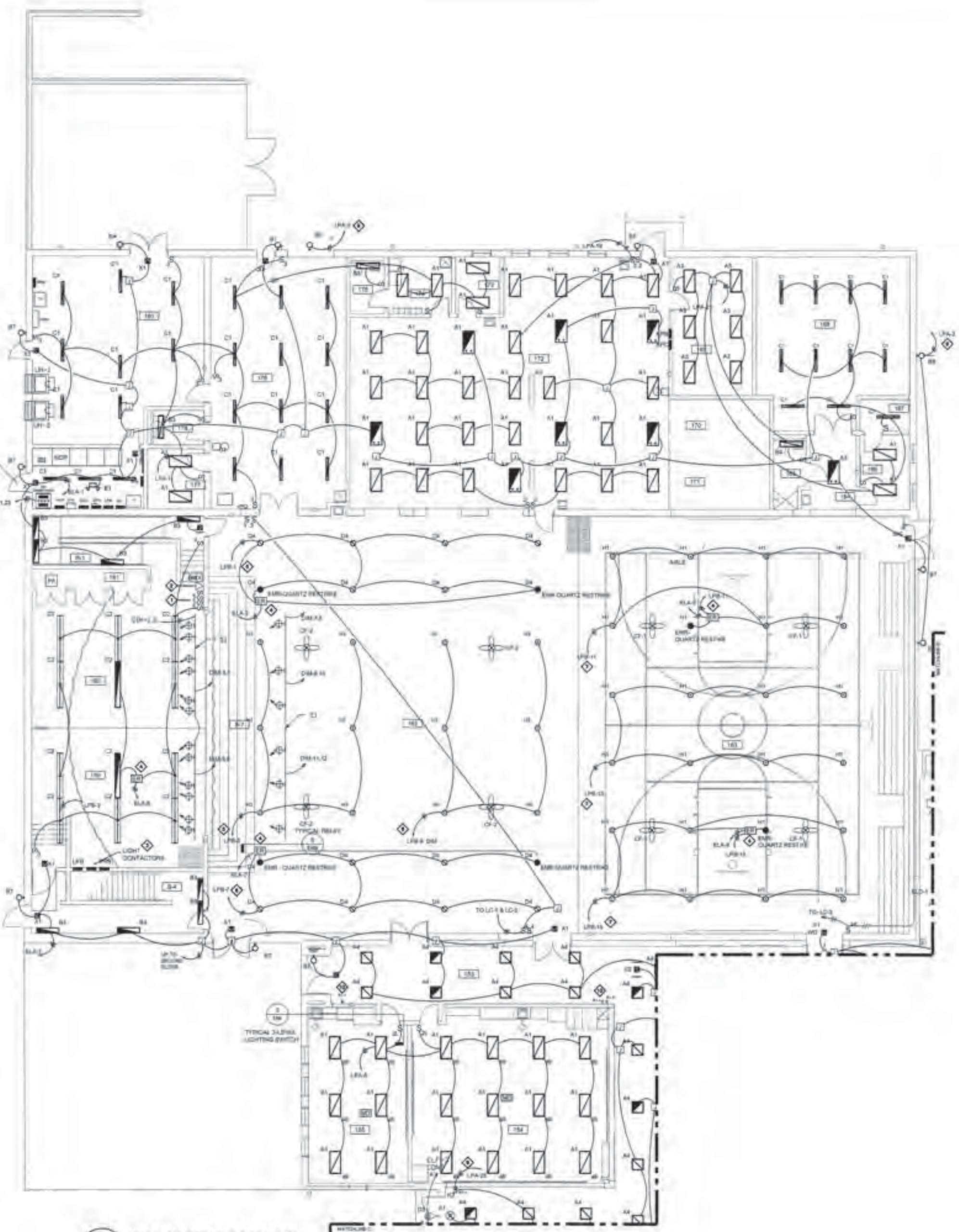
AREA 'A' 2ND FLOOR ELECTRIC LIGHTING PLAN

Construction Documents

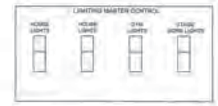
DATE MARCH, 2007

COMM NO. 2005008.06

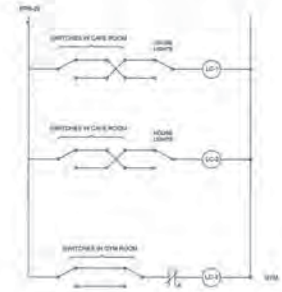
E101



1 AREA 'A' FIRST FLOOR PLAN
E100 1/8" = 1'-0"



2 LIGHTING CONTROL SWITHCHES
E100 N.T.S.



3 LIGHTING CONTROL SWITHCHES
E100 N.T.S.

NOTES:

1. MASTER STAGE LIGHTING CONTROL. SEE DETAIL 2/E100 THIS SHEET. WIRE TO CAFE & GYM LIGHING CONTACTORS.

2. OUTLET FOR DIMMER CONTROL. 3/4" CONDUIT TO DIMMER PANEL IN ELECTRIC ROOM 179. BELDON 8925 CABLE. 5 PIN MALE XLR OUTLET.

