Cincinnati Public Schools Mercantile Self Direct CUSTOM Applications – Part 2 of 4

Mt Airy School

Supporting Documentation

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

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

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

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

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

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

Account Number	Annual Usage	Account Number	Annual Usage
8940-3651-01			

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

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

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

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

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

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

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

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

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

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Proposed energy efficiency measures may be eligible for Self-Direct Custom rebates if they clearly reduce electrical consumption and/or demand as compared to the appropriate baseline.

Before you complete this application, please note the following important criteria:

- Submitting this application does not guarantee a rebate will be approved.
- Rebates are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Incomplete applications cannot be reviewed; all fields are required. Refer to the complete list of Instructions and Disclaimers, beginning on page 6.

Notes on the Application Process

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact your Duke Energy Ohio, Inc account manager or the Duke Energy Smart $aver® team at 1-866-380-9580.

Every application must include calculations of the baseline electrical usage and the electrical usage of the proposed high-efficiency equipment/system. Monthly calculations are best. You, the Duke Energy Ohio customer, or your equipment vendor / engineer should perform these calculations and submit them to Duke Energy for review. *We strongly encourage the use of modeling software (such as eQuest or comparable) for complex projects.*

Upon receipt of your application, an acknowledgement email will be sent to you with an estimated response time based on an initial assessment of your application. The application review may include some communication to resolve any questions about the project or to request additional information. Applications that are received complete without missing information have a faster review time.

There are two ways to submit your completed application.

Email your scanned form to: SelfDirect@duke-energy.com

Or, fax your form to 513-419-5572

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

1. Contact Information (Required)

Duke Energy Customer Contact Information						
Company Name	Cincinnati Public Schools					
Address	2651 Burnett Ave					
Project Contact	Don Elbe					
City	Cincinatti	State	OH	Zip Code	45219	
Title	Utility Management Coordinator					
Office Phone	614-580-3352	Mobile Phone		Fax		
E-mail Address	elbedon@cpsboe.k12.oh.us					

Equipment Vendor / Contractor / Architect / Engineer Contact Information					
Company Name	Plug Smart				
Address	1275 Kinnear Road Suite 229				
City	Columbus	State	OH	Zip Code	43212
Project Contact	Lucas Dixon				
Title	Operations Manager				
Office Phone	614-580-3352	Mobile Phone		Fax	1-800-518-5576
E-mail Address	lucas.dixon@plugsmart.com				
Describe Role	Ensures rebate is correctly applied for				

Payment Information					
Payee Legal Company Name (as shown on Federal income tax return):	Cincinnati Public Schools				
Mailing Address	2651 Burnett Ave				
City	Cincinatti	State	OH	Zip Code	45219
Type of organization (check one) ☐ Individual/Sole Proprietor ☐ Corporation ☐ Partnership ☒ Unit of Government ☐ Non-Profit (non-corporation)					
Payee Federal Tax ID # of Legal Company Name Above:	31-6000758				
Who should receive incentive payment? (select one) ☒ Customer ☐ Vendor (Customer must sign below)					
If the vendor is to receive payment, please sign below: I hereby authorize payment of incentive directly to vendor: Customer Signature _____ Date____/___/_____(mm/dd/yyyy)					

2. Project Information (Required)

A. Please indicate project type:
- ☒ New Construction
- ☐ Expansion at an existing facility
- ☐ Replacing equipment due to equipment failure
- ☐ Replacing equipment that is estimated to have remaining useful life of 2 years or less
- ☐ Replacing equipment that is estimated to have remaining useful life of more than 2 years
- ☐ Behavioral, operational and/or procedural programs/projects

B. Please describe your project, or attach a detailed project description that describes the project.
New public pre kindergarten - 8th grade school.

C. When did you start and complete implementation?
Start date / (mm/yyyy) End date 03/ 2008 (mm/yyyy)

D. Are you also applying for Self-Direct Prescriptive incentives and, if so, which one(s)[1]?
Lighting Controls, Motors, Chiller

E. Please indicate which worksheet(s) you are submitting for this application (check all that apply):
- ☒ Lighting
- ☐ Variable Frequency Drive (VFD)
- ☐ Compressed Air
- ☐ Energy Management System (EMS)
- ☒ General (for projects not easily submitted using one of the above worksheets)

F. Please tell us if there is anything about your electrical energy projections (either for the baseline or the proposed project) that you are either unsure about or for which you have made significant assumptions. Attach additional sheets as needed.

Required: Attach a supplier or contractor invoice or other equivalent information documenting the Implementation Cost for each project listed in your application. (Note: self-install costs cannot be included in the Implementation Cost)

[1] If your project involves some equipment that is eligible for prescriptive incentives and some equipment that is likely eligible for custom incentives, and if it is feasible to separate the equipment for the energy analysis, then the equipment will be evaluated separately. If it is not feasible to separate the equipment for analysis, then the equipment will be evaluated together in the custom application.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Duke Energy

3. Signature (Required -must be signed by Duke Energy customer)

Customer Consent to Release of Personal Information

I, (insert name) Don Elbe , do hereby consent to Duke Energy disclosing my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number to its subcontractors solely for the purpose of administering Duke Energy Ohio's Mercantile Self-Direct Program. I understand that such subcontractors are contractually bound to otherwise maintain my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number in the strictest of confidence.

I realize that under the rules and regulations of the public utilities commission, I may refuse to allow Duke Energy Ohio, Inc to release the information set forth above. By my signature, I freely give Duke Energy Ohio, Inc permission to release the information designated above.

Application Signature

I certify that I meet the eligibility requirements of the Duke Energy Ohio, Inc Mercantile Self Direct Custom Incentives Program and that all information provided within this application is correct to the best of my knowledge. I agree to the terms and conditions set forth for this program. I certify that the numbers, energy savings, and responses shown on this form are correct. Further, I certify that the taxpayer identification number is current and correct. I am not subject to backup withholding because: (a) I am exempt from backup withholding; or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends; or (c) the IRS has notified me that I am no longer subject to backup withholding. I am a U.S. citizen (includes a U.S. resident alien).

Don Elbe
Duke Energy Ohio, Inc Customer Signature

Print Name

Date 12/30/2011

Checklist for completing the Application

INCOMPLETE APPLICATIONS WILL RESULT IN DELAYS IN DUKE ENERGY PROCESSING YOUR APPLICATION AND NOTIFYING YOU CONCERNING AY REBATES. Before submitting the application and the required supplementary information, use the following checklist to ensure that your application is complete and the information in the application is accurate. (Note: this checklist is for your use only – do not submit this checklist with your application)

Section No. & Title	**Have You:**
1. Contact Information	☐ Completed the contact information for the Duke Energy customer? ☐ Completed the contact information for the equipment vendor / project engineer that can answer questions about the technical aspects of the project, if that is a different person than above?
2. Project Information	☐ Answered the questions A-E, including providing a description of your project. ☐ Completed and attached the lighting, compressed air, VFD, EMS and/or General worksheet(s)?
3. Signature	☐ Signed your name? ☐ Printed your name? ☐ Entered the date?
Supplementary information (Required)	☐ Attached a supplier or contractor's invoice or other equivalent information documenting the Implementation Cost for projects listed in your application? (Note: self-install costs cannot be included in the Implementation Cost) ☐ (If submitting the General Worksheet) attached calculations documenting the energy usage and energy savings for **each** project listed in your application?

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact:

- your Duke Energy account manager
  or,
- the Duke Energy Smart $aver® team at 1-866-380-9580.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Instructions/Terms/Conditions

Note: Please keep for your records- do not submit with the application

1. Energy service companies or contractors may assist in preparing the application, but an authorized representative of the customer must sign this application to be eligible to participate in the Mercantile Self Direct Program. Completion of this application does not guarantee the approval of a Self Direct Custom Rebate.

2. Once all documentation requested in this application is received by *Duke Energy Ohio, Inc,* and any follow-up information requested by *Duke Energy* is received, the rebate amount for each Energy Conservation Measure (ECM) will be communicated to the customer. The rebate amount will be based on ECM energy savings and ECM incremental installation cost.

3. All rebates require approval by the Public Utilities Commission of Ohio. *Duke Energy Ohio, Inc* will submit an application for rebate on the customer's behalf upon customer attestation to program terms, conditions and requirements as outlined in the rebate offer letter and upon customer completion of attestation documents required by the Public Utilities Commission of Ohio.

4. *Duke Energy Ohio, Inc* will issue a Self Direct Custom Rebate check, based on the approved rebate amount for each ECM, upon receiving approval from the Public Utilities Commission of Ohio. *Duke Energy* Ohio, Inc does not guarantee PUCO approval.

5. With the application, the customer must provide a list of all sites where the ECMs were installed. *Duke Energy Ohio, Inc* requests that sites of similar size, hours of operation and energy consuming characteristics be grouped together in one application for the determination of the rebate amount. The application should identify the site where each unique ECM was installed.

6. Based on the information submitted with the application and the information gathered both before and after the initial installation of the ECM, *Duke Energy Ohio, Inc* will calculate the rebate amount for each ECM.

7. *Duke Energy Ohio, Inc* may conduct random site inspections of a sample of the locations where the ECMs are installed to verify installation and operability of the ECMs and to obtain information needed to calculate the Approved Incentive Amount.

8. Customers are encouraged to retain copies of all forms, invoices and supporting documentation for their records.

9. Approved rebates are valid for 6 months from the date communicated to the customer by *Duke Energy Ohio, Inc,* subject to the expiration of measure eligibility based on project completion dates and application submission deadlines as defined by PUCO. Customers are encouraged to execute their rebate offer contracts and PUCO-required affidavits promptly to ensure eligibility is not forfeited.

10. *Duke Energy Ohio, Inc* reserves the right to recover all unrecoverable costs associated with the project approval if the customer decides not to execute the rebate contract, after the project is approved by *Duke Energy Ohio, Inc.*

11. Projects financially supported by other funding sources will be evaluated on a case-by-case basis for potential partial funding from *Duke Energy Ohio, Inc*.

12. Participants must be *Duke Energy Ohio, Inc* nonresidential, mercantile customers with the project sites in the *Duke Energy Ohio, Inc* service territory.

13. Customers or trade allies may not use any *Duke Energy* logo without prior written permission.

14. Only trade allies registered with *Duke Energy* are eligible to participate.

15. All equipment must be new. Used or rebuilt equipment is not eligible for incentives. All old existing equipment must be removed on retrofit projects.

16. Disclaimers: *Duke Energy Ohio, Inc*
    a. does not endorse any particular manufacturer, product or system design within the program;
    b. will not be responsible for any tax liability imposed on the customer as a result of the payment of incentives;
    c. does not expressly or implicitly warrant the performance of installed equipment. (Contact your contractor for details regarding equipment warranties.);
    d. is not responsible for the proper disposal/recycling of any waste generated or obsolete or old equipment as a result of this project;
    e. 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; and
    f. reserves the right to change or discontinue this program at any time. The acceptance of program applications is determined solely by *Duke Energy Ohio, Inc.*

The Lighting Worksheet is part 2 of the application. Do not submit this file without submitting a completed Part1 Custom Application document file, which can be found at www.duke-energy.com.

Before you complete this application, please note the following important criteria:

- Incentive approval is required PRIOR to equipment purchase, or any other activity which would indicate that the Duke Energy customer has already decided to proceed.
- Submitting this application does not guarantee an incentive will be approved.
- Incentives are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Simple payback without incentive must be greater than 1 year.
- Incomplete applications will not be reviewed; all fields are required.

Refer to the complete list of Instructions and Disclaimers, found in the Custom Application Part 1 document.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

Duke Energy Customer Contact Information (Match the information in Application Part 1):

Name	Don Elbe
Company	Cincinnati Public Schools

Equipment Vendor / Project Engineer Contact Information

Name	
Company	

Before proceeding with the custom application, please verify that your project is not on the prescriptive incentive application.
The prescriptive incentive applications can be found at:

KY http://www.duke-energy.com/kentucky-business/energy-management/energy-efficiency-incentives.asp
Kentucky only: custom incentives only available to K-12 school facilities; prescriptive incentives available for those not on rate TT.
OH http://www.duke-energy.com/ohio-business/energy-management/energy-efficiency-incentives.asp
NC http://www.duke-energy.com/north-carolina-business/energy-management/energy-efficiency-incentives.asp
SC http://www.duke-energy.com/south-carolina-business/energy-management/energy-efficiency-incentives.asp

Prescriptive incentives are already pre-approved and the application is submitted after project implementation.
Take note of the equipment eligibility on the prescriptive application before planning to utilize the prescriptive application.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

List of Sites (Required)

Project/ Site (see note 1)	Site Name	Electric Account Number(s) (see note 2)	Site Address	Area (sq ft)	Location within Facility	Location Type	Indoor or Outdoor?
Example	*Distribution Center*	*12345678 01*	*Example: 123 Main Street, Anywhere USA 12345*	*1000*	*Warehouse*	*Industrial*	*Indoor*
1	Mt. Airy			84,144	Classroom	K-12	Indoor
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

If your application involves more than 20 lighting projects, please check here and use multiple worksheets. ☐

1 **Project/Site**
You can write over the default project/site number with a store #, building identifier, or other reference that distinguishes one project/location from another.

2 **Electric Account Number(s)**
If there are multiple meters at a site, only include the Duke Energy account numbers that pertain to the project.
Currently active account number(s) are required for an existing facility. For new construction, write in "new construction."

	Hours of Use (see note 3)									Controls (see note 5)			
		Weekday		Saturday		Sunday		Weeks of Use in Year (see note 4)	Total Annual Hours of Use	Existing		Proposed	
Project/ Site	24 x 7	Start Hour	End Hour	Start Hour	End Hour	Start Hour	End Hour			Type of Control	Hours Reduction	Type of Control	Description
Example	*No*	*8:00 AM*	*7:00 PM*	*10:00 AM*	*6:00 PM*	*1:00 PM*	*6:00 PM*	*52*	*3,536*	*None*	*0%*	*Occupancy*	*Applying for Prescriptive Incentive*
1	No	6:30:00 AM	4:30:00 PM					52	2,340	None		Occupancy	*Applying for Prescriptive Incentive*
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

3 Hours of Use

For unoccupied times, leave applicable cells blank.

4 Weeks of Use in Year

If the lighting fixtures are not in use 52 weeks during the year (for example, during holiday or summer break), provide an explanation of when they are not expected to be in use and why:

Majority of fixtures out of service for Holiday Breaks

5 Controls

Please attach more description of existing and/or proposed controls if more space is needed. If sufficient description is not provided, then controls portion of project will not be evaluated. Attach assumptions and calculations to support estimated reduction in hours that result from the controls.

New occupancy sensors should be applied for through the prescriptive application unless ineligible for prescriptive.

New or upgraded EMS/building controls require a separate application part 2. Without the separate application, EMS portion of the project will not be evaluated for an incentive.

	Existing Fixture(s)								
Project/ Site	**Existing Fixture Installation Year** (see note 6)	**Fixture Type**	**Fixture Manufacturer** (see note 6)	**Fixture Model Number** (see note 6)	**Lamps per Fixture**	**Fixture Size**	**Fixture Input Power (watts)** (see note 7)	**Quantity of Fixtures**	**Total Demand (kW)**
Example	*1995*	*High Pressure Sodium*	*Manufacturer*	*Model #*	*1*		*190*	*175*	*33*
1		Other (enter by typing	Comcheck Code	Code	1		100,972	1	101
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
Application Total								**1**	**101**

6 Information on Existing Fixture(s)

Optional - please provide as much information as you can.

For new construction projects, provide information on the light fixture(s) that would meet the building code in your location.

7 Fixture Input Power (watts)

Provide actual input power (in watts), not nominal power rating. For example, a 400 watt (nominal) metal halide fixture has a typical input power of approximately 459 watts.

	Proposed Fixture(s)										Projected Savings			
Project/ Site	Fixture Type	Fixture Manufacturer (see note 8)	Fixture Model Number (see note 8)	Warranty of Proposed Fixtures (years)	Lamps per Fixture	Fixture Input Power (watts) (see note 9)	Quantity of Fixtures	Total Demand (kW)	Lumen Output per Fixture	Lumen/ Sq Ft	Demand (kW)	Annual Energy (kWh)	Other Annual Savings $ (see note 10)	Incremental Project Cost $ (see note 11)
Example	*T8 Fluorescent*	*Manufacturer*	*Model #*	*5.0*	*1.0*	*78*	*225*	*18*		*0*		*55,515*	*$1,265*	*$29,215*
1	Actual installed	Comcheck			1.0	82,782	1	*83*		0	18	42,565		
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
Application Total							**1**	**83**			**18**	**42,565**	**$0**	**$0**

Average Electric Rate $/kWh $0.10 **Project Simple Electric Payback** (see note 12) **years**

8 Fixture Manufacturer and Model Number

Attach a scanned copy of a spec sheet for each fixture that includes the input power (watts), lumen output and other relevant information.

For eligible LED fixtures, refer to the FAQs for Custom Incentives found at www.duke-energy.com and attach required documents if necessary.

9 Fixture Input Power (watts)

Provide actual input power (in watts), not nominal power rating. For example, a 400 watt (nominal) metal halide fixture has a typical input power of approximately 459 watts.

10 Other Annual Savings $

Optional. Estimate other annual savings in addition to electric (for example operations/maintenance savings).

11 Incremental Project Cost $

Attach a copy of a formal proposal with the projected project costs.

For new construction projects, a formal proposal is also required with the projected costs for the light fixture(s) that would meet the building code in your location.

12 Project Simple Electric Payback

If the simple payback on the project is less than 1 year, then the project is not eligible for a custom incentive. Please check that the electric rate is accurate based on history.

March 2, 20U

To whom it may concern:

This letter Is to confirm that for the renovation to Cincinnati Public school Mount Airy (5730 Colerain), for the custom rebate application, the lighting and HRW project were Installed with a minimum unit cost listed below.

DESCRIPTION	QUANTITY	PRICE/FIXTURE	AMOUNT
CI- Metalux DIMN-232	19	$94.00	$1,786.00
B2 - Metalux 2GC8 232Al25	SO	$90.00	$4,500.00
B3- Meta!ux 2GC8 332Al25	*724*	$95.00	$68,780.00
B7- Metalux 2RDI-332RP	16	$183.00	$2,928.00
HI Metalux 2HB 632G	35	$78.00	$2,730.00
810- Focal Point FSK 4TSHO	24	$115.00	$2,760.00
f4 - PortfoliO HD7-7701	16	$52.00	$832.00
FI Portfolio C7226E-7251	19	$94.00	$1,786.00
BS- Metalux 2RDI2BX40RP	8	$187.00	$1,496.00
88 - Metalux 2RDI2BX40RP	4	$187.00	$748.00
NoveiAire ECW 844 Energy Conservation Wheel	2	$8,000.00	$16,000.00
TOTAl			$1D4, .00

This is also to confirm that for the renovation to Mount Airy (5730 Colerain), for the prescriptive rebate application, occupancy sensors and motors were installed with a minimum unit cost listed below.

DESCRIPTION	Mode!Number	QUANTITY	Nominal AMOUNT Size fTons)	PRICE/FIXTURE	
SetfOirect Occupancy Sensor	CM-POT-10,WV-PDT-16	133	-	$117.89	si5;679.37
SelfDirect Motor	Baldor EM3311T	2	-	$1,220.00	$2,440.00
SelfDirect Motor	Baldor EM253ST	2	-	$3,052.00	$6,104.00
SelfDirect Motor	Baldor EM2515T	1	-	$2,290.00	$2,290.00
SelfDirect Motor	Baldor EM2543T	1	-	$4,394.00	$4,394.00
SelfDirect Motor	Baldor EM2S13T	1	-	$2,091.00	$2,091.00

SeffDirect Motor	Baldor EM2539T	1	$3,982.00	$3,982.00

TOTAL **$36,980.37**

Thank you for your attention to this matter,

Don Elbe

Don Elbe
Utility Management Coordinator

Turner DAG TYS

ReiJOildihQ Chicinnati Public Schools

May21,2008

Angie Tolle
Cincinnati Public Schools
2315 Iowa Avenue
Cincinnati, OH 45206

Dear Angie:

Attached are Pay Applications for the Mt. Airy School, please process for payment.

Contractor	Application #	Monthly Billing	Total Billing To Date	Contract Amount to Date
BP#5 ESI, Inc.	#20	$ 45,614.40	$1,889,005.00	$ 1,889,005.00

Please call if you have any questions.

Sincerely,
TURNER/DAGtrYS

D&Lage
Project Executive

lbcs

Attachments

cc: Derek Howard-DH Architects
Killl Scott-TurnermAG/TYS

File 0025 - 10960PA

T:PROJBCTS/Mt. Airy/00250 Pay APplication/2008-05 21 ESI Pay App. Lttr. Doc

The Ohio School Facilities Commission
10 West Broad S)reet
Suite 1400
Columbus, Ohio 43215

Contractor's Name: ESI, INC
Address: 4696 DEVITT DRIVE
CINCINNATI, OHIO 45246

Contractor Pay Application Summary

Project Name MT AIRY SCHOOL
Bid Package No. # 5

1	Original Contract Amount	$	1,869,000.00
2	Net Changes to Date	$	20,005.00
3	Current Contract Amount	$	1,889,005.00
4	Labor Completed to Date	$	752,130.00
5	Material Completed to Date	$	1'136,875.00
6	Total Work Completed to Date	$	1,889,005.00
7	Store Material to Date	$	
8	Less Retained to Date	$	
9	TotaiAmountoue	$	1,889,005.00
10	Less Previo.us Payments	$	1,843,390.60
11	Less Amount Retained to Cover Lien	$	
12	Less Amount Retained for Liquidated Damages	$	
13	Less Other Amounts Withheld	$	
14	Current Due	$	45,614.40
15	Balance to Complete	$	

OSFC approval required for the following contract adjustments:

1. Assessment of liquidated damages
2. Other amounts withheld

Ohio School Facilities Commission Date

Comments:

APPLICATION ANii.¢ERTIFICATE FOR PAYME T

TO OWNER: BOAr;lp Of EDUCATION OF THE CINCINNATI PU.BUC SCHOOL DISTRICT

PROJECT: MT AIR'fSCHOOL 5730 COLERAINAVE CINCINNATI,.01+45206

APPLICATION No: 20
PERIOD TO: 04/30/08
PROJECT NOS:
CONTRACT DATE:

FROM CONTRACTOR: ESI,INC 4696 DEVITT ORNE CINeiNNATI, OHIO 45246

VIA ARCHITECT:

.C.O.NTRACT FOR: SID j{Q.# 5

CONTRACTOR'S APPLICA'f!.O.N FOR PAYMENT

Applictltion is made for payl)'le['lt s,sllovffl below, In connection with the Contract Continuation sheetis atfacheit · · .

1. ORIGINAL CONTRACT SUM..............$ 1,869,000.00
2. Net Change by Chang<)!(). "n;,.,.,,...........$ 20,005.00
3. CONTRACT SUM TODATE••0C,.,...........c.,$ 1,889,005.00
4. TOTAL COMPLETED &STORED TO DATE............".$ 1,889,005.00
5. RETAINAGE
   a. 8 50% of Completed Labor............$
   b. 8% of Sto"red Material......•...........$
   Total Retainage..•,...........,;$
6, TOTAL EARNED LESS RET,AINAGE.........................$ 1,889,005.00
7; LESS PREVIOUS CERTIFICATES FOR PAYMENT.....$ 1,843,390.60
8. CURRENT PAYMENT DU!'>',;?ri'•·•···•·".$ 45,614.40
9. BALANCE TO FINISH, INCLUDING RETAJNAGE........$

Change Order/Cont<:act..	ADDITIONS	DEDUCTIONS
Total Changes aPproVed-in Previous months by--Owner	25 716.00	(12 741.00)
Total ap roved this month	8 S2S.00	(1,495.00)
TOTALS.	34,241.00	__cL14,236.00)
NET CHANGES by Change Order		20,005.00

Tile:Gontr ctor certified that the -wOrk CO'VEired by this pay request has been con'IPfeted-in accordance with the Contract. Documents and that all progres·s-pay_rn nts previously paid by the- State have been applied by the Contradar to dischci:rge-_in full all of Contractor's obligations incurred in connection with the wol1n::ov8ted by all prior pay reques.ts.

Contractor — Date 4/30/08

BaSed Upon on site observations, the firm affirms that the work has progressed to the tage of completeness indica pay request

Architect — Date !>-15- '!r

Construction Manager — !!!$ftif olfe---

Approv:ecl:

SChOOl OiStrict Treasurer — Date

osfc-16Sss

>li2Si9!1

Application and Certificate For Payment-- page 2

To Owner: 1URNER VAG 1YS
From (ContractOr): ESI, INC.
Project: MT AIRY SCHOOL

Application No: 20 Date: 04/28/08 Period To: 04/28/08
Contractor's Job Number: 65606
Architect's Project No:

Item Number	Description	Scheduled Value	Prevlous Application	This Period	M;: terlals Presently StOred	Completed and Stored to Date	%	Balance to Finish	Retention	MeiT_0
001	GENERAL-CONDITIONS	84,000.00	84,000.00	0.00-	0.00	84,000.00	100.00	0.00	0.0,0	
002	BOND INSURANCE	23,000,00	23,000.00	0.00	0.00	23,000.00	100.00	0.00	0.00	
003	CLOSEOUT	6,000.00	6,000DO	0.00	0.00	6,000.00	100.00	0.00	0.00	
004	MOBILIZATION	47,000.00	47,000.00	0.00	0;00	47,000,00	100.00	0.00	0.00	
005	COORDINATION	62,000.00	62,000..00	0.00	0.00	62,000.00	100.00	0.00	0;00	
006	L FIEL.D"·SUPERV!SION	38,000.00	3B,a01MO	O,(J:0	0.00	38,000,00	100,00	0.00	0.00	
007	I- CLEAN UP	30,000.00	30,000.00	0,00	0:00	30,000.00	100.00	0.00	0,00	
008	L- CONTINGENCY ALLOWANCE	15,000.00	15,000.00	0,00	0.00	15,000.00	100.00	0.00	0.00	
009	L- TEMPORARY ELECTRIC	35,000.00	35,000.00	0.00	0.00	35,000.00	100.00	0.00	0.00	
010	i:-SITEWORK	45,000.00	45,000.00	0.00	0'.00	45,000.00	100.00-	0.00	0.00	
011	L-SWITCHGEAR420 430 440 455470	11,000.00	11,000.00	0.00	0.00	11,000.00	100.00	0,00	0.00	
012	M-SifoliTCHGEAR420 430 440 455470	50,000,00	50,000.00,	0.00	0.00	50,000.00	100.00	0.00	0_.00	
013	I-LUMINAIRES 16501	55,000.00	55,000.00	0.00	0.00	55,000.00	100.00	0,00	0.00	
014	M-LUMINAIRES 16501	180,000.00	180,000.00	0,00	0.00	180,000.00	100.00	0.00	0.00	
015	L- FIRE ALARM 16721	6,000.00	6,000.00	0.00	0.00	6,000.00	100.00	0.00	0.00	
018	M- FIRE ALARM 16721	13,000.00	13,000.00	0.00	0,00	13,000.00	100.00	0.00	0.00	
017	I-VVIRING DEVICES 16240	4,000.00	4,000.00	0.00	0.00	4,000.00	100.00	0.00	0.00	
018	M.: WIRING DEVICES 16240	8,000.00	8,000.00	0.00	0,00	8,000.00	100.00	0.00	0.00	
019	L- CONDUIT/FITTINGS 16200	155,800,00	155,800.00	0.00	0:00	155,800.00	100.00	0.00	0.00	
020	M- CONDUIT/FIITINGS 16200	256,200.00	256,200,00	0.00	0.00	256,200,00	100.00	0.00	0,00	
021	L- INIREICABLE 16220	75,000.00	75,000.00	0.00	0.00	75,000.00	100.00	0.00	0.00	
022	M- WIRE/CABLE 16220	125,000,00	125,000,00	0.00	0.00	125,000,00	100.00	Q.OO	0.00	
023	L- GENERATORS/AT$ 16621	2,500"00	2,500.00	0.00	0.00	2,500.00	100.00	0.00	0,00	
024	M--GENERATORS/ATS 16621	15,000.00	15,000.00	0.00	0.00	15,000.00	100.00	0.00	0.00	
025	L-IVSS 16480	1,200.00	1,200.00	0.00	0,00	1,200.00	100.00	0.00	0.00	
026	M- IVSS 16480	4,000.00	4,000,00	0.00	0.00	4,000.00	100.00	0.00	0.00	

Application and Certificate For Payment -- page 3

To Owner: TURNER DAG 1YS
From (Contractor); ESI, INC.
Project: MT AIRY SCHOOL

Application No: 20 Date: 04/28/08 Period To: 04/28/0B
contractor's Job NuiTibef: 65606
Architect's Project No:

Item umber	oesc:rlptlon	Scheduled Value:	Previous Appl'h;:ation	CT:his P:eriod	Materials Presently Stored	Completed and Sto-red tO-'Date	%	Balance to Finish	Retention	Memo
027	L CABLE TRAY 16210	1,800.00	1,800.00	0.00	0.00	1,800.00	100.00	0.00	0.00	
028	M CABLE TRAY 16210	12;ooo.oo	12,000.00	0_.00	0.00	12;000 00	100.00	0.00'	0.00	
029	L- COMM CABUNG·17600	35,000.00	35,000.00	0-.00	0.00	35,000.00	100.00	0.00	0.00	
030	M- COMM CABLING-17600	100,000.,00	100,000.00	0.00	0.00	100;000 00	100.00	0;00'	0.00	
031	L- DATA HARDWARE 17782	2,000.00_	2,000.00	0.00	0.00	2,000,00	100.00	0.00	0.00	
032	M- DATA-HARDWARE 17782	60,000,00	60,000J)O	0.00	0.00	60,000.00	100.00	0.00'	0.00	
033	L- VIDEO SYSTEM 17765	18.000.00	18,000,00	0.00	0.00	18,000.00	100.00	0.00	0.00	
034	M- VIDEO SYSTEM 17785	105,000.00_	105,000.00	0.00	0.00	105,000.00	100.00	O.Oil	0.00	
035	l- PA SOUND 17823	11,ooo;oo	11,000.00	0:00	0.00	11,ooo:oo	1oo.oo	0:00	0.00	
036	M- PA SOUND 17823	16,000.00	18,000.00	0.00-	0.00	18,000.00	100.00	0.00	0.00	
037	I–CAFETORIUM SOUND 17784	5,000.00	5,000.00	0.00	0.00	5,000.00	100.00	0:00	0.00	
038	M- CAFETORI:UM SOUND 17784	14,000.00	14,000.00	0 90	o.oo	14,000.00	100.00	0.00	0,00	
039	L- GYM SOUND 17786	6,000.00	6,000.00	0.00	0.00	6,000.00	100.00	0.00	0.00	
040	M- GYM SOUND 17786	17,000.00	17,000.00	0;90	0.00	17,000.00	100.00	0.00	0.00	
041	I–MUSIC ROOM SOUND 17783	2,500,00	2,500.00	0,00	0.00	2.soo;oo	1oo.oo	Q.OO	0.00	
042	M- MUSIC ROOM SOUND 17783	e,ooo;po	9,000.00	0.00	0.00	9,000.00	100.00	0.00	0.00	
043	L CLASSROOM SOUND 17787	S,OOO,QO	6,000.00	0.00	0.00	6,000.00	100.00	<L00	0,00	
044	M- CLASSROOM SOUND 17787	39,000.00	39,000.00	0.00	0.00	39,000;00	100.00	0.00	0.00	
045	L SECURITY SYSTEM 17791	9,000.00	9,000.00	0.00	0.00	9,000.00	100.00	0.00	0,00	
048	M- SECURITY. SYSTEM 17791	13,000.00	13,000.00	0.00	0.00	13,000.00	100.00	0.00	0,00	
047	L- CCTV SYSTEM 17795	10,000.00	10,000.00	0:00	0.00	10,000.00	100.00	0.00	0.00	
048	M- CCIV SYSTEM 17795	29,000.00	29,000.00	0,00	0.00	29,000.00	100.00	0.00	0.00	
C001	CHANGE ORDER# 1	9,452.00	9,452.00	0.00	0.00	9,452.00	100.00	0.00	O.OiJ	
C002	CHANGE ORDER # 2	-12,741.00	-12,741.00	0.00	0.00	-12,741.00	100o00	0.00	0.00	
C003	CHANGE ORDER # 3	3,358.00	3,358.00	0.00	0.00	3,358.00	100.00	0.00	0.00	
C004	CHANGE ORDER "4	2,334.00	2,334.00	0.00	0.00	2,334.00	100,00	0.00	0.00	

Application and Certificate For Payment-- page 4

To-Owner: TURNER DAGIYS
From (Contractor): ESI; INC.
Project: MT AIRY SCHOOL

Application No: 20 Date: 04/28/08 Period To: 04/28/08
Cpntractor's Job Number: 65606
Af(:hltect's Project No:

Item Num_ber	D_escri.Ptk!n	Scheduled Value	W#tk Cl>mol<o e<i Previous 'Appl_icat16n	This Period	Materials Presently'Stored	Completed and Stored to Date	%	Balance to Finish	Rel:elitlon	Memo
COOS	CHANGE ORDER# 5	933.00	933.00	0.00	0;00	933.00	100.00	0.00	0.00	
COOS	CHANGE ORDER # 6	2,992.00	-2;992.00	0.00	0._00	2,992.00	100.00	0.00	0.00	
C007	CHANGE ORDER # 7	3,397.00	3,397.00	0.00	0.00	3,397.00	100,00.	0.00	0.00	
COOS	CHANGE ORDER # 8	3,250.00	3;250.00	0.00	0.00	3,250.00	100.0,0	0.00	0.00	
COOS	CHANGEORDER#O	279.00	279.00	0.00	0.00	279.()0	1oo;oo	0.00	Q.OO	
C010	CHANGEORDER#10	4,361.0_0	4;361.00	0.00	0.00	4,361.00	1'00.00	0.00	0.00	
C011	CHANGEORDER#11	2,120.00	.?.I20,00	0.00	0.00	2,120.00	100.00	0.00	0.00	
C012	CHANGEORDER#12	1,335.00	1,335,00	0.00	0.00	1,335.00	10.0.00	0.00	0.00	
C013	CHANGEORDER#13	430.00	430.00	0.00	0.00	430.00	tOO QO	0.00	0 00	
CQ14	CHANGEORDER#14	-1,495.00	-1,495.00	0.00	0.00	-1,495.00	100.0_0	0,00	0.00	
	ApplicatiQn Total	1,889,005.00	':,889,005.00	0,00	0,00	1,889,005.00	100.00	0.00	0.00	

DHARCHITECTS, INC.

5306 S. GILMORE RD. (513)874-8338 **FAIRFIELD,** OHIO 45014

FAX#(513)874-8695

LETTER OF TRANSMITTAL

TO: TURNER/DAG/TYS

DATE 5-15-08

PROJECT # 2005.01

PROJECT MT. ANN TURNER/DAG/TYS

FAX #:

ATTENTION: BRIDGETT STAMPS

MAY 19 2008

RECEIVED

WE TRANSMIT:

O .UNDER SEPERATE COVER VIA· — — — — — — ☐ _____

THE FOLLOWING:

O DRAWINGS O CORRESPONDENCE O SHOP DRAWING PRINTS O PRODUCT LITERATURE

O SPECIFICATIONS O CHANGE ORDER /J.(t>AY REQUEST O PROPOSAL REQUEST

FOR:

APPROVAL O YOURUSE O YOUR RECORDS O — — — — — — —

O REVIEW& COMMENT O DISTRIBUTION O YOUR INFORMATION O — — — — — — — — — —

COPIES:		REV. NO.	DESCRIPTION:
4			EST TAP APP. #220

REMARKS:

QPtg?TQ:

PREPARED BY: Lindsay Knox

APPLICATION AND CERTIFICATION FOR PAYMENT

CONSTRUCTION MANAGER-ADVISER EDITION

PAGE ONE OF PAGES

TO OWNER: Tuner DAG/TYS.
2315IowaAvenue
Cincinnati, OH 45206

PROJECT: MtAiryNewSchoo1HVAC

APPL!CATIONNO: 18
PERIOD TO: 9/24/08
PROJECT NOS.:

Distribution to:
DoWNER
C]ARC!ITIECT
CJcoNTRACTOR
B

FROM CONTRACTOR:
RPC Mechanical Inc.
5301 Lester Road
Cincinnati, OH 45213

CONTRACT DA1E:

VIA CONSTRUCTION MANAGER:
VIA ARC!ITIECT:

CONTRACT FOR:

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.

I. ORIGINAL CONTRACf SUM		$ 1,505,000.00
2. Net change by Change Orders		$ 25,767.00
3. CONTRACf SUM TO DATE (Line 1 ± 2)		$ 1,530,767.00
4. TOTAL COMPLETED & STORED TO DATE (Column G)		$ 1,530,767.00
5. RETAINAGE:		
a. ____0_% **of Completed Work**	$ 0	
b. ____0_% **of Stored Material**	$ 0	
Total Retainage(Lines Sa+ 5b or Total in Column I)		$ 0.00
6. TOTAL EARNED LESS RETAINAGE **(Line 4 Less Line 5 Total)**		$ 1,530,767.00
7. LESS PREVIOUS CERTIFICATES FOR **PAYMENT (Line 6 from prior Ce ficate)**		$ 1,491,150.00
8. CURRENTPAYMENTDUE		$ 39,617.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE **(Line 3 less Line 6)**	$	0.00

CHANGEORDERS Y	ADDffiONS	DEDUCfONS
Total changes approved in previous months by Owner	$28,710	($2,943
Total approved this Month		$0
TOTALS	$28,710	($2,943
NET CHANGES by Change Order	$25,767	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued aud payments received from the Owner. and that current payment shown herein is now due.

CONTRACfOR: RPC MECHANICAL, INC

By: X. W. & MA-.1. Date: o9t24J08

Based upon on-site observations, the firm affirms that the work ;has progressed to the percentage of completeness indicated on the pay r.etfiie'st.

ARCHITECT:
By: Date /'fl-Z-&f-

Ns;r;'--.r ;t-42- Date: 10//08

Approved:

SCHOOL DISTR!Cf TREASURER:
By: **Date:**

CONTINUATION SHEET

APPLICATIONNO: 18

Contractor's signed certification is attached.

APPLICATION DAlE: 09124/08

In tabulations below. amounts are stated to the nearest dollar.

PERIOD TO: 09124/08

Use Column I on Contracts where variable retainage for line items may apply.

RPC#06131

ARCHITECT'S PROJECT NO:

A ITbM NO.	B DESCRIPTIONOF WORK	C SCHED_::ED VALUE	D WORK COMPLETED FROMPREVIOUS APPLICATION (D+E)	E TillS PERIOD	F PRESENTLY STORED (NOT IN DORE)	G TarAL COMPLE1ED AND STORED TO DATE (D+E+F)	G % (G+C)	H BALANCE TOFINISH (C-G)	I RETAINAGE (IF VARIABLE RATE)
1	Bond. Insurance. Pennits	$39,000	$39,000	$0		$39,000	100%	$0	$0
2	Mobilization	$15,000	$15,000	$0		$15,000	100%	$0	$0
3	Engineering	$20,000	$20,000	$0		$20,000	100%	$0	$0
4	Coordination	$38,000	$38,000	$0		$38,000	100%	$0	$0
5	Equipment (M)	$552,000	$552,000	$0	$0	$552,000	100%	$0	$0
6	(L)	$12,000	$12,000	$0		$12,000	100%	$0	$0
7	Sheetmetal Equipment (M)	$50,000	$50,000	$0		$50,000	100%	$0	$0
8	(L)	$10,000	$10,000	$0		$10,000	100%	$0	$0
9	Gnn!KitcheniDinine								$0
10	Piping (M)	$13,000	$13,000	$0		$13,000	100%	$0	$0
11	(L)	$19,000	$19,000	$0		$19,000	100%	$0	$0
12	Sheetmetal (M)	$24,000	$24,000	$0		$24,000	100%	$0	$0
13	(L)	$20,000	$20,000	$0		$20,000	100%	$0	$0
14	Insulation (M)	$4,000	$4,000	$0		$4,000	100%	$0	$0
IS	(L)	$6,000	$6,000	$0		$6,000	100%	$0	$0
!6	CommonAl'ea								$0
17	Piping (M)	$26,000	$26,000	$0		$26,000	100%	$0	$0
18	(L)	$38,000	$38,000	$0		$38,000	100%	$0	$0
19	Sheetmetal (M)	$65,000	$65,000	$0		$65,000	100%	$0	$0
20	(L)	$53,000	$53,000	$0		$53,000	100%	$0	$0
21	Insulation (M)	$8,000	$8,000	$0		$8,000	100%	$0	$0
22	(L)	$12,000	$12,000	$0		$12,000	100%	$0	$0
23	Academic Wino-								$0
24	Piping (M)	$30,000	$30,000	$0		$30,000	100%	$0	$0
25	(L)	$45,000	$45,000	$0		$45,000	100%	$0	$0.
26	Sheetmetal (M)	$76,000	$76,000	$0		$76,000	100%	$0	$0
27	(L)	$64,000	$64,000	$0		$64,000	100%	$0	$0
28	Insulation (M)	$10,000	$10,000	$0		$10,000	100%	$0	$0
29	(L)	$14,000	$14,000	$0		$14,000	100%	$0	$0

ACORD. CERTIFICATE OF LIABILITY INSURANCE

09126108

Companies, Inc.
Or
2734
Cres view Hills KY 41017-0900
Phone:859-341-0202 Fax:859-341-3709
INSURED

RPC Mechanical. Inc.
5301 Lester Rd
Cincinnati OH 45213

INSURERS AFFORDING COVERAGE	NAIC#
INSURERk CNA - A Rated	20435
INSURER"	
IINSURERC'	
INSURER D'	

THE POliCIES OF' INSURANCE LISTE0Bf:i:OWHAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED.NOTVVITHSTANDING ANY REQUIREMENT,TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO AIITHE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS, •

						LIMITS
A	FX LIABILITY -CLAIMS MADE--[!]·OCCUR :;:00 StoD Ga.; I.POLICY IxI P,W.; -Ft': :	2092520892	SUIIS'I'ANTUJ.LY '10 OCCUR	01/0l/08	01/01/09	lol,000,000 lo 300.000 lo5,000 lol.000,QOO lo 2.000 '000 S- COMP/OP AGG 1•2,000,000 IE= Ben l.000.000
lA	ANY AUTO All OWNED AUTOS SCHEDULED AUTOS HIREDAIJTOS NON-OWNED AUTOS como $1 000 nnn	2092520889		01/01/08	01/01/09	COMBINED SINGLE I!MIT {Ea accident) Sl,000,000 BODILY INJURY (Per person) • BODILY INJURY (Per accident) • PROPERTY DAMAGE {Per accident) •
	UABILITY *ANY* AUTO					I AUTO I • OTHER THAN AUTO ONLY: EAACC • AGG • • 10.000.000
lA	lll J'occuR O CLAIMS MADE DEDUCTIBLE RETENTION S	2092520875		01/01/08	Ol/01/09	[olD.000.000 • • T.
A	WORKERS COMPENSATION AND EMPLOYERS' LIABU.IIY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED?	WC299485065		12/03/07	12/03/08	IX ;I 1"1 · E.L. 1•1.000,000 E.L. I "l.000.000 E.L. DISEASE- POLICY LIMIT lol,000,000
A	Errors & Omissions	59586		01/01/08	01/0 9	E & o $1,000,000
A	• — Equi			Ol'tOl/08	01/01 J9	$50.000

<0 /SPECIAL

Project: Mt Airy School, Bid Paokage #l-#5. Contract #• . Cincinnati PUblic Schools Board of Education is listed as additional insured as respects this project.

CINCIJ?U

CATION

SHOULD ANY OF THE: ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE DATE THEREOF,THE ISSUING INSURER WILI.ENDEAVOR TO MAIL DAYS WRiTTEN NOTICE TO TI-fE CERTIFICATE HOLDER NAMED TO THE LEFT,BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR UABIL.ITY OF ANY KIND UPON THE INSURER,ITS AGENTS OR

Cincinnati Public Schoo s
Board of Education
7001 Reading Rd
Cin innati OH 45237

B:i.H

AcQR525

ov.•l1988

The Ohio School Facilities Commission
10 West Broad Street
14th Floor
Columbus, Ohio 43215
Phone: 614-466-6290 Fax 614-466-7749

Contractor's Contract No.

Project Name: Mt. Airy School Contractor: RPC Mechanical, Inc.

School District Board:

County: Harid J ton

School District Staff Training Completed: [Jves ONo Trades Package Name: HVAC

The undersigned certifies that all the Contractor's. Work Is 100 percent complete, with exception of the below noted deficiencies, and the Contractor has complied with all conditions precedent to final payment and release of retainage. When upon Final Inspection, items of Work cannot be completed because of seasonal conditions approved by the Architect and the Construction Manager, such as Bituminous paving, landscaping, etc., and if the School District Board agrees that a particular item need not be completed until a subsequent date, the Architect, Construction Manager and School District Board may release payment to the Contractor less two (2) times the cost of completing the remaining Work.	Date to be Completed

RG echanica Inc. 9/24/2008
Contractor Date

We';-tbE undersigned, together with a representative of the Contractor employed for the execution of the Work, have inspected the Worf included in the captioned Contract, prior to the date of this certificate, and hereby certify that all Work on the Contract has been completed in accordance with the requirements of the Contract Documents recommend the Work be accepted.

Architect Date	Construction ManaQer Date
Acknowledgment of Acceptance of Project	f'inal Acceptance of Project
School District Board Date	Ohio School Facilities Commission Date

LABOR'

Said affiant further says that the following shows the names and addresses of every unpaid laborer in the employ of-----

RPC Mechanical, Inc 'furnishing labor under sold contract, giving the amount, if any, which is due, or to become due, for labor done to date hereof.

NOTE-If the fact Is that every laborer has been paid In full, then recite: "Every taborer haS been paid In full." If not. then give each unpaid laborer's name and address and the amount due or to becomes duo

NAME	ADDRESS	HOURS	Amount Due or to Become Due for Labor Furnished to Data Hereof.
All Labor Paid In Full			

Affiant further states that there is due or to become due to._!:RP Cc:..!:M!:e:::c h!::aru!:.t:al!:,c!:ml:: ::c -------'--------------- for work performed or machinery, material or fuel furnished to. _____::C:!in cttta tic;P.:,u!:b li!!ic:.S::c h;!!o o!!l;cs.... ,======-----------to date hereof under sold contracts, the sum of$ 39,617OO t (Owner or Contractor)

That the amounts duo or to become due to said sub-contractors, material-meh. and laborers, for work. don* or machinery, material or fuel furnished to the date hereof. to RPC Mechaoical Inc.

are fUlly and correctly got forth opposite their names, respectively, In the aforesald-- tatemerrts. and further evidenced by certificates of *e erj* person fUrnishing machinery, materia! or fuel, hereto attached, and made a part hereof.

Affiant further soy* that'_____;RP :::C"M:!:!::e::ch!!ao i::c!!al!.cl!!n!!c::..-------------------------------- has not employed or purchased or procured machinery, material or fuel from, or sub-conlract"d with any person, flrm or corporation. other than those above mentioned, and owes for no labor performed, or machinery, material or fuel furnished, under sold contracts, other than above set forth,

Jeri Hill, Vice President

SWORN TO BEFORE ME AND SUBSCRIBED IN MY PRESENCE, at Cincinnati, Ohio

this 24 day of September

NOTARIAL SEAL 2008 NOTARY PUBLIC

RHONDA K GARTEN
Notary Public, State of Ohio
My Commission Expires October 20, 2009

AFFIDAVIT OF ORIGINAL OR $US-CONTRACTOR. No.44
(R C 11131f.OA, EJf410·85J

State of Ohio, Hamilton Countyof_____________________83 Cincinnati --- — --- Ohio 9/24/2008

Kevin Madigao ---'-- ..:::.---------------being first duly sworn, says that he is -l!VJSiC<!ieuP::. r:§e.§.Si!!!d!!lenntL____________ of' RPC Mechanical Inc the Original contractor having a contract with'

________,...C_in_c_in_n_•_ti_P_u_b.:.li.:.c.:.S.::ch::o:..:o::ls:________________________,the'_____.:.o.:.wn=er:______________________________________

------------------------------------- ----------lfur HVAC

a, reject ,_==_'----------..:._------ -situated on or around or in front of the following described property, ill Cincinnati ----__!!..!!.----- ---Ohia..Jiiz:.____,__. Mt. *Airy* Scho. o_I____________________________

16-IL

NIECHA.NICA.L INC-

X IW60<XXX

P 0 BOX23129

CINCINNATI, OH 45223-0128

INVOICE

No. 10447

5301 LESTER ROAD, CINCINNATI, OHIO 45213
PHONE (513} 733-8888 FAX (513} 733-8555

r

Turner DAG/TYS
23151owaAvenue
Cincinnati OH 45206

INVOICE DATE	09/24/08
CUSTOMER NUMBER	000496
RPC JOB NUMBER	06131
CUSTOMER PURCHASE ORDER NUMBER	
TERMS	Net 10 Days

L _j

JOB NAME AND LOCATION

Mt Airy New School HVAC

DESCRIPTION		PRICE	INVOICE AMOUNT
TOTAL HVAC CONTRACT	$1,505,000.00		
CHANGE ORDERS	$25,767.00		
TOTAL HVAC CONTRACT	$1,530,767.00		
TOTAL COMPLETE TO DATE		$1,530,767.00	
LESS RETENTION		$0.00	
LESS PREVIOUSLY BILLED		$1,491,150.00	
AMOUNT DUE THIS BILLING			$39,617.00

Sel!er represents that the goods or sa/VIces covered by this Invoice have been produced or rendered In full compliance with the requirement!! of the Fair Laber Standards Act of 193B as amended,including Section 12(A)

FOR OFFICE USE ONLY: BREAKDOWN OF THIS INVOICE

Invoice Gross $ $39,617.00

Amount Due $

Retention $ $39,812.00

If this invoice is finalretention invoice, please check__

Total retention $

The Ohio School Facilities Commission
10 West Broad Street
Suite 1400
Columbus, Ohio 43215

Contractor's Name: RPC Mechanical, Inc.
Address: 5301 Lester Road, Cincinnati, OH 45213

Contractor Pay Application Summary

Project Name: Mt. Airy School
Bid Package No.

1	Original Contract Amount	$	$1,505,000.00
2	Net Changes to Date	$	$25,767.00
3	Current Contract Amount	$	$1,530,767.00
4	Labor Completed to Date	$	513,235.00
5	Material Completed to Date	$	1,017,532.00
6	Total Work Completed to Date	$	1,530,767.00
7	Store Material to Date	$	0.00
8	Less Retained to Date (8% of Labor to Date)	$	0.00
9	Total Amount Due	$	1,530,767.00
10	Less Previous Payments	$	1,491,150.00
11	Less Amount Retained to Cover Lien	$	0.00
12	Less Amount Retained for Liquidated Damages	$	0.00
13	Less Other Amounts Withheld	$	0.00
14	Current Due	$	39,617.00
15	BALANCE TO FINISH, INCLUDING RETAINAGE	$	0.00

OSFC approval required for the following contract adjustments:

1. Assessment of liquidated damages
2. Other amounts withheld

_____ _____
Ohio School Facilities Commission Date

Comments: _____

DESCRIPTION

GC8 is a premium grade spac:ifi(:RtionJAr $00 tt'Offi'Jserlao. Th s InnovatfVehlg.h Quarr.• lumfnalr&ls dadfcated to tha lafl;)stT81amp and micro ttlact.o!'"ballast te<::hnofogy for ◇Pbrnat porlormonce a;-,d anergy ll:fHciency.Th.l GC8is comp tlbl-t with allof to/.s popularceilin9 sVS"temsatd fsavaifablawith a,number cfoptionsand accessories for eppli aaion vtHsatility.

APPLiCATION

Tho GC3sorlos ft ;Rtlll"$t al'iciRMC'/,qu,.lify anri(.lfif"R"rmanc&. Tne. s&rie.s lsn wwl.1Uc 1t choioe foe corl101 fclal office spaces,school:-), hospit.als. or rct.1llmet'ChMrlislog aas.

C.u!oo	GCSFA-2S2A125MIN-UNV-LSF032MTYP• !tilSIECO-EBSl-.e3l8·2il2!3	82/ B2G
rro1aer	MT.AJRY SCHOOLPK·B SCHOOL	
Commer.ts		
Prepared		Det

SPECIFICATION FEATURES

A-·-Con•true:tl on
Rigid hQt.-sing-is die fornod oreodo ,augo Pfl!'ne cold tollstael CJnd .Qot'UI'95 rulllt rtgth di-;-formed etlffeners for eddad strtmgth. Slo'., ftAnge!': Are hemmad.Innovative designprovide::; a;upeti()t h::ns bri9htness'Uj,ifon'l'lity and visual comfort:.Mfr:ro Mllastc:ave,..u rodures ball&t stl.!ldow for st..parlOr lens briQhtnass u11ifonnitv PTll;i it; S<'sily ll't'lnvAC:l wilhout tools.Die forrTl...deaptfvef(lmph(lfcfer hrllcket t. Uv onc:lc.eo l amphodd•rwirino permittin!) oasyl:lrt"'P:"loldor raplsoement. Hea\'y enelpltes are seourly·attachcd with intorl· ing tilb$ anrfscrews.Fo'-!r auxiliary fi}(lure end SUSTIGOSion poinls prcrvided. KOs foiconthuous 1'0\\1 wiling.Endplates ha\16 fntegr'al Grkl-f'Ock ft» ure for utility and convorrroooo.

B - Elco(rioo l
B;: tlasts are CBM.£TL CltiJ ··p...and are positivel y se(:ttred bY t"l'IO tt"'ting bolt$.Prt-$ ure lock 1on1pholders. UUCULliGtcd.Sull3blc for damp locations.-

C ··Flnlah
Mu tistage-,iron pho3phate retr&otmerrt tnsures maximum bonding aod rustin h bition.H)\tsing and b:!illast covert'inlsh&C with f\IJV.' 1r-4nucti'o'll 'UltWill tO en :mel tor sup.erior performonoo. "PAF' POilHOCIAft-c.f FMH1"-"tf\)lt v.,lletl•r.. toa .l'lvRahte,

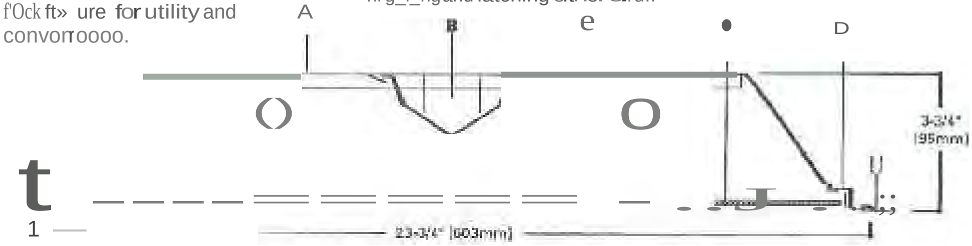
O ···Hii191ft0/'-••4hlng
Posftivectlm action $pring loaded &tool latcho9 whh .Mk0Ow.hit)ol finl$hSafQWkT.htngos Hovt hi g_i_ng and latching either siru..

--Fram•IS hl&l ding
Oi-a f.::umod, hoovy gaugi), flal ne-el door with reinforced mite, edcornero andbaked white e.n.am'finlth.Fbtand r$QI"$5Sed -aluminum d:lOrs also avall;sblo. rosili vo lfgl\t :seelts. Light stabil'ted 100% virofn aOtylic pl'lsn1 tlc tens.Stahdad #12 p ttem.N.im¢f'OU$ additioMI shldino option$ 81/tlllpl)l .

2GC8232
432

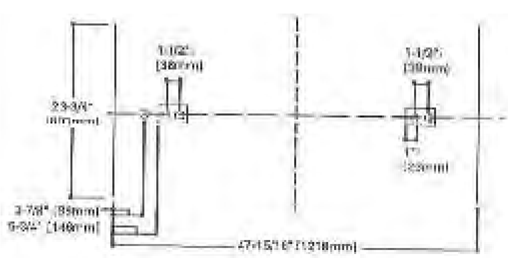
t' X •• TROFFEF
2 OR 4 LAMP

Spec fication T8 Troffer



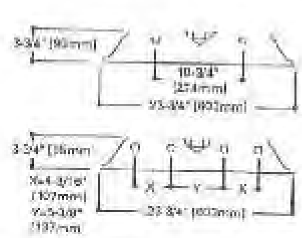
'fl'laxtmJmO...r!llnomiu!oep1!

MOUI'HING DATA



DOOR FRAMES

LAMP CONFIGURATIONS



ENERGY DATA

lft jlui \Vl.l.$"
E8 81Wlnt&ST!> lamps
232 :6l1
'32(10!2:

ESW.' 'llt.STD l.am& s
2(7 'J
.L321142!

l.Jmll•11E flitacv t hQ
LERF:l.-6$
C1:&lcg f.lurr.ber: 2GCS. ?A

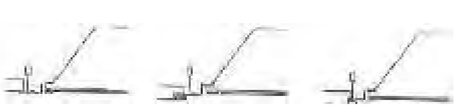
v.. rlvCM(vf 1000.km.nt.
300() tinlit.00 K'Mf = tl.toa

U:AA.·lst
C t ao,I'Jurnb=r: 2GCihJ A

'r'•NI'/CC$C of 10001urfl•f'ls.
30()1) tiff 4l..a31CWH = l1..lS

CEILING COMPATIBILITY

Grid/Lay-in Standard
Concealed T
Slot Grid



..2GC8-23:ZA
Electronic Ballast

(2) FO32/35K lamps
2900 lumens

Spacing criterion:
(II) 1.2 x mounting height, (⊥) 1.3 x mounting height

Efficiency 84.0%

Test Report:
2GC8-232A.IES

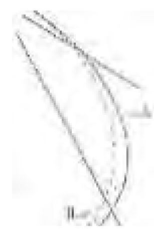
IER - FL

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH ..$3.GO

Angle	Along II	45°	Across ⊥
0	1810	1819	1812
5	1807	1805	1810
10	1799	1781	1800
15	1763	1764	1782
20	1900	1723	1760
25	1818	1687	1703
30	1620	1591	1644
35	1451	1482	1588
40	1[illegible]5	1391	1487
45	1385	1103	1316
50	[illegible]	1061	1181
55	723	813	875
60	584	593	580
65	420	282	403
70	307	218	330
75	228	171	268
80	110	141	207
85	50	57	122
90	0	0	0

Coefficients of Utilization

Effective floor cavity reflectance 20%



2GC8-43tA
Electronic Ballast

(4) FO32/35K lamps
2800 lumens

Spacing criterion:
(II) 1.2 x mounting height, (⊥) 1.3 x mounting height

Efficiency 80.2%

Test Report:
2GC8-432A.IES

IER - FL

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH $3.1&

Angle	Along II	45°	Across ⊥
15	3331	3367	3407
20	3278	3292	3339
25	3085	3183	3272
30	2930	3003	3010
35	2970	2758	2953
40	2382	2310	2677
45	2077	2165	2319
50	1731	1543	1845
55	1376	1420	1523
60	[illegible]	[illegible]	[illegible]
65	113	719	849
70	540	540	621
75	418	316	421
80	318	259	371

Coefficients of Utilization

SHJPPfNG fNFOftMATtON

Catalog No.
[illegible]
[illegible]

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1437	24.7	30.2
0-40	2369	47.3	49.8
0-60	3999	71.3	84.1
0-90	4751	95.0	100.0
0-180	4751	95.0	100.0

Typical VCP Percentages

Room Size (Ft.)	Height Along 8.5'	Height Along 10.0'	Height Across 8.5'	Height Across 10.0'
20 x 20	71	75	69	72
30 x 30	66	70	63	67
30 x 60	58	61	53	57
60 x 30	66	70	66	70
60 x 60	58	61	54	58

0-90	[illegible]	79.2	100.0
0-180	[illegible]	79.2	100.0

Typical VCP Percentages

62	67
40	45

ORDERING INFORMATION

→ LSF032M/841K/XPS/ECO LAMPS

SAMPLE NUMBER: 2GC8-232-120V-EB81-U

Series
C8=Specification T8 Troffer

Standard

Standard=White Steel Door (Leave Blank)
FA=Flat White Extruded Aluminum Door
RA=3/8" Regressed White Extruded Aluminum Door
FAN=Flat Natural Extruded Aluminum Door
RAN=3/8" Regressed Natural Extruded Aluminum Door
FAB=Flat Black Extruded Aluminum Door
RAB=3/8" Regressed Black Extruded Aluminum Door

Number of Lamps
2 or 4 Lamps (Not included)

Wattage (Length)
32=32W T8 (48")

A=#12 Pattern Acrylic
A125=#12 Pattern Acrylic (.125" Thick) MIN.
A19/156=#19 Pattern Acrylic (.156" Thick)
IMA 48=Injection Molded Acrylic (.150" Thick)
PB18=Silver Parabolic Louver (1/2" x 1/2" x 1/2")
DA=Dropped Door - Matte White Acrylic (Additional Shielding Media Available. See Accessory Section)

Per Spec 16501

Voltage
120V=120 Volt
277V=277 Volt
347V=347 Volt
UNV=Universal Voltage 120-277

Options
GL=Single Element Fuse
GM=Double Element Fuse
Lamps=Lamps Installed
Flex=Flex Installed
Emergency=EM Installed

Ballast Type
EB8_=T8 Electronic Instant Start, Total Harmonic Distortion < 20%
No. of Ballast 1, 2 or 3
EB8_/HLHC=T8 Electronic Instant Start, High Ballast Factor >1.13, Total Harmonic Distortion < 20%
No. of Ballast 1, 2 or 3
EP8_=T8 Electronic Program Rapid Start, Total Harmonic Distortion < 10%
No. of Ballast 1, 2 or 3
TEB8_=T8 Electronic Instant Start, Total Harmonic Distortion < 10%
No. of Ballast 1, 2 or 3
DLS=Digital Lighting System Dimming

Options
PAF=Painted After Fabrication
FR=Suitable for Fire Rated Applications
EQ-T-BAF, Safety Earthquake Clips
MEP=Modified End Plate/ For End Filler Applications
20GA/REP=20 Gauge Riveted Endplates. For use in New York City.
RLS=Rotor-Lock Socket (T8 Lamps Only)

Packaging
U=Unit Pack
FAL=Job Pack, out of carton
FALC=Job Pack, in carton

METALux·

DESCRIPTION

GCS It a premium9rade gpeciflcatfon !eMP.d tfl)ffi"lr sius. Thit Innovative-,high qualitt luminairo is ded;cated to the la':eStT81amp and micro ek,ctronc ball st technology for optimal pi!rf\'Irmance and P.nergy effickmcy, The GCB is compatible withall of tc<lOV'$popular collin\} ;ystemsandit &vai1able witt' A number of omlonG andaccoosoriaslor applicationvefs&tility.

r-;•t00 •aGC6FA-332A125MIN-UNV·LSF032M)'<P• j K/XP I!;;CQ-ER 2-A3ill-ll2Q	83/
P<Oject MT. A!RY SCHOOL-PK-8 SCHOOL	
CoN\'I'I!1"\t\	B3G
Pr pared ny	Caie

APPLICATION

Tho GCSSoriol& rtla lurot'alflciMcy, qualftvnd pe-rformance. The sarils is an excoUentchoice-forc:ommsrolal<ffice space$schools,llC$pitilla nr rE l l ftVJfl"....hllndh;iM t ro-M.

SPECIFICATION FEATURES

A ··ConlJ'•'ruotiC n

Rigid housing is die forme<i' of code gauge tHmc coldrolled lrtoel and faatures full length. dle-fom..ed dl ffen rs fQr a:td(ltd strenmh. Side ftanges are mn"'ed. Innovative de'g!gn Provides superior lenS; brlghtlli:II>S uniforn1ty:am.l vhwal comfort. Mitro ballast covar•u re-dutt'<J; ba'U<rt ;;hadGw for iHIJ.la:liur lep$ bIh)f:$' un1formIty andIs easily removed wi(hout tools.Oio fomlcd ::..eptlvc lamphQl,jcr bn:dcts fully MCioM I,JJmpho!derwirin!) permitting easy lam'phokfer feplse6m&nt. Hesvv endplaw-.s ate"curely attached with intorlockInQ 1abs andscmv.rs. Four auxIflart ixture end suspension poif1b prlwidad. wiring.

KOs for continJourow Endplotes have lntegrarGrld-lOck tttature for $&fely and convt\iOi!CC!.

a...£1•ctrle;•l

BtlllastB are CB!vl.:ETL C1asf: ;'P" ond arpositively secured by rnovnling bolts. Pressure lock lampholders. Ul..'CULI sted. Suitable for damp locatlo•:o....

C--Finbh

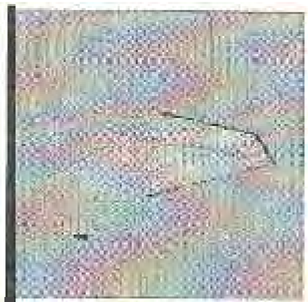
Multls ge,!tonphu phuw l:.Ha treatmenl eruures maxfmum bondin g M:lrust Inhibition. Housing and ballast &over tlnish!N with new 90% ll!fl&ctiv&•.vhit&eOamel fa< ' uportor p rformance. "PAP' P"inteel After FabticallOn opuon also ;wa1Jab$e.

O... Hinging/Latching

Positive cami1<.11onspring lodod ::.tcol latchos with baked •Jh!Mc.'tlm'l'lcl flnl h.S.:rfatyl6ck: T·h nnesaUowh(nging and latthl•l9 olthersidr.

E Frome/Ahhldlng

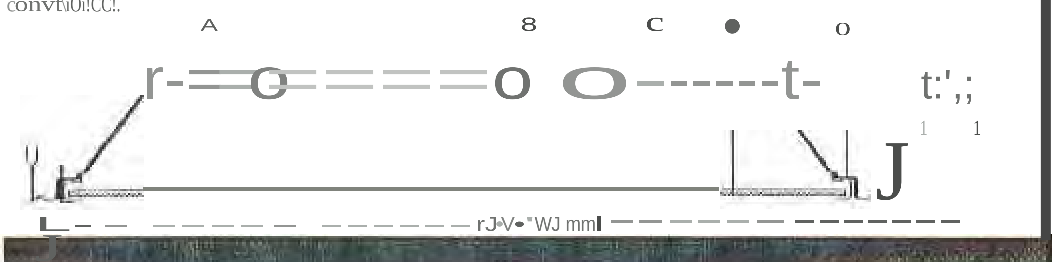
Die *lormod*, heavv gauge, ftdt steel dOOf wrth rcinfo• mtttrod cornE:rs and bokf.ld white enamelflnl.h. Flnt ond ragres.Jaad Rm1n•Jm dClOr&c.f':llso available. PO$It1ve tights0cols• litJht sklbilzcd 100"k virgin acrylic prlsmatrc lens. Standart1 #12 p$ttern. Numerous additionol ehloldlng opfion11 available.



2GC8332

2" X 4' TROFF F,A
3 LAMP

Soecifit:stion Tl:l 1r.:'llt t



Ifll' II'I,JrII ow•allt ::ml".alo•llCI

ENERGY DATA

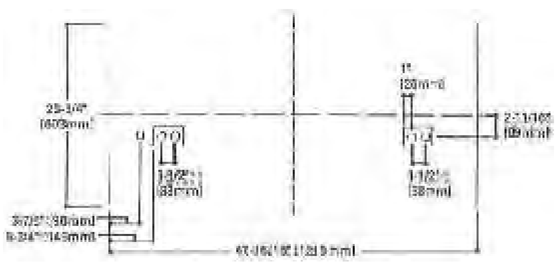
klpu1 Wo:.t'l'
ea O..•tt6.$11) n'P•
332(911

19 Qllll ut481'0
.3lZ\10;1)

lu-mln:tiiVl £1t'iR.:ldno
Lm-.FL.o(l!
C&tllluCJ i't.imb'tGCil,j:!Z4.

~~Yfarpt Cost Of 1000 lu Yutns,~~
2000 lim :rt.OJ KWH..$3.

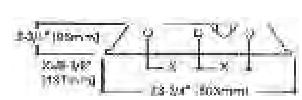
MOUNT1NG DATA



DOOR f!IU,MES

un o <
C<ol\ll'•'"wl.
Ool'\11•1N'lW'OI I>\Ut

LAMP tONFIQUAATIONS



CEILING COMPATIBILITY

a
Grld,•l.AV"In
-scalt<l•d

G
ConMIlbdT

F
•roTri:n

Mouul•rTri'n
WitS!.lp.p dn;

Elol>ll')OCG.lk'l

S•IAIQO

C.'.. 'l

o

703

SSf

2GC8332A.IES

Spotlight

Mounting

Efficacy

Replacement

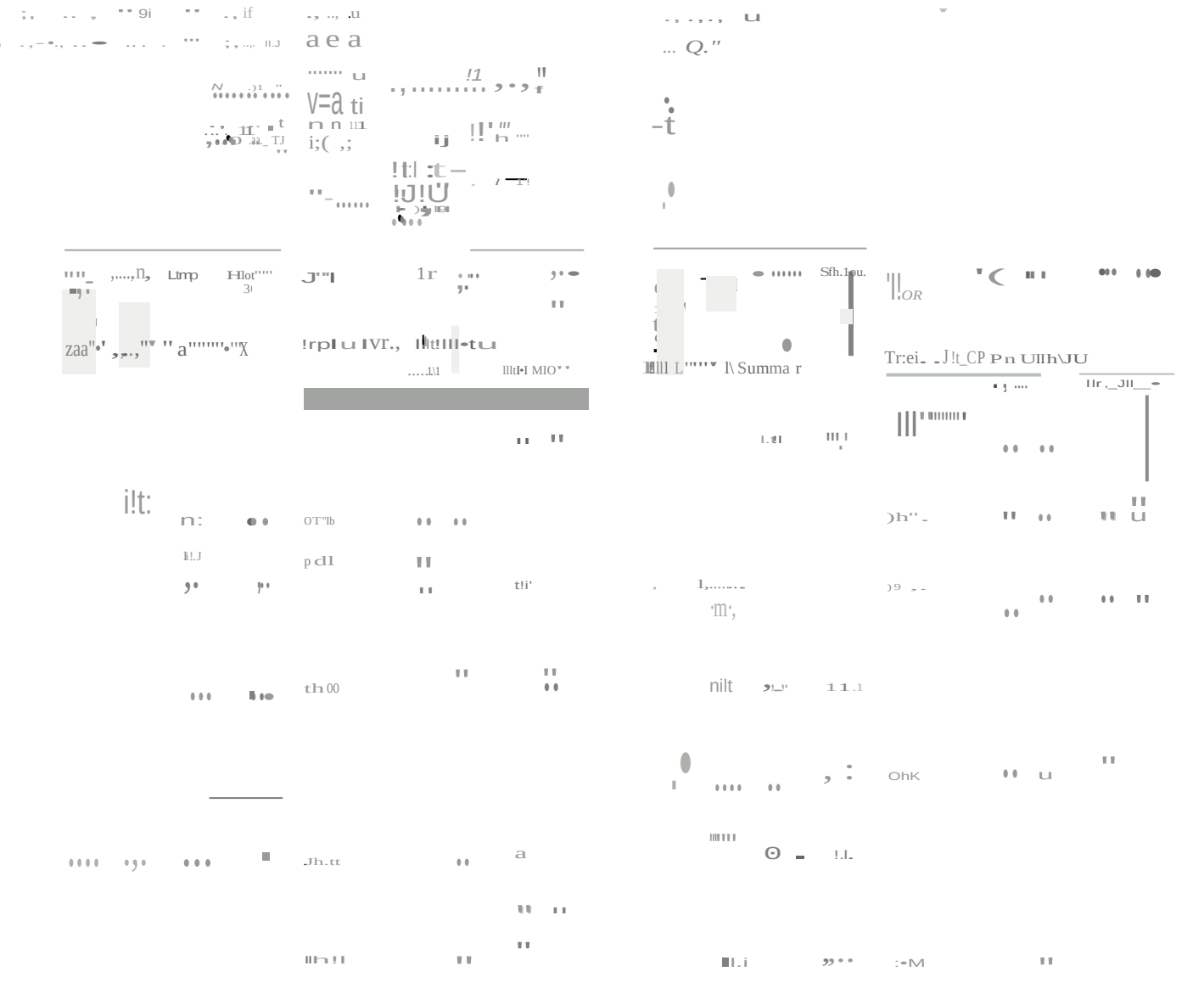
2GC8332A.IES

Year Cost at 1000

Lumens at 3000

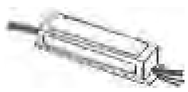
Effective floor cavity reflectance

103


OROIR IHO INFOR MAtiON
tSE032M.'B<IIK,iPSIE CO LAM=:!!!!PS
Trim Type
Series
Number of Lamps
Wattage/Length
Voltage
Options
Ballast Type
Per Spec 10-201

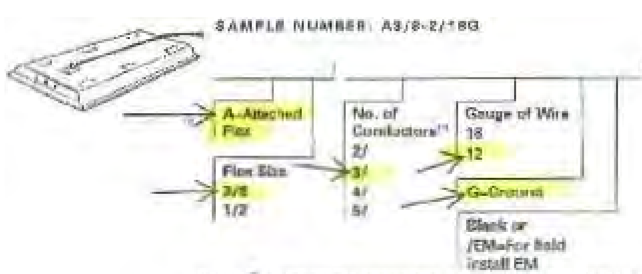
SHIPPING INFORMATION

Visit our web site at www.[illegible]

ELFCTR ICAI	DESIGNATION	OESCRIP fiO N
Ballasts 	LE3 LEOC8 Z DIM Electronic	Enet'l(\' Suvino Magnetic EnctlJV Saving M ttgi"UJCIO na L&mp onl'/) 0" Cold 'We&tluu Difnmln9 Eltettonit:
IOtr boll' lid rn. a.,_,bblc., Sttloe.l.\thP,beti.S•Nil'"J	r::=,:E;;;B.J L.____ TEB:r ,ild !w Lalfiia ..I:-'.,,..,= ..,. Tt tort wm.... T•U""-1'1	GCf'ctic Elccuonlo Boll t :For3pecifie Electronic; Ballastg;pectfy br)nd and Cottk>g number) EB O.altast tCX.I hll'f'nOr-k: disto:1Jon < 2.0% TES Ballat1 total harmcnic di1:tort;on < 10-w.
EmergeoGy Ugbtin'9 	T,·r EL4 2'..4' RS_SI, and Compact	Selkont;Jintd,OPfli'IIQS ono '{Jrnp ;temcrgoncv I0•1;Isc or90 mInutnupon powertoss (120V or 271V;. Lumlnafre will bl'l labeled "For 0r1' loc.etions Only.M
	6L8 2'..8' AS, SL, hO, VHO & Cowprtcl	Self -C0Q,IOjtlUitllt19 VIIV ltunplt tiiUI!ryency le\l.11 for 90 fnll.J161t 16'-8'1 O1 120 mfu.(!' -4'J u!)On powpr bill (120V or 2"7V)_ Luf'llnlllrn wlU be labf'll For Oty Location&: Onty."
	ELS	Self-contaiOPtrattt one Llmp ac eme-rgency tevels torSO mln:vs re.a·1 or 1201rin. fl"-41 upon po\.,..r k>s• (120V OJ 2nv1, L.urni.l'lel,..will bGabcled '"For Dry onv.·
r.uine Onternel or Extcmolo ..•.., :J)	GL OM	SlngE l8f'MI'nt FU<iW Ooubte Element Fun
R1dlo Interferencro Suppro.nor 	890·635 {Supp-esso,..OE) Rlf 1 ISl.pptsssor-AdW\'"Ci)	In:1uctiva ca pacitor ctrCUll to minlm·ze- Interfcreuco frO1t1 line rodiodon or focdbock.
Night Lights	INI PL	In Cnde9tent night I!Qht Up to 40 Watt/TS-- 120 V lntormodlltl0 ban IAm.p) Com.paclamp ftl. reao&nt night Uyht (;.7or 13W-.tt p - e)')6Cl,.f vohQ9 120'1or 27M Elto"nplt:PL 13{120V

I NG

ORDEIUN O fNr:ORM AnON

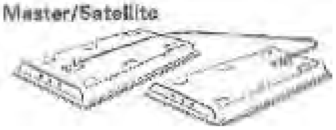


NOTES: * For fixtures with emergencies, extra conductor must be added to accommodate hot lead for EM.

