



Case No.: 11-3919-EL-EEC

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 implemented during the prior three calendar years.

Completed applications requesting the cash rebate reasonable arrangement option (Option 1) in lieu of an exemption from the 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 electric utilities' energy efficiency rider option (Option 2) will not qualify for the 60-day automatic approval.

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.

If you consider some of the items requested in the application to be confidential or trade secret information, please file a copy of the application under seal, along with a motion for protective order pertaining to the material you believe to be confidential. Please also file a copy of the application in the public docket, with the information you believe to be confidential redacted.

Section 1: Company Information

Name: **Lakota, Hopewell Elementary**

Principal address: **5572 Princeton Road, Liberty Township, OH 45011**

Address of facility for which this energy efficiency program applies: **8300 Cox Rd., West Chester, OH 45069**

Name and telephone number for responses to questions: **Cory Gordon, 317-838-2955**

Electricity use by our company (at least one must apply to your company – check the box or boxes that apply):

- We use more than seven hundred thousand kilowatt hours per year at our facility. (Please attach documentation.)**
- We are part of a national account involving multiple facilities in one or more states. (Please attach documentation.)

12-Month Billing History

55102216 01

LAKOTA LOCAL SCHOOLS Electric meter number 106841426

8300 COX RD

WEST CHESTER, OH 45069

Date Days Read Actual KWH Bill KWH

6/15/2011 30 0 31,555 31,555

5/16/2011 32 0 32,493 32,493

4/14/2011 29 0 31,889 31,889

3/16/2011 29 0 31,934 31,934

2/15/2011 29 0 30,641 30,641

1/17/2011 34 0 30,857 30,857

12/14/2010 33 0 34,934 34,934

11/11/2010 29 0 32,622 32,622

10/13/2010 29 0 38,243 38,243

9/14/2010 32 0 44,729 44,729

8/13/2010 29 0 31,259 31,259

7/15/2010 30 0 31,865 31,865

Subtotal 403,021

01202083 01

LAKOTA LOCAL SCHOOLS Electric meter number 104829459

8300 COX RD

WEST CHESTER, OH 45069

Date Days Read Actual KWH Bill KWH

6/15/2011 30 0 21,984 21,984

5/16/2011 32 0 19,319 19,319

4/14/2011 29 0 25,131 25,131

3/16/2011 29 0 30,323 30,323
2/15/2011 29 0 43,998 43,998
1/17/2011 34 0 48,302 48,302
12/14/2010 33 0 35,058 35,058
11/11/2010 29 0 20,805 20,805
10/13/2010 29 0 24,166 24,166
9/14/2010 32 0 28,742 28,742
8/13/2010 29 0 14,960 14,960
7/15/2010 30 0 16,054 16,054
Subtotal 328,842

Total 731,863

Section 2: Application Information

- A) We are filing this application (choose which applies):
- Individually, on our own.
 - Jointly with our electric utility.**
- B) Our electric utility is: **Duke Energy**
- C) We are offering to commit (choose which applies):
- Energy savings from our energy efficiency program. (Complete Sections 3, 5, 6, and 7.)
 - Demand reduction from our demand response/demand reduction program. (Complete Sections 4, 5, 6, and 7.)
 - Both the energy savings and the demand reduction from our energy efficiency program. (Complete all sections of the Application.)**

Section 3: Energy Efficiency Programs

A) Our energy efficiency program involves (choose whichever applies):

- ✓ Early replacement of fully functioning equipment with new equipment. (Provide the date on which you replaced your fully functioning equipment, and the date on which you would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how you 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 We installed our new equipment on the following date(s):
_____.
- Installation of new equipment for new construction or facility expansion. We installed our new equipment on the following date(s):
_____.

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

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

Annual savings: 20,264 kWh

Source of energy savings assumptions is from Duke Energy Smart Saver Prescriptive program.

Measure	Qty	kWh per measure	Total kWh savings	kW per measure	Total kW savings
T-8 4ft 4 lamp	15	144.6	2,169	.03	.48
T-8 4ft 3 lamp	98	125.8	12,382	.03	2.52
T-8 4ft 2 lamp	40	62.91	2,516	.01	.19
LED Exit Signs	13	245.91	3,197	.03	.52

- b) If you checked the box indicating that you installed new equipment to replace equipment that needed to be replaced, then calculate the annual

savings [(kWh used by less efficient new equipment) - (kWh used by the higher efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: _____kWh

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

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

Annual savings: _____kWh

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

Section 4: Demand Reduction/Demand Response Programs

A) Our program involves (choose which applies):

- Coincident peak-demand savings from our energy efficiency program.**
- Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)
- Potential peak-demand reduction (choose which applies):
 - Choose one or more of the following that applies:
 - Our 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.
 - Our 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) What is the date your peak demand reduction program was initiated? *July, 2007*
- C) What is the peak demand reduction achieved or capable of being achieved (show calculations through which this was determined):

3.71 kW

Refer to table in section 3(B)(a) for coincident peak kW.

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

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

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

- A) We are applying for:

Option 1: A cash rebate reasonable arrangement.

OR

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

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

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

- A cash rebate of \$ 676.00 . (Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

Incentive calculated is 50% of the Smart Saver Prescriptive Incentive.

<i>Measure</i>	<i>Prescriptive Incentive per measure</i>	<i>Self Direct Incentive per measure</i>	<i>Total Incentive</i>
T-8 4ft 4 lamp	\$11.00	\$5.50	\$82.50
T-8 4ft 3 lamp	\$9.00	\$4.50	\$441.00
T-8 4ft 2 lamp	\$4.00	\$2.00	\$80.00
LED Exit Signs	\$10.00	\$5.00	\$65.00

OR

- A cash rebate valued at no more than 50% of the total project cost, which is equal to \$_____. (Attach documentation 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

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

Section 6: Cost Effectiveness

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

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

<i>Measure</i>	<i>UCT</i>
T-8 4ft 4 lamp	6.27
T-8 4ft 3 lamp	6.21
T-8 4ft 2 lamp	6.99
LED Exit Signs	10.49

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 (capacity and energy) by the sum of our program costs and our electric utility's administrative costs to implement the program.

Our avoided supply costs were. _____.

Our program costs were _____.

The utility's administrative 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 _____.

Note: all values are per UNIT

	<i>T&D</i>	<i>Prod</i>	<i>Cap</i>
<i>T-8 4ft 4 lamp</i>	\$6	\$40	\$13
<i>T-8 4ft 3 lamp</i>	\$5	\$32	\$11
<i>T-8 4ft 2 lamp</i>	\$2	\$16	\$5

LED Exit Signs \$5 \$67 \$17

The utility's administrative costs were ___.

<i>T-8 4ft 4 lamp</i>	\$3.19
<i>T-8 4ft 3 lamp</i>	\$2.61
<i>T-8 4ft 2 lamp</i>	\$1.16
<i>LED Exit Signs</i>	\$2.90

The utility's incentive costs/rebate costs were ___.

<i>T-8 4ft 2 lamp</i>	\$2.00
<i>T-8 4ft 3 lamp</i>	\$4.50
<i>T-8 4ft 4 lamp</i>	\$5.50
<i>LED Exit Signs</i>	\$5.00

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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



Public Utilities Commission

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

Case No.: ___ - ___ -EL-EEC

State of _____ :

CHRISTOPHER T. PASSARIS, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

LAKOTA LOCAL SCHOOL DISTRICT [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.

[Handwritten signature]

Signature of Affiant & Title EXECUTIVE DIRECTOR BUSINESS OPERATIONS

Sworn and subscribed before me this 24 day of JUNE, 2011 Month/Year

[Handwritten signature] Signature of official administering oath

C.L. McMONIGLE, Notary Public Print Name and Title

My commission expires on APRIL 11, 2014

C.L. McMONIGLE Notary Public, State of Ohio My Commission Expires April 11, 2014



DUKE ENERGY CORPORATION
Mercantile Self Direct Program
139 East Fourth Street
Cincinnati, OH 45202
513 419 5572 fax

8/29/2011

Lakota Local School District
Attn: Robert Fischer, Director Buildings & Grounds
6947 Yankee Rd
Liberty Township, OH 45044

Subject: Rebate Offer for Duke Energy Mercantile Self-Direct

Dear Mr. Fischer

Thank you for your Duke Energy Mercantile Self Direct rebate application. As noted in the Energy Conservation Measure (ECM) table on page three, a total rebate of \$6088.50 has been proposed for your Lighting and VFD projects completed in the 2007 calendar year. All Self Direct Rebates are contingent upon approval by the Public Utilities Commission of Ohio (PUCO).

Please indicate on the following page if you accept or decline this rebate offer by checking the appropriate box (rebate accepted or rebate declined) and providing your signature where indicated.

Please return the documents to my attention via fax 513-419-5572 or email at SelfDirect@duke-energy.com. Upon receipt, Duke Energy will submit the necessary documentation to PUCO for approval. 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 Saver® incentives, when applicable. Please view the Duke-Energy.com website for further review of programs or contact your local Duke representative if you have questions about our programs. Please contact me if you have any questions about this letter.

Sincerely,

Brien R. Krieger

Brien R. Krieger
Product Manager, Ohio Mercantile Self Direct
317-838-4256

cc: Mike Heath
Rob Jung
Lucas Dixon

Please indicate your response to this Duke rebate offer.

Rebate is accepted. Rebate is declined.

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

Additionally, Lakota Local School District agrees to serve as joint applicant in any future filings necessary to secure approval of this Mercantile Self Direct project arrangement as required by PUCO. Lakota Local School District agrees to comply with information and reporting requirements imposed by PUCO rule as part of the PUCO approval process relating to these rebate requests.

Finally, Lakota Local School District affirms that all application information submitted to Duke Energy pursuant to this rebate offer is true and accurate. Said application information includes, but is not limited to, project scope, equipment specifications, equipment operational details, project costs, project completion dates, and the quantity of energy conservation measures installed.

Signature:

Robert Fischer ROBERT FISCHER 8/31/11

Customer Signature

Printed Name

Date

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

YES NO

If declined, please share a reason here for your declination:

Table 1. ECM's with Proposed Rebate Amounts

ECM Number	ECM Description	Proposed Rebate
ECM-1	Endeavor, Under 500 W Occ. Sensor (Quantity 117)	\$1,170
ECM-2	Endeavor, Over 500 W Occ. Sensor (Quantity 57)	\$1,140
ECM-3	Endeavor, VFD 20 hp Process Pumping (Quantity 1)	\$400
ECM-4	Wyandot, Under 500 W Occ. Sensor (Quantity 117)	\$1,170
ECM-5	Wyandot, Over 500 W Occ. Sensor (Quantity 57)	\$1,140
ECM-6	Wyandot, VFD 20hp Process Pumping (Quantity 1)	\$400
ECM-7	Hopewell, T8 4ft. 4 lamp (Quantity 15)	\$82.50
ECM-8	Hopewell, T8 4ft. 3 lamp (Quantity 98)	\$441
ECM-9	Hopewell, T8 4ft. 2 lamp (Quantity 40)	\$80
ECM-10	Hopewell, LED Exit Signs (Quantity 13)	\$65
Total Rebate		\$6088.50



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 Chermansy 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 for Incentive)		
<input type="checkbox"/> Data Centers	<input type="checkbox"/> Full Service Restaurant	<input type="checkbox"/> Office
<input checked="" type="checkbox"/> Education/K-12	<input type="checkbox"/> Healthcare	<input type="checkbox"/> Public Assembly
<input type="checkbox"/> Education Other	<input type="checkbox"/> Industrial	<input type="checkbox"/> Public Order/Safety
<input type="checkbox"/> Elder Care/Nursing Home	<input type="checkbox"/> Lodging	<input type="checkbox"/> Religious Worship/Church
<input type="checkbox"/> Food Sales/Grocery	<input type="checkbox"/> Retail (Small Box)	<input type="checkbox"/> Service
<input type="checkbox"/> Fast Food Restaurant	<input type="checkbox"/> Retail (Big Box)	<input type="checkbox"/> Warehouse
<input type="checkbox"/> Other:		

How did you learn about the program? (check one)		
<input type="checkbox"/> Duke Energy Representative	<input checked="" type="checkbox"/> Web Site	<input type="checkbox"/> Radio
<input type="checkbox"/> Contractor / Vendor	<input type="checkbox"/> Other	

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

<input type="checkbox"/> All sections of application	<input type="checkbox"/> Invoice with make, model number, quantity and equipment manufacturer	<input type="checkbox"/> Tax ID number for payee	<input type="checkbox"/> Customer/vendor agree to Terms and Conditions
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Customer Information					
Customer/Business	Hopewell Elementary		Contact	Robert Fischer	
Phone	513-777-3316		Account Number	5510-2211-01 & 0120-2083-01	
Street Address (Where Incentive should be mailed)	6847 Yankee Rd				
City	Liberty Township	State	Ohio	Zip Code	45044
Installation Street Address	8300 Cox Road				
City	West Chester	State	Ohio	Zip Code	45069
E-mail Address	robert.fischer@lakotaonline.com				

per Carol B.

*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	614-680-3362		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?	<input checked="" type="checkbox"/> Customer <input type="checkbox"/> 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 #	282868277

Terms and Conditions			
I have read and hereby agree to the Terms & Conditions and Program Requirements.			
Customer Signature	Robert Fischer	Vendor Signature	[Signature]
Date	6/20/11	Date	6/20/2011
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.



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

Fixtures, Lamps + Ballast	Incentive per fixture	Qty	Annual Operating Hours	Equipment Cost	Date of Installation	Estimated Savings	
T8 8ft 2 lamp replacing T12 8ft 2 lamp (retrofit only)	\$7.00			Hrs.			
T8 8ft 1 lamp replacing T12 8ft 1 lamp (retrofit only)	\$5.00			Hrs.			
T8 4ft 4 lamp replacing T12 4ft 4 lamp (retrofit only)	\$11.00	15 ✓	2200	Hrs.	\$1,050.00	03/07	\$165.00
T8 4ft 3 lamp replacing T12 4ft 3 lamp (retrofit only)	\$8.00	98 ✓	2200	Hrs.	\$5,880.00	03/07	\$982.00
T8 4ft 2 lamp replacing T12 4ft 2 lamp (retrofit only)	\$4.00	40 ✓	2200	Hrs.	\$2,000.00	03/07	\$160.00
T8 4ft 1 lamp replacing T12 4ft 1 lamp (retrofit only)	\$3.00			Hrs.			
T8 3ft 4 lamp replacing T12 3ft 4 lamp (retrofit only)	\$10.00			Hrs.			
T8 3ft 3 lamp replacing T12 3ft 3 lamp (retrofit only)	\$6.50			Hrs.			
T8 3ft 2 lamp replacing T12 3ft 2 lamp (retrofit only)	\$4.00			Hrs.			
T8 3ft 1 lamp replacing T12 3ft 1 lamp (retrofit only)	\$3.00			Hrs.			
T8 2ft 4 lamp replacing T12 2ft 4 lamp (retrofit only)	\$6.00			Hrs.			
T8 2ft 3 lamp replacing T12 2ft 3 lamp (retrofit only)	\$4.20			Hrs.			
T8 2ft 2 lamp replacing T12 2ft 2 lamp (retrofit only)	\$4.00	11	2200	Hrs.	\$550.00	03/07	\$44.00
T8 2ft 1 lamp replacing T12 2ft 1 lamp (retrofit only)	\$3.00			Hrs.			
T8 HO 8ft 1 lamp replacing T12 HO 8ft 1 lamp (retrofit only)	\$10.00			Hrs.			
T8 HO 8ft 2 lamp replacing T12 HO 8ft 2 lamp (retrofit only)	\$14.00			Hrs.			
T8 HB 4ft 3L replacing 150-249W HID (retrofit only)	\$30.00			Hrs.			
T8 HB 4ft 4L replacing 250-399W HID (retrofit only)	\$40.00			Hrs.			
T8 HB 4ft 6L replacing 400-999W HID (retrofit only)	\$50.00			Hrs.			
T8 HB 4ft 8L replacing a 400-999W HID (retrofit only)	\$40.00			Hrs.			
2 fixtures - T8 HB 4ft 8 Lamp (32W) replacing 1,000 W HID (2 for 1 replacement (retrofit only)	\$120.00			Hrs.			

Remove per customer's request

- 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.

Equipment Description	Ballast Model #	Unit Cost	Hours	Other	Notes
T8 4ft High Performance 1 lamp & ballast replacing standard T8 4ft 1 lamp fixture	Ballast model# Lamp model #	\$4.00	Hrs.		
T8 4ft High Performance 2 lamp & ballast replacing standard T8 4ft 2 lamp fixture	Ballast model# Lamp model #	\$6.00	Hrs.		
T8 4ft High Performance 3 lamp & ballast replacing standard T8 4ft 3 lamp fixture	Ballast model# Lamp model #	\$6.20	Hrs.		
T8 4ft High Performance 4 lamp & ballast replacing standard T8 4ft 4 lamp fixture	Ballast model# Lamp model #	\$12.00	Hrs.		
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T8 4ft 1 lamp - 32W	Ballast model# Lamp model #	\$4.00	Hrs.		
Reduced Wattage T8 4ft 2 lamp of 28W or less & ballast replacing standard T8 4ft 2 lamp - 32W	Ballast model# Lamp model #	\$6.00	Hrs.		
Reduced Wattage T8 4ft 3 lamp of 28W or less & ballast replacing standard T8 4ft 3 lamp - 32W	Ballast model# Lamp model #	\$10.00	Hrs.		
Reduced Wattage T8 4ft 4 lamp of 28W or less & ballast replacing standard T8 4ft 4 lamp - 32W	Ballast model# Lamp model #	\$12.00	Hrs.		
Relamp T8 4ft 32W fixtures with Reduced Wattage T8 lamps 28 watts or less	Ballast model# Lamp model #	\$.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.

Fixture/Lamp Description (Lamp Type, Wattage, Ballast Type, etc. Indicated)	Estimated Cost	Qty	Estimated Hours (to Minimum 1,000)	Estimated Hours	Estimated Hours	Estimated Hours
T5 4ft (28 watt) 1 lamp replacing T12 4ft 1 lamp (retrofit only)	\$5.00			Hrs.		
T5 4ft (28 watt) 2 lamp replacing T12 4ft 2 lamp (retrofit only)	\$8.00			Hrs.		
T5 4ft (28 watt) 3 lamp replacing T12 4ft 3 lamp (retrofit only)	\$10.00			Hrs.		
T5 4ft (28 watt) 4 lamp replacing T12 4ft 4 lamp (retrofit only)	\$12.00			Hrs.		
T5 HO 4ft 1 (54 watt) lamp replacing 34W T12 4ft 2 lamp (retrofit only)	\$6.00			Hrs.		
T5 HO 4ft 2 (54 watt) lamp replacing 34W T12 4ft 4 lamp (retrofit only)	\$9.00			Hrs.		
T5 HO 4ft 2 (54 watt) lamp replacing 60W T12 8 ft 2 lamp (retrofit only)	\$9.00			Hrs.		
T5 HO 4ft 3 (54 watt) lamp replacing 95W T12 HO 8ft 2 lamp (retrofit only)	\$11.00			Hrs.		
T5 HO 4ft 4 (54 watt) lamp replacing 60W T12 8ft 4 lamp (retrofit only)	\$13.00			Hrs.		
T5 HO 4ft 4 (54 watt) lamp replacing 95W T12 VHO 8ft 2 lamp (retrofit only)	\$13.00			Hrs.		
T5 HO HB 2L replacing 150-249W HID (retrofit only) Fixture efficiency Model Number	\$30.00			Hrs.		
T5 HO HB 3L replacing 250-399W HID (retrofit only) Fixture efficiency Model Number	\$40.00			Hrs.		
T5 HO HB 4L replacing 400-999W HID (retrofit only) Fixture efficiency Model Number	\$50.00			Hrs.		
T5 HO HB 6L replacing 400-999W HID (retrofit only) Fixture efficiency Model Number	\$40.00			Hrs.		
T5 HO HB 8L replacing 750-999W HID (retrofit only) Fixture efficiency Model Number	\$75.00			Hrs.		
2 fixtures – T5 HO HB 6 Lamp replacing 1,000 W HID (2 for 1 replacement retrofit only) Fixture efficiency Model Number	\$120.00			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 1,000 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.



Project Name	Location	Request Date	Actual Cost	Equipment Cost	Item Description	Total Incentive
High Performance T8 4ft 2 lamp fixture replacing T12 8ft 1 lamp fixture Replace 4200 watt T8 4ft 2 lamp fixture with high performance 4200 watt T8 4ft 2 lamp fixture. Incentive capped at 50% of equipment cost.						
		Ballast model#	\$10.00	Hrs.		
		Lamp model #				
		Ballast model#	\$10.00	Hrs.		
		Lamp model #				
		Ballast model#	\$20.00	Hrs.		
		Lamp model #				
		Ballast model#	\$25.00	Hrs.		
		Lamp model #				
		Ballast model#	\$6.00	Hrs.		
		Lamp model #				
		Ballast model#	\$8.00	Hrs.		
		Lamp model #				
		Ballast model#	\$12.00	Hrs.		
		Lamp model #				
		Ballast model#	\$16.00	Hrs.		
		Lamp model #				
Reduced Wattage T8 4ft 1 lamp of 28W or less & ballast replacing standard T12 4ft 1 lamp - 34 W Replace 4200 watt T8 4ft 1 lamp of 28W or less & ballast replacing standard T12 4ft 1 lamp - 34 W. Incentive capped at 50% of equipment cost.						
		Ballast model#	\$8.00	Hrs.		
		Lamp model #				
		Ballast model#	\$10.00	Hrs.		
		Lamp model #				
		Ballast model#	\$14.00	Hrs.		
		Lamp model #				
		Ballast model#	\$18.00	Hrs.		
		Lamp model #				

- 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 1,000 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.

Fixture (including wiring & ballast)	Cost	Unit	Amperes Original (in a.m.c.)	Amperes New (in a.m.c.)	Ballast Type (if any)	Notes
T8 8ft 1 lamp replacing T12 8 ft 2 lamp (retrofit only)*	\$10.00			Hrs.		
T8 4ft 2 lamp replacing T12 4ft 3 lamp (retrofit only)*	\$5.00			Hrs.		
T8 4ft 1 lamp replacing T12 4ft 2 lamp (retrofit only)*	\$5.00			Hrs.		
T8 3ft 3 lamp replacing T12 3ft 4 lamp (retrofit only)*	\$4.00			Hrs.		
T8 3ft 2 lamp replacing T12 3 ft 3 lamp (retrofit only)*	\$4.00			Hrs.		
T8 3ft 1 lamp replacing T12 3 ft 2 lamp (retrofit only)*	\$4.00			Hrs.		
T8 2ft 3 lamp replacing T12 2 ft 4 lamp (retrofit only)*	\$3.00			Hrs.		
T8 2ft 2 lamp replacing T12 2 ft 3 lamp (retrofit only)*	\$3.00			Hrs.		
T8 2ft 1 lamp replacing T12 2ft 2 lamp (retrofit only)*	\$3.00			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.
- All fixtures, lamps and ballasts must be UL certified and meet all applicable codes and regulations.
- Incentive capped at 50% of the equipment cost.

42W B lamp HB CFL replacing 400W HID (retrofit only)	\$50.00		Hrs.			
CFL - Screw In (lamp only) replacing an incandescent (retrofit only)	\$1.50 / lamp		Hrs.			
CFL - Screw-In dimmable or 3-way bulb replacing an incandescent dimmable or 3-way bulb (retrofit only)	\$2.00 / lamp		Hrs.			
CFL - Hardwired Fixture replacing or in lieu of incandescent fixture (only pin based CFL's qualify) **check one <input checked="" type="checkbox"/> R <input type="checkbox"/> FE	\$10.00 / fixture	17	2200Hrs.	\$119.00	03/07	\$170.00
Up to 30W CFL Flood Lamp with Reflector replacing 100W or less incandescent (retrofit only)	\$3.00 / lamp		Hrs.			
33W - 115W CFL lamp replacing 100 W or more Incandescent	\$5.00 / lamp		Hrs.			
ENERGY STAR 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=ictrl.display_products_oil Model Number	\$10.00 / 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_od Model Number	\$15.00 / fixture		Hrs.			
Total Value						
320W Pulse Start Halide replacing 400W HID (retrofit only) **check one <input type="checkbox"/> R <input type="checkbox"/> FE	\$25.00		Hrs.			
CERAMIC METAL HALIDE						
20W Ceramic Metal Halide fixture replacing <input type="checkbox"/> Incandescent or <input type="checkbox"/> Halogen of at least 100 W	\$30.00		Hrs.			
39W Ceramic Metal Halide fixture replacing <input type="checkbox"/> Incandescent or <input type="checkbox"/> Halogen of at least 150 W	\$30.00		Hrs.			
50W Ceramic Metal Halide fixture replacing <input type="checkbox"/> Incandescent or <input type="checkbox"/> Halogen for a total of 195W	\$30.00		Hrs.			
70W Ceramic Metal Halide fixture replacing <input type="checkbox"/> Incandescent or <input type="checkbox"/> Halogen for a total of 225W	\$30.00		Hrs.			
100W Ceramic Metal Halide fixture replacing <input type="checkbox"/> Incandescent or <input type="checkbox"/> Halogens for a total of 270W	\$30.00		Hrs.			
150W Ceramic Metal Halide fixture replacing <input type="checkbox"/> Incandescent or <input type="checkbox"/> Halogens for a total of 360W	\$30.00		Hrs.			
25 W or less Ceramic Metal Halide with integral ballast replacing 70 W or greater incandescent flood light	\$10.00/lamp		Hrs.			

Remove per customer's request

- 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.

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 ** <input type="checkbox"/> R <input type="checkbox"/> NC <input type="checkbox"/> FE	\$75.00 / fixture					
LED Exit Signs (replacing or retrofitting existing incandescent or compact fluorescent exit sign)	\$10.00 / fixture	13 ✓	2200	\$390.00	03/07	\$130.00
LED Lighting In Reach-in Freezer or Cooler Case (replacing or in lieu of fluorescent fixtures) check one ** <input type="checkbox"/> R <input type="checkbox"/> NC <input type="checkbox"/> FE	\$50.00 / door					
LED Case Lighting Sensor Controls ** <input type="checkbox"/> R <input type="checkbox"/> NC <input type="checkbox"/> FE	\$10.00 / sensor					
Under 500 W connected to sensor check one ** <input type="checkbox"/> R <input type="checkbox"/> NC <input type="checkbox"/> FE	\$20.00 / sensor					
Over 500 W connected to sensor check one ** <input type="checkbox"/> R <input type="checkbox"/> NC <input type="checkbox"/> FE	\$40.00 / sensor					

- 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 1,000 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.

Exterior LED or Induction fixture replacing up to 175W HID Model Number	\$40 / fixture					
Exterior LED or Induction fixture replacing 176W – 250W HID Model Number	\$50 / fixture					
Exterior LED or Induction fixture replacing 251W – 400W HID Model Number	\$80 / fixture					
Exterior LED or Induction fixture replacing > 400 W HID Model Number	\$150 / fixture					
Garage LED or Induction fixture replacing up to 175 W HID Model Number	\$100 / fixture					
Garage LED or Induction fixture replacing 176W – 250W HID Model Number	\$150 / fixture					
Garage LED or Induction fixture replacing 251W – 400 W HID Model Number	\$250 / fixture					
Garage LED or Induction fixture replacing > 400 W HID Model Number	\$400 / fixture					
LED Auto Traffic Signals (replacing incandescent) Model Number	\$12.50 / lamp					
LED Pedestrian Signals (replacing Incandescent) Model Number	\$25.00 / 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 LED and induction lighting must result in a total power reduction 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.



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.
- Applications, along with the required documentation, must be submitted within 90 days of equipment installation and operation.
- 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. I 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 its 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. Review program and equipment requirements on the incentive application. (Page 6)
2. Purchase and install eligible energy-efficient equipment.
3. Complete and submit application within 90 days after equipment has been installed and is operational.
4. **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.
5. Duke Energy may require site verification of projects that have been self-installed, prior to payment of incentive.
6. Email the complete, signed application with all required documents to PrescriptiveIncentives@duke-energy.com or fax to 1-866-908-4921 or mail to the following address:

Duke Energy
Smart Saver® Incentive Program
431 Charming Drive
Madison, WI 53713
7. 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.

COOPER LIGHTING - SURE-LITES®

DESCRIPTION

In the event of AC power failure, the Sure-Lites FBP Emergency Battery Pack automatically switches to emergency mode. It maintains illumination of one or two lamps for a minimum of 90 minutes. UL listed for field retrofit installation and conforms to UL 524.