3. SQUARE D 8903 LOXL OPEN 30 AMP LIGHTING CONTACTORS. PROVIDE NUMBER OF POLES AS REQUIRED. FIELD CONVERTIBLE CONTACTS, NO-NC. MOUNT IN A SQUARE D PANELBOARD ENCLOSURE TO MATCH ELECTRICAL PANELBOARDS. NUMBER AND LABEL ALL WIRES WITHIN THIS PANEL. LAMINATE A COPY OF THE WIRING SCHEMATIC (DETAIL 3/E100) AND MOUNT INSIDE OF PANELBOARD COVER.

LC-1 4-POLE MAIN CAFE
LC-2 3-POLE SIDE CAFE LIGHTS
LC-3 8-POLE GYM LIGHTS

4. EMERGENCY LIGHTING RELAY. WIRE NORMAL CIRCUIT THOUGH LOCAL SWITCHING. EMERGENCY CIRCUIT TO BRING ON LIGHTS UPON FAILURE OF NORMAL CIRCUIT.

5. THROUGH LIGHTING CONTACTOR LC-1

6. THROUGH LIGHTING CONTACTOR LC-2

7. THROUGH LIGHTING CONTRACTOR LC-3

8. 2-CIRCUIT TRACK. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT. WIRE TO DIM PANEL LOCATED IN ELECTRIC ROOM.

9. RUN CIRCUITS THROUGH LIGHTING CONTROLLER PANEL 'R1'.

10. LOW VOLTAGE OVERRIDE BUTTON. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'.

11. MASTER STATION - LOW VOLTAGE OVERRIDE BUTTONS. EACH SWITCH TO HAVE PILOT LIGHT INDICATING AN OVERRIDE OR ON POSITION. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'. SEE DETAIL 3/E100 FOR CUSTOM PLATE.

3 LIGHTING CONTROL MASTER
E100 N.T.S.

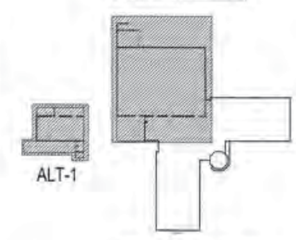
ROOM NO.	ROOM NAME
152	CORRIDOR
153	CORRIDOR
154	MUSIC CLASSROOM
155	STAFF DINING
156	CLASSROOM
157	NOT USED
158	NOT USED
159	MUSIC CLASSROOM/PLATFORM
160	MUSIC CLASSROOM/PLATFORM
161	STORAGE
162	MULTI-PURPOSE ROOM
163	GYMNASIUM
164	ALCOVE
165	TOILET
166	OFFICE
167	STORAGE
168	GYM STORAGE
169	DRY STORAGE
170	FREEZER
171	COOLER
172	KITCHEN
173	OFFICE
174	LOCKER ROOM
175	TOILET
176	BUILDING STORAGE
177	OFFICE
178	TOILET
179	ELECTRIC ROOM
180	MECHANICAL ROOM
181	TOILET
182	TOILET

WIRE SIZING CHART				
RUN LENGTH		CIRCUIT BREAKER		
120V	277V	20A	30A	40A
000-100'	000-200'	12	10	8
101-150'	201-300'	10	8	6
151-200'	301-400'	8	6	4

LIGHTING CONTROLLER RELAY PANEL 'R1'