3..S' fa.....ry pre:wireti F) (wired Into f1XhH\Iaccs plata. Various wlro gauges and numb(lr of wl'ntlvttileble. (i' long:hs_

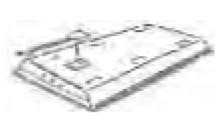
The Fie)¢ s&consis II or1ho following:
Ol'10 wego connector per wl·u
B feat of s:eel flex
18 gauge: TFN ·Mrc.7 t..leadr;,mc:poclng6" out of.achand
one 91> de-!'M flt.xoonn.ctor
ons 5truiyh.1tfleA c;OOOOCtOf
on. IK'ICe'fs plare

Master/Satellite



LaOOr Saving ten.J•t 1 witlng system.ln:stGII(Itlon a nd onary officicwt_(Su Me.,ter/SIJtellite Coooep' pago or consult Pre Solf'Js Technical Sup ort iur additional lnitmnotlon.:

Modulw Wiring Syrt.-ml



CompoYJwlrll"g sv11em, provides cost tlld labor saVirtg alternedv•to convC1"1\1on'l hs.r-dv.l'iring. U••• 1nterdUu'9J&t')le tn06u\at components. Offel"9 ponablltw a-nd ..,.,utility In fiyhdng configJJrlldons. (See M'WS ion or COfY;Uit PreSat_Teehnka4 SuppOrt f<< .addhlonel otdefln91nlonrudtan..l

METALUX•

Ot:SCRI,liOH

OC81t s premium gr&de spaciflcotion lensed tro"ftr series.Thili lr.novotNo, hfgh ualityluminairo Is dedicated ro lho lateet TS lo.mp and meelectronic t.e lasttechnology forPtrtornan:e ancs energy o'!l.."ioocy.The GCS;....,pacibfo\\;,1, allol todly'& __,brc.11Q Mtems;ndi11 1\IOlt:lblcwlltl a tl\lmberof OQfiOn!r andaceEBaorite tor opplicatirm Vflrt4o11Hty.

Catalog #	2GC8FA-332A125MIN-AD-REZ3S32-LSF032M/841K/XPS/ECO
Type	B3-DIM
Project	MT. AIRY SCHOOL - PK-8 SCHOOL
Comments	
p,.. rodny	Date

APPLICATION

'l'lo GCS Serieslt•un>•elrdoncy.quoliyand performonoc.1'llo<Orbs 11an e:«:Qfhlntc:hGic:e for commtrt:inlo-i""tee Stt IWI.f'Choots,t'.Mp!Y..aft oor mfthl merc:ha.,<lrtinc;J M.

SPECIFICATION FEATUR!S

A ··Con uructlon

Rigkf hoosing tseM formedor codo g< ugoprimt eold t<>tlod otoolnnd fMtiJri.l•) fulllungth dlo· formad stiffar' ˅ ˅ ˅ (or{nided w:Jar•yth Sid&fl•''iO$ are hommed..,,_,.-..,cesign prev(dessuperior lens briQhtnoss unlonnCty and vitlli.I" comfort. ·lbro bBllaotcov(lr"•• rocucesbalhit »h•I.Avw for 5Ul)erlo1.kons brightrtoss mdofTT'lily and lt easily nW"nnWWd wrthout toots. O..formed captiva lomvJ!Illd&r brackets fully eneloso lt mpholderwiring pormi!Meaw lnmpholder r'tplac.c l.Hnvv cndplatM ••aecurely:mld\ed wth h\terkx':ting tabc end Kf""WS. Fu.Jf auxiJi.:ary fbm.rte end oua penslon po1ntl provided. kOs orcoitlruous row wiring, Endpl!!ltM ha'At lme-gmGrid-took $;J.ottu19fm Mft(t'ld

a— El•Gifloel

S.IWoser&CBMIELCl... P. Md areposltive y seQ.rrecl t:ly rr.ountino lxlltot Pr o.Uur.,ltf:t lampholdets. UL/CUL li.!1lU1L S..M;)bl6fo• diur.plocatlont.•"

C finhh

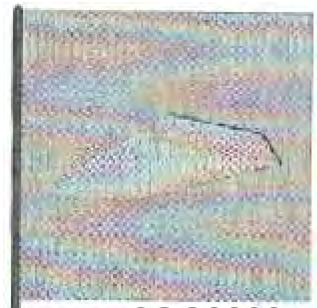
Multistnuc,lu.u1phosphat-> t)ttlr&atmam en$uros: rM)(Imum bondinQ and rust irh˅ bition ltousing and b•llo f COli«finilhed v..Tth now g)!K refleerhft\\1\.it.fJ eMmel for superiOf oertorna,lce.•pAI" Painted Ahtr fabric:Att()noption ('l!f()(('IVAIlttble.

O Hlntlng/Latc:hhiO

–.......,0<rlon oprtng .,sdAd sretllatthes W1h bGMd white lfl!bCl!et rl1ish. S\lfcty•lodt T-hingOtlullow hhging and latching (ilhor sid6.

lf...ll'r•1n dShleldtnu

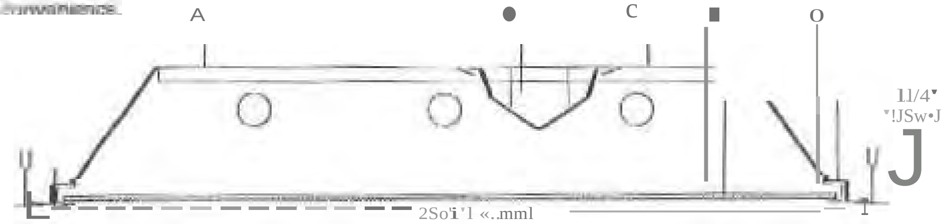
Dio fOfncd..h«vy aa o.ga, ftal 01ecl de«wlh r<lrfoN:od mitorod corners andb3f:ed wtrlt\ltnamfll fi'1ish. rte.t tend ragre"td i)h.aminu!n @rJAl avail!()...PosJtfVe ltGht teals. Ughl Jl!lbiized tl)()% wtruir ac::yll'pris'l'"atic lAn'J. Sr.tfldard #12 par:emNumcrout sddtionc:l:ohici.Sing opt om: vaiiBbte.



2GC8332

/' X •• TRUFFIIIM
3 LAMP

Spoclfic••lon TS Troffor



"maximum overall nominal depth

liNE.RGV OAf A

k•w 'A'•l'T.

m ·\

U lla!!u$f"O LoCMIK !IUIS)

,_.E,...,.......

ICA=n..I$
C•t.log N-..mllf!" 4f.CII•l31A

V-'\1Coat o4 \000kli'MM.
a000h.......otKWU ..S!r.-&

MOUNTING nAT'A

lift
IealA
IITIIII IIIIJ, IIY. .II.

LAMP CONF10U..•:::ATC.N:::_$

CEILING COMPA r181LITY

O	O	G	F	C	Ceilll'9	Trim
GNfUioy iu	C:; ..-.....lftl.b.l 1	!0Lr. Cr-1	,:h.,1 rim	bd.rlarTti\1 •'lo':J-Sv,. 119	T)1!!	

..AO.U

rtlf

METALUX·

DESCRIPTION

The Ovation Ssries is a compiG'lO tiJmilv of recessed dlrcct/l'ldll'c¢t luminaires fuaturilig plel!!santmO<l&z'fl stchlte-ctural atyHng, oomputer-design't :d opllcs and !.he latest ereergy P.fficient tRmp and ballast tAch-r.ology, Thlumin;)lf'C"c-cmbim!$ a matta Ylhite indirect re&ctor ar.d a perforated dlrcct 13mp htet<t wi\1\ a CfO& bbd<t baffle to proYidopti-mum br'ightne.ss control. All oompooants are loca\eCl abovettle ceiling planfeu a ell)8!"1 6r<:hiter.tur appooron.«to in tho fln!Ghod Sf.llJCO. Carefully ba nr.ed Closign61 men.!.S combine to provide an efficrent and exe't;ng alternative to trnditionalgcn<::r,,lli(lhtif19.

-'''00	2RDI-332RPtrBW-UNV-LSF032M/ 841K/XPSIECO-ER82-A318-3/12G
Project	MT. AIRY SCHOOL - PK-8 SCHOOL
Comments	
Prop.:trl:d by	

T\'P.t

87/ B7G

APPLICATIOr.J

O·vation i9. a series of hioh pcrform me !uminairet d&s!gMd tor a variety 9f arctmecturat ap;: lications. Ovation is an cx<lont choice for Pflwta r.fflcaec,anf&ren::e rouns,rcettJliOnu;ees,J"l:tiil st.ofes,librarietope.n offie-o:;, okportaclagsrooms,ben!<$, re&t urants,COfl'idor\::: ;Ind m ny uthi!r commar.::iat applications.

SP£CIPICATION FeAd-!'UC!R'-'Ec;$c

A''•COIIS1fUOtion

Nomina16" deep.hotlsing is dia fomtad of code gauge prim cok:l rol lad steel Heavy g uga and plates arat CttfY l'tf('.(:h.fln with scrcm for str¢n9th and rigidity andthG al imin8tion of gaps,Fou·r ouxilinrv fixt re:end

suSpension points am provi dud. K09 foi c-:lnti nuous row wiring. Large occoss fJI0ICI fot copply conneccloC'l.

a...t;hetr jcal •

Salla9ts are CBMiETL Clau "' ··and are positively tscured.Si ax rnodel$. use.2G11 bose: lampholdarG with i"lOJ.lbIAdga" Niping actio, pms.:sure lock contact& and wrti lty Ori\11'1ted lamp support c1ips.T8 o10dUis u o rotor.lock lampho1ders for pOsft.ive lilnlp raient.!on.UL,.'CUlist&d. Suitablo for dllnlP locatr01$.

C''dlalla•t Aooo•a

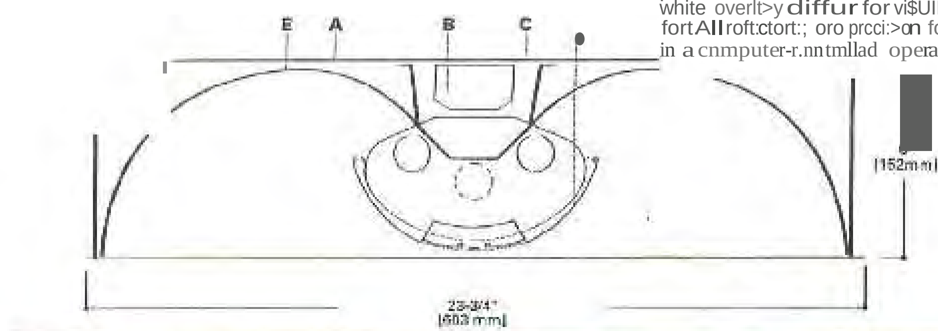
Ballast can 1>0 romovOO from botow withOut tOOl$ Or rrom bOVO..U$I'lg. th9 unique b&II&Sln'·Ountingfaccesc$ pfcte.."

D"·Fini•h

P&lntEKI aft{lr r-obriClltion, El :etruswticolly appllod bal<ed white poh/B!Star powdr enamel finish. Mult stage cleaning C",'0IO, ron pho!l-ptltne coating whh rust lnh bitor,

E···Rofleotor-•

Indire..-1eBe cor has. i(ll1 mltB:Ciaoco. baked matte white enamel finish. for ltnni nbus unif:mni.PO$lti vely retai n d direct k\mp shicklls oonstrucd of h:)avy gaugE: perforated steel tmd lateral crossblade OOJile avallablo ln white, gumt.spetular or specular finish. Shi alds are combined with a high li:J'lactance painted otter mbr:cauon tlnlsn and mlf<V white overlt>y diffur for vi$UIII CO•Yl-fortAll roft:ctort:; oro prcci:>on formed in a cnmputer-r.nntmllad operation.



2RD132

232
332
T1BX40
T2BX40
T3BX40

T8 OR BIAXC.Al lAMPS

t··. X <4". Roco$J:Gd OltuCI/1nd li / Cente r-Mounl Louve,.ed 311!l o:tl

Ovation™

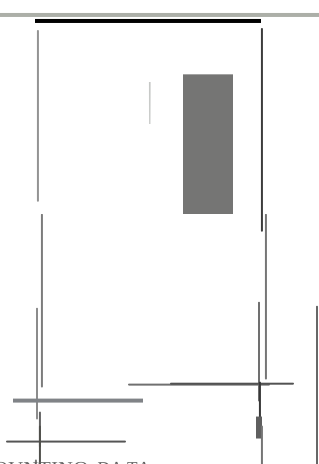
ENERGY DATA

lnpul 't'lkl;r:t.

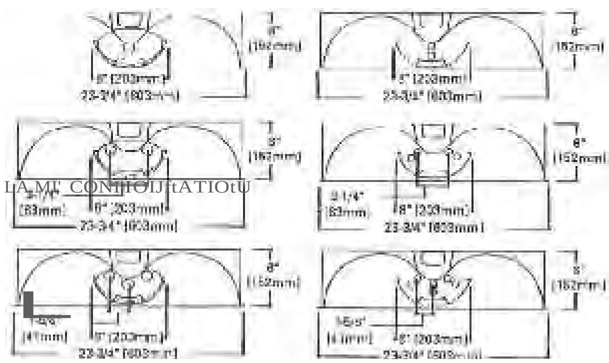
EB Bli!!Mt &STO Lnmp

1132'1
2llt61)
J3119.1
TISX«< (701

TIOX10 llO&:



V



MOVNTINO DA.TA

LA.MI' CONJIOIJrtATIOtU

T28X:«<(Htl;.
T:)0X ·-o:

1'111 1

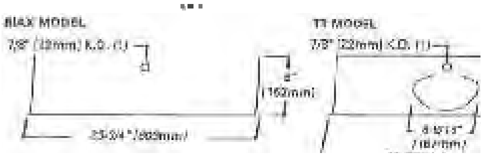
....l'l....

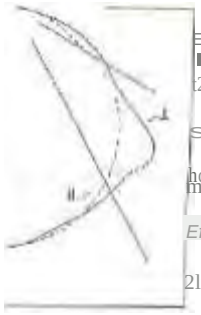
l":!O>:'W12:l:
13BX'30 lS:ai
T1B>GS11'0:
126X561220
neXM•1 :
5Stltllut&;STDL.mpt
13 1
231H11
232<CBJ
S1D lk!RI5t =$1P L..,rnpt
f18X4!I (f!1)
1'2tiX® \t€4)
T38X«If246)
IJ.•miro:lre £fllU(f :L.U!tfl
LEA•fll4
c«w!Og Nun.,.... ROH$2FP(TliW
V tt Co:ot 04 1000 IUI'IItl\._
tin: 11t.tilt1(\VN=S.Uli
•..,.,..,: .lll• ''lw.lloilo r.,ll••
lt; .!!ol l!ho;l.,..,0S:...,'ltc
·°C,..,..,n.s... Tomnl•;t3<il'l'(o'1.
· e O tt-';t':ffO!llO r.ttoa: nor,

It!,..I
l' ttl

CEit.INO eOMPATUUI.ITV

Ceiling Type	Trim Type	O	F D1v•o.l
!llotcUoul 'lmol	G	Gri<I/'.J("in S.."anCI<d	fnuMKil





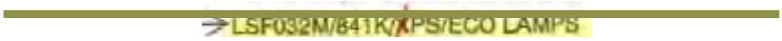
Coefficients of Utilization

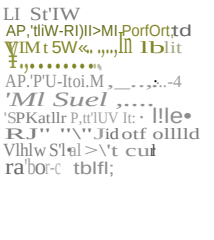
Coefficients of Utilization

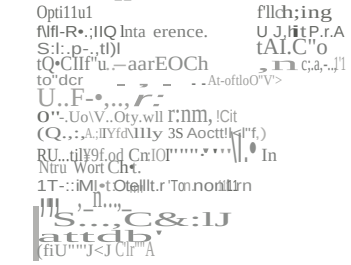
Zonal Lumen Summary

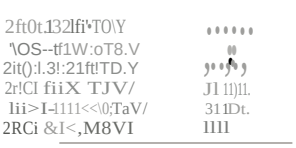
Zonal Lumen Summary

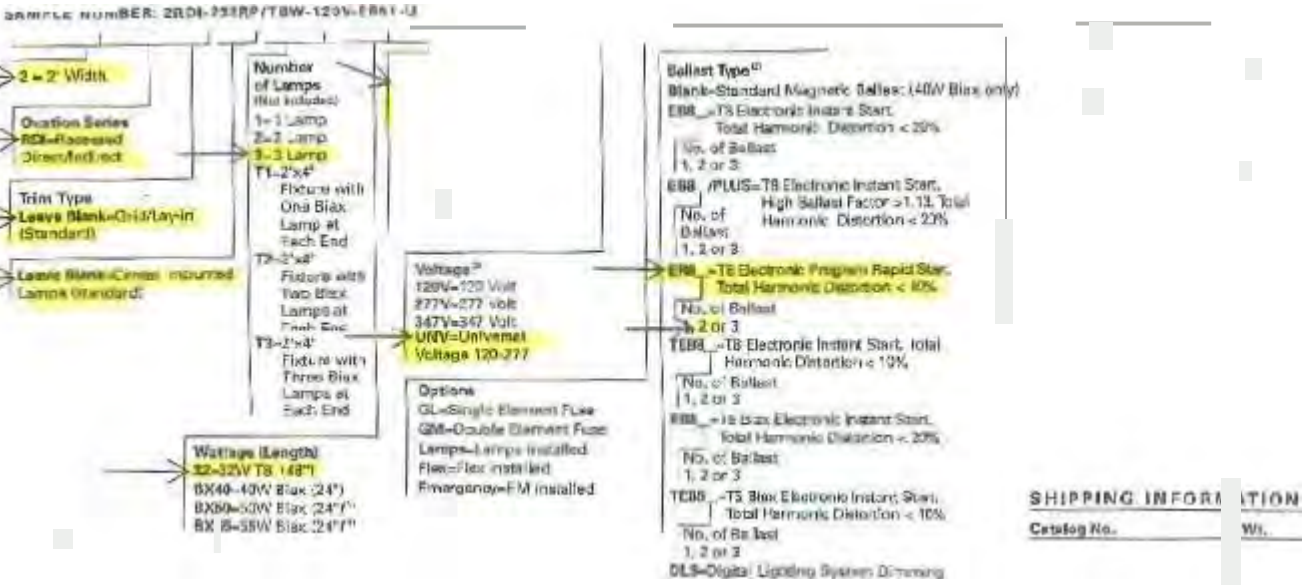
RDEAINQ INFOR M ATION











METALUX*

C.. al•OO tt	DIMN2 32U NVE RBI
ProJte.t	MT.AIRY SCHOOL •PK·6 SCHOOL
Comments	
Prepared by	

lypo

C1/ C1G

DfSCRirnON

The IM Serlos -I9 an anOJgy atllcianl f1mltv or rndustrlals thafejtlJrw proriUM porfor01ancB &nd durability. I Htifld(J>lli611<tfle¥ rrrtocp>oriiW9 hOM.'Y dutyombos••ct 1aflectors: lha!Pl'OCl$O}V dlroet 1nd e-lectively f N.TW wn:•'-utMSeiet Clll beinsn UM using *Sriovt mounnnomethodsandnumerous opr:onsandacceaotuls a:r·• llv•"" able.

AP PUCATIOrl

Thit OfMStufas:an be utll1tC:dlnsimpfa lest end atOll ltrghtinQ to tNt moGt demanding lr<l•ntrlal appt1calions.

SPECIF CATION FEATU_!:ES

A.•••COnlffWCticfll

Channail!! cocre gatl9& Qimo cold mllodoteQl. Die foll'led with deep V..groovN for tong nget.06•fottnactt Mnol CU".-- a1ilur..atteight r'OW-and c:ontit'luity of ground rhrough wt !nO'.Vs.l.wnpholdar mourling bf&Cket$!UO &llrtily i &d with 3nap =n ae.t;Son.

e.. l!l•c:trlc•l

Sallas afe CBM. mCl<tili "P.. nnd P(Noly tecd by moun.tlna boltt.MotaLclad l•m Phohk-r-s: aro ng too®d for IUr,..lsafety.UVCULt$:1 SU tablt tord•mp ooation,;.

C..·Finlah

Multist..a!Jtllron phosphata pre· rreatme<e ens..ti'W maximum bone(ln9 and Nlll Inhibitor Lighting gradoboked white enttmvl Fnish, •

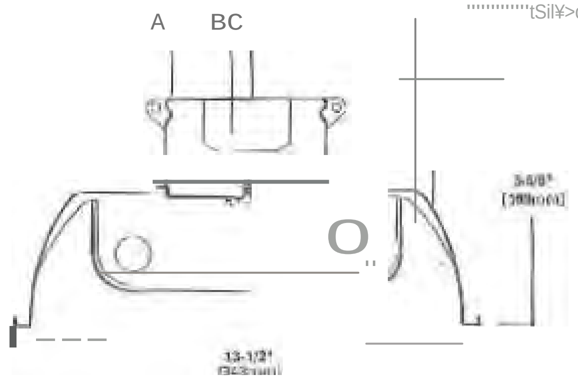
0-–••Necror•

Oit 'ormtd pcimu IIHI,cod• gauge. Deep draw full width ribs for'T'ed wlth ontJoress strK•. Side flanges lend !1JV"S\jj wftn upward turn. E: sity(kMeclBated wf!he enitmf.II \3-1/2" wfdth. Four fout &octiono. Rcftoclotr. fiCUced by po$lttvO •<l>inino screw. Rtftoeu>r ollgner• pu)vid>d. Stawth 20% uplgt.- IOIM), Closed tof! rrltc.tor tDCIM). Optlont Ilndustri lfix - tl.lrot Of'(l ws'lable lncorporbt• ino •Jto.-or:achnoloOV eohooee-- ''''''''''''tSil¥>crt.i_,lng)

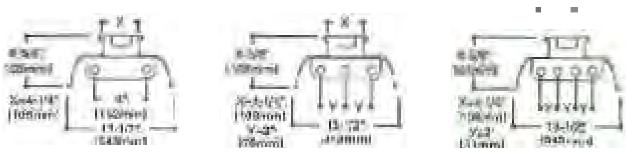
DIM240
232
340
332
440
432

4' 0111 I'IKOUilftiAL
2,J OR 4 LAM,

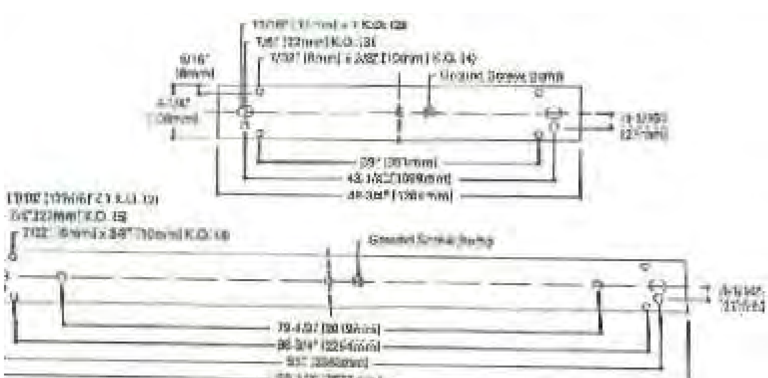
Mtovv Outy !Mitutrlal



LAMP C.ONFIGURATIONS



MOUHTIHC OATA



ENfftct V DAU.

l'IPJ:. 1
u •• ....as.ml--e-
2tl111)
211 ··1
340 :1101
!l»:oll
.;.40JIW
.f32HZ2)

llolllat6.STO U.ntpt
140(1[fo
t.1()IJ
Mtl•
3:Rf1Ci0
wonrn
432114:)

rnl•&AteEfip:y R.e .,,
ua.,.,.
CO(IIlogN\lmb>Ol':PIM U

""tty Catrtof 1000 IIII!WW!t, 3C00
hi•tf AI KWH•AM

PHOTOMET ICI=-- — — —— — —

Co•fllele t• of Ul1llutictn

cand•l•

El.:ttonfc- Ballasl

DIM-232

F32T8/35K Lamp&

Sp1dng edtcriOfl:

Zon•l Lurn•ft Summuy

UU 1. ic mo.Jnti,o

:Z850 Lumens

h : iyht, (I) t.4 X

mountl:'lg height

efficlency 90.8'!1

Test Rapurt:.. CIMZ32.1ES

U:R-F 78

Yo rly Coat of 1000 lumant, 3000 hrs 01 08 I(WH – Sl.08

Sp lamps OK

ORDERING INFORMATION

f.>JJU $.1T-Oiil"&l"...olm
&PI·tti12CW)
G-;tft•SIT•
l1 11P..CQ e.;...19 :m v 1
l1lw..r.l1$m tt.UM
Vllnl'(l OpfiG.'I (CQtu:ult
ILW oÇeutiOO "n;;att
PO .Jiitar,...,
fo.r.Mlii,Jf(I$)

Packaging
U=Unit Pack
1B=1 Bulk

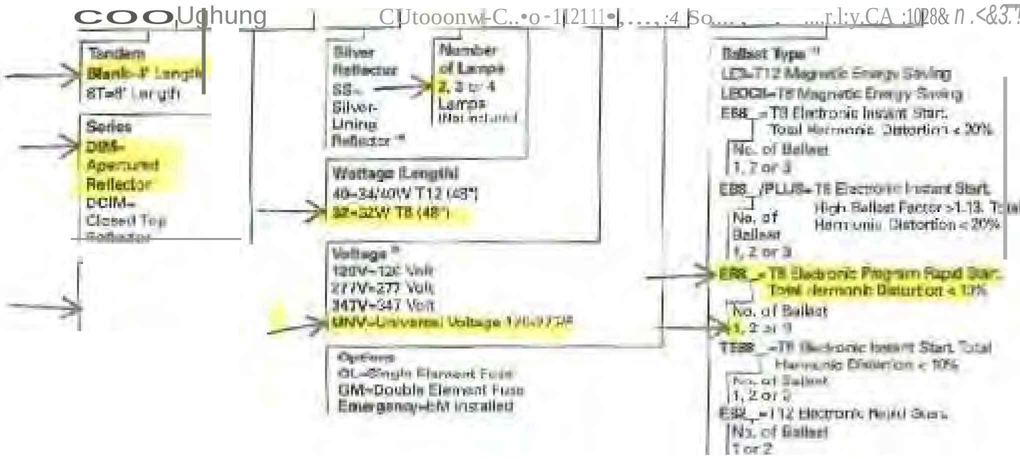
ACCESSORI&&

(U.,>'por btv1•:
ATO+tns ... flxtO"t"l
ecr.n...s 5ec (SpxfV
SQI-S.....ive:lSUm S.t tS"$Cti<J Ltn Jii
SCt..AliJ abl•.tS' S1.,n 01
I.Y'C u..o,..:ll H•rw S&:U..1"'t P«fIW!I.''')
w<JIOf.¥"FU•II,.CU.:!
WCXI/OI-4fHJ' =W1W G'('ll A11Ajtt.l
liCCl.otJRS.C9.J{4-Uoot.li'tfl e,Q (r:.tol.uuv-
Mt.Q...OifRS..9e 1n-u..:M i<M
CIP..C-.1 ::1[tl(I to

eHI,.PINO INFOftiAATION

oo,l-231	I UJll.
S-fDIM·!J2	30 llol,
uar.a.:nt	zSb•.
()&).Ut	2$a-.

\ltsit our web alt.t ut www.eoa(H'tlfJhtlng.oom



METALUX

DESCRIPTION

The SA Series combines such architecturally preferred design features such as low profile housings and refractor optics into a contemporary styled modular series. This energy efficient luminaire is available with an extruded acrylic refractor basket. The refractor has been designed to conceal lamp image and effectively control brightness.

APPLICATION

Product design and styling result in a luminaire for either surface or pendant mounting. Lighting aesthetics and performance required for applications such as commercial environments, classrooms, corridors, hospitals and general office lighting makes the SA Series the ideal luminaire choice.

Catalog # SA-232A-UNV-EA81	Type
Project MT. AIRY SCHOOL PK-8 SCHOOL	A1
Comments	
Prepared by	Date

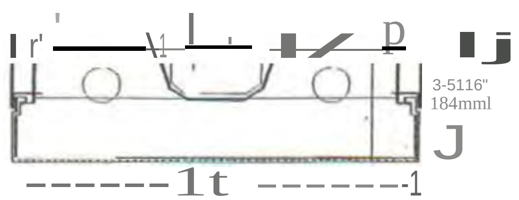
SPECIFICATION FEATURES

A - Construction
Housing, socket track and ballast cover are die formed code gauge prime cold rolled steel. Full seam welded corners. Smooth sides permit flush joint for continuous row mounting. Housing back has numerous KOs for easy installation. Ballast cover easily removed without tools for electrical access. Couplers for continuous row mounting.

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
Painted after fabrication. Electrostatically applied baked white polyester powder enamel finish. Multistage cleaning-cycle, iron phosphate coating with rust inhibitor. Conveyorized application and baking timing accurately controlled at an elevated temperature.

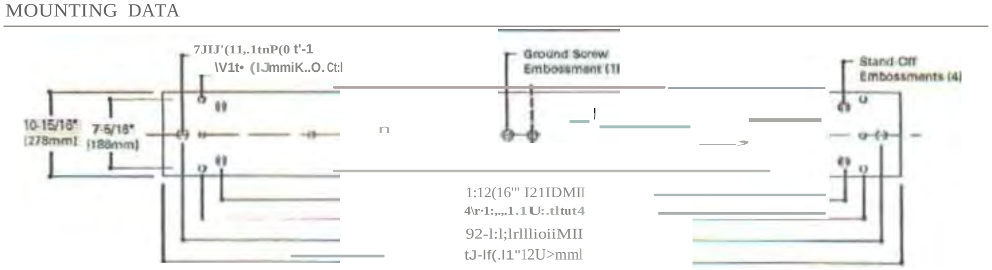
D - Frame/Shielding
100% virgin acrylic, extruded, prismatic refractor. Refractor bottom has a micro base prismatic pattern and sides consist of inside longitudinal prisms. Refractor design conceals lamp image and controls brightness. Sonically welded. Injection molded endcaps. Refractor positively retained by torsion springs and can be easily removed.

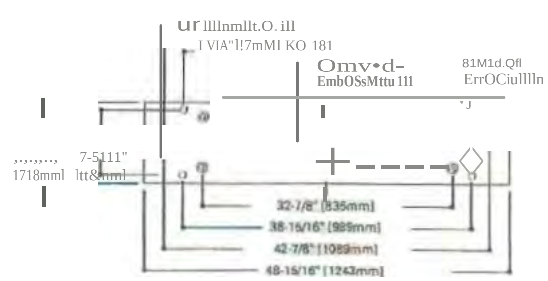


SA240A
232A

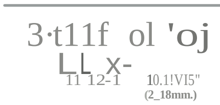
4' OR 8' SURFACE
2 LAMP
Surface Module - Wrap

MOUNTING DATA





LAMP CONFIGURATIONS



POSITIVE REFRACTOR ATTACHMENT

ENERGY DATA

Input Watts:
EB S.Uoot & STD L.mpt
240 (121
L.JL II>l1

ES BaRast & STD L.mpa
2CO 1861
232 n11

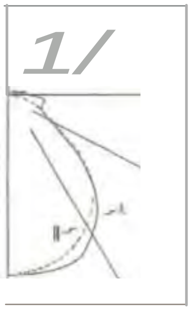
Luminaire Efficacy Rating

LER:FW-75
Catalog Number: SA-232A

Yearly Cost of 1000 lumens,
1000 hrs at .08 KWH = $3.20

thermal/photometric data: for specific lamp-ballast combinations

PHOTOMETRIC$



SA·232A
Energy Saving Ballast

F32T8/35K Lamps
2850 Lumens

Spacing criterion: (II) 13 x mounting height, (J.) 1.3 x mounting height

Efficiency 84.5%

Test Report
II144P112

LER • FW-75

Yearly Cost of 1000 lumens,3000 hrs at .08 KWH • S3.20

Coefficients of Utilllu tlon

flo or cavity rolne. ZO'-

n:	lOY.				70"-				50f.			30%			10%			0%
rw	70	50	30	10	70	50	SO	10	50	30	10	50	30	10	50	SO	10	0
RCR																		
0	99999999				▾▾▾▾▾▾▾▾										808080			n
-					88	84	81	78	79	17	74	75	73	71	71	69	68	65
1	87	83	80															9
2	83	17	71	87	80	75	10	ee	10	ee	83	67	63	61	63	s1	sa	sa
S	na	&Z67			,.	87	81	68	63	68	54	80	58	53	67	54	51	49
•	71	81	55	49	ea	e0	53	.S	67	s1	47	54	so	48	s2	•a	45	43
5	55564842				83	53	.,	42	51	45	41	49	H	•0	46	42	39	37
8	80	49	4237		58480				48			« 39$			42			
7	55	45	38	33	54	44	37	31	42	36	31	40	35	31	38	34	30	28
L...!J...!O	33	28			3933				38nv			38	V		s0			
9					•8	35	29	24	34	28	24	32	21	23	31	2s	23	21
	47	3629	25		42	32	28	22	31	25	21	:lO	24	21	26	24	20	19
10	44	33	26	22														

Candela

Angl•	AlongU	45"	AtroKJ.
0	1548	1648	1648
10	1822	1643	1 9
20	1!143	Ulll	1557
30	1410	1512	1523
40	1211	1265	1258
50	848	847	765
80	481	475	429
70	248	308	328
80 90	38	125	3-43 225
100	30	134	163
110	28	69	63
130	18	so	68
140	17	38	47
150	15	27	38
180	,.	19	24
170	13	13	15
180	12	12	12

Zonal Lumen Summary

Zone	Lumen•	%Lamp	%Axtura
0-30	13	23.5	27.8
0.40	2202	38.8	45.7
0-60	3583	82.9	7U
4415		77.5	91.7
9().180	£O	7.0	8.3
0.180	4818	84.5	100.0

Typical VCP Percentages

Room Size (Ft. I	Haight Along 8.5'	10.0'	Haight Acron 8.5'	10.0'
20K 20			"""G37i	
:l0><30	56	61	52	59
30 x 80	48	50	38	42
GO>e30	57	62	55	61
80><60	48	50		43

O

4\

ORDERING INFORMATION

SAMPLE NUMIIE R: SA -Zl2A - 12011 - EBII - U

Tandem
al..,k•4' Langlh
IT-s' Longlh Houting Only U-,. Ooor Frame Sttlona••

SA-Series

Width
Blank=Standard
A=Wide Body for 2 Lamps

Number of Lamps
2 lamps
(Not Included)

Wattllgt (Langlhl
40.40W T12 (48")
2.WT8(48'1

Lent
A=Aavllc-Refractor Lens

Vottogem
12.011= 120 Voh
27711•277 Voh
3'711..:!47 Volt
ONV-Unlvei'So'll llolJaga 120.ltl"

Optlona
glo Elom&nl FUM
GMaDouble Element FuN
ErMrgtnev-EM lnotallld

1.2or J

Wntl'ypa,.
t£0Ca-1ll Magnotic Energy S!Mng
LE3-T12 Mogne<E""9ySavln9
- •T8 Elecctror11C PrognomRapid SIDrt. Tot>
Hormonlc Oostonlon < 1
No. or Bellsst

EB8 •"Ill Eleart>O!C Instant Start
Total Hormonlc Olstortlon <20%
of Balint
or 3

EB8_1PLUS TSEioectronic lnotant Statt. lUgh
Ballasl F8Cilor>1.11 Total Harmonic
Dlstottlon <211%
No. of Bollas\
1, 2 or 3

Tal8 1 1 Ele<tronic lllStllnt Sian:. Total Hllrmonlc
DiltO<Iion <10%
o. of Bolla11
2 or 3
Qo.NQnlG floptd CU.,.
No. of Bollal1
l ot2
DlS-DigJtal ljghung System Dimming

Optlona
RIFlaRadio Interference SuP!)<tUOr
EKo-End Plalllwflh7
KO (Roqulrod for Continuous Row Mounting!
RLS RoloM.O<Socktt
(TB Lamps Ottlyl
ISCJO oprlono & 11000o110rlaol

Packaging
U=Unit Pack

ACCESSORIES

(Older Sepenotelyl

S!I'-fll(!!(! Slam $()((Specify IMIQIIV
SCS•Sw111ol Stem Sal (Spaofy Lanuthl
SCA.Ad)uoub..•r Stom Sot
AIB/Sp__.u..$j>_,..1·1/2'to 2·112•
!tom oaolino V.2 par fncturel
Ltf19thaAva,1tblt'6. 8, 12.18, 24,38.43
(Addftlol'l.ll AcoHtOrMt Av-aba.,.St•Ooconl •nd A.eCMJOf - Stctiotl

NOTES· Np,ooueu; aiMt ...Wble1n non-US ...,.- l\d ff=qvH410 ''fOf IAWofl'1'_."""•Hot •.,.wn.-n tpedfytf'l •rv.....-e•m'-lII M._,. effie-mcxrnoc..,.a.ta. on).Wnp tbmil'ft.ta.n ewil•ot. 2.aa.,O"ty -For row mo.;.nd,.7/r ItO.fumbt4*'lft e1\d of tt..m.,. EKO. - ,polni UJP MkltequltM fof 4o-l.amp 1\..tW'M. 2: polntO'4 poif'i Pot 2.aem.pl'Uctt.ulll• n t KO.,. """rwt.&tilk in 4 nty - .,....tamp tf)adng byaddlngiBor O1..•uftbe II On boiN..t.-..tPKI"O.01Outboanf•t1• t.m;

SPtdlcdOMa\l'mtnPonttubtKt to"*""""ttout ncxa.Coft..tt'fOil'C".oopet liOht-'v --.prw..t...,.kw rAte.·tv WidO""demQ lnfomlaoon..

SHIPPING INFORMATION

SA·232A	15 lbs.
C.Ul og No.	Wt.
8TSA 232A	31 lbo.

\

METALUX•

DESCRIPTION

GC8 is a premium grade specification lensed troffer series.This Innovative,high quality lumineire is dedicated to the latestT81amp end micro electronic ballast technology for optimalperformance and energy efficiency.The GCB is compatible with ell of todey's popular ceiling systems and is available with a number of options and accessories for applicatiion versatility.

APPLICATION

The GC8 series features efficiency,quality and performance. The series Is an excellent choice for commercial office spaces,schools,hospitals or retailmerchandising areas.

Catalog GC8FA-232A125MIN-UNV-LSF032MJYP9
BJIS:D.{ESLECO-EBB1-AaL8-2ll20

Proioct MT. AIRY SCHOOL- PK-8 SCHOOL

Comments

82/
B2G

Proparod by Date

SPECIFICATION FEATURES

A ···Constructlon

Rigid housing is die formed of code gauge prime cold rolled steeland features full length die-formed stiffeners for added strength. Side llangell are hemmed. Innovative design provides superior lens brightness uniformity and visual comfort.Micro ballast cover reduces ballst shadow for superior lens brightness uniformity and is easily remnvAd wi1houttools. Die formed captive lompholdor brockotG fully onc:loco l<>mpholdarwirinQ permitting easy lampholder replacement. Heavy endplates are securely<attached with interlocking tabs and screws.Four aux iary fixture end suspension points provided.KOs for contlnuous row wiring. Endplates have integral Grid-lock feature for safety and convenience.

B ···Eiectrioal

Ballasts ere CBMJETL Class *Np•* and are positively secured by mounting bolts.Pressure lock lampholders. Ut.JCUL listed. Suitable for damp locations.••

C ···Finlsh

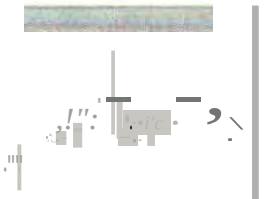
Multistage,iron phosphate pretreatment ensures maximum bonding and rust inhibition.Housing and ballast cover finished with new 90"A> reflective matte white enamel for superior performance. "PAF" Pointed After Fobrigotlon Of'liun ul;;u available.

O•··H lngIng/Latch lng

Positive cam action spring loaded steellatches with baked white enamel finish.Safety-lock T-hinges allow hi g_!_ng and latching either side.

E ···Fnm e/Shieldlng

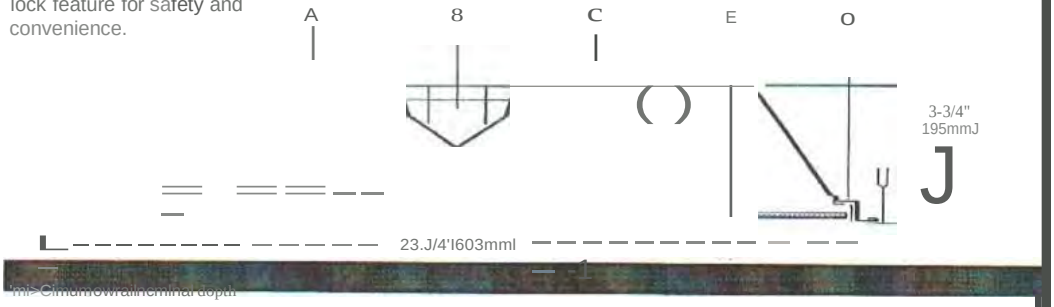
Die formed,heavy gauge,flat stealdoor with reinforced mitered corners and baked white enamelfinish.Flat and regressed aluminum doors also available.Positive light seals. Lightstabified 100% virgin acrylic prismatic lens.Standard #12 pattern.Numerous additional shielding options available.



2GC8232
432

2' X 4' TROFFER
2 OR 4 LAMP

Specification TB Troffer



ENEROV DATA

Input Watts:
EB Ballast 8c STD IA...,s
232 (61)

432 (1221

ES Batlnl 8c STD 1Atr4>o
232 (711
432 (142)

Lumillblre Eff•cacv Rating
LERaFl-69

C«<alogNumber: 2Gca..232A

Y-lv Cost ol1000 lumtlna-
3000 hra at .OS KWH = $3.50

LER"Fl-64

Catalog Numbof: 2GC8·432A
Y•orty Cost ol 1000 lumens,
3000 hn at.08 KWH = $3.75

·nat.ronc. tM lampib.tbsl dati In lh• Tldtnlcel S.Cijon tor a Ptolfto lam Jut ntquitenMnta.

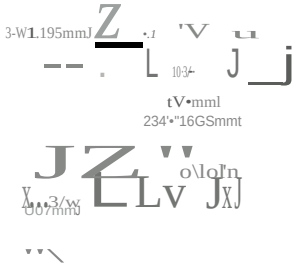
- -Conau• Pr.Sat- - fec:tmlc•f S'-1ppof1.

MOUNTING OATA

DOOR FRAMES

8CI "-t.Yfllll
GCIU fil1E.rfrWIHI WbhoA"""""""
OCWI O....R..-....., bndedH11U,.lAhi•U>fl

LAMP CONFIGURATIONS



CEILING COMPATIBILITY

v-5':W - ttJ7mml
2 - • II!O:tmml

Q	Q	G	F	C	Calling	Trkn
Grld/tay·ln Stilndard	ConcealodT	StotGrfd	flange Trim With Supporting Swing Gates	ModufarTtlm With Supponlng	Type fltpos...J Grid	Type G

···Full lind balla.ucowr (or blaxlellamp• anG emoroency opcion.

COOPER LIGHTING

Swing Got11s

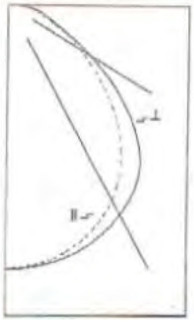
Conce.altd T n
$kt1Grid G
fl'angt f
Metalhn
C

(Verify oomp.ttlblllrvfcontufl
t. Qtmy.)

ADF031996

fSt!twli.--,.;A• 1\t'\.C'n "a>,.f:"o--Tii1'0

PHOTOMETRICS



2GC8232A
Electronic Ballast
(2) F032135K lamps
2800 lumens

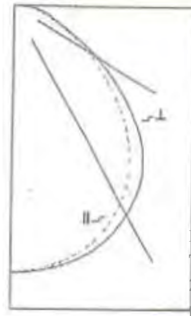
Spacing criterion: (II) 1.2 x mounting height, ⊥ 1.3 x mounting height

Efficiency 84.8%

Test Report: 2GC8232A.ES
LER = FL-69

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.50

Candela



2GC8432A
Electronic Ballast
(4) F032135K lamps
2800 lumens

Spacing criterion: (II) 1.2 x mounting height, ⊥ 1.3 x mounting height

Efficiency 79.2%

Test Report: 2GC8432A.ES
LER = FL-64

Yearly Cost of 1000 lumens, 3000 hrs at .08 KWH = $3.75

Candela

Coefficients of Utilization

Effective Floor Cavity Reflectance 20%

Coefficients of Utilization

Effective Floor Cavity Reflectance 20%

Zonal Lumen Summary

Typical VCP Percentages

Zonal Lumen Summary

Typical VCP Percentages

ORDERING INFORMATION — LSF032M/841K/XS/ECO,I:= MP-=S

SAMPLE NUMIIEII; 20CI•Ut - U0V 1111-U

2=2' Width

Trim Type
G=Grid/Lay-in – Standard
G=Concealed T
G=Slot Grid
F=Flange Trim
C=Modular Trim

Series
C8=Specification T8 Troffer

:stan<DrG•,.letl vvnne :)IMI OUut
(leave I!lanlcl
FA..FI01 W1>te Exuvdod Aluminum
Do«
RA.:w"Regnnsed WIlto uded
All uminum Door
FAN-FltiN.>tunsl E>ctrudod Aluminum
Door
RAN-3,11" Regreosed Natural
Exwded Aluminum Ooot
FAa-FQI8lact EXINdtd Alumlm.n
Do«
RAB-318" Rogm>od Bl0ck El<lruded
Aluminum Door

Number of Lamps
2 or 4 Lamps
(Not Included)

Wattage (Length)
32=32W T8 (48")

A..I ZP.nornAaytc:
Aqyk !125(=1bi;kl
p1t/1 amwiD:
IMA 48 Injecuon Moldod Aoyroe 160" Thiel<)
P81S..Sl!110r Por•bcl!c loW« (lfl" x 1/2" x 1/2")
DA-Oroppod Oian •M81.1t wnllll ACryltOtA tiontl
9hteldlngMtdl1 Anbblt.s- -ActtncHy \llwi11•J

y S 6D\

Voltogo,.
IZOI/•\20Vo l
2TN 277Voh
U7V..:J.t7Voh
UNV-Un!vo""l
Voll.ol)l 120- 77'"

Optlono
QI.Sing1e Element Fuse
GMD-olto Element Fu- -
Lo....,...umps lntQIIed
F*< Aex1nmftod
Emwganev•EM1nmllod

BalaotTp'''
EBI •T8 Eleccronic In.,...l&all. TolllHatmonlc
Ol•ortion <211%
of Ballest
013
CDO JrLUG-TO Clootr'oon&o 1 - I'llt t-rt.. 14l-.,h
of BeO.ostFACIOr>1.11 Tolal Harmonic
tint Do•O<Ilon<20%
2or3
tEAI a IIIE!octron;,Pn>gram Rac»d &311.
Toto! HIlfrnoric Distof!lon <_1
No.oi Bollaal
1, 2or3
•T8 EleccronoctnontSl&Jt. TotaiHIllT'IOf'llc
Oisto< ton<11l'l'
of Ballast
or3
DIS Digllal UghtInv SystomDimming

Optlono
PAF-Polnted Afuor
Fabrication
fR..SUubla for AreRateel
API)licohono
EO.T-BAR Safety
Eorthqu•lw Clip•'"
MEP·ModKied End Plsto{
FarWF.......pllaollo- -
20GA/REP-20 Gltugo Rlllecod
Endpllun.For u•lnN...,
Yori<Oty.
Rt.SoRotor-lock Socket
(T8 Lompo Only)
c>—v>fv•.., 0-....-.,...,•••J

oo!<eglng
U—Urtlt Pal)I(
PAU-Job Pack.
out of carton
PALe-Job l'llck.
In 0<lrton

NOTES: '''An I'QGt1d c,_, It n'lfMnrkdtot •• r c;:lting_apt•ma..•srencl.v-doff etnt•r taell•st
::=n ';:' ;:'m:u:'l =: =j:-:!'v:.:. :; ::'::;;,7::: fot
SpecifftitlON. fli —to wlmOYt nocfC'L Cofttulll VOI/II CooptorUgl'n.1no
R ..,..,..fo4' W.•tlibIltv •lll• lliCII tnfom\rioft.

SHIPPING INFORMATION

Catalog No.	Wt.
2GCS.232A	29lbs.
ZGCS-4321\	321bs.

METALux- 1YPes: B2/B2G/88

MT. AIRY SCHOOL - PK-8 SCHOOL

CAT.#: A3/8-2/12G

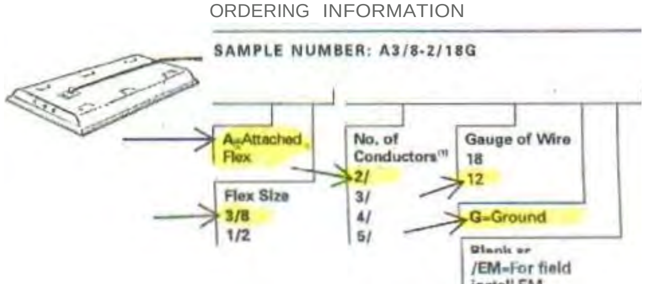
OPTIONS AND ACCESSORIES

PARABOLIC.RECESSED AND SURFACE

ELECTRICAL	DESIGNATION	DESCRIPTION
Ballasts	LE3 LEOC8 Z DIM Electronic	Energy Saving Magnetic Energy Saving Magnetic (T8 Lamp only) 0• Cold Weather Dimming Electronic
(Other bellesopti<lrw avslloblo. con1u1t p,.Sal- - Tochnl<;alSuppott.l lAmp Slu 2.oT12 a.Til S.811xTS T•Un -rT5	1:.... No.of Ballao 1 or2 TEB TT Lomp S,.. - - T8 5oo81o• Tll T•UnearT5 l:,No,.-o'"a=-=-llaoU 1 or2	Generic Electronic Ballast (For specific Electronic Belfast specify brand and Catalog number) EB Ballast totalharmonic distortion < 20% TEB Ballast total harmonic distortion < 10o/o
Emergency lighting	El4 2'-4' RS,SL,and Compact	Self-contained, oporotes one lamp ot emergency levels for 90 minutes upon power loss (120V or 277V). luminaire will be labeled "For Dry ocations Only.•
	EL8 2'-8' RS,SL,HO, VHO & Compact	Self-contained,operates one lamp at emergency levels for 90 minutes (6' or 120 min. (2'-4'1 upon power loss (120Vor 2nV). Luminaire will be labeled "For Dry Locations Only.•
	EL5	Self-contained,operates one lamp at emergency levels for 90 minutes (6'-8'1 or 120 min.(2'-4') upon power loss (120V or 2nv1. Luminaira will be labeled "For Dry locations Only.•
Fusing (Internalor External) ()>.((	GL GM	Single Element Fuse Double Element Fuse
Radio Interference Suppressor --:--fr"	89G-635 (Suppressor-GEl RIF-1 (SuppressorAdvancol	Inductive capactor circuit to minimize interference from line radiation or feedback.
Night Lights	INL PL	Incandescent night light (Up to 40 Watt/T6-120 V Intermediate base lamp) Compact lamp fluorescent night light (5, 7, 9 or 13 Watt lamp, specify voltage 120V or 277Vl Example:PL-13/120V

WIRING

ORDERING INFORMATION



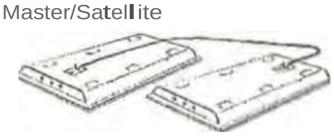
NOTllfh rOt f'Jt\\lru w//\tf!'ltr ci'IC.rtt-Utrt :.onauttor m M .cldt4•0 acocommocM'•not lU4 ""EM.

3ta' factory prewirod Flax wired Into fixture access plate.Various wire gauges and number of wires available.6' lengths.

The Flex set consists of tho following:

one wago connector per wlro
6 feet of steelflex
- 18 gauge TFN wire,7 ft.leads,exposing 6'out of each end
one 90 degree flex connector
one straight-in flex connector
one access plato

Master/Satellite



It bor Saving tandem wiring system.Installation and energy efficient.(See Master/Satellite Concept page or consult Pre Sales Technical Support for additional information.)

Modular Wiring Systems

Component wiring system, provides cost and labor saving alternative to conventional hardwiring.Uses interchangeable modular components.Offers portability and versatility in lighting configurations. !See MWS Sectton or consult Pre Sales Technical Support for additional ordering information.)

COOPER LIGHTING SURE-LITES

DESCR IPTION

In the evant of AC power loss, the Sure-Lites LTC2, Load Transfer Circuit, automatically switches normal light fixtures to approved emergency lights. The LTC2, in conjunction with an auxiliary power to lighting fixtures regardle1ls of the room switch position. The LTC2 will operate up to a maximum 10A load. The LTC2 is UL listed for field retrofit Installation and conforms to UL 924.

catalog # LTC2	Type B2G/83G/ 87G/C1G F1G/H1G
Project MT.AIRY SCHOOL- PK-8 SCHOOL	
Comments	
Prepared by	Date

SPECIFICATION FEATURES

Electronic

1201277VAC, 60Hz

Operates incandescent, fluorescent, HID and other loads. 10Amps. Max.

Two soporoto noutrolll

Codo Comp0aneo

Ub24 Listed, Dry lnr.11tinn<>

UL Listed for Retrofit/Field Installation

Life Safety NFPA 101

NECIOSHA

Construction

Mane black painted steel housing

Sized to fit inside ballast channel

F•eturea

Con bo lnetolled inside or on top or rixtuta (rur t<>p mount use Sure-Lites FBP1WBC)

Easy-to-follow instructions make installation quick and simple

May be u ecJ with switched fixtures

Compatible with mony different lamp types– consult your Cooper Lighting Representative regarding specific applications

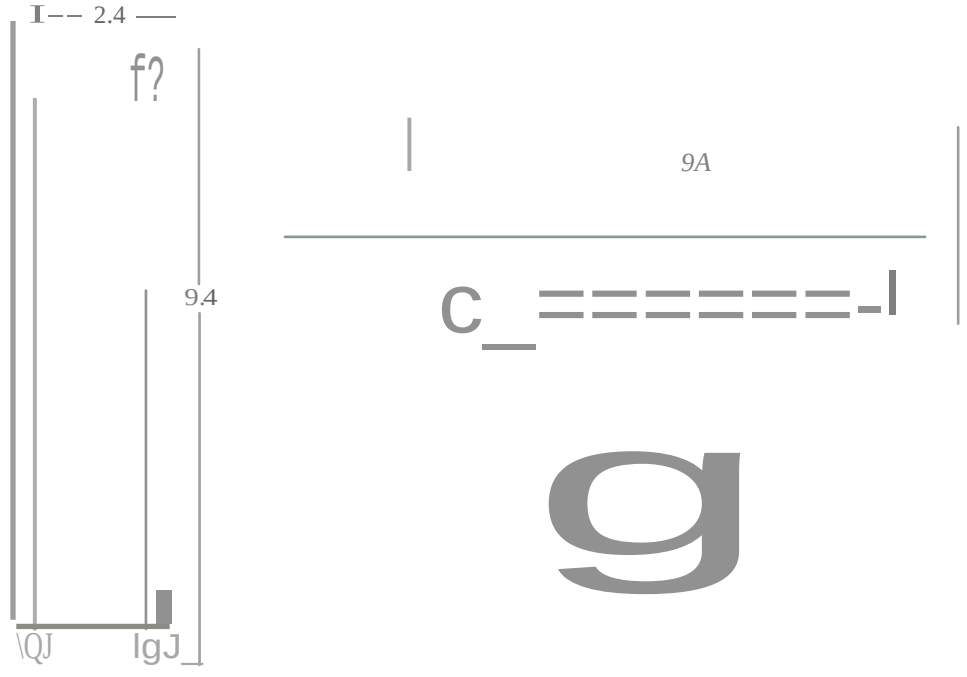
Compatible with many ballast typos Including standard, rapid start, sllimlinA, lnst11nt stArt, onorgy ooving, dimming, ond electronic AC bolloets-coneult your Cooper lighting Representative regarding specfic applications

LTC2 SERIES

LOAD TRAN SF ER CIRCU IT

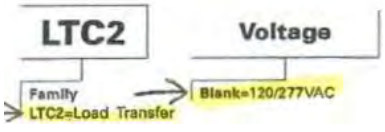
Emergency Lighting

DIMENSIONS



ORDERING INFORMATION

SA MPLE NUMIER : LTCl



METALux

DESCRIPTION

GC8 is a premium grade specification lensed troffer series. This innovative, high quality luminaire is dedicated to the latest T8 lamp and micro electronic ballast technology for optimal performance and energy efficiency. The GC8 is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for application versatility.

Catalog M2GC8FA-332A125MIN-UNV-LSF032M;'YP9 41KIXPSL§QQ-!iR g-8;IL L12	B3/
ProJect MT. AIRY SCHOOL-PK-8 SCHOOL	
Comments	B3G
Prepared by	Date

APPLICATION

The GCS Series featuras afficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools hospitals or retail merchandising areas.

SPECIFICATION FEATURES

A - Construotlon

Rigid housing is die formed of code gauge prime cold rolled steel and features full length die-formed stiffeners for added strength. Side flanges are hemmed. Innovative design provides superior lens brightness uniformity and visual comfort. Micro ballast cover*** reduoes ballst shadow for superior lens brightness uniformity and is easily removed without tools. Die formed captive lampholder bracf<ets fully enclose lampholder wiring permitting easy lampholder naplacement. Heavy endplates are secunaly attached with Intorlbcking tabs and screws. Four auxiliary fixture end suspension points provided. KOs for continuous row wiring. Endplates hava integral Grid-lock feature for safety and convenience.

B - Eiectrloal

Ballasts are CBM/ETL Class np• and are positively secured by mounting bolts. Pressure lock lampholders. UUCUL listed. Suitable for damp locations.**

C - Finlsh

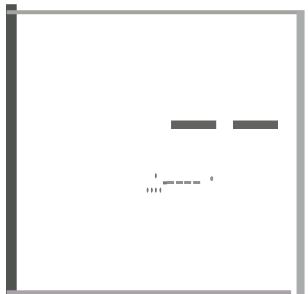
Multistage, iron phosf.>haltt pretreatment ensures maximum bonding and rust inhibition. Housing and ballast cover finished INith naw sanA. reflective white enamel ror superior performance. "PAF" Painted After Fabrication option also available.

D - HlngIng/Latching

Positive cam action spring loaded steel latches with baked whito enamol finish. Safety-lock T-hinges allow hinging end latching either side.

E - Frame/Shlalding

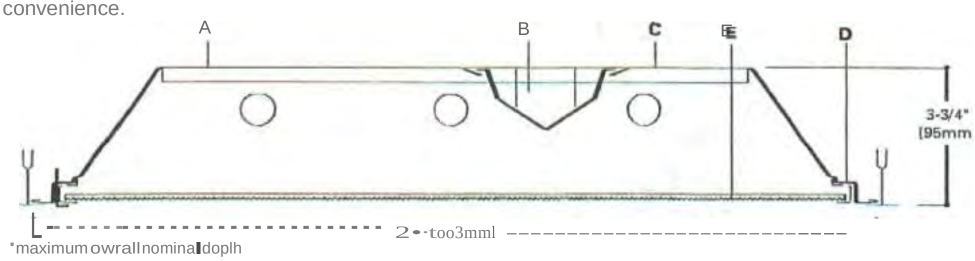
Ole formed, heavy gauge, flat steeldoor with reinforced mitered corners and baked white enamel finish Flat and regressed aluminum doors also available. Positive fight seals. Light stabifized 100"4 virgin acrylic prismatic lens. Standard #12 pattern. Numerous additional shielding options available.



2GC8332

2' X 4' TROFFER
3 LAMP

Specification T8 Troffer



*maximum owrall nominal doplh

ENERGY DATA

lnpu1 Waus:
EO e..llost & STD Lo111>•
332 (9tl

ES SaliMI & STD U!11>S
332. (108l

Lumlnol,.. Efficacy Rating
lERs Fl.o-69
Catalog Number. 2GC8-332A

Yoorlv Cost of 1000 lument,
3000 hrs ot .08 KWH$3.46

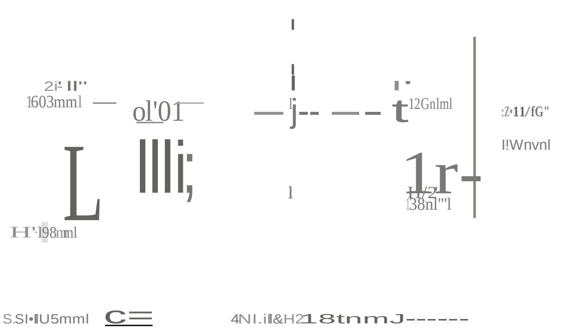
•A J'-r.no.lhe llnu.,dtllln th• 'f.ctlnicl S.odon tot •p.cdlc tam'b4l1lut r•qulremttnra.

•on•ull Pte SaletTtd'lnio8l SupPOrt.

•Futl ti*bobtteov•r tot blaxi•l lt"0'"

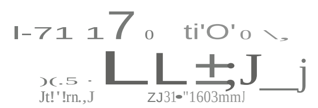
and em•rv•n:cv opdOft.

MOUNTING DATA



DOOR FRAMES

LAMP CONFIGURATIONS



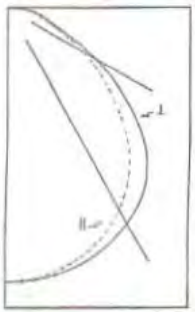
CEILING COMPATIBILITY

G	G	O	F	C	c.fling Typo	Trim Type
Gr<l/1.Ay-In Standard	Conce•lod T	Slot Grid	Flanga Trim	Modular Trim With Supp01tlng	El<l>otod G...	a

PHOTOMETRICS

SSC'

2GC8-332A·PAF Candela



13) F032/35K lamps
Electronic Bellnt

2800 lumens

(II) 1.2 x mounting holght, IJ.J 1.3x mounting height

Efficiency 83.0%

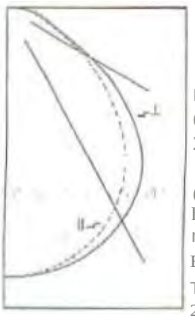
Test Report:
2GC1332APAAiRPP£S

LER • FL-73

Veorty Cost or 1000 lumens,3000 hrs at .08 KWH • $3.29

I		-,-	Acto9Sl
0	2Aa	21U	1881
	2J7l	2J7t	
11	2U$	UIZ	2'840
20	260&	liWD	1587
to	2..Z	2457	ZOIZ
30	U44	ll37	2U3
35	2011	2171	Z?!!!
&4	, . ,	1185	1111
	-IHt	1121	18S1
u	n	1	ua
55	...!9!!	IIH	1VI
	IJ4		t61
IS		1M	
10	«1	nc	en
n	nc	251	381
eo	m	11t	1ac
85		123	179
10	0		

2GC8..J32A Condole



Ehoetronic B•lfast
(3) F032/3SK lamps
2800 lumens

(If) 1.2 ;c mounting height, (J) 1.3 x mounting height

Etrlclency 81.6%

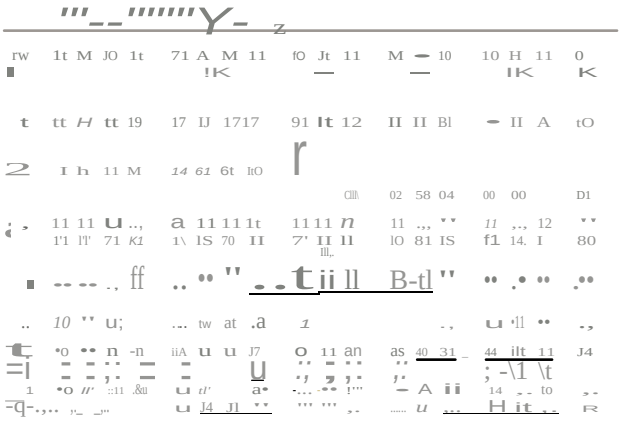
Test Report:
2GC8332A.IES

LEA-FL·69

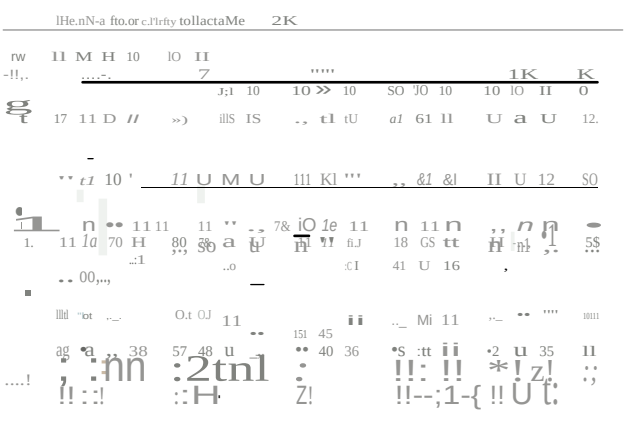
YnMIV Cost o1000 lumena,3000 hrs at .08 KWH • S3.46

1!	...		–J-
0	H.U	,.,,	
5	Z<>l4	lil28	2G34
IS	UIll	IM	2593
20	2481	2603	2$4t
25	2JS4	2417	....
-;0--	221•	n0-3	np
3S	?040		5
&o	tat	ttu	20tt
5S	10!!0	liM	1251
eo	114	161	teo
I	lOot	Mt	661
If	32'S	2..	34S
80	2CS	103	300
liS	142	125	178

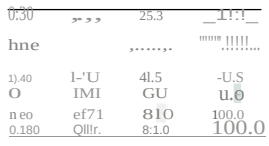
Coofllclonu of Utlllullon



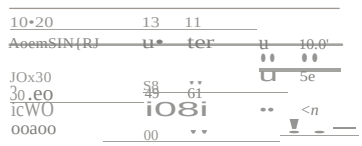
Coefllclonto o t Ut!llut!on



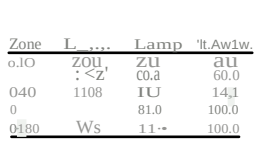
Zonal lumen SumMirY



Ty_ptcal VCP Perc•nt,• t••

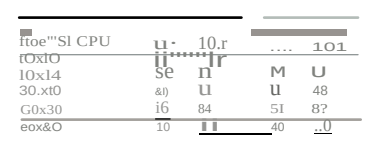


Zonal Lum•n Summary



Zone	L_ ,...	Lamp	'lt.Aw1w.
o.lO	zou	zu	au
	: <z'	C0.a	60.0
040	1108	IU	14.1
0		81.0	100.0
0180	Ws	11-•	100.0

Typlcol VCP Porcontogn

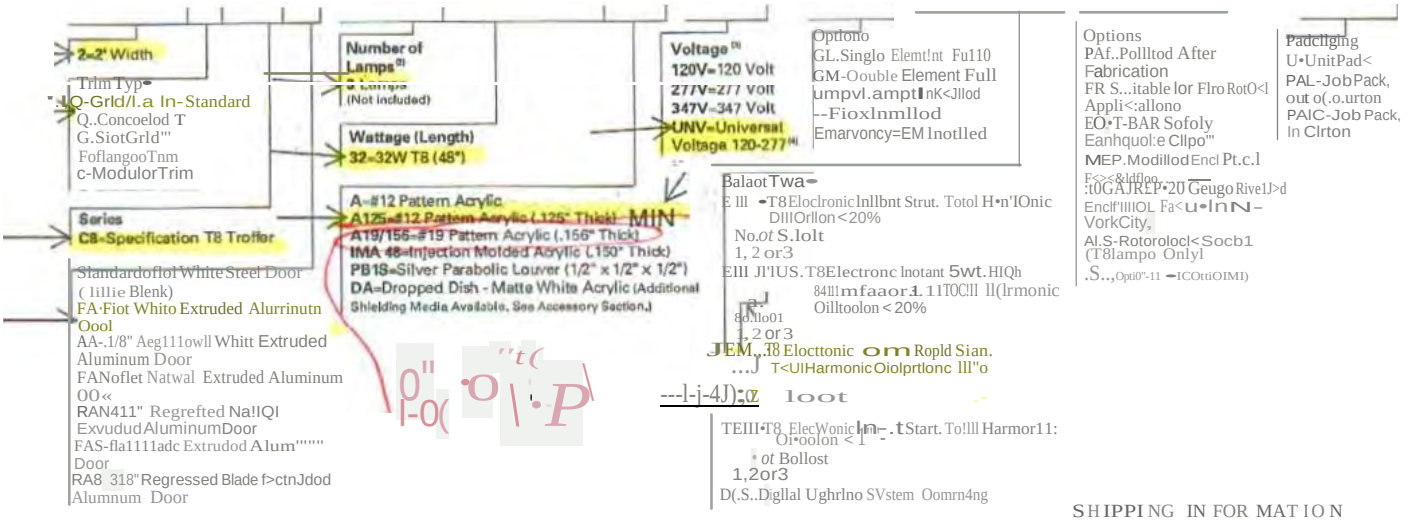


ftoe"'Sl CPU	u·	10.r	....	101
tOxtO				
10x14	se	n	M	U
30.xt0	&l)	u	u	48
G0x30	i6	84	5I	8?
eox&O	10		40	..0

ORDERIN G INFO RMATI ON

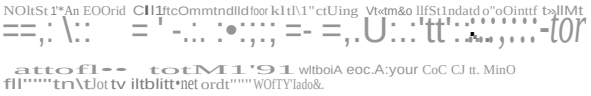
LSF032M/S41KtPS/EC0 LAMPS

SAM LE NUMBER: 2GC8·UZA·1ZOV·EIII·U



SHIPPING IN FOR MAT IO N

Catalog No,	Wt.
2GC8-332A	31lbs.