SPECIFICATION FEATURES

Electronic	UL Listed for Retrofit/Field Installation
Dual Voltage Input 120/277 VAC, 50Hz	Life Safety NFPA 101
Universal Voltage Input 120-277 VAC, 50/60Hz (FBP240HSD)	NEC/OSHA
Solid-state Charger	Most State and Local Codes
Overload/Short Circuit Protection	Chicago Approved
Test Switch/Power Indicator Light	Features
Battery	Provides a minimum of 90 minutes of emergency illumination
Sealed Nickel Cadmium	Can be installed inside or on top of fixture
Maintenance-free, Long Life	Low Profile Housing (FBP450LP)
Full Recharge Time, 24 hours (max.)	Easy-to-follow instructions make installation quick and simple
Code Compliance	May be used with switched or unswitched fixtures
UL 524 Listed	

Catalog #	Type
Project	A4EM
Comments	Hopewell School
Prepared by	Date

Self-Diagnostics (FBP240HSD)

One lamp operation (FBP240D, FBP140X, FBP240U, FBP450LP)

One or two lamp operation (FBP240M, FBP240H, FBP240C, FBP240HU, FBP240HSD)

Compatible with many different lamp types—consult ordering information below or consult your Cooper Lighting Representative regarding specific applications

Compatible with many ballast types including standard, rapid start, slimline, instant start, energy saving, dimming, and electronic AC ballasts—consult your Cooper Lighting Representative regarding specific applications



*FBP SERIES

FLUORESCENT
EMERGENCY
BATTERY PACK
Emergency Lighting

ORDERING INFORMATION

Catalog No.	Lamp Type	Number of Lamps Operated in Emergency Mode	Initial Lumens
FBP140X	30W 4-pin, 2'-0", T8-T12 U-shaped, circular, 2D, energy saving, rapid start 14-pin, 2G11 long compact fluorescent	One	350-450
FBP240U	17W-215W, 2'-0", T8-T12 HO, VHO, U-shaped, circular, 2D, energy saving, rapid start 4-pin, 2G11 long compact fluorescent	One	600-700
FBP240M	17W-215W, 2'-0", T8-T12 HO, VHO, U-shaped, circular, 2D, energy saving, rapid start 4-pin, 2G11 long compact fluorescent	One-20W to 215W (2'-0") One-40W to 30W long compact fluorescent One or Two 20W to 40W (2'-0")	600-700
FBP240H	17W-215W, 2'-0", T8-T12 HO, VHO, U-shaped, circular, energy saving, rapid start 4-pin, 2G11 or GX24q long compact fluorescent	One or Two - 17W to 24W One or Two - 32W to 40W (2'-0") One - 40W to 215W (5'-0") One or Two - 18W to 21W long compact fluorescent One or Two - 30W to 32W 4-pin compact fluorescent	1100-1400 (700-1000 for long compact fluorescent)
FBP240HSD	17W-215W, 2'-0", T8-T12 HO, VHO, U-shaped, circular, energy saving, rapid start 4-pin, 2G11, GX24q, or GX24q twin, quad and triple twin-tube compact	One or Two - 17W to 40W (2'-0") One - 40W to 215W (5'-0") One or Two - 18W to 30W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1100-1400 (700-1000 for long compact fluorescent)
FBP240HU	17W-215W, 2'-0", T8-T12 HO, VHO, U-shaped, circular, energy saving, rapid start 4-pin, 2G11, GX24q, or GX24q twin, quad and triple twin-tube compact	One or Two - 17W to 40W (2'-0") One - 40W to 215W (5'-0") One or Two - 18W to 29W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1100-1400 (700-1000 for long compact fluorescent)
FBP240C	6W-26W tubular without integral starter, 13W-42W 4-pin twin, quad, or triple twin-tube compact fluorescent without integral starters	One or Two - 6W to 26W tubular One or Two - 13W to 30W or One - 42W 4-pin compact fluorescent	300-450
FBP240D	17W-26W quad size with integral starter in 1/2" pin base	One - 18W to 26W compact fluorescent	300-450
FBP240S	17W-215W, 2'-0", T8-T12 HO, VHO, U-shaped, circular, energy saving and 4-pin, 2G11, GX24q, or GX24q twin, quad and triple twin-tube compact	One or Two - 17W to 40W (2'-0") One - 40W to 215W (5'-0") One or Two - 18W to 39W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1400-1600
FBP450LP	30W, 4", 18"	One	450

FBP140X, FBP240C, FBP240D and FBP250D are only models with conduit.

ORDERING INFORMATION

SAMPLE NUMBER: FBP140X

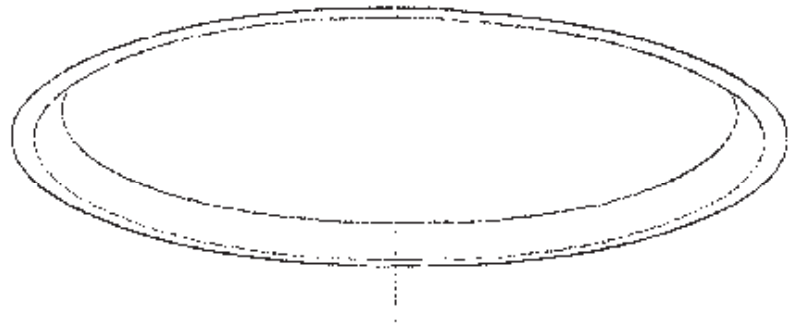
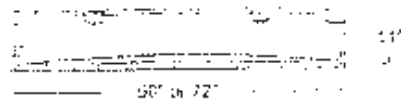
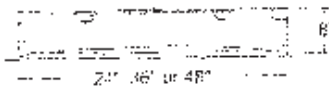
Power	Input
Model No.	120V
FBP140X	4.5W
FBP240U	5.3W
FBP240M	5.3W
FBP240H	5.8W
FBP240HSD	4.0W
FBP240HU	6.0W
FBP240C	5.3W
FBP240D	3.5W
FBP250D	8.0W
FBP450LP	1.5W

style **A5**

job name **Hopewell School**

defining number **P8930-4TB-CWA-TMW-SC-120V-X1-RSE-FH**

transmittance **P-8900**



ordering

series	lamp rows	shielding	color/finish	circuiting	voltage	ceiling system	options
P-8930	2' diameter 1) diameter: (2) T8, T8HQ 2BX_w 3BX_w 4RX_w	CWA* concave white acrylic VWA convex white acrylic	TMW* textured matte white YGW glass white V... premium color CC custom color	SC single circuit DC dual circuit	120 277 347*	X1 exposed T-bar X3B* hard ceiling	EML* EMH* DM RSE* 10THD* B... FH
P-8940	3' diameter 1) diameter: (4) T8, T5, T5HQ (6) T8, T5, T5HQ	FWA* flat white acrylic			*T5, T5HQ, A, T, HQ, w/b		
P-8940	4' diameter 1) diameter: (4) T8, T5, T5HQ (6) T8, T5, T5HQ (8) T8, T5, T5HQ						
P-8950	5' diameter (6) T8, T5, T5HQ (8) T8, T5, T5HQ (10) T8, T5, T5HQ						
P-8950	6' diameter (8) T8, T5, T5HQ (10) T8, T5, T5HQ (12) T8, T5, T5HQ						

*Max. specify per arm, 2' max. length

*Indicate color of exterior and interior

*consult factory for fixture identification, T5 & ballasts

Applications: Offices, lobbies, retail, schools, libraries, themed spaces

Features: A round, recessed luminaire with a housing depth that ensures even lens illumination. Designed for T5HQ, T8 or biax lamps. This fixture is ideal for spaces where non-traditional fixtures are desired to amplify the architectural design. The extruded aluminum copolymers gives the fixture strength and clean architectural detailing. Concave, convex or flat lenses are available.

Construction: The housing, available in 2-, 3-, 4-, 5- or 6-foot diameter, is made of die-formed, 20-gauge steel.

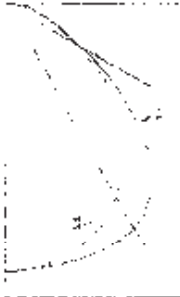
Finish: The standard housing color is glass white (YGW) while the standard exterior trim color is textured matte white (TMW) using polyester powder paint. Refer to Defining Section for optional paint colors.

Electrical: T8 and biax fixtures have instant-start electronic ballasts with less than 20% THD. T5HQ fixtures have programmed-start electronic ballasts with less than 10% THD. Fixtures are U.L. Listed (non-emergency) and I.B.E.W. manufactured. Maximum ballast size available: 2 3/8" width x 1 1/2" height.

Mounting: Fixture is to be recess-mounted into exposed T-bar or hard ceiling application(s).

Options: EML: emergency battery (T5HQ=700 lumens; T8=600 lumens; BX=600-700 lumens); EMH: emergency battery (T5HQ=1200 lumens; T8=1200 lumens; BX=900-1100 lumens); DM: dimming (consult factory); **RSE**: rapid-start electronic, (T8 and biax only); 10THD: ballast with < 10% total harmonic distortion, (T8 and biax only); B... specific ballast, specify manufacturer and catalog number (consult factory); **FH**: fixture fusing (slow blow).

PHOTOMETRICS



2GC-2BX40A
 Electronic Ballast
 F40BX/S/PX35/R5
 Lamps
 3150 Lumens

Spacing criterion:
 (H) 1.2 x mounting height, (L) 1.4 x mounting height
 Efficiency 74.3%

Test Report:
 2GC2BX40AIES
 LER = FL-62
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.87

Coefficients of Utilization

rc	Effective floor cavity reflectance													
	80%				70%				50%					
	70	50	30	10	70	50	30	10	50	30	10	50	30	10
0	22	28	28	28	18	26	26	26	13	23	23	7	19	19
1	32	39	36	34	23	32	32	32	16	27	27	10	25	25
2	36	43	38	36	24	33	33	33	17	28	28	11	26	26
3	37	43	38	36	24	33	33	33	17	28	28	11	26	26
4	38	44	39	37	24	33	33	33	17	28	28	11	26	26
5	38	44	39	37	24	33	33	33	17	28	28	11	26	26
6	38	44	39	37	24	33	33	33	17	28	28	11	26	26
7	38	44	39	37	24	33	33	33	17	28	28	11	26	26
8	38	44	39	37	24	33	33	33	17	28	28	11	26	26
9	38	44	39	37	24	33	33	33	17	28	28	11	26	26
10	38	44	39	37	24	33	33	33	17	28	28	11	26	26

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	1526	24.7	22.6
0-40	2492	39.6	33.2
0-50	4013	63.7	51.2
0-60	4682	74.3	60.0
0-100	4582	74.3	100.0

Typical VCP Percentages

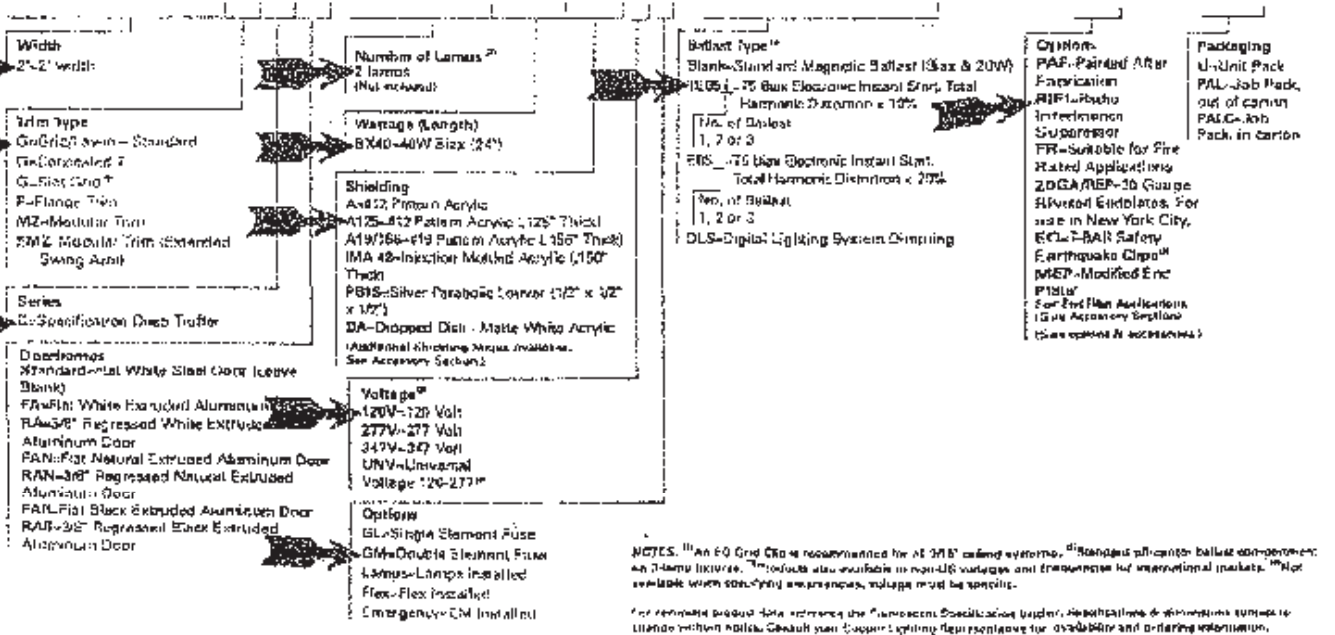
Room Size (ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	56	64	55	60
20 x 30	51	56	49	52
30 x 30	41	45	37	40
60 x 30	52	57	50	55
60 x 60	42	45	38	41

Candela

Angle	Along H	45°	Across L
0	1822	1802	1802
5	1896	1858	1811
10	1868	1830	1816
15	1817	1803	1817
20	1737	1806	1804
25	1641	1778	1852
30	1527	1648	1774
35	1375	1406	1862
40	1204	1031	1494
45	1007	1026	1206
50	799	906	954
55	618	678	744
60	479	472	528
65	368	322	383
70	273	272	301
75	202	175	214
80	154	148	156
85	86	74	104
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2GC-2BX40A-120V-E181-U



NOTES: ¹¹An E0 Grid Clo is recommended for all 200w ceiling systems. ¹²Standard electronic ballast components are 3-amp fixtures. ¹³Products also available in non-US voltages and frequencies for international markets. ¹⁴Not available with some trim accessories, voltage must be specified.

For complete product data, reference the Component Specification Guide, HealthCare & Education samples to include product data. Contact your Support Lighting Representative for 0500490 and ordering information.

SHIPPING INFORMATION

Catalog No.	WL
2GC-2BX40A	18 lbs.

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construction

Nominal 4-1/2" deep, para-contoured housing, die formed, cold gauge, prime cold rolled steel. Die stamped housing has full length die formed stiffeners for added strength. Deep "V" ballast wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture and suspension joints provided, KDs for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B - Electrical

Ballasts are CBM/ETL Class "F" and are positively secured. 2C11 base lampholders have double-edge wiping action pressure lock contacts with free dentally oriented lamp support clips. UL/CUL listed. Suitable for damp locations.**

C - Finish

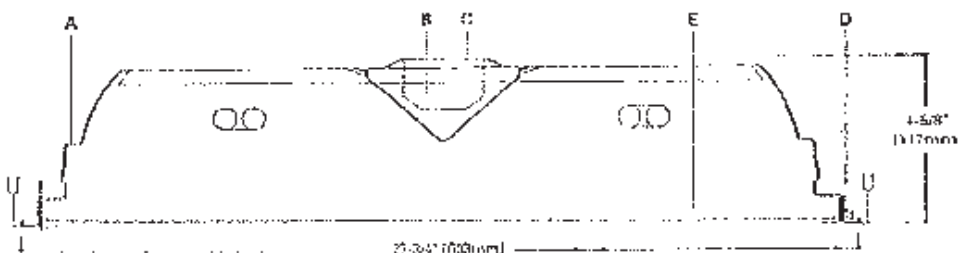
Multi-stage, wet phosphate pretreatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Hinging/Latching

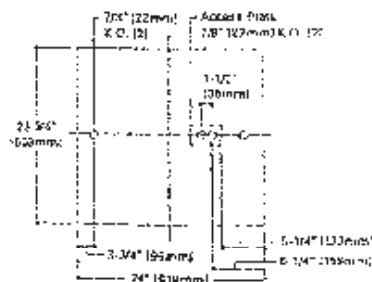
Positive cam action spring loaded steel latches with baked white enamel finish. Safety lock T-hinges allow hinging and latching either side.

E - Frame/Shielding

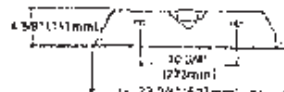
Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Positive light series, light stabilized 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.



MOUNTING DATA



LAMP CONFIGURATIONS



CEILING COMPATIBILITY

G	B	G	F	M2	Ceiling Type*	Trim Type
Grid/lay-in Standard	Concealed	Non Grid	Flange Trim With Supporting Swing Gates	Moover Trim With Supporting Swing Gates	Exposed T-bar Composite T-bar Slotted Slange Concealed Spine Metal Fan	G M2

Catalog #	Type
2GC-2BX40A125-720V-GM-EL-	A9EM
Product	FBR240H-TEB51-R1F7
Comments	Hopewell School
Prepared by	Date

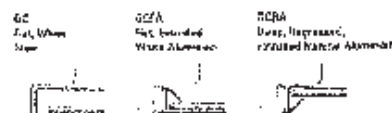


ZGC2BX40

2' X 2' TROFFER
2 BIAXIAL LAMPS

Specification Deep Troffer

DOOR FRAMES



ENERGY DATA

Input Watts:
R9 Ballasts @ STD Lamps
2BX40 (67)

STD Ballast & STD Lamps
2BX40 (62)

Luminaire Efficiency Rating
LER = 71-62
Catalog Number: ZGC-2BX40

Yearly Cost of 1000 lumens,
2600 hrs at .06 KWH = \$3.57

* Refer to the Installation, spec. in the Technical Section for specific installation requirements.

** Consult the Sales Technical Support



CFL Fixture

METALUX®

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast/wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture and suspension points provided. KO's for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B - Electrical

Ballasts are CBMETL Class "P" and are positively secured. ZGC's base lampholders have double-edge wiping action pressure lock contacts with horizontally oriented lamp support clips. UL/CUL listed. Suitable for damp locations. **

C - Finish

Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Ringing/Latching

Positive cam action spring loaded steel latches with baked white enamel finish. Safety-lock hinges allow latching and unlatching either side.

E - Frame/Shielding

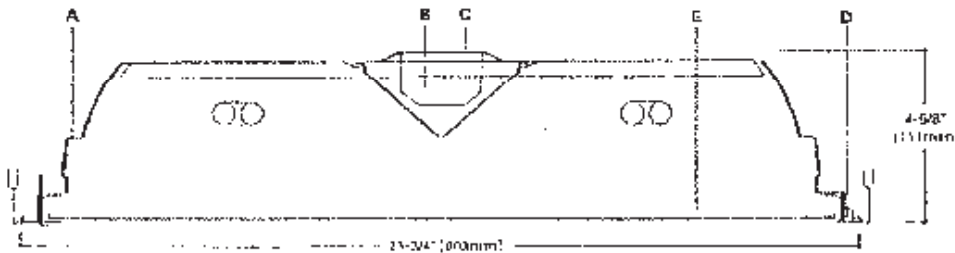
Die formed, heavy gauge, flat steel end with reinforced mitered corners and baked white enamel finish. Positive light seals. Light stabilized 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.



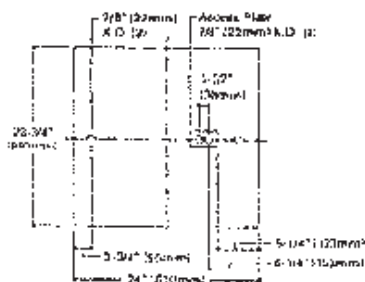
ZGC2BX40

2' X 2' TRIDFER
2 BIAXIAL LAMPS

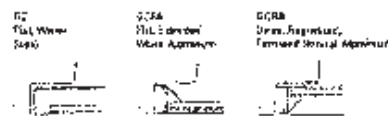
Specification Deep Troffer



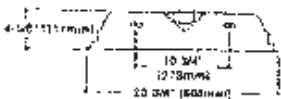
MOUNTING DATA



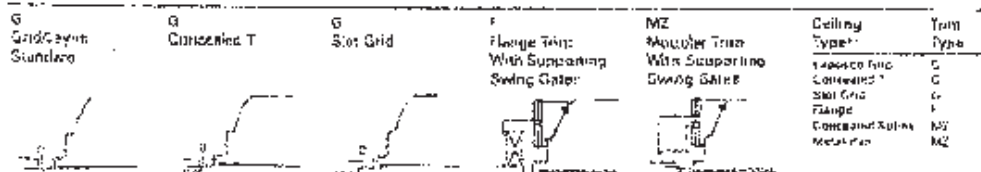
DOOR FRAMES



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



ENERGY DATA

Input Watts:
28 Ballast & STD Lamps
22840 (67)

STD Ballast & STD Lamps
25X40 (32)

Luminaire Efficacy Rating
LER = FL-6Z

Catalog Number: ZGC2BX40

Typical Cost of 1000 luminaire,
3000 hrs at .08 KWH = \$3.87

*Reference the luminaire data on the Technical Section for specific lamp fixture requirements.

**Contact the Sales Technical Support.

© 2000 METALUX



PHOTOMETRICS



ZGC-2BX40A
 Electronic Ballast
 F40EX/SPX35/RS
 Lamps
 3750 Lumens

Spacing criterion:
 (H) 1.2 x mounting
 height, (L) 1.4 x
 mounting height

Efficiency 74.3%

Test Report:

ZGC2BX40A.JES

LER = FL-62

Yearly Cost of 1000
 lumens, 3000 hrs. at
 .08 KWH = \$2.87

Coefficients of Utilization

Effective floor cavity reflectance	70%																
	80%				70%				50%				30%				
row	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
0	58	68	82	88	56	66	80	86	42	52	66	76	86	76	76	76	74
1	52	59	74	74	50	57	72	73	34	42	56	64	70	68	69	67	65
2	45	50	65	67	44	49	64	65	24	30	44	51	58	57	56	54	53
3	39	43	58	54	38	42	57	58	16	20	34	41	47	46	45	44	43
4	33	37	51	47	32	36	51	49	10	14	28	35	41	40	39	38	37
5	28	31	45	40	28	31	46	44	6	8	22	28	34	33	32	31	30
6	24	26	40	35	24	26	40	38	4	5	18	23	28	27	26	25	24
7	21	22	35	31	21	22	35	33	3	4	15	20	24	23	22	21	20
8	17	19	31	27	17	19	31	29	2	3	12	16	20	19	18	17	16
9	14	15	26	24	14	15	26	24	1	2	9	12	15	14	13	12	11
10	11	12	21	20	11	12	21	20	1	1	7	9	11	10	9	8	7

Zonal Lumen Summary

Zone	Lumens	% Lumens	% Fixtures
0-30	1526	24.5	32.5
0-40	2492	38.6	53.2
0-50	3037	46.7	65.7
0-90	4597	74.3	100.0
B-180	4597	74.3	100.0

Typical VCP Percentages

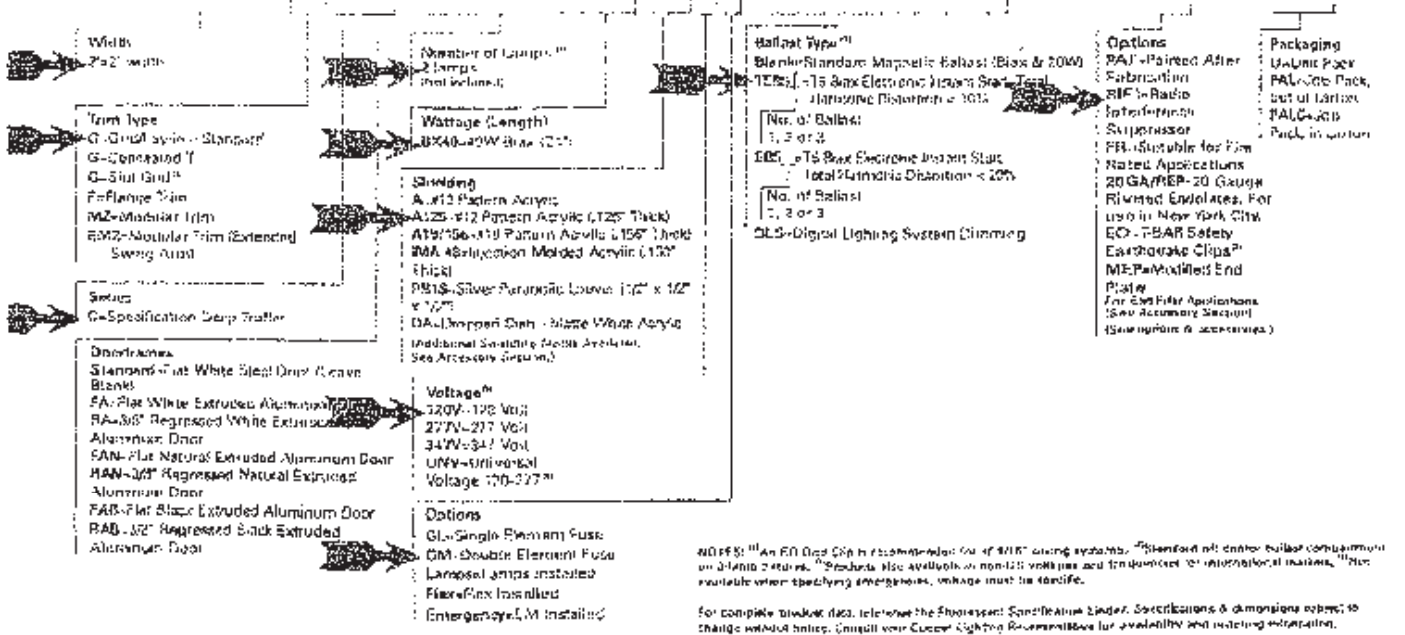
Room Size (ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
10 x 20	59	84	55	80
20 x 30	51	75	48	71
30 x 30	44	65	37	60
60 x 30	52	77	50	75
60 x 60	42	65	38	61

Candela

Angle	Along H	45°	Across H
0	1807	1032	1902
5	1896	1028	1911
10	1958	1004	1936
15	1872	1025	1911
20	1737	1006	1884
25	1647	1008	1867
30	1521	1040	1774
35	1375	1000	1650
40	1204	1031	1494
45	1007	1120	1260
50	795	1206	990
55	616	1278	744
60	479	1332	528
65	368	1372	382
70	279	1397	264
75	202	1415	180
80	154	1426	120
85	98	1428	60
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER ZGC-2BX40A-120V-E35710



NOTES: *An E0 Diep Chip is recommended for all E0 diep lighting systems. **Standard end-center ballast compartment is 3-1/2" x 4-1/2". **Products also available in non-120 voltages and frequencies for international markets. ***The available when specifying emergency, voltage must be specified.
 For complete product data, reference the Emergency Specifications Index. Specifications & dimensions subject to change without notice. Consult your Cooper Lighting Representative for availability and pricing information.

SHIPPING INFORMATION
 Catalog No. **W3**
 ZGC-2BX40A 18 lbs.

COOPER LIGHTING - SURE-LITES®

DESCRIPTION

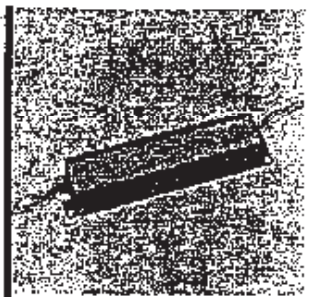
In the event of AC power failure, the Sure-Lites FBP Emergency Battery Pack automatically switches to emergency mode. It maintains illumination of one or two lamps for a minimum of 90 minutes. UL listed for direct retrofit installation and conforms to UL 924.