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

4 LIGHTING CONTROL RELAY TABLE
E100 N.T.S.



AREA "A" KEY PLAN

LESOURDSVILLE WEST CHESTER ELEMENTARY
Lesourdsville West Chester Road

Lakota Local School District
5572 Princeton Road Liberty Township, Ohio 45011

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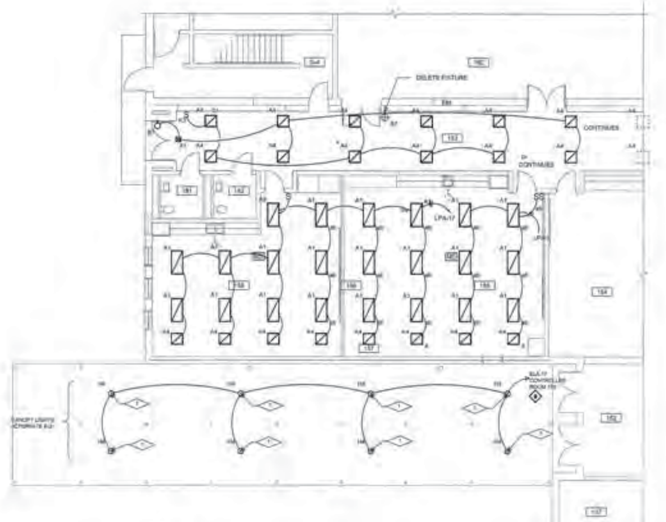
STATE OF OHIO REGISTERED ARCHITECTS

AREA 'A' 1ST FLOOR ELECTRIC LIGHTING PLAN

Construction Documents

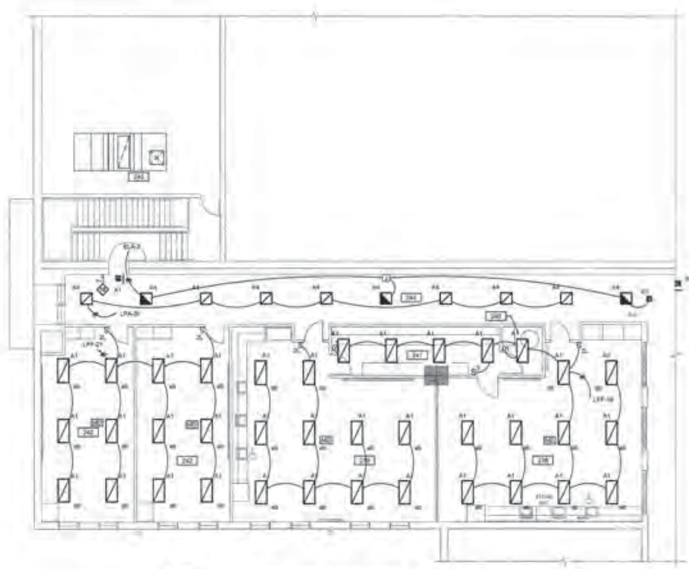
DATE	MARCH, 2007
COMM NO.	2005008.06

E100



1 E104 AREA 'A' FIRST FLOOR PLAN (ALT. E-1)
1/8" = 1'-0"

ROOM NO.	ROOM NAME
137	NOT USED
138	GIRLS TOILET
139	BOYS TOILET
140	TOILET VESTIBULE
141	CUSTODIAL CLOSET
142	FACULTY TOILET
143	CLASSROOM
144	CLASSROOM
[illegible]	CLASSROOM



2 E104 AREA 'A' SECOND FLOOR PLAN (ALT. E-1)
1/8" = 1'-0"

ROOM NO.	ROOM NAME
[illegible]	ART LAB
[illegible]	GENERAL LAB
240	KILN
241	ART STORAGE
242	SPECIAL CLASSROOM
243	SPECIAL CLASSROOM
244	CORRIDOR
[illegible]	MECHANICAL
[illegible]	MECHANICAL

NOTES:

1. MASTER STAGE LIGHTING CONTROL. SEE DETAIL 18/100 THIS SHEET. WIRE TO CAFE & GYM LIGHTING CONTACTORS.

2. OUTLET FOR DIMMER CONTROL. 3/4" CONDUIT TO DIMMER PANEL IN ELECTRIC ROOM 175. BELDON 8925 CABLE. 5 PIN MALE XLR OUTLET.

3. SQUARE D 8903 LOAD, OPEN 30 AMP LIGHTING CONTACTORS. PROVIDE NUMBER OF POLES AS REQUIRED. FIELD CONVERTIBLE CONTACTS NO/NC. MOUNT IN A SQUARE D PANELBOARD ENCLOSURE TO MATCH ELECTRICAL PANELBOARDS. NUMBER AND LABEL ALL WIRES WITHIN THIS PANEL. LAMINATE A COPY OF THE WIRING SCHEMATIC (DETAIL 2/E100) AND MOUNT INSIDE OF PANELBOARD COVER.