Visit our web site at www.coooerllahtlno.c:om

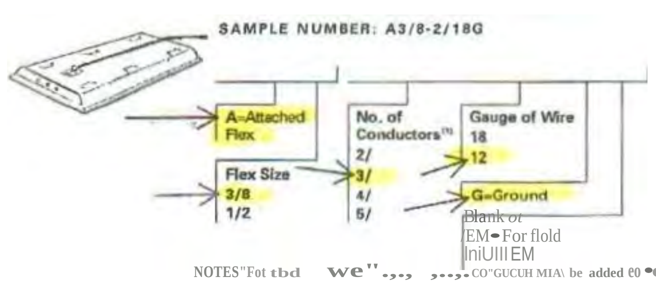
METALux- TYPEs: B3/B3G/B7/B7G CAT.#: A3/8-3/12G oPTioNs AND AccessoRies

PARABOLIC, RECESSED AND SURFACE

eLECTR ICAL	DESIGNATION	DESCRIPTION
Ballasts	LE3	Energy Saving Magnetic
	LEOCS	Energy Saving Magnetic (TS Lamp only)
	Z	0• Cold WeaU1er
	DIM	Dimming
	Electronic	Electronic
101her ball.ur optlo,.avall3blo, co,.u p, , Saleo Tothn..,AI Support.1 Lamp $k.e Z..T12 S.TB 6-BieK TS T-UnoorTS	':-No:-.0 a=-a"""llool:ll 1 or2 TEBTT U,,..., s a S.T8 S.Biax T5 T-UnearTS ',..-:-or=a;:....... 1or2	Generic Electronic Ballast (For specific Electronic Ballast specify brand and Catalog number) EB Ballast total harmonic distortion< 20% TEB Ballast total harmonic distortion< 10%
Emergency Lighting	EL4 2'-4' RS, SL, and Compact	Self-contained, operotos one lamp at emergency levels for 90 minutes upon power loss (120V or 277V). Luminaire will be labeled "For Dry Locations Only.•
	ELB 2'-8' RS, Sl, HO, VHO & Compact	Self-contained, operates one lamp at emergency levels for 90 minutes (6'-8') or 120 min.(2'-4') upon power loss (120V or 277V). Luminaire will be labeled "For Dry Locstions Only•
	EL5	Self-contained, operates one lamp at emergency levels for 90 minutes (6'-8') or 120 min.(2'-4') upon power loss (120V or 277V). Luminaire will be lebeled "For Dry Locationo Only.•
Fusing (Internet or Extornoll ,..4.])	Gl	Single Element Fuse
	GM	Double Element Fuse
Radio Interference Suppressor _-tr	89G-635 (Suppressor-GEI	Inductive capacitor circuit to minimize Interference from line radiation or feedback.
	RIF-1 (Suppressor-Advance)	
Night Lights	INL	Incandescent night light (Up to 40 WatVf6-120 V Intermediate base lampl
	Pl	Compact lamp fluorescent night light (5,7,9 or 13 Watt lamp, specify voltage 120V or 277V) Example: PL-13/120V

WIRING

ORDERING INFORMATION



NOTES"Fot tbd we".,., ,..,. CO"GUCUH MIA\ be added e0 •OCO hoe.._.to n,.,.

3" factory prawired Flex wired into fixture oecess plate. Various wire gauges end number of wires evailable. 6' lengths.

The Flex set consists of the following:

- one wago connector per wire
  6 feet or stool flex
  18 gaugo TFN wire, 7 ft. leads, expoaing 6" out of eoeh end
  one 90 degree flex connector
- one straight-in nex connector
  one access plate

Master/Satellite

Labor Saving tandem wiring system. Instelletlon and energy efficient. (See Master/Satellite Concept pega or consult Pre Sales Technical Support for additional information.)

Modular Wiring Systems

_ c

Component wiring system, provides cost and labor saving alternative to conventional hardwirlng. Uses Interchangeable modular components. Offers portability and versatility In lighting configurations. (See MWS Section or consult Pre Sales Technical Support for additional ordering information.)

METALUX-

DESCRIP TI ON

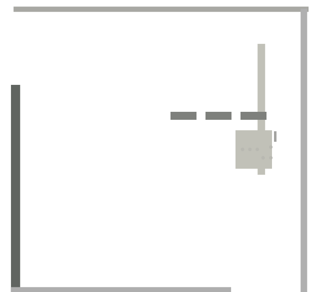
GC8 Is a premium grade specification lensed troffer sarles. This innovative, high quality luminaire is dedicated to the latest T8 lamp and micro electronic ballast technology for optimal performance and energy efficiency. The GC8 is compatible wth all of today's popular ceiling systems and Is available with a number of options and accessories for application versatility.

Ca!ilog	"2GC8FA-332A125MIN-AD-REZ3S32- LSF032M/841K/XPSIECO
Type	B3 _ DIM
D--;act	MT. AIRY SCHOOL-PK-8 SCHOOL
Comments	
Prepared by	Date

APP LICATIO N

The GC8 Series features efficiency, quality and performance. The series is an excellent choice for commercial office spaces, schools, hospitals or retail merchandising areas.

SPEC IFICATION FEATU RES



2GC8332

2' X 4' TROFFER
3 LAMP

Speciflcation T8 Troffor

A··Construc tlon

Rigid housing Is die formed of code gauge prime cold rolled steel and features full length die-formed stiffeners for added strength. Side flongos are hemmed. Innovative design provides superior lens brightness uniformity and visual comfort. Micro ballast cover"- - reduces ballst shadow for superior lens brightness uniformity and Is easily removed without tools. Die formed captive lampholder brackets fully enclose 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.

a..-Eiactrlcal

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

C.. f!l nlah

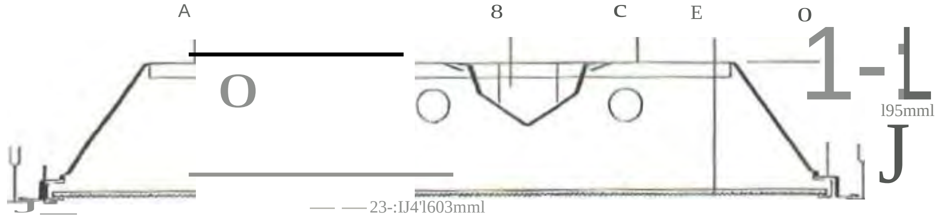
Multistage, iron phosphato pretreatment ensures mBXimum bonding and rust inhibition. Housing and ballast cover finished with new 90% reflective white enamel for superior performance. "PAF" Painted After Fabrication option also available.

D... Hlng In g/Latc h lng

Positive cam action spring loaded steellalehes with bakod white enamel finish. Safety-loci< T-hinges allow hinging and latchlng either side.

e...f!ram a/Shla ldl no

Die formed, heavy gauge, 0at steel door with reinforced mitered comers and ba ed white enamellinish. Fl at and regressed aluminum doors also available. Positive light seals. Light stabi&zed 100% virgin acrylic prismatic lens. Standard #12 pattern. Numerous additional shielding options available.



ENERGY DATA

Input Watte:
Ell tlootlast a. STO Lampo
33%1911

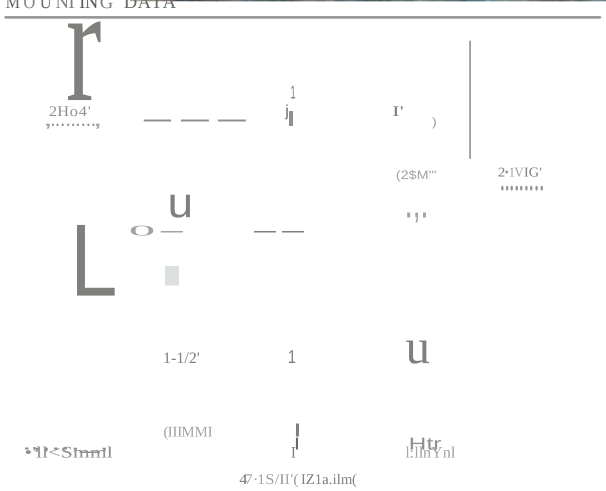
ES s.Host a. STD Lampo
33211061

Lumina Ire Efficacy Roling
LER Fl.-69
C.Wog Numb..- 2GC8-332A

Valrly Coot of 1000 lu•nona,
3000 hrs at .OS KWH •$3.46

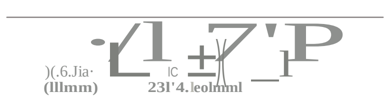
•ftttttM" Ce me dloc•.-. m.

MO UNTING DATA



DOOR FRAMES

LAMP CONFIGURATIONS



Ttchnkl•t S.cnan f0t apv.•fk la t.lut ••q\Attmenta.

•-ton tii llPrt$t14t TftiehnQI Slll'f"'t\. •••,"11 taod bIltIll co...r fw btu;... "-""• ar dtmt OCl(iOtl.

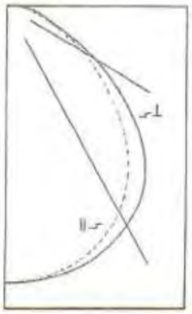
CE ILI NG COMPATIBI LITY

Q Grlci(Loy·in	G Conco•lo<IT	G SlotGrtd	F FtengeTrlm	C Modulor Trin	Cei'ng Ty	Trim Type
		or	SwlnvGates	SwlngGotn 1M -	lic IT ,,,"'	G
StMloord	– or		WithSupporting	With Supporting	IXD'O'fodOl"l\1	O a
					$1ooGnd Met.tPaft	F C

..,l'

WhoJ Ctl.("t.kqs. -f?x-lui£5 ttSPd -for . . ((JOYV'-:

PHOTOMETRICS



2GC8-332A-PAF
Elactronie Ballast
(3) F032/35K lamps
2800 lumens
Spacing criterion:
(II) 1.2 x mounting height (ll 1.3 x mounting height
Efficiency 83.0%
Test Report:
2GC8332APN'HRPPJES

AnP'•	AJOftoll	4&'	1
10	28<1	265>	2010
IS	2ses	2sn	V!<o
20	2504		n o1
2$	2l'f2	21 7	2512
30	21..,	2337	2413
as	ooo•	211s	noa
56	1m	14<1<	168i
80	83t	flU	t!$7
	1010	1188	me

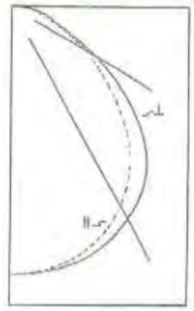
LERFl-71

lumens,3000 hrs ot | 70 | u1 | 3" | 497

Veafl y Cost or1000 | as | 011 | SSS | ss•

.08 KWH $3.29 | | 32< | 251 | 381

IS	131	12l	170
AO	238	199	29-4-
90	0	0	0



2GC8332A
Electronic Ballast
(31F032/35K lsrnp:1
2800 lumens
Spacing criterion:
(II) 1.2. x mounting height, (I) 1.3 x mounting height
Effldoncy 81.6%
Test Report:
2GC8332A.IES

Cand•l•

Ani!_	!olonoll	45'	AcrouJ.
0	203.&	26!4	tel<
	2524	2828	2634
10	2.593	2-606	2'G21
	2530	1566	25,3
	246!	2S03	2S42
'-6	7.'"4	2417	2460
30	2114-	U03	2371
35	20-tO	214tl	ZZ&3
40	1831	194<	Z099
<5	!57	1897	1872
		8U	040
		1«2	15t0
		11cs	tzsg

LER • FL-G9

lumens.3000 hrs at | 70 | | S! | <85

Voarly Cost of 1000 | G5 | G04 | 562 | et7

.08 KWH • $3.46 | 7 | | 2<8 | 38&

325			
90		⊙	⊙

Coefficient• of Utilization

Effective floOf' c•vttv' refl.etunc:e | 10-4 | ol4

Coefltclanta of U\ltlzatlon

Eff.-ttve Uooruvtty r._netw1C• 2.K | eol' | 70% | 00% | JK | lOll | 0%.

[illegible]

Zonal Luman Summery

Zone	lumem	Lamp	%fixturw
0-!0	2124	25.3	:IU
0-(0	3(84	41.5	49.9
0.eo	ue t	et.a	a.&.0
0.,9Q	n1s	el:o	1000
0-180	6!175	83.0	100.0

Typlcol VCP Porcontogos

Room Sl.J:elft.•	HMght .t.fong u•	10.0'	Hetgh1 Acron 1.5'	10.cr
20 X20	53	$1	80	64
3(1 x30	54	31	S5	58
)(1 X aQ	It	62	.&(	47
10x30	80	83	51	1112
aoxao	.O	&3		

onDl Lumen Summary

	Lunwnt	tiUmp	1(.ftd
0-:10	7088	2U	30.S
0.(0	3t29	tO.!	5!>.0
0-10	6J88	11.7	U.1
0-90	GISS	81.6	100.0

Typical VCP Perctntagu

Room Sla tft.J	Along 8.5'	10.0'	Height Aero•• u•	t0.0•
10 X20	0<	89	G1G5	
30x30	58	62		
lOx 50	d	52	'iT""'4i	
tox30		St		

essed

rrREZ3;BA s;pr:ao

F0321PS/ECO LAMPS \ (....

A.Jlc(..-

ORDERING INFORMATION

SAMPLE NUMBE R: 2GC 8-332A-t 20 V-EB81 -U

2-2' Width

Tr-imTypo
_.;}-Q..Grid/lav-•n – St-11,._rd
O.Conc:eelod T
G-Siot Grid'"
F-FiangeTrim
C.ModulorTrim

Series
C8–Specification T8 Troffer

Stondard•Fiet WhiteSteelDoCC'
(Loi\IC Slankl
FA..flat Whto Extruded Auf)inum
!X>0<
RA•3/8'Reg Vo!iOd WIlta Extruded Aluninum Door
FAN-Fiot Nature! E>ctruclod A minum OoCC'
RAN-318" Regrested Natt r8l E>ctrudad Aluminum Doar
FAB:Fiat Blaol< E><lruded Aluninum t)<)C(
RAS..:J/8" Regmued Slack ExtrUded

Number of Lamps
3 Lamps
(Not included)

Wattage (Length)
32–32W T8 (48")

A=#12 Pattern Acrylic
A125;;r12 Po«am Acrylic 1 125" Thlckl MIN
A19/166-M19 Partom Aayllc t.1S6" Thick)
IMA 48–tnjfM."lil)n MnlriAtt Ar.ylle f.Hr.0• Thldd
P81SaSIlver Partbollc Louver (1/l' x 112• x 1/2"1
DA=Dropped Dish Mono White lc l\ddlrionol
Shloklng Mtdl.t Av1HJble.Sot Acca..ory StotloftJ

Voltage••
120V•120 Volt
277V-277 \loll
34711-347 Volt
UNV•Unlvors•l
Voi!Dge 120-277"'

Options
Ql.Singla ElementFuse
GM2Doublo Element Fuse
t..mp.. LomptinNllod
FIB Aoxl nstaned
Emergency•EMl nstaUed

Billott Type.'''
EB8 •18 Electronic tnstan!Stznt.Tolll lHormonic Dlstortfon<2<m
o.o!Bollolt
1.Zor3
E88 JPWS.18Ei<lctronlc inS\811\Start. High Bah•t Fector>1.1lTotal Ho!lll011ic Distortion< 20%
o.of Ballast
1,2or3

Aluninum Ooor

Options
PAf>.Pointed Aftor Fabrlc4tlon
FII..Suitshla l<l'Fi"'Rotwd Applications
EO..T-BAR S.loty Earthquob! Clips,.
MEP–Modifled End Ploto/
f'<>tEnd FIIW Appleallont
20GAJREP 20 Gauge Rlvellld Endplltllls. For m. .ln Now York City.
Rl.S•R.otor Lock Socko! 11ijJ..!!mps Onl)'l
l$_.opttoM & tteus.ortllltt

Packaging
u.UnitPack
PAL-Job f'llck.
olt ofc.!lrton
PALe-Job Pack. incarton

NOTES: uAnEQ Gt1dCUp It roCOt'l'In'Htnd•d tot ttlWIS"' c•mnu ...,_u.tna. Stendatd off !'Mr blin•t wmp.anment ot\ l-tafixwrtn.. Cllp,odUCU aiJO.vallabl• In non-tJS

vofttOt.t and frtquenc:let fot lnll'tn•tk)ntl marteta. Not •wl14ble w'heon aped emtrotl'lo1.flt, voDgt "'un be tpttC.

S ItleatfoM & dimension•sutiocltto o.lw'loa w hout nocfct. Consvtl yO>.((CooperUottdna "'..,..nwtlvt f01evtl&.bility ond-. rdarlnr;nfonnetf.on..

ERB 18 Eloelrone Pregn rn Rdpld Slurt.
Toto! Hatmoric Distortion< 10%
.oiBallut
or3
TEB8 T8 Electronic ln91llnt Slllrt. Total Harmonic
Oi.tunlon < 10%
of . Bollo•J
or3
Dsl-Dighnl Ughtlng SySiam Dlnming

SH IPP ING INFORMATION

Catal og No.	Wt.
2GC8-332A	31 lbo.

5

filii

Visit our web site at www.cooperlighting.com

METALux-

DESCRIPTIO N

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 tech-

perforated direct lamp shield with a crossblade baffle to provide optimum brightness control. All components are located above the ceiling

Carefully balanced design elements combine to provide an efficient and exciting alternative to traditional general lighting.

Catalog 112RDI-332APffBW-UNV-LSF032M/ IVPe
!l!ll KIXESIEQQ-!;Bf!2-8 3l6- Il2G
87/ B7G

Project
MT. AIRY SCHOOL- PK-8 SCHOOL

Commonts

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, rec-eption areas, retail stores, libraries, open offices. airports, classrooms, banks, restaurants, corridors and many other commercial applications.

SPECIFICATION FEATURE E:;S:;

A ··Conatruction

Nominal S• deep housing is die formed of code gauge, prfme 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···Eiectrlce l °

Ballasts are CBM/ETL Class Hp• and are positively secured. Biax models use 2G11 base lampholders with double edge wiping 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···Bellaat Acceaa

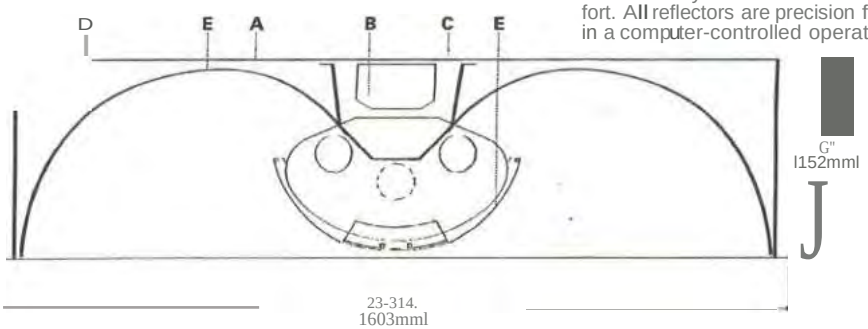
Ballast can be removed from below without tools or from above using the unique ballast mounting/access plate.'

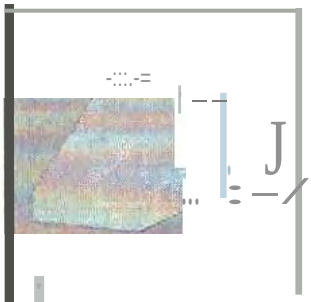
D··· Finish

Painted after fabrication. Electrostatically applied baked white polyester powder enamel finish. Multistage cleaning cycle, iron phos-Ph!lte coating with rust Inhibitor.

E···Reflectora

Indirect reflector has high reflectance baked matte white enamel finish for luminous uniformity. Positively retained direct lamp shield dls constructed of heavy gauge perforated steel and lateral crossblade baffle available in white, semi-specular or specular finish. Shields are combined with a high reflectance painted after fabrication finish and milky white overlay diffuser for visual comfort. All reflectors are precision formed in a computer-controlled operation.





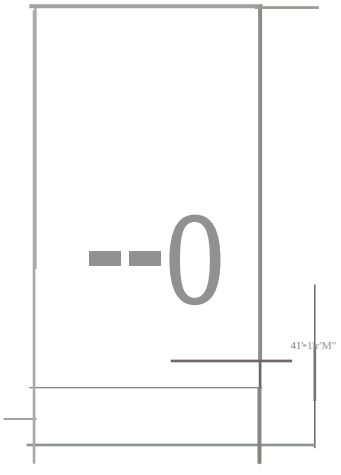
2RDI132
232
332
T1BX40
T2BX40
T3BX40

T8 OR BIAXIAL LAMPS

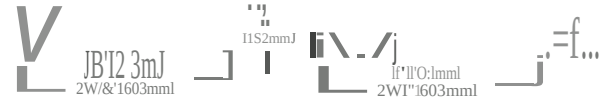
2' X 4' Reeessed
Ofrec;l/Indlreot
Center-Mount
Louvered Basket

-vafion™

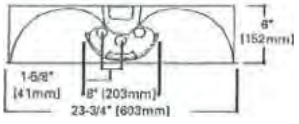
MOUNTINO DATA



LAMP CONFIOURATIONS



to&ammJ



--...j--=8't!;(2 ;;§ ml+--_J
2'1603mml

ENER GY DATA

InputWatlll:

EB Ballast & STO Lamps
132 132)
232161)
3321911
T1BX40 1701
T2BX40 (140)
T3BX40 1210)
T1BXGO (1001
T2BX50 (2121
T3BX50 (318)
T1BX5S11101
T2BX55 12201
T3BX55 13301

ES Bollnt & ST0 Lamps
132 (38)
232 (711

ST0 Ballut & STD Lamps
T1BX40 1821

T3BX40 1246)

lumfnaire Efficacy Rating

1

1

5

2

1

1

\

m

l

1

2
)
.
3
W
I
6
0
3
m
m
l

C
E

I

L
I
N
G

C
O
M
P
A
T
I
B
I
L
I
T
Y

Itt

8IAX MOO&l

T8 MODEl

C.ID•g Type••

Trim Type

O Grid/lay-in

T Slot Grid

F OrywaU

g Numb•r.2RDI-232RPITIIW

Yoorl'(Cost of 1000 lumo•••-
3000 hrs at .08 KWH = $1.75

·Rtf•rtnc+ the t.rnPib•ll••t d.a rn t.h• T..-:hnkal S1;ctlon for sptcUle l•mp,.Jtut r.c;ulrementa.

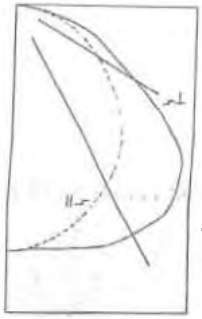
••eon.urt Pte S•l=• Ta-ct.nlcaSuppon.

•••S''Orvwatt;,,me Kit Aaenorv

S7tnm/

lh'-1/J

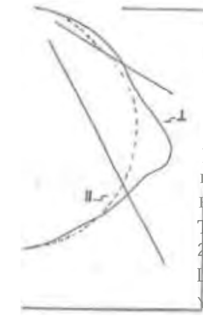
PHOTOMETRICS



2ROI-232RPrrBW
Electronic Ballaat
(2) 3'1W T8 lamps
2850 lumens
Spacing criterion:
(II) 1.2 X mountmg height (J.I 1.6 X mounting height
Efficiency 71.4%
Test Report:
2RDI232RP-TBW.IES
l.ER • FL64
Yearly Cost of 1000 lumens, 3000 h11 ut .08 KWH$ 3.75

Candela

0	lle1	1281	IZOI
10	mt	11.a	1"""
40	878	1073	lI2t
CS	788	1002	12u
50	as1	tn	11•1
SS	5!13	108	
10	417	e(IO	711
iS	41!2		5511
1o	213	2s.	
10	121	1&2.	180
n	0Z	S1	e0
90	0		



2RDI·232RP/PLI
Elecuonic Ballast
(21 32W TS lamps
2850 lumens
Spacing criterion:
(II) 1.2 x mounting height, C.IJ 1.3x mounling height
Efficiency 58,1%
Test Report
2RDI232RP-PU.IES
LER • Fl52
Yearly Cost of 1000 tument, 3000 hra at .08 KWH a $4.61

C1ndel1

0	1185	1165	
I	11'1	1161	1111
10	UJ7	1111	1121
15	1107	1092	1M2
20	11168	IOGI	1071
40	11&	8SI	1003
	730	831	!I&Z
&0		711	
IS'	5"		687
$0	411	504	!511
65	t91	391	Ut
7S	ISS	I'OI	2>0
		IU	125
	37		60

Coefflc:lanu ol Utilization

Efftcttw Root uvtl:y tefltrtta

[illegible]

Coafflclantt of Urll tutlon

EftHtJw RoOf nvtty reflktance

[illegible]

Zonal Lumen Summary

Z	IMnMM	'IIL!np	'IIF!ortlft
	1021	ItJ)	25.2
-0	171	3D.I	42.1
HO	3'21t	!5l.1	19.0
	4011	'u	100.0
..110	.a?I	1t.A	10G.O

Typlul VCP l'aro antagn

RoOf'ftlll• | 1.5' | 10.0'
HMQhc rou

toxJO 17 71
eo.so 11
SOIC$0

Zonal Luman Summary

Typical VCP Porc:ant1pu

0-40 | 1,0
010 | ZNI | 46.1
| l312 | | 10ii'

20.20 | 13 | 78
30x3o
SOxJO
tox!O

ORDERING INFORMATION

LSF032M/S41Kfi,PS/ECO LAMPS

SAMPLE NUMBER: ZROI - UZAP/TBW-120V-EB51-U

2 - 2' Width

Ovation Series
RDI=Recessed Direct/Indirect

Trim Type
Leave Blank=Grid/Lay-in (Standard)
Blank .cen... mounbld (SI-'dO<cl)

Numbe< ol Lamps
NOIInCI o. ded)
1·1.lamp
Z.2 Lanlp
3 Jump
'2 4'
Flldu,.with On• Blax lame> ot Each End
'2·2'x4'
Flldurl with Two Blax Lampaat Coot\ G:ttl
'D.2'x4'
Fbclu,.wnh TlvuBiox Lompaat E8ChEnd

Lamp Sftleld
RI'(T8W-Aound Palfom..S WhiiD Steel "Thin Blodo Wh,)ll Bailie"
RI'/PU-Round Perfora!ad Whilll Steel W/Semi-Spocular Parebo41c 8alfte"
RP/PLNI-Aound Perforated WM11 Steel Vo(Specul8r Par bo4lc Ballla"

Voltage•
120V·120 Volt
rnv-zn Vott
347V·347 Volt
UNV-Unlvo,...,l llohO!!I• 12().277

Optlono
Gt...slnglo Element Fuse
GM·Oo<bl8 E1-1
La"""..U""'s lnSIIIIad
Fl8l<=FIIIC lnstalled
Emero•ncv-EM ln••llod

wen.oa !Langthl
32-<3T8 (o\8"1
BX-OW Bla>< (21"1
exso.60W ar... tza·r"
8X55-6W Biax !24"Y

WaatlYP•"
Bllnt.Soendard Megnetic Ballast («MM BlaK onlyt
EB8 -T8e-.nlc ln10nt S|31L Tolal Hatmonic Oclo<lion < 20% ol Ballast 1, 2or3
WS•T8 Ellctru>io ln•ant SIIIL High Salta•f8Cior >1.1!1. Touot Hormonlc OISionlon < 20!(, Ballast 1, 2or3
ER1 -T8 Boc:tronlc Pmgnom Aopld SUIL
EB -Totll Hormor>c o.ort.on < 10% o.ol Ballilst 1, 2or3
•T8 Eleclronlc tnltllrt SuiiL Touot Horrronlc Distortion< 10% ol Ballo$\ or3
E85 •T5 Bia><Eloclronio lnaarrt St11tl. Total Har'-licOitronlon <20% oiBalllst or3
TEBS T5 BlA><Electronlc lnlShlllRI Ibtll Hotmonie O-nion < 10%
No. Of BaiiHl 1. or3
DL.So0lgil31 Ugh!lng Syst.m Dimming

Optio,..
•R&doo lntorloronce Suppressor
EQ.CIIpoO.T-B•EQ Clip (Order lndNicluollv M
Use Four Pot fi)(lure.)
DF-24-W•Drvwall Fume Kit IOrder Individually as Accenory.l REP-RMJted Endllf•te. for use ln New York City.
ST•Semt-Specultr Tonnenboum Main olloctor
l.SColamp Shield Cablo
Rt.s-Rc>torol.odt Socket
CT8 Lampo Onlyl

Podr:aglng Rlfl
U•Unit Pack
PALe-Job
Podt. In carton

SHIPPING INFORMATION

Cauolog No.	Wt.
2ADI•132ff>/!BW	301bt.
2ROI-232ff>(!'BW	301bs.

NOTES 1.12' •2'end 2'a,.C.nwr t..amp Shleld modth ontyOtPtOdu.ctJ al•o tvl ble in non-US volt•
..and freqanoiec tot l\ttrn•tiofllll"

Fof complitft ,.,.,IM'liNctihut.A..otuuM Spd'c:edon S a n-'01\t tvbfect to c.hlll\01without nV'lice, CoMUtt '1"0\fr CoOJ.I"LljJ'!Mg RapttNI\tJ'M for ewlabllrry tnd ord'CJ,.. $''f lftform•don.

2RDI-332R'/TBW	301b8.
2ROI-TIBX40/TBW	31 lbo.
ZRDI-T2BX•OITBW	31 1bo.
2ROI-'IJBX40/TBW	31 lbs.

METALux-

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 a perforated direct lamp ahlold with a crossblade baffle 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 traditionalgenerallighting.

Co1iiogII 2R01·2BX40RP/TBW-UN V-ER51- ym
A3/8-2/12G
Project MT. AIRY SCHOOL- PK-8 SCHOOL
B8
Comments
Prepared by Date

APPLICATION

Ovation is a serlea or high performance luminaires designed for a variety of architecturalapplications.Ovation is en excellent choice for private offices,conference rooms,reception ereos,retelllstores,libraries,open offteas,airports,classrooms.banks,restaurants,corridors and many other commercialapplications.

SPECIFICATION FEATURES

A ···Construotlon

Nominal6" deep housing Is die formed of code gauge,prime cold rolled siBel. 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 rCNV wiring.large access plate for supply connection.

B ···Eioctrlc•l *

Ballasts are CBM/ETL Class •p• and are positivelly secured.Biax models use 2G11 base lampholders with double edge wiping action pressure lock contacts and vertically oriented lamp support chps. T8 models use rotor·lock lampholders for positive lamp retention.UL/CUL listed. Suitable for damp locations.

C ···Ballaat Acoeaa

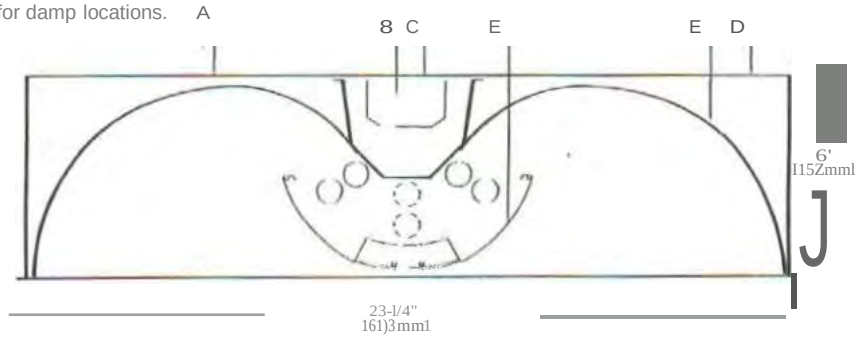
Ballast can be removed from beiCNV without tools or from above using the unique ballast mounting/access plate.'

D ···Finiah

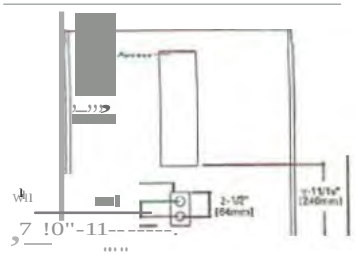
Painted after fabrication. Electrostati<:< lly oppliod baked white polyester powder enamelfinish. Multistage cleaning cycle, iron phosphate coating with rust inhibitor.

E ···Roflootora

Indirect reflector has high reflectance baked matte white enamelfinish for luminous unifonmity.A positively retained direct lamp shield Is constructed of heavy gaugo perforated stoelend lateralcrossblade baffle available in white,semi-specular or specular finish. Shields are combined with a high reflectance painted after fabrication finish and milky white overlay diffuser for visualcomfort. All reflectors are precision formed in e computer-controlled operation.



MOUNTING DAT4



23-tt4"11103mtnl

rttolmml
rJ.a/4"11103tnml

LAMP CONFIGURATIONS

ruoJtnm

C1Slmm1

2RDI1BX40
2BX40
3BX40
117
217
317

BIAXIAL OR T8 LAMPS

2' X 2' Recessed Direct/Indirect Center·Mount Louvered Basket

<i:Jvatian

ENERGY DATA

Input Wans:

EB Balleot &STD lAmpo
18X40 (43)
2BX40 1871
3BX40 (102)
1BX501541
28)(110 1106)
3BXSO 1160)
IBXSS tl>91
2BX55 (117)
38)(55(1761
117 (181

117 1341

317(541

ES Ballut a.sro Lampo
1171231
217 (45)
3171681
STO Illlast &STO lAmps

IIAXMOOC.
/lri2Z•"""1K.0.l11

Z3-ll"'

nMOO&I.
718" !Uflwn1 K.O(II

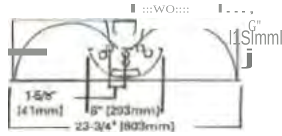
fle1mm l

lu/lli.j

Z:J.l/<'lto:lmml

234'4 I03IW'I\I

lWWitalmml



CE I LING COMPATIBILITY

O
Grl4'Uv-!n
Stondwd

T
SlotGrid

F
Oryw 1
101

c.;nng
b;por..SGrld

Trim
Typ!
O

Conot-

or

8lo1Grid G T

•'-d f G or T

1BX40 14G)
28X40 1821
3BX40 (1281

Lumln•lre Efficacy Ratlno
LER a fl54
C.Utlog NumiMH: 21101-
2BX.o!IP(TBW

Y•erly Cost of 1000 1umant.

3000 hrs •t .08 KWH • 14.48

-fertnce tM a..te.t•1ft th•

T.clWc:tl S.Cconlot .,_tflc
ftqulrtmtMI..
••Con.ulllfftS....,T at SwpPCHt.

•••s.t F111me KA AcuttOfy

PHOTOMETRICS.

2RDI·217RP/TBW
Eloctronic Ballast
(21 17W T8 lamps
1350 lumens
Spacing orltllrlon:
(II) 1.2 x mounting height, W 1.6 x mounting height
Efllclency 65.9%
Test Report:
2RDI217RP-TBWIES
LER • Fl49
Yearly Cost of 1000 lumens.3000 hra at .08 KWH •$4.90

Candela			
0	,_71	A<n"J. s'r's	S'n
10	170 s.a	513	110
11	140	SSS	m
35	us	SO• 62	103 101
40	U4	478	
,5			n•
50	111	.01	
SS	2	JSI	
e0	101	2t2	JC•
10	1n	1os	m
rs	n	101	
10	41	...	08
85	21	27	26
t0	0	0	0

RDJ. BX40RP/TBW
Eloctronic B llast
(2) 40W lamps
3150 lumens
Spacing criterion:
(II) 1.2 "mounting height, W 1.5 x mounting belght
Efficiency 67.6%
TQst Report:
2RDI 2BX40RP·TBW.IES
LER • Fl54
Yearly Cost of 1000 lumen1.3000 hra at .08 KWH•$'-48

Condole			
	AIOftl	W	._,o•J.
0	1351	1 1	111fl
10	I)U	1331	13U
1S	1214	ISO!!	1385
20	ln1	1288	1J71
25	115.&	1215	
30	1011	1	
35	100rt	1185	11,.
		11\t	
		1Olt	1!14
50	712	8]9	I'''
$S	101		1011
&0	4H	705	
&S	m	sn	1:11
70	2N	401	414
/6	201	282	211
eo	111	100	119
liS	10		
	0	0	0

Coofllolonto of Utlllutlon

Coofllolonto o1 Utlll

[illegible]

Zon•l Lumen Summ•ry

Z.ON	lum•,.	'''Lamp	"A:tnure
0-30		11,	26.0
NO	lt28	6t.8	10.2
1).40	710		u..
NO		64l	loOT
0.110	,n1	ss.§	–uiO.O

Typ lcol VCP Porco nugu

Room	W.lght Aloog		•1Qh1Atlt0
IO•:tO	11		i81i
lhiO	55		
J0xJ0	87	70	n
I0xl0	10	71	11
l0xG0	H	H	$2 11

Zonal Lumon Summary

	lum	,.l!rtlp	
0.30	1a.J	11.3	Zb.G
0.40	1121	UJI	.U--
	3'*	U.l	7U
	4HO	tl.I	100.0
0.teo	•itO	n.e	100.0

I VCP Peruntag u

l'•ml!uf,t.1	H•lohl Aiono	Helgh\ lkfoM
!2.3..Z9.	100'	100'
	4.5	
10•:10		
ih'ii	10	-r-ei
10•:10		
50x50	41	

ER51 •T5 BIAX ELECTRONIC-PROGRAM RAPID START, TOTAL HARMONIC DISTORTION <10%

ORDERIN G INFORMATIO N

SAMPLE NUMiii\:2RDI=iaxToRP;TiW•120V·EI&1·U

tlloga
«en¢1
1
17·17
WT8
124•t
BX40-
40W
Bild2

4'1
axso-
sow
Blax
(24"1'"

W

--..,.J ....,

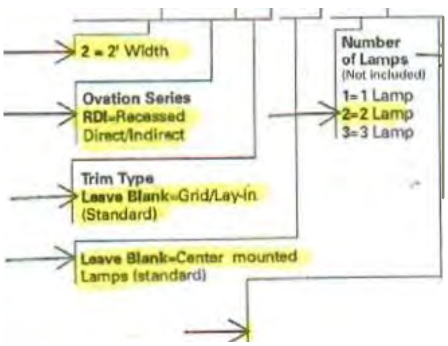
lAomp Shlold
RI'/TBW-Round Porfo,.tod
Whllo Slooi\1\(Thln Blodo
Wh1ta earne"
RI'II'U-Round Parloratld
Wh'leSteei I- Sp«:Ut. P.,abolic Baffle"' IU'/PU111-
Aound Porforotod Whilll St•ol w!SJMO Iar Parabolic B<0
tno••

Vott.ga•
UOV•120 Vol\
271V-ZnVok
a.4 – •1 Vok
UNV.Unlvef'UI
\loltego 120-217

W... rypo"'
Blenk.Stondord Magnetic 8GIlut
(4fM/ 8iox onlyI
ESS •Til Bo<:tronic Instant Siart.
Tollll Harmor*l Oistortlan c
20%
No. of S.I.I.M.t. t. 2 or 3
ESS /PUIS-T8 Etoctronlc Inunt
Suort.
High OaRost
Factor>1.13. To !I
Hermonlc Olstortlon <
•of 20%
lut 2 or 3
RS •T8 Eleclronlc Program Rapid
Slllrt.
Tolll Hormonic Oistonion <
10%
NO.of B411aot
1. Zvr3
TEB8earor*ltnstanl Stlln. Total
Harmonic
Olstonlon <
tot'o

Optlont
RIF1-Radlo lntorforonco
Su pprel8or
EO-cllp-Uo-T-Btt EO Clip
(Order Individually u Al:ee5Sory.
Uoo Four Pw Flxtur•.l
Df.U.W.Dtywall Frame Kit
!Order Indlviduolly as Aceenory.l
REP..Riwtsd Enclploloo. lor use in
New York City.
ST..S.mi•Speculnr Tonnonbaum
Main Reflector
t..sc-l.Mnp Shield Olblo
RLS-Rotor.t.ock Sook
IT8 !.Amps Onlyl

Poc:Qglng
U.Unlt Pack
PALc.JoiJ
PaQic. In carton



BX5! 5W Biax 124"1"'

Optlorw
Gl.Single £lemont Fu••
GM..OO!blt E1aman1 full
Lomp - !Jimpa lnstatltd
Fl4x·A••inllbllod
Em•oncv•EM Installed

No.of B4llalt
1.2or3
E115 •T5 BtuElottronlc Ituunt Suon.
1l>ol Hormoric Oostoo1ion <
of 11311l111
or 3
EBS •T5 Blax Electrork lni!Bnt Start.
Total Hermoric Distortion < tO%
No. of 11111 1
1.2 or 3
O g''''' UghUng System Dimming

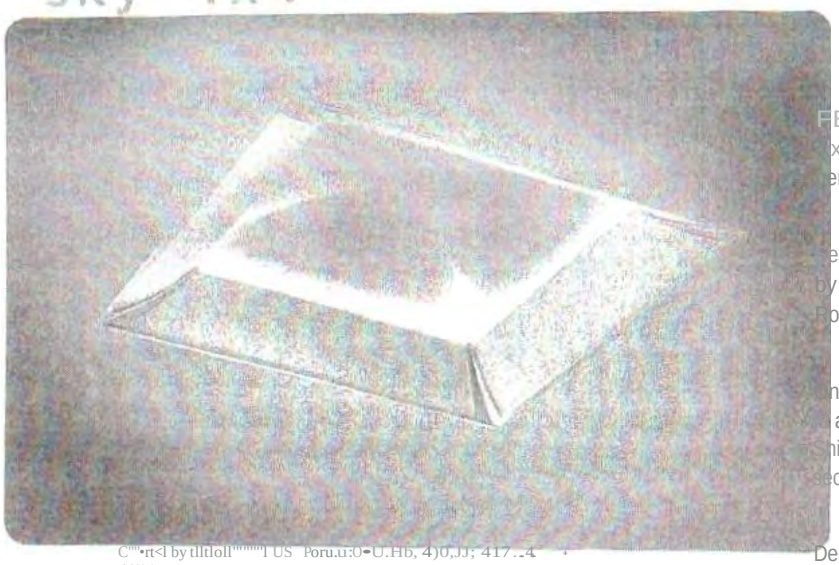
!'tOTeS?'"r "r 1ftd 1:' x •• c.nt., LanShWd MO<W•otltGtptod-"*-atto ..1.tl..1ft nO"to-U:J volt-
III"'•.._.hq •fOf in t!Of\at mar11;eU..
forl product dU.relltet'lllllllhe Spect'CihOft bn.r. 6: di __,..
tub)K'ttod\lftQtWIII'IotanoGoe.CoMU•yowCoopot UgM'"' R-.pr....-n,_f.ot 14<iabl"V 1!"1d
lneinformtlfon..

SHIPPING INFORMATION

Catalog No.	Wt.
2ROI-IBX4DRPITBW	191bo.
lROI-2BXoiOIIJ'/TBW	1911>1.
2ROI·3BX4DRP/TBW	191bl.
2RDI-1171f/TBW	19.Sibo.
2AOI-2171f'/TBW	19.5lb$.
2AOI 311AP/TBW	t9.5lbs.

sky™ 4x4

FOCAL POINT'



C'"•rt<l by tlltloll""""""l US Poru.tr:0•U.Hb, 4)0,JJ; 417..4 41'14

FEATURES

x4' recessed Indirect with four-sided erforated diffuser and domed reflector

eamless, one-piece reflector design inspired by quadripartite vault form seen in omanesque and Gothic architecture.

ne-piece four-sided perforated lamp shield attached with Focal Point's Cam Actuated hield Extension mechanism that en ures a ecure fit and provides easy lamp access.

Designed for easy Installation In any ceiling conditron Including grid & drywall.

Hlghreflectance,low glosMatte White finish controls glare and provides hl9h efficiency.

Sky..Is a truly unique IUmlnalre that makes a distinct Msthetlc statement in boardrooms, corridors,tobble<>,concourses or any open area.

DfME.ISIONAL DATA

.E;:-

I'

lamping options

TSITSHO LAMPS

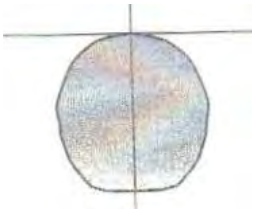
CJlm aetu.itld teldex Mlon mechanism'"

PERI='OP.M/\rJCE

4-LBmpTSHO

55.5'" EHocenq }b'IJ cd tt 0•

5Photometric •ect•on fo, •dO•t•onal pc·lo11nanu d.at•



ftxture type:B10

project name:MT. AIRY SCHOOL

DE TAIL 5

mounting

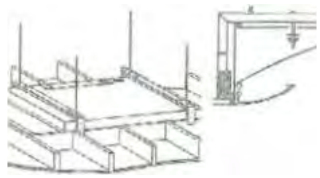
grtel

L ,t n•u•lre il'l'tUIlt tiJily Into mo-;1gTid ailinG (Cr'g UOnl ttcftrcnct roc.ar Po4f11 ltt""'<.tiort Strl-' ISOl'fl f0f' CO t ll4i

b ,h...,.........j. - ./' -- -::=:-!

flange/drywall

lurrtoattt al\0 IW II• lutodry.rall rtlll rondldOftlwllftu.te. lltftrf"'t• Fou- f'off'lt lnrtrvctlon ,.., I 150194 lo•CGI!Il)i<lcd<UII\



oo nr::o NG

lumlnalre series

Sky (FSK

nominal size __i4

4' JC4' '"f

distribution ____B

BI-Directional 8

lamp quantity 4

larnpo

8 lamp$ 8

lamp type T5HO

T T5

T!lHO T!>HO

ballast S

Electronic Progr>un St:art <10 THO S!>

ElectroniC OlmmlllQ B•llat D

IC""""tt IJctory for dii'lRllng a14n.bllhll

construction

<?77V;j,

SPF C!FICATIONS

On•-p i 20 Gl stetl reflector and hous ng.

fa• -pot<e 21(•:& Sll't' l)"rforated tamp """ld ""th carrel' e.tsl•t\9

Perforated Shield 1s attached with Focal Poont"Cm Actu led Shield Extemlon Mech'n,sm•• that allOW\ for asyl mp accm

Two p1ece II> Ga. wppo<l tJrackrts suppled fo• dryw.>llmcx.nt•ng

Top or botto111 at14 Ga. ah.mtnum ball sl compartment.

- t' l)lblo

voltage _2!!_.

'170't'Oft

277 .) d 1/

37 VOlt }47

((-omuft.Clary fo, ...fAD.,irt)

mounting _ _ 'J

Grid j) '7

:•Lumt..,J,.•"'.., 1411 0t.'!/slottu.l

C1llaut d!mtmloas:•a.ns• •S.J7S'

shielding

I'MIIr•led Shield PW

optic

::,eanllts.S ont'-Pi'!'<.e 20 Ga. steel q...-drip..ilfl•te efiKtor flni\h6d tn Mllltt- <..uln White poWder coat.

electriCdl

Option"' DA\..f •mi nlhr.. d,mm•nt;h:.allacts av=-u blflo

Ele<:tromc balhUI$ are Utcrru..arly p'ot.cc-led ,,,d h;he "(1411"4 "P" ratino.

Con.,Jit b<tory lor rilmomno Sl'f'l'INcations ar.d av••labod\y,

Ul and cUL hst•d.

factory Options ___

Chlcll<lO rlenum CP

II RIGI.R row FU ___

Emet110ncy S.IIM'y Pack CM ___

Incluclo JOOOK amp I O

Include 35001(Lamp Ll135

Include 4100K Lamp l841

S!!P"' lt Circuit SC ____

emergency

lnoti'l lunll!fl out1>11l for tamp type$ art as follows:

El"'!r!)Cncy b..tte• y paUi pro¥ide 'O monuof ilium;r.at•on.

TS tamps; Up to 500 lume

15HO Lamps: Up to a S lumens

a,ttery pKk requi"CS IIOSWitched hotlrom !..-lfllt branch c.-cul tAC ball st.

finish WH

Matte Satin White WH

flni h

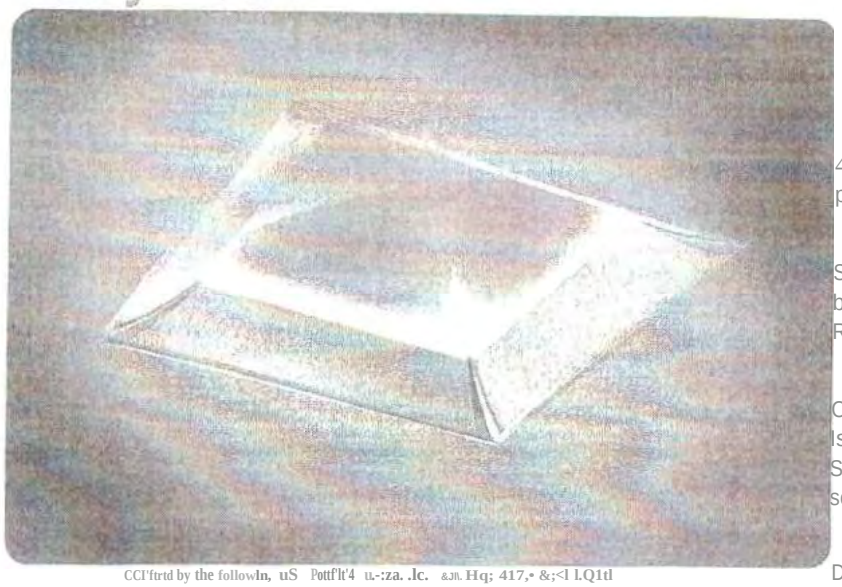
P..')'CSlCr powd"r Co.>t applitd CYtf' il;t.lgc rr!"-t!UU1 l.

Snrdard lumona•re housing fini>hed•Matte Sat.n Whitt.

n

sky™ 4x4

FOCAL POINT'



CCI'ftrtd by the followIn, uS Pottf'lt'4 u.-:za. .lc. &JII. Hq; 417,• &;<l l.Q1tl

4'x4' recessed indirect with four-sided perforated diffuser and domed reflector

Seamless, one-piece reflector design Inspired by quadripartite vault fonn seen In Romancsquc and Gothic architecture.

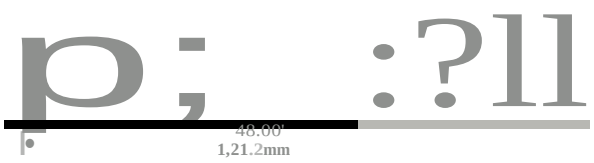
One-piece four-sided perforated lamp shield Is attached with Focal Point's Cam Actuated Shield Extension mechanism that ensures a secure fit and provides easy lamp access.

Designed for easy Installation in any ceiling condition Including grid & drywall.

High reflectance/ow gloss Matte White flnlsh controls glare and provides high efficiency.

Sky'" is a truly unique lumlnalre that makes a distinct aesthetic statement In boardrooms, corridors,lobbies,concourses or any open area.

DIMENSIONAL DATA



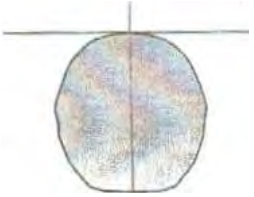
detail

camllCtuatltd thleld ••14ns;on mechanism'"

lamping options

T5/TSIIO LAMI>S

PEKFORMANCE



4-LampTSIIO
55.5.,. Elfoc;ency
36'H cd@ 0•

Seo! Photometric•on /o•
arld1t1onlptrfonnillCC .;lat.a.

fixture type:B10G

project name:MT. AIRY SCHOOL

OIHIE:RHJG

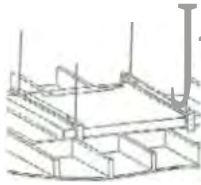
mounting

gr1d

Luonln•tf'!Aiie lly lnlo mo.l grid ctlllnq (.ONlrtio• Rtftrff\(f' roc:.l Pul1-l IIIUIV;tioo Shotl ISOl'U lor co ••r. w'l>

flang /drywall

lt mh•ll"l'C 1$0 IMt.'II hHO drywJU CeHi" cond• ont wllh••st R•t....,.-. FO<.ll Point """""""5h..:150194 fM<O""II!kd 'h.



Jt::

.... _'4'

j r k

S... 52

tuminalre series — Sky — ill

nominal size — 4' x 4' — 44 — 4!

4 Lamps — 4

distribution — e. Olrectlonal "'ll — 8

lamp quantity — 8 LampS — 8 — 4

tamp type — T5 — TS — T5HO — T5HO — T5HO

ballast — Elettronlc PrOgr:rm StArt <10% TliO — S — Electronic Dimming Ballast fKIOIY f<>r—'100411!11 — o — tc- — s

voltage — :tit — 26

C271/7 — 17

J4iVolt — 547

1"""\jtl1•toty f<>r ...,.alllfii00I

mo Gnd & — L

c•Lu i..,.alb M tDpo£1Wf" ....._l. — 9

Df.ywllltf.IPf\9" — p

Cutout dlmtntlo!w 48St 48.37S'

shielding — ...PC<'I\Itl\od SliTcld — f>Si:. — f§

factory options

Cluc81)0 Plenum — CP

HLR/GIR r...., — f'U

Emei'CjellCy S.ttery Pa — EM

Inclqlle 3000K.L&Ttp — l8gb

Inclllldt 35001< lomp — l835

Include 4100l< Lamp — L841

Separate Circuit — SC

finish — Matte Satl11 Whit<> — WH — WH

':. P CIFICATIONS

construction

Ont-p ece 20 G3 steel rflector and housing

Fou•-ptece 22 (.o..ste< l)el"oratlamp $11••'<l with comer casting

Perforated s 'eld is attc"hwith Focal Point's earn Actu4ted Sh•tld Extens;on Mechanism"' that allows for easy lamp a<Cts\

lWO'i>t&e lb Ga.support bracket• >uppl:for drywall mounting

Top or bottom acccs14 Ga. aluminum ballast comp3rtiMnL

v.e1ghl! 83 lbs

optic

Seamloot p•ece 20 G1 steel quedripartlle l'l!'l•rtor ftnished "' Matte Satin Wh•te tJ<Ncoat

electrical

Optmnal OAL l aod other dlrnmlno ua la>ts IY3ilable.

Electronte b.!•lasts are th•1'1N11y protect••d h<l•• c;r••s.. p• r3\1t>g

Consult f ctory for d•mlillf\9 specifications and 3Wilabllty

Ul. and cUL listed

emergency

Ey b.ltletr peCk> pro.idtO mlntrtn of tlluf'1·n t•on.

111111&1 lumon output lor l mp types •..., ''' I0II0I.YS:

151¥• - Up to 00 •umens

TSHO Lon1ps: Up to 825 lutnl'n\

Battery plcrecu1runswitched hot from .am!! b• llC:h C•n:u•t tlS AC b.111 1

r-te-

E:.rt:>

finish

Po >tc coal Pil'lrd-.a !hUll* p•e- — n — Uti'"Cnl Standatd

§.2

lumlnairhoor5mg finished In M'tt< Satin White.

METALux-

DESCRIPTION

The DIM Series is an energy efficient family of Industrials that feature premium performance and durability.The Industnal series incorporates heavy duty, embossed,renectors that precisely direct and effectivel y control light.The versatile DIM Series can be installed using various mounting methods and numerous options and accessories are available.

Catalog# DIMN-232-UNV-EA81	Type C1/ C1G
Project MT. AIRY SCHOOL- PK-8 SCHOOL	
Comments	
Prepared by	Date

APPLICATION

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

SPECIFICATION FEATURES

A..-Conatruction

Channel is code gauge prime cold rolled steel. Die formed with deep V-grooves for tong hanger. Die formed channel con-nector assures straight rows and continuity of ground through set screws.Lampholder moun ng brackets are easily inserted with snap-in action.

a...Electrical"

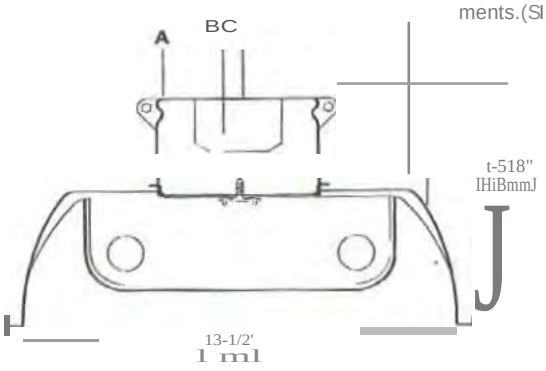
Ballast are CBM!Ell. Class •p• and positively secured by mounting bolts.Metal clad lam-pholders are spring loaded for turret safety. Ul.ICUL listed. Suitable for damp locations.

C...flnlah

Multistage iron phosphate pre-treatment ensures maJOmum bonding and rust inhibitor. Lighting grade, baked white enamelfinish.

o...Raflectora

Ole formed prime steel,code gauge.Deep draw full width ribs formed with one press stroke.Side flanges lend strength with upward turn. Easily cleaned. Baked white enamel13-1/2" width.Four foot soctions. Reftoctors secured by positive retaining screw. Reflector aligners provided. Standard with 200.4 upllght (DIM). C l osed top reflector (DCIM).Optionalindustrialfix-tures are available incorporat-Ing silver technology enhanoa-ments.(SIIverlining)

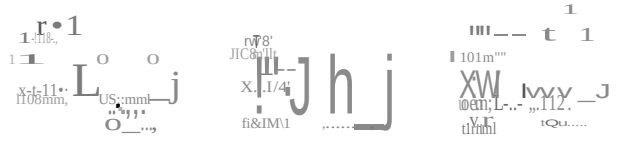


DIM240
232
340
332
440
432

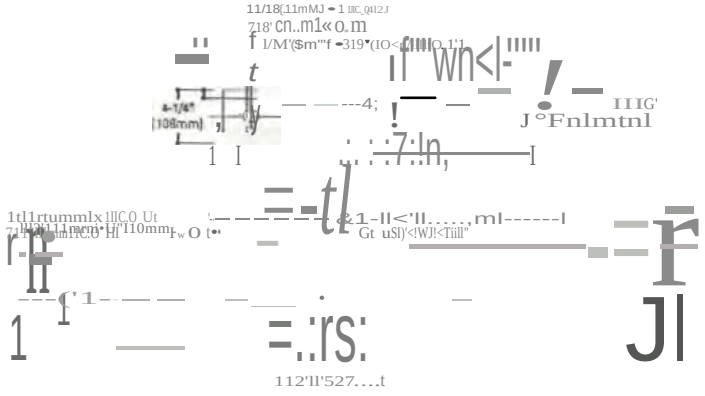
4' OR 8' INDUSTRIAL
2.S OR 4 LAMP

Heavy Duty Induatrlol

LAMP CON FIGURATIONS



MOUNTING DATA



ENERGY DATA

Input waas:
Jill lloUoft I< STO lom""
240 (72)
232 (011
340 11l0)
332 (ill
440 (144)
4321t221

ES a.n-& STO IJimps
240 (863
2321711
340 (tJS)
332 (10111
uo11n1
432114l)

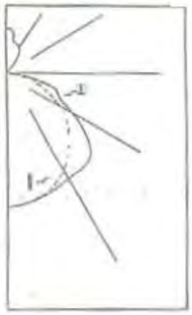
LumlnalroEffleacyRarin9
li!R = Fl-78
Catalog Number: OIM·232

Yearly Cost of 1000 lum11ns, 3000

'''''at.08KWH•13.08

TO<hnlcoltor-lamM>oll...
rtqul,.menta.

PHOTOMETRieS .



DIM-232

2S Electronic Ballast

F32T8/35K Lamps

2850 Lumens

Spacing criterion: (II) 1.3 x mounting height, (I) 1.4 x mounting height

Efficiency 90.8%

Test Report: DIM232.1ES

LER = FI-78

Yoarly Cost of 1000 lumens,3000 hrs at .08 KWH = $3.08

Coefficient• of Utilization

Effoctlvolloor cαofhoc:tllnoo

rc				70				20% 50'14			30%			10%			0'14
rw	70	60	30	10	70	50	30	10	50	30	10	80	30	10	50	80	10	0
RCR																		
0	105105105105100100100100	il	93						938680			80	79	79	79	78		
1	95	111	81	84	91	88	84	81	81	78	78	75	73	71	70	88	66	G4
2	87	79	73	68	83	78	71		11	'ee	82	68	62	59	61	58	55	53
379	70	62	87		711	87	61	55	62	57	52	56	53	50	64	50	47	u
									55	4!1	44	111	41!	42	48	44	40	38 4
	72 61	54	48		1!9 59	62	47		49	42	37	45	40	35	42	37	34	31
6	66	54	46	40	63	52	45	39	43	37	32	40	35	30	38	33	29	27
									39 25	32	28	38 23	31	2	6			34 29
	60 48	40	34		57	46	39	33										
7	55	43	35	29	53	42	34	29										
	51	3S	31	25	49	37	30		35	28	24	32	27	23	30	25	22	20
n	34	21	22		45	33	28	21	31	2G	20	29	23	19	27	22	19	17
10	43	31	24	19	41	30	23	19	28	22	18	28	21	17	25	20	16	15

Zonal Lumen Sun1mary

Zone	Lumens	%La!!E	..f'l:nl..
0.30	]018	J7tl!	19.6
0.40	1703	29.9	32.9
Q.IIO	3238	58JI	112.5
0.90	4330	76.0	83.7
80·180	UII	1U	16.3
0.180	6176	80.8	100.0

Candela

An!•	Along II	45'	AC<OM.1
0	1278	1278	1278
10	1258	1264	1288
20	1195	1214	1228
30	1092	1133	1180
40	i62	1039.	1174
50	781	972	
80	562	817	724
70	31!7	'72	553
80	157	751	138
90	15	30	21
100	31	6S	50
110	96	18	3S
120	169	45	20
130	240	140	S4
140	304	2▾▾	173
150	358	266	28S
160	398	36:9	311
170	424	426	– 420
180	434	434	434

u\C

5? wvfo

ORDERING INFORMATION

SAMPLE NUMBER: DIM - ZU·IZOV-Uil–U

Tandem
Blank=4' Length
8T=8' Length

Series
DIM= Apertured Reflector
DCIM= Closed Top Reflector

Lamp Spacing
Blank=Standard Spacing
N=Narrow Spacing for 2 Lamp Only (10% uplight)

Silver Reflector
SS= Silver-Lining Reflector ™

Number of Lamps
2, 3 or 4 Lamps (Not included)

Wattage (Length)
40=34/40W T12 (48")
32=32W T8 (48")

Vottagt ul
1ZOV=120 Volt
Z77V•277 Volt
347V-347 Volt
UNV·Unt...ore•l'-">IU.o• 1'"'-?'77JII

Options
GL=Single Element Fuse
GM=Double Element Fuse
Emergency=EM Installed

Balat1YJio,.
LDon 2 M.gn«ie EnorvvSevlno
LEOCS.TitM.1gnenc Energy Sov!no
E88 •T8 Bectronic In..,.nr Sta rt.
Tollll Hoon'>Onle Dlotortl'"' <20%
of Btllo>
or 3
UIS-T1l Elactronlc lr•nlll'tl Stell.
Hioh 8alatt faetor>1.13.Total
BaCi:.t Hotmonle Oanortion<20%
1,2or3
EAl.,.T1l Eled.ronl<: Progrwm Rapid s&rt
j To... Hermonic OIIIOr\ljln<1
No.of Btlla•1
1,2 Ot 1
TEBI •T1l Eloctrcrk lnstorc SUrrt.Total
Hoormc>rtko Ol_.lon c 1
N.,. of 8allt-trt
1,2orJ
Em.,.•IIZ tloctronlo flllpiU S1ro1.
No. of Btllaot
1 or 2

Optlo..
RIF1-Radio lnltofatenca Supp.e8Sor
WI''SJT-c&I'-615P..Cord & Plug (120VI
W/18SJT-c&r - L715P•Corcl & Plug (277VI
PI/CPlooPiugn Optron
TILW=random ln.t.Jno Wiring Option (Consult
TILW Opdon C.!Mog "-1101
POR-Porceltln Anlth
POXoPoriUK finish
CS.o opdonl & –OOriool

Packaging
U=Unit Pack
48=4 Bulk

ŋ.

ACCESSORIES

IOrdl!f S.paratelyl

A1B/Sptcor.t.J= Spacer 1·1/1'to 2 1/2' from ceiling (UM2par IlJttu,.l
ATG-4-Tong Hongor IU.o 2 por fiX1..,11
SCf•fiKod Stem So(Spadly Longthl
SCS-5wrvel Stem SeiiSpeeify Length)
SCA-AdJustable 43" Stem Set
AYC-Chaln/Sot-U•Choin Hor>ger Sot CUao 1 1101 par fi><turol
WG/OI-4FT-V'-Wl,.Guard
WOO/DI-4FT-U'oWlre Gym Guard
MEct.-01/RS-49-!/4-lMNtll Egg Craie Louver
MECt.DI/RS-99 1/2·U.Metel Egg Crate Louver
Dl2 ng Connoctor
CEPoClosod End Plate
tAdditlonll ''or+•• Av.n bl•.S.t option•l'Cl A<rc;•ttorln SacUonl.

NOTES u¹,.,oduca •t.to avalta.btt ln non--V3¥Otc.fu •Ad f.tq MIM for '''•MattOMI mat\to\t.'''Not •.,.,.,.,.,wh•n tptc' fvlno tmerQtnc:l1l.voltmu•t bt spedOc CltsiWtr IINI'Igoot .v..ablt on thct\lfUWhh MO,VHO or f'G
s.....-cetJont acf!m. to cM,..wtf'lo-.a ft91... your Coopt, 1.JohtfftQ Ft.p •M tot awbbUV and onhf'Int rtfotr'M1t0n..

SHIPPING INFORMATION

Cotalog No.	Wt.
DIM-232	151bs.
8TOIM2 2	30 lbs.
OIM-32	251bL
OIM-432	zs lbs.

9

Catalog #	C7226E-7251LIWF-HB26	—Type
Project	MT. AIRY SCHOOLPK-8SCHOOL	F1/F1G
Comments		- -:oiiiC- -
Prepared by		

Description

low bightness 7-318" apO'ture reflector for 1.80 wth (:!18W *a* '4JW Cllad Tube 4pin a>mpact fuor88Cent lamps. The jTeciaely formed non-imaging optical eflector tnsurea e rraximum 56' cutoff 1> limp 111d lemp im e and fle one pece cbslgn eliminates lght bake at the c&llng. Sandard features irclude lew iida.cent finish *ao* all oofloctor colora b eliminate 'rainbowing" and 1o11nting to •aura maximum llmp lfe a'ld lumen output. Optica *dfer* unparalleled performance In gere free lghdng wth a smooth beam. Optn d>wnllght, llna, and q:>en Will wash time are irterchangeabie within the BIITI9 f'ouaing.

SPECIFICATION FEATURES

A ... Reflector/Baffle Availoble In few iidescent deer, haze, 11traw, V\heat, end .-.rm hue Aizak® or 1»inted lllhile fnlshoe, .050 fl ick aluminum, h a one pace spun IJitabolic a>ntour. Positive reflector ITtlunting, W!hout toole, pulls trim tbht 1> ceiling. Other finish cptione available upon reque.t. Also a-.ellable with lllhite or 11ack l:llffle.

B ... Trim Ring Optiona High mpact r»lymar wth satin white fnish *a* ef fanged reflector. Metal tim ing 111d rimle11 tim ing IICCeseoriea avelloblo

C ... Socket Connector One poco do cat alJmlnum connection dlowa -.enting br maximum tl ermal performance.

D ... Houalng Mounting Frame One pece Jl'8Cision de cart aluminum 1-1/2" deap collar accommodates 10rying dimensions *d* eating material•.

E ... Universal Mounting Bracket Accept• 'V2" EMT. C Cllnnet, T bu fasteners, 111d tar lungers. .tdjusts 6' -.ertioally tom tbove or mlow ceiling.

F ... Conduit Flttlnga Oio a st s:rew fght connectors.

G ... Junetlon Box Listed br eight t112AWG rour in four OJt) 9)•C onductora feed through branch wring. V2" tnd two 3'4" pry aJtl. fbsitloned t> allow staight cmduit una. Aocen to junction l:ox 1¥ amoving reflector.

H ... Socket 26W IIITips: 4pin GZ4q3. 18W IIITips: 4pln G2.4q2 l:asa. Ban• t..ve faigua fee noinla.. ateel lamp spring to msure positive limp retention.

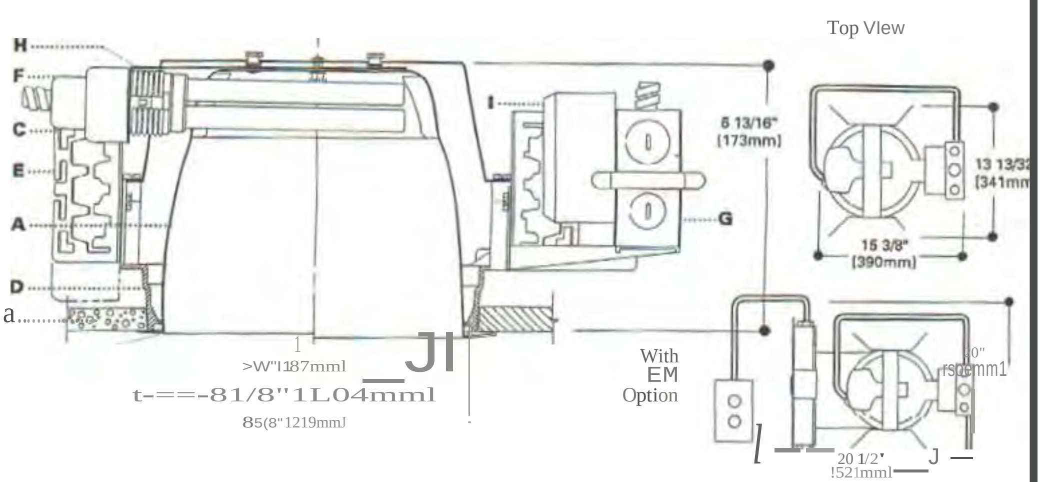
I ... Ballaata Electronic ballest P'OVidea 1.111 light output ;nd 111ted limp life. Provides flcker tee ll'ld noise free operation 111d starting. End *d* lamp lfe P'Oiaction is ltendard.

U.bela cUlua li ed, C.SA.cortlfled, standard cllmp libel, IEEW union made.

C7226 7250
C7218 7250

(2) 26W Quad
(2) 18W Quad
Compact Fluoresc.nt

7-3/8" OPEN DOWNUGHT



Energy Data

121 zeW Quod 4·pln
Ballast: Eiecuonic
120V input won.. 60 Line AmPL 0.4$
'IT1V Input Wotta; 50 Line Ampe; 0.20
Power Factor: >.99
THO: <10%
Min. swung l'..,.,_, -1o-c ns•FJ
Sound Rating: A

121 UW Outd 4-p In
8allnc Eloetronlc
120V Input won• J7Line Ampa; 0.32
271V lni"JI Wotto; 37 line Ampo: 0.u
Powor Focror>.99
THO:<10%
Min. Suonlng Ta.,.p. -IO"C(IS'Fl
Sound Rating: A

NOTES
Acce .oroM should be ordered ltfVt'ldUtly,
For oddotlonal Option• ploa?O oonsuh your Couper Lighting Repreocntotlve.
Alr.ok la • roglllred trldemerl< of Aluminum Company of Amerleo

ORDERINO INFORMATION: Compltte unit ns oou or boutlng. bell.. t tnd trim.