SPECIFICATION FEATURES

Electronic	UL Listed for Retrofit/Field Installation
Start Voltage Input 120/277 VAC, 60Hz	Life Safety NFPA 101
Universal Voltage Input 120/277 VAC, 60/50/40 FT/US/01/UT	NEC/OSHA
Solid-state Charger	Most State and Local Codes
Overload/Short Circuit Protection	Code Approved
Test Switch/Power Indicator Light	Features
Battery	Provides a minimum of 90 minutes of emergency illumination
Sealed Nickel Cadmium	Can be installed inside or on top of fixture
Maintenance-free, Long Life	Low Profile Housing (FBP450LP)
Full Recharge Time, 24 hours (max.)	Easy-to-follow instructions make installation quick and simple
Code Compliance	May be used with switched or unswitched fixtures
UL 924 Listed	

Catalog #	Type
Project	AGEM
Comments	
Hopewell School	
Prepared by	Date

Self-Diagnostics (FBP240HSD)
 One lamp operation (FBP240D, FBP140X, FBP240U, FBP450LP)
 One or two lamp operation (FBP240M, FBP240H, FBP240C, FBP240HU, FBP240HSD)
 Compatible with many different lamp types—consult ordering information below or consult your Cooper Lighting Representative regarding specific applications
 Compatible with many ballast types including standard, rapid start, dimming, instant start, energy saving, dimming, and electronic AC ballasts—consult your Cooper Lighting Representative regarding specific applications



*FBP SERIES

FLUORESCENT
 EMERGENCY
 BATTERY PACK
 Emergency Lighting

ORDERING INFORMATION

Catalog No.	Lamp Type	Number of Lamps Operated in Emergency Mode	Initial Lumens
FBP140X	25W-47W, 2'-4", T8-T12 U-shaped, circulate, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	350-450
FBP240U	12W-215W, 2'-8", T8-T12 HC, VHO, U-shaped, circulate, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	600-700
FBP240M	12W-215W, 2'-8", T8-T12 HD, VHO, U-shaped, circulate, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One or Two: 20W to 215W (2'-8") One or Two: 20W to 40W (2'-4")	600-700
FBP240H	12W-215W, 2'-8", T8-T12 HD, VHO, U-shaped, circulate, energy saving, rapid start (4-pin, 2G11 or GX24q) long compact fluorescent	One or Two: 17W to 28W One or Two: 32W to 40W (2'-4") One or Two: 40W to 215W (5'-8") One or Two: 10W to 39W long compact fluorescent One or Two: 10W to 39W 4-pin compact fluorescent	1100-1400 1700-1900 for long compact fluorescent
FBP240HSD	12W-215W, 2'-8", T8-T12 HD, VHO, U-shaped, circulate, energy saving, rapid start (4-pin, 2G11, GX24q, or GX24q) twin, quad and triple twin tube compacts	One or Two: 17W to 40W (2'-4") One: 40W to 215W (5'-8") One or Two: 18W to 39W long compact fluorescent One: 40W to 55W long compact fluorescent One or Two: 18W to 39W 4-pin compact fluorescent	1100-1400 1700-1900 for long compact fluorescent
FBP240HU	12W-215W, 2'-8", T8-T12 HD, VHO, U-shaped, circulate, energy saving, rapid start (4-pin, 2G11, GX24q, or GX24q) twin, quad and triple twin tube compacts	One or Two: 17W to 40W (2'-4") One: 40W to 215W (5'-8") One or Two: 32W to 39W long compact fluorescent One: 40W to 55W long compact fluorescent One or Two: 18W to 42W 4-pin compact fluorescent	1100-1400 1700-1900 for long compact fluorescent
FBP240C	5W-28W tubular without integral starter, 13W-42W 4-pin twin, quad, or triple twin tube compact fluorescent without integral starters	One or two: 5W to 28W tubular One or Two: 13W to 39W or One: 42W 4-pin compact fluorescent	300-350
FBP240D	18W-28W quad tube with integral starter in two pin base	One: 18W to 28W compact fluorescent	300-350
FBP240E	17W-215W, 2'-8", T8-T12 HD, VHO, U-shaped circulate, energy saving and (4-pin, 2G11, GX24q, or GX24q) twin, quad and triple twin tube compacts	One or Two: 17W to 40W (2'-4") One: 40W to 215W (5'-8") One or Two: 18W to 39W long compact fluorescent One: 40W to 55W long compact fluorescent One or Two: 18W to 42W 4-pin compact fluorescent	1450-2500
FBP250L	32W, 8', TB	One	450

*FBP240C, FBP240D and FBP250E are only models with conduit.

ORDERING INFORMATION

SAMPLE NUMBER: FBP140X

See chart above for Accessories.
 Order separately:
 FBP1WB Cable Bundle Cover for external mount applications (if required)

Power	Input
Model No.	120V
FBP140X	4.5W
FBP240U	5.3W
FBP240M	5.3W
FBP240H	5.8W
FBP240HSD	4.0W
FBP240HU	5.0W
FBP240C	5.3W
FBP240D	3.5W
FBP250E	8.0W
FBP450LP	1.5W

PHOTOMETRICS



Coefficients of Utilization

FC	Effective floor cavity reflectance												FC	
	80%				70%				50%					
	70	50	30	10	70	50	30	10	50	30	10	50		30
0	95	88	81	74	87	81	75	69	82	76	71	64	59	54
1	87	81	75	69	85	80	74	68	79	73	67	57	52	47
2	81	75	70	64	79	73	67	61	71	65	59	55	50	45
3	74	69	63	57	72	66	60	54	63	57	51	51	46	41
4	68	63	57	51	67	61	55	49	57	51	45	45	40	35
5	62	57	51	45	61	55	49	43	51	45	39	40	35	30
6	56	51	45	39	55	49	43	37	48	42	36	38	33	28
7	50	45	39	33	49	43	37	31	42	36	30	35	30	25
8	45	39	33	27	44	38	32	26	37	31	25	32	27	22
9	40	34	28	22	40	34	28	22	33	27	21	29	24	19
10	35	29	23	17	36	30	24	18	30	24	18	26	21	16

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1328	25.7	29.6
0-40	2265	39.3	48.5
0-60	3743	66.8	84.1
0-80	4447	79.4	100.0
0-100	4447	79.4	100.0

Typical VCP Percentages

Room Size (ft. x ft.)	Height Along		Height Across	
	8'-0"	10'-0"	8'-0"	10'-0"
20 x 30	77	75	89	72
30 x 30	88	70	85	68
30 x 60	82	64	87	60
60 x 30	70	73	69	71
60 x 60	62	64	58	61

Candela

Angle	Along If	45°	Average
0	1688	1656	1660
5	2447	1682	1991
10	1627	1624	1620
15	1555	1623	1645
20	1545	1600	1633
25	1481	1545	1604
30	1400	1498	1557
35	1299	1405	1480
40	1174	1294	1360
45	1015	1126	1245
50	865	984	1093
55	747	864	959
60	620	759	821
65	505	672	729
70	397	590	649
75	294	513	571
80	196	442	510
85	103	377	441
90	0	312	377

2GC-232A
Electronic Ballast
F22T8/35K Lamps
2800 Lumens

Spacing criterion:
(H) 1.3 x mounting
height, (L) 1.4 x
mounting height

Efficiency 79.4%

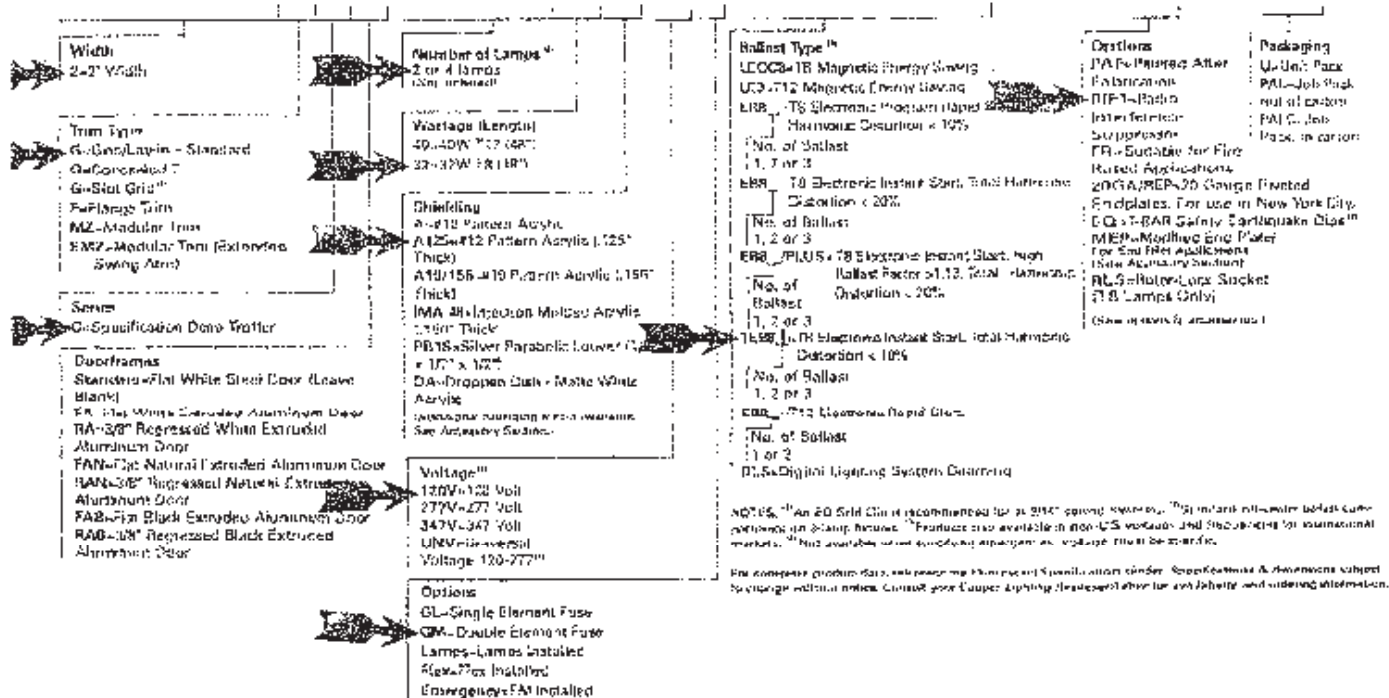
Test Report:
2GC232A.TES

LER - FL 88

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH - \$3.64

ORDERING INFORMATION

SAMPLE NUMBER: 2GC-232A-120V-EBB-1



SHIPPING INFORMATION

Catalog No.	Wt.
2GC-232A	28 lbs
2GC-432A	37 lbs

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A...Construction

Nominal 4-1/2" deep, para-contoured housing, die formed, cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KDs for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B...Electrical*

Ballasts are CBMAETL Class "H" and are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed.**

C...Finish

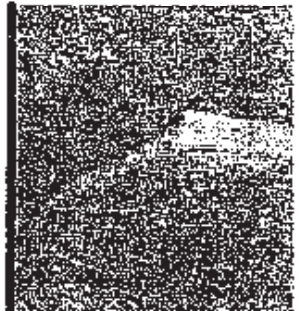
Multistage, iron phosphate pre-treatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D...Hinging/Latching

Positive cam action spring loaded steel latches with baked white enamel finish. Safety-lock T-hinges allow hinging and latching either side.

E...Frame/Shielding

Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Positive light seals. Light stabilized 100% virgin acrylic prismatic shielding. Standard #32 pattern. Optional shielding available.

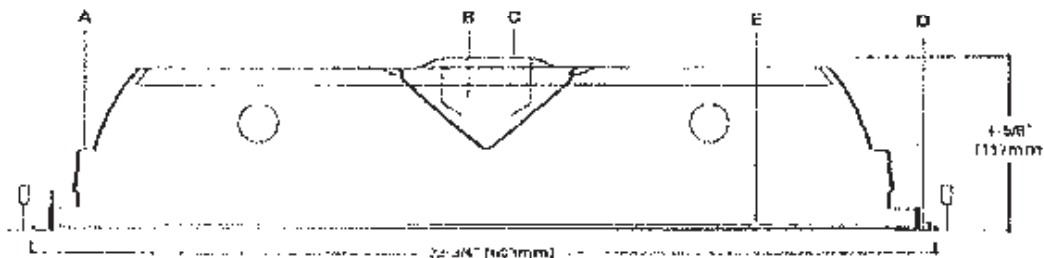


2GC2

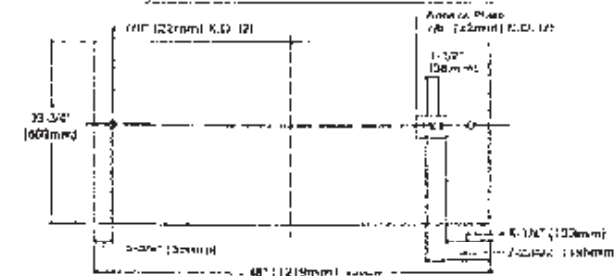
2
4
4

2' X 4' TROFF
2 OR 4 LAN

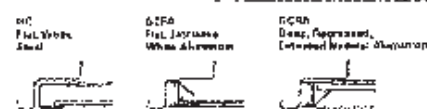
Specification Deep Tro



MOUNTING DATA



DOOR FRAMES



ENERGY DATA

Input Watts:
EB Ballast & STD Lamp
240 (172)
292 (59)
440 (144)
432 (122)

ES Ballast & STD Lamps
240 (86)
292 (71)
440 (172)
432 (142)

LAMP CONFIGURATIONS



CEILING COMPATIBILITY

G Grid/Type Standard	G Contoured T	G Steel Grid	F Flange Trim With Supporting Swing Gates	M2 Module Trim With Supporting Swing Gates	Ceiling Type**	Trim Type
					Expanding Grid	G
					Contoured T	G
					Steel Grid	G
					Range	F

Luminaire Efficacy Rating
LER = 86
Catalog Number 2GC-232A

Yearly Cost of 1000 Luminaires,
3000 hrs at .08 KWH = \$5.84

*Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

**Consult Pre-Sales Technical Support

PHOTOMETRICS



ZGC-232A
 Electronic Ballast
 F32 T8/25K Lamps
 2800 Lumens
 Spacing criterion:
 (h) 1.3 x mounting
 height, (d) 1.4 x
 mounting height
 Efficiency 79.4%
 Test Report:
 ZGC232A.IES
 LER = FL-56
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.64

Coefficients of Utilization

rc	Effective floor cavity reflectance													
	80%				70%				20%					
	50	50	30	10	70	50	30	10	50	30	10	50	30	10
0	86	85	85	85	82	82	82	82	88	88	88	84	84	84
1	87	84	81	78	85	82	80	77	79	77	75	76	74	72
2	81	78	70	66	79	73	69	65	71	67	64	66	63	62
3	74	67	61	56	72	66	60	56	68	65	63	61	57	54
4	68	60	54	49	67	61	54	48	67	62	48	65	61	47
5	63	55	47	42	61	54	46	41	61	48	41	48	43	40
6	58	48	41	36	56	47	41	36	48	40	36	44	39	35
7	53	43	36	32	52	42	36	32	45	36	31	40	35	31
8	48	38	32	27	48	38	32	27	37	31	27	36	31	27
9	43	33	28	23	44	34	28	24	33	27	23	32	27	23
10	42	31	25	21	41	31	25	21	32	26	21	30	24	21

Candela

Area	Along H	45°	Across
0	1636	1636	1636
5	1647	1655	1663
10	1627	1644	1632
15	1595	1623	1600
20	1545	1590	1578
25	1487	1546	1504
30	1400	1486	1457
35	1299	1405	1402
40	1171	1294	1290
45	1012	1138	1245
50	825	954	1031
55	667	764	799
60	520	575	597
65	393	412	428
70	281	298	298
75	191	171	171
80	126	126	126
85	86	86	86
90	0	0	0

Zonal Lumen Summary

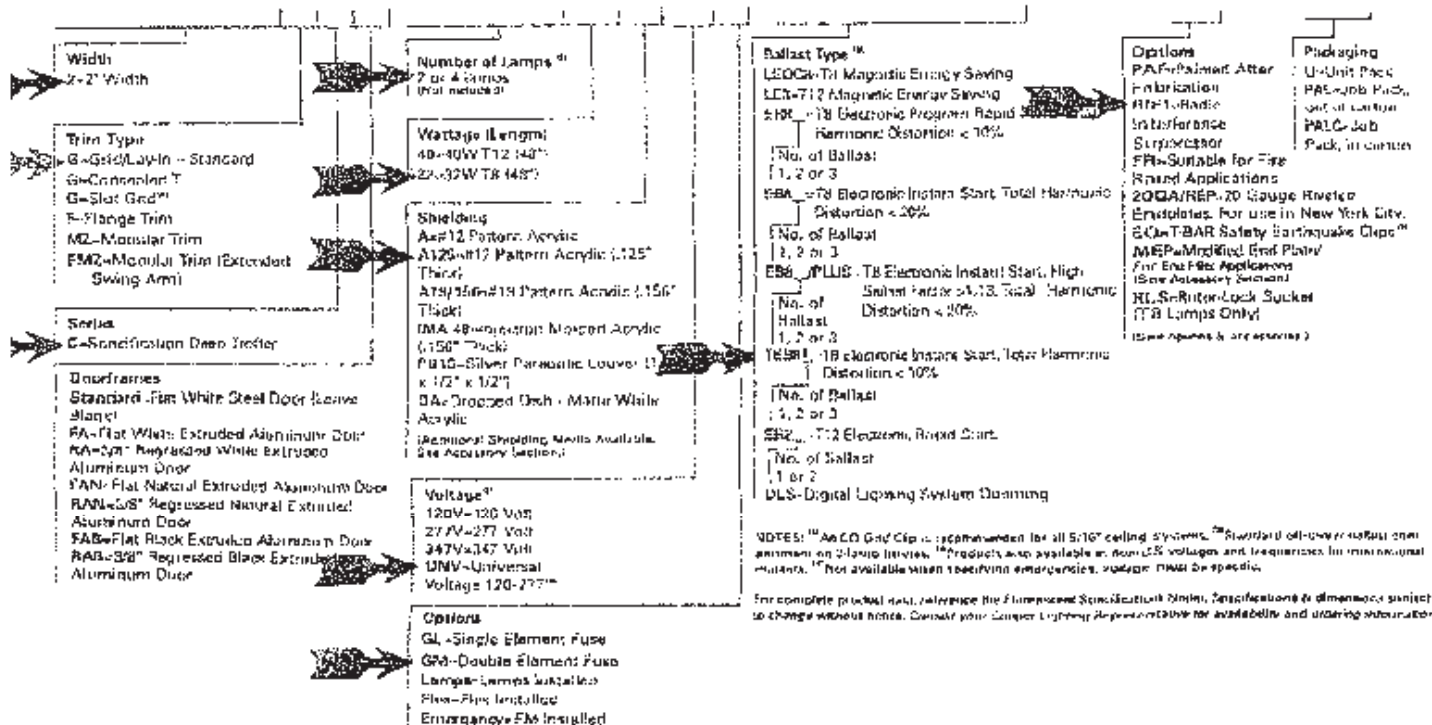
Zone	Lumens	%Lamps	%Fixture
0-30'	1298	75.1	29.5
0-40'	2263	39.3	43.5
0-50'	3742	56.8	84.1
0-60'	4647	79.1	100.0
0-150'	4447	79.1	100.0

Typical VCP Percentages

Room Size (ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	72	76	69	73
20 x 30	68	70	65	69
30 x 30	62	64	57	60
60 x 30	70	71	60	61
60 x 60	52	54	58	61

ORDERING INFORMATION

SAMPLE NUMBER: ZGC-232A-120V-EUR-0



SHIPPING INFORMATION

Catalog No.	Wt.
ZGC-232A	18 lbs.
ZGC-432A	37 lbs.

NOTES: ¹ An LED Grid Clip is recommended for all 5'x10' ceiling systems. ² Standard off-power ballast dimming is available on 2-lamp fixtures. ³ Products also available in non-US voltages and frequencies for international markets. ⁴ Not available when operating emergency, unless DIMM is specified.
 For complete product data, please refer to the Emergency Specification Sheet, Specifications & Dimensions printed to change without notice. Contact your Cooper Lighting Representative for availability and ordering information.

METALUX®

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum light to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A -- Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast/wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture and suspension points provided. KOs for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B -- Electrical**

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed.**

C -- Finish

Multistage, iron phosphate pre-treatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

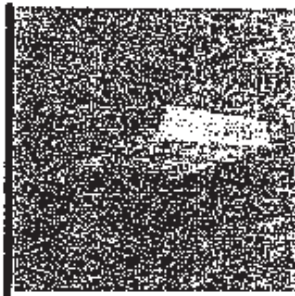
D -- Hinging/Latching

Positive cam action spring loaded steel latches with baked white enamel finish. Safety-lock hinges allow hinging and latching either side.

E -- Frame/Shielding

Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Positive light seals. Light stabilized 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.

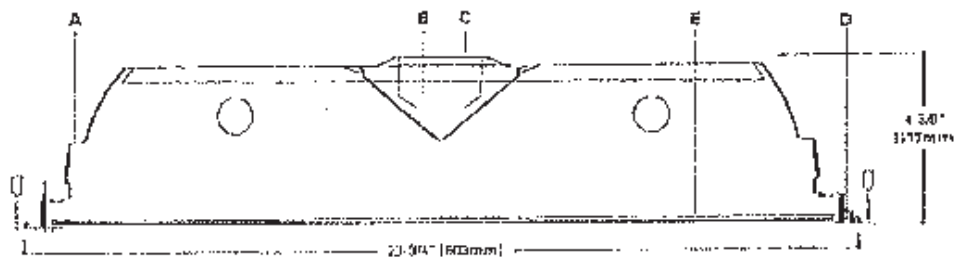
Catalog #	Type
2GC-232A125-UNR-L3335-	
Project G.M.-11831-RIFT	A3
Comments	
Hopewell School	
Prepared by	Date



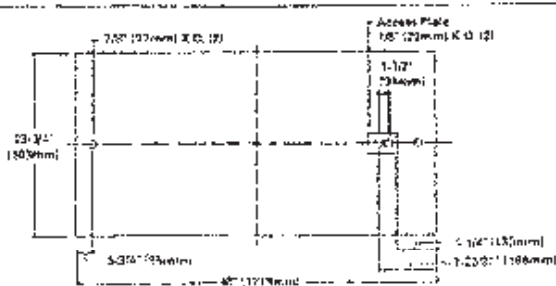
2GC240
232
440
432

2' X 4' TROFFER
2 OR 4 LAMPS

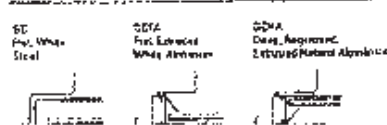
Specification Deep Troffer



MOUNTING DATA



DOOR FRAMES



ENERGY DATA

Input Watts
ES Ballast & STD Lamps
240 (72)
232 (61)
440 (144)
432 (132)

ES Ballast & STD Lamps
240 (86)
232 (71)
440 (172)
432 (142)

Luminaire Efficacy Rating

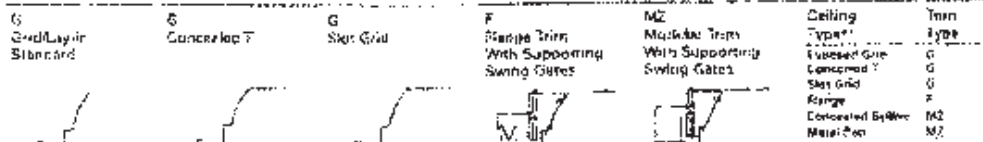
LER = FL-66
Catalog Number: 2GC-232A

Yearly Cost of 1000 lumens.
2000 hrs. at .08 KWH = \$3.64

LAMP CONFIGURATIONS



CEILING COMPATIBILITY



**Reference the compatibility data in the Technical Section for specific compatibility requirements.

**Consult Fire Sales Technical Support



COOPER LIGHTING - SURE-LITES™

DESCRIPTION

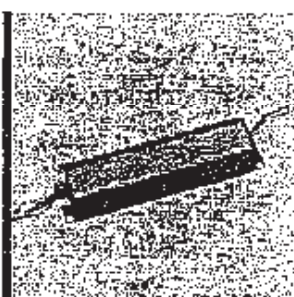
In the event of AC power failure, the Sure-Lites FBP Emergency Battery Pack automatically switches to emergency mode. It maintains illumination of one or two lamps for a minimum of 90 minutes. UL listed for field retrofit installation and conforms to UL 524.

SPECIFICATION FEATURES

Electronic	UL Listed for Retrofit/Field Installation
Dual Voltage Input 120/277 VAC, 50Hz	Life Safety NFPA 101
Universal Voltage Input 120-277 VAC, 50/60Hz (FBP240HU)	NEC/OSHA
Solid state Charger	Meets State and Local Codes
Overload/Short Circuit Protection	Cracking Approved
Test Switch/Power Indicator Light	Features
Battery	Provides a minimum of 90 minutes of emergency illumination
Sealed Nickel Cadmium	Can be installed inside or on top of fixture
Maintenance-free, Long Life	Low Profile Housing (FBP240LP)
Full Recharge Time, 24 hours (max.)	Easy-to-follow instructions make installation quick and simple
Code Compliance	May be used with switched or unswitched fixtures
UL 524 Listed	

Catalog #	Type
Project	AGEM
Comments	Hopeville School
Prepared By	Date

Self-Diagnostics (FBP240HSD)
 One lamp operation (FBP240D, FBP140X, FBP240C, FBP450LP)
 One or two lamp operation (FBP240M, FBP240H, FBP240C, FBP240HU, FBP240HSD)
 Compatible with many different lamp types—consult ordering information below or contact your Cooper Lighting Representative regarding specific applications.
 Compatible with many ballast types including standard, rapid start, dimming, instant start, energy saving, dimming, and electronic AC ballasts—consult your Cooper Lighting Representative regarding specific applications.



*FBP SERIES

FLUORESCENT
 EMERGENCY
 BATTERY PACK
 Emergency Lighting

ORDERING INFORMATION

Catalog No.	Lamp Type	Number of Lamps Operated in Emergency Mode	Initial Inverse
FBP140X	20W-40W, 2-8', 18-112 U-shaped, circled, 20, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	350-450
FBP240C	17W-215W, 2-8', 18-112 RC, VHO, U-shaped, circled, 20, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	500-700
FBP240H	17W-215W, 2-8', 18-112 RC, VHO, U-shaped, circled, 20, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	500-700
FBP240H	17W-215W, 2-8', 18-112 RC, VHO, U-shaped, circled, energy saving, rapid start (4-pin, 2G11 or G24q) long compact fluorescent	One or Two: 17W to 21W (2-8') One: 20W to 29W long compact fluorescent One or Two: 20W to 40W (2-8') One or Two: 17W to 21W One or Two: 22W to 40W (2-8') One: 40W to 215W (5-8') One or Two: 18W to 39W long compact fluorescent	1100-1400 700-1000 for long compact fluorescent
FBP240HSD	17W-215W, 2-8', 18-112 RC, VHO, U-shaped, circled, energy saving, rapid start (4-pin, 2G11, G24q, or GX24q) twin, quad and triole twin-tube compact	One or Two: 17W to 21W (2-8') One: 20W to 29W long compact fluorescent One or Two: 20W to 40W (2-8') One: 40W to 215W (5-8') One or Two: 18W to 39W long compact fluorescent One: 40W to 55W long compact fluorescent One or Two: 18W to 42W 4 pin compact fluorescent	1100-1400 700-1000 for long compact fluorescent
FBP240HU	17W-215W, 2-8', 18-112 RC, VHO, U-shaped, circled, energy saving, rapid start (4-pin, 2G11, G24q, or GX24q) twin, quad and triole twin tube compact	One or Two: 17W to 21W (2-8') One: 20W to 29W long compact fluorescent One or Two: 20W to 40W (2-8') One or Two: 18W to 39W long compact fluorescent One: 40W to 55W long compact fluorescent One or Two: 18W to 42W 4 pin compact fluorescent	1100-1400 700-1000 for long compact fluorescent
FBP240D	0A-28W tubular without internal starter, 13W-42W 4 pin twin, quad, or triole compact fluorescent without internal starter	One or Two: 6W to 18W tubular One or Two: 13W to 35W ac One: 42W 4 pin compact fluorescent	300-450
FBP240C	18W-55W quad tube with integral starter in two pin base	One: 18W to 26W compact fluorescent	300-450
FBP350D	17W-215W, 2-8', 18-112 RC, VHO, U-shaped circled, energy saving and (4-pin, 2G11, G24q, or GX24q) twin, quad and triole twin-tube compact	One or Two: 17W to 40W (2-8') One: 40W to 215W (5-8') One or Two: 18W to 39W long compact fluorescent One: 40W to 55W long compact fluorescent One or Two: 18W to 42W 4 pin compact fluorescent	1450-2500
FBP450LP	32W, 4', 18'	One	450

ORDERING INFORMATION

SAMPLE NUMBER: FBP140X

See chart above Accessories (Order separately)

Energy Data

Power	Input
Model No.	32W
FBP140X	4.5W
FBP240C	5.0W
FBP240M	5.0W
FBP240H	5.5W
FBP240HSD	4.0W
FBP240HU	8.0W
FBP240D	3.3W
FBP240E	3.6W
FBP350D	8.0W
FBP450LP	1.5W

PHOTOMETRICS



ZGC332A
Electronic Ballast
FS21R35K Lamps
2800 Lumens

Spacing criterion:
(H) 1.2 x mounting
height, (L) 1.3 x
mounting height
Efficiency 77.2%

Test Report:
ZGC332A.1E5

LSR = FL-87

Yearly Cost of 1000
lumens, 3000 hrs at
.08 kWh = \$3.58

Coefficients of Utilization

rc	Effective floor cavity reflectance													
	90%				70%				50%					
rw	70	50	30	10	70	50	30	10	90	70	50	30	10%	5%
0	92	82	72	62	80	60	50	40	66	46	36	26	20	10
1	85	75	65	55	73	53	43	33	59	39	29	19	13	3
2	78	68	58	48	66	46	36	26	52	32	22	12	6	0
3	72	62	52	42	60	40	30	20	46	26	16	6	0	0
4	67	57	47	37	55	35	25	15	41	21	11	1	0	0
5	63	53	43	33	51	31	21	11	38	18	8	0	0	0
6	59	49	39	29	47	27	17	7	35	15	5	0	0	0
7	56	46	36	26	44	24	14	4	33	13	3	0	0	0
8	54	44	34	24	42	22	12	2	32	12	2	0	0	0
9	52	42	32	22	40	20	10	1	31	11	1	0	0	0
10	51	41	31	21	39	19	9	0	30	10	0	0	0	0