LC-1: 4-POLE MAIN CAFE
LC-2: 4-POLE SIDE CAFE LIGHTS
LC-3: 8-POLE GYM LIGHTS

4. EMERGENCY LIGHTING RELAY. WIRE NORMAL CIRCUIT THOUGH LOCAL SWITCHING. EMERGENCY CIRCUIT TO BRING ON LIGHTS UPON FAILURE OF NORMAL CIRCUIT.

5. THROUGH LIGHTING CONTACTOR LC-1

6. THROUGH LIGHTING CONTACTOR LC-2

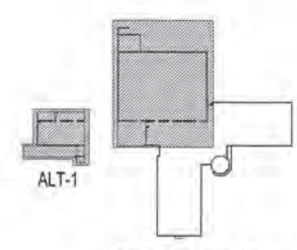
7. THROUGH LIGHTING CONTRACTOR LC-3

8. 2-CIRCUIT TRACK. PROVIDE SEPARATE NEUTRAL FOR EACH CIRCUIT. WIRE TO DIM PANEL LOCATED IN ELECTRIC ROOM.

9. RUN CIRCUITS THROUGH LIGHTING CONTROLLER PANEL 'W'.

10. LOW VOLTAGE OVERRIDE BUTTON. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'.

11. MASTER STATION - LOW VOLTAGE OVERRIDE BUTTONS. EACH SWITCH TO HAVE PILOT LIGHT INDICATING AN OVERRIDE OR ON POSITION. WIRE TO LIGHT CONTROL RELAY PANEL 'R1'. SEE DETAIL 3/E100 FOR CUSTOM PLATE.



AREA "A" KEY PLAN

STATE OF OHIO REGISTERED ARCHITECTS

STATE OF OHIO REGISTERED PROFESSIONAL ENGINEER

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Lakota Local School District
5572 Princeton Road, Liberty Township, Ohio 45011

AREA 'A' ELECTRIC LIGHTING PLAN ALT E-1

Construction Documents

DATE MARCH, 2007
COMM NO. 2005008.06

E104

LIGHTING FIXTURES

NOTES

LEGEND CONT.

GENERAL NOTES

LEGEND

INDEX OF DRAWINGS

HEAPY ENGINEERING

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ADDITIONS AND RENOVATIONS
LIBERTY EARLY CHILDHOOD SCHOOL
LAKOTA LOCAL SCHOOL DISTRICT
6040 PRINCETON ROAD LIBERTY TOWNSHIP, OHIO 45011

CONSTRUCTION DOCUMENTS 04-15-08

LEGEND SCHEDULES AND DETAILS

DATE APRIL 2008
COMM NO. 2005008.04

E001

LIGHTING FIXTURES

NOTES

GENERAL NOTES

INDEX OF DRAWINGS

SHEET	DESCRIPTION
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E002	Site Plan
E003	Details
E004	Details
E005	Details
E006	Details
E007	Details
E101	Partial First Floor Lighting Plan – A South
E102	Partial First Floor Lighting Plan – A North
E103	Partial First Floor Lighting Plan – B West
E104	Partial First Floor Lighting Plan – B East
E105	Partial Second Floor Lighting Plan – A North
E106	Partial Second Floor Lighting Plan – B West
E107	Partial Second Floor Lighting Plan – B East
E108	Partial First Floor Lighting Plan – Alternate 3
E201	Partial First Floor Power Plan – A South
E202	Partial First Floor Power Plan – A North
E203	Partial First Floor Power Plan – B West
E204	Partial First Floor Power Plan – B East
E205	Partial Second Floor Power Plan – A North
E206	Partial Second Floor Power Plan – B West
E207	Partial Second Floor Power Plan – B East
E208	Partial First Floor Power Plan – Alternate C2
E301	KITCHEN PLAN
E401	Motor Starters Schedule
E402	Single-line Diagram
E403	Switchboard Elevation & Schedule
E404	Panelboard Schedule

LEGEND

LEGEND CONT.

GENERAL NOTE

AREA "B"

AREA "A"

KEY PLAN NTS

NORTH

STATE OF OHIO REGISTERED ARCHITECTS

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4011 Broadway • Grove City, Ohio 43123 614.277.9822