Housing	Ballast	Options	Trims	Finish	Options	Accessories
C7218=(2) 18W Horizontal DTT Lamp C7226=(2) 26W Horizontal DTT Lamp	!•120V -277V bOAJO Hz EIKttOnlc 3Eo347V 6<WO Hl Eluctronlo 1D•120V Olmmlng, lutron" Comf>GO' SE 20..277V otmmlng, lutron•Compact SE	CP.cnlcago Plenum oplion Zc-(21S.llests to< HI Low Swltehlno 2CMSo2 Circuit M..18r Sal.onllt 12 housings, ordtr2 tt1msl EM-Emervoncv onodule with remota test awitth IEM=Emorgoncy modUle with integrel !Q!swiltll	.72SO•Rt0eetOr, Pol Trim Ring. Whiut 725t-ftoftoaor SOif Flonge<l 7Z50E=Rtflector, Polymer Trim Rong, White, uto with IEM option 7ZI1E–Rufloctor. 5•11 F!4nge<l, use with IEM option	U·Low lridoocont Clear LF Hod S.St..w WH= Wheal WMH•Worm Halo WaWh"l BB•Bioctt earno 11260 onlyJ WB·Whlte Balflel7250 onlyl	WF=White Painted Flange (Self Flanged only)	HBZ&-C Chonnul Bor Hongo•211'Long. Pail HBS0..C Cnannol BM Hinger, W Long, Pair RMBl1-Wood JolstiiJor Hanger. 22" long, P " HSA7•Siope Adepn"lor 7"Apenure Housing•. Specify Slope TIIM7ooMillal Trim Ring, Specoly Finish TRR1=Rimleu Trim Ring, White FJC5..Rotd ln.stalad runK;1.5 Amp DT7=0oo:oTrimt'"

COO Ughting

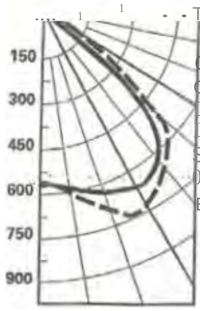
Specification• and Dimenaion• aubpct to changewithout notice.

eonao.0' """ ropr....,..liw 1or od<IIIO<lll ____ -•"" a–

ADP023274

Cen dlepower Distribution

.... 1 1 - - Test No.H23193



C7218-7250LI
Open Reflector
Lampa(2118W OTT
Lumensa1250each
Spacing Criteria..
0"=1.5,9<r 1.8
Efflclencye59.3o/o

0•
go•

Candlepowar

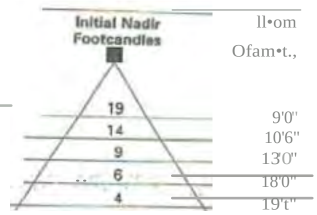
Deo.	C:	90
0	585	585
5	SSS	608
IS	518	7D,L.
25	646	J!L
35	625	.!E._
45	401	504
55	154	171
6S	8	7
75	0	0
85	0	0
90	0	0

Average Luminan

O•CD/SO		90
45	20544	25832
SS	10371	10794
65	506	601
.2.L_	0	0
SS	0	0

Cone of Light

Dlsta-to
IUuminotod Plano



ll•om
Ofam•t.,

5'6"	19	9'0"
a·e•	14	10'6"
a·0·	9	13'0"
10'0"	6	18'0"
12'0"	4	19't"
U'O"	3	22'&"

Beam dlometet hi 10 60% ot maximurn rootcandleaJ rounded to tho neerest hotl·looL

Footeandlo , - , __ oro lnlllol, Gpply appropM1o!lvhl lou factors wl1orv ne<>essary.

fl<tftoctot Multiplier.
Haz - - 9&
Straw-.99
Whoat-.95

EM Mulllpl. . .
!lnemorvoncv model
EM•.28

Zonel Lumen Summery

	Lu...-.	%lamp	%Lumino!!:!.
1).3()	583	23 3	39.3
G-40	• 987	39.5	66.8
0.e0	1474	59.0	119.4
0.!10	1483	59.3	100.0
90 180	0	0.0	0.0
0.180	1483	&9.3	100.0

Coefficient of Utilization

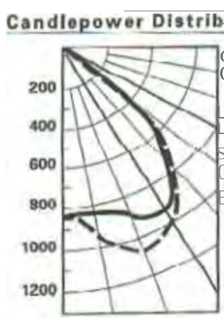
__!!	SOY.				70%			50!1.		30"-		10"-		0•
_!!!.	70	S0	30	10	50	:10	10	10		50	10	50	10	
RCR														
0	71	71	71	71	69	69	69	66	66	63	&3	81	61	59
1	67	65	63	-s2	&4	62	81	81	59	59	57	51	50	
%		60	67	55	59	68	54	57	53	55	52	54	51	50
_	59	SS	52	49	54	51	49	53	48	51	47	50	48	45
4		51	47	u	50	48	44	49	43	(7	43	48	42	41
&	52	48	42	39	46	42	351	45	39	u	38	43	38	37
— -	48	42	38	35	42	38	35	41	35	40	35	39	34	
— 7	45	38	34	31	38	34	31	37	31	38	31	38	30	29
•	u	35	31	28	34	30	28	••	27	33	27	32	27	28
-	39	32	27	24	31	27	24	31	24	30	24	29	24	23
1o	35	29	24	22	28	24	22	28	21	27	21	27	21	20

— lne ...noounca,rw•W•n r...ad•noc RCRaRoom cevlty ratio
CU Otta S.H<I on ZOllo eiiKtl••t1oor C.vhy

lt-

Candlepower Distribution

Tet No. H23186



C7226-7260U
Open Reflector
Lamp•(2l26W OTT
Lumena-loo At:h
Spacing Critoria.-
00:1:8,90"•1.6
Efflclencv•60.6%

0·
go•

Candlepower

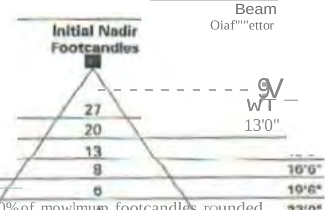
O .	CO 0·	W__
o	031	1131
s	_83s	Btl..L
15	867	_!!!!L
'6	q1e	I.Q!!;L
35	920	-6
4!)	dUI	75
55	251	8-
65	9	11
75		
!!!		o
90		0
		0

Avorege Luminance

O .	CD/GOM	0* &o•
IJ>	0	Q

Cone of Light

Dl•tonce to
lllumlnoH<I """""



Beam
Oiaf""ettor

_rr.	27	9V WT
6'6"	20	13'0"
!!:2:._	13	
10'0"	8	16'0"
--.!..!'O,"	6	19'6"
		23'0"

Bttam d•ameter ts to 50% of mowlmum footcandles, rounded 10 tne nure•• half-foot.
fOOn:LimJie vehJ"oro 11'\tlltl,..ptr'ftfU'Ouriate llghl lou fac!ors where -..ssary.

llohctor Multipler:
Hoz....S&
su-.99

EM Multipllef
(lnem<lfOOncy
modol
EM·I8

Zonal lumen SummarL__

tone	Lu"""""		%1umlnolro
0-30	839	23.3	31U
G-40	U31	39.7	65.4
0.a0	2166	60.2	99.3
	2181	60.6	100.0
gQ.1BO	0	0.0	0.0
0·	-	— —	loO:O

Coetticeent ot uuu...tlon

rc	ao•				7011o			50		SO"-		— — —0, .		
1—0		30	10	50	30	10	S0 —	—	SO	10	60	10	0	
.2'!.	2L-....!!!.													
RCR											62	62	61	
0	12	12	12	12	70	70	70	67	67	84	64	58	57	55
_ !			65	113	65	63	62	63	60	60	2!..			
2			58	56	80	56	55	58	54	58	53	55	52	
!60		58	53	50	SS	52	49	54	49	52	'II	51	47	
		57	61	48	45	!1	47	••	49	4A	48	43	<7	43	42
5	53	47	43	40	48	43	40	45	39	44	38	43	39	38
649		43	39	3	42	38	35	41	35	41	35	40	35	34
7		39	34	31	34		31	38	31	37	31	36	31	30
842		35	32%8		35	31	28	34	28	33	27	33	27	%8
5I	39	32	27	2'	32	27	24	31	24	30	24	30	24	23
10	38	29	25	22	29	24	22	%8	22	27	21	7	21	2

rce.lllng relloclance, rw:Wol __ - , __ , f!QiaRoom cavity rotlo
cu Data Btud on 20% Efftct.l\1$ Floor Cavity Roftaetonc:e.

TYPE:
F2

MT. AIRY SCHOOL - PK-8 SCHOOL

CATALOG *I* :
CL9242E-10012P-HB26

pte **PORTFOLIO**

DESCRIPTION

Low brightness 9-1/2" aperture reflector for use with one or two 26W,32W or 42W Tnple tube 4-pin lamps. The deeply regressed lens provides superb shielding in comparison to shallow lenses. Reflector trim eliminates brightness at higher angles. Choice of lens types for various aesthetics. Standard features include low iridescent finish on all reflector colors (to eliminate "rainbowing") and one electronic ballast to operate all 26W,32W and 42W triple tube 4-pln lamps. Venting ensures maximum lamp life and lumen output. Optics offer unparalleled performance In glare free lighting with a smooth beam; its performance rivals that of three lamp,higher wattage, larger aperture twin tube and quad tube units.

A Reflector

Low iridescent Alza finishes in specular clear, warm haze, black,haze,straw and wheat or painted gloss white,.050 thick aluminum, in a one piece spun parabolic contour. *Positive* reflector mounting,without tools,pulls trim tight to ceiling. Other finish options available upon request. Also available with Black Baffle

•-·· ena

Choice of fresnel glass or concave prismatic. Lens is fixed to lower 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

Ole cast screw tight connectors.

G.. *Junction* Box

listed for eight #12AWG (four In, four out) SO•C conductors feed through branch wiring. Ono 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 GX24q3/4 base with fatigue free stainless steel lamp spring to ensure positive lamp retention.

I Electronic Ballast

Ono thermally protected,fused, high rrequency electronic ballast provides full light output and rated lamp life. Provides flicker free and noise free operation and starting End of tamp lifo protection Is standard.

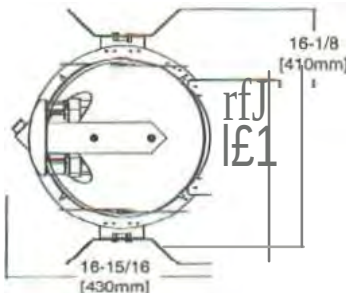
Labels

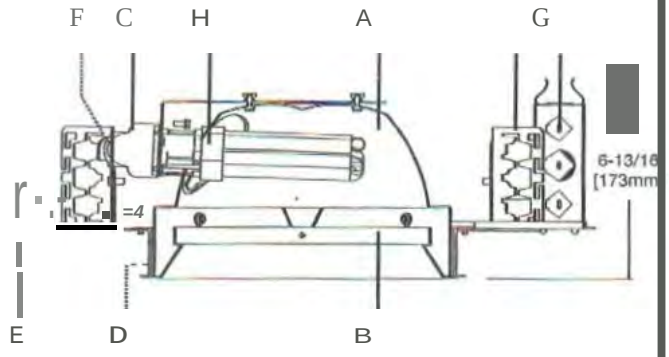
U.L. and cUL listed, C.S.A. certified, standard wet labol, IBEW union made.

CL9242
CL9142
10002
10012

or (2) 26, 32, 42W Triple Com pac t Fluorescent

9-1/2" LENSED REFLECTOR





ENERGY DATA
12) 42W Trlplu 4-pln
Sollut Eloe170nio
120V lnpot Watt111 93.0
LlneAn.ps:0.71
2TI Input Watu:1130
Uno Amps:0.30
Power feotor: >.99
THD-.<10%
Min. Stertlng Temp; -10'C (15 f)
Sound Rating:A

12) 32W Triple 4-pln
BtiiUL EIICttOnle
120V Input W111t1:88
Une Ampo:0.67
2n Input Walla; 68
>.99
Powtr f..:tor:
1Iil)• <10%
M1n. S,.rtfno Tomp -10"C I15'Fl
Sound Rating:A

(2) 2/fiN Triple 4-i>ln
Bollut Eloe170nic
120Vlnpyt Wattll:55
Line Amps; 0.48
'I77 Input Wauc 55
Uno Ampe: 0.21
Power Ftctcr: >.98
THO ,10%
Min. Starting T11tnp -10'C (IS" Fl
sound II.Ung; A

NOTES:
Acceaoorlcs shoold bo ordered seperotely.
for additionat options pjeue CORSult your Coopor llgh ng Repr aenttbVt. Altok lla registered trodomorlt ot

Housing | Ball ea t | Options | Trims | Finish | Options | Accessories

CUIU• E=120V – 277V*H,t*
(1) Zffl Horizontal Electronic
m Lamp 3E-347\I 50180 Htl:Jectronlc
(1) 32W HorizontAl 1026-26W 120V
m lamp Olmmlng,Lwon• Compact SE
(1) 112W Horizontol 1032oo3ZW 120V
mtamp Oimming.lutron"CompactSS
Clt242.; 1042.o42W 120V Dimming,
(2) 26W Horizontal Lutron"Compect SE
m Lamp 2026-21!W 277V Dimming, lutron•Compact SE
32W HO<itont.tl 2DlWZW 277V Dimming, Lutron•Compact SE
m lamp ZW Z77V Olrmmlng,lutron"Compact SE
121 42W Homonttl EDR2S.O.Rat*'Waruogo lAbel,21f>N
m Lamp EDR:J Roted Wattage Lebel, 32W

CP=Chicago Plenum option
2C=(2) Ballasts for Hi-Low Switching
2CMS=2 Circuit Master Satellite (2 housings, order 2 trims)
EM=Emergency module with remote test switch

10002=Reflector, Regressed Fresnel
10002=Reflector, Regressod Concave Prismatic Lens

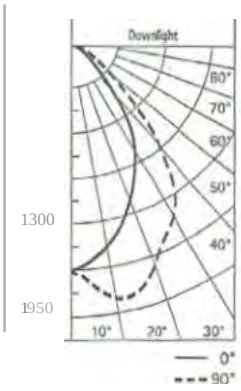
P=Black Baffle with White Trim Ring
PWH=White Baffle with White Trim Ring

WF=White Painted Flange (Self Flanged only)

- TH82e-C O>on,,l Hongor,*26"* lonQ,Perr
HBSO-C Channel 8ar Hanger, 50" Long, Pair
RIIIIB22-Wood Joist Bar !Unger, 22" long, Pair
PK5-F,.Icl lmtalled Fuse Kit, &Amp

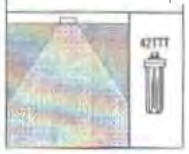
PHOTOMETRICS

li Wet Laation



Spacin9 Ollcua ▪0.9
Etf.circv – 46 n

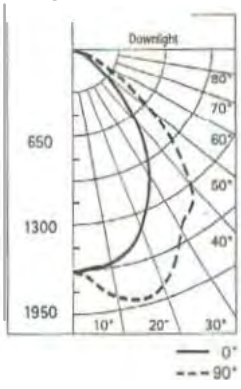
Test tlo. H40059
Cl9242 10002P
Lamp – l2l42W m
26W lolu tpLet ▪056
32W Mu t•pller ▪075



Ol!u...		
4'0"		4'0"
6'0"		S·0·
a·0·	28	e·0·
10'0"	18	9'6"
u·o·	10	12'6'''
16'0"	7	15'6"

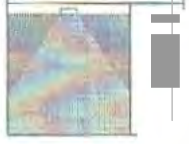
Ceiling	8				7				S0;;;-	
Wall._	70	!.0	JC	tO	S0	5ft	10		10	
	Zonal ea"!!Y_method — n00r rtfltctancc ▪ 2									
0	56	56	56	56	54	54	64		52	52
1	52	51	49	48	so	48	47		48	46
2	49	46	43	41	45	43	41		43	40
3	45	41	39	36	41	38	36		39	35
4	42	38	34	32	37	34	32		36	31
5	39	34	31	28	34	31	28		33	28
6	37	32	28	26	31	28	25		30	25
7	34	19	26	23	29	25	23		28	23
8	32	27	23	21	27	23	21		26	21
9	30	25	22	IS	25	21	19		24	19
10	29	23	20	18	23	20	18		23	18

Condlepower Distribution Curve



Spacing Criteria = 1.0
Efficiency = 56.8%

Test No. H23499
CL9242E 10012P
Lamp = (2) 42W TTT
26W Multiplier = 0.56
32W Multiplier = 0.75



Cone of Ught

Distance Fixture to Lighted Plane	Initial Footrandles at Nadir	O ro-
7'6"	32	8'0"
8'0"	28	e·e·
10'0"	18	11'0"
13'0"	11	14'0"
16'0"	7	17'6"

Coetndenb *of* Utlllullon

Colling	B				7				50<\11	
Wotl..,	*10*	50	30	10	50	30	10		50	10
RC!I	Zonal a'<ity method — fl00r rtOtttall<i: ▪ 20'1b									
0	b8	68	60	IIIS	88	IIIS	66		03	m
I	63	61	59	Sa	60	58	57		58	55
2	59	55	52	49	I>4	*bl*	49		52	48
3	54	50	46	43	49	45	42		47	42
4	50	45	41	37	44	40	37		43	37
5	47	41	36	33	40	3G	33		39	32
6	44	37	33	29	16	32	29		36	29
7	41	34	29	26	33	29	26		33	26
8	38	31	27	24	31	27	24		30	24
9	36	29	25	22	28	24	22		28	22
	34	27	23	20	26	22			26	20

Note; SPtclflc-•Uont and Olmondona t"bjiiCt to d'II"''t Wlthonode..

Visit our website at www.cooperlighting.com

Customer Flm Cenw 1121Highway 74 South Peachtree City, GA 30269 n0.488.4800 FAX 770 468.4801
Coopor Llglllling 5925 Mclaughlin Ref. MIssiueug•, Ontorio, Canada L6R 188 905.607. 4000 FAX 905.568.7049

Description

Low bightness 9-1l2" apcnure lens downlight for tse wth (1) or (2) 33W, 32W *a* 42/V li'lple tube 4-pln lanp:J. Tho cboply 10grossod Ions J70VIdoe superb .t.ieldlng h ccmparlaon to tlallow tlnses. Rlflector trim eliminate• brightness It higher angea. Choice *d* bns types for erious I!Bsthotica. Standard batures lrclude lew rldascont finish en al IBflocltor colora b ellminato 'tainbowlng• and electronic i:BIlast to cperate Ill 26W, :Jl.W md 42W r-lpla tuba 4pln lemps. Venlng en!Liraa rmxlmum lamp 1111 end lumen output. Qltlcs dfer unparalleled IJirfOrmanca In gare free lghtlng with a smooth team.

Catalog #	CL9242 F3
Project	-9281LI1G-WfH-FtB;26,
Comments	MT. AIRY SCHOOL- PK-8 SCHOOL — Date
Prepared by	

SPECIACAllON FEATURES

A ... Reflector
Specular dear 14)per za reflector br maximum lbht output. Lower ccno available h low Iridescent dear, haze, staw, wheat. and v.erm t'tlze Plzak® *a* painted white fnlsh, 050 thick aluminum, in e cno poco sp.m parabolic c:ontour. Positive reflector rrountlng, wthout tooit, pulla trim tght t> ceiling Oth"r finish q>tlonc available upon request.

B ... Lena
Choice *d* tempered frmnel, pricmatic *a* dear geaa lenses or molded P"iam•tic mrylic nr deAr UV nbilized acrylic:. Lena la fixed to lower 18flector.

C ... Socket Connector One pace de c:ait ai.Jmlnum connection llllowa wnting br maximum flermal performance.

D ••• Housing Mounting Frame
One peco IJ'OCision de COlt aluminum '1-1l2" deep collar accommodates o rying dimensions *d* ctillng materials.

E ... Unlvar. . l Mounting Bracket
Accepts V2" 8\1T, C Cllnnol, T l:er fastenert, md i:Br t'engera. A.ljusta S· \Grtically tom lbove or hllow ceiling.

F ... Conduit Fittings
Die 01st crew lght connoc:tort.

Q ...Junction Box
Listed br eight t<12AW<3 ruur ill four art) !D"C onductora feed through branch wring. 0\e n· and wo 3.4" *17V* cuts. Fbsltioned to allow straight c:ondult lUna. Access b jlllction box b{ removing 11flac:tor.

H ... Socket
4-pln 004q314 base wth flllgue free stainless abel bmp apring to ensure (Dsitive bmp retsntlon.

I ... Electronic Bellaat
Electronic: ballast J70vldee tJIIIIght output md mted hmp life. Provides ticker tee IJld noise froo operation md etorting. t:nd *d* lamp I fe J70iec:tlon Ia candord.

Labat•
cULus liaed, C.SA. cerllflod, atondord v.at label, IBEW union made.

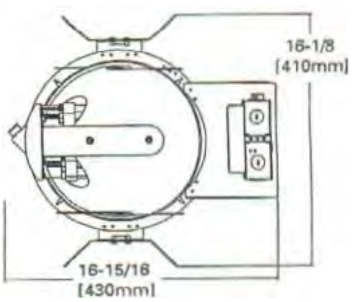
CL9242, Cl9142 9280

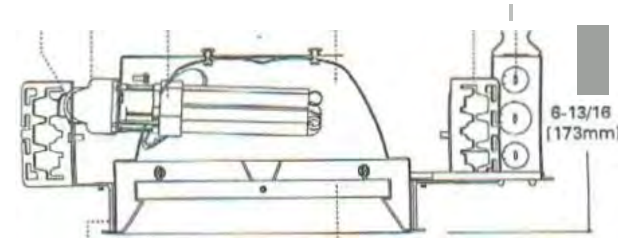
(1) or (2) 26, 32, 42W Triple
Compact Fluoras nt

9-1/Z" LENS DOWNLIGHT

ENERGY DATA
12! 4ZW Triple 41Jin
8ellO:.stEloc:tn>mc
120V Input Wtttl: 93.0, Une Amps: 0.71
271rlput Wort.: 930, I.JM Amps·030
Po-r Fildor: >.951, lliO: <10%
Mon. Swting Temp: IOC !15• fl
Sound Rotlng A
17112W Trtple 41>ln
e- .Electronic
120V Input Wan--AA I fWit Amrd" 0.51
277 Input Wattr 88
Power Factor:>99.1liD; <10%
Min. Starting Temp: 10'C IIS"Fl
Sound Raring: A
121Z6W Triple 41Jin
Belleotl Elo<:tronlo
120V Input Wono: 55, Line Amps:0,46
2771npul Watts:SS.Lint Amps 021
Power Factor: >.98, 1liD; <10%
Mon.Starting Temp: ·ID'C (15'Fl
Sound Rating:A
NO:
Al><:ucoriH ohould be onloe<l separately.
For edditloMI oprlon• pluH <Or•ult your Cooper i.Ighting Rtp<HentJtive.
Atzalt lo a reg ll...., tr..S.mark of Aluminum ComJ)Ilny or Arneta

'L

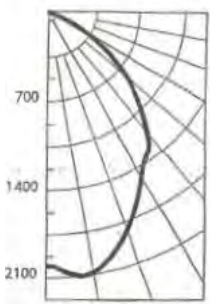




ORDERING INFORMATION: Complell un it contltto of houtlng, btllut and trim.

Housing	Bellut	Options	Trims	Finish	Lens	Options	Accenoriea
CL9142= (1) 26W Horizontal TTT lamp (1)'J'ZW Horlzonrl TTT lomp (1) 4ZW Horkonuol TTT lom p -----:>"CUt4l- 121'JGW Horironuol TTT lomp .;\.(213 Horitonrtl ZDU..:nw 21N TTT lo..,p 121 42W rirontl TTT LAmp	E 120V - 277V &0180 H: Elect ronic 3E-347V 50/80Hz EloQttonlc 1D20.18W 120V Dimmlng. lut...•Compec:<Sf IDJt-nW IZOV Dimmong,lutrvn•Co.,.,...Sf 1D4l-42W t20VDimmlng, lutt(N'I• ComP<0Ct SE 202e-2ew 277V Domrrung, lurrvn•Compact SE Dommg, Lutton"Compte< SE 2D ·42W 277V Dimming. Lutron•Compact SE EDRle Deflated Watuogel.tbel, 26W EOIUZ ·O.Ratod Wan"V•lAbel, 32W	CP·Chicego P1enum op;8280 Zt-(21 BaiiJtS10 for HH-Low Sw lng 2CMS 2 Circuit Mu et 12 houslnoo.ord EM-fmerven<Y module W11h remotet >t twill:h	·Aoltocto<. Polvmer Trim Ring, W lte HI RofloetO<. Solf n""ll.!"	LI=Low Iridescent Clear H=Haze S=Straw WH=Wheat WMH=Warm Haze W=White	1=Prismatic Acrylic 3=Clear Polycarbonate 1G=Prismatic Glass 3G=Clear Glass 4G=Fresnel Glass	WF=White Painted Flange (Self Flanged only)	3Zf-C Cb.tnnol Sor H•nger, 2S" Long, Pelr H850.C Channel Bar H1nger, 50" long, P1r RMBZZ= Wood Joist Bor Hanger. U"long, Pair FK5= Fleld I,_.lled Fv._K t._ 5Amp

Candlepower Distribution



Test No. H23413
Cl9242 9280li1G
lamp.(2) 42W PLT
lumens•3200 each

Spacing Critenas
o•a1.1 eo·-1.2
Efnclencys60%

---90·

Candlepower

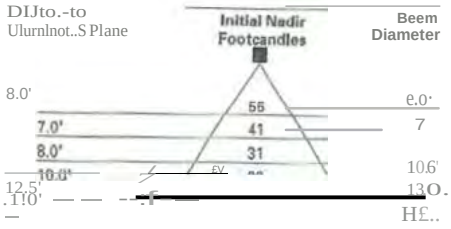
°1111.	?	goo
0	1965	1965
5	1975	20
15	1879	1 86
25	1537	1
35	1183	1392
	780	
55	429	830
65	215	
75	89	
85	2	Z
90	0	0

Average Luminance

Dog.	CD/SOM 0'	90'
45	24113	33758
SS	18349	24010
85	11172	15<105
IL..	.1_432	84.S
8S	502	502

Cone of Light

DIJto.-to Ulurnlnot..S Plane



S.Orn diameter litO 50% Of maxJmum loo!candleo, rounded to1he noattst hall-fooL

Footcandlt v•lue•oro Initial, opply appropriate light to•• feetors wherv.

ltlrnp Multiplier:	Renoctor
32W-.75	MuiUpllo<:
26W-.58	Hata..96
	Strowo.99
	Wheato.95

Zonal Lumen Summary

Zone	Lumens	'Koltlmp	'Koluminolre
0-30	1411	23.3	38.8
0-<10	22 7	35.9	59..!
0.90	3842	60.0	100.0
9<>-180	0	0.0	0.0
().180	3842	60.0	100.0

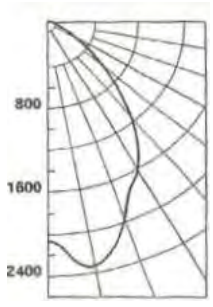
Coefficient of Utiliutlon

'''	80,-				70%				50%			30%			10%		0%
rw RCII	70	50	30	10	70	50	30	10—	— 60	30	10	50	30	10	50	30	10	
1	87	G.&	62	a0	as	63	61	59	&1	59	58	58	87	56	58	SS	54	53
2	82	58	54	51	60	57	53	51	54	52	50	— — — 53	60"49	—	5		-.a	
— 3		52	48	44	58	51	47	44	49	48	•3	49	45	42	48	44	42	41
— -		47	42	39	52	.16	42	38	u	41	38	43	40	37	42	39	37	36
—5	49	42	38	34	46	42	37	34	40	37	34	il9	38	33	38	35	33	32
•	.a	39	34	30	46	38	33	30	37	33	30	36	32	30	35	32	2t	28
7	43	J<j	31	27	42	3S	30	27	34	30	27	33	29	17	32	29	27	26
—— -	40	32	28	25	39	32	18	25	31	17	2•	31	27	24	30	27	''	23
— -	37	30	26	22	37	30	25	22	29	25	22	28	?5	22	28	25	22	21
1O	S	28	23	21	34	ZS	23	21	21	23	Z0	28	23	20	2a	2l2o	— —,9	

—— rc.Ce!Rng rtfltctllnce,rw:WrJ rofltctance, RCII:floom covlty ratio

CV Oat"•Bosed on 20% ElftetM Floor CavitY Rollec1anco.

Cendlepowar Distribution



Test No. H23415
Cl9242 9280U4G
Lomp•(2) CF42DT/ E/IN/827
Lumons-3200 each

Spacing Criteria•
o• 1.o so –1.2
Efficiency•55.5%

——a-
---go•

Candlepower

Dog.		go•
o	zoJe	2038
s	2030	21va
— 15	1834	2213
25	1120	1743
35	1082	UJI
•s	681	884
55	335	•29
as	175	1te
...ll	71	S3
8 5	2	
	2_	
90	0	0

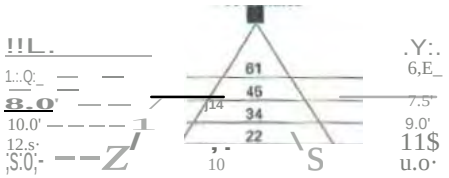
Avenge Luminance

Dog.	CO/SQM O'	90'
—		
45	2043	27328
55	12881	
...!L	_.!!.!1!	
75	tl997	701L

!!!L 8.0'

Cone of Light

OIJ14nca to Ilurnlntt&dPlAne



Boom dlamotor ''to 50% of maKimum IOO!ctmllos.rounded to the nearesl hall-fooL

Footeand1e voluos ore IMoal.opply appn>prioto lovht lou factors whtro ne<:MSOfY.

lamp Multiplier:	R•R-
32W-.75	Multiplier.
26W-5 8	uno•.9e
	Stnl-.9t
	Wheat•.95

ZonaI Lumen S urn m_a"-V

Zono	Lumens	Lomp	%Lumlnolre
o-30	1649	24.2	43.8
o-•o	2349	3tl.7	68.1
a-e0	32S9	51..4	ez.s
o	-90	3555	55.5
	100.0		
		0	0.0
		0.0	
D-1!!,	3555	55.$	100.0

Coelflolent of Utilization

	IOtio				70111				''''''''			J094			10'"-			0m
rw RCii	70	50	30	10	!!..	!!_	30	10	50	30	10	50	30	10	50	30	10	•
o	ea	ea	68	68	Mas		85	as	62	ezez		U	59	U	5767	57		58
— 1	ez	ao	58	s8	so	59	57	se	sa	55	54	S•	s3	52	sz	s1	5l	50
——	-z	58	54	st	49	58	53	50	48	s1	o ..	••	48	46	48	.a	45	''
——	-3	''	49	45	42	52	48	•S	42	.a	''	41	45	43	41	u	•2	40
	4	50	''	40	37	49	u	<10	37	•2	37		41	38	Je	<10	38	38
	S		40	38	33	45		<10	38	33	39	35	33	38	35	32	37	34
	8	43	37	33	30	42	37	33	30	35	32	:zg	35	32	29	34	31	29
—	–,	;;---JC7				<10	34	30	27	33	29	27	32	29	27	31	29	26
—	_			27	25	37	31	27	25	30	27	24	30	27	24	29	28	24
—	9	38	29	25	23	35	28	25	22	28	25	22	28	25	22	27	24	22
	;0	34	17	;u	21	33	27	Z:S	11	2l1	:n	21	25	2.1	21	zen	zo	10

—— — ....c.mng rtflecunco, rw•W•A rwfttctanca,RC!I:Room uvlty ra1to

CV Oato Ilued on 29'4 Effoctlve Floor Cavity Rellecunce.

D"erlption

A low brightnsss 7" de meter cbwnllght br we v.lth A211ampa- 00W 1'"8X, froetod lamp• lll(:Ommended).Tho fl'Oeisoly fomed ron-Imaging ""flector aneures 45' Cl.ltoff to limp and hmp inaga. The ma:fular housing e;stem supports 18rlous downlight, Wlllwesh, 81d l11ns reflectors.

Catalog #	HD7-7701LIWF-HB26
Project	MT. AJAY SCHOOL • PK-8 SCHOOL
Comments	
Prepared by	
Type	F4
Date	

SPECIFICATION FEATURES

A ... Reflector
Poaitive IBfleetor mounting p.JIla trim fght b celing. 0050" Sf:lJn aluminum IBfleetor. Awilable In low lidesoent clear, haze, rtaw, wheat, Wlrm haze, 81d t:lack Alzak® or p inted lllhite f nishes *a1* well *a1* Vlhite or tlack taffies.

B ... Trim Ring
High inpeet JX)Iymer v.ith satin white fnish *a* 111lf fanged reflector. Motel tim ing 111d rimless tim ing a::cessories available (Sea Opfons and Accessories).

C ... Socket Cap
One pece hsat dissipating die-caat aluminu m.

D ... Houelng
Precision de-cast lluminum 1-112" CJBmm) daep collar. Opfcal assembly a:!Justs within the housing to acommodete wilings up to *4V4"* nosmm) tl lck.

E ... Unlvoreal Mounting Bracket
Accopto l'2' IMT, C Ctannol, T l:ar fasteners 01d hanger l:an1 Provides B' t>tal a:ljustment

F ... Conduit Flttfnge
Di st screw light caonectora.

G ... Junction Box
U.L. lilted br bur in, bur OJt #12 at 9)'C PJll through !:ranch wiring. Pry outa br four 111!" and Wo 3.4" conduits Aa;ese b jU1ction IDx 1¥ removing eflector.

H ... Socket
Medium mse JX)rcalein lOCket v.lth nickel J:fated SCfew shell.

lneulatJon Detector
Self-resetting naulation dltector opens circuit If lruu latlon Is improperly nstolfod.

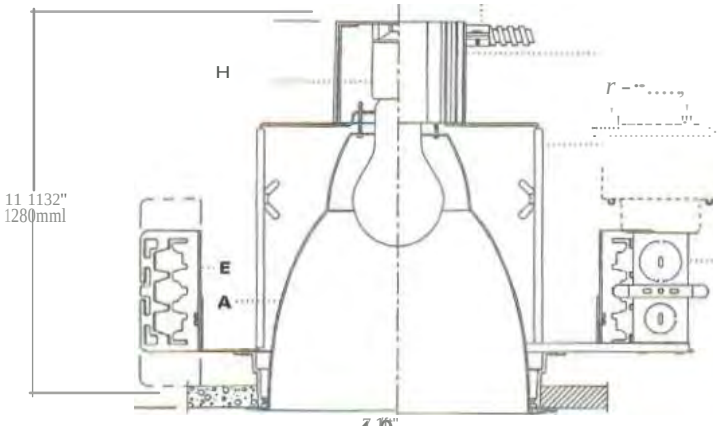
label•
cULus liaed, C.SA.certified, dlmp location, IBE'N U1lon made.

Option• & Acceuorlas
TRM=Metal Trim Rngs to r•laco polymer tim ring
TRRaRimless Trim Rlrgs br minimal fange appJarance n pluter calinga

HD7 7700

200 W MAX
A 2 1

7 3/8" MEDIUM BEAM
DOWNUGHT



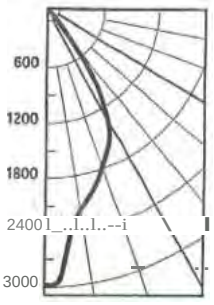
IIIOTiiS:
Acceesorlos sllould bo or o;rsd separetoly.
For additional options please eonsuh your CooperUghUng Rapre- - ntaliw-
AluokIs o regloterad lflld&mart of Atumtnum '-=Ompanv o• 1-\ntvnR

ORDERING INFORMATION : Complete unit conelsts or housing, ballaat ond trim.

Housln 11	Trim a	Finish	Options	Oarated Waltage	Label	Accesaorlos
4 H07–, 7' lncandOSc:.nt H07CP –7' 1ncanMecont. O>ic-Piofl-	7700•Raftecl0t Pol....., Trim Ring, 'MKto S.lf 7701-Rell.ctor. fl'"'!J!d	a – H– H81e	WF=White Painted Flange (Self Flanged only)	[DR' DeRated, Specify Wattage		H277•Sttp DoW11 TraMforme<, 300VA Max Ha2t-c O>ennol a. Honvor, 26• L<>ng. Pw BI!O-C O.onnel Bar Hon9tt, l!O'long. Pllr a. HlllO'f, 22' L<>no. Pair RM822-Wood JoOst HSA7-Siopo Moptor for 7" Aporturo H«<oongo, Specify Slopo TRM7-Metal Trim Ring, Specify Rnioh TRR7•Rimless Trim Ring. Whito FK5-I'leld ln&t.llod ru. -KAt. 6 Amp

S•SVI-N
WH•YA1oot
WMH-Warm Hare
B•Biftek
W•Whltl
88•IIICI< Balflo 17700yl
WI-Whtta Baffle
n7MI"ttr'tfv\

Candlepower Distribution



Test No. H35067
HD7-7700C
lamp a 150W A21
Inside
Frosted
Lumens = 2850
Spacing Criteria = 0.7
Efficiencv=70.6%

Candteeower		Average Lumlnanc	
D!i•	CD	lleg.	COJSQ M
0	2936	45	2657
5	2597	65	0
IS	1961	75	0
26	1540	as	0
35	786		
	52		
55	0		
65	0		
75	0		
85	Q.		
90	0		

Cone of 'liQ.!!!

Distance to Illuminated PI–	lnlll!J Na<lr Footcandlet	681111\ Olamoter
S·5·		4'0•
e·5·		4'6"
a·o·		s·e •
10'0"		ro·
12'0"		8'6"
14'0..		10'0"

Beam dlam&* tS to 60C)E, *ot* maxim.Jm footc.antaas. roundod to the nearest hall·foot.

Footeondle values are initial,apply appropriate fight loss foe· tONI when!O neees$3ry.

R<tOector Muttlpflat

Low lridoseent = 0.95
Haze = 0.90

Straw '' 0.85
IM>etlt – 0.85

Zon a l Lumen Summar):

Zone	Lumens	%Lo!!!!	%Luminoire
0- 30	1486	62.1	73.8
0-40	1959	68.7	97.3
0.60	2013	70.6	100.0
0·90	2013	70.6	100.0
90·180	0	0.0	0.0
0·180	2013	70.6	100.0

Coefficient of Utilization

!£	80%				70%			50%		30%		10%		
rw	70	60	30	10	60	30	10	60	tO	50	10	50	10	0
RCR														
0	84	84	84	84	82	82	82	79	79	75	75	72	12	71
I	81	79	78	76	78	76	75	75	73	72	71	70	69	68
2	78	75	73	71	74	72	70	72	69	70	67	68	68	65
3	75	71	69	66	70	68	66	69	65	67	M	66	63	62
4	72	68	65	62	61	64	62	88	81	84	81	83	80	59
6	69	64	61	69	84	61	58	83	58	62	57	01	57	&8
6	87	62	58	56	6)	58	55	60	55	59	65	58	54	54
1	64	58	55	52	58	55	52	57	52	56	52	55	52	'
a	81	86	62	50	55	52	49	54	49	64	49	153	49	48
2	58	63	49	47	52	49	47	52	48	51	46	51	46	45
	!>8	50	47	44	50	46	44	49	44	49	44	48	44	43

rc=Celllng reftoctance, rw=Wall reriectonce, RCR•Room collily ratio

CU Data Ba&ed on 20% Effective Floor Cavity Roftoc!Anco.

Spec;ltlcations and Dimensions subject to ch ange without notice.

74 South • Peachtree CitY, OA 30269 • TEL 770 41300 • FAA

770.486.4801

MT. AIRY SCHOOL - PK-8 SCHOOL

TYPE: H1/H1G

CATALOG 1: 2HB-632G-WG-UNV-LSF032M/841K/SPXIECO-ER82

METALux-

F-BAV2HB SERIES

2' x 4' High-Bay
6 Lamp

HIGH-BAY INDUSTRIAL LUMINAIRE

DESCRIPTION

The2HBscrics•sanoutstand-Ingsolutionforhighmounting height Industrialorretailappll·cations.The2HBoptlchas beenoptlml7edtoprovide maximumperformance from either theT5orT81amps. Optlonaluplightcomponentls providedtoenableexccllent ceilIngumformity.

APPLICATION

2HB'shlghlumenpaci<Dgc allowsthebenerilsornuores-centtobeappliedathigh mountingheightsthatwere traditionallyoxcluslvetoii.I.D. Theprimary benefitsinclude exceptionalcolorrendering, highsystemofficacy,95% lumenmaintenance,long lamplifeinstanton/instantre-strike,economicaldimming, anduniformbrightnesscon-trol.Primaryapplications include"blgbox"retail,shop·pingmalls,lightindustrial,etc.

SPECIFICATION FE/\TURES

A...construction

Housing,endplatesandsock-ettrackseredleformedcOde gauge,prlmecoldrolledsteel. Thehousing featuresonInte-gralballastchannelthatadds strengthandprovides numer• ousKO'sforeasyInstallation. OleformedInternalreflectors areavailableInbothhigh roflcctancospccularmatcriol orinpaintedafterfabrication whiteenamel.

B...Eiectrlcal

BallastsaroCiass"P"andare posltivclysccurodbymount-Ingbolts.Pressure-lockIam-pholders.UUCULIlsted. Sultablefordamplocatlons.

C...finish

Electrostaticallyappliedbaked whiteenamelfinishIspreted· edbyamultlstagcclcanlng cycle,Ironphosphatecoatlng withrustInhibitor.

D...oo wnlight/Uplight Optics

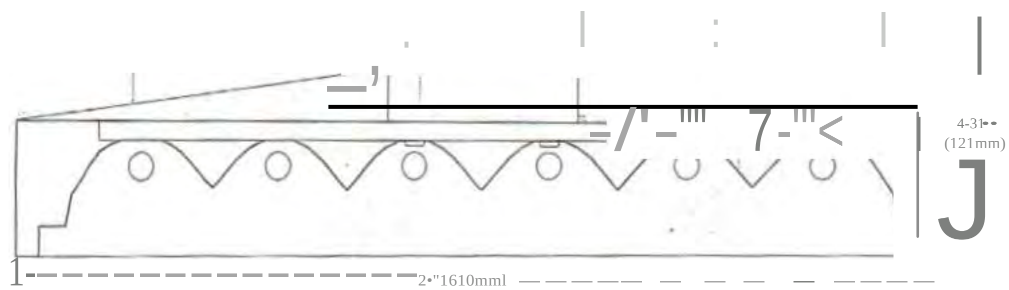
Opendownllghtdeslgnoptl·mizesperformance.Ga!>keted doorframe& lensasc;omblyis optionalformoredemanding envlronments.Upllghtoptlon providedtoenableeelllnguni-formity.

£..Mounting

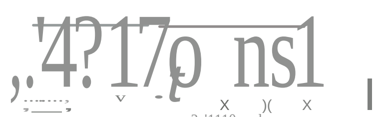
The2HBseriesIsideallysuited forsurface,suspensionmount-Ingwithoptlonalwlrchook andchainset,stemor cable mounting.

IF-E3AYf

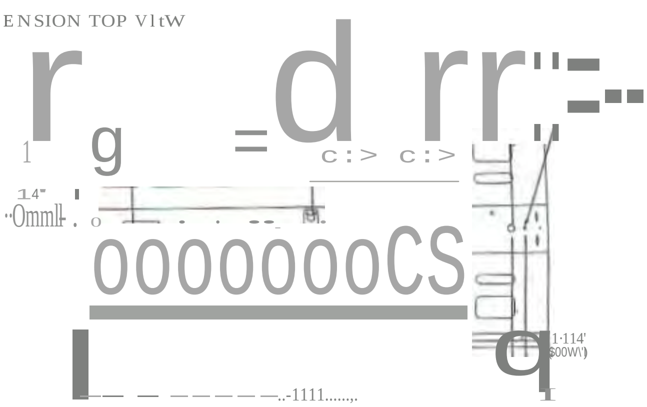
uJoaucnr!!tG"•·'"



LAMP CONFIGURATIONS



DIMENSION TOP V1tW



ENERGY DATA

1npv1Watto:
E8S.Dnta.STDLAmpo
6).(•11ow
654•363W

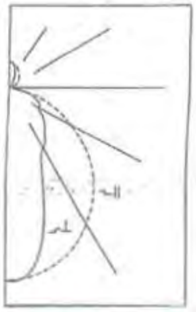
Lum11\AireEtllcacyR!nlng
I.£R•M (White)
LER•89 (Specularln,.,rlll)
CatalogNumbel: 2Hil-l>Jl·UPL

VoariJCostoiiOOOl.umo>nl.
30001-n.at.OIKWH •SS•1

•Rol••nc:othol'lmplballaM01£11lnu•
T-ISoctiOO\ro. -
·•eon-Il....,.S.I .T So.;pport.

',.,..., / J

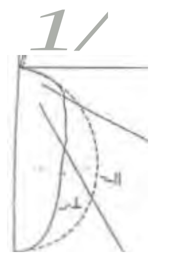
PHOTOMEJ ICS



2}18-.664T5·UPL
I'0 ElectronlcBalla$1.$
(6)F54TS/HO830
54Wtamps
44001umens
Spaclngcrit('f'IOn:
(II)1.2xmounting
height.(J.)0.7x
mountingheight
Efficiency92.5%
TestRapo<l
1175P186
I.ER•6Q
YearlyCostof1000
lumens,3000hrsat
.08KWH•S3.47

Candela

	AfoniiO	45'	Aao,.l
0	11120	m20	uno
5	13Z50	1.i2'	M
;a-	IJ(llil	12925	11JSI
Z0	11.I99	10141	7$U
Z5	11735	81a4	59..
!!...,	11057	4380	6CW
3S	10274	5024	41«)
40	1391	.)14	4014
u	84ZJ	J874	....
S0	7UZ	IMA	3115
u	1'1!13	233	mo
!!!!..,	499'1	mo	2'#
''''	11.	1O	21)5
10	161.3	1631	1571
7!1i	1561	10SII	G87
10	708	J6l	123
		n	u
go	..	)	•



2HB·83Z·G·UPL
(2)ElecttonlcGallaSIS
(6)F032135K32W
lamps
28001umens
Spaclngcrltarlon-
(II)1:Zxmounllng
height.(J.J0.9x
mountingheight
Emclency93.7%
TiKIRr.po<l
1175P1S4
I.ER•66
YAarlyCo tof1000
lumens3000hrsot
.08KWH•$3.64

Candela

Angle	Along	ll	u•	
0	701)	lQ1J	701}	
	....!271	80111	I'M	
10	6881	8760	1548	
H	&114	6114	M4-4	
:0	6480	5707	s0.a	
2.S	I'H	Soli	4lt7	
JO	5840	43U	31M	
lS	SOl	3697	St18	
40	48lt	u,.	1021	
45	4462	2840	Zlll	
so	nn	zoa	zuz	
SS	331&	Z0!1S	Z1711	
1741		1171	2011	
as	t•••	us..	111.4	
10	ISSI	13111	"11	
15	OOt	103S	1035	
io	603	6117		
as	11e	1119	146	
10	J	5		

CooHiolonu or Utill...b:

EtfectJwftoot'c:wltJttRecunoe IO'JII,

	1a 10 JO to	10 to ao 10	u 11 10	— — 10	so 1 ft 10	011
IC1l						
0	101101101101	lOS 10S 101 lOS	— — Ill	t1 93 93	8) 87 87	85
1	16197 t4 91	IJ2	— ,, 1.)	... u 11		
2	IJ 17 11 n	VO 14 .. 71	10 N 7J	II IJ 10	11 10 b1	
J	M I'l 12 67	III 16 70 66	ll II Q	M 5S 61	66 S1	'1
	10101!	11166161	&StoW	'Z $4	60$6SJ	Ji
	14 U S6 110	71 62 6S 50	.. &3	5l $1 47	54 S0 46	-44
a	— 11 "!»	6li 50 •• ••		s16•z	•• u .,	
7	63 u •S 40	s1 •• lt	•s ll	•1 •z l8	.cs ,,	11
	58 47 40 JS	S! 4e 40 S5	45 I9 l4	43 37 J.4	41 36 ll	ll
t	6S 43 M II	Sl 42 S5 II	---.(U :10	Jt)4 IO	36 33 lll	l8
!!!.	Ji 33 28	4i Ji JZ Zl	Jl 11 ll	16 11 Z7	>> lO 28	2S

Coatficlont• of UUll&etlon

[ft'eclMnoote&ollfty Ift

rW	10 50 IO 10	10 50 IO 10	SO ,. 10	ii'lOto	iO"JJ'1o
	101107 107		101 101 101	IS IS IS	10110110
1	nil• SM 91	W ld-,.f n	-10 ti iii	as-.:r e•	o•
2	11 Ill ., 16	10 .. 1t 14	11) 10 11	78 71 61	71 70 67
S		1:1 1s 69 i4	-n u u	u 64 ;;O-65	0;z u
7	7'1 — 61 56	n t1 G0 II	14 Y 6l	61 SO Sl	6.1 54 61 G
	1J II 5J 41	10 10 Sl 47	57 S1 46	55 49 4S	Sl 41 44 4l
	SS .n u	a.s S.C ., .,	S.Z •• ••	so ,.,. 40	.ca n
1	11 60 ..·Z 11	10 41 42 M	47 .,	45 .e0 lS	J.l lS >>
1	S1 45 38 l2	56 44 J7 n	4.3 M J1	41 JS J1	40 l4)o 21
	Sl 41 33 Z8	6Z 40 J1 28	:ll JZ Z8	J7 31 27	38 31 Z1 2$
10	60 31 a0 ts	.. V.:li>u	lS 20 2'	a. zs z	u za 24 n

Zonal Lumen Summary

lnM	l""*'*	%Lamp	'Ukb.n
0.30		3Z 2	) 4.8
0.40	1:z..		'11
G-GO	111012	no	11
0.00	Z2JS3	IU	tU
0.110		cut au	1000'

Typical VCP Percentages

Zonal lumen Summary

0f.!t	Lu	%Lw!p	m:ure
0.:10	4043	158	IU
0-40		211	UG
O«<	12fl15	SU	S!!.Z
0-00	11144	11J	15J
0..110	l144t	aJ	1000

Typlul VCP Porcentogu

RoomSito!ft1	HoiQh<Alang u·	1oJY	Holfll'ot-- LS'	10#
20x?O	40	47	'S7""4S	
30x80	32	32	2t	71
e0;;0	n-It		IS	
...00	3J	JJ	n	Jill

LSF032M/841K/tPS/ECO LAMPS
Efi82.- 2- TS ELECTROMC PROGRAM RAPID
START, TOIALHARMONIC DISTORTION <10%

ORDER INC INFORMATION

SAMPLe NUMBER: ZHB·R·UZ·A·120V·EIU

CT B R | 6 | 32 | A | 120V | — E

Serios
...H•.lf>Bay
Arr'lll1gomeot
RoCon!JnuousRowMounl
SINldAJone

No.ofLamps
6=6Lamps

LompType
IZ•3ZWT8(41La
ZITS 28WT5(41L.atr4>S
sus- WT5HO(41Larrf>s

OIIII'!'bullon()ptie
A:la'*:.AJdA
G-G4nmol

OownllghtOptlc
Blank-Open
A•Auyllclons&
Aluminum
Oortrame•
WO -WI"'!UIlll&
Aluminum
Ooorframe

Voll•go
UNV•IJnM!rsal
120/277Vo1Lage
UNCsUnlvef'$<11
347/480Vollft!)e
120V=120Vollllge
l17V•277VoiU>go
l47Vo347

BallutTYJHt
CD[L' ge
BallaSl
No. ol
Ballasts
1,2.a or 4
–LMnpSiu
ToTUlnMr
I•T8
NUJ\l........jno
OLS·DigiQlI
Ughung System
dimming

Options (oddusumK)

Options
UP\.•Upll<)htAperwros
PVCPI•Piug-In(1.2or3)
1IIIN•TanclemlnllneWiring
EL4•EmowgoneyUghtlng
ELS-T5EmergencyLighting
TCB•Topeonr-ror8ox
FK-1-filtw.eHool<
FL·1•fixtureLoop
SHK•Hooltw/SafecySctew
MWS· Illrwonng
S:ptom
MS-Motlon Sensor
PAI..PallutuedOutol
carton
l873o.3000KT81Aml'"
Installed
L8735•3500KT8lamps
In5li111od
l874h4100KT81Jimps
InSL&lIed
LSBl0=3000KT5LIImps
Installed
L5835•3500KT5lamps

NOnS..opt e«auor•.....domrOtMJftJtlnn. lo.uiiiMtPfOOU«.d•t•
Spec:fflcatiomendOimeos.lonssubjtcttoct'l""!)ew4tn®tnotlct.
•u..withCwroa.r:dOts.tribUitonbfledof((;)

Accetsorlu Sop.,..toly)
CCA·IB- •8'A4JuotOO!eCable
SuS!'Cln•lon5et
PdlrT .....,)
PFC= Powerf..ed.
CoiiPowerec.tl
PFS.PowerFeed,
6'Strel

CCF-15: •WF oocab4e
Su&penolonSot
(Oo<lrT
PfC.Powe<FHd,
CoiiPowerO>rd
PrS=PowerFeed.
-straight

sc (Orc <.-Two

CCFII- • 18"nxodCallje

PowerCord
NPf-
StemS<K

PowerCord
NPf=

Loo:9h;6".8".1Z".2A",
–PorFixrure)
36",'48",60",7Z1
foflxed
5-4s-Swlwl

PdJ'I\ocF"fb<Uii
lonSc<
PfC• "-""-!.
Coil
PfS=Poweffeed.

Installed
LS&41o4100KT5Latnps
Installed

SHIPPING IN FORMATION

CatalogNo.	WI.

COOPER Uohtlno
VlsItourwcbsItoatwww.cooperllghting.com
r,.,,.rnmRrrl,...tl':nntrr 1121HlahWAV7d SouthPonchtTcoCltv.GA30269 770.486.4800 FAX 770A86.4801 ADF023033

COOPER LIGHTING-LUMARK•

DESCRIPTION

The IMPACT Trapezoid cutoff wallluminaire makes an Ideal complement to site design. U.L Listed and CSA Certified for wet locations In down mount applications end damp loc.1tlons In up mounted applications.

Rugged construction and full cutoff classified optics provide facade and security lighting for light restricted zones surrounding achool9, office complexes,apartments,and recreational facilities.

Catalog #	WM·T·CF8 4·3·277V·LL·CC
Project	MT. AIRY SCHOOL PK·8
Comments	
Prepared by	

Type
K1
Date

SPECIFICATION FEATURES

A ·- Houalng

The housing Is a two-place design of die-cast aluminum for precise controlof tolerances and repeatability.

B ·· Mountlng

Gaslc:eted and zinc plated rigid steel mounting attachment anchored to wall fits over 4" J·Box or wall with "Hook·N·Lock" mechanism for quick Installation. Sealred with two (2) captive corrosion resistant black oxide coated allen head set screws concealed but accessble from bottom.

C ~ Optlc•l Modulo•

All opticalmodules utlllze high performance 95% reflective sheet.Type II opticalmodule Is standard.

D ·· Balluf

HID luminaires supplied with high power factor ballast With Class H Insulation. Minimum starting temperatures are -40•c (.40°F) for HPS and ·30•C (·22"F) for MH. Compact Fluorescent luminaires feature electronic universai120·277V high efficient 50/60Hz ballast wlth -1e•C (O"F) minimum stanlng.

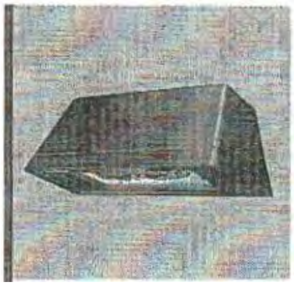
E ··· Ooor

Ole•c11:11door features,1/8" heatand Impact-resistant cloar tempered glass lens mounted with Internalplated steelclips and &ealed with EPDM gasketlng. Hinged door aecurod In place via two (2) captive fasteners.

f ·· Finlah

Durable polyester powder coat flnlsh. Standard color Is bronze. Optional white and black colors available.

Othor finish colors available. Consult your Cooper Lighting Representative concerning •poclal color requlremAnt11.



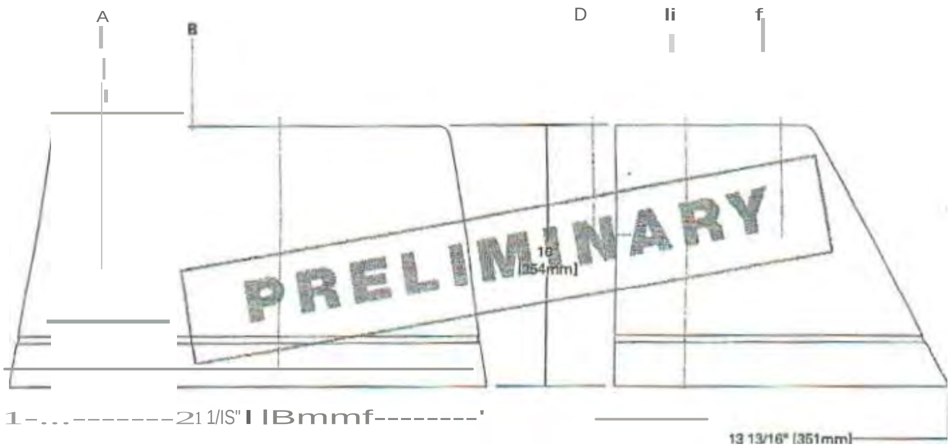
IWM
IMPACT
TRAPEZOID

iMPACT

200·400W
Hloh Pressure Sodium
Maul Halide

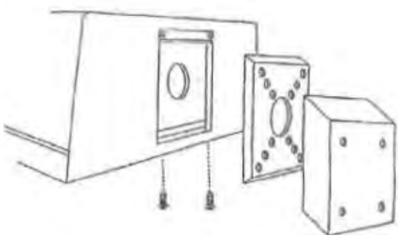
14 -170W
Comp•ot Fluoruoent

FULL CUTOFF
WALL MOUNT LUMINAIRI



•NiJS1,Fco
COMPLIANT
IndownilijhiOPQIIootiont only.

HOOK·III·LOCK MOUNTING IMo<mllnijo ttachmont lncluded. JBOJCrOlncluded



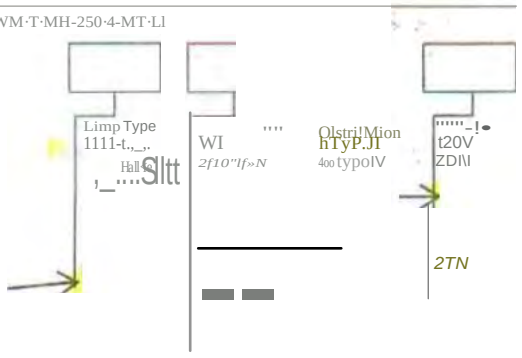
TECHNICAL DATA
-Mu.murn Ami>IWlt Tomper«"Urt
External Supply Wiring acre Minimum
Down Mounhtd-Wot Loc:arion
Up Moumod-Oamp l.ocll\ion

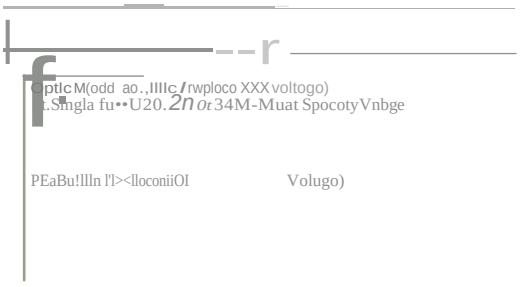
fR:1Tl

IWM IMPACT TRAPEZOIO

OJ!QeR IIII,G. INFORMATION

SAMPLE NUM8ER:IWM·T·MH-250·4-MT·LI





fuMd 1208or 240'1)-Mull S.,.afy

250450\V fo<word *2MN* Res!tlant (OoOt ondMowldngl'lowl

Scnw

Molal HaficM HPoHigh	320420\V 350.:350\V	Ttvow	347V *410V*	UP\10..10%Upllght UPI.50o60% Upllght (Mull Spec.fy
P,_--- SodMn CF.compocl	**Cpmptd8uOAJFBIIt** 114 2)5TW 120 11'JJNI 120 21 *f11N* 11S 3142W 1co 217aw 170.(2)*SSW*		0r-0u..r.p MT-Mulu'lllp TEaTr1pi•Tap &Electronic B.t!IUI	lndudod (MU01"S!>ei:ifY Itogo oiiF'tl WltoWhito Q.Ouaru Res111k8 T4 Lamp EM-Emotlli!M\1 Ouortz Rootrlka T4 Lomp Withlime Delay Rel•v

§ f 1;;- ' 2 - 42W TRIPLE TUBE

--?-CC- CUSTOM COLOR

PRELIMINARY

NOI"£ f!OMMW'Il1nduMIOM •ubftla toct.•aoe,-......

COOPER LIGHTING-LUMARK•

DESCRIPTION

The IMPACT Trapezoid cutoff wall luminaire makes an ideal complement to site design. U.I. Listed and CSA Certified for wet locations in down mount applications and dlmp locations in up mounted applications.

Rugged construction and full cutoff classified optics provide facade and security lighting for light restricted zones surrounding schools, office complexes, apartments, and recreational facilities.

Catalog #	MHIP-T-175-277V-LL-CC	Type K2/K3
Project	MR. AIRY SCHOOL- PK-8 SCHOOL	
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A"Housing
The housing is a two-piece design of die-cast aluminum for precise control of tolerances and repeatability.

B..Mounting
Gasketed and zinc plated rigid steel mounting attachment fits directly to 4" J-Box or wall with "Hook-N-Lock" mechanism for quick installation. Secured with two (2) captive corrosion resistant black oxide coaled "lien head set screws concealed but accessible from bottom.

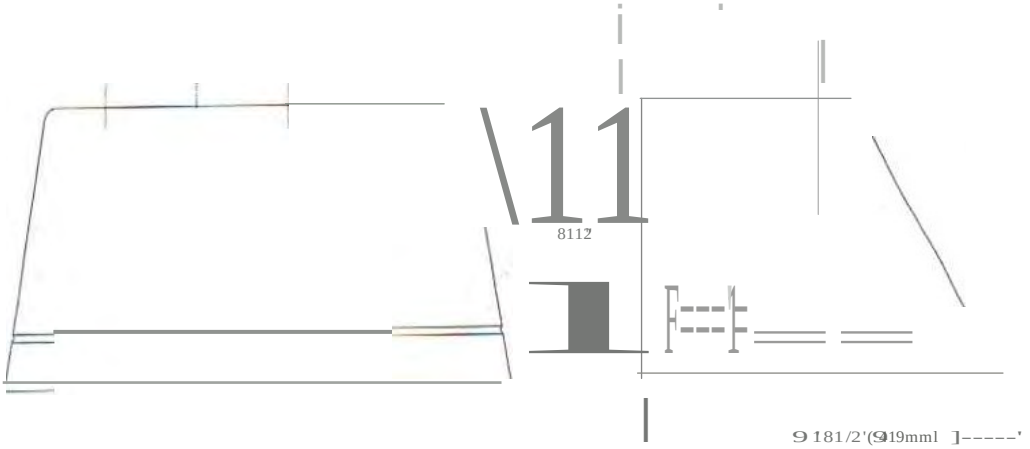
C-..Optical Modules
All optical modules utilize high performance 95% reflective sheet. Type II optical module is standard.

D..-Ballast
HID luminaires supplied with high power factor ballast with Class H insulation. Minimum starting temperatures are -40°C (-40•FJ for HPS and .Jo•c (-22•FJ for MH. Compact Fluorescent luminaires feature electronic universol 120-277V high efficient 50/60Hz ballast with -18"C (o•F) minimum starting.

E-..Door
Die-cast door features, 1/8" heat-and impact-resistant clear tempered glass lens mounted with Internal plated steel clips and sealed with EPDM gasketing. Hinged door secured in place vie two (2) captive fasteners.

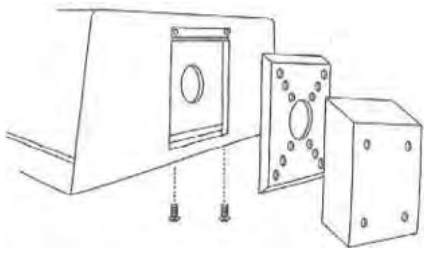
F..-flnlsh
Durable polyester powder coat finish. Standard color is bronze. Optional white and black colors available.
Other finish colors available. Consult your Cooper Lighting Representative concerning special color requirements.

iitfPACr
Cutelr w.11 Lwnt•A•Ir••



DARK SKY COMPLIANT FCO Full Cutoff
In downlight applications only.

HOOK•N•LOCI(MOUNTINO (Mounting attachmont included. J-Bonot inelud• d.)



IP IMPACT TRAPEZOID

50 - 175W
High Pressure Sodium
Meta I Halide

2 6 -5 2W
Compact Fluorescent

FUICUTOFF
WALL MOUNT LUMINAIRE

TECHNICAL DATA
2s•c Max1mum Ambient 1'e.mperature

Down Moumtd-Wotlocation
Up Mounted-Camp loeatlon

ENERGY DATA

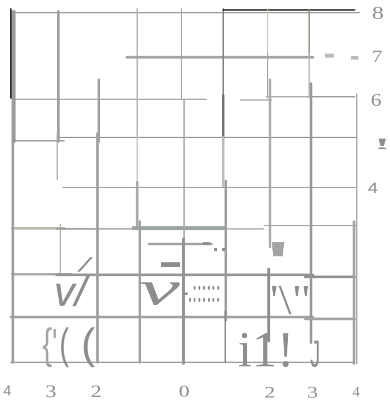
High Reactance Ballast Input Watts
5rJ# HPS HPF{66 Watts)
SOW MH HPF{72 Wonol
7rJ# HPS HPF (91 Watu)
7rJ# MH HPF (90 Watts)
1fYffl HPS HPF (130 WallS)
t'Ym MH HPF (129 Wattsl
160W HPS HPF (190 Wattsl
160W MH HPF (185 W•ns)

CWA B«ll•st Input Watu
175W MH HPF (210 Wotts)

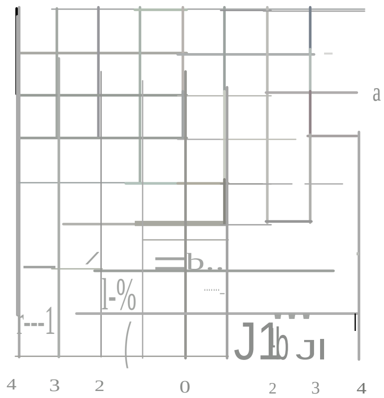
Electronic B«llast Input Wat!S
2INI P1 HPF 129 Watu)
3'NJ P1 HPF (38 Watts)
4'NJ P1 HPF (46 Wonsl
52W PL HPF (55 WDtts)

SHIPPING DATA
Approximat•Nat Wolght:
181bs. (8 kgs.)

PHOTOMETRICS (Complete IES filt IIV•II•t.ln nt www cooperllghting.coml



MHIP-T 175-MT-LL
175-Wett MH
14,000-lumen Clear Lnmp



HPIP-T-150-MT-LL
150WottHPS
10,000-Lumon Cloer Lomp

Selocl mounting height and road acrou for foo nd,. values of ooeh lsofootoandlollno. Olatonc< ln unllo of

Moliitlng	FOOtCiiidfo VliluH IOr				
	–B –				
15'	2.00	1.00	0.60	0.70	0.10
20·	1.12	6.56	0.28	0.11	o.Oil

ORDERING INFORMATION

SAMPLE NUMBER: MHIP-T-150-MT-ll

[oPJ IT

Hafido
HPotilgh
Sodium
Pl.ooCompact

Fixture Type
IP=IMPACT

Fixture Shape
T=Trapezoid

lamp Wottogo
HIP'
50-50W•
70a70W
100.100W
150.150W
175·176W'
Compact fluoructnt
28/3VUa2!, 32, or 4'ltN
S2-52W"

Voltogo
120V
208V
240V
ZTTV
347V
480V
DT=Ouei-Top'
MT-Multi-lap•
TTaTriple•Top•
EaEiectmnlo Ballast"

Optlona (odd ••eulfix / replace XXX votu.go)
Fl•Singlo Fui0-12Q, m or 347V (Muot Spoeily Voltage)
FCDou ble Fused-208 or :MOV (Mual Spoclly Volaogol
TRoTompor ltuontScnw (Door end Mounrlng Plato)
!'&Button Photoc:cntrol (Must Spoclly Voltllgol
UPL10.10% Upllght
U..Lamp Included (Mus1Spe<(fyWonage on PLI"
BlCaBl_ . .
WltaWhito
O=Ouartz RnuiU T4 larnp'" -.n
EM: Emergeocy Quam Aeatrik.o T4 Lomp Wilh Tlme Ooly Roloy •"""
er.t-40-XXXcFlCold Woolhll' Em.rganey Bettely Ptclt
IM151 Spodfy 120 or 271V)•"•
CFIEM-XXXoEmorgeney 8ottorv Pack
IMuet Specify 12Q or 2nvt•""
QMR.Ouem Reotrika MR18 Lomp""
EMMA..em"'VV"cv0u>rt2 Rot tnb MR16Lnmp With 11mt
Delay Rtl8y
EM/SCoEmergency Separate Circuit T4 Lomp""-•
EM/SCIMRoEmergency Soporate Circuit MR18 Lamp"•
EMISC/12VoEmorgoney Soperoto Circuli (12V)•
2QMR.(21 Ouarll Rolllrikl MR1&lomps•""
2EMMR-(2) Emoru""Y Ouoru Ro.trllca MR18U.mpo With lime Delay Wf y""·"
2EMISCIMR-(2) em.<goncy Seportla Cln:ult MR16lomps"-•
2EM/SC/12V•(2) Emargoney Sep; roto Circuli MR16 Lomps(12V) •

20MRISCx(11 Ouoru Rostrlke MA16 Lamp tnd 111 Emergency Sepa rate Circuit MR16 Lamp"'.,.
2£MMRISCo(ll tmergency Ouortz RMtrike MR16 Lomp..;m Tlmo Ooley Relay and (11 Emergency Separate CiiCult MA16 Lamp"-•-•

CUSTOM COLOR

STOCK SAMPlE NUMBER IL_._m_;_p_l_n_e_l_u_d_a_d_:_l

SAMPLE NUMBER: MHIT17

lamp
TYP•
HP•High Prusure
Sodium
MH""letal Holido

IT
Fixture
Type
IT=IMPACT
Trapazoid

Lamp
Wan•
10•100W
1!b15OW
17•175W

NOTES. OP'N no\ w.lltbl• e oducta.
OtcMrAcctaori• up il'&41 n.m.fot fttld

NOTES , An HIO rnedf2:""-"-bl•OfllV '"170rnve!'d Dwl ·leo. lNot lYillat*;,. HaUck O1'\& (2fiN qliiG onJy•l\l'litb&e Wolh up optlo... 1HIOptOductl.-oav.lable In ......US YOI:ttg60.1-b: forlntl,.,.1tNitkaa. Col'tlul.,out Cooper Uglotl 'no,_. lor ewtll.!lmly ttld ot ton_ 8Ou.J..Tep t.n...,.17017TN 2771/, t Mu""Tilp_ _lla&l aot 1lMQII/1'10/277Vw!,.d 2771/.10T p< 1'op b>llaat ,.12QI7771347Vw!rad3(711, 11 Suppl ladwilh 1ZOVlh""!h 2771/&olellllllla<Coo-npiG Fh10<....nt.1Z Muttba ;;,ladlnollea<der an and MPartt."td IJV •d.HI\. Ul..tn\p1t Coop« Ugl\g dtllgnoted ptOdutCt baMd onklmlll\l.lre rtQUtrtmtma. SpldfJttdI•llP'muabl Ofd.nd111MptrNiii'Mlltm14 Thapower m'ohhMd to cyd•md •!tow..O'-"Pu.f010011n..-1Tft.,., ___...._ "P 10171WH10.11ForwwwMT•baa.100WrTW"""""*120Vhltog.n Drocber&.11LMnpaoMr'ldtoqulrtl: r.tey 17 "'kJJ.._.IWH Wf1h a=L. 11a.u.r, pec.twnr oper.uwP.ZnVCA. '-"P fot eom:tM...tta 1otW. mltd tot Mifllmum \tf?lpenrtlif't,o(O"F (1rQ.I1J QW CA.,..,.,. -.,._I'lltllf:l b)l)tNII"""

otl-oro.1<11w!rodQUiftltoK!Jb. (1Talolpwirad ..US...,._..,..,_.-

11'16mlostatoomtvt.toCF l..nptanly, roltd formlnSm"m _,..,.UU.Dlrf (O•C).CU.QWCFLtnaldmum.:n'oru._.whh MR11.GU101»M. rAN m.axlmurn. 1 Vhlltogenllmp byothort..ULNOI Nn out Nell: fOl COI"'...Oon to aw:i:Uary 120V circuit- U Su-pelled with 12V 81-ptn JOC*tl for COMtctlon10•"*VOI'CV bmary ,_C:tCoupplied by tMrs}. For UM w(th MAllGU5J btM. 35W Ml)limiMfl, 11'1 hetogon lemp by zs l'olmad boo"'- S<opplladw>tll'-•'''Mo.Jll ao Hl'fbaiWNl wired 2771/ HSQooi!ICOIJOnl and la<""""Olono! .... aeo-.t yourc-IJvhttnQ fiii>,....,lMiw ro<IMI!obilily....tO<doring

d.,-.,
l"*mrtlon.

HOltep.c.-r ,.and Cr.:,_,.
..,bl«:t10 cNng91Mthot.ft notica.

MT. AIRY SCHOOL - PK-8 SCHOOL

TYPE: K3

DIMENSIONS CAT.II: MHIP-TM-175-4-27 7V LL

COOPER LIGHTING .. LUMARK

DESCRIPTION

The IMPACT Trapezoid fullcutoff wallluminalre makes en Ideal complement to site design. U.L. Listod and CSA Certified for wet locations In down mount applications and damp locations in up mounted applications.

Rugged construction and full cutoff classified optics provide facade and security lighting for light restricted zones surrounding schools,office complexes, apartments,and recreational facilities

IPTM
IMPACT
TRAPEZOID.

1400k·N·LOCK MOUNTINQ !Mounting onaehmontlnduded. J.Bo• not Included

NOT!: In doNn light •ppt..ctt"" uoiv

PRELIMINARY

Consult www.lumark-llghtlng.com
For updated apecfncatlons.