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-10	1876	23.8	30.5
0-40	3296	38.8	53.2
0-60	5405	65.1	84.3
0-80	6482	77.2	100.0
0-100	6482	77.2	100.0

Typical VCP Percentages

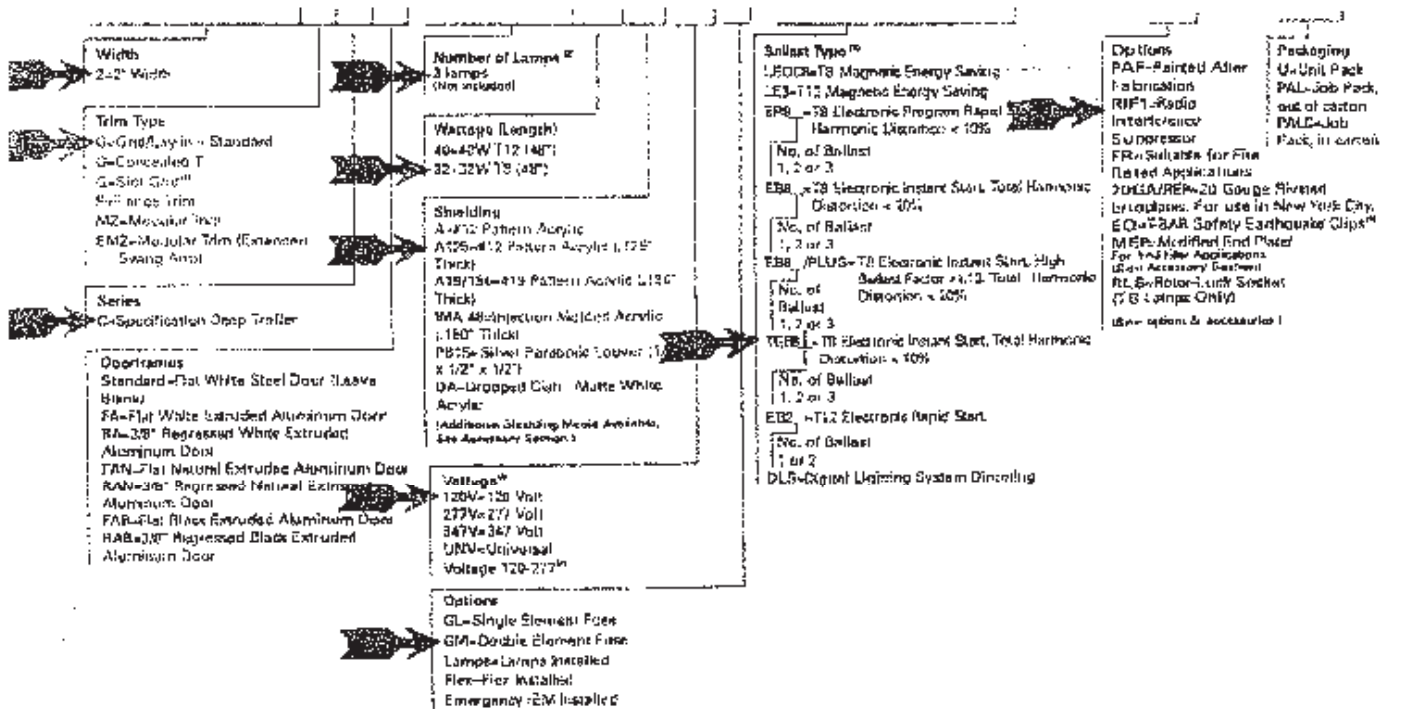
Room Size (ft.)	Height Along			Height Across		
	8.5'	10.0'	12.0'	6.5'	10.0'	12.0'
22 x 20	84	86	92	86	88	94
30 x 30	90	92	97	92	94	100
30 x 60	50	52	48	48	50	56
60 x 30	62	64	61	61	63	64
60 x 60	63	66	60	60	63	62

Candela

Angle	Along H	45°	Across L
3	2478	2478	2478
5	2458	2473	2481
10	2429	2466	2478
15	2379	2425	2463
20	2305	2374	2426
25	2200	2300	2363
30	2087	2187	2274
35	1935	2080	2145
40	1742	1874	1958
45	1504	1627	1717
50	1238	1352	1442
55	994	1081	1147
60	785	876	881
65	579	590	610
70	408	386	437
75	278	252	312
80	183	183	226
85	96	111	134
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: ZGC-332A-120V-EB81-U



NOTE: * An EC-Gnd-Gnd is recommended for all AC/DC wiring systems. ** Standard electronic ballast component on 3-lamp fixtures. ** Product is a low voltage or non-US voltage and frequency for international markets. ** Note voltage when indicating uncertainties, voltage must be specific.

For complete product data, reference the Fixtures and Specifications folder. Specifications & dimensions subject to change without notice. Consult your General Lighting Representative for availability and ordering information.

SHIPPING INFORMATION

Catalog No.	Wt.
26C 332A	11 lbs.

PHOTOMETRICS



2GC-332A
Electronic Ballast
F32T8/35K Lamps
2800 Lumens

Spacing criterion:
(H) 1.2 x mounting height,
(L) 1.3 x mounting height
Efficiency 77.2%

Test Report:
2GC332A,IES

LSR = FL-67

Yearly Cost of 1000
lumens, 3000 hrs at
.06 KWH = \$3.58

Coefficients of Utilization

RCR	Effective floor cavity reflectance							
	20%	30%	40%	50%	60%	70%	80%	90%
0	87	82	77	72	67	62	57	52
1	85	82	78	74	70	66	62	58
2	79	73	68	64	60	57	54	51
3	72	66	62	58	55	52	49	46
4	67	61	57	54	51	48	45	42
5	61	57	54	51	48	45	42	39
6	56	52	49	46	43	40	37	34
7	51	47	44	41	38	35	32	29
8	45	42	39	36	33	30	27	24
9	40	37	34	31	28	25	22	19
10	35	32	29	26	23	20	17	14

Zonal Lumen Summary

Zone	Lumens	SI Area	% Fixture
0-30	1978	23.5	90.5
0-40	3258	34.8	90.3
0-50	5365	65.1	84.2
0-90	6482	77.2	100.0
0-100	6482	77.2	100.0

Typical VCP Percentages

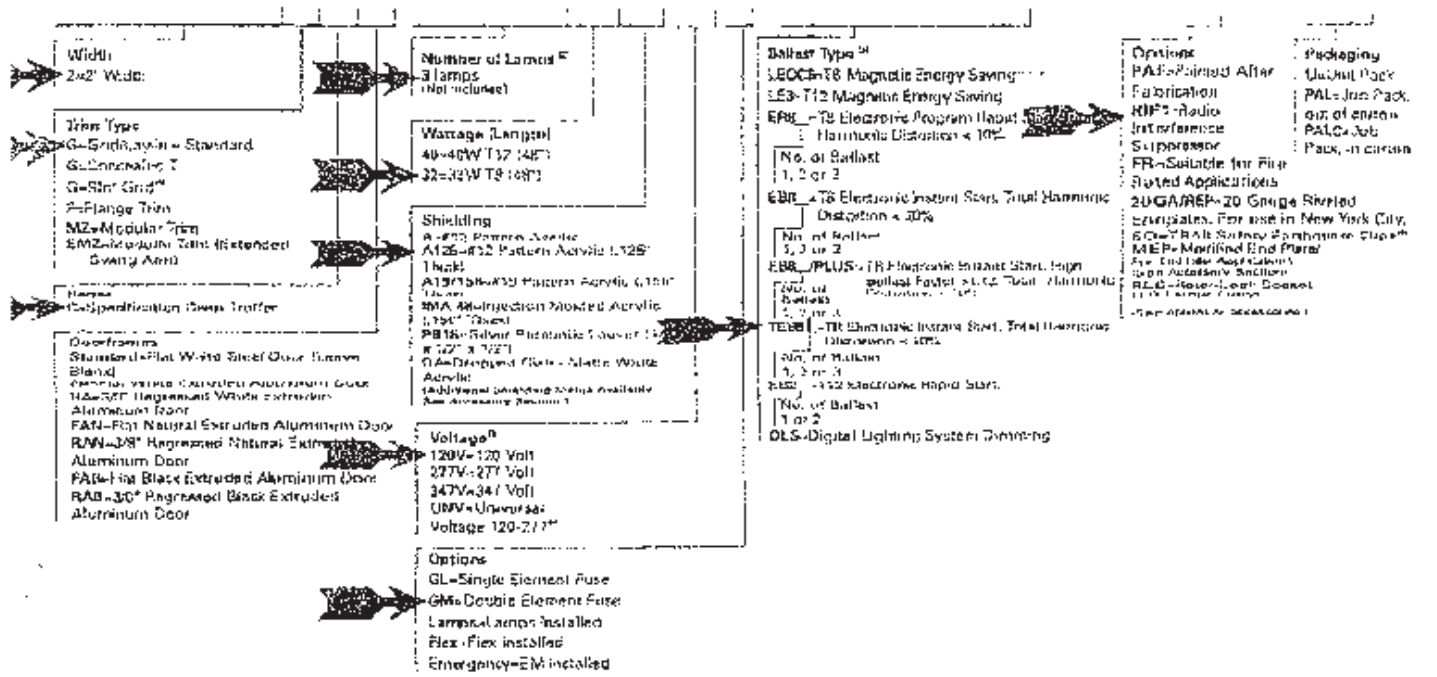
Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
24 x 24	64	68	62	66
30 x 30	60	62	57	60
30 x 60	53	55	48	51
60 x 20	62	60	61	64
60 x 60	53	56	50	52

Candela

Angle	Along fl	45°	Across
0	2476	2476	2476
5	2458	2473	2491
10	2429	2466	2478
15	2370	2426	2463
20	2306	2374	2426
25	2208	2300	2363
30	2087	2187	2273
35	1935	2091	2145
40	1743	1974	1958
45	1504	1627	1717
50	1238	1352	1442
55	984	1061	1147
60	795	828	887
65	573	580	618
70	409	386	427
75	278	252	311
80	182	183	230
85	95	111	134
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2GC-332A-120V-ERS1-U



SHIPPING INFORMATION

Catalog No.	Wt.
2GC-332A	31 lbs.

NOTES: ¹ An EC Grid is recommended for all 2'x2' ceiling systems. ² Standard aluminum ballast compartment on 2-lamp fixtures. ³ Weight does not include shipping and handling charges for international markets. ⁴ Not available when specifying emergency voltage must be specified. For complete product data, reference the Fluorescent Specifications page. Specifications & dimensions subject to change without notice. Consult your Cooper Lighting representative for availability and pricing information.

METALUX[®]

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior applications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast/wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KO's for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B - Electrical¹

Ballasts are CRMETE Class "P" and are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed. Suitable for damp locations.^{2*}

C - Finish

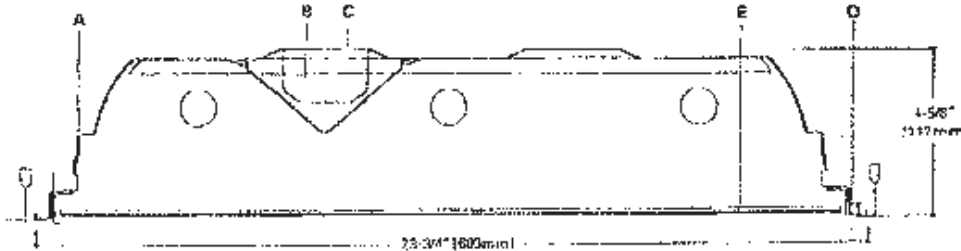
Multistage, iron phosphate pretreatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Hinging/Latching

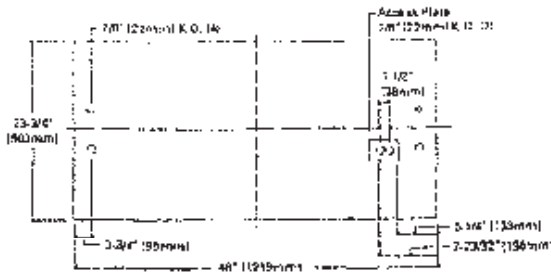
Positive cam action spring loaded steel latches with baked white enamel finish. Safety-Lock T-hinges allow hinging and latching either side.

E - Frame/Shielding

Die formed, heavy gauge, flat steel door with reinforced mitred corners and baked white enamel finish. Positive light seals. Light stabilized 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.



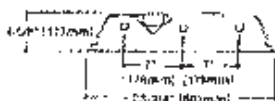
MOUNTING DATA



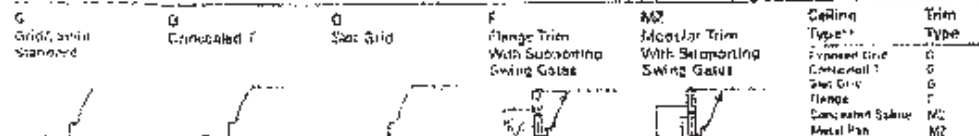
DOOR FRAMES



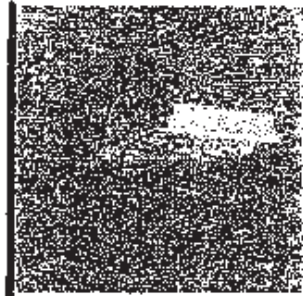
LAMP CONFIGURATIONS



CEILING COMPATIBILITY



Catalog #	Type
2GC-332A125-720V-L8935-	
Project	
GM-EL-FBP240K-TEB3T-R1F1	A2EM
Comments	
Hopewell School	
Prepared by	Date



**ZGC340
332**

2' X 4' TROFFER
3 LAMPS

Specification Deep Troffer

ENERGY DATA

Input Watts:
ED Ballast & STD Lamps
340 (170)
332 (151)

ES Ballast & STD Lamps
340 (170)
332 (108)

Luminaire Efficacy Rating:
LER = FL-67
Catalog Number: 2GC-332A

Yearly Cost of 1000 Hours:
2000 hrs. at .08 KWH = \$3.68

¹Reference the technical data in the Technical Section for specific lamp/ballast requirements.

²Consult Pre-Sales Technical Support



PHOTOMETRICS



2GC-332A
Electronic Ballast
R32T8/35K Lamps
2800 Lumens

Spacing criterion:
(H) 1.3 x mounting
height, (L) 1.3 x
incandesc height

Efficiency 77.2%

Test Report:
2GC322A.IES

LER = FL-67

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$3.58

Coefficients of Utilization

FCI	Effective floor cavity reflectance																
	90%				70%				50%				30%				
	20	50	80	10	20	50	80	10	50	30	10	50	30	10	50	30	10
0	92	82	69	52	80	66	50	36	66	48	34	52	32	22	38	24	17
1	85	72	58	44	73	56	41	29	57	40	28	44	27	19	32	20	14
2	78	63	48	36	66	48	34	23	50	34	24	38	23	16	28	17	12
3	71	55	41	30	59	42	29	19	44	29	20	32	19	13	23	14	10
4	64	48	35	25	52	36	24	15	39	25	17	26	16	11	18	11	8
5	57	41	29	20	45	30	19	11	33	21	14	21	13	9	14	9	6
6	50	35	24	16	38	25	15	7	28	17	11	16	10	7	11	7	5
7	43	29	19	12	31	20	12	5	21	13	8	12	8	5	8	5	4
8	36	23	14	8	24	15	9	3	15	9	5	8	5	3	6	4	3
9	29	18	10	5	17	10	6	2	10	6	3	5	3	2	4	3	2
10	22	13	7	3	10	6	3	1	6	3	2	3	2	1	3	2	1

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	1978	23.5	30.5
0-45	3258	38.6	50.3
0-60	5460	65.1	84.3
0-75	8482	77.2	100.0
0-120	6482	77.2	100.0

Typical VCP Percentages

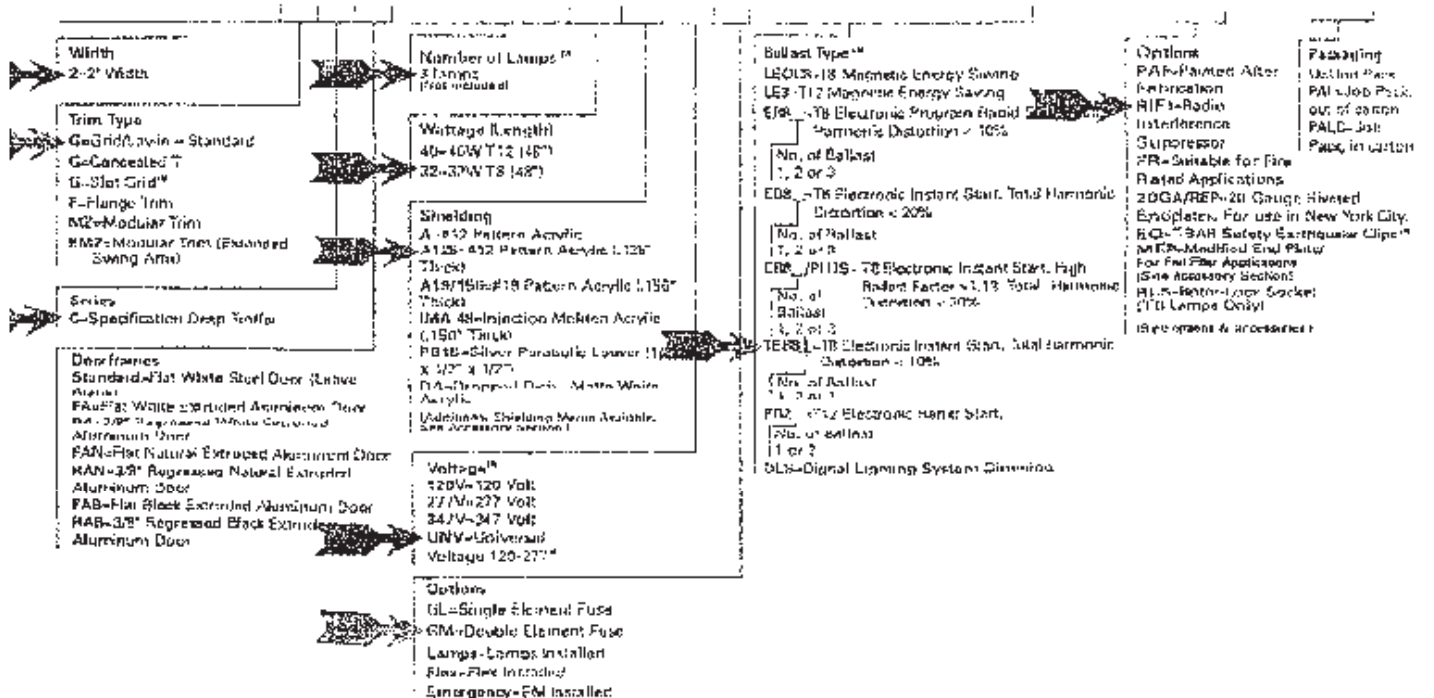
Room Size (Ft.)	Height Along		Height Across	
	9.5'	10.0'	9.5'	10.0'
20 x 20	64	68	62	66
30 x 30	60	62	57	60
30 x 60	53	55	48	51
50 x 30	62	65	61	64
60 x 60	58	58	56	52

Candela

Angle	Along L	45°	Across
0	2478	2478	2478
5	2459	2473	2481
10	2429	2456	2479
15	2375	2426	2462
20	2306	2374	2426
25	2219	2300	2360
30	2097	2197	2270
35	1935	2068	2145
40	1743	1924	1995
45	1504	1677	1777
50	1238	1382	1442
55	984	1081	1147
60	758	829	861
65	573	638	670
70	403	465	487
75	278	312	327
80	183	192	206
85	96	111	124
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2GC-332A-120V-E 881-U



NOTES: **An F0 type CG is recommended for all 800V ceiling systems. **Standard off-center ballast components do comply require. **Products are available in other voltages and frequencies for international markets. **Not available when spacing integrations, voltage must be specific. For complete product data, reference the fixture or specification sheet, specify brand & dimensions when changing voltage, hence, consult your Cooper Lighting Representative for availability and ordering information.

SHIPPING INFORMATION

Catalog No	Wt.
2GC 332A	31 lbs.

METALUX®

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KOs for continuous row wiring. Endplates have integral GridLock feature for safety and convenience.

B - Electrical*

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed. Suitable for damp locations.**

C - Finish

Multistage, iron phosphate pre-treatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Hinging/Latching

Positive cam action spring loaded steel latches with baked white enamel finish. Safety-Lock T-hinges allow hinging and latching either side.

E - Frame/Shielding

Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Positive light axis. Light stabilizing 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.

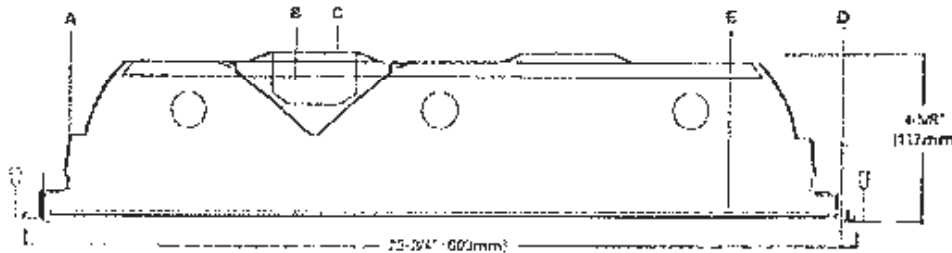
Catalog #	Type
2GC-332A125-UNV-L8935-	
Project GIM-TEB81-RIF 1	A2
Comments	
Hopewell School	
Prepared by	Date



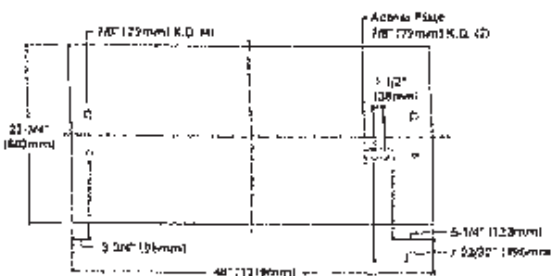
2GC340
332

2' X 4' TROFFER
3 LAMPS

Specification Deep Troffer



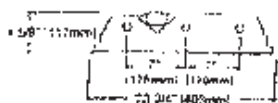
MOUNTING DATA



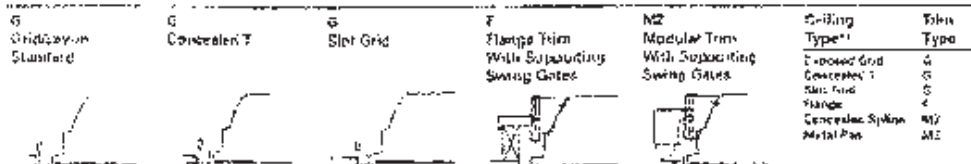
DOOR FRAMES



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
928 (1000)
332 (181)

FB Ballast & STD Lamps
340 (130)
332 (168)

Luminaire Efficiency Rating
LER = PL-67
Catalog Number: 2GC-332A

Yearly Cost of 1000 lumens,
3000 hrs at .08 KWH = \$3.66

*Referenced the specification data in the Technical Section for specific requirements.

**Consult the Safety Technical Manual.

ADP-020017



CFL
hardwired?

COOPER LIGHTING - SURE-LITES®

DESCRIPTION

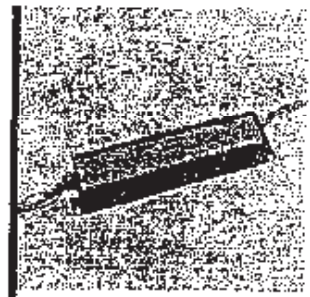
In the event of AC power failure, the Sure-Lites FBP Emergency Battery Pack automatically switches to emergency mode. It maintains illumination of one or two lamps for a minimum of 90 minutes. UL listed for hardwired installation and conforms to UL 924.

SPECIFICATION FEATURES

Electronic	UL Listed for RetroField Installation
Dual Voltage Input 120/277 VAC, 60Hz	Life Safety NFPA 101
Universal Voltage Input: 120-277 VAC, 50/60Hz (FBP240HU)	NEC/OSHA
Solid-state Charger	Meets State and Local Codes
Overload/Short Circuit Protection	Chicago Approved
Test/Switch/Power Indicator Light	Features
Battery	Provides a minimum of 90 minutes of emergency illumination
Sealed Nickel Cadmium	Can be installed inside or on top of fixture
Maintenance-free, Long Life	Low Profile Housing (FBP450LP)
Full Recharge Time, 24 hours (max.)	Easy-to-follow instructions make installation quick and simple
Code Compliance	May be used with switched or unswitched fixtures
UL 924 Listed	

Catalog #	Type
Project <u>Hopewell School</u>	<u>ATEM</u>
Comments	
Prepared by	Date

Self-Diagnostics (FBP240HSD)
 One lamp operation (FBP240U, FBP140X, FBP240U, FBP450LP)
 One or two lamp operation (FBP240M, FBP240H, FBP240C, FBP240HU, FBP240HSD)
 Compatible with many different lamp types—consult ordering information below or consult your Cooper Lighting Representative regarding specific applications
 Compatible with many ballast types including standard, rapid start, slimline, instant start, energy saving, dimming, and electronic AC ballasts—consult your Cooper Lighting Representative regarding specific applications



*FBP SERIES

FLOUORESCENT
EMERGENCY
BATTERY PACK

Emergency Lighting

ORDERING INFORMATION

Catalog No.	Lamp Type	Number of Lamps Operated in Emergency Mode	Initial Lumens
FBP140X	20W-40W, 2'-4", T8-T10 Unshaped, circulation, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	350-450
FBP240U	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circulation, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	600-700
FBP240M	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circulation, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One or Two - 17W to 24W (2'-4") One or Two - 33W to 40W (2'-4") One - 40W to 215W (5'-8") One or Two - 33W to 39W long compact fluorescent One or Two - 18W to 32W 4-pin compact fluorescent	600-700
FBP240H	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circulation, energy saving, rapid start (4-pin, 2G11, 3G24, or GX24q) twin, quad and triple twin-tube compact	One or Two - 17W to 24W (2'-4") One - 40W to 215W (5'-8") One or Two - 18W to 39W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1100-1400 1700-1000 for long compact fluorescent
FBP240HSD	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circulation, energy saving, rapid start (4-pin, 2G11, 3G24, or GX24q) twin, quad and triple twin-tube compact	One or Two - 17W to 24W (2'-4") One - 40W to 215W (5'-8") One or Two - 18W to 39W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1100-1400 1700-1000 for long compact fluorescent
FBP240HU	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circulation, energy saving, rapid start (4-pin, 2G11, 3G24, or GX24q) twin, quad and triple twin-tube compact	One or Two - 17W to 24W (2'-4") One - 40W to 215W (5'-8") One or Two - 18W to 39W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1100-1400 1700-1000 for long compact fluorescent
FBP140C	6W-26W tubular without integral starter, 13W-47W 4-pin twin, quad, or triple twin-tube compact fluorescent without integral starter	One or Two - 6W to 26W tubular One or Two - 13W to 39W or GX-47W 4-pin compact fluorescent	300-700
FBP240D	30W-260W quad tube with integral starter in two pin base	One - 30W to 260W compact fluorescent	300-850
FBP250D	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped circulate, energy saving and (4-pin, 2G11, 3G24, or GX24q) twin, quad and triple twin-tube compact	One or Two - 17W to 24W (2'-4") One - 40W to 215W (5'-8") One or Two - 18W to 39W long compact fluorescent One - 40W to 55W long compact fluorescent One or Two - 18W to 42W 4-pin compact fluorescent	1400-2500
FBP450LP	32W, 6', T8	One	450

ORDERING INFORMATION

SAMPLE NUMBER: FBP140X

See chart above: Accessories (Order separately)
 FBP140X Wire Bundle Cover for external mount applications (Required)

Energy Data

Power	Input
Model No	120V
FBP140X	6.0W
FBP240U	6.0W
FBP240M	6.0W
FBP240H	1.5W
FBP240HSD	4.0W
FBP240HU	6.0W
FBP240C	1.2W
FBP240D	3.0W
FBP350	3.0W
FBP450LP	1.5W