Lakota East Freshman School
7630 Bethany Road Liberty Township, Ohio 45044

LEGEND SCHEDULES & DETAILS

DATE

COMM NO

E001

ELECTRICAL LEGEND

NOTE: (ALL DIMENSIONS TO BOTTOM OF BOX) UNLESS OTHERWISE NOTED:
SWITCHES / THERMOSTATS 44" AFF
OUTLETS 18" AFF

DEVICE SYMBOLS

- SINGLE RECEPTACLE
- DUPLEX RECEPTACLE
- DOUBLE DUPLEX RECEPTACLE
- DUPLEX GFIC RECEPTACLE
- ISOLATED GROUND RECEPTACLE
- DUPLEX ISOLATED GROUND RECEPTACLE
- SPECIAL RECEPTACLE - NEMA CONFIGURATION SPECIFIED
- S SINGLE POLE SWITCH
- S_2 DOUBLE POLE SWITCH
- S_3 3-WAY SWITCH
- S_4 4-WAY SWITCH
- S_K KEY SWITCH
- S_D DIMMER SWITCH
- S_P PILOT LIGHT SWITCH
- S_T TIMER SWITCH
- S_M MOTOR RATED SWITCH
- 2 - LEVEL LIGHTING SWITCH - DPDT CENTER OFF. SEE WIRING DIAGRAM

POWER SYMBOLS

- DISCONNECT SWITCH - NON-FUSED
- DISCONNECT SWITCH - FUSED
- COMBINATION STARTER
- STARTER
- RELAY
- THERMOSTAT - 44" AFF
- MOTOR
- PHOTO CELL
- MOTORIZED DAMPER
- CEILING FAN
- JUNCTION BOX
- SURFACE PANELBOARD
- FLUSH PANELBOARD
- HOME RUN ARROW: PANEL-CIRCUIT NUMBER (PA-2)
- TELEPHONE / DATA PLYWOOD BACKBOARD - 3/4" PAINTED, FIRE RATED
- TCP TEMPERATURE CONTROL PANEL
- 3-SECTION FREESTANDING PANELBOARD

FIRE ALARM EQUIPMENT

- PULL STATION
- HORN / STROBE
- FIRE ALARM STROBE
- DUCT DETECTOR
- SMOKE DETECTOR
- HEAT DETECTOR
- FAA FIRE ALARM ANNUNCIATOR
- FACP FIRE ALARM CONTROL PANEL
- FAP FIRE ALARM POWER EXTENDER PANEL
- FLOW SWITCH
- DOOR HOLDER
- TAMPER SWITCH
- INPUT ADDRESSABLE MODULE
- ZONE ADDRESSABLE MODULE
- FIRE ALARM RELAY

ONE-LINE DIAGRAM

- POWER TRANSFORMER
- CT TRANSFORMER - CURRENT TRANSFORMER
- PT TRANSFORMER - POTENTIAL TRANSFORMER
- PANELBOARD
- LIGHTNING ARRESTOR
- CIRCUIT BREAKER
- SWITCH
- IN-LINE FUSE
- FUSIBLE CUTOUT SWITCH
- FUSIBLE DISCONNECT SWITCH
- N.O. SWITCH
- N.C. SWITCH
- ELECTRIC METER
- BUS
- GROUND CONNECTION
- BUS PLUG / CIRCUIT BREAKERS
- WYE / DELTA TRANSFORMER CONNECTION
- THERMAL OVERLOADS
- ATS - AUTOMATIC TRANSFER SWITCH
- N.O. SWITCH
- N.C. SWITCH

LIGHT FIXTURE SYMBOLS

- NIGHT LIGHT: EM/PROVIDE 1400 LUMEN BATTERY PACK
- 2' X 4' RECESSED FLUORESCENT LIGHT (CAPITAL LETTER - FIXTURE TYPE; LOWER CASE LETTER - SWITCH CIRCUIT)
- 2' X 2' RECESSED FLUORESCENT LIGHT
- FLUORESCENT STRIP FIXTURE
- 1' X 4' PENDANT FLUORESCENT LIGHT
- 2' X 4' SURFACE FLUORESCENT FIXTURE
- FIXTURE WIRED TO EMERGENCY CIRCUIT (HALF FILLED FIXTURE SYMBOL) PROVIDE UNSWITCHED HOT TO FIXTURE. WIRE FIXTURE AS NIGHT LIGHT.
- HID HIGHBAY FIXTURE
- DOWN LIGHT
- WALL WASH LIGHT
- HID STEM MOUNTED DOWNLIGHT
- WALL SCONCE
- WALL MOUNTED FLUORESCENT LIGHT FIXTURE
- WALL MOUNTED EXIT - 90" AFF
- CEILING EXIT - ARROW INDICATES DIRECTIONAL CHEVRON
- DUAL HEAD EMERGENCY FIXTURE - 90" AFF
- REMOTE EMERGENCY FIXTURE - 90" AFF
- EMERGENCY BATTERY - NO HEADS
- SURFACE MOUNTED CEILING LIGHT
- SINGLE HEAD POLE LIGHT
- DOUBLE HEAD POLE LIGHT - 180°
- BOLLARD LIGHT