MEDIUM

High Preuure Sodium
Metal Helld.,

1 1
Compact Fluoruce nt

FULL CUTOFF
WALL MOUNT LUMINAIRE

ORDERING INFORMATION

SAMPLE NUM8£A: MHIP·TM-400 4 MTL

Typo

175-17bW

Ddo
MHoMotol
Hll•d
ll'·ll'ovh
Sodium
1'\..Coml)lld
Fluo-

Lamp W.n..a•'
UIQ
200·200W
2!i0-2110W
l211·320W
350-350W
400-400\Y
Com!>act
Buoroauru
114o(2167W
121..(11120W'
122·(2160W
121(3) 41W
1 2)70W
17O.(2)85W

Olttrtb\l'tlol'l
ItII
,_IVPe.,
4-TvP-IV
CQmMgt Hyor:tft.GJtD.l
2-Type li'
4.IVPeiV'

Volt•a••
120V
208V
240V
rnv
347V
4tOV
DT.Duoi-Top'
M'T•Mutti-T1p•
TToTrfple-Tat>'
!•EIKtronle Ballast

(S..eolow)

- Two-piece die-cast aluminum housing
- Rigid stool mounting attachment anchored directly to wall over 4" J-Box with "Hook-N Lock" mechanism for quick Installation

"hotor.

()ll"<roI (M.,.M SooOfv 'lottaoe}

Option•"
FI..Singlo fuoo (120, 277 or 347VI -Mu11 Spedty VOl\aoe
1'2o0ooblt Fused (208 or 240VI-Mu•t Spedfy Volttge
TR·Tamp.. RM s ont &c.- (Door ond Mounting Pll\ol
UPI10.tOlfo Upllglll

UPI..50-t>Qllo Upllgh•
JU >lomp Included (Mull Spoolly W1ttogo on PU•
BK·Bitcl<
WM Whlto
8C-Surl-ConeM•Topo 12JliA' NPSM
a.auara R-ile•T4 Limp.......
EM•Emtroency OuatU Anttlh T4 ump W•trlllmt Delay Rotor
IMCW&-XXX..CI Cnln Woathor Emerguu'-Y Bmtery rec-k CMuot Spodfy 120 or 2»V)"
CP/IM-XXX.Emorgoncy 8onory Poc:k (Muot Specify 120 or Z77V "

EMM!I-E,.rgoncy0uoruRKlriUMA18llmpWilh TomoDoloyRoloy..

A ao ri; ;; ;, "
WOttTM•Wln> Guor<I Tiopezold Mldlum
(Ptlmtd 8ronto)

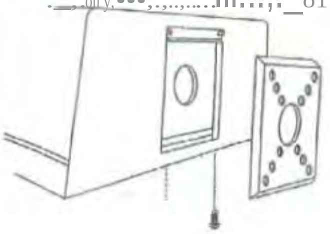
HID luminaires supplied with high power factor ballast with Class H insulatton. Minimum starting temperatures are -40"C 1--0"Fl for HPS and -3o•c 1-22•F1 for MH.

Compact Fluorescent luminaires feature electronic, high efficient multi·voltogo 50/60Hz baiiBst with -18°C (O"F) minimum starting

EM/Geo£morv-ncy Sepofltt Cl tiT4Lomp......
EM/SC/MII•Emt!VIIICY Separate ClrcuMR18 Lamp•P
EM/Ge/12V•Emer oncy Soparoto Circuit (12V)•
20MR-(21 Ouortt lle&trllce MR18 Lampo,
2EMMR-t2) Emergency Quam Reotrke MR16Umpo Wh limt
2EM/SCJMR..(2) Emergency Slp11111te Clrctl t MRt8 Lampo••
IEM/SC/12V..C2) Emoroencv Separ•tt Circuli MR18 Lomp• 112VI"
20MR/Sc.t1) UuatUR clllke MR18 Limp and 1) Emorgency Separate

LAMP TYPE	WATTAGE
Start Metol Helido	200, 250, 320, 350, 400N
Metal	175, 210, A»N
KghPreuuroSodium	Z50,400W
Co .fluor..cont	t2) 67. t2l eo,muo. t3l 42, t2170,l211!1W

HOOK-N-LOCK MOUNTING



DARK SKY COMPLIANT FCO Full Cutoff

Fixture Shape
TM=Trapezoid

1/8" heat and impact resistant clear tempered glass ... secured ... fasteners

Durable polyester powder coat finish. Standard color is bronze. Other finish colors available

U.L. listed for wet locations. CSA certified

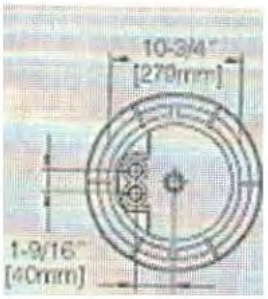
Approximate net weight 42 lbs.(19 kgs.)

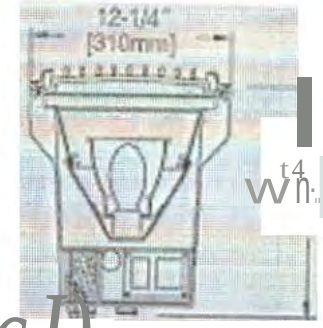
175-400W

4-170W

HID fnground (14) Specification Sheet

Project Name: MT. AIRY SCHOOL - PK-8	Location:	MFG: Hadco	
Fixture Type: FL2	Catalog No.: 14G-N-FL-175-277V	Qty:	





Ordering Guide

Example: 14 G H FL 70TH E

Product Code	14	HID Inground
Trim Ring/Rock Guard	G	RockGuard
Finish	N	Bronze
	S	Natural Brass
	SS	Stainless steel
Optics	FL	Flood
	H	Horizontal
	SP	Spot
	O	No Reflector
Wattage	70TH	70W MHT6
	150TH	150WMHT6
	175W	175WMV
	50M	50WMV
	100M	100W MV
	70S	70WHPS
	100S	100WHPS
	150S	150WHPS
	70H	70W MH
	100H	100W MH
	150H	150W MH
	175H	175WMH
	50S	50WHPS
	50H	50WMH
Voltage	E	120V
	F	208V
	G	240V
	H	277V

Rock guard in bronze and natural brass only.

Specifications

Housing:
Single-piece compression molded fiberglass reinforced polyester composite. Trim ring is a compression molded polyester. Rock guard used for directional glare control is a compression molded polyester. Single piece molded silicone U-channel gasket

Finish:
Composite textured, pressure formed, molded-in-color.

Optical Assembly:
Clear convex, tempered soda-lime glass for high impact resistance. 2,200-pound live-load rated, standard walk-over. Aiming lamps have 15° either side of vertical and 358° rotation. Optional specular aluminum spun reflector available for 17° spot (15°) or flood (70°) beam pattern.

Lamping:
150W maximum PAA36/R40 incandescent lamp, Lamp is not included Lower wattage lamps are acceptable. Lamps have 358° rotation and 16° of vertical adjustability. (Note: PAA20/A20 and PAA30/R30 are not allowable).

Electrical Assembly:
4kv rated medium base porcelain socket. Nickel-plated screw shell with center contact.

Ballast:
HID ballasts are HPF core and coil, factory wired and tested, mounted to a key-slotted removable tray with quick disconnect for easy installation. Class P power regulation with +10% input voltage regulation.

Warranty:
Ten-year limited warranty

Certification:
UL Listed to U.S. safety standards for wet locations. cUL Listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2000 Standards. ADA Compliant when used in concrete and flush mounted with CP4 or CPS4.

Height:
14" (354mm)

Width:
12 1/4" (311mm)

Max. Weight:

...09001:2000 Registered

TYPE :
ST1

MT. AIRY SCHOOL- PK-8 SCHOOL

CATALOG It: GRM·SM-400-MP-277V-AR-FG-CC-HS-LM **cGRAW-EDIsON**

DESCRIPTION

McGraw-Edison's Round Galleria combines beauty and versatility to make it the optimum choice for architects, specifiers and contractors In today's energy- and design-conscious environment. An aesthetic reveal in the roll-formed aluminum housing carries on the Galleria family look while a variety of mounting options and lamp wattages provide maximum flexibility. U.L listed and CSA certified for wet locations

APPLICATION

The Round Galleria echlavos a superior light distribution by utilizing a seamless reflector system,making It the optimum choice for almost any large area lighting application.

SPEC IFI CAT ION FEATURES

A..Houalng

Roll-formed aluminum housing with stamped reveal has interior - welded seams for structural integrity and is finished In polyester powder coat.

a.. Ballut Tray

Ballast tray is hard-mounted to housing mterior for easy access and cooler operation.

c..aallest

Long life ballast core and coil.

o.. Reflector

Spun and stamped aluminum reflector In verticallamp units, or hydroformed anodized aluminum reflector In horizontal lamp units. Rotatable optics standard.

E-· Springs

Aluminum door retaining springs.

F Door

Formed aluminum door for arm-mount fixture has retaining springs, while spider - mount unit has a heavy-duty hinge and captive retaining screws. Door is finished In polyester powder coat.

O..Lena

Convex or Flat tempered glass lens.

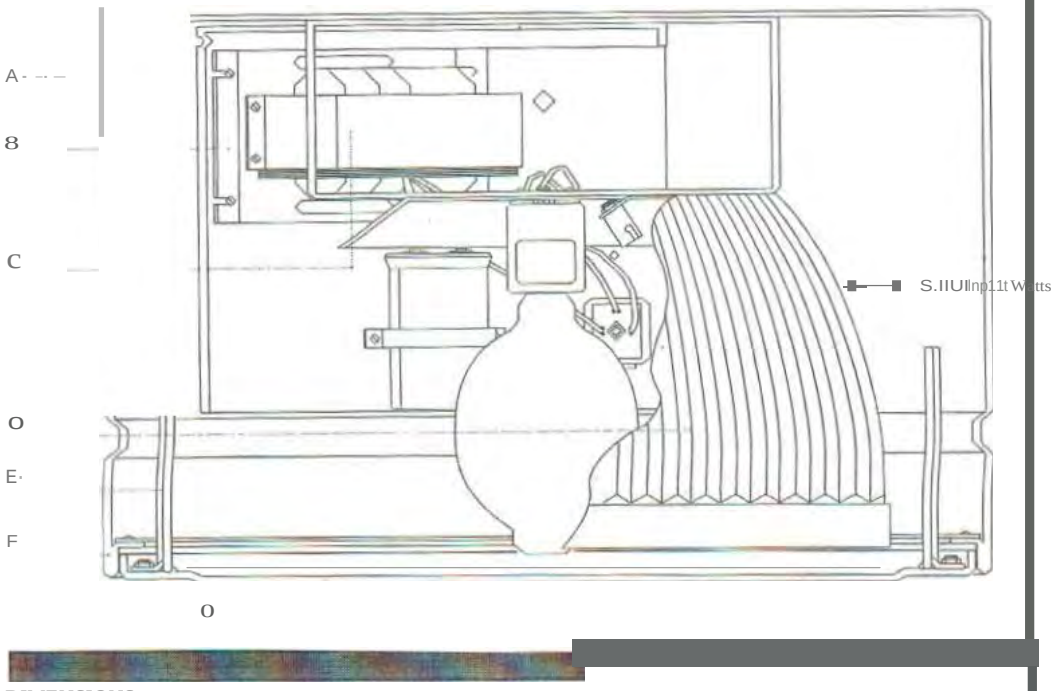
Dark Sky Friendly

OARK SKY FRIENDLY
In all na1 gleu configuredon$.

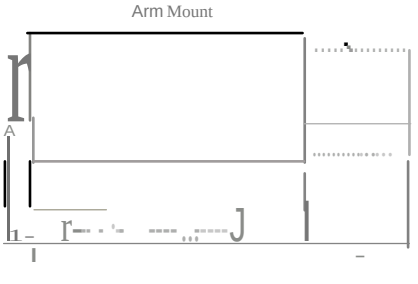
GRGALLERIA ROUND
150 - 1000W

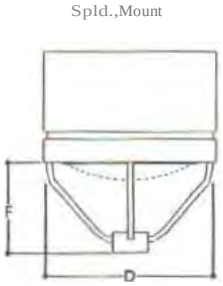
Metal Halide
Pulae Start Mottl Halide
High Prouuro Sodium

ARCHITECTURAL
AREA LUMINAIRE



DIMENSIONS





Rxture	A	8	C	0	e	L
GRM 150-1000W (In.f	181/4	3'112	191)'4	24 '112	**lot 14**	18
(mm)	<484	89	502	878	ISlor3Sa	4011
GAL 1rixfN	193'4	4'112	25c.t	:n 1!1'18	**lor 14**	1911<1
	502	108	1551	837	152or3S8	502

ENERGY DATA

1'j/;fW HPS HPF (190 Wans)

CNA Ballast Input Watts
IGOW MH HPf 1210 Wa1to)
178W MH HPF !210 Wane)
2'AW HPS HPF (300 Wotto!
2fnN MH HPF (295 W.n.!
400W HPS HPF !466 Watts)
400W MH HPF(455 Wino!
lOOOW HPS HPF (IIOOWausl
1000W MH HPF (1080Watts)

CW1 Ballast Input *Watts*
I'TW MH HPF !223 Won.)
2WN HPS HPf (300 Watts)
260W MH HPF (300 Walla)
4or:tW HPS HPF (455 Watts!
4IJ/JW MH HPF !475 Watts)
IOOlfW HPS HPF (1100 Watu!

EI'A

Elfocllva Ptoiactad Ana: jSq. FL)
[Witflout Aim!
GSM: 1.7
OSI: 2.5

(WithArmJ
OSM: 2.32
GSL:3.50

(&pldar Mount)
GSM: 2.0
GS1: 2.8

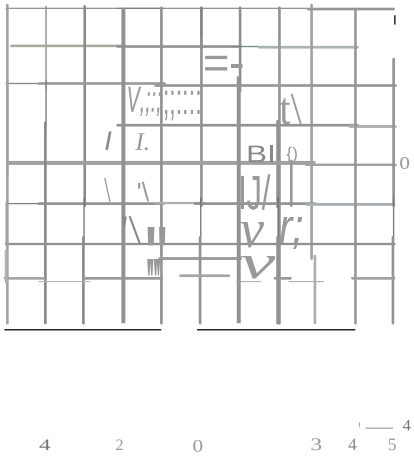
SHIPPING DATA

Approxlmahl Nat Walgh1:
88 lbo. 140lQs.

COOPER LIGHTING

ADH050676

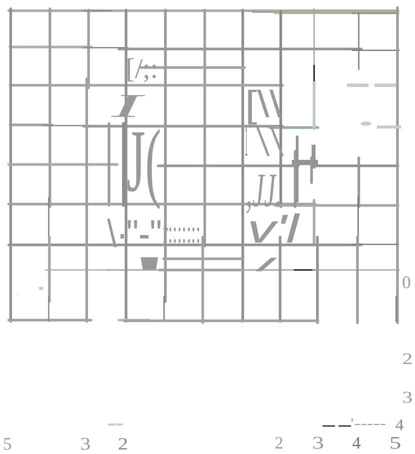
PHOTOMfTRICS



GRM - AM-1000-MH - 120AR-FG

100G-WottMH

110,()()().lumen Clear Ulmp (Raducnd EnV<llopo)



GRM-AM-1000 HPS - ZO·AR-FC

1000-Wott HPS

140,000 lumen Cleer Lemp IReduood Envolopel

Footcandle Tabla

v;duu of eec:h isofootcandle lin• Oi•t•not fn u,.,tll ut

MOWillnt Hoisht	l'OOtc.nclle Vai1Ms lor la<lfoot- - ndle Unes				
	C	0-			0":17
	0.8S	0.:U			
JO'	3AO	1.70			
35'	2.60	130	6.05	6.33	"ll.i3
40""	2.00	1	0&0	025	0.10

MOUNTING VARIATIONS

Arm Mount Sing..

Arm Mount Z •,,•,•

Aim Mount 2 @10" IRe<tulree 14" Armsl

Aim Mount 31!t 1Z00 (Requlta W Atmsl

Arm Mount Ht90" (Roqulreo t4" Anno)

Arm Mount HUo• (Roquh- -14• A''"oj

ORO ER INO INFORMAT_IO_N

SAM,IE NUMIIER. 0HM- AM·2tO MH·IZO·rT·rO·O·L

Product Family
GRM=Galleria Mttdlutu
ORL-Gollorlo Round large

ntlng Mothod
=Atm•
=Arm Included for Round Pole'
S=Arm Included lor . Pole'
Squa.-
..Spidor lor 3" O.O T011on

lomp Wottago
usd eow
175•17GW
2S0W
1000..1000W.

lompTypeWtlo9o
MH-Mttti
H81ido
Mot•l •hcto
HPS-High
I'TMIU1'11
Sod•um

1Z0.1NV
2011a208V
&.t0-240V
271•777V
48Q.480v
TTaTnpla-Tep
red
347V'
MT•M\Illi-Tap wired
2

DISrbudOII
(Horlz0t1tel)
TVJW' II
(HorlLontoH
(Horbontall
FTar'1lf'W3rd Th.-ow
(Horizontal)
-Area Round
LAR (JKllcol)
V•Type Ill Verticel
ASoollrea Squore
(Ve l)
RW..Reetonguler
Widt (Vorticell •

Glasa
SQsSeg Gitu
(oddueulfl•l
llb8tonzo
AP.arey
BKs.Biecli:
DPaOork P1•llnum
GMaGraphitt Motnlllc
-- ":t CUSTOM COLOR

Option& (odd os suffix,)
F-Sfngle F'"- -
1120, 2n 0<347Vl
FF.Ooublo Fusod
(208,240 0f' IIMV,
...a...orw n.-.tnu
Ooley (HOC fleotrlkor Only)
Q;.Qu..m Ru11it.
(Hoi Rostme OnlyI
ReNEMATwistl
PhooocoDll'd(R- acla
S - d a.Shjold
V nde
!Arm Moun!only,
400W Maximum)
I-t amp Included

:=-1--

Aac.nor!- -(Ofder MflllnIloly)
MA1010.XX.$1no!.arm Tenon Ad.Jptw lor 3 1/2'O.DTanon
MA1011 XX•2 O 180'Tenon Adpier fur .<112·.0.O lonon
M.OI01>.-XXoo3e1ZO'TeoonAd4C>Iorfor 3 112"0.0. r....,.,
MA1012-XX-4 - 110" Tonon Ad111>tor lor 3 112'0.0.Tor>On"
f\I\4101- -XX•2 O 9V Tenon Adlplw for 3112'0.0. lenon"
MA1015-XX2 C.120"TononAd•ptet lor 3 112"0.0.Tenon u
MA101&-XX e90"Tenon Adapter lor 3 112•0.0.Tenon "
MA1017-XX. Sinylo ..-m Tenon Adeplu' for 2318•O.O. Tenon u,"
MA1018·x:x.2 '!I 1110'TenonAdapterfor t 318"'OD.T6n0n.,"
MA1018-XX003 - 120' TanonAdaplarfor 2318•OO.Tenon"'·'"
MA102S-XX•14" Arm lor Square Polo.1.0 EPA"
MA1-.XX-t'" Aim for Squ.,..Polo.0.5 EPA ''
MA1027·XX•14''''''' for Round Pol- - 10 EPA ''
MA to::la-)()(..tt" A"''' for Rovnd Pol- - 06£PAn
MA1029-XX.Woll Mount Bl'lld<et With 10' Arm (Specify Color!''
MA1045 AA-4 - U" ll!nuu Allt11Jl01 rv'
2 318"'0.0.Tet'"on ... u
MA1048-x:x-2 - W Tenon Adapt'!'lor 2 318' 0.0.Tenon ....
MA1049-XX-3 O110' TonaM•fl',.for 2 318"' 0.0. Tenon u.,.
MAtOS1•HouMSide Shlold-Midlum Housing (Field lns<olledl
MAt062...ouH Side Shleld — l.trvo Housing (Flold Installed!
OAIRA1016al'hot<>controi-Muld Tap
OAIRA1027•Photo<:Onlro1-4180V
OAIRA1201eNEMA Twlstloclr Photooonrroi-347V

NOTU t141M '"C. !netucflld S........,...._aAimMngth"M&baed housTngsia l1Vl'" forIC" f'lfGRt.. a A.eQ.ultMf.ck.adlttvt E 2811rnpW.nllt*lwkhCAU ho!A.Ing lnd ftMO1-a\'tfticahv lMnC*f opPC!I, - 1000W tl\ ORM Muting ntepM'wn dd ,....'opt8T·)1t1mp. - 1SCW mtdfum-bltM 17GW·1000W mogul briM. - ProdUd .t1o 1\iti'tblt Jn non-US vollfu•end KI for lnl•MtioNfm•Utt.. eo.-.tul\ f•etory fot tV t ltbflity lfld Of"dtlingll\formltlon 7 M11hi·Tp btUnt tt l2012'*2 77V wlr-' ZTTV.Tripi - Pbllltstl• t2.01277/347V whtd S4"1V. I RW optic n. avaSitbll w11h ft1t glass.. t \OOOW GAl w\th ftot gloM ._l...,ll'f.37 t1n1pand It nouvolloblo In AS, IV, AW dialllbu<JOIU.. 10 Other nnlth oolor voltablo.lne1Ydl"9 tlut 'ino Ol RAL color motdlos.Consult your .. 1J9hl."9ilepl-nii\No.11 Houn sldt only.

1

lour web •ite at www.cooperilghUng.com

NOT£•Spoc;'l<otlo""....., 6lmol>oiont ..,bioct to d>-""l>oui•-

V"ISi

Cullom or First Cenltr 1121 Highway 74 Soutlo Peoehtroo City, GA 30269 770.480. 800 fAX 770.466.4S01 ADHOSOt78

wt - L =- rz.Lon TO lOP uF F':AU ·

/THDN/A /OHT/N

OrtaiDQ Hu:nber WSR 175M MOU5 Z77 LP; \r DBLB

Hates /IP.L -Mr. /Jilt Type KS

FEATURES & SPECIFICATIONS

INT'E.MD.ED Ull —'or buUc:linv- and wall-moc.mc;od o.pp0collons.

CoWS'nWcnON — Augg1d, d..cut single-piece aluminum houling. o;.,. cast door frame has e 1l8" thick m11111ared glass ltnl. Door lrlmt 11 tully gultd widl one-piece solid rHicon..

AMISH —Sto.,.jord lin..h is ,__ t8xtured dor'< bron>t IDOBT) ClOlTt:Jn - raimnt r powd•r finu/1, With ath••n:IlQctur•l colort ava1lablL

OI'TICAL SYSTDI — Segmented ra for superioc unfonnay 1nd conlrol. R.llee111n ara imen:INinv-abM. Three lui cutolf downligiK ctlnlbWona IMillbla: FT (fotw11rd dlrowl, MD (medium 111..-1end WT ("Melt throw!. Six upright dS1ributiOll$ 1Mil1bl1: FTU (fo,...,.rd tlvow, 10"4 upI,MOU (medium throw, lO'Wi up), wru (wide mrow. 1Oup) end MOUS (up/down medium thrvw. up 50'llt l.WTIH' (pencll beam) and wruc !column baem).

Bfc:ntiCAI. SmiM '!ifN-15fNt/ ulilma llighrNc:lllOCI, hlgll powllr fllc• blr be/lest. J5S 11111us reactance high power factllr bd1st. 11'5W Ul!H:et • 1fonner ballast. Quiet dllconntr:t plug ea:atly dis· connecu rl1tactor from llan. Ball"tll are copper-wound end 100% fac:tory·temd. Porctltln, m lum-base .tacket >Mill copp1r anoy. nickel-piNscrew .n.n and cen• r C r.t. Ulktad fliJINI, DN 4¥N pul11 riClld.

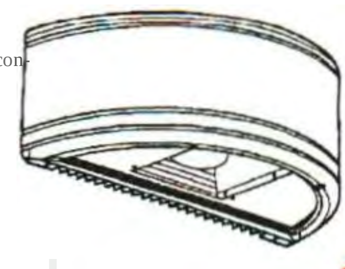
IN$TALLAT\OfII — Unlvartll mou g maellenlsm wi1h imegral m0<lndng tuppon allows ftxtunt ro hinoot dOW!\,. Bu!J bllt r.lflll ptovldes cM,ct align- mini whtl wefV Nllblfon.

UST11116-UL l.latel lndanll. CSA Certified ,.,., Opdonsl. Sultlllle tor wit loctlions (dtmp loc11lon Uttld ln lalli' up on.IUI!onJ, WIU OptiOn of. ,.,.. — locelion hhnQ in up— •—n OpndVL I1'61!5 I'Itld. (,..

Decorative Wall UtllfiAg

JVSR

METALHAUDE fnN-17SW HJGHPRESSURE SODIUM 3SW-150WW



..,;.tJ.,.

IJlQII>: 18.0 145 7)

DtpIll: 9.0 f22.SJ

OwraJ HaiQht 7.25 (1UI

MilL W1ig11C 30 lbs ll3S k;l

AI _.......,oro lnchn (eaml,...,.,.l unl — 0111.- - - -SOMIIild.

SUBMIT WST Foward Throw Fixture

ORDERING INFORMATION

a ..d\t boldfice —g nomenclwn fiMb:.,•iii.,.,., ro•nd — tt "" 11>0 ..,..pr, 5ne.

Example: W$R 175M ff 129 Sf IPI DNAT

WSR 175M MDU5 '1:71 LPIDBLB

Wattage/source — High pressure sodium | Olstrlhtlo• | folt e•l | Optfona

J5S'

W$11

51$ m 1CIOS 15111

Mom! balldo

1110M 150M IJ!!M

Dowuiight wml!!!llona
- FT FDIWWrd dlrow
- MD MecfNm Iflrow
- (c:oe!W lamp 101)
- WT 'Mete throw

U'gldOwn dimillu!Ipna
- FTU Forward d>to Willi 1 upnwx
- IIIIU Mtdlum thlow WIln lCJ'IVUpiiQilt l iel!IIlltd.l
- WTU – throw with 1 uplighl
- 1.;>05 •jr: * "T. 'T't;Ji;: ,,1 ...
- WTUr Pencil umu
- WTUI: ColwM beam&>

Uplight Color Options: Blue, Green, Red, Yellow

ILUE 8IW liED Yfl

S!JwUd inQGcd lp tjx1ura
- SF Single fuse (1277, 3f1V, rt/1TBI
- DF Double — (208. 21(N.fl/1 T8 M TBV)
- £C Emer cy circuit f2SW max 120V, lncendMcont (amp Incllntedl"
- DCl::t Emergency c!rwit 12 volt (35W llmp Included ltd.)"
- .ZOC1Z ervencv drcull IZ vult 12.'39N lampa Included!'.
- DC:ZOI2 Em -_nay circuit 12 volt tl!NII11n1p Included)*
- 2.DC20t:l Emwgency cirwit 12 voh 12. 'IJ10N blmpa included)"
- OilS au.m I'MOllce tvmm (lOOW max 12011, ..nz limp nM inci\Jdtdl"
- CA Enn1nced corron ..s SU nc•
- CIT Non.sllct promctlvt
- I'E co..rne (block P!lobotllc11'1c cell-button type (rt/a TB/TBV)I
- WlU Wit locrtloo daor lor up orienlation
- IBS Internal bactliQht leld"
- Dfl Diffu.log l1ns
- IPI IJi il!lnrlnd rl ltJ.\
- W L.aa temp
- CSA CSA Ctnilltd
- UCI Ul'li9ht COIN)Oillnt lhieidt!

SbjRptd IIMI'Illlv
- WSBIW Surface-mounted back box
- UTS Uptilt 5 degrees
- WSRWG Wire guard
- WSRVG Vandal guard
- Architectural colors
- Standard textured colors
- DDBT Dark bronze (std.)
- DSST Sandstone
- OtU.T N1ural Illurnlllum
- DWliO White
- .,981e 21 uk
- ORifonl!IU!UCid cars
- DINH Bronze
- 0$1'0 D1t gray
- OSJ>J light grey
- O.$P£ Grun
- DUG Dart r1d
- DSI'f Rust
- DCf1t Rod
- SUWo.a
- SODI Dart bronze
- SDWM White
- SDBL Black
- SOMA Nall1r11 t!Umlnum
- SOTI Ttnnla green
- SDBI Brigtt red
- SDBUA O.rt blue
- $11GY'II Gr y
- SDYUI Ydow

NOTn:
1. 1211Y.
2. Mut honfwtd will blalra: CIMOI be iioid 01ltllMol.
3. .l.voilobtii.Mt WT ""do lltOW) dleln'blllicn OI'ly.
   Avawit! WrUC W WI1Jf' Ollly.
   Con$1111 f.clefy lor ,..,,b,iity in C•'*-
   Otmcnat nwW-mp boltoa(12Il.IDI.mVl; !!12'l.m,Jo7VIn co _ 1.
   Opoonol PIIU-IIP beaut 1120. 201, 2<40. m, oltiGV:not t.Oiblo ln Ca11dol. 1 W mtelh.Ude only.
8. HOI,.ti ull with QRS,
9. HotIYPeble w1111Sf, OF or ORS.
10. !lot ovadable wllll fC.
11. IIOIIVIIIItllll wi'lllll'>ldu'"ltlrowMOI dS!IIM!on.
12. UHd ....,fTU 1l1d WnJ dfmw–10 tllamal otectrical coonp-
13. Adeaionll ordlbcvat colors rooo.le!Q: ••__........"""" fvt .__.dortnollon.

,_LITHONIA LIGH77NG®

Catalog Number	
Notes	

FEATURES & SPECIFICATIONS

INTENDED USE

Light controlling parabolic luminaires designed to control screen glare in VDT open office environments.

ATIRIBUTES

Models available to meet IES RP-1 preferred luminance criteria for office lighting. Choice of diffuse or specular louvers utilize the latest developments in louver finishing for minimized louver iridescence. Ideal for use with triphosphor lamps.

CONSTRUCTION

Black reveal provides floating louver appearance, conceals optional air-supply slots. Airflow control provided with optional heat removal dampers and air-pattern control blades.

Overlapping flange and modular ceiling trims factory installed with standard swing-gate hangers or field convertible with optional trim and hanger kits.

T-hinges die-formed for maximum strength. Latches spring-loaded, concealed in the reveal.

Housing formed from cold-rolled steel. Louvers formed from anodized aluminum. No asbestos is used in this product

FINISH

Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with high-gloss, baked white enamel.

ELECTRICAL SYSTEM

Thermally-protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast is standard. Energy saving and electronic ballasts are sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout. rated for required temperatures.

LISTING

UL Listed and CSA certified (see Options). NOM certified for Mexico (see Options).

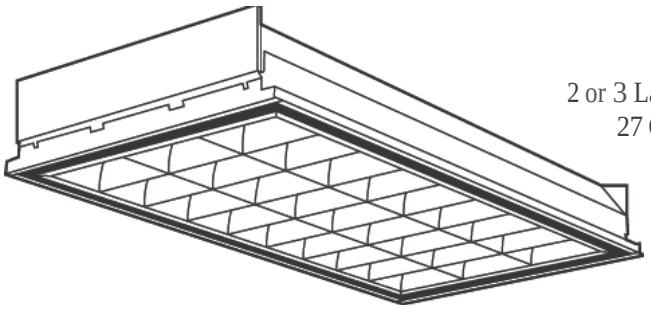
WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Specifications subject to change without notice.

Optimax® Parabolic Light Control System

PMO 2'X4'



2 or 3 Lamps
27 Cells

Specifications

Length: 48 (1218)
Width: 24 (609)
Depth: 6 (152)
Weight: 35 lbs (16 kg)

All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure product using standard options (shown in bold).
Example: 2PMO G B 3 32 27LS MVOLT 1/3 GEBlOIS

2PMO

Series

2PMO Optimax Light Control System, 2'wide

Trim type

G Grid
F Overlapping flanged
MT Modular fit-in
ST Screw slot

Air supply/ return (slots in side trim)
H Heat removal (through lamp cavity, dampers available)
0 Combination A&H
B Static (no air function, matching appearance)

2
3
Not included.

Lamp type

3Z 32WT8(48")

Number of cells

27 3 rows of 9

VoiLge
120
277
347
MVOLT [1]
Others available.

Finish

LD Low iridescent diffuse silver
LS low iridescent SJ!ecular Sliver

Options

113 One 3-lamp ballast
GEB101S Electronic ballast,_s10% THO, Instant Start
GEB10RS Electronic ballast..s_10% THO, Rapid Start
El Emer9ency battery pack (nommal300 lumens)
El14 Emer9ency battery pack (nommal14001umens)
PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit
GLR Internal fast-blow fuse2
GMF Internal slow-blow fuse2
LST Tandem wired fixture pairs (shared ballasts)
LP__ Lamped, specify lamp type and color
LP735 lamped; 700-series, 3500K
LP835 lamped; 800-series, 3500K
APB Air-pattern control blades (A and 0 models only)
JP Palletized and stretch-wrapped, G & MT trim only
CSA Listed and labeled to comply with Canadian Standards
NOM Listed and labeled to comply with Mexican Standards

NOTES:

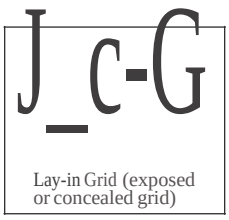
MVOLT standard for 120V and 277V applications. Some options require vokage specified.
Must specify voltage.

PMO 2•x4• 27 Cell, Optimax

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options}.

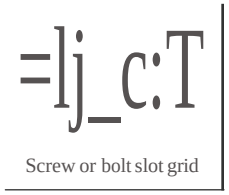
Ceiling Type	Appropriate Trim Type
Exposed grid tee	G
Concealed grid tee	G,ST
Concealed Z-spline	F,MT
Metal pan (consult factory}	MT
Screw slot (consult factory}	ST
Acoustical tile, plaster, or plasterboard on rigid support parallel to lamps	F



Lay-in Grid (exposed or concealed grid)

Overlapping Flanged Trim with swing-gate hangers

Modular Fit-In Trim with swing-gate hangers



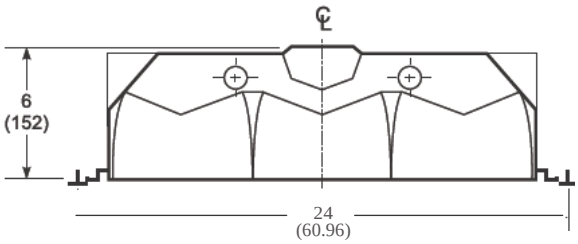
Screw or bolt slot grid

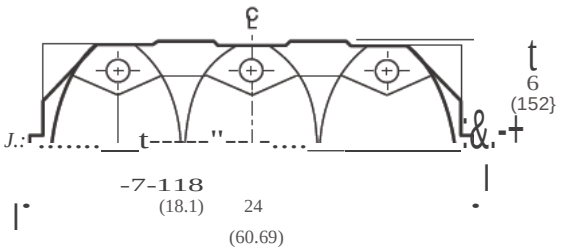
NOTES:

1 Recommended rough-in dimensions for F trim fixtures 24"x24" (Tolerance is +1/4", -0"). Swing-gate range 1-7/16"to 3-7/16", span 23-1/2" to 26-7/16'.

DIMENSIONS

Inches (millimeters). Subject to change without notice.





Energy (Calculated in accordance with NEMA atandard LE-5)

LER.fL	ANNUAL ENERGY COST*	LAMP OESCR PTION	LAMP UMENS	BALLAST FACTOR	WATTS
49 (LS) louver	$4	(2) 32WTS	2850	.88	62
59 (LS) louver	$4.07	(3) 32WTS	2850	.88	86

*Comparative yearly lighting energy coat per 1000 lumen&

PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedures. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon requeS1.

2PMO G B 33227S
Report LTL 3686
Lumens per lamp = 2900- Lum. eff. 67.3%
SJMH (along) 1.2 (across) 1.5
Coefficient of Utilization

Ceiling	80%			10%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
1	76	74	72	74	73	71	70	69	67
2	72	68	65	70	67	65	65	63	61
3	68	63	59	66	62	59	60	57	55
4	64	58	54	62	57	53	56	52	50
5	59	53	49	58	52	48	51	48	45
6	56	49	44	55	48	44	47	44	41
7	52	45	40	51	44	40	43	40	37
8	48	41	36	47	40	36	40	35	33
9	45	37	32	44	36	32	36	32	29
10	41	34	29	41	33	29	33	29	26

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2669	30.7	45.6
0-40	4546	52.3	77.6
0-60	5842	67.2	99.7
0-90	5858	67.3	100.0
90-180	0	0	0
0-180	5858	67.3	100.0

Luminance Surrmary - ccVm2

Angle	0	45	90
45	3080	3776	1567
55	469	565	113
65	33	33	30
75	27	22	22
85	16	16	16

2PMO 2 32 27LS
Report LTL 5742
Lumens per lamp = 2900- Lum. eff. 60.6%
S/MH (along) 12 (across) 1.3
Coefficient of Utilization

Ceiling	80%			10%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
1	68	67	65	67	65	64	63	62	60
2	65	61	59	63	60	58	58	56	55
3	61	56	53	59	55	52	54	51	49
4	57	52	48	56	51	47	50	47	44
5	53	47	43	52	47	43	46	42	40
6	50	44	39	49	43	39	42	39	36
7	46	40	35	45	39	35	38	35	32
8	43	36	31	42	35	31	35	31	28
9	39	32	28	39	32	28	31	27	25
10	37	29	25	36	29	25	28	25	22

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1498	25.8	42.6
0-40	2473	42.6	70.3
0-60	3512	60.6	99.9
0-90	3515	60.6	100.0

Luminance Surrmary- cd/m2

Angle	0	45	90
45	1808	3003	3322
55	122	775	74
65	0	8	0
75	0	0	0
85	0	37	0

f_ LITHDN/A LIGHTING®

An<!ItalltyBrandsCompany

Lithonia Lighting
Fluorescent
One Lithonia Way, Conyers, GA 30012
Phone: 800-858-7763
www.lithonia.com

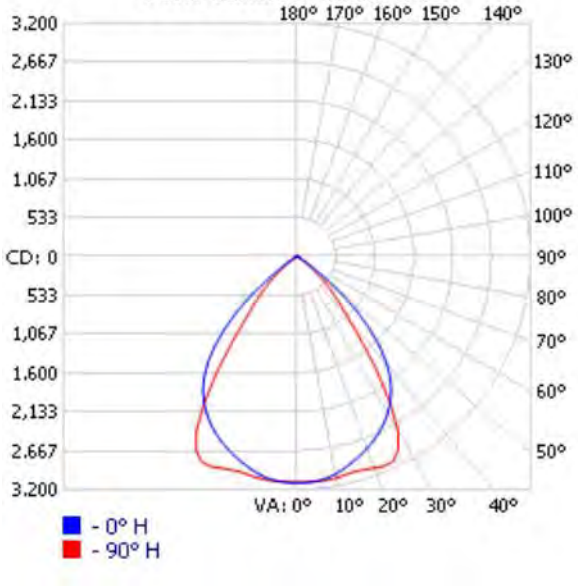
INDOOR PHOTOMETRIC REPORT

CATALOG: 2PMO G B 3 32 27LD MVOLT GEB10IS

TEST #:	LTL15287
CATALOG #:	2PMO G B 3 32 27LD MVOLT GEB10IS
LUMINAIRE:	PARAMAX LIGHT CONTROL SYSTEM, 2' X 4', 3-LAMP T8, 27-CELL LO IRR SEMISPECULAR 'OPTIMAX' LOUVER, ELECT BALLASTS, PAINT REFL = .919.
LAMP CAT #:	FO32/735/ECO
LAMP:	THREE 32-WATT T8 LINEAR FLUORESCENT
LAMP OUTPUT:	3 LAMP(S), RATED LUMENS/LAMP: 2850
BALLAST:	QTP1X32T8 & QTP2X32T8/UNV-ISN-SC AVG PUBL BF = .88
INPUT WATTAGE:	87.6
LUMINOUS OPENING:	RECTANGLE (L: 45", W: 20.76")

TER VALUE:	54 (BF = 1)
TER CATAGORY:	RECESSED, LINEAR
CIE CLASS:	DIRECT
MAX CD:	3,116.0 AT HORIZONTAL: 90°, VERTICAL: 22.5°
SPACING CRITERION:	@ 0 = 1.19 @ 90 = 1.23
EFFICIENCY:	**57.5%**

Polar Candela Distribution



INDOOR PHOTOMETRIC REPORT
CATALOG: 2PMO G B 3 32 27LD MVOLT GEB10IS

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	2,450.7	28.7%	49.9%
0-40	3,814.8	44.6%	77.6%
0-60	4,866.9	56.9%	99%
60-90	46.8	0.5%	1%
70-100	12.2	0.1%	0.2%
90-120	0	0%	0%
0-90	4,913.7	57.5%	100%
90-180	0	0%	0%
0-180	4,913.7	57.5%	100%

LUMENS PER ZONE

ZONE	LUMENS	% TOTAL	ZONE	LUMENS	% TOTAL
0-10	294.8	6.0%	90-100	0	0%
10-20	848.0	17.3%	100-110	0	0%
20-30	1,307.8	26.6%	110-120	0	0%
30-40	1,364.1	27.8%	120-130	0	0%
40-50	838.4	17.1%	130-140	0	0%
50-60	213.7	4.3%	140-150	0	0%
60-70	34.6	0.7%	150-160	0	0%
70-80	10.2	0.2%	160-170	0	0%
80-90	2.0	0.0%	170-180	0	0%

AVERAGE LUMINANCE (CD/M2)

	0	22.5	45	67.5	90
0	5148	5148	5148	5148	5148
45	3316	3541	2600	1699	1565
55	700	749	573	402	301
65	173	145	98	114	126
75	71	58	51	58	64
85	19	19	19	38	38

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC %:	80				70				50			30			10			0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	.68	.68	.68	.68	.67	.67	.67	.57	.64	.64	.64	.61	.61	.61	.59	.59	.59	.57
1	.65	.63	.61	.60	.63	.62	.60	.53	.59	.58	.57	.57	.56	.55	.55	.54	.54	.53
2	.61	.58	.55	.53	.59	.57	.54	.48	.55	.53	.51	.53	.51	.50	.51	.50	.49	.48
3	.57	.53	.49	.47	.56	.52	.49	.44	.50	.48	.46	.49	.47	.45	.48	.46	.44	.43
4	.53	.48	.45	.42	.52	.48	.44	.40	.46	.43	.41	.45	.43	.41	.44	.42	.40	.39
5	.50	.44	.41	.38	.49	.44	.40	.36	.43	.40	.37	.42	.39	.37	.41	.38	.36	.35
6	.47	.41	.37	.34	.46	.40	.37	.33	.40	.36	.34	.39	.36	.33	.38	.35	.33	.32
7	.44	.38	.34	.31	.43	.37	.34	.30	.37	.33	.31	.36	.33	.31	.35	.32	.30	.29
8	.41	.35	.31	.28	.41	.35	.31	.28	.34	.31	.28	.33	.30	.28	.33	.30	.28	.27
9	.39	.33	.29	.26	.38	.32	.29	.26	.32	.28	.26	.31	.28	.26	.31	.28	.26	.25
10	.37	.30	.27	.24	.36	.30	.26	.24	.30	.26	.24	.29	.26	.24	.29	.26	.24	.23

INDOOR PHOTOMETRIC REPORT
CATALOG: 2PMO G B 3 32 27LD MVOLT GEB10IS

CANDELA TABLE - TYPE C

	0	22.5	45	67.5	90
0	3103	3103	3103	3103	3103
5	3098	3103	3097	3098	3095
10	3033	3053	3072	3088	3089
15	2925	2961	3001	3043	3056
20	2801	2847	2896	3031	3090
25	2662	2710	2810	3024	3104
30	2483	2532	2700	2789	2765
35	2251	2311	2420	2081	1890
40	1909	1999	1840	1219	1060
45	1413	1509	1108	724	667
50	799	835	537	384	334
55	242	259	198	139	104
60	86	77	54	51	51
65	44	37	25	29	32
70	23	19	14	16	18
75	11	9	8	9	10
80	5	4	4	4	5
85	1	1	1	2	2
90	0	0	0	0	0

REPORTED DATA CALCULATED FROM MANUFACTURER'S DATA FILE, BASED ON IESNA RECOMMENDED METHODS.
REPORT GENERATED ON 3/7/2012, USING THE 'INDOOR' TEMPLATE.

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

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

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

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

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

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

Account Number	Annual Usage	Account Number	Annual Usage
8940-3651-01			

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

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

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

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

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

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

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

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

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

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Proposed energy efficiency measures may be eligible for Self-Direct Custom rebates if they clearly reduce electrical consumption and/or demand as compared to the appropriate baseline.

Before you complete this application, please note the following important criteria:

- Submitting this application does not guarantee a rebate will be approved.
- Rebates are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Incomplete applications cannot be reviewed; all fields are required. Refer to the complete list of Instructions and Disclaimers, beginning on page 6.

Notes on the Application Process

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact your Duke Energy Ohio, Inc account manager or the Duke Energy Smart $aver® team at 1-866-380-9580.

Every application must include calculations of the baseline electrical usage and the electrical usage of the proposed high-efficiency equipment/system. Monthly calculations are best. You, the Duke Energy Ohio customer, or your equipment vendor / engineer should perform these calculations and submit them to Duke Energy for review. *We strongly encourage the use of modeling software (such as eQuest or comparable) for complex projects.*

Upon receipt of your application, an acknowledgement email will be sent to you with an estimated response time based on an initial assessment of your application. The application review may include some communication to resolve any questions about the project or to request additional information. Applications that are received complete without missing information have a faster review time.

There are two ways to submit your completed application.

Email your scanned form to: SelfDirect@duke-energy.com

Or, fax your form to 513-419-5572

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

1. Contact Information (Required)

Duke Energy Customer Contact Information						
Company Name	Cincinnati Public Schools					
Address	2651 Burnett Ave					
Project Contact	Don Elbe					
City	Cincinatti	State	OH	Zip Code	45219	
Title	Utility Management Coordinator					
Office Phone	614-580-3352	Mobile Phone		Fax		
E-mail Address	elbedon@cpsboe.k12.oh.us					

Equipment Vendor / Contractor / Architect / Engineer Contact Information					
Company Name	Plug Smart				
Address	1275 Kinnear Road Suite 229				
City	Columbus	State	OH	Zip Code	43212
Project Contact	Lucas Dixon				
Title	Operations Manager				
Office Phone	614-580-3352	Mobile Phone		Fax	1-800-518-5576
E-mail Address	lucas.dixon@plugsmart.com				
Describe Role	Ensures rebate is correctly applied for				

Payment Information					
Payee Legal Company Name (as shown on Federal income tax return):	Cincinnati Public Schools				
Mailing Address	2651 Burnett Ave				
City	Cincinatti	State	OH	Zip Code	45219
Type of organization (check one) ☐ Individual/Sole Proprietor ☐ Corporation ☐ Partnership ☒ Unit of Government ☐ Non-Profit (non-corporation)					
Payee Federal Tax ID # of Legal Company Name Above:	31-6000758				
Who should receive incentive payment? (select one) ☒ Customer ☐ Vendor (Customer must sign below)					
If the vendor is to receive payment, please sign below: I hereby authorize payment of incentive directly to vendor: Customer Signature _____ Date____/___/_____(mm/dd/yyyy)					

2. Project Information (Required)

A. Please indicate project type:
- ☒ New Construction
- ☐ Expansion at an existing facility
- ☐ Replacing equipment due to equipment failure
- ☐ Replacing equipment that is estimated to have remaining useful life of 2 years or less
- ☐ Replacing equipment that is estimated to have remaining useful life of more than 2 years
- ☐ Behavioral, operational and/or procedural programs/projects

B. Please describe your project, or attach a detailed project description that describes the project.
New public pre kindergarten - 8th grade school.

C. When did you start and complete implementation?
Start date / (mm/yyyy) End date 03/ 2008 (mm/yyyy)

D. Are you also applying for Self-Direct Prescriptive incentives and, if so, which one(s)[1]?
Lighting Controls, Motors, Chiller

E. Please indicate which worksheet(s) you are submitting for this application (check all that apply):
- ☒ Lighting
- ☐ Variable Frequency Drive (VFD)
- ☐ Compressed Air
- ☐ Energy Management System (EMS)
- ☒ General (for projects not easily submitted using one of the above worksheets)

F. Please tell us if there is anything about your electrical energy projections (either for the baseline or the proposed project) that you are either unsure about or for which you have made significant assumptions. Attach additional sheets as needed.

Required: Attach a supplier or contractor invoice or other equivalent information documenting the Implementation Cost for each project listed in your application. (Note: self-install costs cannot be included in the Implementation Cost)

[1] If your project involves some equipment that is eligible for prescriptive incentives and some equipment that is likely eligible for custom incentives, and if it is feasible to separate the equipment for the energy analysis, then the equipment will be evaluated separately. If it is not feasible to separate the equipment for analysis, then the equipment will be evaluated together in the custom application.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Duke Energy

3. Signature (Required -must be signed by Duke Energy customer)

Customer Consent to Release of Personal Information

I, (insert name) Don Elbe , do hereby consent to Duke Energy disclosing my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number to its subcontractors solely for the purpose of administering Duke Energy Ohio's Mercantile Self-Direct Program. I understand that such subcontractors are contractually bound to otherwise maintain my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number in the strictest of confidence.

I realize that under the rules and regulations of the public utilities commission, I may refuse to allow Duke Energy Ohio, Inc to release the information set forth above. By my signature, I freely give Duke Energy Ohio, Inc permission to release the information designated above.

Application Signature

I certify that I meet the eligibility requirements of the Duke Energy Ohio, Inc Mercantile Self Direct Custom Incentives Program and that all information provided within this application is correct to the best of my knowledge. I agree to the terms and conditions set forth for this program. I certify that the numbers, energy savings, and responses shown on this form are correct. Further, I certify that the taxpayer identification number is current and correct. I am not subject to backup withholding because: (a) I am exempt from backup withholding; or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends; or (c) the IRS has notified me that I am no longer subject to backup withholding. I am a U.S. citizen (includes a U.S. resident alien).

Don Elbe
Duke Energy Ohio, Inc Customer Signature

Print Name

Date 12/30/2011

Checklist for completing the Application

INCOMPLETE APPLICATIONS WILL RESULT IN DELAYS IN DUKE ENERGY PROCESSING YOUR APPLICATION AND NOTIFYING YOU CONCERNING AY REBATES. Before submitting the application and the required supplementary information, use the following checklist to ensure that your application is complete and the information in the application is accurate. (Note: this checklist is for your use only – do not submit this checklist with your application)

Section No. & Title	**Have You:**
1. Contact Information	☐ Completed the contact information for the Duke Energy customer? ☐ Completed the contact information for the equipment vendor / project engineer that can answer questions about the technical aspects of the project, if that is a different person than above?
2. Project Information	☐ Answered the questions A-E, including providing a description of your project. ☐ Completed and attached the lighting, compressed air, VFD, EMS and/or General worksheet(s)?
3. Signature	☐ Signed your name? ☐ Printed your name? ☐ Entered the date?
Supplementary information (Required)	☐ Attached a supplier or contractor's invoice or other equivalent information documenting the Implementation Cost for projects listed in your application? (Note: self-install costs cannot be included in the Implementation Cost) ☐ (If submitting the General Worksheet) attached calculations documenting the energy usage and energy savings for **each** project listed in your application?

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact:

- your Duke Energy account manager
  or,
- the Duke Energy Smart $aver® team at 1-866-380-9580.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Instructions/Terms/Conditions

Note: Please keep for your records- do not submit with the application

1. Energy service companies or contractors may assist in preparing the application, but an authorized representative of the customer must sign this application to be eligible to participate in the Mercantile Self Direct Program. Completion of this application does not guarantee the approval of a Self Direct Custom Rebate.

2. Once all documentation requested in this application is received by *Duke Energy Ohio, Inc,* and any follow-up information requested by *Duke Energy* is received, the rebate amount for each Energy Conservation Measure (ECM) will be communicated to the customer. The rebate amount will be based on ECM energy savings and ECM incremental installation cost.

3. All rebates require approval by the Public Utilities Commission of Ohio. *Duke Energy Ohio, Inc* will submit an application for rebate on the customer's behalf upon customer attestation to program terms, conditions and requirements as outlined in the rebate offer letter and upon customer completion of attestation documents required by the Public Utilities Commission of Ohio.

4. *Duke Energy Ohio, Inc* will issue a Self Direct Custom Rebate check, based on the approved rebate amount for each ECM, upon receiving approval from the Public Utilities Commission of Ohio. *Duke Energy* Ohio, Inc does not guarantee PUCO approval.

5. With the application, the customer must provide a list of all sites where the ECMs were installed. *Duke Energy Ohio, Inc* requests that sites of similar size, hours of operation and energy consuming characteristics be grouped together in one application for the determination of the rebate amount. The application should identify the site where each unique ECM was installed.

6. Based on the information submitted with the application and the information gathered both before and after the initial installation of the ECM, *Duke Energy Ohio, Inc* will calculate the rebate amount for each ECM.

7. *Duke Energy Ohio, Inc* may conduct random site inspections of a sample of the locations where the ECMs are installed to verify installation and operability of the ECMs and to obtain information needed to calculate the Approved Incentive Amount.

8. Customers are encouraged to retain copies of all forms, invoices and supporting documentation for their records.

9. Approved rebates are valid for 6 months from the date communicated to the customer by *Duke Energy Ohio, Inc,* subject to the expiration of measure eligibility based on project completion dates and application submission deadlines as defined by PUCO. Customers are encouraged to execute their rebate offer contracts and PUCO-required affidavits promptly to ensure eligibility is not forfeited.

10. *Duke Energy Ohio, Inc* reserves the right to recover all unrecoverable costs associated with the project approval if the customer decides not to execute the rebate contract, after the project is approved by *Duke Energy Ohio, Inc.*

11. Projects financially supported by other funding sources will be evaluated on a case-by-case basis for potential partial funding from *Duke Energy Ohio, Inc*.

12. Participants must be *Duke Energy Ohio, Inc* nonresidential, mercantile customers with the project sites in the *Duke Energy Ohio, Inc* service territory.

13. Customers or trade allies may not use any *Duke Energy* logo without prior written permission.

14. Only trade allies registered with *Duke Energy* are eligible to participate.

15. All equipment must be new. Used or rebuilt equipment is not eligible for incentives. All old existing equipment must be removed on retrofit projects.

16. Disclaimers: *Duke Energy Ohio, Inc*
    a. does not endorse any particular manufacturer, product or system design within the program;
    b. will not be responsible for any tax liability imposed on the customer as a result of the payment of incentives;
    c. does not expressly or implicitly warrant the performance of installed equipment. (Contact your contractor for details regarding equipment warranties.);
    d. is not responsible for the proper disposal/recycling of any waste generated or obsolete or old equipment as a result of this project;
    e. 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; and
    f. reserves the right to change or discontinue this program at any time. The acceptance of program applications is determined solely by *Duke Energy Ohio, Inc.*

The General Worksheet is part 2 of the application. Do not submit this file without submitting a completed Part1 Custom Application document file, which can be found at www.duke-energy com. This worksheet is for all projects that are not easily submitted through one of the other worksheets

Before you complete this application, please note the following important criteria:
Submitting this application does not guarantee an incentive will be approved.
Incentivealready decided to proceed.
Electric demand and/or energy reductions must be well documented with auditable calculations.
Incomplete applications will not be reviewed; all fields are required.
Refer to the complete list of Instructions and Disclaimers, found in the Mercantile Self Direct Custom Application Part 1 document.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

Duke Energy Customer Contact Information (Match the information in Application Part 1):

Name	Don Elbe
Company	Cincinnati Public Schools

Equipment Vendor / Project Engineer Contact Information

Name	Lucas Dixon
Company	Plug Smart

Before proceeding with the custom application, please verify that your project is not on the Self-Direct Prescriptive application.
The prescriptive incentive applications can be found at:
http //www.duke-energy.com/ohio-large-business/smart-saver/mercantile-self-direct.asp
Prescriptive rebate amounts are pre-approved.

List of Sites (Required)

App No.	
Rev.	

Provide a list of sites addressed by this custom incentive application

Site ID (see note 1)	Duke Energy Electric Account Number(s) (see note 2)	Facility Address	List of Proposed Projects at each site	Annual Hours of Operation	Gross Square Footage	Conditioned Square Footage	Facility Age (years)
225	*12345678 01*	*Example: 123 Main Street, Anywhere USA 12345*	*Project Name(s)*	*5,840*	*42,000*	*38,000*	*12*
	8940-3651-01	*5730 Colerain Ave Cincinnati OH 45239*	*Heat Recovery Wheels*	*1,225*	*84,144*	*84,144*	*3*

1 Site ID

Can be a store number, building name or other way to identify the location. If there is only one site involved in this application, then a Site ID is not necessary.

2 Account Numbers

Must match the facility of the proposed project(s). If there are multiple meters at a site, only include the meters that pertain to the project(s).

App No.	0
Rev.	0

For each project, answer the following questions (use one worksheet per project)

Project Name: Heat Recovery Units

How would you classify this project? (Place an x in all boxes that apply.)

Lighting		**Heating/Cooling**	X	**Air Compressor**		**Energy Management System**	
VFD		**Motors/Pumps**		**Process Equipment**		**Other, describe below:**	

Brief Project Description

Describe the Baseline (see note 3) Equipment/System	Describe the Proposed High Efficiency Project
No heat recovery units installed on air handlers	Heat recovery units installed on air handlers.

If Existing Equipment is the Baseline, how many years of useful life remain or how many years until scheduled replacement?

Detailed Project Description Attached? Yes (Required)

Operating Hours (see note 4)

	Weekday		Saturday		Sunday		Weeks of Use in Year (see note 5)	Total Annual Hours of Use
24 x 7	Start Hour	End Hour	Start Hour	End Hour	Start Hour	End Hour		
	7:00 AM	*3:00 PM*					*29*	*1,225*

Energy Savings

	Baseline (see Note 3)	Proposed	Savings	Describe how energy numbers were calculated
Annual Electric Energy	19,204 kWh	0 kWh	19,204 kWh	
Electric Demand	0 kW	0 kW	0 kW	
Calculations attached	Yes	Yes	(Required)	he is listed as the savings with proposed at 0 kWh. See attached DUKE.CincPublic_Evar

Simple Payback

Average electric rate ($/kWh) on the applicable accounts (see note 6)			$0.10
Estimated annual electric savings			$1,920
Other annual savings in addition to electric savings, such as operations, maintenance, other fuels			
Incremental cost to implement the project (equipment & installation) (see note 7)			
Copy of vendor proposal is attached (see note 8)			Yes
Simple Electric Payback in years (see note 9)	0	**Total Payback in years**	0

3 Baseline
Retrofit projects: the existing equipment is the baseline.
New construction projects: the baseline is the standard option in today's market, taking into account any applicable organizational, local, state or federal codes or standards currently in effect.

4 Operating Hours
Describe when the equipment is typically used. If the project is proposed for more than one site, provide any variations in operating hours between the sites on a separate sheet.

5 Weeks of Use in Year
If the equipment is not in use 52 weeks during the year (for example, during holiday or summer break), provide an explanation of when usage is not expected and why: Savings only calculated for summer hours, gas heating systems are used during the winter.

6 Average electric rate ($/kWh)
If you do not know your average electric rate, use $0.10/kWh.

7 Incremental cost to implement the project
Costs exclude self installation costs. Retrofit projects, incremental cost is the total cost of the proposed project. New construction or where the existing equipment must be replaced anyway, then incremental cost is the premium of the proposed high efficiency project over baseline.

8 Copy of vendor invoice is attached
Vendor invoices detailing costs of the project are always required.
New construction projects or where the existing equipment must be replaced anyway, vendor proposal of baseline must also be attached.

9 Simple Electric Payback
If the simple electric payback is less than 1 year, the rebate structure is affected. Double check average electric rate for correct payback.

Total energy wheel selection

VENMAR CES
COST-EFFECTIVE COMMERCIAL VENTILATION

Engineering submittal data

Version 2.63

Project name: Cinps Mt. Airy

Date: 09-07-06

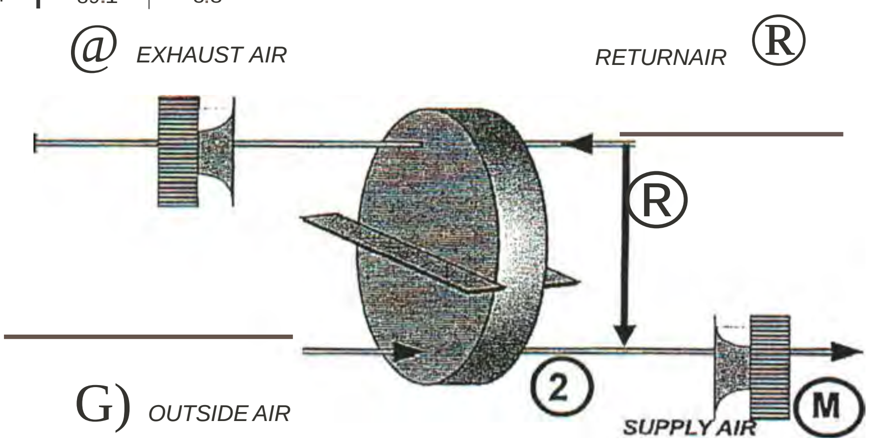
Unit tag#: AHU-1

Folder#: C244-06

WHEEL MODEL: HWL-T-78

Station #4	Summer	Winter
CFM	11 650	
DBT("F)	89.6	16.6
WBT("F)	71.9	14.8
RH o/o	42.7	69.0
GR / Lb air	89.1	8.8

Station#3	Summer	Winter
CFM DBT	34 300	
("F)	75.0	72.0
WBT("F)	62.5	55.9
RH o/o	49.8	35.1
GR / Lb air	64.4	40.8



Recirc.	Summer	Winter
CFM	22 650	
DBT ("F)	75.0	72.0
WBT("F)	62.5	55.9
RH o/o	49.8	35.1
GR / Lb air	64.4	40.8

Station #1	Summer	Winter
CFM	14 350	
DBT("F)	93.0	5.0
WBT ("F)	74.0	2.0
RH%	41.2	20.8
GR / Lb air	95.7	1.5

Station #2	Summer	Winter	Defrost*
CFM	14350		
DBT ("F)	81.1	49.9	36.7
WBT("F)	66.9	42.2	31.3
RH%	47.7	51.8	54.2
GR / Lb air	75.6	27.5	17.2

Mixing	Summer	Winter	Defrost*
CFM	37 000	37 000	
DBT("F)	77.6	62.6	58.3
WBT ("F)	63.8	49.8	46.5
RH%	47.1	39.0	39.0
GR / Lb air	69.6	34.9	31.6

Specifications:

MODEL: HWL-T-78

Desiccant type: Molecular Sieve 4A

	Air flow	Face velocity	Pressure drop
Supply side	14 350 CFM	897 FPM	0.95 in.wg.
Return side	11 650 CFM	728 FPM	0.77 in.wg.

Recove!:l£ effectiveness

	Summer	Winter
Sensible=	81%	83%
Latent=	79%	81%
Total =	80%	82%

urge air: *No purga sa/acted*

Purge flow: OCFM   EATR: 5.2%

*FROST PREVENTION SYSTEM

Tvpe: VFD defrost

Note: Calculations based on maintaining a 85%RH Exhaust set-point

ENERGY RECOVERED

Cooling mode:

	Sensible	Latent	TOTAL
BTUH	183929	195791	391536

Moisture transfer : 185.1 lblhr

Heating mode:

	Sensible	Latent	TOTAL
BTUH	696 441	253 560	956 360

Moisture transfer : 239.7 lb/hr

Dimensions:

Rolorlh- n e ss	Wh diamet	iw x H	L e n$ h	1:gh tm(I bs)
10"	78"	87" x BT'	20"	1230

Total energy wheel selection

Engineering submittal data

Version 2.63

VENMAR CES
COST-E:'FFECT/VE COMMERCIAL VENTILATION

Project name: Cinps Mt. Airy
Unit tag#: AHU-2
Folder#: C244-06
Date: 09-07-06

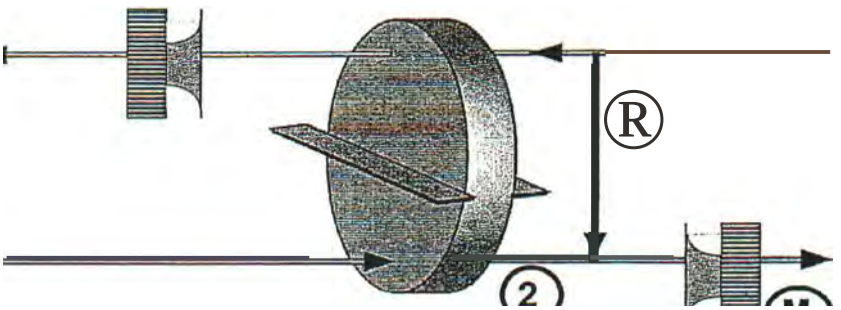
WHEEL MODEL: HWL-T-62

Station #4	Summer	Winter
CFM	5650	
DBT ("F)	91.4	10.5
WBT("F)	73.0	8.2
RH%	41.9	52.2
GR / Lb air	92.5	4.9

Station #3	Summer	Winter
CFM	21400	
DBT ("F)	75.0	72.0
WBT("F)	62.5	55.9
RH%	49.8	35.1
GR / Lb air	64.4	40.8

@ *EXHAUST AIR*

RETURNAIR ®



CD *OUTSIDE AIR*

Recirc.	Summer	Winter
CFM	15 750	
DBT ("F)	75.0	72.0
WBT("F)	62.5	55.9
RH%	49.8	35.1
GR / Lb air	64.4	40.8

Station #1	Summer	Winter
CFM	8 250	
DBT ("F)	93.0	5.0
WBT ("F)	74.0	2.0
RH%	41.2	20.8
GR / Lb air	95.7	1.5

Station #2	Summer	Winter	Defrost*
CFM	8 250		
DBT ("F)	81.8	47.1	317
WBT("F)	67.2	40.3	28.2
RH%	47.1	54.7	64.6
GR / Lb air	76.4	26.1	168

Mixing	Summer	Winter	Defrost•
CFM	24 000	24 000	
DBT ("F)	77.3	63.4	58.1
WBT("F)	63.6	50.5	46.7
RH%	47.0	39.3	40.5
GRLb air	68.5	35.7	32.5

Specifications:

MODEL: HWL-T-62
Desiccant type: Molecular Sieve 4A

	Air flow	Face velocity	Pressure drop
Supply side	8 250 CFM	825 FPM	0.84 in.wg.
Return side	5650 CFM	565 FPM	0.57 in.wo.

Recove!:Y effectiveness

	Summer	Winter
Sensible=	91%	92%
Latent=	90%	91%
Total=	90%	92%

Purge air: No *purge selected*

Purge flow: OCFM EATR: 5.7%

*FROST PREVENTION SYSTEM

Type: VFD defrost
Note: Calculations based on maintaining a 85%RH Exhaust set-point

ENERGY RECOVERED

Cooling mode:

	Sensible	Latent	TOTAL	Tons
BTUH	99 880	108 052	214497	17.9

Moisture transfer : 102.2 lbfhr

Heating mode:

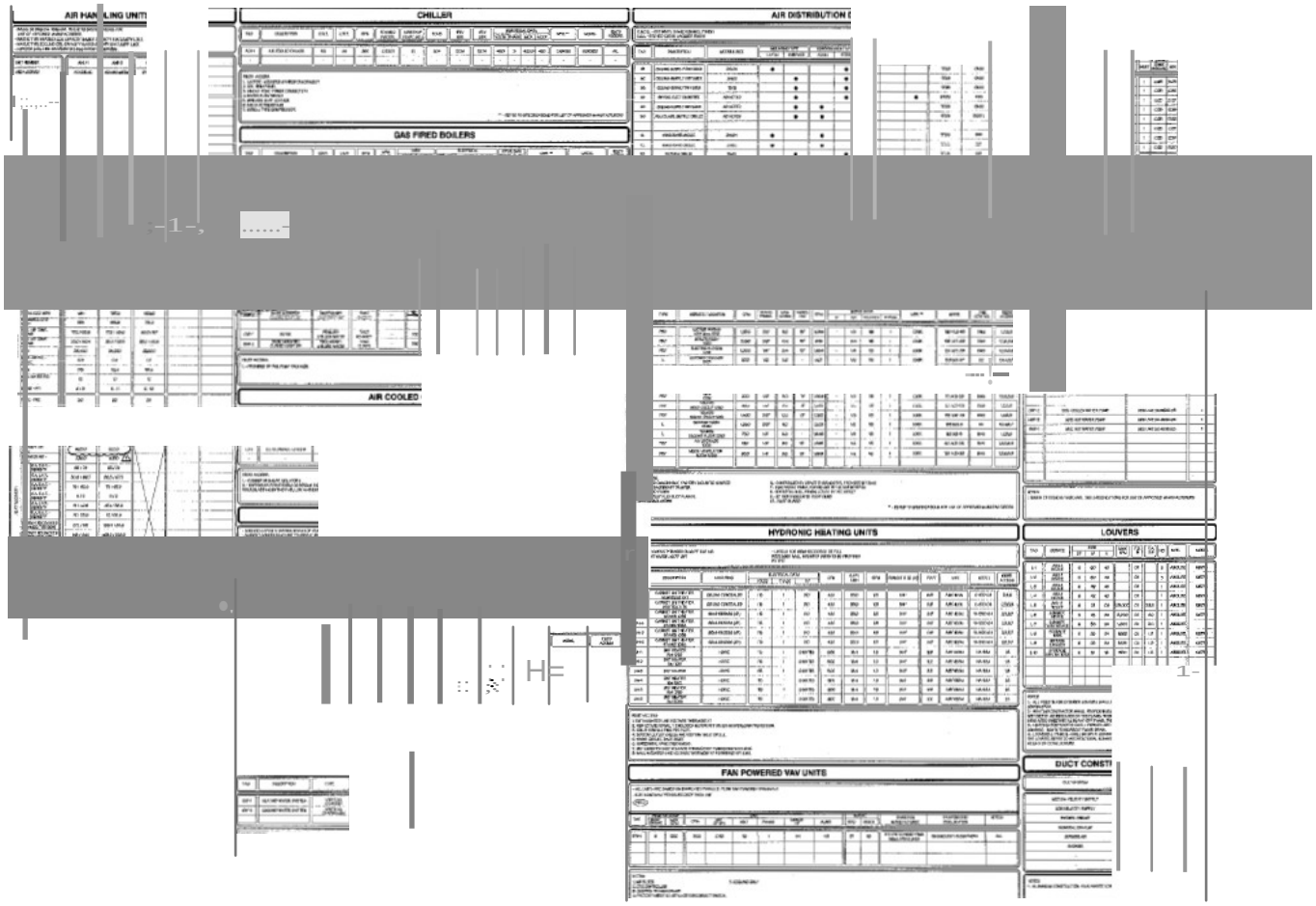
	Sensible	Latent	TOTAL
BTUH	375 217	137 897	516 408

Moisture transfer : 130.4 lblhr

Dimensions:

Rotor thickness	Wheel diameter	WxH	Length	Weight (lbs)
10"	62"	73" x73"	20"	910

EATR =Exhaust air transfer ratio per ARI-1060-2001



Mt. Airy Pre-K dms & School
5790 Colerain Avenue
Cincinnati, OH 45239

Construction Partners

HVAC SCHEDULES

M611

Performance Data

Part Load Perfonnance

Table P-9. ARI part-load per(omlaiiCtl for 60 Hz standatd efliciem;y machines in English units

Unit Size	Ful Load Tons	Full load Effi	IPlV
140	138.2	9.7	13.5
155	151.9	9.8	13..6
170	166.2	9.9	13.9
185	181.2	9.7	137
200	197.2	9.6	133
225	216.4	9.6	13.4
250	2312	9.6	13.6
275	268.0	9.8	133
300	299.2	9.6	13.3
350	339.6	9.6	13.1
400	401 7	9.6	14.6
450	441.6	9.6	14.7
500	483.0	9.6	14.9

Notes:
1.1PLV values are rated in accordance with ARI Standard .
2. EER andl PLV val ues indl ude compressors, condenser fans and control kW,

Table P-10. ARt part-load pedotmaiiCtl for 60 Hz high efticiency machines in English units

Unit Size	Ful load Tons	Full Load Effi	IPLV
140	143.9	10.3	14.0
155	157.1	10.4	14.1
170	1712	10.4	14.4
185	1811	1().3	14.2
200	204.1	10.1	13.9
225	223.9	1o.2	14.0
250	243.2	10.1	13.8
275	m1	10 5	13.7
300	308.8	10.2	13.6
350	349..7	10.5	15.3
400	415.5	10.1	14.5

Jilble P-11. ARI part-load ,.rfotmaiiCtl for 50 Hz standanl elliciency machines in English units

Unit Size	Full Load lOns	Full load EER	IPLV
140	133.7	9.3	14.2
155	146.0	9.2	14.1
170	159.0	9.2	13.9
185	175.9	9.3	13.8
200	193.9	9.5	14.2
250	232,6	9.5	14.3
275	259.0	9.4	14.4
300	294..4	9.5	14.0
350	324.6	9.3	15.9
375	360..1	9.4	16.0
400	395..1	9.5	16.1

Notes:
1, IPLV values are rated in accordance with ARI Standard 6&1'500.
2. EER and IPLV values include comprmsors. condenser fans and control kW.