PHOTOMETRICS



2GC-232A
Electronic Ballast
F32T8/35K Lamps
2800 Lumens

Spacing criteria:
(H) 1.3 x mounting height, (L) 1.4 x mounting height

Efficiency 79.4%

Test Report:
2GC232A.TES

LER = FL-66

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = \$3.64

Coefficients of Utilization

FCI	Effective floor cavity reflectance															
	80%				70%				50%				30%			
	10	50	30	10	70	50	30	10	50	30	10	50	30	10		
0	95	95	95	95	77	77	77	77	59	59	59	41	41	41		
1	87	84	81	78	68	67	65	62	49	47	45	31	29	27		
2	81	75	70	66	62	57	53	50	41	37	34	25	22	20		
3	74	67	61	56	57	50	45	41	33	29	26	20	17	15		
4	68	60	53	49	51	43	38	34	27	23	20	16	13	11		
5	63	55	47	42	45	37	32	28	23	19	16	13	10	8		
6	58	49	41	36	40	32	27	23	20	16	13	10	7	5		
7	53	43	35	30	36	28	23	19	17	13	10	8	5	3		
8	48	38	30	25	31	23	18	14	14	10	7	6	3	1		
9	43	33	25	20	26	18	13	9	11	7	4	4	2	0		
10	38	28	20	15	21	13	8	4	8	4	1	2	0	0		

Zonal Lumen Summary

Zone	Lumens	% Area	% Fixture
0-30	1328	23.7	39.9
3-40	2263	35.5	49.5
0-50	3742	62.8	84.1
0-80	4447	79.4	100.0
0-100	4447	79.4	100.0

Typical VCP Percentages

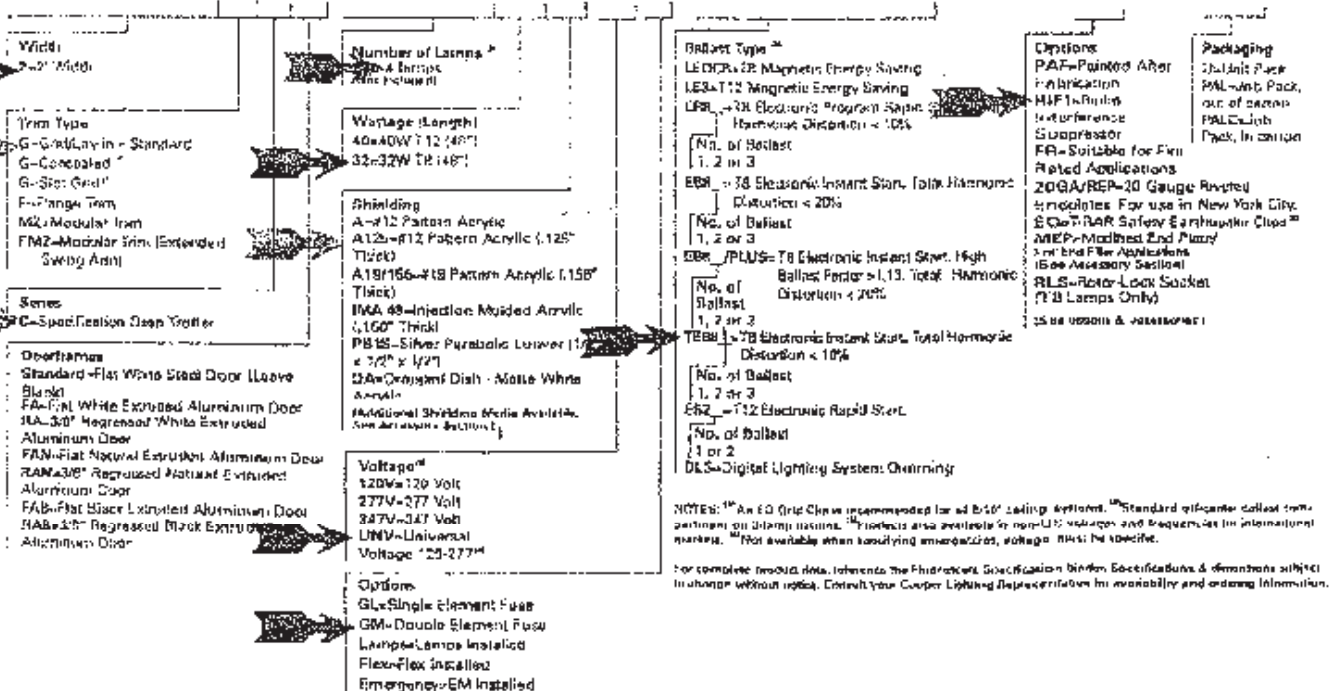
Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
10 x 20	72	75	69	73
30 x 30	68	70	65	69
30 x 60	67	64	67	60
60 x 30	70	73	68	71
60 x 60	62	64	60	61

Candela

Angle	Along H	45°	Across L
0	1656	1656	1656
5	1647	1656	1643
10	1627	1644	1630
15	1596	1623	1618
20	1545	1580	1563
25	1481	1546	1504
30	1400	1486	1437
35	1299	1400	1353
40	1171	1286	1235
45	1013	1128	1095
50	835	954	901
55	667	784	739
60	520	629	597
65	393	472	428
70	281	348	308
75	181	223	221
80	129	126	125
85	66	77	84
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER, 2GC-232A-120V-E991-U



SHIPPING INFORMATION

Catalog No.	Wt.
2GC-232A	28 lbs.
2GC-432A	32 lbs.

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast/wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KOs for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B - Electrical¹

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed.²

C - Finish

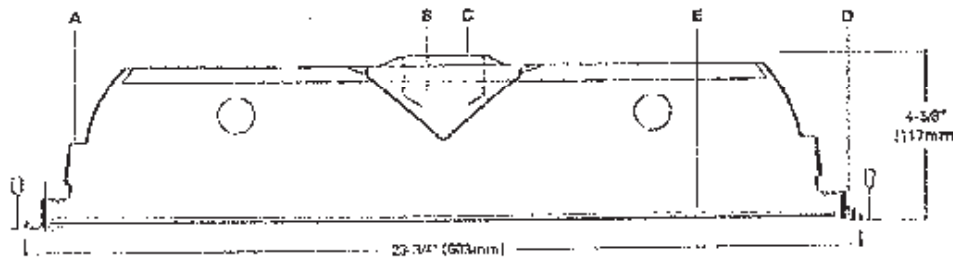
Multistage, iron phosphate pre-treatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Hinging/Latching

Positive cam action spring loaded steel latches with baked white enamel finish. Safety-lock. Tringles allow hinging and latching either side.

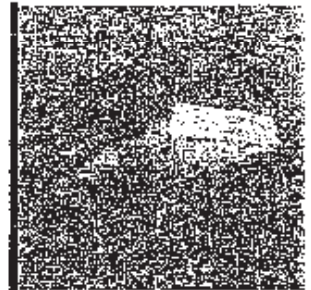
E - Frame/Shielding

Die formed, heavy gauge, flat steel door with reinforced mitered corners and baked white enamel finish. Positive light seals. Light stabilized 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.



Catalog #	2GC-432A725-720V-L8835-	Type	
Project	GM-EL-FBP240H-T883T-RIF-7		
Comments	Hopewell School		
Prepared by		Date	

A1EM

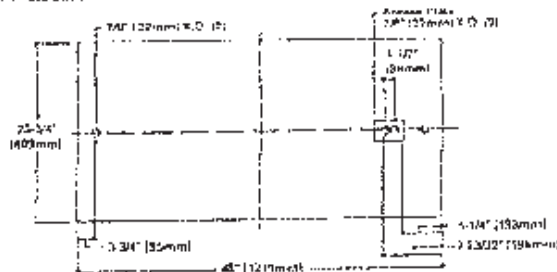


2GC240
232
440
432

2' X 4' TROFFER
2 OR 4 LAMPS

Specification Deep Troffer

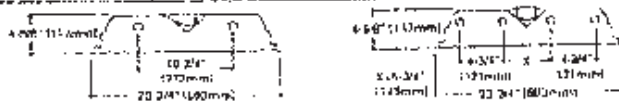
MOUNTING DATA



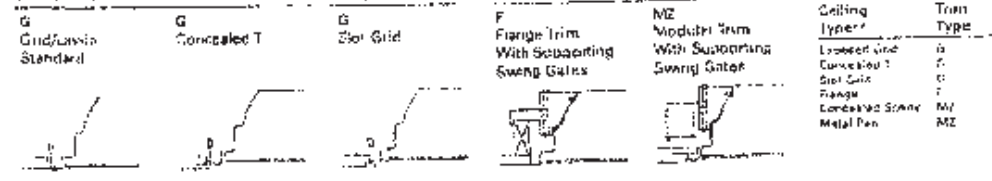
DOOR FRAMES



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



ENERGY DATA

Input Watts:
232 (172)
232 (172)
440 (172)
432 (172)

20 Ballast & 270 Lamp
240 (186)
232 (73)
440 (172)
432 (142)

Luminaire Efficiency Rating
LER = 91-96
Catalog Number: 2GC-232A

Yearly Cost of 1000 lumens,
3000 hrs at .08 kWh - \$3.64

¹Reference the manufacturer's data in the Technical Section for specific lamp/ballast requirements.

²Consult Pre-Sales Technical Support.

ADF020615
(SU on series ADF981744)



PHOTOMETRICS



2GC-232A
 Electronic Ballast
 F32T8/35K Lamps
 2800 Lumens
 Spacing criterion:
 III) 1.3 x mounting
 height, I) 1.4 x
 mounting height
 Efficiency 79.4%
 Test Report:
 2GC232A.RS
 LER - FL-66
 Yearly Cost of 1000
 lumens, 3000 hrs at
 .08 KWH = \$3.64

Coefficients of Utilization

Room	#Active floor cavity reflection														
	80%		70%		50%										
h	70	50	30	10	70	50	30	10	50	30	10	50	30	10	0
RCR															
0	95	95	95	95	95	85	85	85	85	85	85	85	85	85	79
1	87	84	81	78	65	62	59	57	79	77	75	76	74	72	64
2	61	75	75	66	79	73	69	65	71	67	64	63	63	62	59
3	74	67	63	56	72	66	60	56	63	59	55	61	57	54	52
4	58	60	57	48	67	59	53	48	57	52	48	55	51	47	45
5	63	63	47	47	51	52	46	41	51	45	41	49	44	41	38
6	59	45	41	36	56	47	41	36	46	40	36	44	39	35	34
7	53	43	36	32	52	42	36	32	41	36	31	40	35	31	29
8	49	39	32	27	49	38	32	27	37	31	27	36	31	27	25
9	45	36	28	24	44	34	28	24	33	27	23	32	27	23	22
10	42	31	25	21	41	31	25	21	30	25	21	29	24	21	20

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1328	22.7	29.9
0-40	2203	38.3	49.5
0-60	3742	64.8	84.1
0-90	4447	79.4	100.0
0-180	4447	79.4	100.0

Typical VCP Percentages

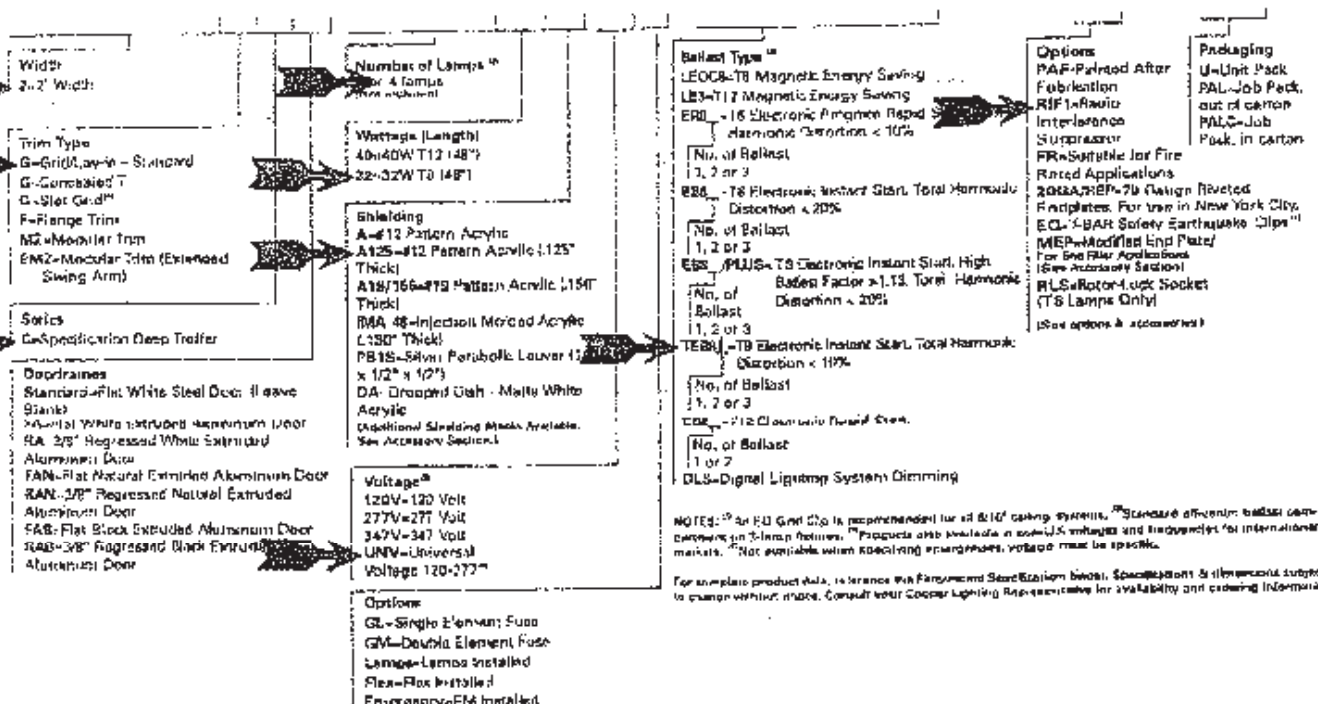
Room Size (ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	72	75	60	73
30 x 30	68	70	65	68
30 x 60	62	64	57	62
60 x 30	70	72	59	71
60 x 60	62	64	59	61

Candela

Angle	Along II	45°	Across
0	1058	1856	1856
5	1847	1856	1603
10	1827	1644	1480
15	1595	1623	1649
20	1546	1640	1633
25	1683	1544	1504
30	1400	1486	1457
35	1299	1405	1400
40	1171	1284	1395
45	1013	1139	1246
50	834	954	1031
55	667	764	789
60	529	578	597
65	403	442	458
70	281	269	298
75	191	173	221
80	125	126	196
85	66	77	94
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2GC-232A-120V-FB81-U



SHIPPING INFORMATION

Catalog No.	Wt.
2GC-232A	79 lbs.
2GC-432A	32 lbs.

DESCRIPTION

The GC Series features a nominal 4-1/2" deep, para-contoured fixture housing, high reflectivity and optimum lamp to lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A---Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" ballast/wireway cover easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KO's for continuous row wiring. Endplates have integral Grid-Lock feature for safety and convenience.

B---Electrical*

Ballasts are CBM/ETL Class "P" and are positively secured by mounting bolts. Pressure lock lampholders, UL/CUL listed.**

C---Finish

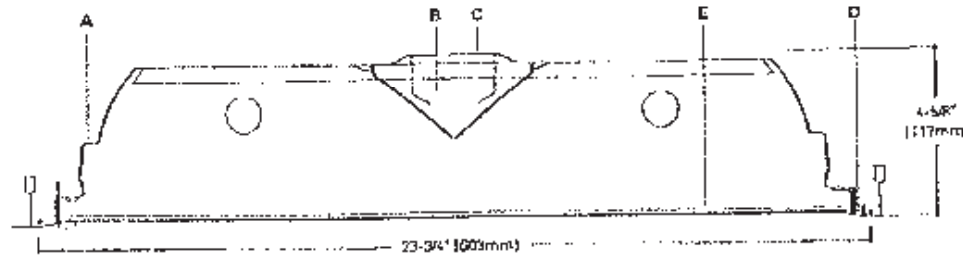
Multistage, iron phosphate pre-treatment; ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D---Hinging/Latching

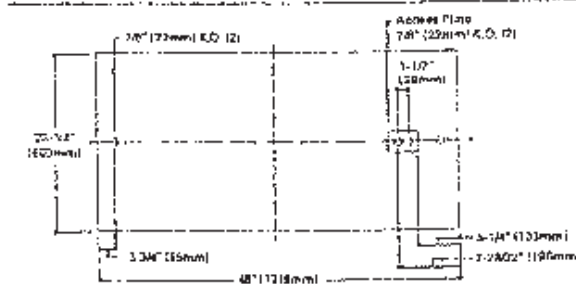
Positive cam action spring loaded steel latches with baked white enamel finish. Safety-lock latches allow hinging and latching either side.

E---Frame/Shielding

Die formed, heavy gauge, flat steel agar with reinforced mitered corners and baked white enamel finish. Positive light seals. Light stabilized 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.



MOUNTING DATA



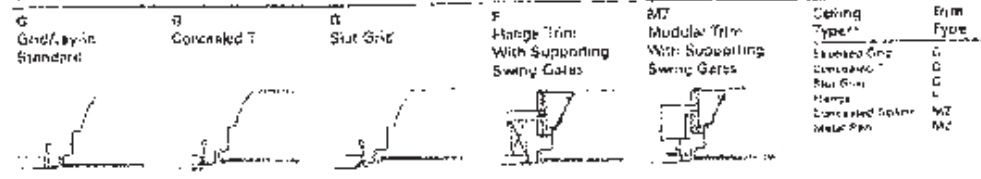
DOOR FRAMES



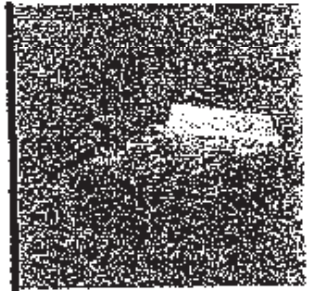
LAMP CONFIGURATIONS



CEILING COMPATIBILITY



Catalog #	Type
AGC 432A125-UNV-L8835-	A1
Project GM-TE883-RIF81	
Comments	
Hopewell School	
Prepared by	Date



2GC240
232
440
432

2' X 4' TROFFER
2 OR 4 LAMPS

Specification Deep Troffer

ENERGY DATA

Input Watts:
EB Ballast & STD Lamps
240 (72)
232 (61)
440 (144)
432 (122)

EO Ballast & STD Lamps
240 (66)
232 (71)
440 (172)
432 (142)

Luminaire Efficacy Rating
LER = FL-66
Catalog Number: 2GC-232A

Yearly Cost of 1000 Hours,
3000 hrs at .08 kWh = \$3.04

*Please refer the compatibility data in the technical data on the specific lamp ballast requirements.

**Consult the Series for exact Surface



DESCRIPTION

The Ovation Series is a complete family of recessed direct/indirect luminaires featuring pleasant modern architectural styling, computer-designed optics and the latest energy efficient lamp and ballast technology. The luminaire combines a matte white indirect reflector and two perforated direct lamp shields to provide optimum brightness control. All components are located above the ceiling plane for a clean architectural appearance in the finished space. Carefully balanced design elements combine to provide an efficient and exciting alternative to traditional general lighting.

Catalog #	2RD1-S-2BX40RP-120V-GM	Type	
Project	TGBS7-RIP1		AL
Comments	Hopewell School		
Prepared by		Date	

APPLICATION

Ovation is a series of high performance luminaires designed for a variety of architectural applications. Ovation is an excellent choice for private offices, conference rooms, reception areas, retail stores, libraries, open offices, airports, classrooms, banks, restaurants, corridors and many other commercial applications.

SPECIFICATION FEATURES

A - Construction

Nominal 5" deep housing is die formed of cold gauge, prime cold rolled steel. Heavy gauge end plates are securely attached with screws for strength and rigidity and the elimination of gaps. Four auxiliary fixture and suspension points are provided. KO's for continuous row wiring. Large access plate for supply connection.

B - Electrical*

Ballasts are CBM/FEL Class "P" and are positively secured. Biax models use 2G11 base lampholders with double edge wiping action pressure lock contacts and vertically oriented lamp support clips. TB models use rotor-lock lampholders for positive lamp retention. UL/CUL listed. Suitable for damp locations.

C - Ballast Access

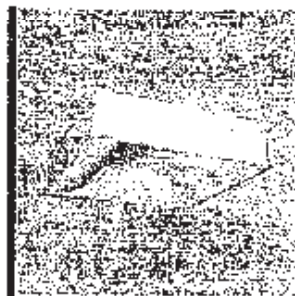
Ballast can be removed from below or from above using the unique ballast mounting/access plate.†

D - Finish

Painted after fabrication. Electrostatically applied baked white polyester powder enamel finish. Multistage cleaning cycle, iron phosphate coating with rust inhibitor.

E - Reflectors

Indirect reflector has high reflectance baked matte white enamel finish for maximum uniformity. A pair of positively retained, side-mounted direct lamp shields is constructed of heavy gauge perforated steel with high reflectance painted after fabrication finish and milky white overlay diffuser for visual comfort. All reflectors are precision formed in a computer-controlled operation.



2RDI-S-2BX40
2RDI-S-217
2RDI-S-417

BIAXIAL OR TB LAMP'S

2" X 3" Recessed
Direct/Indirect
Side-Mount

Ovation

ENERGY DATA

Input Watts	
EB Ballast & STD Lamps	
2BX40 (67)	
2BX60 (106)	
2BX60 (110)	
217 (34)	
417 (62)	

EB Ballast & STD Lamps	
217 (45)	
417 (93)	

STD Ballast & STD Lamps	
2BX40 (82)	
4BX40 (164)	

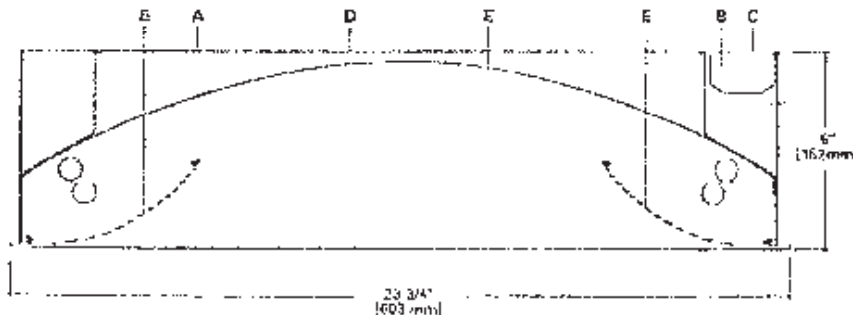
Luminaire Efficiency Rating
LER = 75%

Catalog Number: 2RD1-S-2BX40RP
Yearly Cost of 1000 Lumens,
3000 hrs at .06 KWH = \$4.36

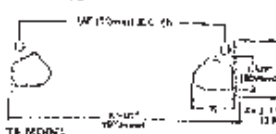
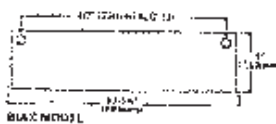
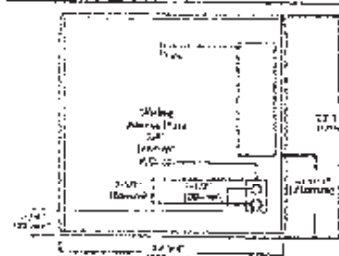
*Reference the lamp/ballast data in the Technical Section for specific lamp/ballast requirements.

†Control See Access Terminal Wiring.

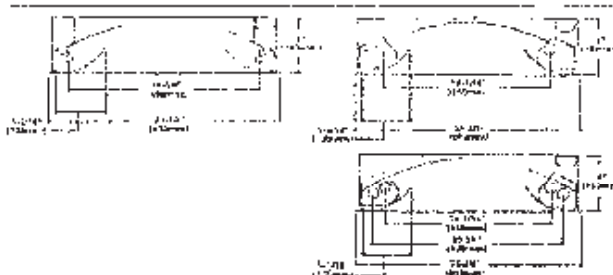
***See Drywall Patch Kit Accessory.



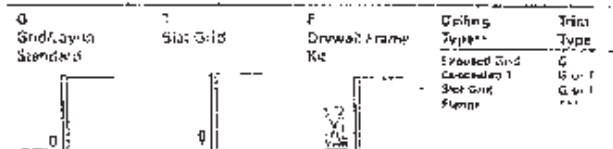
MOUNTING DATA



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



PHOTOMETRICS



2RDI-S-2BX40RP
Electronic Ballast
F40BX/35K/RS Lamps
3150 Lumens

Spacing criterion:
H: 1.2 x mounting
height, L: 1.3 x
mounting height
Efficiency 87.8%
Foot Report:
2RDIS2RX40RP,IES

LER - FL55

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$4.35

Coefficients of Utilization

Effective Down cavity reflectance	30%		70%		50%		30%		10%		0%	
	10	20	30	40	50	60	70	80	90	100	110	120
10	0.74	0.71	0.68	0.65	0.62	0.59	0.56	0.53	0.50	0.47	0.44	0.41
20	0.65	0.63	0.61	0.59	0.57	0.55	0.53	0.51	0.49	0.47	0.45	0.43
30	0.58	0.56	0.54	0.52	0.50	0.48	0.46	0.44	0.42	0.40	0.38	0.36
40	0.52	0.50	0.48	0.46	0.44	0.42	0.40	0.38	0.36	0.34	0.32	0.30
50	0.47	0.45	0.43	0.41	0.39	0.37	0.35	0.33	0.31	0.29	0.27	0.25
60	0.43	0.41	0.39	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.23	0.21
70	0.40	0.38	0.36	0.34	0.32	0.30	0.28	0.26	0.24	0.22	0.20	0.18
80	0.37	0.35	0.33	0.31	0.29	0.27	0.25	0.23	0.21	0.19	0.17	0.15
90	0.35	0.33	0.31	0.29	0.27	0.25	0.23	0.21	0.19	0.17	0.15	0.13
100	0.33	0.31	0.29	0.27	0.25	0.23	0.21	0.19	0.17	0.15	0.13	0.11

Candela

Angle	Along H	45°	Across
0	1420	1420	1420
5	1426	1424	1428
10	1406	1408	1412
15	1377	1376	1382
20	1322	1324	1328
25	1260	1276	1297
30	1198	1216	1247
35	1099	1129	1176
40	1001	1048	1104
45	885	958	1053
50	780	858	957
55	688	792	878
60	621	742	825
65	571	695	787
70	532	653	748
75	505	616	711
80	489	582	675
85	480	550	640
90	0	0	0

Zonal Lumen Summary

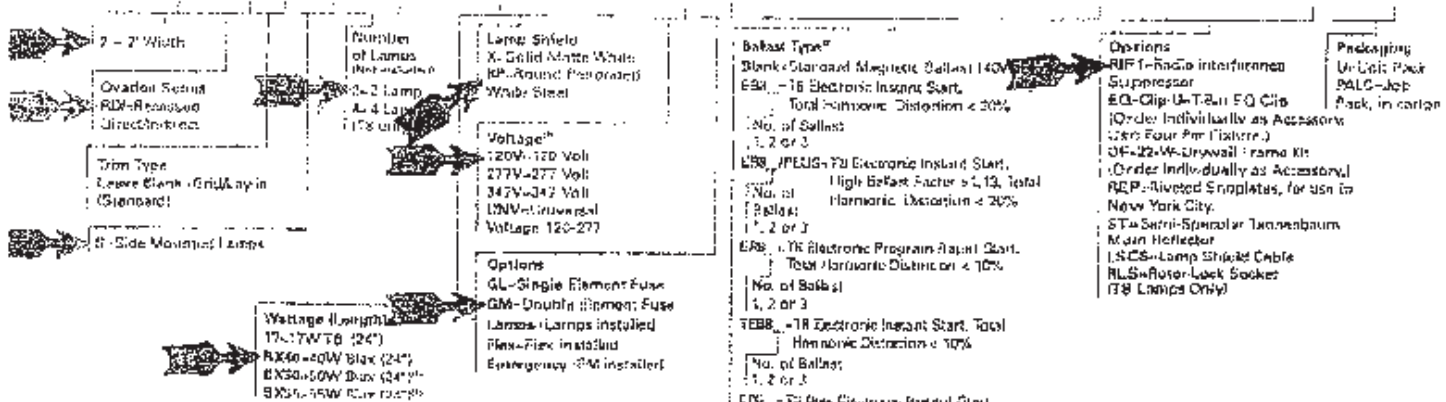
Zone	Lumens	% Lumens	% Fixtures
0-30	1114	35.2	26.7
3-40	1025	32.6	42.7
4-60	324	10.3	75.0
6-90	427	13.4	100.0
0-100	4276	134.5	100.0

Typical VCP Percentages

Room Size (ft.)	Height Along		Height Across	
	8.0'	10.0'	8.0'	10.0'
20 x 20	57	59	39	45
30 x 30	44	48	32	36
30 x 60	44	45	27	28
60 x 30	45	47	37	41
60 x 60	43	43	31	31

ORDERING INFORMATION

SAMPLE NUMBER: 2RDI-S-2BX40RP-120V-EBS-110



NOTES: 1) 7' x 7' and 7' x 4' Center Lamp Shield models only. 2) Fixtures also available in non-US voltages and configurations for international markets.

For complete product data, reference the Fluorescent Specification Under Grid, Features & Dimensions, or contact your local lighting representative for availability and application.

SHIPPING INFORMATION

Catalog No.	Wt.
2RDI-S-2BX40RP	16 lbs.
2RDI-S-217RP	16.5 lbs.
2RDI-S-417RP	16.5 lbs.