TELECOMMUNICATIONS

- TELE / DATA / VIDEO OUTLET: 1" EMT TO ABOVE CEILING "2" INDICATES NUMBER OF GANGS REQUIRED
- COMBINATION TELE / DATA / POWER - FLOOR BOX
- VOLUME CONTROL
- MICROPHONE JACK
- AUXILIARY SOUND INPUT 1/4" JACK
- INTERCOM
- BUZZER SIGNAL
- PUSH BUTTON
- CONTROL STATION
- SPEAKER CABINET - WALL OR FLOOR MOUNTED
- CEILING SPEAKER
- LINE MATCHING TRANSFORMER
- MICROPHONE
- MICROPHONE STAND
- TELEPHONE EQUIP.
- DIGITAL CLOCK
- ANALOG CLOCK / WALL MT 89"
- WIRELESS CONNECTION
- TV CAMERA
- ANTENNA
- TV MONITOR
- COMPUTER / MONITOR
- AMPLIFIER
- GROUND SYMBOL
- TMGB TELECOM MAIN GROUND BAR
- TGB TELECOM GROUNDING BAR
- CONDUIT SLEEVE - 4" RIGID/PLASTIC BUSHINGS
- CONDUIT
- CENT-R-RAIL LADDER RACK
- OPEN EQUIPMENT RACK - FLOOR MOUNTED
- CLOSED EQUIPMENT RACK - FLOOR / WALL MOUNTED
- CABLE TRAY

EC ELECTRICAL CONTRACTOR
HC HVAC CONTRACTOR
PC PLUMBING CONTRACTOR
GC GENERAL CONTRACTOR
TC TEMPERATURE CONTROLS CONTRACTOR
FP FIRE PROTECTION CONTRACTOR

WP WEATHERPROOF
EM EMERGENCY
AFF ABOVE FINISHED FLOOR - DIMENSION TO BOTTOM OF BOX
ETR EXISTING TO REMAIN
EMT ELECTRICAL METALLIC TUBING
LT LIQUIDTIGHT FLEXIBLE METAL CONDUIT
WG WIRE GUARD
GFI GROUND FAULT CIRCUIT INTERRUPTER