Jilble P 12. ARI part-load ,.rfotmaiiCtl for 50 Hz high efficiem;y machines in English units

Unit Size	Full load Tons	Full Load EER	IPLV
140	140.4	10.2	15.0
155	152..4	10.1	14.9
170	165..2	14.7	14.7
185	183..1	10.1	14.6
200	202..2	10.2	14.9
250	241 1	10.0	14.3
275	269..9	10.2	14.9
300	306..1	10.3	14.5
350	3312	10.0	16.1
375	374.1	10.1	16.1
400	411.8	10.2	16.2

TRANE' Submittal

Trane
A Division of American Standard Inc.

Prepared For:
Dynamix Engr.

Sold To:
RPC Mechanical
5301 Lester Road
Cincinnati, Ohio 45213

Date: *October 15, 2006*

Job Name:
CPS Mount Airy PreK-8
5730 Colerain Avenue
Cincinnati, Ohio 45239

Trane is pleased to provide the enclosed submittal for your review and approval.

Product Summary

Qty	Product	
1	Air-Cooled Helical Rotary Water Chiller	Tag: ACH-1

The attached information describes the equipment we propose to furnish for this project and is submitted for your approval.

Rick DeWitt
Trane
10300 Springfield Pike
Cincinnati, OH 45215-1118
Phone: (513)771-8884
Fax: (513)772-7281

NOT AP
BY
10/23/06

Tag Data - Air-Cooled Helical Rotary Water Chillers (Qty: 1)

Item	Tag(s)	Qty	Description	Model Number	Spec Number
A1	ACH-1	1	Air-Cooled Series R(TM)	RTAC200	15684

Product Data- Air-Cooled Helical Rotary Water Chillers

Item: A1 Qty: 1 Tag(s): ACH-1

Air Cooled Series R(TM} Model RTAC
200 Nominal Tons
460 V/60 Hz/3 Ph
High Efficiency/Performance
C/UL Listing
ASME
Std 40-60F leaving, with evap heaters
2 Pass Arrangement, insulated
Low and High Ambient Capability
Aluminum Fins
TEAO Fan Motors
Wye-delta closed transition starter
Single point power connection Non-
Fused Disconnect Switch Dyna-
View operator interface LonTalk
Communications Interface Alarm
relay
150 psi NEMA-3 (sealed) flow switch (Fid)
With suction service valves
Architectural louvered panels
Elastomeric isolators (Fid)
Startup and (2) Days Owner Training
5 year Compressor Warranty
1st Year Labor Warranty Whole Unit
1st Year Refrigerant Warranty

Performance Data - Air-Cooled Helical Rotary Water Chillers

Tags	ACH-1
Capacity (tons)	204.90
Compressor power (kW)	221.50
Efficiency (EEA)	10.1
Evap entering temp (F)	58.00
Evap flow rate (gpm)	350.00
Evap leaving temp (F)	44.00
Evap pressure drop (ft H20)	7.40
Evap fluid concentration (%)	0.00
Evap fouling factor (hr-sq ft-deg F/Btu)	0.00010
Ambient air temp (F)	95.00
ALA- compressor A (A)	168.00
LAA- compressor A (A)	285.00
ALA- compressor B (A)	168.00
LAA - compressor B (A)	285.00
Single point power MCA (A)	417.00
Ckt 1 Charge (HFC-134a) (lb)	225.0
Ckt 2 Charge (HFC-134a) (lb)	225.0
COP (COP)	2.97
Single point power MOP (A)	500.00

Pleasant Ridge School

Supporting Documentation

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

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

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

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

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

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

Account Number	Annual Usage	Account Number	Annual Usage
9110-3676-01			

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

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

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

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

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

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

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

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

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

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Proposed energy efficiency measures may be eligible for Self-Direct Custom rebates if they clearly reduce electrical consumption and/or demand as compared to the appropriate baseline.

Before you complete this application, please note the following important criteria:

- Submitting this application does not guarantee a rebate will be approved.
- Rebates are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Incomplete applications cannot be reviewed; all fields are required. Refer to the complete list of Instructions and Disclaimers, beginning on page 6.

Notes on the Application Process

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact your Duke Energy Ohio, Inc account manager or the Duke Energy Smart $aver® team at 1-866-380-9580.

Every application must include calculations of the baseline electrical usage and the electrical usage of the proposed high-efficiency equipment/system. Monthly calculations are best. You, the Duke Energy Ohio customer, or your equipment vendor / engineer should perform these calculations and submit them to Duke Energy for review. *We strongly encourage the use of modeling software (such as eQuest or comparable) for complex projects.*

Upon receipt of your application, an acknowledgement email will be sent to you with an estimated response time based on an initial assessment of your application. The application review may include some communication to resolve any questions about the project or to request additional information. Applications that are received complete without missing information have a faster review time.

There are two ways to submit your completed application.

Email your scanned form to: SelfDirect@duke-energy.com

Or, fax your form to 513-419-5572

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

1. Contact Information (Required)

Duke Energy Customer Contact Information						
Company Name	Cincinnati Public Schools					
Address	2651 Burnett Ave					
Project Contact	Don Elbe					
City	Cincinatti	State	OH	Zip Code	45219	
Title	Utility Management Coordinator					
Office Phone	513-363-0754	Mobile Phone		Fax		
E-mail Address	elbedon@cpsboe.k12.oh.us					

Equipment Vendor / Contractor / Architect / Engineer Contact Information					
Company Name	Plug Smart				
Address	1275 Kinnear Road Suite 229				
City	Columbus	State	OH	Zip Code	43212
Project Contact	Lucas Dixon				
Title	Operations Manager				
Office Phone	614-580-3352	Mobile Phone		Fax	1-800-518-5576
E-mail Address	lucas.dixon@plugsmart.com				
Describe Role	Ensures rebate is correctly applied for				

Payment Information					
Payee Legal Company Name (as shown on Federal income tax return):	Cincinnati Public Schools				
Mailing Address	2651 Burnett Ave				
City	Cincinatti	State	OH	Zip Code	45219
Type of organization (check one) ☐ Individual/Sole Proprietor ☐ Corporation ☐ Partnership ☒ Unit of Government ☐ Non-Profit (non-corporation)					
Payee Federal Tax ID # of Legal Company Name Above:	31-6000758				
Who should receive incentive payment? (select one) ☒ Customer ☐ Vendor (Customer must sign below)					
If the vendor is to receive payment, please sign below: I hereby authorize payment of incentive directly to vendor: Customer Signature _____ Date____/___/_____(mm/dd/yyyy)					

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

2. Project Information (Required)

A. Please indicate project type:
- ☒ New Construction
- ☐ Expansion at an existing facility
- ☐ Replacing equipment due to equipment failure
- ☐ Replacing equipment that is estimated to have remaining useful life of 2 years or less
- ☐ Replacing equipment that is estimated to have remaining useful life of more than 2 years
- ☐ Behavioral, operational and/or procedural programs/projects

B. Please describe your project, or attach a detailed project description that describes the project.
Pre-K-6 Public School

C. When did you start and complete implementation?
Start date / (mm/yyyy) End date 08/2008 (mm/yyyy)

D. Are you also applying for Self-Direct Prescriptive incentives and, if so, which one(s)[1]?

E. Please indicate which worksheet(s) you are submitting for this application (check all that apply):
- ☒ Lighting
- ☐ Variable Frequency Drive (VFD)
- ☐ Compressed Air
- ☐ Energy Management System (EMS)
- ☒ General (for projects not easily submitted using one of the above worksheets)

F. Please tell us if there is anything about your electrical energy projections (either for the baseline or the proposed project) that you are either unsure about or for which you have made significant assumptions. Attach additional sheets as needed.

Required: Attach a supplier or contractor invoice or other equivalent information documenting the Implementation Cost for each project listed in your application. (Note: self-install costs cannot be included in the Implementation Cost)

[1] If your project involves some equipment that is eligible for prescriptive incentives and some equipment that is likely eligible for custom incentives, and if it is feasible to separate the equipment for the energy analysis, then the equipment will be evaluated separately. If it is not feasible to separate the equipment for analysis, then the equipment will be evaluated together in the custom application.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Duke Energy

3. Signature (Required -must be signed by Duke Energy customer)

Customer Consent to Release of Personal Information

I, (insert name) Don Elbe , do hereby consent to Duke Energy disclosing my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number to its subcontractors solely for the purpose of administering Duke Energy Ohio's Mercantile Self-Direct Program. I understand that such subcontractors are contractually bound to otherwise maintain my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number in the strictest of confidence.

I realize that under the rules and regulations of the public utilities commission, I may refuse to allow Duke Energy Ohio, Inc to release the information set forth above. By my signature, I freely give Duke Energy Ohio, Inc permission to release the information designated above.

Application Signature

I certify that I meet the eligibility requirements of the Duke Energy Ohio, Inc Mercantile Self Direct Custom Incentives Program and that all information provided within this application is correct to the best of my knowledge. I agree to the terms and conditions set forth for this program. I certify that the numbers, energy savings, and responses shown on this form are correct. Further, I certify that the taxpayer identification number is current and correct. I am not subject to backup withholding because: (a) I am exempt from backup withholding; or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends; or (c) the IRS has notified me that I am no longer subject to backup withholding. I am a U.S. citizen (includes a U.S. resident alien).

Don Elbe
Duke Energy Ohio, Inc Customer Signature

Print Name

Date 12/30/2011

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Checklist for completing the Application

INCOMPLETE APPLICATIONS WILL RESULT IN DELAYS IN DUKE ENERGY PROCESSING YOUR APPLICATION AND NOTIFYING YOU CONCERNING AY REBATES. Before submitting the application and the required supplementary information, use the following checklist to ensure that your application is complete and the information in the application is accurate. (Note: this checklist is for your use only – do not submit this checklist with your application)

Section No. & Title	Have You:
1. Contact Information	☐ Completed the contact information for the Duke Energy customer? ☐ Completed the contact information for the equipment vendor / project engineer that can answer questions about the technical aspects of the project, if that is a different person than above?
2. Project Information	☐ Answered the questions A-E, including providing a description of your project. ☐ Completed and attached the lighting, compressed air, VFD, EMS and/or General worksheet(s)?
3. Signature	☐ Signed your name? ☐ Printed your name? ☐ Entered the date?
Supplementary information (Required)	☐ Attached a supplier or contractor's invoice or other equivalent information documenting the Implementation Cost for projects listed in your application? (Note: self-install costs cannot be included in the Implementation Cost) ☐ (If submitting the General Worksheet) attached calculations documenting the energy usage and energy savings for **each** project listed in your application?

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact:

- your Duke Energy account manager
  or,
- the Duke Energy Smart $aver® team at 1-866-380-9580.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Instructions/Terms/Conditions

Note: Please keep for your records- do not submit with the application

1. Energy service companies or contractors may assist in preparing the application, but an authorized representative of the customer must sign this application to be eligible to participate in the Mercantile Self Direct Program. Completion of this application does not guarantee the approval of a Self Direct Custom Rebate.

2. Once all documentation requested in this application is received by *Duke Energy Ohio, Inc,* and any follow-up information requested by *Duke Energy* is received, the rebate amount for each Energy Conservation Measure (ECM) will be communicated to the customer. The rebate amount will be based on ECM energy savings and ECM incremental installation cost.

3. All rebates require approval by the Public Utilities Commission of Ohio. *Duke Energy Ohio, Inc* will submit an application for rebate on the customer's behalf upon customer attestation to program terms, conditions and requirements as outlined in the rebate offer letter and upon customer completion of attestation documents required by the Public Utilities Commission of Ohio.

4. *Duke Energy Ohio, Inc* will issue a Self Direct Custom Rebate check, based on the approved rebate amount for each ECM, upon receiving approval from the Public Utilities Commission of Ohio. *Duke Energy* Ohio, Inc does not guarantee PUCO approval.

5. With the application, the customer must provide a list of all sites where the ECMs were installed. *Duke Energy Ohio, Inc* requests that sites of similar size, hours of operation and energy consuming characteristics be grouped together in one application for the determination of the rebate amount. The application should identify the site where each unique ECM was installed.

6. Based on the information submitted with the application and the information gathered both before and after the initial installation of the ECM, *Duke Energy Ohio, Inc* will calculate the rebate amount for each ECM.

7. *Duke Energy Ohio, Inc* may conduct random site inspections of a sample of the locations where the ECMs are installed to verify installation and operability of the ECMs and to obtain information needed to calculate the Approved Incentive Amount.

8. Customers are encouraged to retain copies of all forms, invoices and supporting documentation for their records.

9. Approved rebates are valid for 6 months from the date communicated to the customer by *Duke Energy Ohio, Inc,* subject to the expiration of measure eligibility based on project completion dates and application submission deadlines as defined by PUCO. Customers are encouraged to execute their rebate offer contracts and PUCO-required affidavits promptly to ensure eligibility is not forfeited.

10. *Duke Energy Ohio, Inc* reserves the right to recover all unrecoverable costs associated with the project approval if the customer decides not to execute the rebate contract, after the project is approved by *Duke Energy Ohio, Inc.*

11. Projects financially supported by other funding sources will be evaluated on a case-by-case basis for potential partial funding from *Duke Energy Ohio, Inc*.

12. Participants must be *Duke Energy Ohio, Inc* nonresidential, mercantile customers with the project sites in the *Duke Energy Ohio, Inc* service territory.

13. Customers or trade allies may not use any *Duke Energy* logo without prior written permission.

14. Only trade allies registered with *Duke Energy* are eligible to participate.

15. All equipment must be new. Used or rebuilt equipment is not eligible for incentives. All old existing equipment must be removed on retrofit projects.

16. Disclaimers: *Duke Energy Ohio, Inc*
    a. does not endorse any particular manufacturer, product or system design within the program;
    b. will not be responsible for any tax liability imposed on the customer as a result of the payment of incentives;
    c. does not expressly or implicitly warrant the performance of installed equipment. (Contact your contractor for details regarding equipment warranties.);
    d. is not responsible for the proper disposal/recycling of any waste generated or obsolete or old equipment as a result of this project;
    e. 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; and
    f. reserves the right to change or discontinue this program at any time. The acceptance of program applications is determined solely by *Duke Energy Ohio, Inc.*

The Lighting Worksheet is part 2 of the application. Do not submit this file without submitting a completed Part1 Custom Application document file, which can be found at www.duke-energy.com.

Before you complete this application, please note the following important criteria:

- Incentive approval is required PRIOR to equipment purchase, or any other activity which would indicate that the Duke Energy customer has already decided to proceed.
- Submitting this application does not guarantee an incentive will be approved.
- Incentives are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Simple payback without incentive must be greater than 1 year.
- Incomplete applications will not be reviewed; all fields are required.

Refer to the complete list of Instructions and Disclaimers, found in the Custom Application Part 1 document.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

Duke Energy Customer Contact Information (Match the information in Application Part 1):

Name	Don Elbe
Company	Cincinnati Public Schools

Equipment Vendor / Project Engineer Contact Information

Name	Lucas Dixon
Company	Plug Smart

Before proceeding with the custom application, please verify that your project is not on the prescriptive incentive application.
The prescriptive incentive applications can be found at:

KY http://www.duke-energy.com/kentucky-business/energy-management/energy-efficiency-incentives.asp
Kentucky only: custom incentives only available to K-12 school facilities; prescriptive incentives available for those not on rate TT.
OH http://www.duke-energy.com/ohio-business/energy-management/energy-efficiency-incentives.asp
NC http://www.duke-energy.com/north-carolina-business/energy-management/energy-efficiency-incentives.asp
SC http://www.duke-energy.com/south-carolina-business/energy-management/energy-efficiency-incentives.asp

Prescriptive incentives are already pre-approved and the application is submitted after project implementation.
Take note of the equipment eligibility on the prescriptive application before planning to utilize the prescriptive application.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

List of Sites (Required)

Project/ Site (see note 1)	Site Name	Electric Account Number(s) (see note 2)	Site Address	Area (sq ft)	Location within Facility	Location Type	Indoor or Outdoor?
Example	*Distribution Center*	*12345678 01*	*Example: 123 Main Street, Anywhere USA 12345*	*1000*	*Warehouse*	*Industrial*	*Indoor*
1	Pleasant Ridge School	9110-3676-01	5945 Montgomery Rd Cincinnati, OH 45213	75,310		K-12	Indoor
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

If your application involves more than 20 lighting projects, please check here and use multiple worksheets. ☐

1 **Project/Site**
You can write over the default project/site number with a store #, building identifier, or other reference that distinguishes one project/location from another.

2 **Electric Account Number(s)**
If there are multiple meters at a site, only include the Duke Energy account numbers that pertain to the project.
Currently active account number(s) are required for an existing facility. For new construction, write in "new construction."

	Hours of Use (see note 3)									Controls (see note 5)			
		Weekday		Saturday		Sunday		Weeks of Use in Year (see note 4)	Total Annual Hours of Use	Existing		Proposed	
Project/ Site	24 x 7	Start Hour	End Hour	Start Hour	End Hour	Start Hour	End Hour			Type of Control	Hours Reduction	Type of Control	Description
Example	*No*	*8:00 AM*	*7:00 PM*	*10:00 AM*	*6:00 PM*	*1:00 PM*	*6:00 PM*	*52*	*3,536*	*None*	*0%*	*Occupancy*	*Applying for Prescriptive Incentive*
1	No	7:00:00 AM	3:30:00 PM					45	2,340	None		Occupancy	*Applying for Prescriptive Incentive*
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

3 Hours of Use

For unoccupied times, leave applicable cells blank.

4 Weeks of Use in Year

If the lighting fixtures are not in use 52 weeks during the year (for example, during holiday or summer break), provide an explanation of when they are not expected to be in use and why:

The School is shut down for a combined 7 weeks a year due to holidays and the summer break.

5 Controls

Please attach more description of existing and/or proposed controls if more space is needed. If sufficient description is not provided, then controls portion of project will not be evaluated. Attach assumptions and calculations to support estimated reduction in hours that result from the controls.

New occupancy sensors should be applied for through the prescriptive application unless ineligible for prescriptive.

New or upgraded EMS/building controls require a separate application part 2. Without the separate application, EMS portion of the project will not be evaluated for an incentive.

	Existing Fixture(s)								
Project/ Site	**Existing Fixture Installation Year** (see note 6)	**Fixture Type**	**Fixture Manufacturer** (see note 6)	**Fixture Model Number** (see note 6)	**Lamps per Fixture**	**Fixture Size**	**Fixture Input Power (watts)** (see note 7)	**Quantity of Fixtures**	**Total Demand (kW)**
Example	*1995*	*High Pressure Sodium*	*Manufacturer*	*Model #*	*1*		*190*	*175*	*33*
1	2008	Other (enter by typing	Com Check	Com Check	1		90,372	1	90
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
Application Total								**1**	**90**

6 Information on Existing Fixture(s)

Optional - please provide as much information as you can.

For new construction projects, provide information on the light fixture(s) that would meet the building code in your location.

7 Fixture Input Power (watts)

Provide actual input power (in watts), not nominal power rating. For example, a 400 watt (nominal) metal halide fixture has a typical input power of approximately 459 watts.

	Proposed Fixture(s)										Projected Savings			
Project/ Site	Fixture Type	Fixture Manufacturer (see note 8)	Fixture Model Number (see note 8)	Warranty of Proposed Fixtures (years)	Lamps per Fixture	Fixture Input Power (watts) (see note 9)	Quantity of Fixtures	Total Demand (kW)	Lumen Output per Fixture	Lumen/ Sq Ft	Demand (kW)	Annual Energy (kWh)	Other Annual Savings $ (see note 10)	Incremental Project Cost $ (see note 11)
Example	*T8 Fluorescent*	*Manufacturer*	*Model #*	*5.0*	*1.0*	*78*	*225*	*18*		*0*		*55,515*	*$1,265*	*$29,215*
1	Other (enter by typing	Com Check	Com Check		1.0	53,779	1	*54*		0	37	85,628		
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
Application Total							**1**	**54**			**37**	**85,628**	**$0**	**$0**

Average Electric Rate $/kWh $0.10 **Project Simple Electric Payback** (see note 12) **years**

8 Fixture Manufacturer and Model Number
Attach a scanned copy of a spec sheet for each fixture that includes the input power (watts), lumen output and other relevant information.
For eligible LED fixtures, refer to the FAQs for Custom Incentives found at www.duke-energy.com and attach required documents if necessary.

9 Fixture Input Power (watts)
Provide actual input power (in watts), not nominal power rating. For example, a 400 watt (nominal) metal halide fixture has a typical input power of approximately 459 watts.

10 Other Annual Savings $
Optional. Estimate other annual savings in addition to electric (for example operations/maintenance savings).

11 Incremental Project Cost $
Attach a copy of a formal proposal with the projected project costs.
For new construction projects, a formal proposal is also required with the projected costs for the light fixture(s) that would meet the building code in your location.

12 Project Simple Electric Payback
If the simple payback on the project is less than 1 year, then the project is not eligible for a custom incentive. Please check that the electric rate is accurate based on history.

March 2, 2012

To whom it may concern:

This letter is to confirm that for the renovation to Cincinnati Pubfic school **Pleasant Ridge (5945 Montgomery Rd),** for the **custom** rebate application, the lighting and HRW project were installed with a minimum unit cost listed below.

DESCRIPTION	QUANTITY	PRICE/FIXTURE	AMOUNT
R1-Lithonia VGR12/26D1T	707	$178.00	$125,846.00
C1- Lithonia AFlO 232	36	$178.00	$6,408.00
Fl • lithonia AF 2/26D1T	63	$164.00	$10,332.00
F4 - Lithonia AF 2/26D1T	3	$164.00	$492.00
R2 ·Lithonia 2RT5-14TS	27	$138.00	$3,726.00
02 -Peerlite 10CRM4 328TS	2	$639.00	$1,278.00
Dl • Peer/ite 10CRM4 328T5	3	$639.00	$1,917.00
R3 ·Lithonia RTS 28TS	12	$293.00	$3,516.00
D4 -Peerlite 10CRM4 328T5	9	$639.00	$5,751.00
F2 - lithonia LGF 2/26D1T	3	$35.00	$105.00
B4- lithonia 2SP8 432	18	$119.00	$2,142.00
B4G - Lithonia 2SP8 432	5	$119.00	$595.00
H1- Speclight FHB24 632Tl	30	$154.00	$4,620.00
H1G- 5peclight FHB24 632Tl	10	$154.00	$1,540.00
C1G ·lithonia AF10 232	2	$178.00	$356.00
NoveiAire ECW 844 Energy Conservation Wheel	2	$8,000.00	$16,000.00
TOTAL	1	**$184,624.00**	

This is also to confinrn that for the renovation to **Pleasant Ridge (5945 Montgomery Rd),** for the **prescriptiVe** rebate application, occupancy sensors, motors and a chiller were Installed with a minimum unit cost listed below.

DESCRIPTION	Model Number	QUANTITY	Nominal Size (Tons)	PRICE/FIXTURE	AMOUNT
SelfDirect Occupancy Sensor	CM-PDT-10, WSD-2P, WV-POT-16	198	-	$117.89	$23,342.22
SelfDirect Motor	Baldor EM3218T	2	-	$830.00	$1,660.00
SelfDirect Motor	Baldor EM3311T	1	-	$1,220.00	$1,220.00
SelfDirect Motor	Balder EM2513T	1	-	$2,091.00	$2,091.00
SelfDirect Chiller-Air- Screw	York YCAV0227PA46	1	227	$272,400.00	$272,400.00
TOTAL					$300,713.22

Thank you for your attention to this matter,

Don Elbe

Don Elbe
Utility Management Coordinator

'"Turner DAG TYS

Rebuilding Cincinnati Public Schools

April29,2009

Angie Tolle
Cincinnati Public Schools
2315 Iowa Avenue
Cincinnati, OH 45206

Dear Angie:

Attached are Pay Applications for the Pleasant Ridge School, please process for payment as soon as possible, if the change order has been processed.

Contractor	Application#	Monthly Billing	Total Billing To Date	Contract Amount to Date
BP#7 United Electric	#21-CO#I3	$ 17,172.00	$1,873,233.61	$1,906,055.00

Please call if you have any questions.

Sincerely,
TURNER/DAG/TYS

d fjp j

Project Executive

/bcs

Attachments

cc: Dan Bascom - SHP
Bill Martin – Turner/DAG/TYS
7'!ili!.eri.@@,g5n:'t;;C. @.2fii@!'/:{},,,.,n!:'ci:Lii'"

T:PROJECTS/SEGMBNT2/Pieasant Ridgc/00250 Pay Application/2009 ()4,29 United Pay App.:Lttr. Doc

United Electric Co., Inc.
4333 Robards Lane
Louisville, KY 40218

Phone: 502 459-5242

Invoice 19181

Bill to:	Job: 07-16017
CPS FACILITIES 231510WASTREET CINCINNATI, OH 45206	PLEASANT RIDGE ELEM 5945 MONTGOMERY ROAD CINCINNATI OH 4S213

Invoice#: 19181 Date: 04/09/09 B!lym tl!Terinl>: NETSP Cusf<:>rnef Code: CPSFAC	J tl)1)'1'1l. [P.(;), , , Pft 1 ?t!lfl.£:15?. . $'li J? fi>Q!l;

Remarks: APRIL 2009 PLEASANT RIDGE ELEM-

Quantity	DescriptiOn	Ulfi11	Umt Pnce	Extens1on
	CHANGE ORDER 13			17,172.00
	5 ORIGINALS TO BILL MARTIN CPS/TURNER			
			Subtotal:	**17,172.00**
			Total:	**17,172.00**

emltf"aM!!le f9:
O!! ed srecfl:m(:Q;,lil;q.
Re)i bte·fia y
Chicago, IL fi(l!!S!I .

f'rtnt Date: 041QSlQ9

APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER: Cincinnati Public School District

original

PROJECT: Pleasant Rldga Elemlllliafy Sehool Now

APPLICATION No: CHANGE ORDER 013
PERIOD TO: 3:4:2009
PROJECT NOS: P0518337
CONTRACT DATE:

FROM CONTRACTOR: United Electric Co., Inc.

VIA ARCHITECT: ISTEED HAMMOND PAi.JL

"""kprovide Richard Prekalski wih material expedtlng log with·e ch bil!ini;

CONTRACT FOR: Bid Package 7 Electricai!Technology

CONTRACTOR'S APPLICATION FOR.PAYMENT

Appncation Is made for paymenlas shown below,in connection wltIl the Contract Continuation sheelis atlached.

1. ORIGINAL CONTRACT SUM:.s.·. ._,.....,.....,..,•..,,\"""":$		1,781,250,00
2. Net Change by Change OrderS;:.....................,.....•	$	124,805.00
3, CONTRACT SUM TO DATE.,-,-,•••'......,•..•••.•, ...,....$		1,906,055.00
4. TOTAL COMPLETED & STORED TO DATE...,...........:f,		1,873,233.-61
5_, RETAINAGE		
4o/o of completed labor		
b. 8% of Stored Materia i•·N·""""-"-"•'•'-$		
TotalRetalnaga••.•••••.;,..;;,;,-.-.;-.,_;. -;..•._-.:;,,.................$		
6, TOTAL EARNED LESS RETA1NAGE...,....... ....$		1,873,233.61
7. IESS PREVIOUS CERTIFICATES FOR PAYMENT....$		1,856,061.61
8. CURRENT PAYMENT DUE......"""-""""""""" .... $		17,172.00
9, BALANCE TO FINISH, INCLUDING RETAINAGE.•.,,...$		32,821.39

91101\l!e Order/Conlrll<:t	ADD;TIQNS	',QEDU.G ONS
Total Changes approved in Previous months)) Owne-r	{S17 ;Jii!	0.00
Total a oved t liSmOnl	4 S - 00-	0.00
TOTAli!!	1 4 00.00	0.00

The Contractor certified that the work covered by this pay request has been completed in accordance with the C0n1ract Documents and that all progress payments-previously paid by the State haVe been applied by the Contractor to discharge in full all of Contractor's obligations incurred in connection with the work covered by all prior pay requests

$

UNITED ELECTRIC CO., INC. 4 ;7"'.2 0 09 ---
Conlraclo"1fW;Y'-(dl 6-.,IV) ale

Based upon on site observations. the firm affirms that the work has progressed to the percentage of completeness indicated on the pay request..

Architect ,iJt.¥'1
Qal...

Construction Manager /t(c;><Jf

Approved:

"SChOOl"District Treasurer

Date

osrc-165S$

·WfM

CONTINUATION SHEET

AIA DOCUMENT G703

PAGE OF PAGES

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

Pleasant Ridge Elementary School
BP #7 Electrical/Technology

APPLICATION NO: CHANGE ORDER 13
APPLICATION DATE: 4.9.2009
PERIOD TO: 4.9.2009
ARCHITECT'S PROJECT NO:

A		B		C	D	E	F	G		H	I
ITEM NO.		DESCRIPTION OF WORK **PROVIDE RICHARD PREKIASKI WITH UPDATED MATERIAL EXPEDITING LOG		SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
	1	PERMIT		$9,500.00	$9,500.00	$0.00	$0.00	$9,500.00	100.00%		$0.00
	2	GENERAL CONDITIONS		$95,000.00	$95,000.00	$0.00	$0.00	$95,000.00	100.00%		$0.00
	3	TEMPORARY		$30,000.00	$30,000.00	$0.00	$0.00	$30,000.00	100.00%		$0.00
	4	MOBILIZATION		$10,500.00	$10,500.00	$0.00	$0.00	$10,500.00	100.00%		$0.00
	5	BOND		$17,812.50	$17,812.50	$0.00	$0.00	$17,812.50	100.00%		$0.00
	6	PUNCH LIST - Labor		$9,000.00	$9,000.00	$0.00	$0.00	$9,000.00	100.00%		$0.00
	7	TESTING		$4,500.00	$4,500.00	$0.00	$0.00	$4,500.00	100.00%		$0.00
	8	FINAL CLEANING		$4,500.00	$4,500.00	$0.00	$0.00	$4,500.00	100.00%		$0.00
	9	PROJECT CLOSE OUT		$15,000.00	$15,000.00	$0.00	$0.00	$15,000.00	100.00%		$0.00
AREA A	10	LIGHTING CONDUIT	Labor	$15,980.00	$15,980.00	$0.00	$0.00	$15,980.00	100.00%		$0.00
AREA A	11	LIGHTING CONDUIT	Material	$12,526.00	$12,526.00	$0.00	$0.00	$12,526.00	100.00%		$0.00
AREA A	12	LIGHTING WIRE	Labor	$10,000.00	$10,000.00	$0.00	$0.00	$10,000.00	100.00%		$0.00
AREA A	13	LIGHTING WIRE	Material	$2,033.00	$2,033.00	$0.00	$0.00	$2,033.00	100.00%		$0.00
AREA A	14	LIGHTING FIXTURES	Labor	$21,422.00	$21,422.00	$0.00	$0.00	$21,422.00	100.00%		$0.00
AREA A	15	LIGHTING FIXTURES	Material	$80,365.00	$80,365.00	$0.00	$0.00	$80,365.00	100.00%		$0.00
AREA A	16	LIGHTING DEVICES	Labor	$4,104.00	$4,104.00	$0.00	$0.00	$4,104.00	100.00%		$0.00
AREA A	17	LIGHTING DEVICES	Material	$20,000.00	$20,000.00	$0.00	$0.00	$20,000.00	100.00%		$0.00
AREA B	18	LIGHTING CONDUIT	Labor	$27,390.00	$27,390.00	$0.00	$0.00	$27,390.00	100.00%		$0.00
AREA B	19	LIGHTING CONDUIT	Material	$9,000.00	$9,000.00	$0.00	$0.00	$9,000.00	100.00%		$0.00
AREA B	20	LIGHTING WIRE	Labor	$9,774.00	$9,774.00	$0.00	$0.00	$9,774.00	100.00%		$0.00
AREA B	21	LIGHTING WIRE	Material	$4,000.00	$4,000.00	$0.00	$0.00	$4,000.00	100.00%		$0.00
AREA B	22	LIGHTING FIXTURES	Labor	$19,038.00	$19,038.00	$0.00	$0.00	$19,038.00	100.00%		$0.00
AREA B	23	LIGHTING FIXTURES	Material	$69,000.00	$69,000.00	$0.00	$0.00	$69,000.00	100.00%		$0.00
AREA B	24	LIGHTING DEVICES	Labor	$1,064.00	$1,064.00	$0.00	$0.00	$1,064.00	100.00%		$0.00
AREA B	25	LIGHTING DEVICES	Material	$26,000.00	$26,000.00	$0.00	$0.00	$26,000.00	100.00%		$0.00
AREA A	26	POWER CONDUIT	Labor	$25,380.00	$25,380.00	$0.00	$0.00	$25,380.00	100.00%		$0.00
AREA A	27	POWER CONDUIT	Material	$10,000.00	$10,000.00	$0.00	$0.00	$10,000.00	100.00%		$0.00
AREA A	28	POWER WIRE	Labor	$17,746.00	$17,746.00	$0.00	$0.00	$17,746.00	100.00%		$0.00
AREA A	29	POWER WIRE	Material	$6,838.00	$6,838.00	$0.00	$0.00	$6,838.00	100.00%		$0.00
AREA A	30	POWER DEVICES	Labor	$4,602.00	$4,602.00	$0.00	$0.00	$4,602.00	100.00%		$0.00
AREA A	31	POWER DEVICES	Material	$2,275.00	$2,275.00	$0.00	$0.00	$2,275.00	100.00%		$0.00

CONTINUATION SHEET

AIA Document G702, APPLICATION AND CERTIFICATE FOR PAYMENT

Ridge School

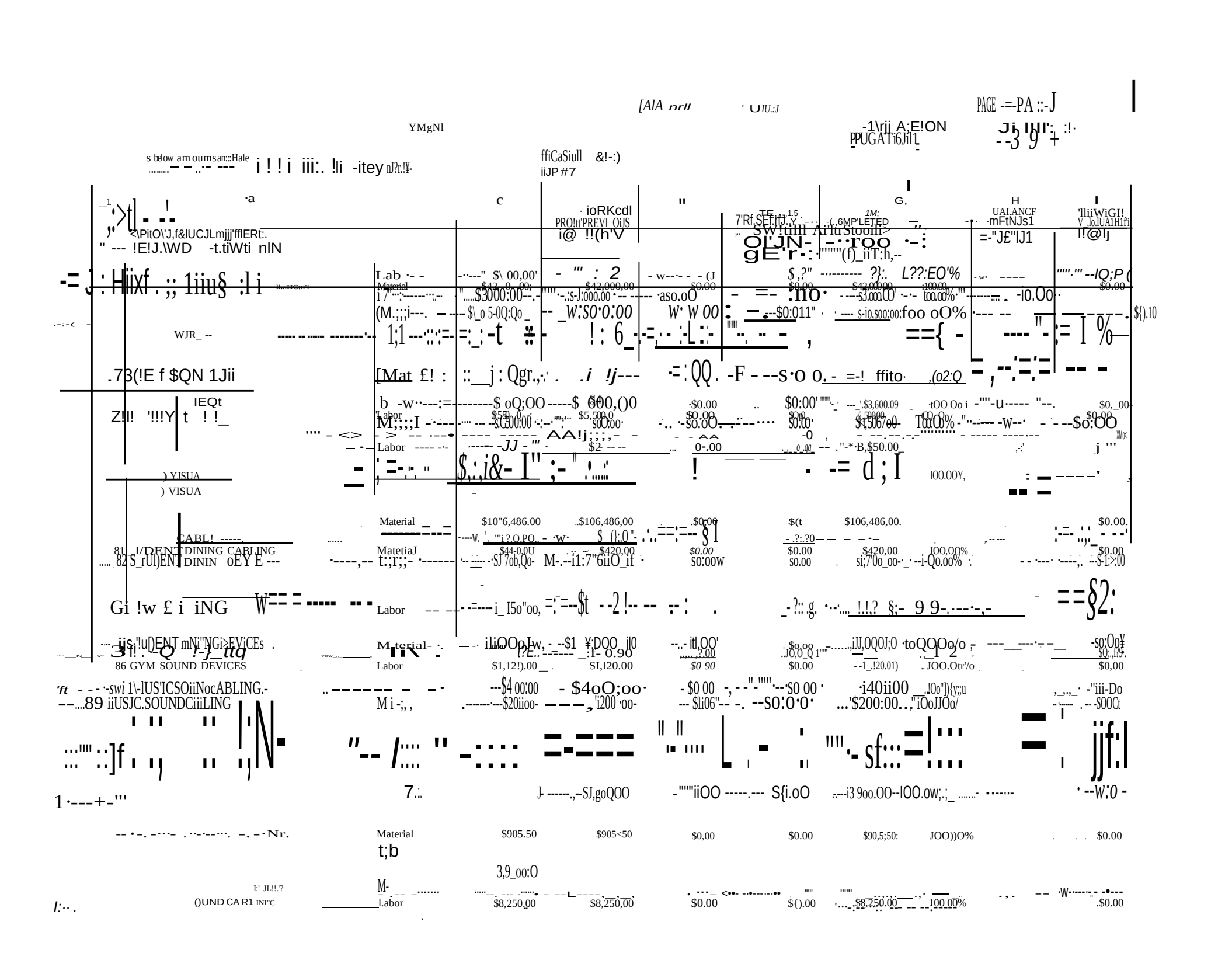
PERIOD

$).0,9

REAA – ii1RE'lURr;t

		Labor	SJ6,492;(l0-			$000	$!6,4 92;00	t00,00%	;;;0;,;;;0
AREAB	'JRE		$6,633"00	$6,633,0()	$0,00	$0,00	_$6,63 ,00	l{JOJJO%	$0.00
AREAB									
AREAS									
		aboi:.		$ 96.fo	$0::0		X00:0		? ?
AREA"A" -i9	FIRE. Al4 1-.	1ateria!	$1,600 00	$!,600,00	$Q,OO	$0JJO	600:?-	] 0.()()01..	$0,00
AREA A	"46 FIRE"ALAR	er!_a	$1.40.110,		$\WO.		$ 1 A 0 0.9?	.Oo,	
REAA	42 FIRE ALA}!.M l	Labor	$4,000.00	$4,000.00	$0Jl0	$0.00	$4,000.00	100.00%	$0.00
-43	FiRirALAR i--	Mat;ri l	OO!	$8 000:00"	wllo-	-io.oO		,W.00%	iirOO
44	FIRitALA-Jt'	Labor	$ 5-to-,o-O-	$ 5 5 10-	$\oQW	$0,00	$5:510:00	1-QO:Q'Qo/;	$0,00'
		1-i i- ial	00 '§ -1	?I :		"So.oo		l-{J0 0--0,	$§: 0
	I WIRE	Labor	$1,93&.00	$1.938.00	$(1,.0 0	$0,00	$1,938,90	!00.00%	$0.00
	IWIRE	-teria!			"JO.o -IM	$0:	J}J!! ce?	J o	'-2-
		Lar.	$ - 6: 0,	:-_56.00'	$QOO	SOJJO	$ _) 56_,	19 :?	-0_:90
AREA A		Malcria!	$8,000.00	$8,000.00	$0,.00	$0.00	$8,000,00	100.00%	$0.0{)
AREA A	TRAY	Labor	$20,000.00	$20,0 00	$0.00	$0.00	$20,000.00	tOO.00%	$0.00
AREAA 51	;;rR-i\Y	Mt ;,	600 ooJ	600:00	Sq.00	$0.00	ySI l-:600,00	1oitOO%.-	$0.00
	&TRAY.,	L -b	$5.89"0,-00-	$'S.S';,0.00-	W 00	$0.00	$--s:ss;'o:oo	Jo-0:00%	,S0.00
	THAY	Materia!	$2.900.00	$2,900.00	$QJJO	$0.00	$2,900.00	!00_00%	$0.00
		i;;b	$3S:18iOO"I"	s3ii 4B OOU	W00	$0:00	$3s,4il:OO-.	lOO.oo%	$0.00
		:inl	$ }_? - :	:3..OE£'-	S0.00	s0.00	.s,,t};! -- :?.o..		:o l

	HORIZONTAL CABLING							
		Material	$45,000.00	$45,000.00	$0.00	$45,000.00	100.00%	$0.00
		Labor	$6,000.00	$6,000.00	$0.00	$6,000.00	100.00%	$0.00
		Labor	$6,000.00					$0.00
63	TELE/DATA		$10,000.00		$0.00	$10,000.00	100.00%	$0.00
64	TELE/DATA	Labor	$11,000.00			$0.00		$0.00
		Material	$65,000.00	$65,000.00	$0.00	$65,000.00	100.00%	$0.00



It;UN riNUATION §jiEET

ADOC< rG;us

;AIA1 f.ANR .fFORPA'

In< -- --' ----- d to Ute nearest dollar. .... _!"Pleasant Ri 8- ! . -- -w PERIOD TO+ ·"'tC --

1 on fomracts where · e retaiOO.t).t!}?r line items_lJ_)(iJaifufYi; JJ3P.#7.Electricu!]f·"" ECT'S PRQJECTNQ

A ITEM NO.	B	C			G	H	I
	**PROVIDE UPDATED M		f - -:·		(iif) 1\- 1D_DA ""(D-1- ':::- -	;Am NfS	Li'AOK ---- l:.t..
102	VIDEO SUF ...	1Labor	-- l:?9?,0_, "_-.:§1 2i' -	$0:'00' ----	$0,_ $3,99.Q:90	__	--- =- g:PP_
103	VIDEO SUF	[_ateri - -	;)O.OOOftn		$.0,00	!0CLOO%	$0,00

DISTRIBUTION AND r..Hu.1

.Lqj)Jl!l'J, $0.00 $0,00 $0.00 -$OJJO

\'_Ut .

...- -- 1-----!: qg !. .l- J !lJ) --\ J! I -! :2

·-- ms:r - - .. Q,\lfl o Q_ $0,00

.3lll

-·" ;._"UQ – ––P _<!:r g 9___ """rot> ·

Ul PC0#46 CHANGE ORDER 02 liU,UU W,UU :t>!JJ7!,Ull JOU,OO%.

!CONTINUATION SHEET

[AIA DOCUMENTG703

.IA ieryt:G7{)2,t).PPLlCAT!ON AND
'\.-\!ll"" f!Vt;;' gncd certific!'tiois a'iiUCh - ¢-- --
...J!.I!... -UJ ,I - loW unt E - !_a{t:-... t!! - - q_tt _i.;_
Use Column ron Contracts where vari ble r ;:!!l.tll ge f9. }iJ1e i! J:l!S ma_y

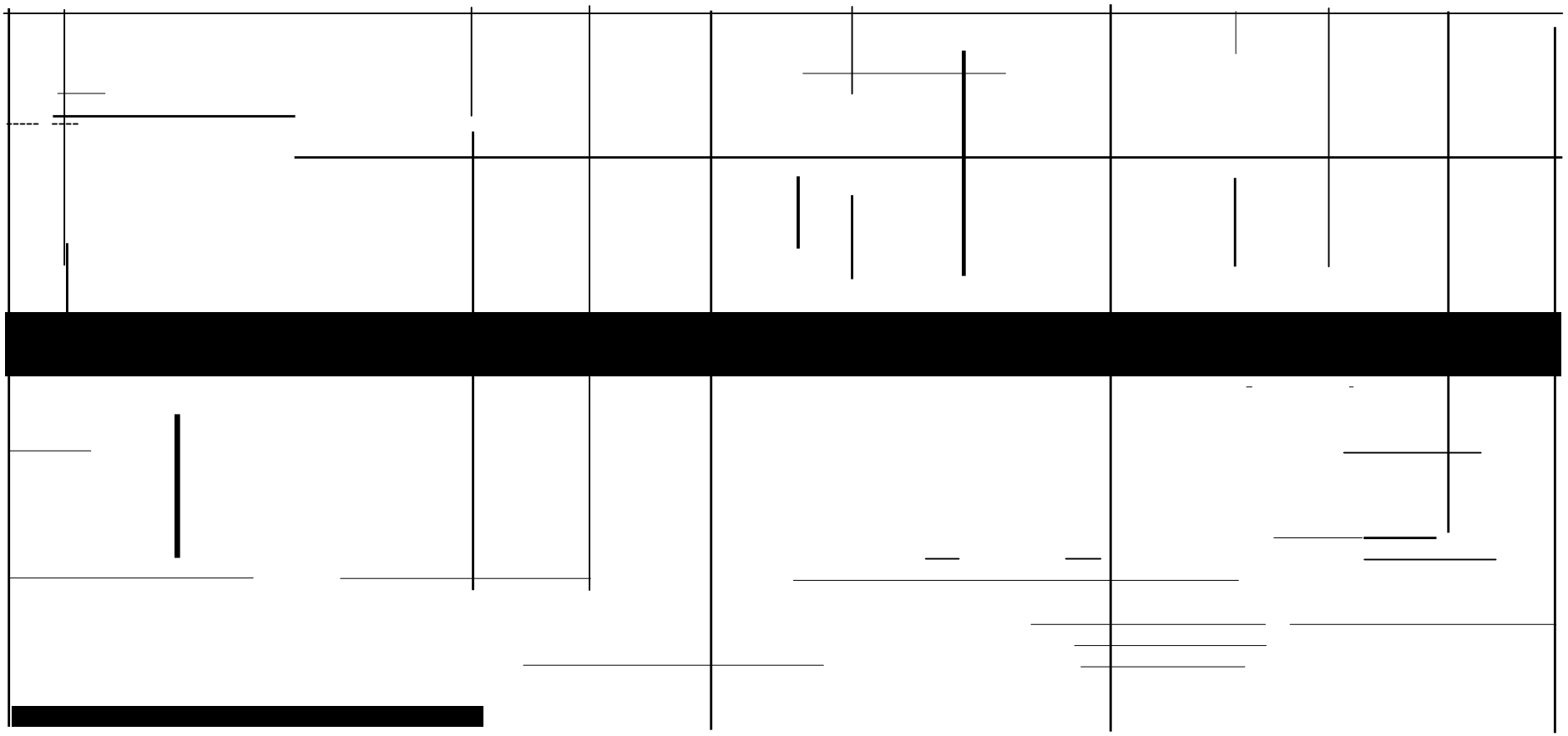
iPl E - i fi; g!£ t;!XS:cli- L--
-- f fltiJ2. - ! . -!ti e!j!191il_gy,

APPLICATION NO:!_Cf!MJGE - bRDER 13
JERlOD}:Q
; PROJECT NO:

a		C	D	E	F	G		H		I
		:HEbU			ihi fl]	OS'ffi -o-_DAl ll>!IDl	;b	r'ANflii :c··ro1'1NJit _(f_ _QJ -z.		I.RIABir """?!. f-:_:
						$20,46L00		100.00%		$0,00
....L..i -Z;;' o/47••			..$_± _$9.q$f•.:_:.:	:_0.00		?J.,"i:	"<!_._""_"		._$_."00	
}34 PCO #070 1&2 METER	!:__									
l3s PCo7t--CHANGl. ORDER 6	Lnlxlr &Mat		? E..	$0.00		:"""'.JA--J 0 _:00				-?.:?.
i36 :PC0#88.92CiiANGEORDER7-								III		M?E_
		-$	-$ -!- :91i: :.·	SO.oq_		$5JiD! .l q.				
13P£Q!!Q!_£tJA!'"Q! <LR,!> ! ?-.	!i Or&¥!!_	$2,518.1	$2,518,00	$0.00		$Z,5lii;OO		!00,00%		$0.00
				SO.tJQ		$O.oo·	$1 5.18.5.00'	100.00%		$0.00
140 PCOfl. 086 CHANGE ORDER 11		$9,_l3}s_	$9.133,oo	--$Oj)Q	"'S-0,00	--$	133)Mi'	-lcl0.0'a./..		$o,oo
	Labor&Mat	$884.00	$884.00	$0.00	$0.00		$884.00	100,00%		$0.00
--\43 PCO 14-1' -------..9 OplRl -2RilER _13.	!-abor&Mat	i4:2i po·., 172.(	$4,74ii:OO:----ro:-Q0- - ip:00.--	$t7_!.1.72.:2.Q	$Q]Q· $0.00	"-:"_.,.,-- -])40:00" ---$}.7._1_72:0= JOO·-		i'00.00%		$OJJ0"
LI·!11·			-$0_;00		-····SO:®			1J.832.9E.		........::.""
2E 9. !J!, E!.S!!MCJO 16 E-ORDER		Si904 oo·	$o,oo	$O,oo	so.oo			$3.904._00		!----':":'"-':':
147PCOID"' E ORDER 17	lLa- -1_;1-t	$4.S,?P:.0	_$0.00 - ---- ££..	$Q,oo	,-- ---- ·x· $0.00			1!2 JJO.Q0 ·Jc---.....;		,...-- ?P f>O_______
			9- PP___					"" - -M --- --- --•		$._00_
+......1---	.... -1---·	(- ··-·--+··								
··+	·· ----+-	$1,								

$ 56,06 61

$0.00



N'FI VITOFORIGINo'J. Cfl S!J!I.eOI,TIIACTCR, No,44 Appklibloforoll!abprojod$(«\rllloh .. t.p ot Regls«!red In Us:Patent B'ld Tra om rk Office
(IIC 1131!0<,£1 ·1 cr •"""•<U<Icoc•.-.ror. 31,tPt sMcrson pubilslmtl ""'tlnelnnau, oh•o52(11

Commonweah of KENTUCKY $$
County of "J,off •• •'•"'------------------"-"•"•isvil""I"------KY ---- AE" ·In.mc________20

-- J•,moo •oO•"<' "!---------------, being fimt duly sworn, says that he/she is • ---""re"-'P" """"""""------

ot:•______,u"NciT"'D""""C'T'R"IC-"C"Q:IN'C .------------------tl'le (sub Oli!Jln:al} contractor having a contract with ²

Ohio School Facilites Commission the ³ Owner

------------------------" -c -" .__c-c-c -""-+ r•

'_JS<ho ·'- - -----.,--'c--"'+---,,.,.,--, s'ltuatetl on or around or In front of the fclloiVlnQ Qe.scr\bed property,'

in Hamilton County, Ohio, viz: New Pleas nt Ridge Elementary School located at 5945 Montgomery Road
in Cincinnati Ohio 45213.

whereoP Ohio SchQol Facilities CommIssionfCity Public Schools was the owner, part owner or lessee.

SUB-CONTRACTORS

AffianUurther says.that. the following shows the names and addresses of every sub-contractor Jn lhe etnploy of sald United Electric Co., Inc, which ls due, or to become due, to them, or any of them, fot work done, or machinery, material or fi giving the amount, if any f, under said contracts.

NOTE - This statement must ... statement signed by each of the ...

NAME	ADDRESS	TRADE	Amount Due Work and Mat
NONE THIS PERIOD			$0.0C

MATERIAL MEN

Said affiant *further* says that the following shows the n<: mes and addresses of every person furnishing machinery, material or fuel to• Un ed Electric giving the amount, if *any,* which is due, *or* to become *dw,* to them, or any of them, machinery, material *or* fuelfurnished to date hereof, under said contracts,

NAME	ADDRESS	'·.. ',,, ..""""V, M:oloriarorFuol	Amount Due of to Become Due Material Furnished to Hereof	for Date
NONE THIS PERIOD				

l>[redacted]a•,Jl>o:' t>Mlt.i.Jl - .)'l ·lA f>fS""bovtilk>o!<>, . -fllrnlohcd:a, !i!ln- "ffll: :""wil!kll -" -'

••

LABOR

Said <: ffiant fUrther says !hat the following shows the names and addresses o1 every unpaid laborer in the employ of ²

[redacted] llŒ •lllho l•ollo lhat very!&barer hu been polr.1111, llo"" 1m:"Evory lobonr h.lo b.. n pold In1111.• fl'nOll. ll><>ft l'<o eoollunpold l•bc..,.·nome ltl<llIddreA on

NAME	ADORE	HOURS	" ▬▬
A!r laborers nave beatHlaldiMull:			

--;;;;;;"c"o"1.' ' EO"c"" ;o;;C o'-"""·:·:·r ;;;;;-;;;;;;;;-;;;-;;;;;;-;;;;;;;;;--------furnishing labor under said contract, giving the amount, if any. [redacted] is due, or to become due, *tor* labor dona to date hereof.

<f>lI'(ll:(c_'bcc<;mo"duo,.,

AMant riJ •r ;t•thot there is due ot to b-mtl duo to United Electric Co., Inc. *l'or* work pertormod or maohlno'". matotiol or fuolllrrnl>hod lo Ohio School Facilities Commission/City Public Schools (Owner or Contractor) to date heroofunder 'Io:e troel:i, lhe•"" or,o________ "1"7""1"7'2".Q"Q'---------

Tllat lhe emo!!riiS de or to becomCuto •aid sub·amtraotors, maloriol·mc nd tai>Ofor., tor work done or moollInl!!)'. rnalerial or l\lel fumo>hed to thotdol orecf, to' \hi.OOG .ni lflc

ar!Wiy and eorte<lly$ollor!h op to lhci< nameo. roopoollvely, fn lho 6for • i$1lolomerts.tnd rurthare.rdenood *by* oortH!cotes o/<Wory pen on 1Um1s k.9 mach, ery, materi'l or fuel hereto attaorod, ""mMea p l1 hereor.

Affiant further says that United Electric Co., Inc. has not employed or purchased or procured machinery, material or fuel from, or sub-contracted with any person, firm or corporation, other than those above mentioned, and owes for no labor performed, or machinery, material or fuel furnished, under said contracts, other than above set forth.

James Olliges, Vice President

SWORN TO BEFORE ME AND SU8SCRISEO IN MY PRESENCE, BI

Louisville KY

this 7th day of April 20 2009

NOTARY PUBLIC 3/2/2013

1 SO<ty,'rroa,onoof rl1ln. oug•N.""""""llIAY bo N.,o...OoOdro...

4. "Constructing, altering or repairing a house ... or "erecting, altering, repairing or removing a house, mill manufactory, or any furnace or furnace material therein or other building appurtenance ...

.''f'Ort……,r,··l….."or"oLtn""i>oclaiJO""otU1o """""""" J:M,-ownOl'or
rno..·or·OO\(J'ruror•pM••I =voo: ..-"""""""""""""""ll'llio

A"""""""""ll>lloo>9f:>"opoc.f
•-.oll>ror_l:'>c..,.oo«oJi''>l.

i !

"

E!:!l>

!

o

@

•

ii

,E>

t

-

APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER: CPS Schoolsffurner Construction
23151owa Avenue
Cincinnati, Ohio 45206

PROJECT: Pleasant Ridge Elementary
5945 Montgomery Road
Cincinnati, Ohio 45213

APPLICATION No: 19
PERIOD TO: March 31, 2009
PROJECT NOS:
CONTRACT DATE: 2/2B/2007
Invoice No: 1226-RET

FROM CONTRACTOR: Feldkamp Enterprises, Inc.
3642 Muddy Creek Road
Cincinnati, Ohio 45238

VIA ARCHITECT:

CONTRACT FOR: PleasanlHill Elemenlary

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment as shown below, in connection with the Contract
Continuation sheet is attached.

1. ORIGINAL CONTRACT SUM.....................................$ 1,566,000.00
2. Net Change by Change Orders..................................$ 5,413.00
3. CONTRACT SUM TO DATE......................................$ 1,571,413.00
4. TOTAL COMPLETED & STORED TO DATE...............$ 1,571,413.00
5. RETAINAGE
   a. 8-50% of Compleled Labor............$ 0.00
   b. 8% of Stored MaterialL........"......$ 0.00
   Total Retainage...$ 0.00
6. TOTAL EARNED LESS RETAINAGE..........................$ 1,571,413.00
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....$ 1,494,785.00
8. CURRENT PAYMENT DUE..................................... $ 76,628.00
9. BALANCE TO FINISH, INCLUDING RETAINAGE.........$ 0.00

Change Order/Contract	ADDITIONS	DEDUCTIONS
Total Changes approved in Previous months by Owner	5413.00	
	0.00	
Total approved this month	0.00	
TOTALS	5413.00	
NET CHANGES by Change Order		

The Contractor certified that the work covered by this pay request has been _completed in accordance with the Contract Documents and that all progress payments previously paid by the Stale have been applied by lhe Contractor to discharge in full all of Coritractor's obligations incurred in connection with the work covered by all prior pay requests.

Chadd J. Feldkamp
Brett Meyer
ontractor

June 15, 2009
Date

Brett Meyer
Notary Public, Stale of Ohio
commission Expires 11-18-201:

Based upon on-site observations, the firm affirms that the work has pe'rcentage of completeness indicated on the pay request.

Dt>
Architect

tth.zfoq
Date

aw Wofford
Construction Manager

6/tb/ot;
Date

Approved:

School District Treasurer

Date

osrc-165ss· 8}25/99

!COi TiNUATIoN SHEET

ITE NUMB R	ES_CRJPTIONOFWORK	SCHEDU :ED V('.LE	R VIOUS APPS.	!HIS PERIOD	MATERIALS PRESENTLY STORED	JfOTAL <?MPLET &STORED TODA!§_		BAIANS:E TOF!N_I	!f':IJ\ i:j
9."	.-!L...........	000.00			0.!	0.oq	0\X?-9	1 0.	1?.
2_00	jSUBMITIALS	?!000.00	5,00 .00	0.00	.oo	5,	1!?<J.C	0.i	0.?C!
3_-jL	C09RDINA 19 RAWI_N	30!000.00	30,000.01?	.oo)	-o	!000._qo	1_00:0 .6:		
4.00	1M OoRiJJN TtciNDRA\AflN	000.Oo!	.ooo: .l.	.oa	o.oj	?. o_o oo!	100.oo l.	.0..	
5:jMo t	Trq --	?.! g --j					.-o J...1		
	:o!- c N_l:IP	. oo.oo	1,0 0:?0	:0<? J	2- o	1 000.00 1	100_. o i	-9 .!	9
1.00	;L.CLEAN up_	7 000.fl<?.!	7,000:0?	0.00	0.00	7i.000.00.	10<?- %.]	=o	
	B.f?O \M CLOS -O "f	oo,od	.1fOO.	0.00	9.00	7. oo.oo_	!9 -oool	0.00	0.9f:J
..:OI?	.j.L.y ?s9 "f...	.7i?.t?!J,,oo_J_	..709- .J---	0_o() 1	0-9 -.!	!50_9.-2:o_Q_:9		9-.0.0.i	
10.;M	PUJ'I!CHLIS!	2 000.00	2, .00 !	0.00	0:f!?	,900.00	100.00%	f!.00	-i
1 -				0.00	0.90	6, 0.9. oo_.oot		.oo	0.()():
11.0	jL Pl!NC US"f-- J _All!J.WANCE .	6,000.00 .000.00	6,000:00 5!000.00_1	0.00	0.00	5,000.	_1 -90%1	.9-90_	?.00
3	-l AL Q ---		...? = -1----.	9·0	0_.90	_51 00:00	1 9.-99	9-	9- .i
14.00	]MAHU#1_	&_J.000.00	50,000.90.J_	0.001	- :001_	_50,000.00!	100.00%	0.00	_O. j
15.00	l AHU #J	-000.00	3 00 .00	0.00	()_.00	3,000.00	100.00%		0.09-1
\:i:\	:t :r	;..;L	;..1.	...1	:.].	,,,j::	:L	i L	J I
-1?0	AHU#.J	_50:000.00	50_.000._00	0.00	0.'?O_!	so,ooo. -i	100.Dq%!	.oo	q 00 1
	e.OO_JLAHUI/3	ooo.oo_i.	3 '?00:1?0.;	0.00_1	9.00	? -00	100.0D"k[	= -j	0.oo.
2o.oo	MJSC HVAC UIP NT	3!5,501.00	5\501._01	0:00 1	0.00 !	375,501.00		oo.	: o
--- ; 1%		1:;:m ;ri6-	i!ci: -	:ciri	:- 1--	·:·:t.:::1	ci: nr:	;rici-	ci: -.J
? -00-1l	HYDR.ON!.EQUJ MENT__	B:0.00.00.	.000:00	0.00 .-	0.00 .j	13 000.0	10<?-00%1	0:0.	0.00_
4.00	\MBOI'-:f'RS	ao. o.oo\	f!!0,00Q- 1	o.ooi	o. o !	ao_.ooq.ooj	01?-00 -	1	o.oo1
			: 6:1	- .:-1--	Z.		66:: 1		
r	1.sT-FLOOR"PiPiNd								
7.oo	LAREI\ -1 if O<?R. i_PJ_	_10_.1 8.00	·1o·.1a\	o.\	0.oo \.	_1o:1Sa:oJ	1oo.oo%j	!?·	o.0!?.l
2B.00	!MAR _B_ fjTf_Lt?ORPIPINGj_	_55, 00. 0_!	_55,100.00_!_	0.OO!	OJ) _i	.??11?0.00	101?.000 !	- - o_l	0.!?OJ
29.00	iL AREA B 2ST FLOOR PIPING!	58,800.00	58,800.00	0.00	0.00	08,800.00	100,00%!	0.00	0.00 !
					0.80	.! .00: 1?.!	10._0. .	o .- 1?!	Q.00 j
aq.oo	jM. AREA A. 2ND L90.-- P.IP!	.'. !:!:0.9[.	1.:9.00.00. !-	000!	-0.00	2,027. 0	.o?.OO'!',	0.00	-oo
3J.OO	\ ?!'!!' F <?9.piP Gi--	2021.9 !	2P?-?:OI? 1	0.00 i					
3 :9Q	:MREA,_B_?NP!" 9f?R f'I_ ! G	qo	9:,60o,qo 1..	o: o-!	g._Q0.	s.m;Jo.o .\	_oq.o..-.	...9- 0	0.91?
33.	_jLJ\R -? I? f. 99RP1'.'!1'!.9-	0,138.00	_10.13 1?.L	-00 j	.opo1	10:1 a:o	10Q-? I	_q:l?0	9- !
4.cx;J:	!M- E !"f _NIC - 9Q _P!_Plf"!r	19 000:09 i	!.:0()1):.90 J	0.00 !	0. t:J j	9.000.O!_.l	100.00%1	o_. t	0.90 j
-9.	\L¥ -.". J(; - - _qq _ !P!"!	?.Q{J_j|_	...?9 1?. Q.\	- ·o \.	9_q.	1?._?.- gQ.	QI? I?.-	P.o.o	9-
3s.OO	[LI?U 'fW9 K	130,000.	.139,ooo.oo•	o.oof	.9-	130,009.DO!	100.t?<J !	0.1Jl? 1	.0:21?.!
- 7.00	j DUC"f_WORK	_12 ,qoo.oo_i	1_25J Jo,oo	0.00 !	q._oo !	.1? .000.qj	1 0.99 /	0_.go	0_.oo 1
- .oo_	:FAJ'.!	.!·9o_o.	1.0Qo.oo.i	0.00 j	0_.90 i	_1 9oo_.oo	1(}o,	0_.oo t	_4.00
--!6::--!:	rJr:ciEVJGS	1-----i : 6::	--- : _-j--·	6:ci(	.: .1	--- 6: ri::	ci: r_-: ·::·:	-!--:--:	..:..!
41.00	j":!AJ!J. YJC s	?:oo .oo j	7,000.00 1.	0.oq	0.l?0.	7,000.00	1oq.oo%j	9-	o: .i
_4200	i:;us o TRAC"f<?RS	!	o.o	0:00	0.oo1	0,0?.J	o.oo!		0.00 J
... po_	- N§.l.J TJ? ...	-- ()- !?.!_	.3f!-C!00-!x.!!	opo	.-9Q_i._	3qP.Q?_.D_0:	1_9.: 0. .j	.(?	1?'2.1
44_.00	(liJ'I! UlAT O_N-	44,50 :.00	44!500.00 r	0.00	o. _j	44.? 0_-Qt	100.0!)%.!	(l.-9	0.00
5.00	? TE":'lf' _C.OWR.!?.	40,0 .00 j	40,090-9 j	0.00	0,00.!	,!?90.00	1(10.0. %	. 0.	0._(l/
46.00	__jl!EMP C9_N qLf3	o. - 1.	so, -00 1	0.(l0	o,oqj	opoo.9q	_toq.oo !	(l.0o	(l-l?Q 1
?:D_0_i	_E_N - !':1- ------	...?.(l. (IO j	?.(l,t?()(l_qG	.9: -|-	OJ - --	?O.(l9_0_.99_j	100.DQ%j	-0.J.	.!t(l(l_ji
_48_.09	A!R(v\I_AT -BA J'I! E	12,6?0.00 j	1?,620.	0.(l0	0.0(l_\	1?. 2(1.	1.00.00%[	q_.(l(	O.(lOI
49.00	,CQ#1	0.00!	0.00'	0.00					
:: :	=	_f·:: :t-1	1-;: : j	: :l	-	1-;: ::f	J:: r--	-ri: ci--.·	--_: :l
52.00	!<;:0#4	! ?64- !	1 64.00	0.00	0. j	1,?64_.90	[-- 0O.0Q	_(l.00	_0.00

- -00 W0 #5	0.00	0.00	0.00	0.00	0.90	0_-99	..9P!Jj	o,oo!
54.00)C0#6	t?61_.(l !	2!281.1?0	0.00!	.9-	- 61.	1'?0-0.J l-	0:4?f'!	O.(l(l!
Total	1,571,413!	1,571.413	o	o	1,571,413!	1oo	oi	o

The Ohio School Facilities Commission
10 West Broad Street
Suite 1400
Columbus, Ohio 43215

Contractor's Name: **Feldkamp Enterplises, Inc.**
Address: 3642 Muddy Creek Road
Cincinnati, Ohio 45238

Contractor Pay Application Summary

Project Nal)le
Bid Package No.

1	Original Contract Amount	$	1,566,000.00
2	Net Changes to Date	$	5.413.00
3	Current Contract Amount	$	1,571.413.00
4	Labor Completed to Date	$	533,072.25
5	Material Completed to Date	$	1,038,340.75
6	Total Work Completed to Date	$	1,571,413.00
7	Store Material to Date	$	0.00
8	Less Retained to Date	$	0.00
9	Total Amount Due	$	1,571,413.00
10	Less Previous Payments	$	1,494,785.00
11	Less Amount Retained to Cover Lien	$	0.00
12	Less Amount Retained for Liquidated Damages	$	0.00
13	Less Other Amounts Withheld	$	0.00
14	Current Due	$	76,628.00
15	Balance to Complete	$	0.00

OSFC approval required for the following contract adjustments:

1. Assessment of liquidated damages
2. Other amounts withheld

Ohio School Facilities Commission Date

Comments:

LITHONIA LIGHTING®

t:.Jtalog Number
Notes
Type

2RT5

2'X4'
2 Lamps
Premier or Premier XP TS

sImPLYl-"j\ UGHTING INTELLIGENCE

FEATURES & SPECIFICATIONS

INTENDED USE — RTS is designed for applications that require the extremely energy efficient delivEl}' of comfortable volumetric light from a lay-infixture that is appealing and shaDowin depth. Ideal for offices, schools, hospitals, retail and numerous other commercial applications. Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.

CONSTRUCTION – Impact modified aaylic prismatic refractor with polymer lighHiffusing film.

Rugged, one-piece, cold-rolled steel reflector with embossed facets. Polyester powder paint after fabrication.

Rigid structure with ballast box and endplates with integral T-bar dips.

Fixtures may be mounted end-tHnd.

OPTICS-Delivers volumetric lighting by filling the entire volume of space with light, defivering the ideal amount to walls, cu!Xdes, work surfaces and people.

luminous characteristics are carefully managed at high angl es providing just enough intensity to deliver the volumetric effect.

Regressed, two-piece refractive system obscures and softens the lamp and smoothly washes the reflector with light.

linear faceted reflector softens and distributes light into the space and minimizes the luminance ratio between the fixture and the ceiling.

Mechanical cut-off across the reflector and fresnel refraction along the refractct provide high angle shielding and a quiet ceiling.

Sloped endplates provide a balanced fixture to ceiling ratio whae enhancing the perception of fixture depth.

ELECTRICAL-Highly effi<ient program-start electronic ballasts, aass P. thermally protected, resetting, HPF, non-PCB, Ul listed, CSA Certfied, sound rated A. Your dloice of Premium or Premium XPTS lamp with enhanced phosphors and 85 CRI. Ballast/lamp efficacy up to 100+IPW. lamp is TCIP compliant.

0.90 or 0.95 ballast factor standard for typical applications. 1.15 ballast factor or F54T5HO lamping available for higher ceaing height applications.

Step-level dimming optional allows system to be switdled to 50% power let compliance with common energy codes while maintaining fixture appearance.

S5 option available for use with SIMPIYS" lighting Intelligence system with multHevel dimming. See SYNERGY" lighting Controls specification sheets for more information. Ballast Disconnect provided standard where required to comply with U5. and Canadian electrical codes.

INSTALLATION-Side mounted ballast tray accessed by removing adjacent ceiling tile. Ballast tray may be removed from fixture during service.

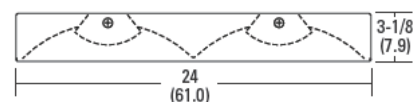
lamps accessed by squeezing refractor to release frctn retentioo tabs.

LISTING-Ullisted (standard) Optional: Canada CSA or cUL. Mexico NOM.

WARRANTY-Fixture guaranteed for one year against mechanical defects in manufacture. lamp and ballast system warranty (24 months for lamp, 60 months for ballast) by lamp and ballast manufacturer.

Specifications

Length: 48 (121.8)
Width: 24 (61.0)
Depth: 3-1/8 (7.9)



All dimensions are inches (centimeters) unless otherwise specified.

Protected by one or more of US Patents Nos. 7,229,192; 0541,467; 0541,468; 0544,633; 0544,634; 0544,992; 0544,933 and additional patent pending.
Sptdfiauions subject to change without nodce

ORDERING INFORMATION For shortest lead times, configure products using **bolded options**.

Example: 2RT5 28T5 MVOLT GEB95 LPM835P

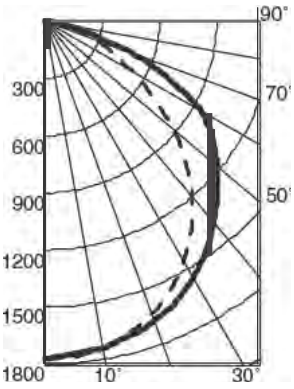
2RTS					
Series	**Lamps**	**Voltage**	**Ballast**	**lamp**[7]	**Options**
2RTS Recessed T5	2BTS 28WT5 (46'1) 54T5HO 54WT5 (46'1')	MVOLT[2] 347[3]	GEB9S .95 ballast factor GEB9SS .95 ballast factor, step dimming' GEB115 1.15 ballast factor GEB115S 1.15 ballast factor, step dimming GEB10PS 1.0 ballast factor, program starts S5 .95 ballast factor SIMP Y5 system' GE880 .80 ballast factor' GE880S .80 ballast factor, step dimming' GEB90 .90 ballast factor GEB90S .90 ballast factor, step dimming GEB10PS 1.0 ballast factor, program start'	LPM835P Premier 3500K 28W lamp[8] LPM830P Premier 3000K 28W lamp[8] LPM841P Premier 4100K 28W lamp[8] l835XP Premier XP 3500K 28W lamp[8] l830XP Premier XP 3000K 28W lamp[8] l841XP Premier XP 4100K 28W lamp[8] LP835 3500K 54W lamp LP830 3000K 54W lamp LP841 4100K 54W lamp	GLR Internal fast-blow fuse9 PWS1836 6' prewire 3/8" diameter, 18-gauge 3-wire (n/a with step dimming)[10] PWS1846 6' prewire 3/8" diameter, 18-gauge 4-wire" EL14 Emergency battery pack[12] El65 Emergency battery pack[12] HW Hardware for SIMPL5 system; replaces RELoc• CSA listed and labeled to comply with Canadian standards BOP Ballast disconnect plug (meets codes that require in-fixture disconnect)

Notes

for T5HO applications, use GE810PS, GEB80 or GEB80S ballast
MVOLT (120-2nvolts), 50-60HZ.
for 347V, use GEB9SS or GEB10PS.
Only option for 347V.
Not available with 1BTS.
SIMPLYS includes B' SS5SC RELOlwiringstem, specify voltage unless HW (hardwire) or PWS is ordered.
Required. All fixtures shipped with lamps installed.
1BTS lamp type only.
Must specify voltage, 120 or 277.
10 for use with standard ballast
11 for use with step dimming ballast.
12 See PS1400QO spec sheet for EL lumen output information.

2RT5 Volumetric Recessed Lighting 2' x 4'

2RTS 28TS GE89S LPM83SP, (2) FP28/835/PM/ECO lamps2730 lumens per lamp,s/m 1.2(along) 1.3(across),test no.LTL13260



Coefficients of Utilization

CP Summary 0°	90	pf pcw	80% 70%	50%	30%	20% 70%	50%	10%	50%	30%	10%
S· 1766	1750	1	98	94	91	92	89	86	88	86	83
15. 1695	1707	2	89	82	76	81	75	70	77	73	69
25. 1555	1623	3	82	72	65	71	64	59	68	63	58
35. 1339	1473	a:4	75	64	56	63	56	50	61	54	49
45. 1044	1280	us	69	57	49	56	49	43	54	48	43
SS· 695	1071	a:6	63	52	44	51	43	38	49	42	37
65. 393	715	7	59	47	39	46	39	33	45	38	33
75. 179	257	8	55	43	35	42	35	30	41	34	30
as· 30	21	9	51	39	32	39	32	27	38	31	27
90 0	0	10	48	36	29	36	29	24	35	28	24

Zonal Lumen Summary

Zone	Lumens	% Lam	% Fixture
0°-40°	2264	41.5	46.1
0°-SO°	3976	72.8	81.0
0°-00°	4908	89.9	100.0
go°- 180-	o	0.0	0.0
0°- 180-	4908	89.9	100.0

LER: 80.4 lpw

Efficiency: 89.9%

*The LER (luminaire Efficacy R.ltilCJ) the lumens per watt rating forthfixture. It is used to compare the energy efficiency of various produthis photometric report is based upon IES testing procedures, as stated in LM-41-1998. The reported lumen rating is based upon lamp manufacturet's published lumen output for the coldspot ternperature measured during lamp calibration.