DESCRIPTION

The Ovation Series is a complete family of recessed direct/indirect luminaires featuring pleasant modern architectural styling, computer-designed optics and the latest energy efficient lamp and ballast technology. The luminaire combines a matte white indirect reflector and two perforated direct lamp shields to provide optimum brightness control. All components are located above the ceiling plane for a clean architectural appearance in the finished space. Carefully balanced design elements combine to provide an efficient and exciting alternative to traditional general lighting.

APPLICATION

Ovation is a series of high performance luminaires designed for a variety of architectural applications. Ovation is an excellent choice for private offices, conference rooms, reception areas, retail stores, libraries, open offices, airports, classrooms, banks, restaurants, corridors and many other commercial applications.

SPECIFICATION FEATURES

A - Construction

Nominal 8" deep housing is die formed of cold gauge, prime cold rolled steel. Heavy gauge end plates are securely attached with screws for strength and rigidity and the elimination of gaps. Four auxiliary fixture end suspension points are provided. KOs for continuous row wiring. Large access plate for supply connection.

B - Electrical*

Ballasts are CBM/ETL Class "P" and are positively secured. Blx models use 2G11 base lampholders with double edge wiring action pressure lock contacts and vertically oriented lamp support clips. T8 models use rotor-lock lampholders for positive lamp retention. UL/CUL listed. Suitable for damp locations.

C - Ballast Access

Ballast can be removed from below or from above using the unique ballast mounting/access plate.†

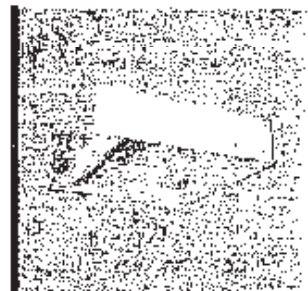
D - Finish

Painted after fabrication. Electrostatically applied baked white polyester powder enamel finish. Multistage cleaning cycle, iron phosphate coating with rust inhibitor.

E - Reflectors

Indirect reflector has high reflectance baked matte white enamel finish for luminous uniformity. A pair of positively retained screw-mounted direct lamp shields is constructed of heavy gauge perforated steel with high reflectance painted after fabrication finish and milky white overlay diffuser for visual comfort. All reflectors are precision formed in a computer-controlled operation.

Catalog #	Type
2RDI-S-2BX40RP-120V-EL	
Project	FBP340H-GM-TEB57-RIF1AUEM
Comments	Hopewell School
Prepared by	Date



2RDI-S-2BX40
2RDI-S-217
2RDI-S-417

BIXIAL OR T8 LAMPS

2' X 2' Recessed
Direct/Indirect
Side-Mount

Ovation™

ENERGY DATA

Input Watts:

ER Ballast & STD Lamps

2BX40 (67)

2BX50 (106)

2BX65 (110)

217 (134)

417 (67)

ES Ballast & STD Lamps

217 (45)

417 (100)

STD Ballast & STD Lamps

2BX40 (82)

4DX40 (116)

Lamp/Refs Efficiency Rating

LER = FLS6

Catalog Number: 2RDI-S-2BX40RP

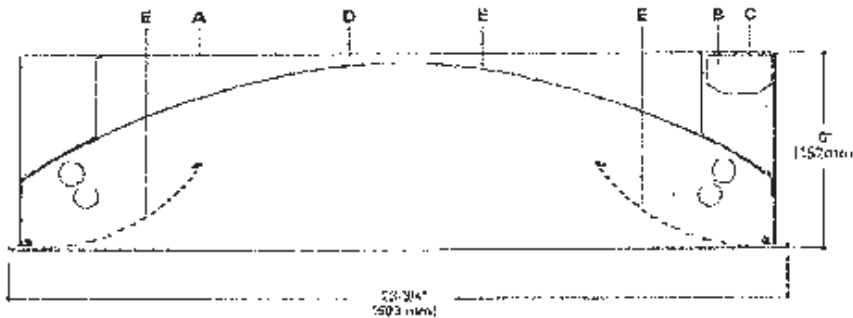
Yearly Cost of 1000 lumens,

3000 hrs @ .08 KWH = \$4.36

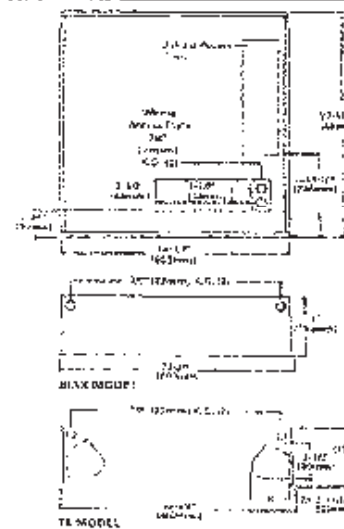
*Reference the lamp/shield data in the "Lighting" Section for specific recommended requirements.

**Circuit Breaker Capacity Requirements

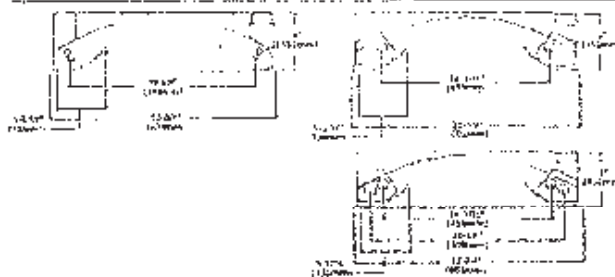
***See the "Work Frame Kit" Accessory



MOUNTING DATA



LAMP CONFIGURATIONS



CEILING COMPATIBILITY



PHOTOMETRICS



2RDI-S-2BX40RP
Electronic Ballast
F40BX/35K/PS Lamps
3150 Lumens

Spacing options:
(H) 1.2 x mounting
height, (J) 1.3 x
mounting height

Efficiency 67.9%

Test Report
7RDI025X40RP1ES

LER = FLSE

Yearly Cost of 1000
lumens, 3000 hrs at
.05 KWH = \$4.36

Coefficients of Utilization

RCR	Effective floor cavity reflectance																	
	90%					80%					50%							
	70	50	30	10	70	50	30	10	50	30	10	30	10	10	0			
0	51	31	41	41	78	78	71	39	75	76	75	72	77	77	69	60	69	58
1	74	71	68	66	72	55	67	64	58	64	62	62	64	62	61	60	59	57
2	67	62	57	54	66	61	56	53	58	55	52	50	46	47	46	45	42	41
3	60	55	49	45	60	54	48	44	57	47	44	40	46	43	42	40	37	35
4	56	46	42	38	55	47	42	38	46	41	37	34	40	37	35	33	31	29
5	51	42	37	32	50	42	36	32	40	35	31	28	35	31	30	27	25	23
6	47	38	32	28	46	37	32	27	36	31	27	24	30	27	26	23	21	19
7	44	34	28	24	42	34	28	24	33	27	24	21	27	24	23	20	18	16
8	40	31	25	21	38	30	25	21	29	24	21	18	24	20	19	16	14	12
9	37	28	22	18	36	27	22	18	26	21	18	15	21	17	16	13	11	9
10	34	25	19	15	33	25	19	15	24	19	16	13	19	15	14	11	9	7

Zonal Lumen Summary

Zone	Lumens	% Lum.	% Fixt.
0-30	1134	35.7	26.1
0-45	1825	57.9	42.7
0-60	2249	71.4	76.0
0-90	4276	133.9	100.0
0-100	4276	133.9	100.0

Typical VGP Percentages

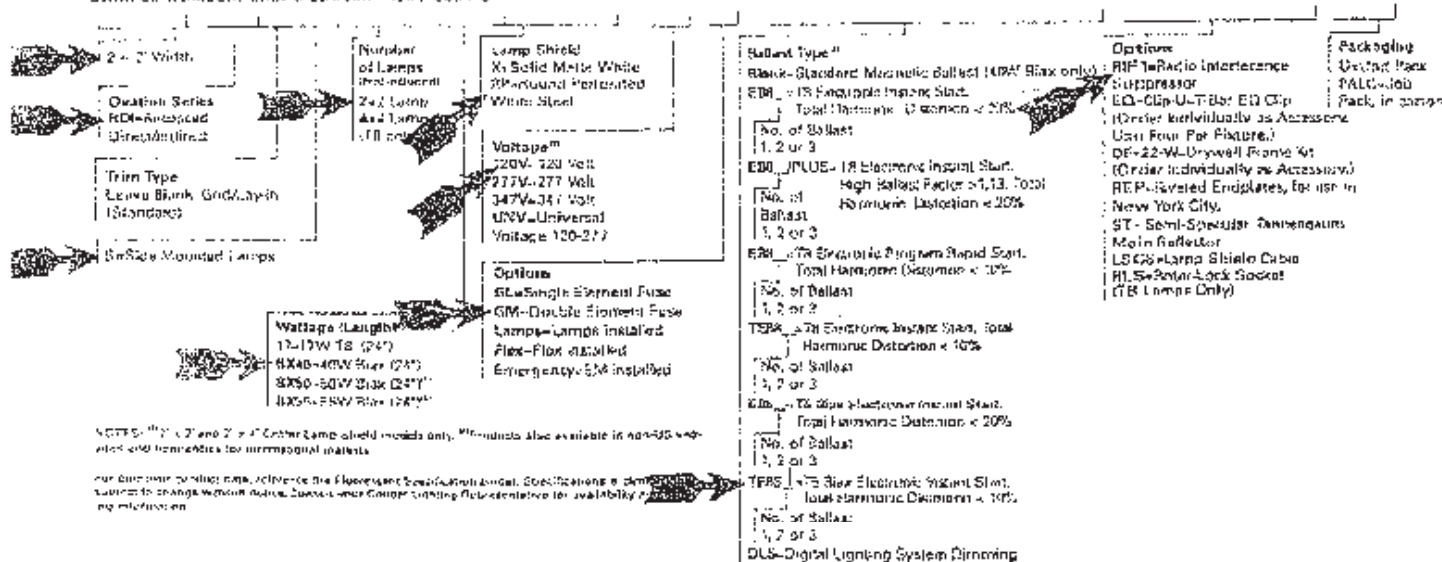
Fixture Size (ft)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
22 x 20	51	56	28	48
30 x 30	44	48	22	36
30 x 60	44	45	27	29
60 x 30	45	47	27	21
60 x 60	43	43	31	31

Candela

Angle	Along H	45°	Across L
0	1420	1420	1420
5	1620	1424	1428
10	1406	1408	1412
15	1371	1376	1385
20	1322	1332	1345
25	1260	1276	1290
30	1185	1219	1241
35	1099	1133	1156
40	1001	1048	1105
45	895	956	1033
50	780	858	957
55	656	742	818
60	521	603	705
65	411	465	521
70	302	352	445
75	206	256	341
80	109	221	319
85	33	73	115
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 2RDI-S-2BX40RP 120V E85K-U



SHIPPING INFORMATION

Category No.	WT.
2RDI-S-2BX40RP	16 lbs.
2RDI-S-217RP	16.5 lbs.
2RDI-S-417RP	18.5 lbs.

COOPER LIGHTING - SURE-LITES®

DESCRIPTION

In the event of AC power failure, the Sure-Lites FBP Emergency Battery Pack automatically switches to emergency mode. It maintains illumination of one or two lamps for a minimum of 90 minutes. UL listed for field retrofit installation and conforms to UL 524.

SPECIFICATION FEATURES

Electronic	UL Listed for Retrofit/Field Installation
Dual Voltage Input: 120/277 VAC, 50Hz	Listed Safety NFPA 101
Universal Voltage Input: 120-277 VAC, 50/60Hz (FBP240HU)	NEC/OSHA
Solid-state Charger	Most State and Local Codes
Overload/Short Circuit Protection	Chicago Approved
Test Switch/Power Indicator Light	Features
Battery	Provides a minimum of 90 minutes of emergency illumination
Sealed Nickel Cadmium	Can be installed inside or on top of fixtures
Maintenance-free, Long Life	Low Profile Housing (FBP450LP)
Full Recharge Time, 24 hours (max.)	Easy-to-follow instructions make installation quick and simple
Code Compliance	May be used with switched or unswitched fixtures
UL 524 Listed	

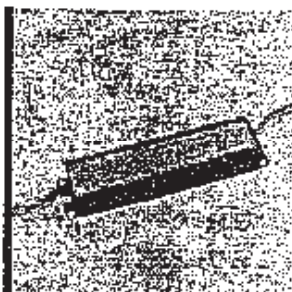
Catalog #	Type
Project	AGEM
Comments	Hopewell School
Prepared by	Date

Self-Diagnostics (FBP240HSD)

One lamp operation (FBP240D, FBP140X, FBP240U, FBP450LP)
One or two lamp operation (FBP240M, FBP240H, FBP240C, FBP240HU, FBP240HSD)

Compatible with many different lamp types—consult ordering information below or consult your Cooper Lighting Representative regarding specific applications

Compatible with many ballast types including standard, rapid start, slimline, instant start, energy saving, dimming, and electronic AC ballasts—consult your Cooper Lighting Representative regarding specific applications



*FBP SERIES

FLUORESCENT
EMERGENCY
BATTERY PACK
Emergency Lighting

ORDERING INFORMATION

Catalog No.	Lamp Type	Number of Lamps Operated in Emergency Mode	Initial Lumen
FBP140X	20W-40W, 2'-8", T8-T12 U-shaped, circuline, 20, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	350-450
FBP240U	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circuline, 20, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	500-750
FBP240M	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circuline, 20, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One or Two - 215W to 215W (2'-8") One or Two - 17W to 215W (2'-8") One or Two - 20W to 40W (2'-4") One or Two - 17W to 215W (2'-8")	500-750
FBP240H	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circuline, energy saving, rapid start (4-pin, 2G11 or G24q) long compact fluorescent	One or Two - 17W to 215W (2'-8") One or Two - 215W (2'-8") One or Two - 17W to 215W long compact fluorescent One or Two - 20W to 40W long compact fluorescent One or Two - 17W to 215W (2'-8") One or Two - 17W to 215W (2'-8")	1100-1300 1700-1900 for long compact fluorescent
FBP240HSD	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circuline, energy saving, rapid start (4-pin, 2G11, G24q, or GX24q) twin, quad and triple twin tube compact	One or Two - 17W to 40W (2'-4") One or Two - 215W (2'-8") One or Two - 17W to 215W long compact fluorescent One or Two - 40W to 55W long compact fluorescent One or Two - 17W to 42W 4-pin compact fluorescent	1100-1300 1700-1900 for long compact fluorescent
FBP240HU	17W-215W, 2'-8", T8-T12 HO, VHO, U-shaped, circuline, energy saving, rapid start (4-pin, 2G11, G24q, or GX24q) twin, quad and triple twin tube compact	One or Two - 17W to 40W (2'-4") One or Two - 215W (2'-8") One or Two - 17W to 215W long compact fluorescent One or Two - 40W to 55W long compact fluorescent One or Two - 17W to 42W 4-pin compact fluorescent	1100-1300 1700-1900 for long compact fluorescent
FBP240C	8W-28W tubular without integral starter, 13W-42W 4-pin twin, quad, or triple twin tube compact fluorescent without integral starter	One or Two - 8W to 28W tubular One or Two - 13W to 28W or One - 12W 4-pin compact fluorescent	300-350
FBP240D	18W-28W quad tube with integral starter in two pin base	One - 18W to 28W compact fluorescent	300-350
FBP250C	17W-215W, 2'-8", T8-T12 HO, VHO, U shaped circuline, energy saving and (4-pin, 2G11, G24q, or GX24q) twin, quad and triple twin-tube compact	One or Two - 17W to 40W (2'-4") One or Two - 215W (2'-8") One or Two - 17W to 215W long compact fluorescent One or Two - 40W to 55W long compact fluorescent One or Two - 17W to 42W 4-pin compact fluorescent	1450-3500
FBP450LP	5W, 4', 18"	One	450

*FBP240C, FBP240D and FBP250C are silver models with conduct

ORDERING INFORMATION

SAMPLE NUMBER: FBP140X



Energy Data

Power	input
Model No	175W
FBP140X	4.5W
FBP240U	5.3W
FBP240M	5.5W
FBP240H	8.8W
FBP240HSD	1.0W
FBP240HU	6.0W
FBP240C	5.3W
FBP240D	2.5W
FBP250C	8.0W
FBP450LP	1.5W

DESCRIPTION

Miniature size, decorator finishes, push-in connectors, economy, all combine to make single-circuit Miniature Trac perfect for residential or commercial use. Polarized connectors and end caps are included for compatibility. Halo Miniature Trac accepts both Halo and Line-by-Line lampholders.

Catalog #	L652P	Type	B1
Project	Hopewell School	Date	
Comments			
Prepared by			

SPECIFICATION FEATURES

A. Structural
Extruded aluminum .063" (1.5mm) nominal wall thickness

B. Line Conductor:
Solid copper brass core (cross section equivalent to #12 AWG wire).

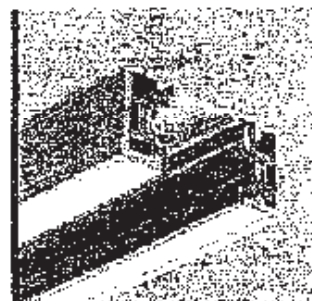
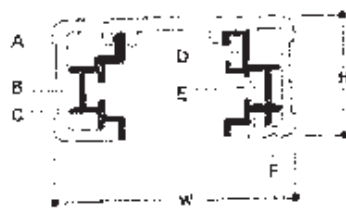
C. Insulating Liner
Extruded polyvinyl insulator.

D. Ground Conductor
Exclusive independent grounding buss conductor. Maintains an independent positive ground #12 AWG path between lampholder, Trac channel and building's ground system.

E. Neutral Conductor
Cross section equivalent of #12 AWG wire.

F. Polarity Indicator (Neutral)
Visual polarity groove indicates proper electrical installation of lampholder adapter.

Listings
UL listed and CSA certified for use with Halo and Line-by-Line lampholders.



**L650, L651
L652, L653**

MINIATURE
SINGLE CIRCUIT
120V TRAC SYSTEM

Power-Trac

ORDERING INFORMATION

SAMPLE NUMBER L651ME

Trac	Finish(es)	Accessories
L650	F = Satin White MS = Matte Black B2 = Bronze	AB = Antique Brass B = Polished Brass SL = Silver
L651		1 (See Below)
L652		
L653		

L650	L651	L652	L653	Connectors
L = 1' Actual length 20.00" (508mm) W = .56" (14mm) H = 1.14" (29mm)	L = 4' Actual length 48.00" (1219mm) W = .56" (14mm) H = 1.14" (29mm)	L = 6' Actual length 60.00" (1524mm) W = .56" (14mm) H = 1.14" (29mm)	L = 12' Actual length 144.00" (3658mm) W = .56" (14mm) H = 1.14" (29mm)	L100 Cubic Box Cover L101 Live End Connector L657 Flexible Connector L658 Straight Connector L604 L Connector L605 T Connector L606 X Connector L607 Gully Box for use with T-Bar routing L608 Mini Gully L609 Floating Canopy and Connector L659 Cord and Ring Connector L678 Conduit Continuation Kit L650 Live End Conduit Adapter DLE00 Used End
Color Codes	Color codes	Color codes	Color codes	Accessories
F = White MS = Black B = Polished Brass SL = Silver	F = White MS = Black B2 = Bronze AB = Antique Brass B = Polished Brass SL = Silver	F = White MS = Black B2 = Bronze AB = Antique Brass B = Polished Brass SL = Silver	F = White MS = Black SL = Silver	L65 Wire Way Cover for Pendant Assembly Kit L665 T-Bar Attachment Cap L60 Pendant Kit (optional) L69 48" Steel Strip L694 Pendant Adapter

ADV0421/7
Supersedes ADV021436 & ADV080406
9/04
TAC Trac Systems
Sheet 1

DESCRIPTION

Roundback lampholders. Available in white or black finish. White lampholder available with white baffle. Uniform three plug box allows line voltage and low voltage (L4018) fixtures to blend together in an installation. For use with Halo and Laser-by-Halo track systems.

Catalog # L4010P	Type
Project Hopewell School	B1
Comments	
Prepared by	Date

SPECIFICATION FEATURES

A - Electrical Quick Lock Adapter/Transformer
Polycarbonate casing. Attaches electrically and mechanically anywhere along Power-Trac. Visual polarity line assures proper grounding. Two position conductor allows use in single circuit and either circuit of two circuit track.

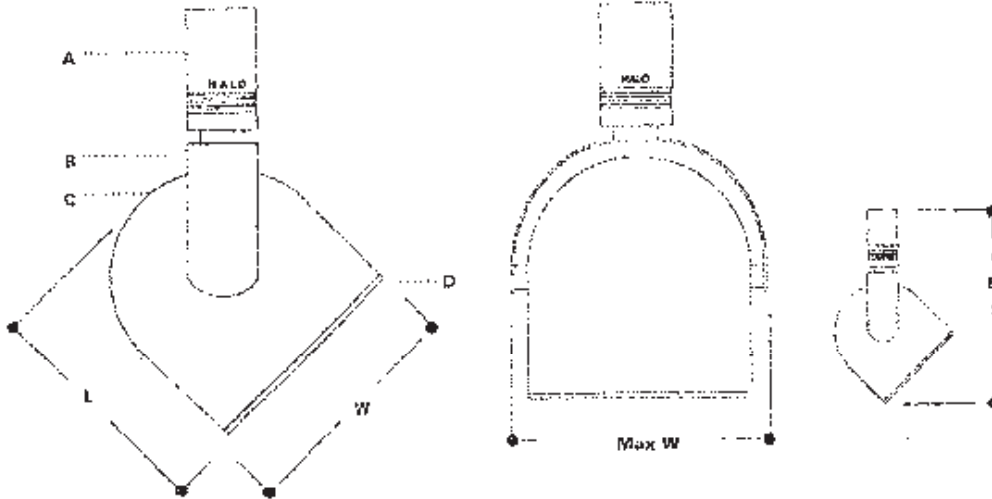
B - Yoke
Yoke allows lampholder to rotate horizontally 390° for maximum aiming adjustability.

C - Lampholder Housing
Roundback style housing with black Coltex baffle.

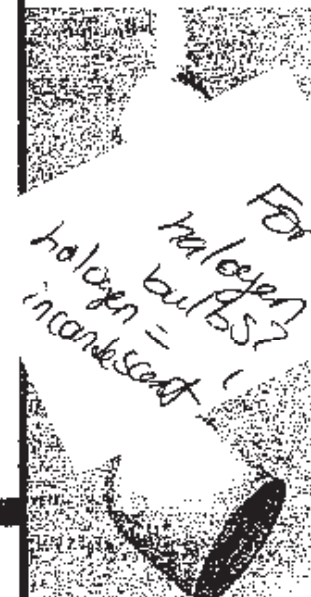
D - Lampholder Housing
Roundback style housing with black Coltex baffle.

Listings

UL listed and CSA certified for use with Halo and Laser-by-Halo track and track systems.



L4010



L4012

ORDERING INFORMATION

SAMPLE NUMBER: L4010P

Lampholders	Finishes	Accessories
L4010 L4011 L4012	Pl - Satin White with Black Baffle MB - Matte Black with Black Baffle L - White with White Baffle	(See Below)

L4010	L4011	L4012
For use with: 50W PAR28, 75W PAR16	For use with: 75W PAR28	For use with: 150W PAR28
L = 4 1/4" (108mm) W = 3 1/2" (89mm) Max W = 4 1/8" (110mm) E = 7 1/2" (191mm)	L = 4 1/2" (114mm) W = 3 3/8" (111mm) Max W = 5 1/2" (140mm) E = 7 3/4" (197mm)	L = 5 3/4" (147mm) W = 3 7/8" (100mm) Max W = 5 1/2" (140mm) E = 10" (254mm)
Accessories L2871 Barn Doors	Accessories L1972 Barn Doors (Barn Door allows use of filters and lenses) L200 Series Filters/Lenses L275 Louvers	Accessories L1994 Barn Doors (Barn Door allows use of filters and lenses) L214 UV Filter L200 Series Filters L275 Louvers

COLETTO ROUND BACK
CYLINDERS WITH BLACK
BAFFLE

Power-Trac®

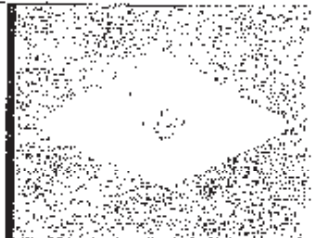
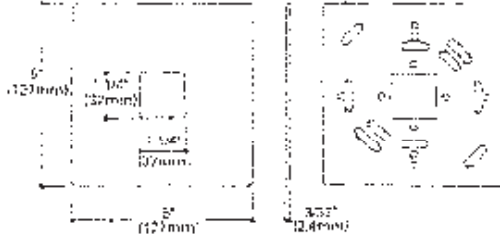
ADV042250
Supersedes ADV980710

Type: BT
 Catalog #: L904P
 Hopewell School

DESCRIPTION

L900 Outlet Box Cover

Can be used at any overhead load connection point. Use Screws L 1/2 x 3/16. Drill guides on back for vertically aligned outlet boxes. Size: 5" dia. Screws included.
 Color codes: P (White), MB (Black)



L900

ORDERING INFORMATION

Connector	Finish
L900	

L901 Live End Connector

To start a run.
 Color codes: P (White), MB (Black)



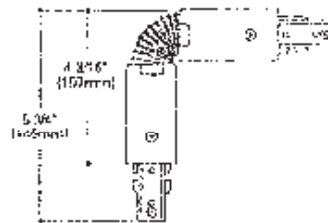
L901

ORDERING INFORMATION

Connector	Finish
L901	

L902 Flexible Connector

To connect two track sections at any angle up to 90° in either plane or wall to ceiling or pitched ceiling applications.
 Color codes: P (White), MB (Black)



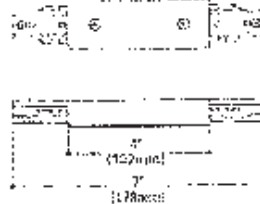
L902

ORDERING INFORMATION

Connector	Finish
L902	

L903 Straight Connector

To connect two track sections end-to-end. L903 differs from main connector L900 in that it provides a center face on an end is longer. May be used as feed point.
 Color codes: P (White), MB (Black)



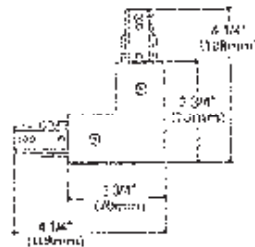
L903

ORDERING INFORMATION

Connector	Finish
L903	

L904 L Connector

To connect two track sections at a right angle. Field adjustable for either right hand or left hand applications. May be used as feed point.
 Color codes: P (White), MB (Black)



L904

ORDERING INFORMATION

Connector	Finish
L904	P

Type: B1
 Catalog #: L908P
 Hopewell School.

HALO®

DESCRIPTION

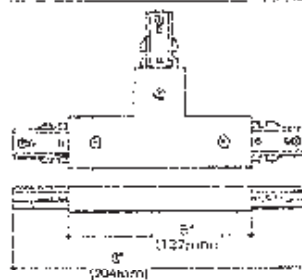
L905 T Connector

To connect three track sections into a T configuration. Field adjustable for either right hand or left hand application. May be used as feed point.

Color codes: P (White), MB (Black)

ORDERING INFORMATION

Connector	Finish
L905	



L905

L906 X Connector

To connect four track sections into a cross configuration. May be used as feed point.

Color codes: P (White), MB (Black)

ORDERING INFORMATION

Connector	Finish
L906	



L906

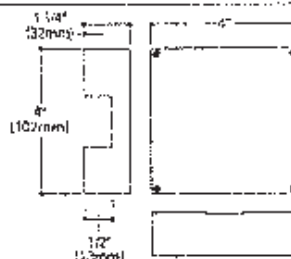
L907 Outlet Box for use with T-Bar ceiling

L901, L903, L904, L905 or L906 connector also required. 4" x 4" x 1 3/8"

Color codes: P (White), MB (Black)

ORDERING INFORMATION

Connector	Finish
L907	



L907

L908 Mini Joiner

A low profile connector to cleanly and crisply join two straight track sections end-to-end. (Note: The L908 is not a feed point.)

Color codes: P (White), MB (Black)

ORDERING INFORMATION

Connector	Finish
L908	P



L908

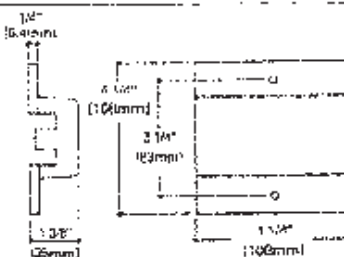
L909 Floating Canopy and Connector

Track can be connected to existing outlet box located anywhere along the track. Comes with canopy cover, connector, riser, end and mounting hardware. 4 1/8" x 4 1/4" x 1 3/8"

Color codes: P (White), MB (Black)

ORDERING INFORMATION

Connector	Finish
L909	



L909

Note: Specifications and Dimensions subject to change without notice. Visit our web site at www.slopesighting.com

Customer First Center 1171 Highway 74 South Peachtree City, GA 30092 770.486.4800 FAX 770.486.4801

DESCRIPTION

The DIM Series is an energy efficient family of industrial lights that feature premium performance and durability. The industrial series incorporates heavy duty, anodized, reflectors that precisely direct and effectively control light. The versatile DIM Series can be installed using various mounting methods and numerous options and accessories are available.