LIGHT FIXTURE SCHEDULE

FIX TYPE	LAMPS	WATT	SIZE	TYPE	COLOR	VOLTAGE	MANUFACTURER	CATALOG NUMBER	DESCRIPTION	FUSING	MOUNTING	MT. HEIGHT	NOTE
A1	4	32	T8	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 4 32 A12125 277 GEB101RS GMF	2X4 LAYIN 4 LAMP A12 ACRYLIC LENS 1/8" 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A2	3	32	T8	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 3 32 A12125 277 GEB101RS GMF	2X4 LAYIN 3 LAMP A12 ACRYLIC LENS 1/8" 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A3	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 2 32 A12125 277 GEB101RS GMF	2X4 LAYIN 2 LAMP A12 ACRYLIC LENS 1/8" 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A4	2	40	TT5	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 2 CF40 A12125 277 GEB10 GMF	2X2 LAYIN 2 LAMP A12 ACRYLIC LENS 1/8" 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A5	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	2PMD G 2 32 18 277 GEB10 GMF	2X4 LAYIN 2 LAMP 18 CELL PARABOLIC DIFFUSE SILVER 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A6	3	32	T8	FLUORESCENT	3500K	277	LITHONIA	SP G 3 32 A12125 277 GEB10 GMF	1X4 LAYIN 3 LAMP ACRYLIC LENS 1/8" 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A7	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	SP G 2 32 A12125 277 GEB10 GMF	1X4 LAYIN 2 LAMP ACRYLIC LENS 1/8" 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A8	4	32	T8	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 4 32 PC38 277 GEB101RS GMF	2X4 LAYIN 4 LAMP 3/4"X3/4" SILVER LOUVER 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A9	2	40	TT5	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 2 CF40 PC38 277 GEB10 GMF	2X2 LAYIN 2 LAMP 3/4"X3/4" SILVER LOUVER 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A10	4	32	T8	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 4 32 PC38 277 GEB101RS GMF	2X4 LAYIN 4 LAMP 3/4"X3/4" SILVER LOUVER 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A11	3	40	TT5	FLUORESCENT	3500K	277	LITHONIA	2SP8 G 3 CF40 PC38 277 GEB10 GMF	2X2 LAYIN 3 LAMP 3/4"X3/4" SILVER LOUVER 10% THD ELECTRONIC BAL	YES	GRID	CEILING	
A12	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	PMD G 2 32 9 LD 277 GEB10 GMF	1X4 LAYIN 2 LAMP 9 CELL PARABOLIC DIFFUSE SILVER 10% THD ELECTRONIC BAL				
A13	8	40	BX40	FLUORESCENT	3500K	277	FOCAL POINT	FSD 44 D 8 BX40 S 277 Q CR FU HW	48" SKYDOME CONCAVE WT ACRYLIC LENS 10%THD ELEC BAL	YES	GRID	CEILING	
B1	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	VRI 2 32 277 GEB10 CW GMF WLF	4' ROUGH SERVICE WET LOCATION ENCLOSED COLD WEATHER 10% THD ELECTRONIC BAL	YES	SURFACE	CEILING	
B3	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	W 240 277 PRM	4' WALL FIXTURE UP/DW LIGHT	YES	SURFACE	WALL 86"	
B4	2	32	T8	FLUORESCENT	3500K	277	PEERLESS	PRAM 232 R4 277 GEB LP735 F1 18	PRIMA IND/DIR 2 LAMP 18" SUSPENDED ELEC BAL	YES	CABLE	18" BC	
B5	2	32	T8	FLUORESCENT	3500K	277	PEERLESS	PRM8 232 8 277 GEB DCT LP735 F1 18 GMF	PRIMA IND/DIR 2 LAMP 8X3 LIGHT VENT 18" SUSPENDED ELEC BAL	YES	CABLE	18" BC	
B6	1	100	P	INCANDESCENT		120	APPLETON	V-51 VC1075G	JAR FIXTURE / GUARD, HUB BOXAS REQUIRED.	NO		SEE PLANS	
B7	1	100	100MH/150 Q	METAL HALIDE	3500K	277	ELCAST	900AL 100 MH 277 CC F1 QRS PC	ROUGH SERVICE SURROUND EYELID, FLUSH MONTED, WHITE LENS, ELEC BAL, PHOTO CELL QUARTZ	YES	FLUSH WALL	88" AFF	
B8	1	250		METAL HALIDE		277	LITHONIA	WFL3 250M RN 277 SF PE DDB EV	ARCH WALL FLOOD 250WMH NARROW SYMMETRIC DIST, PHOTO CELL, CLEAR ANODIZED	YES	WALL	SEE PLANS	
C1	2	32	T8	FLUORESCENT	3500K	277	LITHONIA	AF10 2 32 277 GEB GMF HC36 WGAFPV	4' INDUSTRIAL 2 LAMP ELEC BAL CHAINS WIREGUARD 10% UP LIGHT	YES	CHAIN HUNG	SEE PLANS	