Ballast	Input Wattage 120/277
GEB90 GEB90S	55/54
GEB90S @50% power mode	27
GEB95 GEB95S	60/58
GEB95S @50% power mode	28/28
GEB115 GEB115S	73nl
GEB115S @50% power mode	35/35
GEB80 GEBSOS	96/93
GEBSOS @50% power mode	52/51
S5	60/58

TS/T8 Energy Comparison

System	Lamp Type	Ballast Factor	Input Watts	Watts Saved Compared to T8
3-lamT8	F32T8	0.88	88	
2RT5 2-lamT5	F28T5XP	0.90	54	34
2RT5 2-lamT5	F28T5	0.95	58	30
2RT5 2-lamT5	F28T5	1.15	71	17

FLUORESCENT: One Utronia Way Conyers, GA 30012 Prone: 800.315.4963 Fax:770-981 191 WoNW.tithoniacom

LITHONIA LIGHTING®

Catalog Number
Notes

FEATURES & SPECIFICATIONS

INTENDED USE — 2RT5isdesigned forapplicationsthat require theextremely energy efficient deliveryof comfortable volumetriclightfrom a lay-infixture that isappealing and shallow in depth.Idealforoffices,schools,hospitals,retail and numerousothercommer- cial applications.Certai n airborn e contamin ants can diminish integ rity of acryli c. Click here for Acrvlic Environmental Compatibilitytableforsuitable uses.

OPTICALSYSTEM–Deliversvolumetriclighting byfillingtheentirevolumeofspacewith light,deliveringtheideal amountoflighttowalls,cubicles,worksurfacesand people. Luminouscharacteristicsare carefully managed at highangles,providingjustenough intensityto deliverthe volumetric effect

Regressed,two-piece refractive system obscuresand softensthelamp and smoothly washesthe reflectorwith light

Linearfaceted reflector softensand distributes light into the space and minimizesthe luminance ratio betweenthefixtureand the ceiling.

Mechanical cut-off across the reflector and fresnel refraction along the refractor provide highangle shielding anda quiet ceiling.

Sloped end plates provide a balanced fixture to ceiling ratio while enhancing the perception offixture depth.

CONSTRUCTION — Impact modified acrylic prismatic refractor with polymerlight diffusing film.

Rugged,one-piece,cold-rolledsteel reflectorwithembossedfacetswith coated poly- ester powder paintafterfabrication.

Rigid structure with ballast box and end plates. End platesfeatureintegraiT-bar clips. Fixturesmay bemounted end-to-end.

ELECTRICALSYSTEM–Highly efficient program start electronic ballasts, Class P, thermally protected,resetting, HPF, non PCB, ULListed, CSA Certified,sound rated A. F14T5 uses GEB115, producing 1.22 ballast factor standard for typical applications. F24T5HO isavailableforhigherceiling applications.

Bi-level dimming option allowssystem to beswitchedto50o/e powerforcompliancewith commonenergy codeswhilemaintainingfixtureappearance.

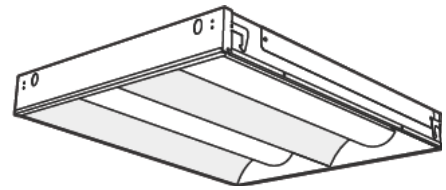
S5optionavailableforusewithSIMPLYS""Lighting Intelligencesystem with multi-level dimming.See SYNERG ControlSystemsspecificationsheetsformoreinfonnation.

MAINTENANCE — Sidemounted ballasttray accessed by removingadjacent ceiling tile.Ballasttray may be removed from fixture duringservice.

Lampsaccessed bysqueezing refractorto releasefrom retention tabs. LISTING–UL Listed (standard). Optional:Canada CSAorcUL Mexico NOM. WARRANTY — Fixtureguaranteedfor oneyearagainstmechanical defectsin manu- facture.Lampand ballastsystemwarranty(24monthsforlamp,60monthsforballast) by lampand ballast manufacturer.

Protected by one or more of US Patents Nos.7,229,192; 0541,467; 0541,468; 0544,633; 0544,634; 0544,992; 0544,933and additional patent pending.

Specificationssubjectto change without notice.



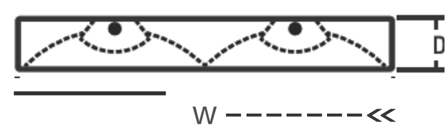
2RT5

2'x2'
2 Lamps
T5

sImPLYI-:jN
LIGHTING INTELLIGENCE

Specifications

Length:	24 (610)
Width:	24 (610)
Depth:	3-1/8 (79)



All dimensions are inches (millimeters) unless otherwise specified.

ORDERING INFORMATION

For shortest lead times, configure product using standard options (shown in bold).

Example: 2RT5 14T5 MVOLT GEB115 LP835

2RT5 | Series | Lamp type | Voltage | Ballast | | Options

Series		Lamp type		Voltage	Ballast				Options	
2RT5 Recessed T5	14T!i	14WT5 (22")	MVOLf2 347[3]	GEB115	1.15 ballast factor	LP835	J500•K lamp	GLR	Internal fast-blow fuse&
	24T5HO	24W TS (22')1		GEB115S	1.15 ballast factor, step dimming	LP830	3ooo•K lamp	PWS1836	6' prewire, 3/8" diameter, 18-gauge, 3-wire (n/a with GEB115S)1
				GEB10PS	1.0 ballast factor, program start [1]	LP841	41oo•K lamp	PWS1846	6' prewire, 3/8" diameter, 18-gauge, 4-wire[8]
				SS	0.95 ballast factor SIMPLYS system[4]			EL14	Emergency battery pack[9]
								HW	Hardwire for SIMPLYS system; replaces RELOC®
								CSA	listed and labeled to comply with Canadian standards

NOTES:

For TSHO use GEB10PS only; not available with 14T5.
MVOLT (120-277 volts), 50-60HZ.
3 For 347V use GEB115S or GEB10PS ballast only.
4 SIMPLY5 includes 13' S5SSC RELOC"wiring system, specify voltage unless HW (hardwire or PWS) is ordered.
5 Required. All fixtures shipped with lamps installed.
6 Must specify voltage, 120 or 277.
For use with standard

ballast.

8 For use with step dimming ballast.

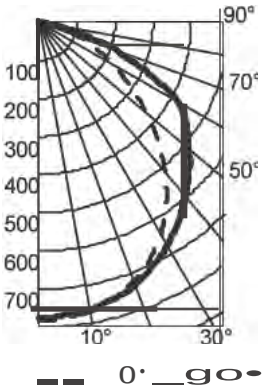
9 See PS140000 spec sheet for EL lumen output information.

QFC Quick-flex cable[6]

BOP Ballast disconnect plug (meets codes that require in-fixture disconnect)

2RT5 Volumetric Recessed Lighting 2' x 2'

2RT514T5 GEB115,(2) FP24/B411amps,1220 lumens per lamp,s/m 1.2(along) 1.3(across),test no.LTL14130



CP Sunwnary

	o·	go•
o•	776	776
S•	778	770
15°	749	751
25°	688	707
35°	583	638
45°	443	557
SS•	293	473
65"	167	319
75"	73	114
aS•	11	9
go·	0	0

Coefficients of Utilization

pf	20%								
pc	80%			70%			50%		
pW	70%	50%	30%	50%	30%	10%	50%	30%	10%
0	103	103	103	101	101	101	96	96	96
1	95	91	87	89	86	83	85	83	80
2	86	79	74	78	73	68	75	70	66
3	79	70	63	68	62	57	66	60	56
a:4	72	62	54	61	54	48	59	53	48
05	66	55	48	54	47	42	53	46	41
a:6	61	50	42	49	42	37	47	41	36
7	57	45	38	44	37	32	43	37	32
8	53	41	34	41	34	29	40	33	29
9	49	38	31	37	31	26	36	30	26
10	46	35	28	34	28	24	34	28	23

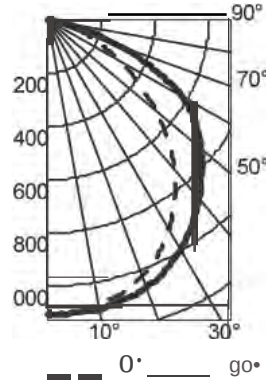
ZonalLumen Summary

Zone	Lumens	%Lam	%Fix
o·-3o•	603	24.7	28.
o·-4o•	983	40.3	46.
o·-6o·	1716	70.3	81.
o·-go•	2113	86.6	100
go-1so·	0	0.0	0.(
o·-1so•	2113	86.6	100

Efficiency:86.6%

LER:66.1 lpw

2RT5 24T5HO GEB10PS LP835,(2) FP24/8351amps,1760 lumens per lamp,s/m 1.2 (along) 1.3(across). test no.LTL12606



CPSummary

	o·	go•
o·	1104	1104
S·	1098	1103
15"	1063	1088
25"	973	1037
35"	826	93g
45°	634	812
55"	413	673
65°	226	435
75°	g?	147
aS•	13	14
go·	0	0

Coefficients of Utilization

pf	20%								
pc	80%			70%			50%		
!1W	70%	50%	30%	50%	30%	10%	50%	30%	10%
0	102	102	102	100	100	100	g6	g6	g6
1	94	go	87	88	85	82	85	82	80
2	86	?g	73	77	72	68	74	70	66
3	78	70	63	68	62	57	66	60	56
a:4	72	62	54	61	54	48	58	53	48
05	66	55	48	54	47	42	52	46	41
a:6	61	50	42	4g	42	37	47	41	36
7	57	45	38	44	37	32	43	37	32
8	53	41	34	41	34	2g	3g	33	2g
9	4g	38	31	37	31	26	36	30	26
10	46	35	28	34	28	24	34	28	23

ZonalLumen Summary

Zone	Lumens	% Lam	11% Fix
o·-3o•	871	24.7	28.
o•-4o•	1424	40.4	47.
o·-6o·	2484	70.6	82.
o·-go•	3028	86.0	100
go• -1so·	0	0.0	0.(
o-1so•	3028	86.0	100

Efficiency:86.0%

LER:56.0 lpw

*The LER (luminaire Efficacy Rating) is the lumens per watt rating for this fixture. It is used to compare the energy efficiency of various products. This photometric report is based upon IES testing procedures, as stated in LM-41-1998. The reported lumen rating is based upon lamp manufacturer's published lumen output for the cold spot temperature measured during lamp calibration.

Input Wattage

Wsttsge	*Bsl/sst*	*120V*	*277V*
24T5HO	GEBtOP	55	54
14T5	GEB115S	39	39
14T5 {50% step	GEB115S dimming)	22	22

T5/T8 Energy Comparison

System	*Lamp Type*	*Ballast Factor*	*Input Watts*	Watts Saved Compared to T8
2-lamp T8	F32T8U	0.88	58	
2RT5 2-lamp T5	F14T5	1.22	39	19

L/THDN/A L/GHT/NG®

An HyBrandsCompany

Lithonia Lighting
Fl uoreacent
One Lithonia Way, Conyers,GA 30012
Phone:80().858-7763 Fax:770-929-8789
www.lithonia.com

f_ L/THDN/A L/GH77NG®

Catalog Number	
Notes	rype

Rough Service Fixture

VGR1

COMPACT FLUORESCENT
14" Round Open Face
Ceiling/Wall Mounted

GA"""""EVVAV

ADA COMPLIANT

FEATURES & SPECIFICATIONS

INTENDED USE- Architectural low-profile lumina ire provides general illumination for rough service (vandal resistant) applications. Ideal for interior or exterior applications where safety and security area concern. Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.

ATIRIBUTES- Designed to complement building architecture and to endure extreme environmental conditions and physical abuse.

CONSTRUCTION- Bezel- One-piece marine grade, die-cast aluminum, low copper alloy (<1% copper),.125 inch thick. Encloses lens and secures to backplate with stainless steel To T-10 setscrews (two included) or optional stainless steel tamper-resistant screws (see Options).

Backplate- Corrosion-resistant, 16-gauge steel. Post-painted in black polyester powder coat, and bas a keyhole mounting detail.

Gasket- Polycarbonate perimeter lens gasket is one-piece silicone '0" ring, mechanically held in lens channel. Glass: Perimeter lens gasket is closed-cell silicone. Pad mounting gasket is closed-cell neoprene that seals backplate to mounting surface. Gaskets help cushion impact shock.

FINISH- Standard finish is textured polyester powder coat in white, black or bronze. Optional architectural colors available (see Options).

OPTICAL SYSTEM- Lens- polycarbonate- Translucent white, injection molded, UV stabilized lens is .125 inch thick. Smooth exterior allows for easy cleaning, and interior pattern diffuse light for even surface illumination.

Lens- glass- Tempered borosilicate lens, .250 inch thick. has smooth exterior for easy cleaning and textured interior.

Reflector- Internal reflector is semi-specular aluminum, with high-reflectance white powder coat perimeter for maximum light output Lamp positioning assures uniform brightness and illumination.

ELECTRICAL SYSTEM- Ballast- Class P, Electronic, High Power Factor multi-volt with starting temperature of -5•F(-20•C). Exception is 13TI, Electromagnetic ballast, Normal Power Factor, 120V only.

Socket- High-temperature thermoplastic with lamp retention clip.

Lamp -35K lamp(s) included unless specified LJLP.

INSTALLATION- Unit maybe ceiling or wall mounted. For maximum vandal resistance, use four hole mounting pattern. For installation on irregular or uneven surfaces, caulk/ sealant may be required for a more positive seal.

LISTING- UL listed to US and Canadian safety standards (see options). NOM Certified (see Options). Ullisted for 25•C ambient and wet locations. IP65 rated.

NOTE: Specifications subject to change without notice.

13.7(34.8) ---i

3.T J (9.4)1

All dimensions are inches (centimeters).

ORDERING INFORMATION

Example: VGR1 42TRT 120 DBLB GLR LPI

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog number.

VGR1

Se es			Vo age		Options		Lamp[8]	
VGR1	13TT	One 13W twin-tube lamp'	(blank) Polycarbonate	120	Standard Textured Colors:	Shipped installed in fixture	LPI	Lamp(s) included (standard)
	2/13TT	Two 13W twin-tube lamps'		m	DI't'll; White	m Dual switching	LAP	Less lamp(s)
	13DTT	One 13W double twin-tube lamp	tJ. Borosilicate glass	347	llllB Black	GlR Internal fast-blow fusing'		
	2/13DTT	Two 13W double twin-tube lamps		MVOLT'	DDBT Dark Bronze	GNF Internal slow-blow fusing'		
	18DTT	One 18W double twin-tube lamp			DNAT Natural Aluminum	NLCF Compact fluorescent night-light (WI Max.)'.U		
	2/18DTT	Two 18W double twin-tube lamps			DSST Sandstone	ms Tamper-resistant screws[7]		
	26DTT	One 26W double twin-tube lamp			Optional Textured Colors:	CSA listed and labeled to comply with Canadian safety standards		
	2126DTT	Two 2fN'I double twin-tube lamps			DBNH Bronze	l'«lM NOM Certaied		
	26TliT	One 26W triple-tube lamp			DSPO Dark Gray			
	2/26TliT	Two 26W triple-tube lamps			DSPE Green			
	32TliT	One 32W triple-tube lamp			DSPF Rust			
	42TliT	One 42W triple-tube lamp			DSPG Dark Red			
					DSPH Light Red			
					DSPJ Light Gray			

Accessories

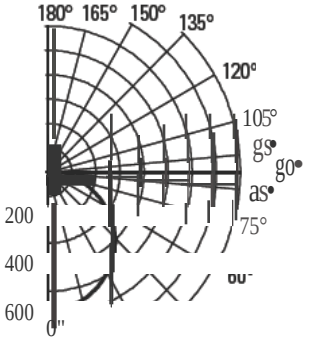
Order as separate catalog numbers.

RK1T10DRV	Torx TXIO screwdriver, for use with Gateway set screws.
RK1T20BIT	Hex-base driver bit, Torx TX20, for tamper-resistant screws with center reject pin.
RK1T20DRV	Torx TX20 screwdriver for use with tamper-resistant screws with center reject pin.

NOTES:
120V only.
Multi-volt electronic ballast (for OTT and TRT lamps) capable of operating on any line voltage between 120 and 277 volt.
3 For additional colors, refer to Architectural Paint brochure.
4 Must specify voltage. Not available with MVOLT.
5 Maximum wattage lamp provided.
6 Option available for single lamp units only. T-20 screws with center reject pin.
8 Lamp(s) included unless LJLP is specified.

VGR1 Rough Service Ceiling/Wall-Mounted Fixture, Compact Fluorescent

VGR142TRT 120 (CEILING}, SYLVANIA CF42DT/EJIN/8351amp,1.3 s/mh,3200 rated lumens,test no. 98091002



ro=cmg criterion: 1.3
pacmg to mounting height: 1.3

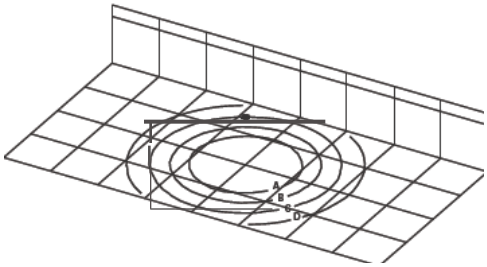
Oistribution dlltt1

Angle	cp.	Lumens
00	576	0
S0	573	55
15°	553	157
25°	517	Z39
35°	464	291
45°	396	:JJ7
55°	315	283
65°	229	'l27
75°	145	153
85°	75	82
90°	49	0
95°	29	32
105°	7	7
115°	0	0
125°	0	0
135°	0	0
145°	0	0
155°	0	0
165°	0	0
175°	0	0
180°	0	0

Output data

Zone	Lumens	Yolamp
0°-300	451	14.1
0°-400	742	23.2
0°-600	1332	41.6
0°-900	1794	56.1
90°-1800	39	1.2
0°-1800	1833	*57.3

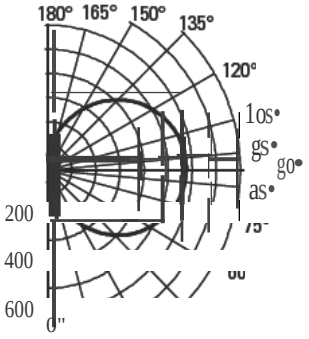
•FDrlute s Aiciency



VGR142TRT CEILING MOUNT (in feet)
HORIZONTAL PLANE ISOCANDLE LINE
(8FT. SHOWN)

	7	8	9	10
A	2.6	2.0	1.6	1.3
B	1.3	1.0	.80	.65
C	.65	.50	.40	.32
D	.32	.25	.20	.16

VGR142TRT 120 (WALU. *Stf. VANIA Cf42DT/E/INI835/amp, 1.5s/mh, 3200 rated lumens*, test *no. 91l19102W*



ro=cmg criterion: 1.5
pacmg to mounting height: 1.5

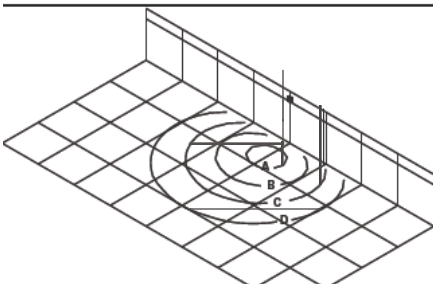
Distribution dlltll

Angle	cp.	Lumens
00	47	0
S0	47	4
15°	59	17
25°	80	37
35°	103	65
450	127	98
55°	147	132
65°	163	162
75°	174	184
85°	180	1$
90°	182	0
95°	181	197
105°	m	187
115°	168	166
125°	153	138
135°	135	104
145°	113	71
155°	90	42
165°	70	20
175°	58	6
1800	58	0

Output data

Zone	Lumens	%lamp
0°- 30°	58	1.8
00-400	123	3.8
0°-60°	353	11.0
00-900	895	28.0
900-180°	931	29.1
00-180°	1826	*57.1

•FIXIure s ffciency



VGRl 42TRT WALL MOUNT (in feet)
HORIZONTAL PLANE ISOCANDLE LINE
(8FT.SHOWN)

	7	8	9	10
A	2.6	2.0	1.6	1.3
B	1.3	1.0	.80	.65
C	.65	.50	.40	.32
D	.32	.25	.20	.16

Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory data and actual field measurements. Dimensions and specifications on this sheet are based on the most current available data and are subject to change without notice.

f_ L/THDN/A L/GHT/NG®

AnltyBrands Company

Lithonia Lighting
Rough Servi ce
One Lithonia Way,Conyers,GA 30012
Phone:770-922-9000 Fax:770-981-8141
www.lithonia.com

Sheet #: VGR1F_0

Cerra·10

Indirect / Direct TS / TSHO

Type: Dl, D2, D4

Project:

SPECIFICATIONS | Modular / 10" x 3" | 10CRM4

CATALOG NUMBER

FT

f;:;;j ;;· 10CRM4 2 28T5 WHR SSB 40FT R12 277 GEB10 OCT LP835 FI/18 SCEP — 10CRM4 3 54TSHO 20/80 PPL 32FT R8 277 GEB10 ISE EL OCT LP835 FI/21

AVAILABLE FIXTURES

1--------10" – ----1 1----- –10" – ----1 1----- –10" ------1

SPECIFICATIONS

Construction
Housing is a nominal 10" x 3" crescent channel formed from onepiece cold-rolled steel. Flat end plate standard. Sculptured die cast aluminum end cap is optional.

Shielding
SSB — Parabolic aluminum baffle with semi specular finish. SBL — White steel straight blade baffle. PPL — White perforated steel straight blade baffle.

Reflectors
Reflecting surfaces have white finish (nominal 90% reflectance).

Finish
Fine textured white polyester powder paint is standard. Consult factory for special finish requirements.

Electrical
Specify 120, 277 or 347 volts. Pre-wired with 16 ga. fixture wire. For special circuiting or wire guage, consult factory. Plug-in electrical connectors included. C-UL label standard.

Fixture Length
4', 8', and 12' lengths in a single section for nominal suspension spacing of 4', 8', and 12'. For total fixture length, add 1/16" for each flat end plate or 4" for each sculptured end cap. Using internal joiners, 4', 8', and 12' sections can be joined to form longer length fixtures.

ORDERING LOGIC

Use guide below to order complete fixture runs from four feet to one-hundred feet in increments of four.

Fixture
10CRM4

# of Lamp
amps in Cross — Type: S4TSHO

Distribution
WHR — 65% Up, 35% Down (Standard)
CL1[1] — Center Lamp Isolator

Shielding
(Blank) No diffuser
OPD — Standard Brightness Diffuser

Baffle
SSB — Semi
SBL — Standard[1] (pre-finished or painted)

Nominal Row Length'

Maximum Section Length
R4
R8
R12

Voltage
120
277
347

Ballast Type
GEB10 — <10% THD
ADE2' — ELECTRONIC Advance Mark 10 dimming
70-IOv
Reference Ballast Chart on website or consult factory for other options

# of Emergency Modules
Blank — No Emergency

Emergency Type[6]
Blank — No Emergency or Night light
n — Emergency Battery Pack
EC — Emergency/Night Light Circuit
EN — Emergency Battery Pack with Night Light Circuit

Switching
SCT — Single Circuit
OCT — Dual Circuit

Lamp Color
VLP — No Lamp
LP830 — 3000k 80+CRI
LP835 — 3500k 80+CRI
LP841 — 4100k 80+ CRI
LP830P' — 3000k 80+CRI Premier Lamp
LP835P' — 3500k 80+CRI Premier Lamp
LP841P' — 4100k 80+ CRI Premier Lamp
Reference Lamp Chart on website or consult factory for other options.

Mounting Type
F1 — T-Bar Ceiling (Universal Mounting Bracket)
FIA — T-Bar Ceiling (UMB with Integrated J-Box)
F2 — Hard Ceiling (Horizontal J-BoX)
F3 — Stem Mount
F4A — IDS Clip 'o' Tee
F4B — IDS Clip Tee
F4C — IDS Clip Screw Slot

Overall Suspension
12 — 12" overall suspension
15 — 15" overall suspension
18 — 18" overall suspension
21 — 21" overall suspension
24 — 24" overall suspension
XX — XX" overall suspension

Finish
(blank)
CnO — Painted Silver to Match Anodized Aluminum
C210 — Textured White While (low gloss)
C099

Options
ACG — Adjustable Coble Grippers
APF — Alternate Power Feed
CP — ChiCago Plenum
DI — Damp Location label
OU — Dust Cover
UH — EM Throughwire w/ Separate Feed
EIS — EM Through Wire w/ Single Feed
GLR — Fusing (Fast blow)
SCEP — Sculptured End Cap

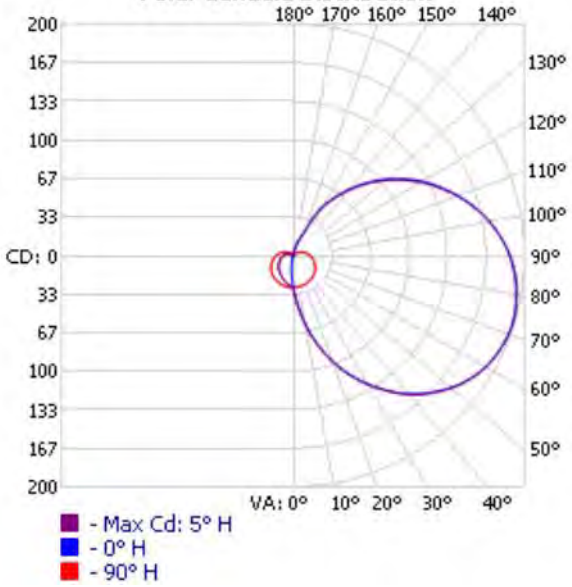
Notes:
1 Available with standard distribution only.
2 Available with 3 lamp cross section only.
3 Must be in 4' increments.
4 TSHO only.
5 Available with 2815 only.
6 Optional.
Eland EC are Installed In last 4' of fixture sections and are not available concurrently with each other. Separate feed required for each E or EC unless ELS/ELH Is specified. Available with F4A/B/C mounting only.
Refer to photometric test for exact distribution.

Peerless Ligtting reserves the right to change material s or modify the design of its prock.Jct without notification as part of the compan(s continu ng product improvement program.

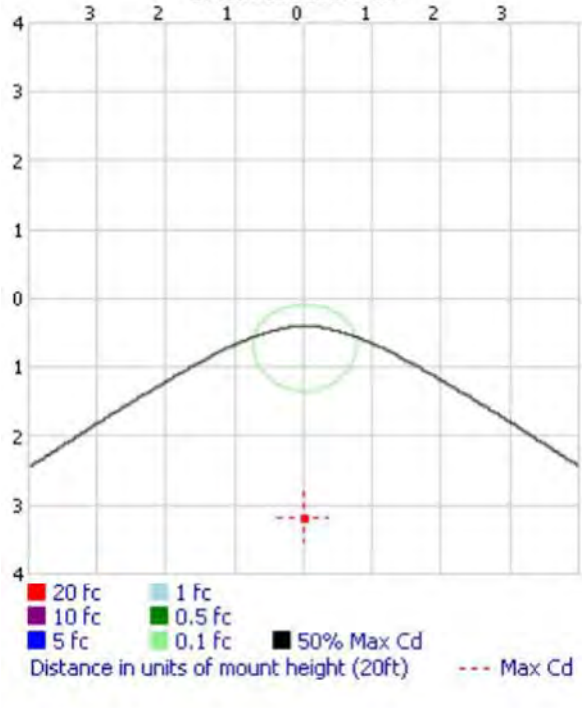
OUTDOOR PHOTOMETRIC REPORT
CATALOG: VGR2 26TRT (WALL MOUNT)

TEST #:	LTL12765
CATALOG #:	VGR2 26TRT (WALL MOUNT)
LUMINAIRE:	GATEWAY ROUND FIXTURE WITH HORIZONTAL EYELID & POLYCARBONATE LENS
LAMP CAT #:	CF26DT/E/IN/835
LAMP:	ONE 26-WATT TRIPLE TUBE COMPACT FLOURESCENT, HORIZONTAL POSITION.
LAMP OUTPUT:	1 LAMP(S), RATED LUMENS/LAMP: 1800
INPUT WATTAGE:	29
LUMINOUS OPENING:	RECTANGLE W/LUMINOUS SIDES (L: 1.56", W: 11.16", H: 5.52")
MAX CD:	198.8 AT HORIZONTAL: 5°, VERTICAL: 72.5°
CUTOFF CLASS:	NONCUTOFF
ROADWAY CLASS:	VERY SHORT, TYPE IV
EFFICIENCY:	**32.6%**

Polar Candela Distribution



Isofootcandle Plot



OUTDOOR PHOTOMETRIC REPORT
CATALOG: VGR2 26TRT (WALL MOUNT)

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	32.3	1.8%	5.5%
0-40	64.1	3.6%	10.9%
0-60	164.5	9.1%	28%
60-90	199.2	11.1%	34%
70-100	197.5	11%	33.7%
90-120	157.9	8.8%	26.9%
0-90	363.6	20.2%	62%
90-180	222.9	12.4%	38%
0-180	586.6	32.6%	100%

LUMENS PER ZONE

ZONE	LUMENS	% TOTAL	ZONE	LUMENS	% TOTAL
0-10	2.8	0.5%	90-100	62.2	10.6%
10-20	9.8	1.7%	100-110	53.4	9.1%
20-30	19.7	3.4%	110-120	42.3	7.2%
30-40	31.8	5.4%	120-130	30.6	5.2%
40-50	44.5	7.6%	130-140	19.6	3.3%
50-60	55.8	9.5%	140-150	10.4	1.8%
60-70	63.9	10.9%	150-160	3.7	0.6%
70-80	68.0	11.6%	160-170	0.7	0.1%
80-90	67.3	11.5%	170-180	0.0	0%

ROADWAY SUMMARY

CUTOFF CLASSIFICATION:	NONCUTOFF
DISTRIBUTION:	TYPE IV, VERY SHORT
MAX CD, 90 DEG VERT:	187.5
MAX CD, 80 TO <90 DEG:	196.3

	LUMENS	% LAMP
DOWNWARD STREET SIDE:	353.5	19.6%
DOWNWARD HOUSE SIDE:	10.1	0.6%
DOWNWARD TOTAL:	363.6	20.2%
UPWARD STREET SIDE:	220.6	12.3%
UPWARD HOUSE SIDE:	2.3	0.1%
UPWARD TOTAL:	222.9	12.4%
TOTAL LUMENS:	586.5	32.6%

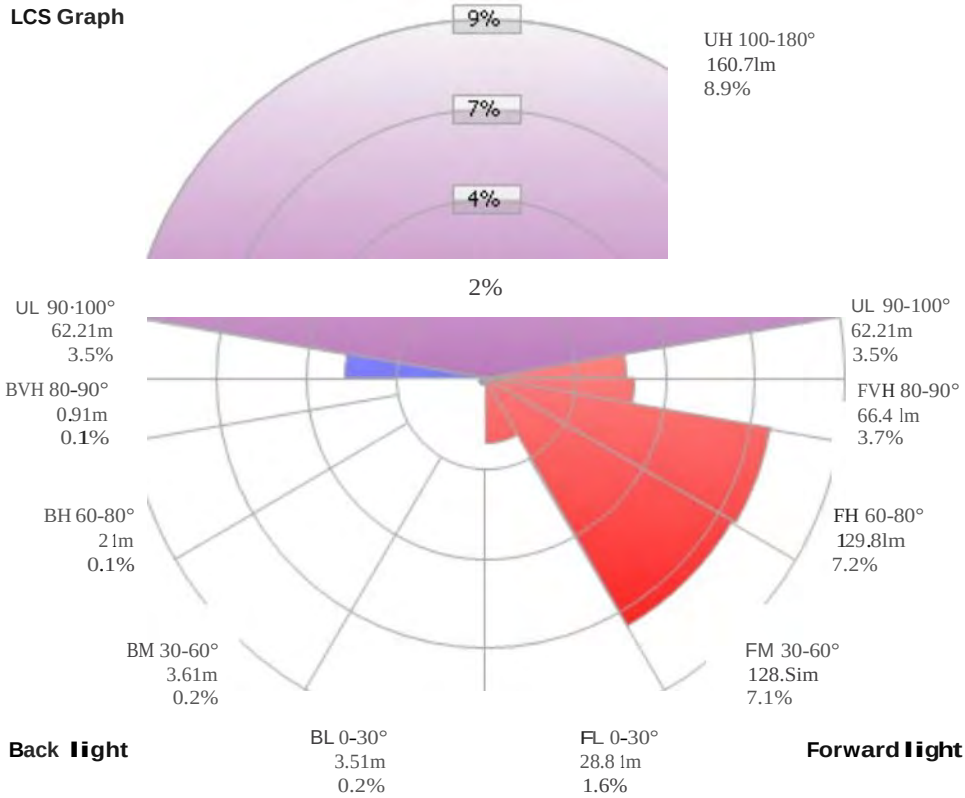
LCS TABLE

BUG RATING	**B0 - U3 - G1**	
FORWARD LIGHT	LUMENS	LUMENS %
LOW(0-30):	28.8	1.6%
MEDIUM(30-60):	128.5	7.1%
HIGH(60-80):	129.8	7.2%
VERY HIGH(80-90):	66.4	3.7%
BACK LIGHT		
LOW(0-30):	3.5	0.2%
MEDIUM(30-60):	3.6	0.2%
HIGH(60-80):	2.0	0.1%
VERY HIGH(80-90):	0.9	0.1%
UPLIGHT		
LOW(90-100):	62.2	3.5%
HIGH(100-180):	160.7	8.9%
TRAPPED LIGHT:	1,213.5	67.4%

OUIDOOR PHOTOMETRIC REPORT
CATALOG: VGR2 26TRT (WALL MOUNT)

cuityBrands

LCS Graph



Scale = Max LCS %

Trapped Light: 1213.5lm, 67.4%

OUTDOOR PHOTOMETRIC REPORT
CATALOG: VGR2 26TRT (WALL MOUNT)

CANDELA TABLE - TYPE C

	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
5	42	42	41	40	38	36	34	32	30	27	25	23	21	20	18	17	16	16	16
10	60	60	58	55	51	47	42	37	32	27	23	19	16	13	11	10	9	8	8
15	78	78	75	70	65	58	50	42	34	27	21	16	12	9	6	5	4	3	3
20	96	95	91	86	78	68	58	47	36	27	19	13	8	5	3	2	1	0	1
25	112	112	107	100	92	79	66	52	38	26	17	10	6	3	1	0	0	0	0
30	128	127	121	113	101	88	72	56	40	26	15	8	4	1	0	0	0	0	0
35	142	141	135	125	112	96	78	59	41	26	14	7	2	0	0	0	0	0	0
40	156	155	148	137	122	104	84	63	42	25	13	5	1	0	0	0	0	0	0
45	167	166	158	146	130	111	89	65	43	24	12	4	1	0	0	0	0	0	0
50	178	176	168	155	138	116	93	68	44	24	10	3	0	0	0	0	0	0	0
55	186	184	175	161	143	121	96	69	44	23	10	3	0	0	0	0	0	0	0
60	192	190	181	166	147	124	97	70	43	22	8	2	0	0	0	0	0	0	0
65	196	194	184	169	149	125	98	69	42	21	8	2	0	0	0	0	0	0	0
70	198	196	186	171	150	126	98	69	41	20	7	1	0	0	0	0	0	0	0
75	198	196	186	171	150	125	97	67	40	19	6	1	0	0	0	0	0	0	0
80	195	194	184	168	148	123	95	65	38	18	6	1	0	0	0	0	0	0	0
85	192	190	180	165	145	120	92	63	36	16	5	1	0	0	0	0	0	0	0
90	187	185	176	161	141	116	88	60	34	15	4	1	0	0	0	0	0	0	0
95	180	178	169	154	135	111	84	56	31	13	4	1	0	0	0	0	0	0	0
100	172	169	160	146	128	105	78	52	28	12	3	0	0	0	0	0	0	0	0
105	162	160	151	138	120	98	73	47	26	11	3	0	0	0	0	0	0	0	0
110	152	149	141	128	111	90	66	43	23	9	2	0	0	0	0	0	0	0	0
115	140	137	130	118	102	82	60	38	20	8	2	0	0	0	0	0	0	0	0
120	129	125	118	107	92	73	53	33	17	6	2	0	0	0	0	0	0	0	0
125	116	113	106	96	82	64	46	28	14	5	1	0	0	0	0	0	0	0	0
130	103	99	93	84	71	55	39	23	11	4	1	0	0	0	0	0	0	0	0
135	89	86	80	72	60	46	32	19	9	3	1	0	0	0	0	0	0	0	0
140	75	72	67	60	49	37	25	14	7	2	1	0	0	0	0	0	0	0	0
145	61	58	54	47	38	29	19	10	5	2	1	0	0	0	0	0	0	0	0
150	47	44	39	35	28	21	13	7	3	1	0	0	0	0	0	0	0	0	0
155	23	23	25	24	19	14	8	4	2	1	0	0	0	0	0	0	0	0	0
160	14	14	15	14	11	8	5	2	1	1	0	0	0	0	0	0	0	0	0
165	8	7	7	6	5	3	2	1	1	0	0	0	0	0	0	0	0	0	0
170	2	1	1	1	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

REPORTED DATA CALCULATED FROM MANUFACTURER'S DATA FILE, BASED ON IESNA RECOMMENDED METHODS.
REPORT GENERATED ON 3/7/2012, USING THE 'OUTDOOR' TEMPLATE.

Type Catalognumber

FEATURES

OPTICAL SYSTEM
- Self-flanged, semi-specular or matte-diffuse reflector. Patented Bounding Ray™ Optical Principle design (U.S. Patent No. 5,800,050) provides lamp image and smooth transition from top of the reflector to bottom. Minimum flange matches reflector finish.

MECHANICAL SYSTEM
- 16-gauge galvanized steel mounting/plaster frame with integral yoke to retain optical system. Maximum 2-1/4" ceiling thickness.
- 16-gauge galvanized steel mounting bars with continuous 4" vertical adjustment are shipped pre-installed. Post-installation adjustment possible without the use of tools from above or below ceiling.
- Galvanized steel junction box with hinged access covers and spring latches. Two combination 1/2"-3/4" and three 1/2" knockouts for straight-through conduit runs. Capacity: 8 (4 in, 4 out) No. 12 AWG conductors, rated for 90°C.

ELECTRICAL SYSTEM
- Horizontally mounted, positive-latch, thermoplastic sockets.
- Class P, thermally protected high-power-factor ballast(s) mounted to the junction box.
- Simply5™ technology available.

LISTING stmPLYl-"I'
- Fixtures are UL listed for thru-braOcli'Wirin'g, non-IC recessed mounting and damp locations. Listed and labeled to comply with Canadian standards.

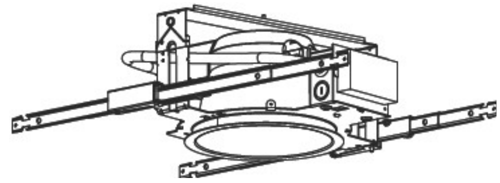
WARRANTY
- One-year limited warranty. Full warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

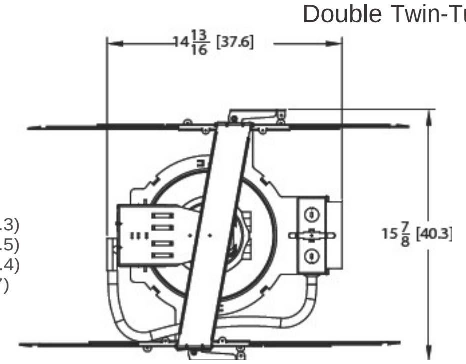
Compact Fluorescent Downlights

8" AF

Lensed

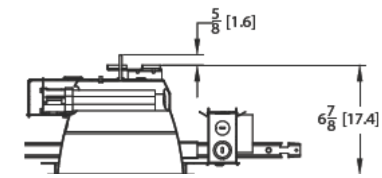
Horizontal Lamp
Double Twin-Tube





Aperture:	8 (20.3)
Ceilingopening:	8-7/8(22.5)
Overlap trim:	9-1/4 (23.4)
Lens recess:	2-5/8 (6.7)

Alldimensions are inches(centimeters).



E=*

ORDERING INFORMATION

Example: AF 2/18DTT BAR CGL MVOLT WLP

Choose the boldface catalog nomenclature that best suits your needs and write it on the appropriate line. Order accessories as separate catalog numbers (shipped separately).

AF

IIWattag /Lampi'-IA,...p-e-ra_t_u-re-:JT:::h:m_c_o-::lo_t,I+=F""in-':is-=h--, I ______B_a_ll_a_stl______ _,| -:--0,-p,-ti,-o_ns________,

________V oltage I

AF

1/13DTI
2/13DTI
1/18DTI
2/18DTI
1/26DTI
2/26DTI

BAR Clear
8PR Pewter
8WTR Wheat
8WR, White painted
8BC[1] Black cone
8MB[1] Black baffle
8WB[1] White baffle

(blank} Semi-specular
LD Matte-diffuse

Lens type

CGL Clear glass lens
PCL Clear polycarbonate lens
T13 Tempered prismatic lens
PPC Prismatic polycarbonate lens
FOL Flat opal lens

MVOLJ2
120
277
347

(blank} Electronic ballast
ECOSU LU1ron EcoSystem< > electronic dimming ballast. Minimum dimming level 5%
ADEz•.s Advance Mark 10< > electronic dimming ballast. Minimum dimming level5%
ADZT•.s Advance Mark 7< > electronic dimming ballast. Minimum dimming level5%
S5' SIMPLY5"' dimming system. Minimum dimming level 15%

DS Dual switching
ELR[7] Emergency battery pack. Remote test switch provided
ELRHP High lumen outpU1 emergency battery pack. Remote test switch provided
GMP Single slow-blow fuse
GLR[6] Single fast-blow fuse
TRW White painted flange. Standard on MB and WB
WLP With 3500 K lamp (shipped separately}
LRC[8] Provides compatibility with Lithonia Reloc" System. Lithonia Reloc System can be installed less option with connectors provided by others. Access above ceiling required
HW Hardwire for S5 system; replaces Reloc
GSKT Foam gasketing
CP' Chicago plenum
BDP[10] Ballast disconnect plug
WL Wet location
NSD[11] Sensor Switch nlight"' dimming relay
WRL[12] Wattage restriction label

Accessories

Order as separate catalog number.

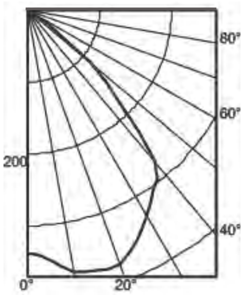
SCAB Sloped ceiling adapter. Degree of slope must be specified (100,150,200, 25D,300}. Ex: SCA810D

NOTES
1 Notavailable withfinishes.
2 Multi-volt electronic ballast capable of operating on any voltage from120Vthrough277V,50or60Hz.
3 For additional ballast types, refer to TECH-250.
4 Notavailable with130TI.
5 Available in120Vor277V only.
6 SIMPLYSTM includes9· S5 MLC Reloc wiring system (shipped separately). Availablein120Vor 277Vonly. Availablein 2&Nonly. SeesimplyS.netfor more information.
7 For dimensional changes, refer to TECH-140.
8 For compatible Reloc systems, refer to TECH-110.
9 Notavailable with emergency options.
II Meets codes that require in-fixture disconnect
11 OneSA relay with one 0-IOVOC dimming oU1put, shipped installed. Re_9uires additionalnUghtbus powersupply(nPSSO}.
12 Must specify wattage. Ex.: WRL32

8.. **AF** Lensed

Distribution curve	Distribution data	Output data	Coefficient of utilization	Illuminance Data at 30" Above Floor for a Single Luminaire

AF 2/1BDTT BAR CGL, (2) CFlSDD/E/835 lamps, 2500 total rated lumens, Test No. LTL10618

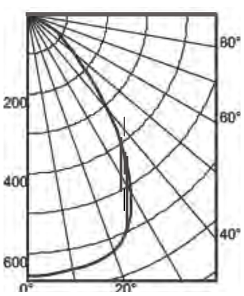


Ave	l.t.mllns	Zone	l.t.mllns	% Lanp
0 338		o·-:w	303.9	12.2
5349	34	00-400	495.2	19.8
15 378	108	00-800	878.5	27.1
25 358	184	00-900	882.1	27.3
35 305	191	go• -1800	0.0	0.0
45 179	143	00-180.	882.1	"27.3
5533	38	-etliclency		
85 4	5			
75 1	1			
85 0	0			
90 0				

p	20%								
pc	lll%			70%			50%		
11!!:	50%	30%	10%	00%	30%	10%	50%	30%	10%
0	3232	32		32	3232		3030	1)	
1	3029	28		29	2828		2827	27	
2	27	28	25	27	25	24	2825	:M	
3	2523	22		24	2322		24	22	21
4	23	21	19	22	21	19	22	20	19
5	21	19	17	20	19	17	20	18	17
8	19	17	18	19	17	15	18	17	15
7	17	15	14	17	15	14	17	15	14
8	18	14	13	18	14	13	18	14	13
9	15	13	12	15	13	12	14	13	12
10	14	12	11	14	12	11	13	12	11

	lnltaiFC	50% beam- 89.r		10% bean- 98.r	
Center Hel9!!!		llomoter	FC	Df011Vlter	FC
8.0	11.2	7.7	5.8	12.8	1.1
10.0	8.0	10.5	3.0	17.5	0.8
12.0	3.7	13.2	1.9	22.1	0.4
14.0	2.8	18.0	1.3	28.8	0.3
18.0	1.9	18.8	0.9	31.5	0.2

AF 2/1BDTT BAR T73, (2) CFlSDD/E/835 lamps, 2500 total rated lumens, Test No. LTL10974

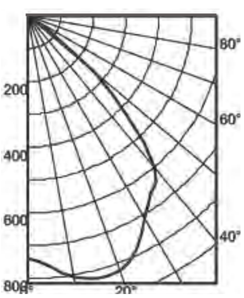


Ave	l.t.mllns	Zone	l.t.mllns	% Lanp
0 857		00-:W	515.1	20.8
5 858	83	o-400	n5.3	31.0
15 848	182	o-800	1040.1	41.8
25 594	270	o-900	1071.2	42.8
35 420	260	900-1800	0.0	0.0
45 218	170	00-1800	1071.2	.42.8
55 104	95	-etliclency		
85 24	30			
75 1	1			
85 0	0			
90 0				

p	20%								
pc	lll%			70%			50%		
11!!:	50%	30%	10%	00%	30%	10%	50%	30%	10%
0	51	51	51	50	5050		484848		
1	47	45	44	4845	44		44	43	42
2	42	40	39	42	40	38	40	39	37
3	39	38	34	38	38	34	37	35	33
4	3532	30		35	32	30	34	31	1)
5	3229	27		32	29	27	31	29	27
8	3027	24		29	28	24	29	28	:M
7	27	24	22	27	24	22	28	24	22
8	25	22	20	25	22	20	25	22	20
9	24	21	19	23	20	18	23	20	18
10	22	19	17	22	19	17	21	19	17

	lnltaiFC	50% beam- 60.9"		10% bean- 92.4·	
Center Hel9!!!		llomoter	FC	Df011Vlter	FC
8.0	21.7	8.5	10.9	11.5	2.2
10.0	11.7	8.8	5.8	15.7	1.2
12.0	7.3	11.2	3.8	19.8	0.7
14.0	5.0	13.5	2.5	24.0	0.5
18.0	3.8	15.9	1.8	28.2	0.4

AF 2126DTT BAR CGL, (2) CF26DD/E/B35 lamps, 3600 total rated lumens, Test No. LTL10617

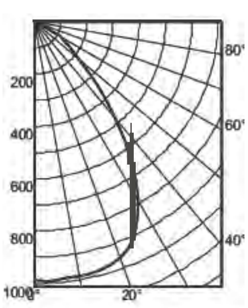


Ave	l.t.mllns	Zone	l.t.mllns	% Lanp
0 739		00-:W	885.9	18.2
5 421	330	00-1800	1512.0	-41.4
5 785	75	o-400	1079.0	29.8
15 828	233	o-800	1498.9	41.1
25 782	358	o-900	1512.0	41.4
35 857	413	900-1800	0.0	0.0
4				
5580	90	-etliclency		
85 10	11			
75 1	2			
85 0	0			
90 0				

p	20%								
pc	lll%			70%			50%		
11!!:	50%	30%	10%	00%	30%	10%	50%	30%	10%
0	4949	49		484848			484848		
5	31	28	28	31	2828		30	28	26
1	45	44	43	44	43	42	43	42	41
2	41	39	37	40	39	37	39	38	38
3	37	35	33	37	3533		38	34	32
4	34	31	29	34	31	29	33	31	29
8	29	28	23	28	2523		28	25	23
7	28	23	21	28	23	21	25	23	21
8	24	21	19	24	21	19	24	21	19
9	22	20	18	22	19	17	22	19	17
10	21	18	18	21	18	18	20	18	16

		50% beam-		10% bean-	
	24.4	7.8	12.2	13.0	2.4
8.0					
	lnltaiFC	89.1 -		99.3·	
Center Hel9!!!		llomoter	FC	Df011Vlter	FC
10.0	13.1	10.3	8.8	17.7	1.3
12.0	8.2	13.1	4.1	22.4	0.8
14.0	5.8	15.8	2.8	27.1	0.8
18.0	4.1	18.8	2.0	31.8	0.4

AF 2126DTT BAR T73, (2) CF26DD/E/B35 lamps, 3600 rated lumens, Test No. LTL10945



Ave	Lt.mens	Zone	Lt.mens	% Lamp
159	148	-elllc:lenc:y		
0 989		00-:W	781.2	21.4
5 991	94	00 -400	11n.1	32.3
15 981	m	00 -800	1585.2	43.4
25 902	410	00 -900	1834.0	448
35 640	397	900- 1800	0.0	0.0
45 334	282	00- 1800	1834.0	-448

p(	20%								
pc	80%			70%			50%		
11!!:	50%	30%	10%	50%	30%	10%	00%	30%	10%
6	31	28	25	31	28	25	30	27	25
0	53	5353		52	5252		50	5050	
1	49	47	48	48	47	48	48	4544	
2	44	42	40	44	42	40	42	4039	
3	40	38	35	40	37	35	38	38	35
4	37	34	31	38	33	31	35	33	31
5	34	31	28	33	30	28	32	30	28

	17.6	6.8	8.8	15.8	1.8
10D					
	lnltaiFC	50% beam- 61.1.		10%beam- 92.8.	
Center Hell!!!!		Diameter	FC	Diameter	FC
8.0	32.7	6.5	18.3	11.6	3.3

55																	
85	38	48	7	29	25	23	28	25	23	28	25	23	12D	11.0	11.2	5.5	20.0	1.1
75	2	2	8	26	23	21	28	23	21	28	23	21	14D	7.5	13.6	3.7	24.2	0.7
85	0	0	9	25	21	19	24	21	19	24	21	19	18D	5.4	15.9	2.7	28.4	0.5
90	0		10	23	20	18	23	20	18	22	20	18						

NOTES:
1. For electrical characteristics consult Tethnical Bulletins tab.
2. Tested to current IES and NEMA standards under stabilized laboratory conditions. Various operating factors can cause differences between laboratory data and actual field measurements. Dimensions and specifications are based on the most current available data and are subject to change without notice.
3. Actual performance may differ as a result of end-user environment and application.

DCF-240

gotham
An Company

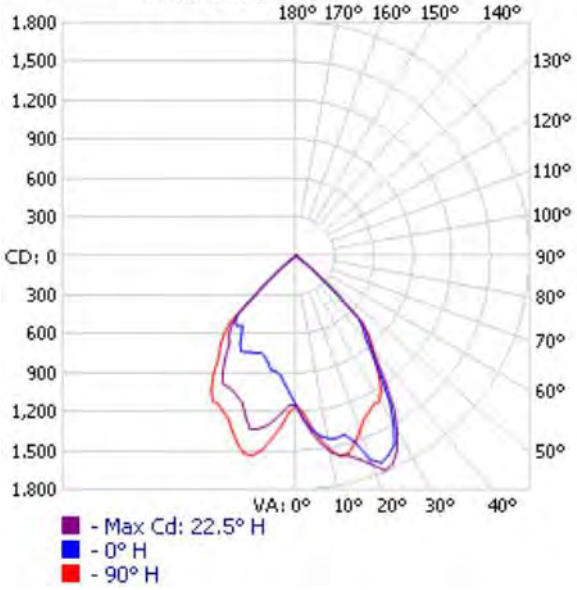
GOTHAM ARCHITECTURAL DOWNLIGHTING
1400 Lester Road Conyers Georgia 30012
P 800 315 4982 F 770 860 3129
www.gothamlighting.com

INDOOR PHOTOMETRIC REPORT
CATALOG: AF 2/26TRT 8AR

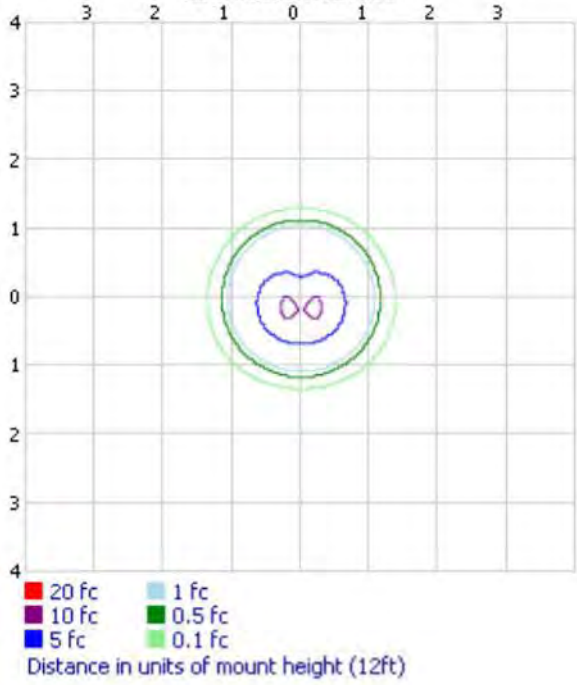
TEST #:	LTL9408
CATALOG #:	AF 2/26TRT 8AR
LUMINAIRE:	AF 8" APERTURE OPEN DOWNLIGHT 2/26TRT
LAMP CAT #:	CF26DT/E/IN/835
LAMP:	TWO 26-WATT TRIPLE TUBE COMPACT FLUORESCENT, HORIZONTAL POSITION.
LAMP OUTPUT:	2 LAMP(S), RATED LUMENS/LAMP: 1800
INPUT WATTAGE:	56
LUMINOUS OPENING:	CIRCULAR (DIA: 8.04")

TER VALUE:	38 (BF = 1)
TER CATAGORY:	DOWNLIGHT, COMMERCIAL
CIE CLASS:	DIRECT
MAX CD:	1,790.0 AT HORIZONTAL: 22.5°, VERTICAL: 22.5°
SPACING CRITERION:	@ 0 = 1.45
	@ 90 = 1.44
EFFICIENCY:	**63.2%**

Polar Candela Distribution



Isofootcandle Plot



INDOOR PHOTOMETRIC REPORT
CATALOG: AF 2/26TRT 8AR

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	1,120.2	31.1%	49.2%
0-40	1,766.0	49.1%	77.6%
0-60	2,267.8	63%	99.7%
60-90	7.4	0.2%	0.3%
70-100	2.6	0.1%	0.1%
90-120	0	0%	0%
0-90	2,275.2	63.2%	100%
90-180	0	0%	0%
0-180	2,275.2	63.2%	100%

LUMENS PER ZONE

ZONE	LUMENS	% TOTAL	ZONE	LUMENS	% TOTAL
0-10	121.8	5.4%	90-100	0	0%
10-20	389.5	17.1%	100-110	0	0%
20-30	608.9	26.8%	110-120	0	0%
30-40	645.8	28.4%	120-130	0	0%
40-50	451.1	19.8%	130-140	0	0%
50-60	50.6	2.2%	140-150	0	0%
60-70	4.7	0.2%	150-160	0	0%
70-80	1.9	0.1%	160-170	0	0%
80-90	0.7	0.0%	170-180	0	0%

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC %:	80				70				50			30			10			0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	.75	.75	.75	.75	.73	.73	.73	.63	.70	.70	.70	.67	.67	.67	.64	.64	.64	.63
1	.71	.69	.67	.66	.70	.68	.66	.58	.65	.64	.63	.63	.62	.61	.61	.60	.59	.58
2	.67	.63	.61	.58	.66	.62	.60	.53	.60	.58	.56	.58	.57	.55	.57	.55	.54	.53
3	.63	.58	.55	.52	.62	.57	.54	.48	.56	.53	.50	.54	.52	.50	.52	.50	.49	.48
4	.59	.53	.49	.46	.58	.53	.49	.44	.51	.48	.45	.50	.47	.45	.49	.46	.44	.43
5	.55	.49	.45	.42	.54	.48	.44	.40	.47	.44	.41	.46	.43	.41	.45	.42	.40	.39
6	.52	.45	.41	.38	.51	.45	.40	.37	.44	.40	.37	.43	.39	.37	.42	.39	.37	.36
7	.49	.42	.37	.34	.48	.41	.37	.33	.40	.37	.34	.40	.36	.34	.39	.36	.33	.32
8	.46	.39	.34	.31	.45	.38	.34	.31	.37	.34	.31	.37	.33	.31	.36	.33	.31	.30
9	.43	.36	.31	.29	.42	.35	.31	.28	.35	.31	.28	.34	.31	.28	.34	.30	.28	.27
10	.40	.33	.29	.26	.40	.33	.29	.26	.32	.29	.26	.32	.28	.26	.31	.28	.26	.25

ILLUMINANCE AT A DISTANCE

	CENTER BEAM	BEAM SPREAD(FT)		FIELD SPREAD(FT)	
HEIGHT(FT)	FOOTCANDLE	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL
2.0	3,100.01 LUX	3.2	2.4	4.4	4.7
4.0	775.00 LUX	6.4	4.9	8.8	9.3
6.0	344.45 LUX	9.5	7.3	13.2	14.0
8.0	193.75 LUX	12.7	9.7	17.6	18.6
10.0	124.00 LUX	15.9	12.1	22.0	23.3
12.0	86.11 LUX	19.1	14.6	26.4	28.0
		BEAM ANGLE		FIELD ANGLE	
		77.0°	62.5°	95.4°	98.7°

INDOOR PHOTOMETRIC REPORT
CATALOG: AF 2/26TRT 8AR

CANDELA TABLE - TYPE C

	0	22.5	45	67.5	90	112.5	135	157.5	180
0	1152	1152	1152	1152	1152	1152	1152	1152	1152
5	1338	1364	1383	1373	1318	1209	1075	1016	990
10	1428	1532	1588	1591	1519	1330	1105	954	902
15	1424	1595	1712	1686	1570	1379	1089	915	844
20	1671	1710	1752	1621	1437	1206	1063	885	792
25	1689	1765	1730	1529	1326	1150	1001	879	817
30	1505	1560	1525	1407	1289	1134	990	891	847
35	1148	1213	1242	1205	1111	951	842	761	733
40	844	903	956	987	910	807	761	717	705
45	683	705	762	772	715	658	645	636	637
50	170	172	194	205	200	183	170	160	148
55	32	34	47	47	43	37	34	32	29
60	6	7	7	8	8	9	8	7	8
65	4	4	5	5	5	5	5	5	5
70	2	2	3	3	3	3	3	3	2
75	1	2	2	2	2	2	2	2	1
80	1	1	1	1	1	1	1	1	0
85	0	1	1	1	1	1	1	0	1
90	0	0	0	0	0	0	0	0	0

REPORTED DATA CALCULATED FROM MANUFACTURER'S DATA FILE, BASED ON IESNA RECOMMENDED METHODS.
REPORT GENERATED ON 3/7/2012, USING THE 'INDOOR-DOWNLIGHT' TEMPLATE.

f_ L/THDN/A L/GH77NG®

Catalog Number	
Notes	rype

FEATURES & SPECIFICATIONS

INTENDED USE

For applications that require medium to high light levels such as manufacturing, warehousing, storage, retail or task lighting. Ideal for mounting heights up to 25'.

ATTRIBUTES

Heavy-duty design for demanding industrial environments. Pressure-Jock Jampholders enclosed in snap-in turret housing. Available in 4' or 8' lengths. 6' lamp spacing of 2-Jamp models, 3' lamp spacing on 3-Jamp models. Solid top, 10% or 20% uplight reflectors available, painted after fabrication.

CONSTRUCTION

Die-embossed reflector constructed of heavy gauge cold-rolled steel. White enamel reflector finish standard, porcelain finish optional.

FINISH

Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Finish is high-gloss baked white enamel.

ELECTRICAL SYSTEM

Thermally protected, resetting, Class P, HPF, ULJisted, CSA Certified ballast is standard. Energy saving and electronic ballasts are sound rated A.

Fixture is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

INSTALLATION

For surface or suspended mounting, unit or row installation.

LISTING

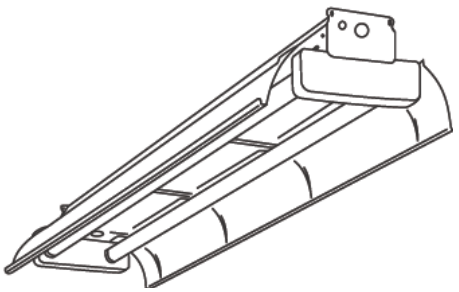
120V, 277V and MVOLT are ULListed and CSA Certified (standard}. 347V is CSA Certified (see Options}. NOM Certified (see Options}.

WARRANTY

Guaranteed for one year against mechanical defects in manufacture.

Heavy-Duty Turret Industrial

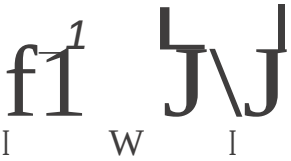
AF



Rapid Start
4' or 8' lengths
1, 2, 3 or 41amps

Specifications

length: 49-13/16 (1265} or 99-5/8 (2530}
Width: 13-3/8 (340}
Height: 6-5/8 (168}



All dimensions are inches (millimeters).
Specifications subject to change without notice.

ORDERING INFORMATION

For shortest lead times, configure product using standard options (shown in bold).
Example: AF 3 32 277 1/3 GEBlOIS

Series		lamp type	Vol age	Options
AFST Solid reflector	1	32 32WT8(48")	120	Shipped installed in fixture
AF10 10% uplight apertured reflector	2		m	1/3 One 3-Jamp ballast (32 watt electronic ballast only}
AF 20% uplight apertured reflector	3		347	1/4 One 4-Jamp ballast (32 watt electronic ballast only}
For tandem double-length unit, add prefix T. Example: TAF10	4 Not included.		MVOLT2	GEB T8 electronic ballast, 0% THO
				GEB101S T8electronic ballast. 10% THO, instantstart[1]
				GEB10RS T8electronic ballasts, 10% THO, rapid start
				El Emergency battery pack (nominal 300 lumens}, see life Safety Section
				GlR Internal fast-blow fusing (add X for external}
				GMF Internal slow-blow fusing (add X for external}
				PlF_ Plug-in wiring, Specify 1, 2 or 3 branch circuits & hot wires (A = black, B = red, C = blue, AB or AC}
				TllW Tandem in-line wiring
				PO White porcelain reflector finish
				CSA CSA Certified (347V only}
				NOM NOM Certified
				BOP Ballast disconnect'

Accessories

Order as separate catalog number.

ACEP	Full-depth endplates (1 pair}
HRUN	HookeT-bar hanger for 5' channel (flush to ceiling}
HRUN1	HookeT-bar hanger for 5" channel (1-112' from ceiling}
SQ	Swivel stem hanger (specify length in 2' increments}
18	Ceiling spacer (1-112" to 2-1/2' from ceiling}
HC36	Chain hangers (1 pair, 36" long}
THUN	Tong hanger for 5" channel
WGAFPV	Wireguard, 4' white (order 2 for 8' fixtures}'
OLAF ME	4' 30° x 30° metal eggcrate louver'
OLAF A12	4' framed acrylic prismatic lens'

NOTES:
Available only *with* 32 lamp type.
Electronic ballast 120 through 277 volt only. Available with 32 watt TS only. MVOLT must specify GEBlOIS.
3 Meets codes that require in fixture disconnect.
4 Order 2 for 8' fixtures.

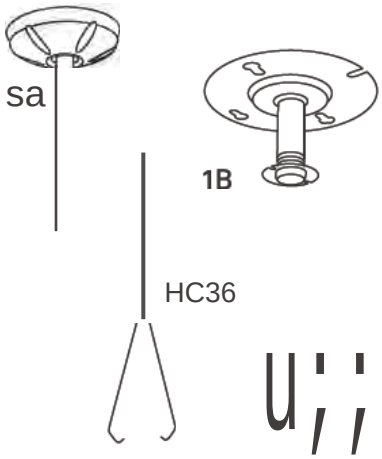
AF Rapid Start

MOUNTING DATA

For unit or row installation. Surface or stem mounting.'

UNIT INSTALLATION — Minimum of two hangers required.

ROW INSTALLATION — One hanger per fixture plus one per row required.



DIMENSIONS

A= 1/4 x 1!2 (64 x 13) Oval Hole

C = 7/8 (22) Oia.K.O.

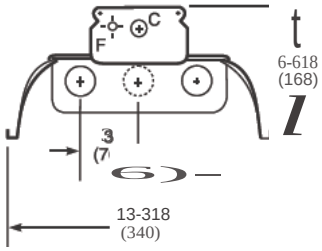
0 = 11/16 (17) Oia. K.O.

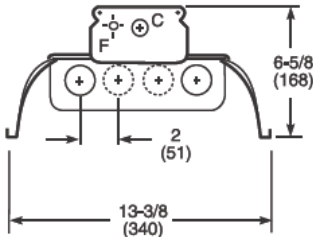
E = 2 (51) Oia. K.O.

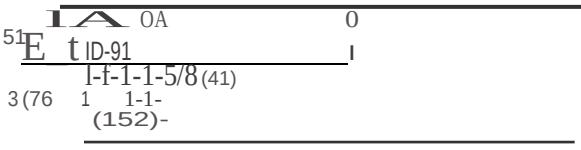
F = 7/16 (111) Oia. K.O.

All dimensions are inches (millimeters).

Specifications subject to change without notice.

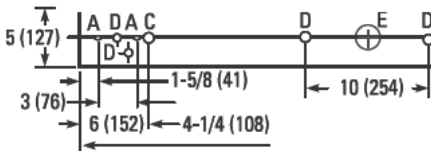






Energy (Calculated in ac<:ordanoe with NEMA standard LE·5)					
LER.fW	ANNUAL ENERGYCOSr*	LAMP DESCRIPTION	LAMP UMENS	BAUAST FACTOR	WATTS
74	$3.24	(2) F32T8	2800	.88	60

*Calculated in accordance with NEMA Standards LE·5.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. lamp configurations shown are typical. All data based on 25°C. Full photometric data on these and other configurations available upon request.

AF232

Report ITL 5711

S/MH 1.4

Coefficient of Utilization

Ceihg	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	tO%
1	94	90	86	90	86	83	79	76	74
2	86	79	73	82	75	70	69	65	61
3	78	69	62	74	66	60	61	5652	
4	72	61	54	6B	59	52	54	4B	44
5	65	54	46	62	52	44	4B	41	37
10	43	31	24	41	30	23	28	22	18

Zonal Lumens Summary

Zone	lumens	%lamp	%Fixture
0-30	998	17.2	19.0
0-40	1677	28.9	31.9
0-60	3126	53.9	59.6
0-90	4074	70.2	77.6
9 180	1175	20.3	22.4
0-180	5249	90.5	100.0

LITHONIA LIGHTING®

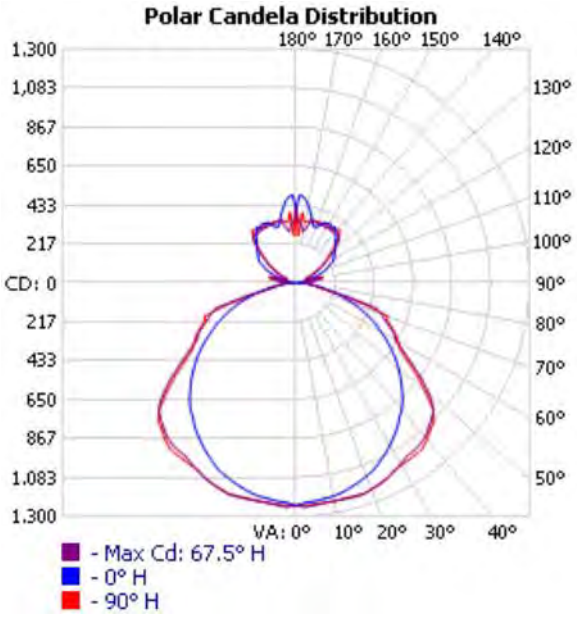
An ltyBrandsCompany

Lithonia Lighting
Industrial
One Lithonia Way, Conyers, GA30012
Phone:770-922·9000 Fax:770·981-8141
www.lithonia.com

INDOOR PHOTOMETRIC REPORT
CATALOG: AF 2 32 MVOLT GEB10IS

TEST #:	LTL5711
CATALOG #:	AF 2 32 MVOLT GEB10IS
LUMINAIRE:	HEAVY DUTY TURRET INDUSTRIAL 20% UPLIGHT 50" X 4' 2 LAMP T8 ELEC
LAMP:	TWO 32-WATT T8 LINEAR FLUORESCENT.
LAMP OUTPUT:	2 LAMP(S), RATED LUMENS/LAMP: 2900
INPUT WATTAGE:	58
LUMINOUS OPENING:	RECTANGLE (L: 48", W: 13.56")

TER VALUE:	52 (BF = 1)
TER CATAGORY:	LINEAR INDUSTRIAL
CIE CLASS:	SEMI-DIRECT
MAX CD:	1,249.0 AT HORIZONTAL: 67.5°, VERTICAL: 2.5°
SPACING CRITERION:	@ 0 = 1.25
	@ 90 = 1.44
EFFICIENCY:	**90.6%**



INDOOR PHOTOMETRIC REPORT
CATALOG: AF 2 32 MVOLT GEB10IS

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	994.7	17.1%	18.9%
0-40	1,671.1	28.8%	31.8%
0-60	3,112.2	53.7%	59.2%
60-90	957.7	16.5%	18.2%
70-100	470.2	8.1%	8.9%
90-120	268.6	4.6%	5.1%
0-90	4,069.9	70.2%	77.4%
90-180	1,187.4	20.5%	22.6%
0-180	5,257.3	90.6%	100%

LUMENS PER ZONE

ZONE	LUMENS	% TOTAL	ZONE	LUMENS	% TOTAL
0-10	117.5	2.2%	90-100	59.1	1.1%
10-20	342.3	6.5%	100-110	82.1	1.6%
20-30	534.9	10.2%	110-120	127.4	2.4%
30-40	676.4	12.9%	120-130	196.6	3.7%
40-50	752.4	14.3%	130-140	232.1	4.4%
50-60	688.6	13.1%	140-150	210.5	4%
60-70	546.6	10.4%	150-160	154.2	2.9%
70-80	323.9	6.2%	160-170	89.8	1.7%
80-90	87.2	1.7%	170-180	35.7	0.7%

AVERAGE LUMINANCE (CD/M2)

	0	22.5	45	67.5	90
0	2955	2955	2955	2955	2955
45	2805	3024	3341	3600	3661
55	2695	3031	3575	3272	3130
65	2524	3144	3060	3246	3296
75	2217	2852	3478	2677	2107
85	1530	2459	2077	1940	1913

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC %:	80				70				50			30			10			0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	1.03	1.03	1.03	1.03	.98	.98	.98	.70	.89	.89	.89	.81	.81	.81	.74	.74	.74	.70
1	.94	.89	.85	.82	.89	.85	.82	.59	.78	.75	.73	.71	.69	.67	.64	.63	.61	.58
2	.85	.77	.71	.66	.81	.74	.68	.49	.67	.63	.59	.61	.58	.55	.56	.53	.51	.48
3	.77	.68	.60	.54	.73	.65	.58	.41	.59	.54	.49	.54	.49	.46	.49	.46	.43	.40
4	.70	.60	.52	.46	.67	.57	.50	.35	.52	.46	.41	.48	.43	.39	.43	.39	.36	.34
5	.64	.53	.45	.39	.61	.51	.43	.30	.46	.40	.36	.43	.37	.33	.39	.35	.31	.29
6	.59	.47	.39	.34	.56	.45	.38	.26	.42	.36	.31	.38	.33	.29	.35	.31	.27	.25
7	.55	.43	.35	.29	.52	.41	.34	.23	.38	.32	.27	.35	.29	.26	.32	.27	.24	.22
8	.51	.39	.31	.26	.48	.37	.30	.21	.34	.28	.24	.32	.26	.23	.29	.25	.21	.19
9	.47	.35	.28	.23	.45	.34	.27	.19	.32	.26	.21	.29	.24	.20	.27	.22	.19	.17
10	.44	.33	.26	.21	.42	.31	.25	.17	.29	.23	.19	.27	.22	.18	.25	.20	.17	.16

INDOOR PHOTOMETRIC REPORT
CATALOG: AF 2 32 MVOLT GEB10IS

CANDELA TABLE - TYPE C

	0	22.5	45	67.5	90
0	1241	1241	1241	1241	1241
5	1220	1229	1237	1242	1237
10	1206	1215	1229	1233	1233
15	1178	1188	1215	1231	1235
20	1145	1157	1199	1224	1224
25	1100	1117	1172	1200	1200
30	1044	1073	1132	1164	1172
35	983	1026	1083	1141	1165
40	916	966	1033	1119	1136
45	833	898	992	1069	1087
50	743	817	938	969	936
55	649	730	861	788	754
60	546	641	707	639	654
65	448	558	543	576	585
70	345	451	459	506	543
75	241	310	378	291	229
80	145	203	158	124	122
85	56	90	76	71	70
90	0	28	32	37	37
95	18	37	62	59	57
100	50	34	75	143	151
105	90	73	42	61	81
110	142	123	73	50	61
115	188	171	119	88	75
120	241	192	179	140	126
125	259	215	241	196	187
130	282	241	296	259	248
135	310	262	302	334	318
140	349	284	313	353	381
145	377	302	327	349	365
150	379	299	338	353	362
155	371	284	341	353	362
160	332	254	315	353	362
165	349	264	270	357	360
170	421	389	255	304	346
175	480	473	409	329	393
180	416	416	416	416	416

REPORTED DATA CALCULATED FROM MANUFACTURER'S DATA FILE, BASED ON IESNA RECOMMENDED METHODS.
REPORT GENERATED ON 3/7/2012, USING THE 'INDOOR' TEMPLATE.

f_ L/THDN/A L/GH17NG®

ut alog llumber	
llotes	
Type	

FEATURES & SPECIFICATIONS

INTENDED USE – Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications, ideal for restricted plenum spaces. Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.