APPLICATION

The DIM Series can be utilized in simple task and area lighting to the most demanding industrial applications.

SPECIFICATION FEATURES

A - Construction

Channel is code gauge prime cold rolled steel. Die formed with deep V-grooves for long hanger. Die formed channel connector assures straight rows and consistency of ground through set screws. Lampholder mounting brackets are easily inserted with snap-in action.

B - Electrical¹

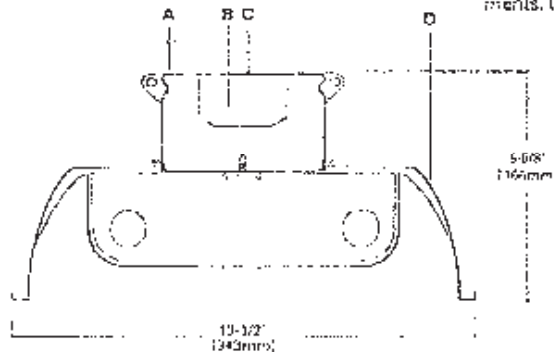
Ballast are CBM&TL Class "P" and positively secured by mounting bolts. Metal clad lamp holders are spring loaded for turn safety. UL/CUL listed. Suitable for damp locations.

C - Finish

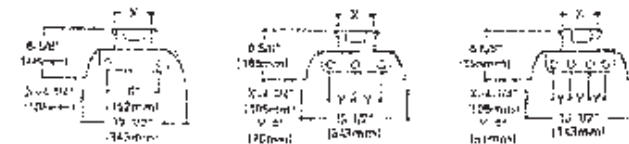
Multistage iron phosphate pre treatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Reflectors

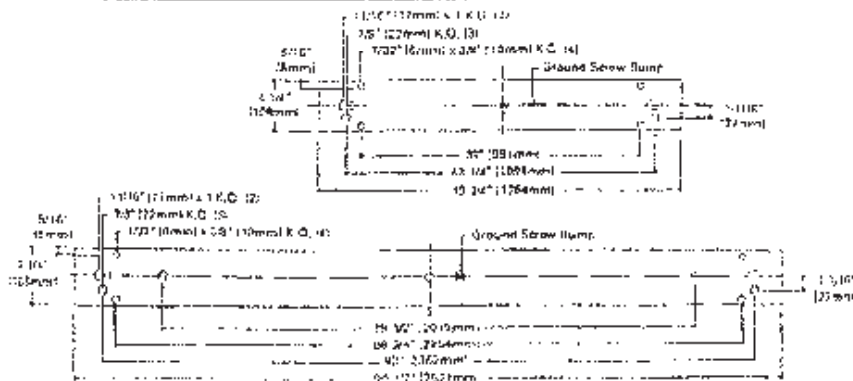
Die formed prime steel, code gauge. Deep draw full width ribs formed with one cross stroke. Side flanges lend strength with upward turn. Easily cleaned, baked white enamel 13-1/2" wide. Four fasteners. Reflectors secured by positive retaining screw. Reflector aligners provided. Standard with 20% uplight (DIM). Closed top reflector (DCIM). Optional industrial fixtures are available incorporating silver technology enhancements. (SilverLining)



LAMP CONFIGURATIONS



MOUNTING DATA



Ordering #	Type
DIM-232-100V-EL-FBP240H-	
Project	
GM-TEB57	C7EM
Comments	
Hopewell School	
Ordered by	Date



DIM240
232
340
332
440
432

4' OR 8' INDUSTRIAL
2, 3 OR 4 LAMP

Heavy Duty Industrial

ENERGY DATA

Input Wires:

ED Ballast & STD Lamps
240 (72)
332 (64)
340 (120)
332 (67)
440 (144)
432 (122)

EQ Ballast & STD Lamps

240 (80)
232 (71)
340 (120)
332 (100)
440 (172)
432 (142)

Luminaire Efficiency Rating

LFR = 91-98

Catalog Number: DIM-232

Yearly Cost of 1000 hours, 3000
hrs at .08 KWH = \$2.08

¹Reference the luminaire data in the Technical Section for specific lamp/fixture requirements.

ADF020748



COOPER LIGHTING - SURE-LITES[®]

DESCRIPTION

In the event of AC power failure, the Sure-Lites FBP Emergency Battery Pack automatically switches to emergency mode. It maintains illumination of one or two lamps for a minimum of 90 minutes. UL listed for direct installation and conforms to UL 924.

SPECIFICATION FEATURES

- Electronic
- Dual Voltage Input (120/277 VAC, 60Hz)
- Universal Voltage Input (120-277 VAC, 50/60Hz) (FBP240HU)
- Self-Test Charger
- Overload/Short Circuit Protection
- Test Switch/Power Indicator Light
- Battery
- Sealed Nickel Cadmium
- Maintenance-Free, Long Life
- Full Recharge Time, 24 hours (max.)
- Code Compliance
- UL 924 Listed

UL Listed for Retrofit/Field Installation

Life Safety NFPA 101

NEC/OSHA

Most State and Local Codes

Chicago Approved

Features

Provides a minimum of 90 minutes of emergency illumination

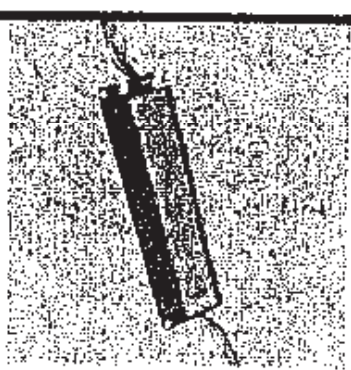
Can be installed inside or on top of fixture

Low Profile Housing (FBP45DU)

Easy-to-follow instructions make installation quick and simple

May be used with switched or unswitched fixtures

Catalog #	Type
Project	CTEM
Comments	Hopewell School
Requested by	Date
Self-Diagnostics (FBP240HSD)	
One lamp operation (FBP240D, FBP140N, FBP240HL, FBP45CLPH)	
One or two lamp operation (FBP240M, FBP240H, FBP240C, FBP240HU, FBP240HSD)	
Compatible with many different lamp types—consult ordering information below or consult your Cooper Lighting Representative regarding specific applications	
Compatible with many ballast types including standard, rapid start, electronic, instant start, energy saving, dimming, and electronic AC ballasts—consult your Cooper Lighting Representative regarding specific applications	



***FBP SERIES**

**FLUORESCENT
EMERGENCY
BATTERY PACK**
Emergency Lighting

ORDERING INFORMATION

Catalog No.	Lamp Type	Number of Lamps Operated in Emergency Mode	Initial Lumens
FBP140X	20W 40W, 2-Pin, T8 T12 U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	350-450
FBP240U	30W compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One	500-700
FBP240M	14-pin, 2G11 long compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One 20W to 25W (2-8')	600-700
FBP240D	14-pin, 2G11 long compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One 20W to 30W long compact fluorescent	600-700
FBP240H	14-pin, 2G11 long compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One or Two 20W to 40W (2-4')	100-200
FBP240C	14-pin, 2G11 long compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One or Two 20W to 40W (2-4')	100-200
FBP240HU	14-pin, 2G11 long compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, 2D, energy saving, rapid start (4-pin, 2G11) long compact fluorescent	One or Two 18W to 32W long compact fluorescent	700-1000 for long compact fluorescent)

FBP240HSD 14-pin, 2G11 long compact fluorescent, 2-Pin, T8 T12 HO, VHO, U-shaped, electrode, energy saving, rapid start (4-pin, 2G11, 2740) long compact fluorescent



Description

Low brightness 7-3/8" aperture cross blade for use with a 26W, 32W or 42W Triple Tube compact fluorescent lamp. Reflector trim eliminates brightness at higher angles. One electronic ballast to operate 26W, 32W and 42W triple tube 4-pin lamps. Venting assures maximum lamp life and lumen output. Open downlight, lens, and open wall wash trims are interchangeable within the same housing.

Catalog #	C7142E-7181 L15-116ac	Qty	
Project	Hopewell School	01	
Comments		Date	
Prepared by			

SPECIFICATION FEATURES

A ... Reflector

Clear upper Alzak® reflector for maximum output. Positive reflector mounting, without tools, pulls trim tight to ceiling.

Option 5: Lower spun parabolic reflector with 90° cross blades, .050 thick aluminum with low iridescent clear Alzak finish or painted white. Other finish options available upon request.

Option 6: Lower spun parabolic reflector painted white with 90° perforated cross blades, .050 thick aluminum, painted gray.

B ... Trim Ring Options

Self flanged reflector.

C ... Socket Connector

One piece die cast aluminum connection allows venting for maximum thermal performance.

D ... Housing Mounting Frame

One piece precision die cast aluminum 1-1/2" deep collar accommodates varying dimensions of ceiling materials.

E ... Universal Mounting Bracket

Accepts 1/2" EMT, C Channel, T bar fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F ... Conduit Fittings

Die cast screw tight connectors.

G ... Junction Box

Listed for eight #12AWG (four in, four out) 90°C conductors feed thorough branch wiring. For 1/2" and two 3/4" pry outs. Positioned to allow straight conduit runs. Access to junction box by removing reflector.

H ... Socket

4 pin GX24e-3/4 base with fatigue free stainless steel lamp spring ensures positive lamp retention.

I ... Ballasts

Electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting. End of lamp life protection is standard.

Labels

UL Listed. Damp Label IBEW union made.



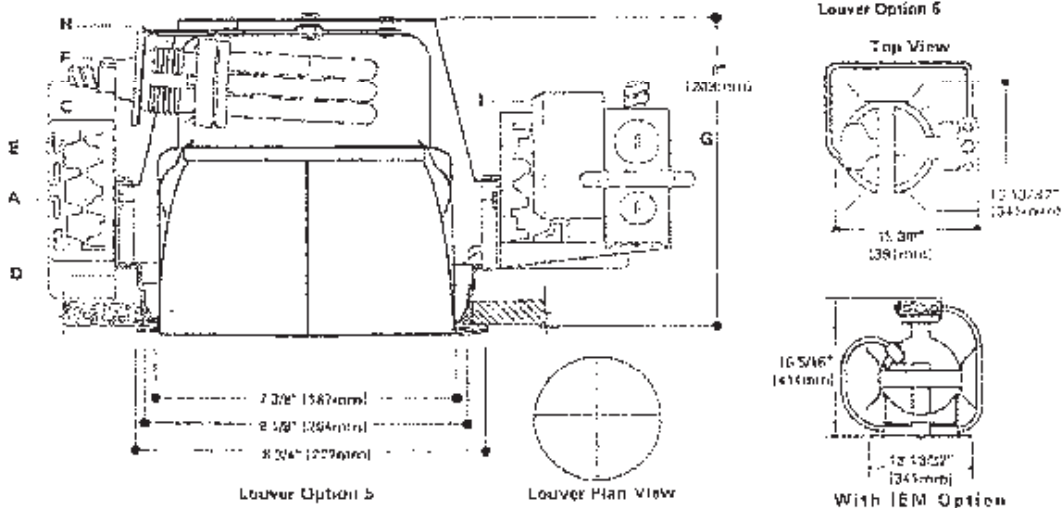
C7142 7181

26W, 32W, 42W Triple Compact Fluorescent
7-3/8" CROSS BLADE

Energy Data

- 26W Triple 4-pin
Ballast: Electronic
120V input watts: 25, Line Amps: 0.25
277V Input Watts: 26, Line Amps: 0.26
Power Factor >.99, THD <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A
- 32W Triple 4-pin
Ballast: Electronic
120V input watts: 34.5, Line Amps: 0.33
277V Input Watts: 34.5, Line Amps: 0.33
Power Factor >.99, THD <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A
- 42W Triple 4-pin
Ballast: Electronic
120V Input Watts: 48, Line Amps: 0.47
277 Input Watts: 48, Line Amps: 0.47
Power Factor >.99, THD <10%
Min. Starting Temp: -10°C (15°F)
Sound Rating: A

NOTES:
Accessories should be ordered separately.
For additional options please consult your Cooper Lighting Representative. Made in a registered trademark of Aluminum Company of America.



ORDERING INFORMATION: Complete unit consists of housing, ballast and trim.

Housing	Ballast	Options	Trims	Finish	Louver	Options	Accessories
C7142							
C7142E C7142E-7181 117 Lamp	E 120V - 277V 50/60 Hz Electronic 36-34 W 50/60 Hz Electronic	OP-1-Choice OP-2-Flange option EM-1-Emergency TR-1-Trimless TR-2-Trimless	7181-Reflectors Self Flanging	1- Low Iridescent 2- Clear 3- White	1- Blade (L) or W 2- Mixing Blade 3- Fan 4- Perforated Blade 5- Gray Blades, W 6- Brushed	1- Self Flange 2- Self Flange 3- Self Flange	M826-C Hanger, 20" Long, 1/4" H850-C Channel Bar H850-C, 50" Long, 1/4" RMB22-Wired Joint Bar Hanger, 20" Long, 1/4" RMB22-Instaled Joint Bar 5 Lamp
C7142E-32W C7142E-32W 117 Lamp	32W - 32W 120V Dimming, Lutron® Compact SE						
C7142E-42W C7142E-42W 117 Lamp	42W - 42W 120V Dimming, Lutron® Compact SE						



Description

Low brightness 7 3/8" aperture cross blade for use with a 26W, 32W or 42W Triple Tube compact fluorescent lamps. Reflector trim eliminates brightness at higher angles. One electronic ballast to operate 26W, 32W and 42W triple tube 4-pin lamps. Venting ensured maximum lamp life and lumen output. Open downlight, lens, and open wall wash trim are interchangeable with the same housing.

Category	C7142 E-EMT-7181	D7EM
Product	L15-HBAC	
Comments	Hopewell School	
Project No.		
Location		

SPECIFICATION FEATURES

A ... Reflector
Clear acrylic Alzak® reflector for maximum output. Positive reflector mounting, without tools, pulls trim into ceiling.
Option 5: Lower spun parabolic reflector with 90° cross blades. .050 thick aluminum with low gloss paint clear Alzak finish or painted white. Other finish options available upon request.
Option 6: Lower spun parabolic reflector painted white with 90° perforated cross blades, .050 thick aluminum, painted gray.

B ... Trim Ring Options
Self flanged reflector

C ... Socket Connector
One piece die cast aluminum connection allows venting for maximum thermal performance.

D ... Housing Mounting Frame
One piece precision die cast aluminum 1-1/2" deep collar accommodates varying dimensions of ceiling materials.

E ... Universal Mounting Bracket
Accepts 1/2" EMT, E Channel. 7 lbs fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F ... Conduit Fittings
Die cast screw tight connectors.

G ... Junction Box
Listed for eight #12AWG (four in, four out) 90°C conductors feed through branch wiring. For 1/2" and two 3/4" pry outs. Positioned to allow straight conduit runs. Access to junction box by removing reflector.

H ... Socket
4 pin GX24-3/4 base with fatigue free stainless steel lamp spring ensures positive lamp retention.

I ... Ballasts
Electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting. End of lamp life protection is standard.

Labels
eULus listed. Dimp label 180W union made.



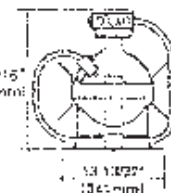
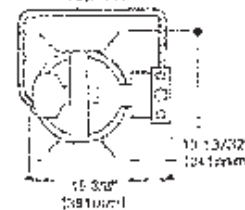
C7142 7181

26W, 32W, 42W Triple Compact Fluorescent
7 3/8" CROSS BLADE

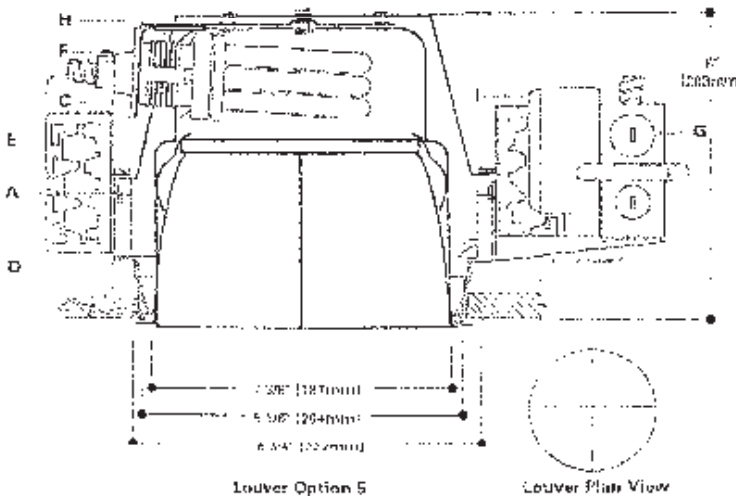


Lower Option 6

Top View



With IEM Option



Lower Option 5

Lower Flat View

Energy Data

26W Triple 4-pin
Ballast: Electronic
120V Input Watts: 29, Line Amps: 0.27
277V Input Watts: 26, Line Amps: 0.24
Power Factor: >.95, THD: <10%
Min. Starting Temp: -10°C (14°F)
Sound Rating: A

32W Triple 4-pin
Ballast: Electronic
120V Input Watts: 34.5, Line Amps: 0.30
277V Input Watts: 34.5, Line Amps: 0.19
Power Factor: >.95, THD: <10%
Min. Starting Temp: -10°C (14°F)
Sound Rating: A

42W Triple 4-pin
Ballast: Electronic
120V Input Watts: 48, Line Amps: 0.42
277V Input Watts: 48, Line Amps: 0.18
Power Factor: >.95, THD: <10%
Min. Starting Temp: -10°C (14°F)
Sound Rating: A

NOTES:
Accessories should be ordered separately.
For additional options, please consult your Cooper Lighting Representative. Alzak is a registered trademark of Alzak-Hubbard Company of America.

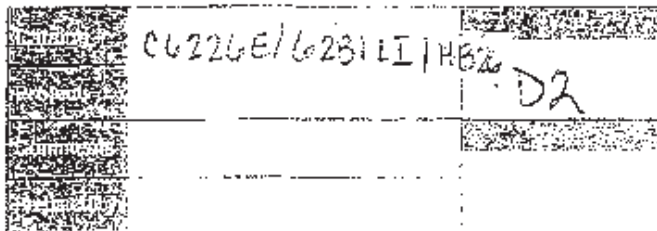
ORDERING INFORMATION: Complete List consists of housing, ballast and trim.

Housing	Ballast	Options	Trims	Finish	Louver	Options	Accessories
C7142							
C7142-26W Horizontal 1-Lamp	E-120V 27W GX24-3/4 Electronic EMT/Channel 120V 26W 120V Electronic Compact EE	OP Channel Request open EMT/Channel Mount with request (not shown)	7181-Reflector Self Flanged Clear White	1-Low Intensity 2-Clear 3-White	15-Blade 1-Matching Blade 2-Trim 1-Perforated Blade 2-Trey Blades, V Finish only	WE-150 9" Halkie 150" Flanged only	HEZH-F Kanger, 26" Long, Pair HB50-C Channel, Bar Hanger, 50" Long, Pair RMB22-Whorl Joints, Bar Hanger, 22" Long, Pair SIS-Field Installed Fixt. Kit 3-Axis
C7142-32W Horizontal 1-Lamp	E-120V 32W GX24-3/4 Electronic EMT/Channel 120V 32W 120V Electronic Compact EE						
C7142-42W Horizontal 1-Lamp	E-120V 42W GX24-3/4 Electronic EMT/Channel 120V 42W 120V Electronic Compact EE						



Description

Low brightness 5" aperture cross blade for use with (2) 18W or 26W quad compact fluorescent lamps. Reflector trim eliminates brightness at higher angles. Standard features include low iridescent finish on all reflectors. Venting assures maximum lamp life and lamp output. Open downlight, lens, and open wall wash trims are interchangeable within the same housing.



SPECIFICATION FEATURES

A ... Reflector

Clear upper Alzak reflector for maximum output. Positive reflector mounting, without tools, puts trim tight to ceiling.

B ... Louver

Option 5: Lower cone parabolic reflector with 90° cross blades. .050 thick aluminum with low iridescent clear Alzak finish or painted white. Other finish options available upon request.
Option 6: Lower cone parabolic reflector painted white with 90° perforated cross blades, .050 thick aluminum, painted gray.

C ... Socket Connector

One piece die cast aluminum connection allows venting for maximum thermal performance.

D ... Housing Mounting Frame

One piece precision die cast aluminum 1/2" deep collar accommodates varying dimensions of ceiling materials.

E ... Universal Mounting Bracket

Accepts 1/2" EMF, C Channel, F bar fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F ... Conduit Fittings

Die cast screw tight connectors.

G ... Junction Box

Listed for eight #12AWG (four in, four out) 90 degree conductors feed through branch wiring, 1/2" and two 3/4" pry outs. Positioned to allow straight conduit run. Access to junction box by removing reflector.

H ... Socket

18W lamps: 4 pin G24q3 base.
18W lamps: 4-pin G24q2 base.
Bases have fatigue free stainless steel lamp spring ensures positive lamp retention.

I ... Electronic Ballast

Electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting. End of lamp life protection is standard.

Labels

eULus listed, C.S.A. certified, Damp label IBEW union made.



C6218, C6226

6281

xx5, xx6

(2) 18W Quad (2) 26W Quad
Compact Fluorescent
5" CROSS BLADE

Energy Data

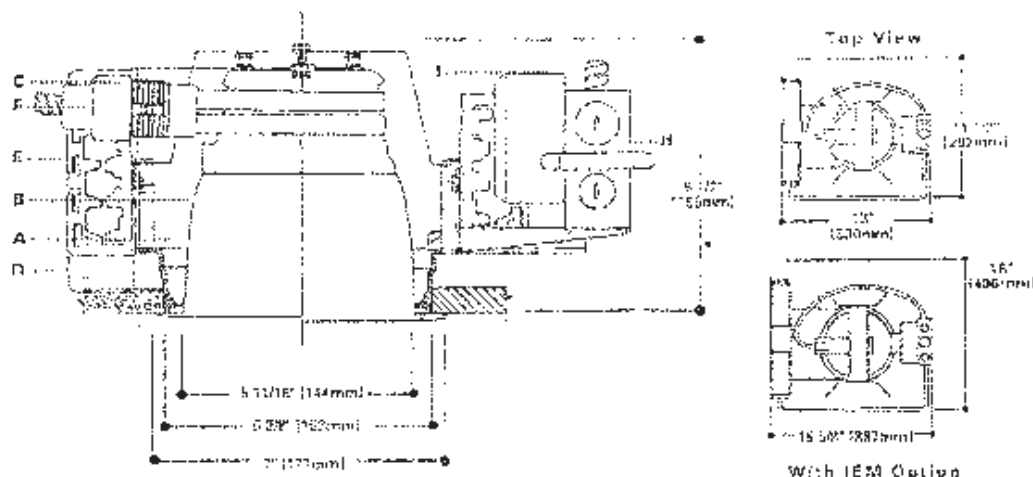
18W Quad 4-pin
Ballast Electronic
120V Input Watts: 19.1 Line Amps: 0.10
277 Input Watts: 16. Line Amps: 0.07
Power Factor: 0.95
THD: <1%
Min. Starting Temp: 10°C (50°F)
Sound Rating: A

26W Quad 4-pin
Ballast Electronic
120V Input Watts: 21. Line Amps: 0.09
277 Input Watts: 27. Line Amps: 0.09
Power Factor: 0.95
THD: <1%
Min. Starting Temp: 10°C (50°F)
Sound Rating: A

Lighting Efficiency Rating:
C6218-6281-26-36

NOTES:

Accessories should be ordered separately.
For additional options please consult your Cooper Lighting Representative. Alzak is a registered trademark of Alzak Inc. Company or American Ballast is a registered trademark of Larson Electronics Co. Inc.



ORDERING INFORMATION: Complete part consists of housing, ballast and trim.

Housing	Ballast	Options	Trims	Finish	Louver	Options	Accessories
C6226	E		6281	LI	5		HS26
C6218-6281 18W Horizontal DIT-Loupe Horizontal DIT-Loupe C6226-6281 26W Horizontal DIT-Loupe	E-120V 277V ENEC Hz Electronic 90°C/247V 50-70 Hz Electronic 10-125V Dimming Lutron® Selectable 50-20=277V Dimming Lutron® Compact 50	CP-Compact Fluorescent Lamp 2C-2" Ballasts for High-Low Switching 2CM-2" Compact Fluorescent Lamp 3-3" Ballasts for High-Low Switching EM-Emergency output with remote test switch	6281-Reflector Self-Flange	LI-Low Iridescent Clear W-White	5-Blade (L) or W Matching Sub- Housing 5-Perforated Blade L: Grey Mount W: Black only	WF-White Painted Hange (Self- Flanged only)	HS26-C Channel Bar Hanger, 26" Long, Pair HS30-C Channel Bar Hanger, 30" Long, Pair RMB26-Wood Cross Bar Hanger, 26" Long, Pair RMB30-Wood Cross Bar Hanger, 30" Long, Pair RMB-White painted Base Kit, 5-Piece

Specifications and Dimensions subject to change without notice.
Contact your representative for additional options.

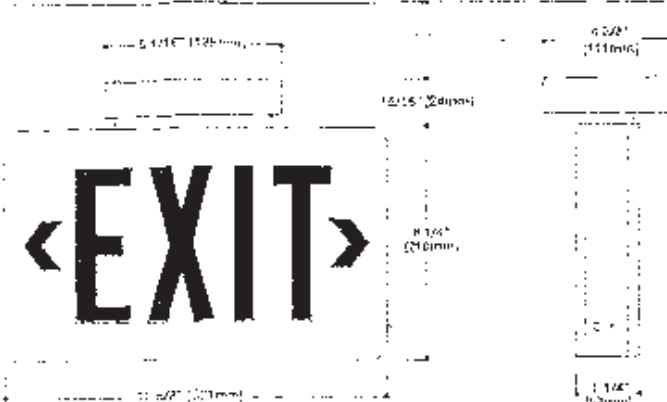
Type: X7

Hopewell School

CX719ORWSD

COOPER LIGHTING - SURE-LITES®

DIMENSIONS



DESCRIPTION

The CX LED Die Cast Aluminum Exit combines the strength and durability of die casting with the bright even illumination of LED lamp sources. Unlike competitive units that have a pronounced hot effect from protruding diodes, the CX LED offers unequaled uniform illumination and brightness. The CX LED comes standard with the Watertight EMS self-diagnostic system insuring fixture reliability and reducing maintenance costs.

EXIT

CX SERIES

Cast Aluminum Exit
Surface Mount
AC Only
Self-Powered
LED Lamps

EXIT LIGHTING

Sure-Lites® 202423

WatchGuard EMS

Indicator	Meaning
⊖ Steady	Full Charge
⊖ Flash	High Charge
⊖ ⊖	Battery Full
⊖ ⊖ ⊖	Circuit Fault
⊖ ⊖ ⊖ ⊖	Low Battery

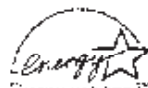
TEST INDICATOR

Self-Diagnostics

The self-diagnostic unit will automatically perform all tests required by UL924, and NFPA 101. The system indicates the status of the exit at all times using the LED indicator near the test switch on the side of the unit. A 30 minute battery power (emergency mode) simulation test will occur randomly once every six months. A 30 second battery power simulation test will occur every 30 days. The charger function is tested upon initial power-up and after every battery discharge cycle. The EXIT lamp circuit and AC/DC power transfer paths is monitored continuously.

The charging mode is also monitored. The unit goes into a high charge mode for 24 hours the first time AC power is applied and when a discharge causes the battery voltage to fall below its nominal value. Pressing the test switch causes the unit to use battery power and test the battery capacity for 30 seconds.

The LED indicator is off when the unit is in the emergency mode and on continuously when the unit is fully charged. It blinks when the unit is in the high charge mode, it blinks twice (then repeats) when the battery needs to be replaced, or if it is disconnected. It blinks three times if there is a circuit board (charger or AC/DC transfer function) failure, and four times if off or more of the EXIT lamps fail.