C2	3	96HO	T12	FLUORESCENT	3500K	277	LITHONIA	AFST 3 96HO 277 GEB10	8' - 3 LAMP HIGH OUTPUT 800MA INDUSTRIAL WIREGUARD SOLID REFLECTOR	YES	BAR JOIST	SEE PLANS	
D1	1	26	DTT	FLUORESCENT	3500K	277	LITHONIA	AFV 26DTT 8AR 277 GEB10 GMF	8" DOWNLIGHT 26W VERT LAMP CLEAR OPEN REFLECTOR ELEC BAL	YES	CEILING	CEILING	
D2	1	26	DTT	FLUORESCENT	3500K	277	LITHONIA	AFV 26DTT 8MB 277 GEB10 GMF	8" DOWNLIGHT 26W VERT LAMP BLACK BAFFLE ELEC BAL	YES	CEILING	CEILING	
D3	2	26	DTT	FLUORESCENT	3500K	277	LITHONIA	AF 2/26DTT 9AR 277 GEB GMF	9" DOWNLIGHT 2-26W HORZ LAMP CLEAR OPEN REFLECTOR ELEC BAL	YES	CEILING	CEILING	
D4	1	250	M250, 150W QTZ	METAL HALIDE/QUARTZ		277	LITHONIA	AH 250M 12BC 277 EC SC12	12" 250 W METAL HALIDE DOWNLIGHT BLACK CONE, DC QUARTZ SOCKE. 150W QTZ LAMP, SLOPED CEILING ADAPTOR	YES	CEILING	CEILING	
D5	1	100		METAL HALIDE		277	LITHONIA						
E1	2	12	N1212	INCANDESCENT		277	LITHONIA	ELU4N N1212 W V	2 HEAD EMERGENCY LIGHT 50WATT NICKEL CADMIUM BATTERY, VOLT METER, WHITE		WALL	93"	
H1	1	400	M400, 150 QTZ	METAL HALIDE		277	LITHONIA	TPGE 400 PG16GLE M 277 QRS UCPSF WG SCK	400W HIGH BAY ENCLOSED , BOROSILICATE GLASS REFECT. WIREGUARD QUARTZ EMR, QUARTZ RESTRIKE, MED DIST. SAFETY CHAIN	YES	STEM	24'-6"	
H3	1	400	M400, 150 QTZ	METAL HALIDE		277	LITHONIA	TPGE 400 PG16GLE M 277 EC UCPSF TR SCK	400W HIGH BAY ENCLOSED , BOROSILICATE GLASS REFECT. QUARTZ EMR , MED DIST. SAFETY CHAIN REMOTE BALLAST	YES	STEM	AFE 14' READING	
H4	1	32	32 CTT	FLUORESCENT		277	FAILSAFE	CTTW PP 32A 277 F1 DBZ	32W TRIPLE TUBE VANDAL RESISTANT, 11" ROUND POLYCARBONATE WHITE LENS, BRONZE	YES	CEILING	CANOPY	
H5	2	100	M100, 100Q	METAL HALIDE		277	KIRLIN	WR51241 35 49 58 66 FR	12" ROUND SCONCE UP-DN LIGHT, FRESNEL LENS, CLEAR ANODIZED, QUARTZ RESTRIKE			13'-4"	
X1	1			LED		277	LITHONIA	LE S 1 R 277	DIE CAST ALUM SINGLE FACE EXIT, RED LETTERS, STENCIL ALUM FACE, LED LAMPS	NO	WALL/CEIL	SEE PLANS	
X2	1			LED		277	LITHONIA	LE S 2 R 277	DIE CAST ALUM DOUBLE FACE EXIT, RED LETTERS, STENCIL ALUM FACE, LED LAMPS	NO	WALL/CEIL	SEE PLANS	
P1	1	150		HPS		277	COOPER	VXS 150HPS 277 SL BZ F HS MA1071-15' SQ	150 WATT HPS VISION INVUE SMALL, 5" ARM FORWARD THROW, HOUSE SIDE SHIELD, FULL CUTOFF DIST. 15' SQUARE BRONZE POLE	YES	CONC BASE	15'	
P2	1	150		HPS		277	COOPER	VXS 150HPS 277 2S BZ F MA1071-15' SQ	150 WATT HPS VISION INVUE SMALL, 5" ARM, TYPE II ROADWAY DIST. 15' SQUARE BRONZE POLE	YES	CONC BASE	15'	
P3	1	150		HPS		277	COOPER	VXS 150HPS 277 2S BZ F MA1071-20' SQ	150 WATT HPS VISION INVUE SMALL, 5" ARM, TYPE II ROADWAY DIST. 20' SQUARE BRONZE POLE	YES	CONC BASE	20'	
P4	2	150		HPS		277	COOPER	VXS 150HPS 277 2S BZ F MA1071-20' SQ DOUBLE 180	150 WATT HPS VISION INVUE SMALL, 5" ARM, TYPE II ROADWAY DIST. 20' SQUARE BRONZE POLE, 2 FIX 180 DEGREE MOUNTING	YES	CONC BASE	20'	
G1	1	100		METAL HALIDE		277	HYDREL	9100 B M100 277 SP 34 IHL	100W MH FLAG POLE IN-GROUND, HONEYCOMB LOUVRE, BRONZE COVER		GRAVEL FILL	IN-GROUND	
G2	1	100		METAL HALIDE		277	HYDREL	9100 B M100 277 WW 34	100W MH WALL WASH IN-GROUND, BRONZE COVER		GRAVEL FILL	IN-GROUND	
S1	1	500		INCANDESCENT		120	LSI	Q500PAR56MFL	500WATT TRACK LIGHT/ TWO CIRCUIT TRACK	NO	CEILING TRACK		

STATE OF OHIO REGISTERED ARCHITECTS

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4011 Broadway • Grove City, Ohio 43123 614.277.9822

LESOURDSVILLE WEST CHESTER ELEMENTARY
Lesourdsville West Chester Road

Lakota Local School District
5572 Princeton Road Liberty Township, Ohio 45011

TITLE SHEET

Construction Documents

DATE: MARCH, 2007
COMM NO. 2005008.00

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