ATTRIBUTES - Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION — Smooth hemmed sides and smooth, inward formed El'ld flanges for safe handling. lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for IEI'lses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% IN stabilized. No asbestos is used in this product

US PATENTS 6,210,025 6,231,213 6,213,625 2,288,471.

FINISH - Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance Painted parts finished with highly reflective matte white enamel.

OPTICAL - A121 ens features reverse apex technology for superior lamp obscuration and improved visual comfort

ELECTRICAL - Standard ballast is electronic, thermally protected, resetting, Class P, HPF non-PCB, U listed CSA certified ballast, universal voltage and sound rated A.

luminaire is suitable for damp locations. AWM TFN or THHN wire used throughout, rated for required temperatures.

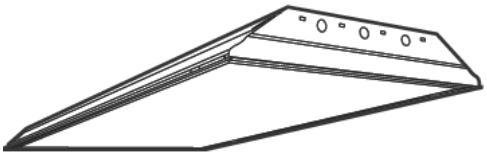
LISTING - Standard: UI. Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY - Guaranteed for one year against mechanical defects in manufacture.

Note: Specific. Jtions subject to change without notice.

Specification Premium TS Troffer

SP8 2'X4'



2,3,4 or 6 Lamps
TS

Spedfications

l€11gth: 48 (1218)
Width: 24 (609)
Depth: 3-11/16 (94)
Weight 22 lbs (9.9 kg)

All dimensions are inches (millimetm).

ORDERING INFORMATION — For shortest lead times, configure products using bolded options — Example: 2SP8 G 3 32 A12 MVOLT 1/3 GEB10IS

2SP8

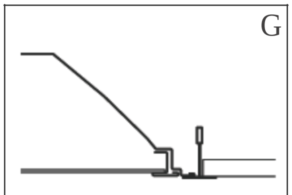
Series	Trim type	Number of lamps'	Lamp type	Door frame	Diffuser type	Voltage	Options'
2SP8 2" wide	G Grid F Overlapping flanged	2 3 4 6 Not included	32 32WT8 (48")	(blank) Flush steel, wihite FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	A12 N12 attem aery ic A1212S N12 attem aery ic, 1.25" thick RA12S N12 attem aery ic, 1.25" thick reverse apex A19 N19 attem aery ic, 1.56" thick A15 N15 attem aery ic, 2" thick PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver	120 277 347 MVOLT Othe available	1/4 One 4-lamp ballast 1/3 One 3-lamp ballast GEB10IS Electronic ballast, <10% THO, instant start GEB10RS Electronic ballast, <10% THO, rapid start EI Emer9enbattery pack (nommal 00 lumens) EI14 Emer9enbattery pack (nommal 400 lumens) GLR Internal fast-blow fuse GMF Internal slow-blow fuse LST Tandem-wired fixture pairs (shared ball lasts) PWS1836 6' prewire, 3/8" dia 18-gauge, 1 circuit PWS1846 6' prewire, 3/8" dia 18-gauge, 2 circuit LP73S lamped 700. series 3500K LP_ lamped specify lamp type and color JP Palletized and stretch-wrapped without individual cartons; grid trim only CSA CSA Certitied NOM NOM Certified

NOTE:
1 MVOLT standard for 120-277V applic.Jtions, 50-60hz operation. Some options require vo age specified.

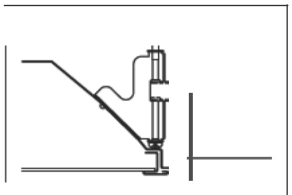
SP8 2'x4' Static T8Troffer

MOUNTING DATA

Continuous rCNI mounting of flanged units requires CRE and CRM trim options (see Options).



Lay in Grid
(exposed or concealed grid}



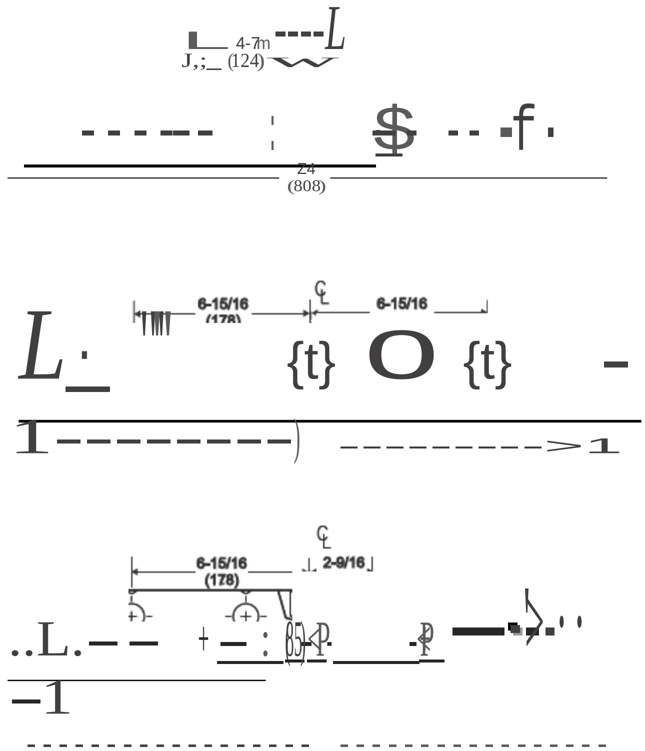
Overlapping Ranged Trim
with swing-gate hangers

NOTE:

1 Recommended rough-in dimensions for F-ttim fixtures 24"x48". (Toletance+1/4"-0".) Swing-gate range 1-3/16" to 3-1S/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional gf16" oor

nominal fixture height

DIMENSIONS



PHOTOMETRIC$

Calculated using tile lllllal cavity method in accolllanee h IESNA LM41 procedure. Aoor reftectances m 2096.
Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2 32 A12*

Report LTL 7525
Lumens per lamp - 2850 – Lum.eft. - 85.5%
S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	8096			7096			5096		
Ytall	ZO!!>	SO!!>	3021>	ZO!!>	SO!!>	3021>	SO!!>	30!!>	1001
0	102	102	102	99	99	99	95	95	95
1	94	90	87	92	88	85	85	82	80
2	86	80	74	84	78	73	75	71	68
3	79	71	64	77	70	64	67	62	58
4	73	63	56	71	62	56	60	55	50
5	67	57	50	66	56	49	54	48	44
6	62	52	44	61	51	44	49	43	39
7	58	47	40	57	46	40	45	39	34
8	54	43	36	53	42	36	41	35	31
9	51	39	33	49	39	33	38	32	28
10	47	36	30	46	36	30	35	29	25

Zonal Lumens Summary

lace	IIIDifDS	!!>lamp	8X1U[f
Q-30	1541	27.0	31.6
Q-40	2571	45.1	52.7
o-60	4192	73.5	86.0
Q-90	4874	85.5	100.0
90..180	0	0	0
0..180	4874	85.5	100.0

2SP8 3 32 A12*

Report LTL 7492
Lumens per lamp - 2850 – Lum.eft. - 83.6%
S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	8096			7096			5096		
Ytall	ZO!!>	SO!!>	3021>	ZO!!>	SO!!>	3021>	SO!!>	30!!>	1001
0	100	100	100	97	97	97	93	93	93
1	92	88	85	90	86	83	83	80	78
2	84	78	73	82	77	72	74	70	66
3	78	70	63	76	68	62	66	61	57
4	72	62	55	70	61	55	59	54	49
5	66	56	49	64	55	49	53	48	43
6	61	51	44	60	50	43	49	43	38
7	57	46	39	56	46	39	44	38	34
8	53	42	36	52	42	35	41	35	31
9	50	39	32	49	38	32	38	32	28
10	47	36	30	46	36	29	35	29	25

Zonal Lumens Summary

lace	IIIDifDS	!!>lamp	8X1U[f
Q-30	2319	27.1	32.4
Q-40	3833	44.8	53.6
o-60	6164	72.1	861
Q-90	7147	83.6	100.0
90..180	0	0	0
0..180	7147	83.6	100.0

2SP8 4 32 A12*

Report LTL 7526
Lumens per lamp - 2850 – Lum.eft. - 81.5%
S!MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	&1)f,			7r1Yo			5001		
Ytall	Z!lll	SOOI	3001	Z!lll	SOOI	3001	SOOI	30!!>	1001
0	97	97	97	95	95	95	91	91	91
1	90	86	83	87	84	81	81	78	76
2	82	76	71	80	75	70	72	68	65
3	76	68	62	74	67	61	64	59	55
4	70	61	54	68	60	53	58	52	48
5	64	55	48	63	54	47	52	46	42
6	60	50	43	58	49	42	47	42	37
7	56	45	38	54	44	38	43	37	33
8	52	41	35	51	41	34	40	34	30
9	48	38	32	47	38	31	37	31	27
10	46	35	29	44	35	29	34	28	25

Zonal Lumens Summary

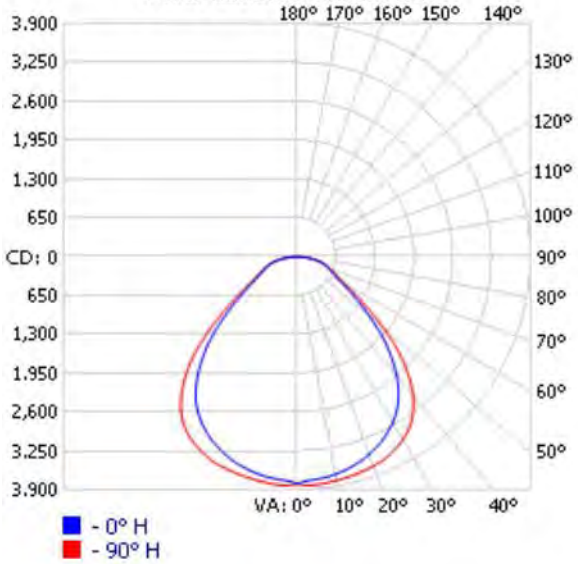
lace	IIlmfDS	!!>lamp	8XIII£f
Q-30	3029	26.6	32.6
Q-40	4999	43.8	53.8
o-60	8017	70.3	86.3
Q-90	9292	81.5	100.0
9o-180	0	0	0
0..180	9292	81.5	100.0

•With revetSe apex lens

INDOOR PHOTOMETRIC REPORT
CATALOG: 2SP8 4 32 A12 1/4 ADDE

TEST #:	LTL7526
CATALOG #:	2SP8 4 32 A12 1/4 ADDE
LUMINAIRE:	SP8 SPECIFICATION PREMIUM T8 TROFFER 2'X4' 4 LP T8 #A12 LENS 1/4 ELEC
LAMP CAT #:	F32T8
LAMP:	FOUR 32-WATT T8 LINEAR FLUORESCENT.
LAMP OUTPUT:	4 LAMP(S), RATED LUMENS/LAMP: 2850
BALLAST:	REL-4P32-SC BF=.877
INPUT WATTAGE:	112
LUMINOUS OPENING:	RECTANGLE (L: 45.12", W: 21.24")
TER VALUE:	75 (BF = 1)
TER CATAGORY:	RECESSED, LINEAR
CIE CLASS:	DIRECT
MAX CD:	3,836.0 AT HORIZONTAL: 90°, VERTICAL: 2.5°
SPACING CRITERION:	@ 0 = 1.25 @ 90 = 1.37
EFFICIENCY:	**81.5%**

Polar Candela Distribution



INDOOR PHOTOMETRIC REPORT
CATALOG: 2SP8 4 32 A12 1/4 ADDE

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	3,029.4	26.6%	32.6%
0-40	4,998.8	43.8%	53.8%
0-60	8,017.4	70.3%	86.3%
60-90	1,274.7	11.2%	13.7%
70-100	554.3	4.9%	6%
90-120	0	0%	0%
0-90	9,292.1	81.5%	100%
90-180	0	0%	0%
0-180	9,292.1	81.5%	100%

LUMENS PER ZONE

ZONE	LUMENS	% TOTAL	ZONE	LUMENS	% TOTAL
0-10	360.3	3.9%	90-100	0	0%
10-20	1,046.0	11.3%	100-110	0	0%
20-30	1,623.1	17.5%	110-120	0	0%
30-40	1,969.4	21.2%	120-130	0	0%
40-50	1,809.7	19.5%	130-140	0	0%
50-60	1,208.9	13.0%	140-150	0	0%
60-70	720.5	7.8%	150-160	0	0%
70-80	416.5	4.5%	160-170	0	0%
80-90	137.8	1.5%	170-180	0	0%

AVERAGE LUMINANCE (CD/M2)

	0	22.5	45	67.5	90
0	6148	6148	6148	6148	6148
45	4890	5105	5485	5716	5798
55	3257	3578	3922	3993	3753
65	2568	2748	2637	2905	2763
75	2818	2400	2156	2412	2943
85	2450	2283	1949	2301	2654

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC %:	80				70				50			30			10			0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	.97	.97	.97	.97	.95	.95	.95	.82	.91	.91	.91	.87	.87	.87	.83	.83	.83	.82
1	.90	.86	.83	.80	.87	.84	.81	.71	.81	.78	.76	.78	.76	.74	.75	.73	.72	.70
2	.82	.76	.71	.67	.80	.75	.70	.61	.72	.68	.65	.69	.66	.63	.67	.64	.62	.60
3	.76	.68	.62	.57	.74	.67	.61	.53	.64	.59	.55	.62	.58	.54	.60	.57	.54	.52
4	.70	.61	.54	.49	.68	.60	.53	.46	.58	.52	.48	.56	.51	.47	.54	.50	.47	.45
5	.64	.55	.48	.43	.63	.54	.47	.41	.52	.46	.42	.51	.46	.42	.49	.45	.41	.40
6	.60	.50	.43	.38	.58	.49	.42	.37	.47	.42	.37	.46	.41	.37	.45	.40	.37	.35
7	.56	.45	.38	.34	.54	.44	.38	.33	.43	.37	.33	.42	.37	.33	.41	.36	.33	.31
8	.52	.41	.35	.30	.51	.41	.34	.29	.40	.34	.30	.39	.34	.30	.38	.33	.30	.28
9	.48	.38	.32	.27	.47	.38	.31	.27	.37	.31	.27	.36	.31	.27	.35	.30	.27	.25
10	.46	.35	.29	.25	.44	.35	.29	.24	.34	.28	.25	.33	.28	.25	.32	.28	.24	.23

INDOOR PHOTOMETRIC REPORT
CATALOG: 2SP8 4 32 A12 1/4 ADDE

CANDELA TABLE - TYPE C

	0	22.5	45	67.5	90
0	3801	3801	3801	3801	3801
5	3742	3765	3777	3819	3833
10	3697	3724	3744	3798	3804
15	3625	3657	3690	3755	3773
20	3519	3561	3621	3704	3731
25	3385	3435	3515	3621	3658
30	3203	3266	3375	3498	3538
35	2954	3040	3184	3309	3345
40	2591	2708	2879	2990	3016
45	2138	2232	2398	2499	2535
50	1617	1704	1854	1927	1923
55	1155	1269	1391	1416	1331
60	847	949	1005	1027	938
65	671	718	689	759	722
70	553	534	469	552	585
75	451	384	345	386	471
80	306	260	232	256	327
85	132	123	105	124	143
90	0	0	0	0	0

REPORTED DATA CALCULATED FROM MANUFACTURER'S DATA FILE, BASED ON IESNA RECOMMENDED METHODS.
REPORT GENERATED ON 3/7/2012, USING THE 'INDOOR' TEMPLATE.

LITHONIA LIGHTING®

C.Jtalog Number
Notes
Type 01, 02, 04

FEATURES & SPECIFICATIONS

INTENDED USE — RT5'" is designed for applications that requie the extremely energy effident delivery of comfortable volumetric light from a layn fixture that is appealing and shallow in depth. Ideal for offices, schools,hospitals, retaa and numerous other commercial applications.Certain airborne contaminants can diminish integrity of acrylic. Click here for Acrylic Environmental Compatibility table for suitable uses.

OPTICS- Delivers volumetric lighting by filling the entire volume of space with ligh delivering the ideal amount of light to walls,cubides,worl< surfaces and people.

Iuminous characteristics are carefully managed at high angles to deliver just enough intensity to deliver the volumetric effect.

Regressed,two-piece refractive system obscures and softens the lamp and smoothly washes the reflector with light.

linear faceted reflector softens and distributes light into the space and minimizes the luminance ratio between the fixture and the ceiling.

Mechanical cut-off across the reflector and fresnel refracton along the refractor provide high angle shielding and a quiet ceiling.

Sloped endplates provide a balanced fixture to ceiling ratio while enhandng the perception of fixture depth.

CONSTRUCnON - Impact modified acrylic prismatic refractor with polymer light diffusing film.

Rugged, one-piece, cold-rolled steel reflector with embossed facets with polyester powder paint after fabrication.

Rigid structure with ballast box and endplates with integral T-bar clips.

Fixtures may be mounted end-to-end.

ELECTRICAL-Highly effident program start electronic baOasts,Class P. thermally protected, resetting, HPF, nonPCB, Ullisted, CSA Certified, sound rated A. Your choice of Premium or Premium XPT5 lamp with enhanced phosphors and 85 CRI. lamp is TO.P compliant

S5 option available for use with SIMPLY5'" lighting Intelligence system with multHevel dimming. See SYNERG'lighting Controls spedfication sheets for more information. Ballast Disconnect provided standard where required to comply with US. and Canadian electrical codes.

INSTALLATION — Side mounted ballast tray accessed by removing adjacent ceiling tile. Ballast tray may be removed from fixture during set:Vice.

lamp accessed by squeezing refractor to release from retention tabs.

LISTING-Ullisted (standard) Optional: Canada CSA or cUL Mexico NOM.

WARRANTY-Fixture guaranteed for one year against mechanical defects in manufacture. lamp and ballast system warranty (24 months for lamp, 60 months for ballast) by lamp and baOast manufacturer.

Protected by one or more of US Patents Nos. 7,229192; 0541,467; 0541,468; 0544,633; 0544,634; 0544,992; D544933 and additional patent pending.

Nott: Specifications subject to ch.Jnge without notice.

RTS

1'x4'

One or Two Lamps

Premier and Premier XP TS

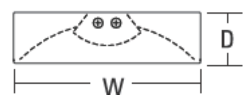
SIMPLY5 LIGHTING INTELLIGENCE

Specifications

length: 48 (121.8)

Width: 12 (305)

Depth: 3-1/8 (7.9)



All dimensions are inches (centimeters) unless otheiWise specified.

I.!;I.Jf;@ijil!i.I;!f:hi!.Ji.. For shortest lead times, configure products using bolded options.

Example: RT5128T5 MVOLT GEBIOPS LPM835P

RTS		28TS				
Series	**Number of lamps**	**lamp type**	**Voltage**	**Ballast**	**lamp"**	**Options**
RTS Recessed 15	1 2	28TS 28WT5 (46") S4TSHO 54W T5HO (46")'	MVOLT[2] 3471	GE810PS 1.0 ballast factor, program start' GEB95 .95 ballast factor (2-lamp) GEB95S .95 ballast factor step dimming (2-lamp only) S5 SIMPLY5'" systems GEB80 .80 ballast factor' GEB80S .80 ballast factor step dimming' GEB115 1.15 ballast factCf (2-lamp ooly) GEB115S 1.15 ballast factor (2 amp only), step dimming GEB90 .90 ballast factor GEB90S .90 ballast factor, step dimming	LPM83SP Premier 3500'1< lamp PM830P Premier 3000'1< lamp PM841P Premier 4100'1< lamp 835XP Premier 3500'1<28W lamp 830XP Premier 3000'1<28W lamp 841XP Premier 4100'1<28W lamp P835 3500'1<54W lamp P830 3000'1<54W lamp P841 4100'1<54W lamp	GR Internal fast-blow fuse' PWS1836 6' prewire 3/8" diameter 18-gauge, 3-wire (n/a with GEB95S)[8] PWS1846 6' prevvire, 3/8" diameter, 18-gauge, wire[9] EI14 Emergency battery pad<'o CSA listed and labeled to comply with Canadian standards QFC_ Quick-flex cable[7] BOP Ballast disconnect plug (meets codes that require in-fixture disconnect)

Notes

1 for TSHO applications, use GEB1OPS, GEB80 or GEB80S ballasts.

2 MVOLT (120-277 volts), S0-60HL

for 147V use GEB9SS or GEB1OPS ballast only.

GEB10PS for use with one-lamp 28TS, and one- and two-lamp S4TSHO.

SIMPLYS indudes 1J'SS SSC RHOC wiring system, specify voltage unless HW (hardwire) or PWS ordered Two-lamp= .95 ballast factor, one-lamp= 1.0 ballast factor.

Required All fixtures shipped with lamps installed.

Must specify voltage, 120 or 2n.

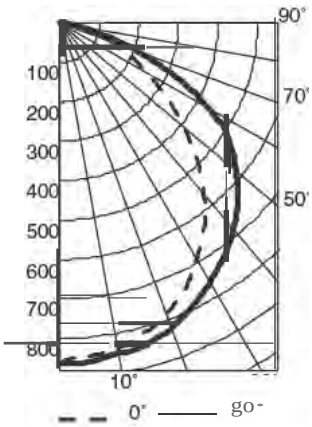
for use with standard ballast

for use with step dimming ballast

10 See PS1400QO spec sheet fur R lumen output information.

RTS Volumetric Recessed Lighting, 1' x 4'

RTS 2BTS GE810PS LPM83SP, (1) FP28/835/PM/ECO lamp, 2730 lumens per lamp, s/m 1.2 (along) 1.3 (across), test no. UL13316



CP Summary

	o°	90
o°	862	862
5°	848	862
15°	814	844
25°	747	792
35°	636	723
45°	492	636
55°	331	523
65°	189	323
75°	85	106
85°	15	13
90	0	0

Coefficients of Utilization

pi									
pc	80%			70%			50%		
w	70%	50%	30%	50%	30%	10%	50%	30%	10%
0	104	104	104	101	101	101	97	97	97
1	95	91	88	89	86	83	86	83	81
2	87	80	74	78	73	68	75	71	67
3	79	70	63	69	62	57	66	61	56
a:4	72	62	55	61	54	49	59	53	48
	67	56	48	55	47	42	53	46	42
6	62	50	42	49	42	37	48	41	36
7	57	45	38	45	37	32	43	37	32
8	53	41	34	41	34	29	40	33	29
9	50	38	31	37	31	26	36	30	26
10	46	35	28	35	28	24	34	28	23

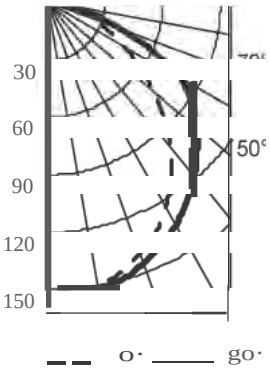
Zonal Lumen Summary

Zone	Lumens	% Lam	% Fixture
o°- 30°	672	24.6	28.3
o°- 40°	1100	40.3	46.3
o°- so°	1940	71.1	81.7
o°- oo°	2375	87.0	100.0
90° - 180°	0	0.0	0.0
o°-1ao°	2375	87.0	100.0

LER: 74.2 1pw

Efficiency: 87.0%

RTS 2 28TS GE89SS LPM83SP, (2) FP28/835/PM/ECO lamp, 2730 lumens per lamp, s/m 1 1 (along) 1.3 (across), test no. LTt14100



CP Summary

	o°	go°
o°	1540	1540
5.	1527	1547
15°	1463	1499
25°	1333	1405
35°	1120	1270
45°	860	1102
55•	588	920
65°	349	609
75°	159	235
85.	27	18
go°	0	0

p				LUvlo					
pc	80%			70%			50%		
W	70%	50%	30%	50%	30%	10%	50%	30%	10%
0	92	92	92	90	90	90	86	86	86
1	85	81	78	79	76	74	76	74	71
2	77	71	66	69	65	61	67	63	59
3	70	62	56	61	55	51	59	54	50
o::4	64	55	48	54	48	43	52	47	42
05	59	49	42	48	42	37	47	41	37
0::6	55	44	38	44	37	32	42	36	32
7	51	40	34	40	33	29	38	33	28
8	47	37	30	36	30	26	35	29	25
9	44	34	27	33	27	23	32	27	23
10	41	31	25	31	25	21	30	25	21

Zonal Lumen Summary

Zone	Lumens	% Lam	% Fix
o°- 3o°	1198	21.9	28.
o°- 4o•	1951	35.7	46.
o°- 5o•	3413	62.5	80.
o°- go°	4223	77.3	100
go°-18o°	0	0.0	0.(
o°- 18o°	4223	77.3	100

Efficiency: 77.3%

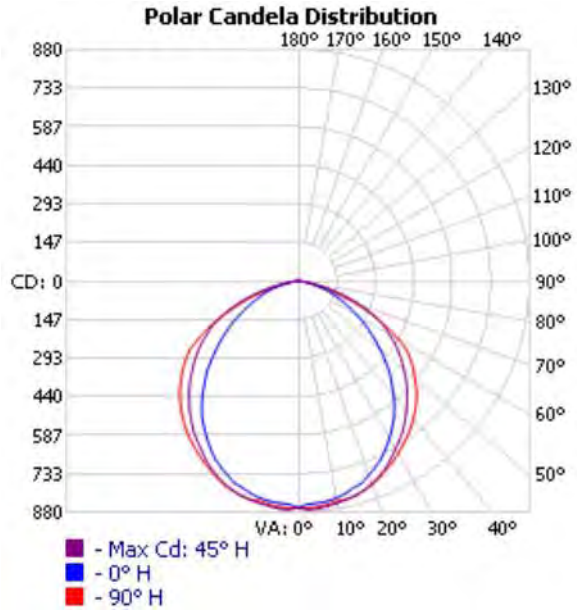
LER: 69.1 lpw

*The LER (luminaire Efficacy Rating) is the lumens per watt rating lot this fixture. It is used to compare the energy efficiency of various products. This photometric report is based upon IES testing procedures, as stated in LM-41-1998. The reported lumen rating is based upon lamp manufa<ture(s published lumen output for the cold spot temperature measured during lamp calibration.

FLUORESCENT: One Utronia Way Conyers, GA 30012 Prone: 800.315.4963 Fax: 770-981 191 WoNW.tithoniacom

INDOOR PHOTOMETRIC REPORT
CATALOG: RT5 28T5

TEST #:	LTL13316
CATALOG #:	RT5 28T5
LUMINAIRE:	VOLUMETRIC RECESSED LIGHTING FIXTURE.
LAMP CAT #:	FP28/835/ECO
LAMP:	ONE 28-WATT T5 LINEAR FLUORESCENT, RATED 2730 LUMENS AT 25C AMBIENT.
LAMP OUTPUT:	1 LAMP(S), RATED LUMENS/LAMP: 2730
INPUT WATTAGE:	31
LUMINOUS OPENING:	RECTANGLE (L: 46.92", W: 11.76")
TER VALUE:	67 (BF = 1)
TER CATAGORY:	RECESSED, LINEAR
CIE CLASS:	DIRECT
MAX CD:	871.0 AT HORIZONTAL: 45°, VERTICAL: 2.5°
SPACING CRITERION:	@ 0 = 1.2 @ 90 = 1.31
EFFICIENCY:	**87%**



INDOOR PHOTOMETRIC REPORT
CATALOG: RT5 28T5

ZONAL LUMEN SUMMARY

ZONE	LUMENS	% LAMP	% LUMINAIRE
0-30	672.3	24.6%	28.3%
0-40	1,099.9	40.3%	46.3%
0-60	1,940.4	71.1%	81.7%
60-90	434.7	15.9%	18.3%
70-100	147.7	5.4%	6.2%
90-120	0	0%	0%
0-90	2,375.1	87%	100%
90-180	0	0%	0%
0-180	2,375.1	87%	100%

LUMENS PER ZONE

ZONE	LUMENS	% TOTAL	ZONE	LUMENS	% TOTAL
0-10	81.5	3.4%	90-100	0	0%
10-20	234.8	9.9%	100-110	0	0%
20-30	356.0	15.0%	110-120	0	0%
30-40	427.6	18.0%	120-130	0	0%
40-50	441.9	18.6%	130-140	0	0%
50-60	398.6	16.8%	140-150	0	0%
60-70	287.0	12.1%	150-160	0	0%
70-80	129.2	5.4%	160-170	0	0%
80-90	18.5	0.8%	170-180	0	0%

AVERAGE LUMINANCE (CD/M2)

	0	22.5	45	67.5	90
0	2421	2421	2421	2421	2421
45	1955	2082	2328	2471	2527
55	1621	1886	2277	2493	2561
65	1256	1642	2180	2174	2147
75	923	1378	1541	1292	1150
85	483	483	355	419	419

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE: 20%

RCC %:	80				70				50			30			10			0
RW %:	70	50	30	0	70	50	30	0	50	30	20	50	30	20	50	30	20	0
RCR: 0	1.04	1.04	1.04	1.04	1.01	1.01	1.01	.87	.97	.97	.97	.93	.93	.93	.89	.89	.89	.87
1	.95	.91	.88	.85	.93	.89	.86	.75	.86	.83	.81	.82	.80	.78	.79	.77	.76	.74
2	.87	.80	.74	.69	.84	.78	.73	.63	.75	.71	.67	.72	.69	.65	.70	.67	.64	.62
3	.79	.70	.63	.58	.77	.69	.62	.54	.66	.61	.56	.64	.59	.55	.62	.58	.54	.52
4	.72	.62	.55	.49	.71	.61	.54	.46	.59	.53	.48	.57	.52	.47	.55	.50	.47	.45
5	.67	.56	.48	.42	.65	.55	.47	.40	.53	.46	.42	.51	.45	.41	.49	.45	.41	.39
6	.62	.50	.42	.37	.60	.49	.42	.36	.48	.41	.36	.46	.40	.36	.45	.40	.36	.34
7	.57	.45	.38	.33	.56	.45	.37	.32	.43	.37	.32	.42	.36	.32	.41	.36	.32	.30
8	.53	.41	.34	.29	.52	.41	.34	.28	.40	.33	.29	.39	.33	.29	.38	.32	.28	.27
9	.50	.38	.31	.26	.48	.37	.31	.26	.36	.30	.26	.36	.30	.26	.35	.29	.26	.24
10	.46	.35	.28	.24	.45	.35	.28	.23	.34	.28	.23	.33	.27	.23	.32	.27	.23	.22

INDOOR PHOTOMETRIC REPORT
CATALOG: RT5 28T5

CANDELA TABLE - TYPE C

	0	22.5	45	67.5	90
0	862	862	862	862	862
5	848	847	869	860	862
10	838	837	858	848	850
15	814	815	845	840	844
20	785	790	819	818	824
25	747	754	785	786	792
30	693	704	738	751	759
35	636	652	695	712	723
40	566	589	642	669	682
45	492	524	586	622	636
50	409	454	525	566	580
55	331	385	465	509	523
60	257	315	398	439	438
65	189	247	328	327	323
70	135	188	235	224	210
75	85	127	142	119	106
80	44	64	61	40	33
85	15	15	11	13	13
90	0	0	0	0	0

REPORTED DATA CALCULATED FROM MANUFACTURER'S DATA FILE, BASED ON IESNA RECOMMENDED METHODS.
REPORT GENERATED ON 3/7/2012, USING THE 'INDOOR' TEMPLATE.

Ohio Mercantile Self Direct Program

Application Guide & Cover Sheet

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

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

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

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

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

Account Number	Annual Usage	Account Number	Annual Usage
9110-3676-01			

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

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

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

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

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

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

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

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

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

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Proposed energy efficiency measures may be eligible for Self-Direct Custom rebates if they clearly reduce electrical consumption and/or demand as compared to the appropriate baseline.

Before you complete this application, please note the following important criteria:

- Submitting this application does not guarantee a rebate will be approved.
- Rebates are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Incomplete applications cannot be reviewed; all fields are required. Refer to the complete list of Instructions and Disclaimers, beginning on page 6.

Notes on the Application Process

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact your Duke Energy Ohio, Inc account manager or the Duke Energy Smart $aver® team at 1-866-380-9580.

Every application must include calculations of the baseline electrical usage and the electrical usage of the proposed high-efficiency equipment/system. Monthly calculations are best. You, the Duke Energy Ohio customer, or your equipment vendor / engineer should perform these calculations and submit them to Duke Energy for review. *We strongly encourage the use of modeling software (such as eQuest or comparable) for complex projects.*

Upon receipt of your application, an acknowledgement email will be sent to you with an estimated response time based on an initial assessment of your application. The application review may include some communication to resolve any questions about the project or to request additional information. Applications that are received complete without missing information have a faster review time.

There are two ways to submit your completed application.

Email your scanned form to: SelfDirect@duke-energy.com

Or, fax your form to 513-419-5572

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

1. Contact Information (Required)

Duke Energy Customer Contact Information						
Company Name	Cincinnati Public Schools					
Address	2651 Burnett Ave					
Project Contact	Don Elbe					
City	Cincinatti	State	OH	Zip Code	45219	
Title	Utility Management Coordinator					
Office Phone	513-363-0754	Mobile Phone		Fax		
E-mail Address	elbedon@cpsboe.k12.oh.us					

Equipment Vendor / Contractor / Architect / Engineer Contact Information					
Company Name	Plug Smart				
Address	1275 Kinnear Road Suite 229				
City	Columbus	State	OH	Zip Code	43212
Project Contact	Lucas Dixon				
Title	Operations Manager				
Office Phone	614-580-3352	Mobile Phone		Fax	1-800-518-5576
E-mail Address	lucas.dixon@plugsmart.com				
Describe Role	Ensures rebate is correctly applied for				

Payment Information					
Payee Legal Company Name (as shown on Federal income tax return):	Cincinnati Public Schools				
Mailing Address	2651 Burnett Ave				
City	Cincinatti	State	OH	Zip Code	45219
Type of organization (check one) ☐ Individual/Sole Proprietor ☐ Corporation ☐ Partnership ☒ Unit of Government ☐ Non-Profit (non-corporation)					
Payee Federal Tax ID # of Legal Company Name Above:	31-6000758				
Who should receive incentive payment? (select one) ☒ Customer ☐ Vendor (Customer must sign below)					
If the vendor is to receive payment, please sign below: I hereby authorize payment of incentive directly to vendor: Customer Signature _____ Date____/___/_____(mm/dd/yyyy)					

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

2. Project Information (Required)

A. Please indicate project type:
- ☒ New Construction
- ☐ Expansion at an existing facility
- ☐ Replacing equipment due to equipment failure
- ☐ Replacing equipment that is estimated to have remaining useful life of 2 years or less
- ☐ Replacing equipment that is estimated to have remaining useful life of more than 2 years
- ☐ Behavioral, operational and/or procedural programs/projects

B. Please describe your project, or attach a detailed project description that describes the project.
Pre-K-6 Public School

C. When did you start and complete implementation?
Start date / (mm/yyyy) End date 08/2008 (mm/yyyy)

D. Are you also applying for Self-Direct Prescriptive incentives and, if so, which one(s)[1]?

E. Please indicate which worksheet(s) you are submitting for this application (check all that apply):
- ☒ Lighting
- ☐ Variable Frequency Drive (VFD)
- ☐ Compressed Air
- ☐ Energy Management System (EMS)
- ☒ General (for projects not easily submitted using one of the above worksheets)

F. Please tell us if there is anything about your electrical energy projections (either for the baseline or the proposed project) that you are either unsure about or for which you have made significant assumptions. Attach additional sheets as needed.

Required: Attach a supplier or contractor invoice or other equivalent information documenting the Implementation Cost for each project listed in your application. (Note: self-install costs cannot be included in the Implementation Cost)

[1] If your project involves some equipment that is eligible for prescriptive incentives and some equipment that is likely eligible for custom incentives, and if it is feasible to separate the equipment for the energy analysis, then the equipment will be evaluated separately. If it is not feasible to separate the equipment for analysis, then the equipment will be evaluated together in the custom application.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Duke Energy

3. Signature (Required -must be signed by Duke Energy customer)

Customer Consent to Release of Personal Information

I, (insert name) Don Elbe , do hereby consent to Duke Energy disclosing my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number to its subcontractors solely for the purpose of administering Duke Energy Ohio's Mercantile Self-Direct Program. I understand that such subcontractors are contractually bound to otherwise maintain my Duke Energy Ohio, Inc Account Number and Federal Tax ID Number in the strictest of confidence.

I realize that under the rules and regulations of the public utilities commission, I may refuse to allow Duke Energy Ohio, Inc to release the information set forth above. By my signature, I freely give Duke Energy Ohio, Inc permission to release the information designated above.

Application Signature

I certify that I meet the eligibility requirements of the Duke Energy Ohio, Inc Mercantile Self Direct Custom Incentives Program and that all information provided within this application is correct to the best of my knowledge. I agree to the terms and conditions set forth for this program. I certify that the numbers, energy savings, and responses shown on this form are correct. Further, I certify that the taxpayer identification number is current and correct. I am not subject to backup withholding because: (a) I am exempt from backup withholding; or (b) I have not been notified by the IRS that I am subject to backup withholding as a result of a failure to report all interest or dividends; or (c) the IRS has notified me that I am no longer subject to backup withholding. I am a U.S. citizen (includes a U.S. resident alien).

Don Elbe
Duke Energy Ohio, Inc Customer Signature

Print Name

Date 12/30/2011

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Checklist for completing the Application

INCOMPLETE APPLICATIONS WILL RESULT IN DELAYS IN DUKE ENERGY PROCESSING YOUR APPLICATION AND NOTIFYING YOU CONCERNING AY REBATES. Before submitting the application and the required supplementary information, use the following checklist to ensure that your application is complete and the information in the application is accurate. (Note: this checklist is for your use only – do not submit this checklist with your application)

Section No. & Title	Have You:
1. Contact Information	☐ Completed the contact information for the Duke Energy customer? ☐ Completed the contact information for the equipment vendor / project engineer that can answer questions about the technical aspects of the project, if that is a different person than above?
2. Project Information	☐ Answered the questions A-E, including providing a description of your project. ☐ Completed and attached the lighting, compressed air, VFD, EMS and/or General worksheet(s)?
3. Signature	☐ Signed your name? ☐ Printed your name? ☐ Entered the date?
Supplementary information (Required)	☐ Attached a supplier or contractor's invoice or other equivalent information documenting the Implementation Cost for projects listed in your application? (Note: self-install costs cannot be included in the Implementation Cost) ☐ (If submitting the General Worksheet) attached calculations documenting the energy usage and energy savings for **each** project listed in your application?

If you have any questions concerning how to complete any portion of the application or what supplementary information is required, please contact:

- your Duke Energy account manager
  or,
- the Duke Energy Smart $aver® team at 1-866-380-9580.

Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1

Instructions/Terms/Conditions

Note: Please keep for your records- do not submit with the application

1. Energy service companies or contractors may assist in preparing the application, but an authorized representative of the customer must sign this application to be eligible to participate in the Mercantile Self Direct Program. Completion of this application does not guarantee the approval of a Self Direct Custom Rebate.

2. Once all documentation requested in this application is received by *Duke Energy Ohio, Inc,* and any follow-up information requested by *Duke Energy* is received, the rebate amount for each Energy Conservation Measure (ECM) will be communicated to the customer. The rebate amount will be based on ECM energy savings and ECM incremental installation cost.

3. All rebates require approval by the Public Utilities Commission of Ohio. *Duke Energy Ohio, Inc* will submit an application for rebate on the customer's behalf upon customer attestation to program terms, conditions and requirements as outlined in the rebate offer letter and upon customer completion of attestation documents required by the Public Utilities Commission of Ohio.

4. *Duke Energy Ohio, Inc* will issue a Self Direct Custom Rebate check, based on the approved rebate amount for each ECM, upon receiving approval from the Public Utilities Commission of Ohio. *Duke Energy* Ohio, Inc does not guarantee PUCO approval.

5. With the application, the customer must provide a list of all sites where the ECMs were installed. *Duke Energy Ohio, Inc* requests that sites of similar size, hours of operation and energy consuming characteristics be grouped together in one application for the determination of the rebate amount. The application should identify the site where each unique ECM was installed.

6. Based on the information submitted with the application and the information gathered both before and after the initial installation of the ECM, *Duke Energy Ohio, Inc* will calculate the rebate amount for each ECM.

7. *Duke Energy Ohio, Inc* may conduct random site inspections of a sample of the locations where the ECMs are installed to verify installation and operability of the ECMs and to obtain information needed to calculate the Approved Incentive Amount.

8. Customers are encouraged to retain copies of all forms, invoices and supporting documentation for their records.

9. Approved rebates are valid for 6 months from the date communicated to the customer by *Duke Energy Ohio, Inc,* subject to the expiration of measure eligibility based on project completion dates and application submission deadlines as defined by PUCO. Customers are encouraged to execute their rebate offer contracts and PUCO-required affidavits promptly to ensure eligibility is not forfeited.

10. *Duke Energy Ohio, Inc* reserves the right to recover all unrecoverable costs associated with the project approval if the customer decides not to execute the rebate contract, after the project is approved by *Duke Energy Ohio, Inc.*

11. Projects financially supported by other funding sources will be evaluated on a case-by-case basis for potential partial funding from *Duke Energy Ohio, Inc*.

12. Participants must be *Duke Energy Ohio, Inc* nonresidential, mercantile customers with the project sites in the *Duke Energy Ohio, Inc* service territory.

13. Customers or trade allies may not use any *Duke Energy* logo without prior written permission.

14. Only trade allies registered with *Duke Energy* are eligible to participate.

15. All equipment must be new. Used or rebuilt equipment is not eligible for incentives. All old existing equipment must be removed on retrofit projects.

16. Disclaimers: *Duke Energy Ohio, Inc*
    a. does not endorse any particular manufacturer, product or system design within the program;
    b. will not be responsible for any tax liability imposed on the customer as a result of the payment of incentives;
    c. does not expressly or implicitly warrant the performance of installed equipment. (Contact your contractor for details regarding equipment warranties.);
    d. is not responsible for the proper disposal/recycling of any waste generated or obsolete or old equipment as a result of this project;
    e. 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; and
    f. reserves the right to change or discontinue this program at any time. The acceptance of program applications is determined solely by *Duke Energy Ohio, Inc.*

The General Worksheet is part 2 of the application. Do not submit this file without submitting a completed Part1 Custom Application document file, which can be found at www.duke-energy com. This worksheet is for all projects that are not easily submitted through one of the other worksheets

Before you complete this application, please note the following important criteria:
Submitting this application does not guarantee an incentive will be approved.
Incentivealready decided to proceed.
Electric demand and/or energy reductions must be well documented with auditable calculations.
Incomplete applications will not be reviewed; all fields are required.
Refer to the complete list of Instructions and Disclaimers, found in the Mercantile Self Direct Custom Application Part 1 document.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

Duke Energy Customer Contact Information (Match the information in Application Part 1):

Name	Don Elbe
Company	Cincinnati Public Schools

Equipment Vendor / Project Engineer Contact Information

Name	Lucas Dixon
Company	Plug Smart

Before proceeding with the custom application, please verify that your project is not on the Self-Direct Prescriptive application.
The prescriptive incentive applications can be found at:
http //www.duke-energy.com/ohio-large-business/smart-saver/mercantile-self-direct.asp
Prescriptive rebate amounts are pre-approved.

List of Sites (Required)

App No.	
Rev.	

Provide a list of sites addressed by this custom incentive application

Site ID (see note 1)	Duke Energy Electric Account Number(s) (see note 2)	Facility Address	List of Proposed Projects at each site	Annual Hours of Operation	Gross Square Footage	Conditioned Square Footage	Facility Age (years)
225	*12345678 01*	*Example: 123 Main Street, Anywhere USA 12345*	*Project Name(s)*	*5,840*	*42,000*	*38,000*	*12*
	5600-3638-01	*5945 Montgomery Rd Cincinnati OH 45213*	*Heat Recovery Wheels*	*700*	*75,310*	*75,310*	*3*

1 Site ID
Can be a store number, building name or other way to identify the location. If there is only one site involved in this application, then a Site ID is not necessary.

2 Account Numbers
Must match the facility of the proposed project(s). If there are multiple meters at a site, only include the meters that pertain to the project(s).

App No.	0
Rev.	0

For each project, answer the following questions (use one worksheet per project)

Project Name: Heat Recovery Units

How would you classify this project? (Place an x in all boxes that apply.)

Lighting		**Heating/Cooling**	X	**Air Compressor**		**Energy Management System**	
VFD		**Motors/Pumps**		**Process Equipment**		**Other, describe below:**	

Brief Project Description

Describe the Baseline (see note 3) Equipment/System	Describe the Proposed High Efficiency Project
No heat recovery units installed on air handlers	Heat recovery units installed on air handlers.

If Existing Equipment is the Baseline, how many years of useful life remain or how many years until scheduled replacement?

Detailed Project Description Attached? Yes (Required)

Operating Hours (see note 4)

	Weekday		Saturday		Sunday		Weeks of Use in Year	Total Annual
24 x 7	**Start Hour**	**End Hour**	**Start Hour**	**End Hour**	**Start Hour**	**End Hour**	(see note 5)	**Hours of Use**
	7:00 AM	***3:00 PM***					***14***	***700***

Energy Savings

	Baseline (see Note 3)	Proposed	Savings	Describe how energy numbers were calculated
Annual Electric Energy	23,444 kWh	0 kWh	23,444 kWh	
Electric Demand	0 kW	0 kW	0 kW	
Calculations attached	Yes	Yes	(Required)	ne is listed as the savings with proposed at 0 kWh. See attached DUKE.CincPublic_Evar

Simple Payback

Average electric rate ($/kWh) on the applicable accounts (see note 6)			$0.10
Estimated annual electric savings			$2 344
Other annual savings in addition to electric savings, such as operations, maintenance, other fuels			
Incremental cost to implement the project (equipment & installation) (see note 7)			
Copy of vendor proposal is attached (see note 8)			Yes
Simple Electric Payback in years (see note 9)	0	**Total Payback in years**	0

3 Baseline

Retrofit projects: the existing equipment is the baseline.
New construction projects: the baseline is the standard option in today's market, taking into account any applicable organizational, local, state or federal codes or standards currently in effect.

4 Operating Hours

Describe when the equipment is typically used. If the project is proposed for more than one site, provide any variations in operating hours between the sites on a separate sheet.

5 Weeks of Use in Year

If the equipment is not in use 52 weeks during the year (for example, during holiday or summer break), provide an explanation of when usage is not expected and why: Savings only calculated for summer hours, gas heating systems are used during the winter.

6 Average electric rate ($/kWh)

If you do not know your average electric rate, use $0.10/kWh.

7 Incremental cost to implement the project

Costs exclude self installation costs. Retrofit projects, incremental cost is the total cost of the proposed project. New construction or where the existing equipment must be replaced anyway, then incremental cost is the premium of the proposed high efficiency project over baseline.

8 Copy of vendor invoice is attached

Vendor invoices detailing costs of the project are always required.
New construction projects or where the existing equipment must be replaced anyway, vendor proposal of baseline must also be attached.

9 Simple Electric Payback

If the simple electric payback is less than 1 year, the rebate structure is affected. Double check average electric rate for correct payback.

The Lighting Worksheet is part 2 of the application. Do not submit this file without submitting a completed Part1 Custom Application document file, which can be found at www.duke-energy.com.

Before you complete this application, please note the following important criteria:

- Incentive approval is required PRIOR to equipment purchase, or any other activity which would indicate that the Duke Energy customer has already decided to proceed.
- Submitting this application does not guarantee an incentive will be approved.
- Incentives are based on electricity conservation only.
- Electric demand and/or energy reductions must be well documented with auditable calculations.
- Simple payback without incentive must be greater than 1 year.
- Incomplete applications will not be reviewed; all fields are required.

Refer to the complete list of Instructions and Disclaimers, found in the Custom Application Part 1 document.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

Duke Energy Customer Contact Information (Match the information in Application Part 1):

Name	Don Elbe
Company	Cincinnati Public Schools

Equipment Vendor / Project Engineer Contact Information

Name	Lucas Dixon
Company	Plug Smart

Before proceeding with the custom application, please verify that your project is not on the prescriptive incentive application.
The prescriptive incentive applications can be found at:

KY http://www.duke-energy.com/kentucky-business/energy-management/energy-efficiency-incentives.asp
Kentucky only: custom incentives only available to K-12 school facilities; prescriptive incentives available for those not on rate TT.
OH http://www.duke-energy.com/ohio-business/energy-management/energy-efficiency-incentives.asp
NC http://www.duke-energy.com/north-carolina-business/energy-management/energy-efficiency-incentives.asp
SC http://www.duke-energy.com/south-carolina-business/energy-management/energy-efficiency-incentives.asp

Prescriptive incentives are already pre-approved and the application is submitted after project implementation.
Take note of the equipment eligibility on the prescriptive application before planning to utilize the prescriptive application.

Please enter your information and data into the cells that are shaded.
Cells in white are locked and cannot be written over.

List of Sites (Required)

Project/ Site (see note 1)	Site Name	Electric Account Number(s) (see note 2)	Site Address	Area (sq ft)	Location within Facility	Location Type	Indoor or Outdoor?
Example	*Distribution Center*	*12345678 01*	*Example: 123 Main Street, Anywhere USA 12345*	*1000*	*Warehouse*	*Industrial*	*Indoor*
1	Pleasant Ridge School	9110-3676-01	5945 Montgomery Rd Cincinnati, OH 45213	75,310		K-12	Indoor
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

If your application involves more than 20 lighting projects, please check here and use multiple worksheets. ☐

1 **Project/Site**
You can write over the default project/site number with a store #, building identifier, or other reference that distinguishes one project/location from another.

2 **Electric Account Number(s)**
If there are multiple meters at a site, only include the Duke Energy account numbers that pertain to the project.
Currently active account number(s) are required for an existing facility. For new construction, write in "new construction."

	Hours of Use (see note 3)									Controls (see note 5)			
		Weekday		Saturday		Sunday		Weeks of Use in Year (see note 4)	Total Annual Hours of Use	Existing		Proposed	
Project/ Site	24 x 7	Start Hour	End Hour	Start Hour	End Hour	Start Hour	End Hour			Type of Control	Hours Reduction	Type of Control	Description
Example	*No*	*8:00 AM*	*7:00 PM*	*10:00 AM*	*6:00 PM*	*1:00 PM*	*6:00 PM*	*52*	*3,536*	*None*	*0%*	*Occupancy*	*Applying for Prescriptive Incentive*
1	No	7:00:00 AM	3:30:00 PM					45	2,340	None		Occupancy	*Applying for Prescriptive Incentive*
2													
3													
4													
5													
6													
7													
8													
9													
10													
11													
12													
13													
14													
15													
16													
17													
18													
19													
20													

3 Hours of Use

For unoccupied times, leave applicable cells blank.

4 Weeks of Use in Year

If the lighting fixtures are not in use 52 weeks during the year (for example, during holiday or summer break), provide an explanation of when they are not expected to be in use and why:

The School is shut down for a combined 7 weeks a year due to holidays and the summer break.

5 Controls

Please attach more description of existing and/or proposed controls if more space is needed. If sufficient description is not provided, then controls portion of project will not be evaluated. Attach assumptions and calculations to support estimated reduction in hours that result from the controls.

New occupancy sensors should be applied for through the prescriptive application unless ineligible for prescriptive.

New or upgraded EMS/building controls require a separate application part 2. Without the separate application, EMS portion of the project will not be evaluated for an incentive.

	Existing Fixture(s)								
Project/ Site	**Existing Fixture Installation Year** (see note 6)	**Fixture Type**	**Fixture Manufacturer** (see note 6)	**Fixture Model Number** (see note 6)	**Lamps per Fixture**	**Fixture Size**	**Fixture Input Power (watts)** (see note 7)	**Quantity of Fixtures**	**Total Demand (kW)**
Example	*1995*	*High Pressure Sodium*	*Manufacturer*	*Model #*	*1*		*190*	*175*	*33*
1	2008	Other (enter by typing	Com Check	Com Check	1		90,372	1	90
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									
Application Total								**1**	**90**

6 Information on Existing Fixture(s)

Optional - please provide as much information as you can.

For new construction projects, provide information on the light fixture(s) that would meet the building code in your location.

7 Fixture Input Power (watts)

Provide actual input power (in watts), not nominal power rating. For example, a 400 watt (nominal) metal halide fixture has a typical input power of approximately 459 watts.

	Proposed Fixture(s)										Projected Savings			
Project/ Site	Fixture Type	Fixture Manufacturer (see note 8)	Fixture Model Number (see note 8)	Warranty of Proposed Fixtures (years)	Lamps per Fixture	Fixture Input Power (watts) (see note 9)	Quantity of Fixtures	Total Demand (kW)	Lumen Output per Fixture	Lumen/ Sq Ft	Demand (kW)	Annual Energy (kWh)	Other Annual Savings $ (see note 10)	Incremental Project Cost $ (see note 11)
Example	*T8 Fluorescent*	*Manufacturer*	*Model #*	*5.0*	*1.0*	*78*	*225*	*18*		*0*		*55,515*	*$1,265*	*$29,215*
1	Other (enter by typing	Com Check	Com Check		1.0	53,779	1	*54*		0	37	85,628		
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														
Application Total							**1**	**54**			**37**	**85,628**	**$0**	**$0**

Average Electric Rate $/kWh $0.10 **Project Simple Electric Payback** (see note 12) **years**

8 Fixture Manufacturer and Model Number
Attach a scanned copy of a spec sheet for each fixture that includes the input power (watts), lumen output and other relevant information.
For eligible LED fixtures, refer to the FAQs for Custom Incentives found at www.duke-energy.com and attach required documents if necessary.

9 Fixture Input Power (watts)
Provide actual input power (in watts), not nominal power rating. For example, a 400 watt (nominal) metal halide fixture has a typical input power of approximately 459 watts.

10 Other Annual Savings $
Optional. Estimate other annual savings in addition to electric (for example operations/maintenance savings).

11 Incremental Project Cost $
Attach a copy of a formal proposal with the projected project costs.
For new construction projects, a formal proposal is also required with the projected costs for the light fixture(s) that would meet the building code in your location.

12 Project Simple Electric Payback
If the simple payback on the project is less than 1 year, then the project is not eligible for a custom incentive. Please check that the electric rate is accurate based on history.

YORK
A JOHNSON CONTROLS COMPANY

Air Cooled Screw cnuter Performance Specification

Unit Tag	Qty	Model No.	Capacity (Tons)	Volts/Ph/Hz	Refrigerant
CH-1	1	YCAV0227PA46	221.0	460/3/60	R134a

Pin No: YCAV0227PA46VACBXTXXXXXLXXXX44SXXXXXHXXXSXXXXXX5kXXLXNJXXXXX

Evaporator Data		Evaporator Data (Cont.)		Performance Data	
EWT (°F)	58.0	GPM Min. Flow Rate	180.0	EER	10.8
LWT (°F)	44.0	GPM Max. Flow Rate	800.0	NPLV	14.9
Design Flow Rate (gpm)	378.4			Minimum Unit Capacity	10 %
Pressure Drop (ft.)	7.9	**Condenser Data**		**Physical Data**	
Fluid	Water	Ambient Temp. Design (°F)	90.0	Rigging Wt. (lbs.)	15061.2
Fouling Factor	0.00010	Altitude (ft.)	0	Operating Wt. (lbs.)	16234.0
Water Volume (gal)	140.0	Ambient Temp. Min (°F)	0.0		

Electrical Data				
Circuit	1	2	3	4
Compressor RLA	162	162		
Fan QTY/FLA (each)	5/2.8	5/2.8		

Single Point				
Min. Circuit Ampacity	392			
Recommended Fuse/CB Rating	450			
Max. Inverse Time CB Rating	800			
Max. Dual Element Fuse Size (Amps)	700			
Unit Short Circuit Withstand (STD)	65KA			
Wire Lugs Per Phase*	2			
Wire Range (Lug Size)	#2/0 - 500 KCM			
Unit Power Factor	0.95			

Control KVA	1.8			Starter Type	VSD
Compressor kW	228.4	Total Fan kW	16.8	Total kW	245.2

Notes: CONGRATULATIONS! Choosing the OPTIMIZED IPLV model will save approximately $5809 / YEAR in energy costs versus the industry average IPLV efficiency. Calculation based on; a) national average weather data, b) national average building load profile, c) average building annual run hours (5000 hrs.), and d) the local typical commercial energy cost ($0.0813/kwh). For a more detailed analysis based on your project please contact your YORK representative.

RATED IN ACCORDANCE WTTH ARI STANDARD 550/590.

* Use Copper Conductors only

Part Load Rating Data				
Load %	Ambient (°F)	Capacity (Tons)	Compressor kW	Unit Efficiency
100.0	90.0	221.0	228.4	10.8
75.0	80.0	165.7	133.8	13.2
50.0	65.0	110.5	64.6	16.3
25.0	55.0	55.2	37.4	16.3

Project Name: CPS- Pleasant Ridge ES	Sold To:
Location:	Customer Purchase Order No.:
Engineer:	York Contract No.:
Contractor:	Date: Revision Date:

AIR HANDLING UNITS

- MIS *OF* DESIGN: YORK. TO SPECIFICATIONS *FOR* LIST OF APPROVED MANUFACTURERS

• WATER TYPE COOLING COIL CAPACITY OASED *ON* 44"1' E.W.T./5f/'f LW.T.
• *MOTORS* SHALL 6E 400/3/60 UNLESS NOTED OTHERWISE.

	UNITNUM6ER	AHU1	AHU- 2	AHU-:3
	A ASERVEO	ACADEMIC	ADMIN/	GYM/CAFE
	MAXIMUM SYSTEM AIRFLON (CFM)	*'!13,700*	16,92.5	*'22.000*
	MINIMUM OA (CFM)	1:3,000 6,000 (SUMMER)	5,000 2.600 (SUMMER)	*2,1!;00* (LOW LIMIT) 16,000 (HI LIMIT)
SUPPLY	CFM	:33,700	16.925	22,000
SUPPLY	S.P. - INW.G. EXT/TOTAL	0.75 / 5.1	15/5.2	2.0/5.:3
SUPPLY	M-IEEL DIA.	*40"* /119:3	:30" /1561	:35" /1262
SUPPLY	M-IEEL *T'l1'EI* CL.A55	AF PLENUM/II	AFPLENUM/ U	AF PLENUM /II
SUPPLY	*MOTOR* BHP / HP	*40.!; 150*	21.0/25	*2A7100*
SUPPLY	-			
RETURN	CFM	00!;00	15,525	-
RETURN	S.P. ·IN W.G. EXT./TOTAL	0.5 /2.1	0.5/1.8	-
RETURN	M-IEEL DIA. IN.!RPM	ZI/1745	22' /16:34	-
RETURN	M-IEEL *Tr'PEI* CLASS	DWDI AF /II	DWDI AF / I	-
RETURN	MOTOR BHP / HP	25.0 / .30	9.2/10	-
RETURN	-			
COIL	FACE AREA	W	M	42
COIL	CAPAaTY M6H	654	:304	509
COIL	ENT. AIR TEI.!P.	:3a.B	4:3.4	.5
COIL	LYG. AIR TEMP.	60.0	*60.0*	*60.0*
COIL	CFM	'!;3,700	16.925	*22.,000*
COIL	MAX. AIR P.D. • IN.W.C.	*0.5*	*0.5*	*05*
COIL	GPM	90.4	:32.2	5:3.9
COIL	MAX WATER P.D. FT.	5	5	5
COIL	MINIMUM RONS	1	1	1
COIL	MAX FACE VEI.OCI1Y	*500*	*500*	*500*
COIL	SENSIaLE CL'G M6H	91:3.6	442..4	649.7
COIL	TOTAL CL'G M6H	1,1694	568.4	1.2
COIL	ENT. AIR TEMP. D6/W6	*712164.1*	76.5 / 6.3.6	00.9/66.5
COIL	LVG. AIR TEMP. D8/W6	52.8 / 52.1	53.0 / 52.1	52.6 / 52.1
COIL	CFM	*'!13,700*	16,925	*22..000*
COIL	MAX. AIR P.D. • INW.C.	*0.!J*	*0.!;*	*0.!;*
COIL	GPM	170.2	80.6	1.'32.7
COIL	MAX. WATER P.D. FT.	10	10	10
COIL	MI IMUM RON5	6	6	6
FILTERS	TYPE -PRE	MERV-8	MERV-8	MERV-6
FILTERS	TYPE -ANAL	MERV-15	MERV-1:3	MERV-1:3
FILTERS	*I-AIX* FACE VEI.OCI1Y	500	500	*500*
FILTERS	P.D. IN W.C. P - FLTRS. CLN/DIRTY	*0.:3/0.7*	*0.:310.7*	*02410.7*
FILTERS	P.D. IN *W.C.* FNL - FLTRS. CLNIDIRTY	*0511.0*	*0!511.0*	0.4/1.2
FILTERS	-	-	-	-
	OUTSIDE AIR • CFM	1:3,550	4,500	
	EXHAUST AIR - CFM	101:30	:3,100	
	O.A. E.A.T. • D6N{f}Of	*90172*	90/72	
	O.A. L.A.T. 06NJB Of	*B0.5* /66.3	00.6/66.4	
	E.A. E.A.T. • D8N{f} Of	75/62.6	75/62-6	
	O.A. EAT. - D6N{f} Of	*010*	*0 / O*	
	O.A. LAT. · DBI"N6 Of	45.!;/ '33.7	45.2 / 38.:3	
	E.A. EAT. · D6/'H60f	72 / 54.4	/1/ 54.4	
	-	-	-	
	MAX. AIR *PD.* W.C. *O/A*	113	O1!>9	
	MAX. AIR P.D. *WC.* EXH	*OM*	*0.63*	
	HWRECOVERY EFFECTIVEt-IE55	*1951.*	86.!;7.	
	-	-	-	

(8[	DESCRIPTION	)[
b	AIR COOLED CHILLER	E

REQ'D ACCESS.
1. FACTORY MOUNTED & WIRED NON·FU51
2. CONDENSER LOUVER PANEL
:3. SINGLE POINT POWER CONNECTION
4. WATER FLOW SWITCH
5. MINIMUM LOAD CONTROL TO tot, SEE E
6. RIMa REFRIGERANI
7. SCREW TYPE COMPRESSOR
e. RATED BASED *ON 9C1'* F AMBIENTTEMI

I8[	DE5CRIPT10N	JG
2	COUPLE1UBE FORCED DRAF1	E
	FLEXIBLE TU6E FORCED DRAFT	
	-	

REQ'D ACCESS.
1. MODULATING FIRING CON'I'ROLS
2. FM INSURED GAS TRAIN.
3. RELIEF PRESSURE SET AT 50 PSI.

- HEATING CAPACITY BASED *ON* 60"F ENT AI &100"F ENT WATER. 160"F LWT

(8[	DESCRIPTION	JC
CUH1	CABINET UNIT HEATER	CEll
CUH-:3	CABINET UNIT HEATER	CEll
CUH-2	CABINET UNIT HEATER	FUI
UH·1 -5	UNIT HEATER	

REQ'D ACCESS
1. HIGH STATIC TOTALLY ENCLOSED MOTOR WIT
2. COIL :3 RON 144 FINS PER FOOT.
:3. DUCTED FRONT OUTLET, DUCTED BACK INLET.
4. HORIZONTAL VANE DISCHARGE.
5. UNrT MOUNTED TEMPERATURE SENSOR FURI<
6. WALL MOUNTED TEMPERATURE SENSOR FUI<

(O(	DESCRIPTION	JE
2	*I<DOF ""UNf REUEF HOOD* ROOF MOUNT RELIEF HOOD	AHU

REQ'D ACCESS
1. AIUMINUM CONSTRUCTION 'MTH ENAMEL FINIS
2. 18" HIGH INSULATED ROOF CUR6
:3. COLOR BY ARCHITECT
4. MOTORIZED RELIEF DAMPER. 120V·1, MOTOR P1
5. DUCTED.
6. NON-DUCTED.

(a	DESCRIPTION	)
HWP-1	INLINE	HEAT

EJ INLI-NE

REQ'D ACCESS.
1.

AIR HANDLING UNITS

- MIS *OF* DESIGN: YORK. TO SPECIFICATIONS *FOR* LIST OF APPROVED MANUFACTURERS

• WATER TYPE COOLING COIL CAPACITY OASED *ON* 44"1' E.W.T./5f/'f LW.T.
• *MOTORS* SHALL 6E 400/3/60 UNLESS NOTED OTHERWISE.

	UNITNUM6ER	AHU1	AHU- 2	AHU-:3
	A ASERVEO	ACADEMIC	ADMIN/	GYM/CAFE
	MAXIMUM SYSTEM AIRFLON (CFM)	*'!13,700*	16,92.5	*'22.000*
	MINIMUM OA (CFM)	1:3,000 6,000 (SUMMER)	5,000 2.600 (SUMMER)	*2,1!;00* (LOW LIMIT) 16,000 (HI LIMIT)
SUPPLY	CFM	:33,700	16.925	22,000
SUPPLY	S.P. - INW.G. EXT/TOTAL	0.75 / 5.1	15/5.2	2.0/5.:3
SUPPLY	M-IEEL DIA.	*40"* /119:3	:30" /1561	:35" /1262
SUPPLY	M-IEEL *T'l1'EI* CL.A55	AF PLENUM/II	AFPLENUM/ U	AF PLENUM /II
SUPPLY	*MOTOR* BHP / HP	*40.!; 150*	21.0/25	*2A7100*
SUPPLY	-			
RETURN	CFM	00!;00	15,525	-
RETURN	S.P. ·IN W.G. EXT./TOTAL	0.5 /2.1	0.5/1.8	-
RETURN	M-IEEL DIA. IN.!RPM	ZI/1745	22' /16:34	-
RETURN	M-IEEL *Tr'PEI* CLASS	DWDI AF /II	DWDI AF / I	-
RETURN	MOTOR BHP / HP	25.0 / .30	9.2/10	-
RETURN	-			
COIL	FACE AREA	W	M	42
COIL	CAPAaTY M6H	654	:304	509
COIL	ENT. AIR TEI.!P.	:3a.B	4:3.4	.5
COIL	LYG. AIR TEMP.	60.0	*60.0*	*60.0*
COIL	CFM	'!;3,700	16.925	*22.,000*
COIL	MAX. AIR P.D. • IN.W.C.	*0.5*	*0.5*	*05*
COIL	GPM	90.4	:32.2	5:3.9
COIL	MAX WATER P.D. FT.	5	5	5
COIL	MINIMUM RONS	1	1	1
COIL	MAX FACE VEI.OCI1Y	*500*	*500*	*500*
COIL	SENSIaLE CL'G M6H	91:3.6	442..4	649.7
COIL	TOTAL CL'G M6H	1,1694	568.4	1.2
COIL	ENT. AIR TEMP. D6/W6	*712164.1*	76.5 / 6.3.6	00.9/66.5
COIL	LVG. AIR TEMP. D8/W6	52.8 / 52.1	53.0 / 52.1	52.6 / 52.1
COIL	CFM	*'!13,700*	16,925	*22..000*
COIL	MAX. AIR P.D. • INW.C.	*0.!J*	*0.!;*	*0.!;*
COIL	GPM	170.2	80.6	1.'32.7
COIL	MAX. WATER P.D. FT.	10	10	10
COIL	MI IMUM RON5	6	6	6
FILTERS	TYPE -PRE	MERV-8	MERV-8	MERV-6
FILTERS	TYPE -ANAL	MERV-15	MERV-1:3	MERV-1:3
FILTERS	*I-AIX* FACE VEI.OCI1Y	500	500	*500*
FILTERS	P.D. IN W.C. P - FLTRS. CLN/DIRTY	*0.:3/0.7*	*0.:310.7*	*02410.7*
FILTERS	P.D. IN *W.C.* FNL - FLTRS. CLNIDIRTY	*0511.0*	*0!511.0*	0.4/1.2
FILTERS	-	-	-	-
	OUTSIDE AIR • CFM	1:3,550	4,500	
	EXHAUST AIR - CFM	101:30	:3,100	
	O.A. E.A.T. • D6N{f}Of	*90172*	90/72	
	O.A. L.A.T. 06NJB Of	*B0.5* /66.3	00.6/66.4	
	E.A. E.A.T. • D8N{f} Of	75/62.6	75/62-6	
	O.A. EAT. - D6N{f} Of	*010*	*0 / O*	
	O.A. LAT. · DBI"N6 Of	45.!;/ '33.7	45.2 / 38.:3	
	E.A. EAT. · D6/'H60f	72 / 54.4	/1/ 54.4	
	-	-	-	
	MAX. AIR *PD.* W.C. *O/A*	113	O1!>9	
	MAX. AIR P.D. *WC.* EXH	*OM*	*0.63*	
	HWRECOVERY EFFECTIVEt-IE55	*1951.*	86.!;7.	
	-	-	-	

(8[	DESCRIPTION	)[
b	AIR COOLED CHILLER	E

REQ'D ACCESS.
1. FACTORY MOUNTED & WIRED NON·FU51
2. CONDENSER LOUVER PANEL
:3. SINGLE POINT POWER CONNECTION
4. WATER FLOW SWITCH
5. MINIMUM LOAD CONTROL TO tot, SEE E
6. RIMa REFRIGERANI
7. SCREW TYPE COMPRESSOR
e. RATED BASED *ON 9C1'* F AMBIENTTEMI

I8[	DE5CRIPT10N	JG
2	COUPLE1UBE FORCED DRAF1	E
	FLEXIBLE TU6E FORCED DRAFT	
	-	

REQ'D ACCESS.
1. MODULATING FIRING CON'I'ROLS
2. FM INSURED GAS TRAIN.
3. RELIEF PRESSURE SET AT 50 PSI.

- HEATING CAPACITY BASED *ON* 60"F ENT AI &100"F ENT WATER. 160"F LWT

(8[	DESCRIPTION	JC
CUH1	CABINET UNIT HEATER	CEll
CUH-:3	CABINET UNIT HEATER	CEll
CUH-2	CABINET UNIT HEATER	FUI
UH·1 -5	UNIT HEATER	

REQ'D ACCESS
1. HIGH STATIC TOTALLY ENCLOSED MOTOR WIT
2. COIL :3 RON 144 FINS PER FOOT.
:3. DUCTED FRONT OUTLET, DUCTED BACK INLET.
4. HORIZONTAL VANE DISCHARGE.
5. UNrT MOUNTED TEMPERATURE SENSOR FURI<
6. WALL MOUNTED TEMPERATURE SENSOR FUI<

(O(	DESCRIPTION	JE
2	*I<DOF ""UNf REUEF HOOD* ROOF MOUNT RELIEF HOOD	AHU

REQ'D ACCESS
1. AIUMINUM CONSTRUCTION 'MTH ENAMEL FINIS
2. 18" HIGH INSULATED ROOF CUR6
:3. COLOR BY ARCHITECT
4. MOTORIZED RELIEF DAMPER. 120V·1, MOTOR P1
5. DUCTED.
6. NON-DUCTED.

(a	DESCRIPTION	)
HWP-1	INLINE	HEAT

EJ INLI-NE

REQ'D ACCESS.
1.