ORDERING INFORMATION

SAMPLE NUMBER: CX719ORWSD

CX 7 1 90 R W SD

Family CX LED Exit	Finish 70-Nickel Canoplast Bakelite (227)	Letter Colors R-Red G-Green	Mounting Blank	LED Self-Diagnostic 110X7 Only	Options 20-Two Circuit Operation, ETBR (CXF Only)	Accessories (Order Separately) CAX11FKK107 Pendant Kit, Black CAX10PKWH 10" Pendant Kit, White CAX10PKH107 10" Hang-Trap Pendant Kit, Black CAX10PKH107 10" Hang-Trap Pendant Kit, White WG10-Plastic/Aluminum Vandal Shield (Wall Mount Only) WG100-Weather Resistant Polycarbonate Vandal Shield (Wall Mount Only) WG10 Wire Guard (Wall Mount Only) WG11-Wire Guard (Ceiling or Cant Mount Only)
------------------------------	---	--	--------------------------	--	--	---

Energy Data - Self-Powered Exit

Input Power	Output Power		Input Current (Max)	Power Factor	T.H.D.	
	120V	277V			120V	277V
LED Only - Red/White	2.9W	2.9W	25A	0.74	< 3%	< 1%
LED Only - Green/White	3.8W	3.8W	36A	0.74	< 3%	< 1%

Energy Data - AC Only Exit

Input Power	Output Power	Input Current (Max)	Power Factor	T.H.D.	
120V	277V	120V	277V	120V	277V

- Dual-voltage input 120/277 VAC, 60 Hz, isolation transformer
- Watertight EMS Self-Diagnostic System (CX7 Only)
- Push-In AC power connections facilitate installation
- Self-powered Exits feature line-ditching, solid-state voltage limited charger, low-voltage disconnect, brownout circuit, overload/short-circuit protection, test switch/power indicator light
- Die cast aluminum housing
- Die cast canopy included
- Universal pattern knockouts on rear of single face housing for direct mounting to junction box
- Knockout provided on housing for surface attachment
- Exit can be universally mounted ceiling, wall or end
- NFPA 101 compliant knockout allows quick conversion to directional signs
- LED lamp provides uniform light output
- AC LED: Long life LED lamps DC: LED DC Lamps
- Demo Location Listed (AC Only), UL 924 Listed, CSA Certified, Life Safety NFPA 101, NEC/OSHA, Energy Star Listed, AC Only-UL ETBR when specified with the "2E" option, most state and local codes suitable for floor proximity notification.

Ben Aring

From: Veronica Gayotin [veronica.gayotin@lakotaonline.com]
Sent: Thursday, July 07, 2011 7:58 AM
To: Robert Fischer
Subject: RE: Duke Question - READ FIRST

Bob, I grouped the query based on acct # do you know the building numbers (the last two digits followed by a zero)?

The account number will start with 004 (shown at the top of the report)

07 Wyandot (Summerlin)

08 Endeavor (Smith)

→ 12 Hopewell

31 West Freshman

32 West

33 East

34 East Freshman

Acct # 003 is LWC

06 New Union

Let me know if this helps. I believe I can break the report down further by adding a line in the query for each building, would you prefer that?

Veronica Gayotin

Lakota Local Schools - Business Operations

5572 Princeton Road

Liberty Township, OH 45011

513.644.1172 or Ext 22021

513.644.1183 Fax



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From: Robert Fischer [mailto:robert.fischer@lakotaonline.com]

Sent: Thursday, July 07, 2011 7:18 AM

To: Veronica Gayotin

Subject: RE: Duke Question - READ FIRST

Hopewell PoP #12

(41)

ION

LAKOTA LOCAL SCHOOLS, BUTLER COUNTY, OR
VENDOR PAYMENT HISTORY

PAGE NUMBER: 1
ACCTPA31

IA: ((((transact.vend_no = "8745"))) AND (((transact.key_orgn MATCHES "004*"))) AND (((transact.ck_date >= "2006-12-3

INVOICE PURCHASE OR P/F	1099 DATE	CHECK NO P/F	BUDGET PROJECT	UNIT #2	DESCRIPTION CONTROL	SALES TAX	AMOUNT
COUNTY ELECTRIC 07006435	N 120609	P 02/23/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0222	0.00	16421.08
COUNTY ELECTRIC 07004531	N 120609	P 02/23/07	0042005550000340-620		BASE BID - PACKAGE 2 EL AEG0222	0.00	16296.12
COUNTY ELECTRIC 07004531	N 120609	P 02/23/07	0042005550000120-620		ALTERNATE # 6 HOPEWELL AEG0222	0.00	8887.16
COUNTY ELECTRIC 07006435	N 121945	P 03/30/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0329	0.00	45894.48
COUNTY ELECTRIC 07004531	N 121945	P 03/30/07	0042005550000340-620		BASE BID - PACKAGE 2 EL AEG0329	0.00	4434.11
COUNTY ELECTRIC 07004531	N 121945	P 03/30/07	0042005550000120-620		ALTERNATE # 6 HOPEWELL AEG0329	0.00	2418.15
COUNTY ELECTRIC 07006435	N 123004	P 04/26/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0426	0.00	9800.20
COUNTY ELECTRIC 07006435	N 124426	P 05/29/07	0042005550000120-620		BID PACKAGE # 5 - ELECT BAY0529	0.00	18255.84
COUNTY ELECTRIC 07006435	N 125664	P 06/21/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0621	0.00	54214.68
COUNTY ELECTRIC 07006435	N 126565	P 07/31/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0731	0.00	56362.42
COUNTY ELECTRIC 07006435	N 127654	P 08/31/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0830	0.00	26502.90
COUNTY ELECTRIC 07006435	N 128749	P 09/27/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0927	0.00	40571.86
COUNTY ELECTRIC 07006435	N 132753	P 11/30/07	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG1129	0.00	28412.43
COUNTY ELECTRIC 07006435	N 137506	F 03/27/08	0042005550000120-620		BID PACKAGE # 5 - ELECT AEG0327	0.00	2880.00
						0.00	331351.43
						0.00	331351.43

Hopewell Pop #12

#2

ION

LAKOTA LOCAL SCHOOLS, BUTLER COUNTY, OH
VENDOR PAYMENT HISTORY

PAGE NUMBER: 1
ACCTPA31

IA: (((transact_vend_no = "1725")) AND ((transact_key_orgn MATCHES "004*")) AND ((transact_ck_date >= "2006-12-3

DO#	INVOICE PURCHASE OR	1099 P/F	CHECK DATE	NO	BUDGET UNIT #2 PROJECT	DESCRIPTION	SALES TAX	AMOUNT
P ENTERPRISE, I	06008219	8 SM	N 119147		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	26425.20
P ENTERPRISE, I	06008220	8 SU	N 119147		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	26002.88
P ENTERPRISE, I	06008219	9 SM	N 120652		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	29296.60
P ENTERPRISE, I	06008220	9 SU	N 120652		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	28708.60
P ENTERPRISE, I	07006430	1 HE	N 121966		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	6812.00
P ENTERPRISE, I	06008219	10 SM	N 121966		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	32182.60
P ENTERPRISE, I	06008220	10 SU	N 121966		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	15920.60
P ENTERPRISE, I	06008219	11 SM	N 123014		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	94176.80
P ENTERPRISE, I	06008220	11 SU	N 123014		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	105846.00
P ENTERPRISE, I	07006430	2 HE	N 123014		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	5100.00
P ENTERPRISE, I	06008219	12 SM	N 124431		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	16304.00
P ENTERPRISE, I	06008220	12 SU	N 124431		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	14726.88
P ENTERPRISE, I	07006430	3 HE	N 124431		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	121986.40
P ENTERPRISE, I	06008219	13 SM	N 125688		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	7781.00
P ENTERPRISE, I	06008220	13 SU	N 125688		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	7781.00
P ENTERPRISE, I	07006430	4 HE	N 125688		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	38063.00
P ENTERPRISE, I	06008219	5 HE	N 126571		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	51612.00
P ENTERPRISE, I	06008220	14 SM	N 127669		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	1060.00
P ENTERPRISE, I	06008219	15 SM	N 127669		0042005550000070-620	3.1C - PLUMBING PACKAGE	0.00	844.20
P ENTERPRISE, I	06008220	15 SU	N 127669		0042005550000080-620	3.1C PLUMBING PACKAGE	0.00	1747.32
P ENTERPRISE, I	07006430	6 HE	N 127669		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	38243.80
P ENTERPRISE, I	07006430	7 HE	N 128768		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	55684.20
P ENTERPRISE, I	07006430	8 HE	N 136288		0042005550000120-620	BID PACKAGE # 4 HVAC	0.00	18235.00
P ENTERPRISE, I	08009651	1 LE	N 142615		0042005550000130-620	LIBERTY ECS RENOVATIONS	0.00	29152.00
P ENTERPRISE, I	08009652	1 WFS	N 142615		0042005550000310-620	WEST FRESHMAN RENOVATIO	0.00	87402.80



Description

Low brightness 7-3/8" aperture cross blade for use with a 25W, 32W or 42W Triple Twin Tube compact fluorescent lamp. Reflector trim eliminates brightness at higher angles. One electronic ballast to operate 25W, 32W and 42W triple tube 4-pin lamps. Venting ensures maximum lamp life and lumen output. Open downlight, lens, and open wall wash trim are interchangeable within the same housing.

Catalog #	C7142E-7181 L15-HB&C	Qty	
Project	Hopewell School	01	
Comments		Date	
Prepared By			

SPECIFICATION FEATURES

A ... Reflector

Clear upper Alzak® reflector for maximum output. Positive reflector mounting without tools pulls trim light to ceiling.

Option 5: Lower spun parabolic reflector with 30° cross blades, .050 thick aluminum with low incident clear Alzak finish or painted white. Other finish options available upon request.

Option 6: Lower spun parabolic reflector painted white with 30° perforated cross blades, .050 thick aluminum, painted gray.

B ... Trim Ring Options

End flanged reflector.

C ... Socket Connector

One piece die cast aluminum connection allows venting for maximum thermal performance.

D ... Housing Mounting Frame

One piece precision die cast aluminum 1-1/2" deep collar accommodates varying dimensions of ceiling materials.

E ... Universal Mounting Bracket

Accepts 1/2" EMT, C Channel, T bar fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F ... Conduit Fittings

Die cast screw light connectors.

G ... Junction Box

Listed for eight #17AWG (four in, four out) 90°C conductors feed through branch wiring. For 1/2" and two 3/4" pry outs. Positioned to allow straight conduit runs. Access to junction box by removing reflector.

H ... Socket

4 pin GX24q-04 base with fatigue free electronic ballast spring ensures positive lamp retention.

I ... Ballasts

Electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting. End of lamp life protection is standard.

Labels

eTLus listed. Damp listed (BEW union made).



C7142 7181

25W, 32W, 42W Triple Compact Fluorescent 7-3/8" CROSS BLADE

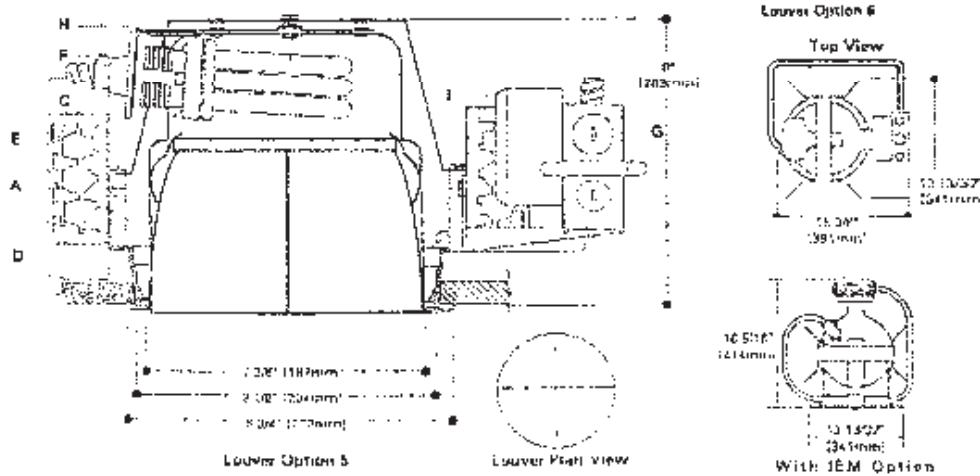
Energy Data

25W Triple 4-pin
Ballast: Electronic
120V Input Watts: 29, Line Amps: 0.22
277V Input Watts: 26, Line Amps: 0.09
Power Factor: >99, THD: <10%
Min. Starting Temp: -10°C (14°F)
Sound Rating: A

32W Triple 4-pin
Ballast: Electronic
120V Input Watts: 34.5, Line Amps: 0.30
277V Input Watts: 34.5, Line Amps: 0.13
Power Factor: >99, THD: <10%
Min. Starting Temp: -10°C (14°F)
Sound Rating: A

42W Triple 4-pin
Ballast: Electronic
120V Input Watts: 48, Line Amps: 0.42
277V Input Watts: 48, Line Amps: 0.18
Power Factor: >99, THD: <10%
Min. Starting Temp: -10°C (14°F)
Sound Rating: A

NOTES:
Accessories should be ordered separately.
For additional options please contact your Cooper Lighting Representative. Also see a representative for details of Alzak™ Company of America.



ORDERING INFORMATION: Complete part consists of housing, ballast and trim.

Housing	Ballast	Options	Trims	Finish	Louver	Options	Accessories
C7142							
07142-0000 Horizontal 7181 Lamp	E-120V-277V 250W to 42W Horizontal Electronic Ballast	05-Open End Flange Option IEM-F emergency inductive with fractional wattage	7181 Reflector End Flange with Wall Mount	15-Low Incident Clear White	15-Blade 11" or 15" Matching Black (Finish)	15-Perforated Blade 11" Grey Blades, W/Finish only	MB26-C Hanger, 26" Long, Pair MB26-C Channel Bar Hanger, 50" Long, Pair RMB22-Wood Jamb Bar Hanger, 22" Long, Pair PK2-Panel Insulated Pipe, 22" Dia
07142-0001 Horizontal 1026 Lamp	1026-25W 120V Dimming, Linear® Compact SE						
07142-0002 Horizontal 1042 Lamp	1042-32W 120V Dimming, Linear® Compact SE						
07142-0003 Horizontal 2026 Lamp	2026-25W 277V Dimming, Linear® Compact SE						
07142-0004 Horizontal 2042 Lamp	2042-32W 277V Dimming, Linear® Compact SE						



Description

Low brightness 1/2" aperture cross blade, for use with a 26W, 32W or 42W Tripe-Tube compact fluorescent lamp. Reflector trim eliminates brightness at higher angles. One electronic ballast to operate 26W, 32W and 42W tripe tube 4-pin lamps. Venting ensures maximum lamp life and lumen output. Open downlight lens, and open wall wash trim are interchangeable with the same housing.

Part No.	C7142-26W-50 2T	Order No.	
Project	Hopwood School	Quantity	01 ERM
Comments			
Entered by			

SPECIFICATION FEATURES

A ... Reflector
Clear or opal Alzak® reflector for maximum output. Positive reflector mounting, without lens, pulls trim tight to ceiling.
Option 5: Lower opal parabolic reflector with 90° cross blades, .050 thick aluminum with low unobstructed clear Alzak finish or painted white. Other finish options available upon request.
Option 6: Lower spun parabolic reflector painted white with 90° perforated cross blades, .050 thick aluminum, painted grey.

B ... Trim Ring Options
Self-fanged reflector.

C ... Socket Connector
One piece die cast aluminum connection allows venting for maximum thermal performance.

D ... Housing Mounting Frame
One piece precision die cast aluminum 1-1/2" deep collar accommodates varying dimensions of ceiling materials.

E ... Universal Mounting Bracket
Accepts 1/2" EMT, C Channel, T bar fasteners, and bar hangers. Adjusts 5" vertically from above or below ceiling.

F ... Conduit Fittings
Die cast screw tight connectors.

G ... Junction Box
Listed for eight #12AWG (four in, four out) 90°C conductors feed thorough branch wiring. Six 1/2" and two 2-1/4" pry outs. Positioned to allow straight conduit runs. Access to junction box by removing reflector.

H ... Socket
4 pin GX240-3W base with bottom free stainless steel lamp spring assures positive lamp retention.

I ... Ballasts
Electronic ballast provides full lamp output and rated lamp life. Provides flicker free and noise free operation and starting. End of lamp life protection is standard.

Labels
dULus listed. Damp label 35W union made.



C7142 7181

26W, 32W, 42W Tripe Compact Fluorescent
1/2" CROSS BLADE

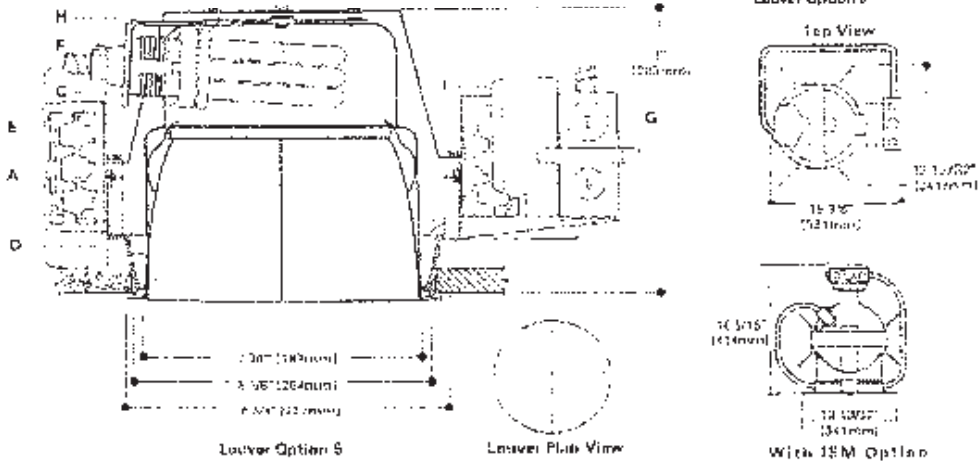
Energy Data

26W Tripe Tripe
Ballast: Electronic
120V input watts: 25, Line Amps: 0.21
277V input Watts: 25, Line Amps: 0.21
Power Factor: >95, THD: <10%
Min. Starting Temp: -10°C (10°F)
Sound Rating: A

32W Tripe Tripe
Ballast: Electronic
120V input watts: 26.5, Line Amps: 0.23
277V input Watts: 26.5, Line Amps: 0.23
Power Factor: >95, THD: <10%
Min. Starting Temp: -10°C (10°F)
Sound Rating: A

42W Tripe Tripe
Ballast: Electronic
120V input Watts: 48, Line Amps: 0.38
277V input Watts: 48, Line Amps: 0.38
Power Factor: >95, THD: <10%
Min. Starting Temp: -10°C (10°F)
Sound Rating: A

NOTES:
Accessories shown by a dashed line only.
For additional options, please consult your Cooper Lighting Representative. **ALZAK** is a registered trademark of Aluminum Company of America.



ORDERING INFORMATION Complete unit consists of housing, ballast and trim.

Housing	Ballast	Options	Trim	Finish	Louver	Options	Accessories
C7142							
26W Tripe Tripe 11200	11200	11200	11200	11200	11200	11200	11200
32W Tripe Tripe 11200	11200	11200	11200	11200	11200	11200	11200
42W Tripe Tripe 11200	11200	11200	11200	11200	11200	11200	11200

METALUX[®]

DESCRIPTION

The GC Series features a nominal 4-1/2" deep para-contoured fixture housing, high reflectivity and optimum lamp-to-lens spacing. The series produces total uniformity of light in the luminous area and is compatible with all of today's popular ballast systems and is available with a number of options and accessories for application versatility.

APPLICATION

The specification luminaire is designed to offer maximum efficiency and performance for today's unique interior specifications. The GC Series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construction

Nominal 4-1/2" deep, para-contoured housing, die formed cold gauge, prime cold rolled steel. Die embossed housing has full length die formed stiffeners for added strength. Deep "V" gullies/airways cover easily removed without tools. Die formed captive lomanolder bracket fully insulates lampholder wiring permitting easy lampholder replacement. Heavy endplates are securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. NDE for continuous row wiring. Endplates have integral Grid-LoK feature for safety and convenience.

B - Electrical

Ballasts are CBMETL Class "P" and are positively secured. 2G11 base lampholders have double-edge wiring action pressure lock contacts with horizontally oriented lamp support clips. UL/CUL listed. Suitable for damp locations.**

C - Finish

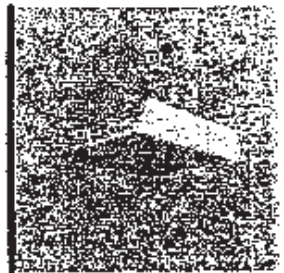
Multistage, iron phosphate pre-treatment ensures maximum bonding and rust inhibitor. Lighting grade, baked white enamel finish.

D - Hinging/Latching

Positive cam action spring loaded steel latches with baked white enamel finish. Safety-lock T-hinges allow runging and latching either side.

E - Frame/Shielding

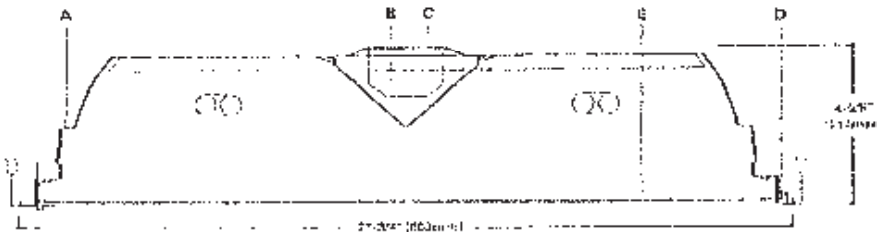
Die formed, heavy gauge flat steel door with reinforced mitered corners and baked white enamel finish. Inactive light seals. Light shields 100% virgin acrylic prismatic shielding. Standard #12 pattern. Optional shielding available.



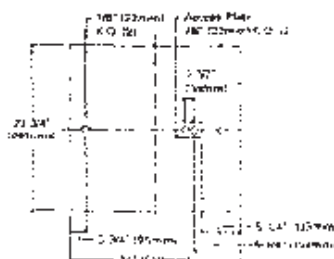
2GC2BX40

2' X 2' TROFFER
2 BIAXIAL LAMPS

Specification Deep Profile



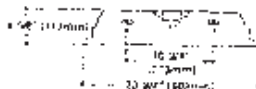
MOUNTING DATA



DOOR FRAMES



LAMP CONFIGURATIONS



CEILING COMPATIBILITY

Grid Type	Grid Type	Grid Type	Grid Type	Grid Type	Grid Type	Grid Type
1	2	3	4	5	6	7
Grid Type	Grid Type	Grid Type	Grid Type	Grid Type	Grid Type	Grid Type

ENERGY DATA

Input Watt:
EB Ballast & STD Lamps
232W (90%)

STD Ballast & STD Lamps
232W (90%)

Luminaire Efficiency Rating
LEER = 70.22
Catalog Number: 2GC2BX40

Yearly Cost of 1600 lumens,
3000 hrs at .08 kWh = \$3.87

*Reference the manufacturer's data in the Technical Section for specific lamp/fixture compatibility.

**See the Safety Section for more information.



PHOTOMETRICS



ZGC-2BX40A
 Electronic Ballast
 F40GX/GPX25/RS
 Lamps
 3150 Lumens
 Spacing criteria:
 (H) 1.2 x mounting
 height (1.14 x
 mounting height)
 Efficiency 74.3%
 Test Report:
 ZGC2BX40AIES
 I.E.R. = FL-62
 Yearly Cost of 1000
 lumens, 3000 hrs at
 68 KW/h = \$3.87

Coefficients of Utilization

H/W	Effective lower cavity reflectance					20%					50%					80%					10%					0%				
	70	50	30	10	0	70	50	30	10	0	70	50	30	10	0	70	50	30	10	0	70	50	30	10	0					
0	88	88	88	88	88	88	86	86	86	86	83	83	83	83	83	79	78	78	78	78	76	76	76	76	76	74	74	74	74	74
1	82	79	76	74	80	77	75	73	71	70	68	67	66	65	64	62	61	60	59	58	56	55	54	53	52	50	49	48	47	46
2	76	70	66	62	74	68	65	62	59	57	55	54	53	52	51	49	48	47	46	45	43	42	41	40	39	37	36	35	34	33
3	70	62	58	54	68	62	59	56	53	51	49	48	47	46	45	43	42	41	40	39	37	36	35	34	33	32	31	30	29	28
4	64	54	51	47	62	58	55	52	49	47	45	44	43	42	41	39	38	37	36	35	33	32	31	30	29	28	27	26	25	24
5	60	51	48	45	58	54	51	48	45	43	41	40	39	38	37	35	34	33	32	31	29	28	27	26	25	24	23	22	21	20
6	57	48	45	42	54	50	47	44	41	39	37	36	35	34	33	31	30	29	28	27	25	24	23	22	21	20	19	18	17	16
7	54	45	42	39	50	46	43	40	37	35	33	32	31	30	29	27	26	25	24	23	21	20	19	18	17	16	15	14	13	12
8	47	37	34	31	44	40	37	34	31	29	27	26	25	24	23	21	20	19	18	17	15	14	13	12	11	10	9	8	7	6
9	43	34	31	28	40	36	33	30	27	25	23	22	21	20	19	17	16	15	14	13	11	10	9	8	7	6	5	4	3	2
10	40	31	28	25	36	32	29	26	23	21	19	18	17	16	15	13	12	11	10	9	7	6	5	4	3	2	1	0	0	0

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Fixture
0-30	1506	24.7	32.6
0-40	1492	24.6	32.3
0-40	4012	65.7	87.7
0-90	4682	74.3	100.0
0-100	4682	74.3	100.0

Typical VCP Percentages

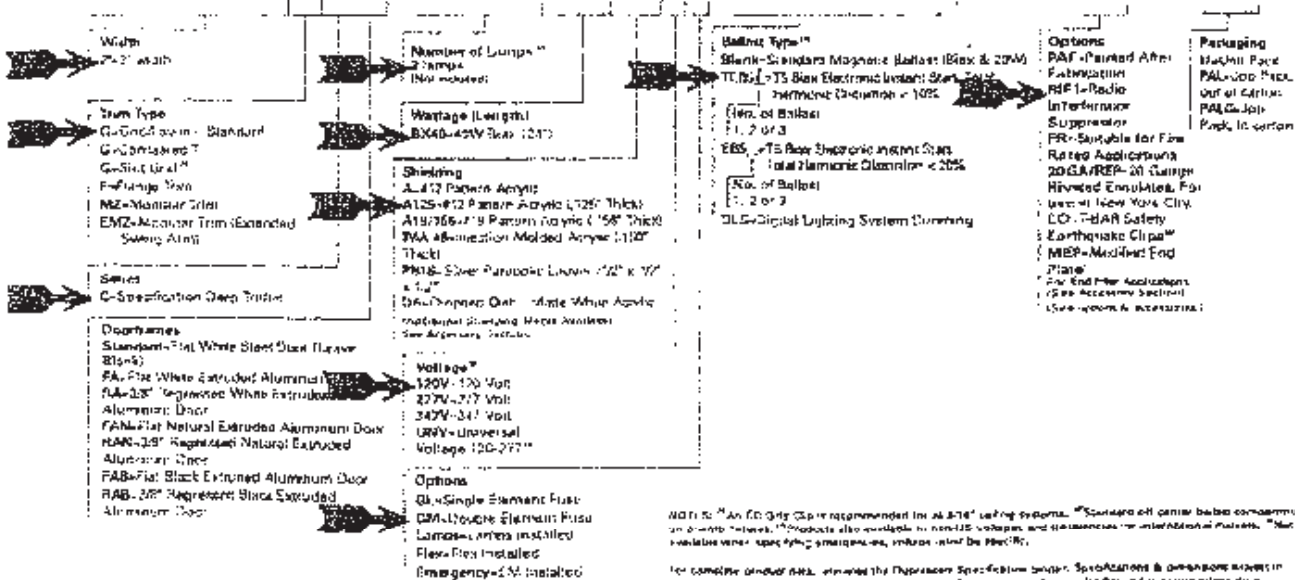
Room Size (ft.)	Height Along		Height Across	
	8'0"	16'0"	8'0"	16'0"
20 x 20	58	54	58	59
30 x 30	51	56	48	52
30 x 60	41	46	47	46
60 x 90	42	47	48	45
60 x 60	42	46	45	41

Candela

Angle	Along H	45°	Across L
0	1902	1007	1902
5	1898	1008	1897
10	1868	1004	1876
15	1812	1003	1811
20	1732	1008	1884
25	1643	1006	1862
30	1527	1010	1774
35	1378	1008	1659
40	1234	1005	1584
45	1067	1000	1468
50	925	906	1399
55	818	828	1344
60	729	672	1276
65	658	522	1202
70	592	397	1122
75	532	295	1048
80	478	218	978
85	428	162	912
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: ZGC-2BX40A-100V-FAS1-U



NOTE: *An LED Only CB is recommended in all LED lighting systems. **Standard off center ballast common on 0-200V network. ***Products also available in non-US voltages and configurations for international markets. **Not available unless specifying; accessories, unless noted by PAF/R. For complete product details, consult the Product Specification sheet. Specifications & dimensions subject to change without notice. Please refer to our website for additional product information and to our website for more information.

SHIPPING INFORMATION

Catalog No.	Wt.
ZGC-2BX40A	18 lbs.