



Case No.: 12-2672 -EL-EEC

Mercantile Customer: Cincinnati Public Schools (Hartwell)

Electric Utility: Duke Energy

**Program Title or
Description:** HVAC and Lighting (CUSTOM)

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

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

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

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

Section 1: Mercantile Customer Information

Name: **Cincinnati Public Schools**

Principal address: **2651 Burnet Avenue Cincinnati, Ohio 45219**

Address of facility for which this energy efficiency program applies:

8320 Vine Cincinnati Ohio 45238 (Hartwell)

Name and telephone number for responses to questions:

Grady Reid Jr 513-287-1038

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

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

Section 2: Application Information

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

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

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

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

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

Section 3: Energy Efficiency Programs

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

- Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).
- Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s):
_____.
- Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s):**
October 2010
- Behavioral or operational improvement.

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

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

Annual savings: _____kWh

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

Annual savings: _____kWh

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

- 3) If you checked the box indicating that the project involves equipment for new construction or facility expansion, then calculate the annual savings [(kWh used by less efficient new equipment) - (kWh used by higher

efficiency new equipment) = (kWh per year saved)]. Please attach your calculations and record the results below:

Annual savings: **70,544 kWh savings**
(Refer to Appendix B for calculations and supporting documents).

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

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

Section 4: Demand Reduction/Demand Response Programs

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

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

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

October 2010

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

28.2 KW

Refer to Appendix B for calculations and supporting documentation

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

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

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

A) The customer is applying for:

Option 1: A cash rebate reasonable arrangement.

OR

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

OR

Commitment payment

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

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

A cash rebate of **\$4,500.00. Refer to Appendix C.**

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

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

OR

A commitment payment valued at no more than \$_____. (Attach documentation and

calculations showing how this payment amount was determined.)

OR

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

Section 6: Cost Effectiveness

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

- Total Resource Cost (TRC) Test. The calculated TRC value is: _____
(Continue to Subsection 1, then skip Subsection 2)
- Utility Cost Test (UCT). The calculated UCT value is **10.13(Skip to Subsection 2.) Refer to Appendix D for calculations and supporting documents.**

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

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

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

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

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

Our avoided supply costs were **\$70,165**

The utility's program costs were **\$2,425**

The utility's incentive costs/rebate costs were **\$4,500**

Refer to Appendix D for calculations

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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

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

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

Refer to Rebate Offer Letter following this application

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



DUKE ENERGY
Mercantile Self Direct Program
139 East Fourth Street
Cincinnati, OH 45202
513 629 5572 fax

September 17, 2012

Mr. Don Elbe
Cincinnati Public Schools (**Hartwell**)
2651 Burnet Avenue
Cincinnati, Ohio 45219

Subject: Your (**Custom**) Application for a Duke Energy (**HVAC and Lighting**) Mercantile Self-Direct Rebate

Dear Mr. Elbe:

Thank you for your Duke Energy Mercantile Self Direct rebate application. As noted in the Energy Conservation Measure (ECM) chart on page two, a total rebate of \$4,500.00 has been proposed for your HVAC and lighting project completed in the October 2010 calendar year. **All Self Direct Rebates are contingent upon approval by the Public Utilities Commission of Ohio (PUCO).**

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

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read 'Grady Reid, Jr.'.

Grady Reid, Jr
Product Manager
Mercantile Self Direct Rebates

cc: Mike Heath, Duke Energy
Rob Jung, WECC
Lucas Dixon, PlugSmart

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

Rebate is accepted.

Rebate is declined.

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

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

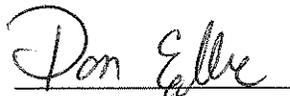
Finally, Cincinnati Public Schools affirms that all application information submitted to Duke Energy pursuant to this rebate offer is true and accurate. Information in question would include, but not be limited to, project scope, equipment specifications, equipment operational details, project costs,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

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

YES

NO

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



Don Elbe

9-19-12

Customer Signature

Printed Name

Date

Proposed Rebate Amounts

Measure ID	Energy Conservation Measure (ECM)	Proposed Rebate Amount
ECM-1	Hartwell – Energy Recovery Wheel for AHU - 1	\$2000.00
ECM-2	Hartwell – Energy Recovery Wheel for AHU - 2	\$1900.00
ECM-3	Hartwell – New Construction Lighting	\$600.00
Total		\$4500.00



Public Utilities Commission

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

Case No.: ___ - ___ -EL-EEC

State of Ohio :

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

- 1. I am the duly authorized representative of: Cincinnati Public Schools
2. I have personally examined all the information contained in the foregoing application...
3. I am aware of fines and penalties which may be imposed under Ohio Revised Code Sections 2921.11, 2921.31, 4903.02, 4903.03, and 4903.99 for submitting false information.

Signature of Affiant & Title (Don Elbe)

Sworn and subscribed before me this 19th day of September, 2012 Month/Year

Signature of official administering oath (Angela F. Tolle)

Angela F. Tolle, Notary Public
Print Name and Title

My commission expires on Sept 11, 2013

ANGELA F. TOLLE
Notary Public, State of Ohio
My Commission Expires 09/11/2013

Appendix A

91103676 01		
CINCINNATI PUBLIC SCHOOLS		
5945 MONTGOMERY RD		
CINCINNATI, OH 45213		
Date	Days	Actual KWH
12/29/2011	30	89,624
11/29/2011	33	99,166
10/27/2011	29	102,362
9/28/2011	30	119,392
8/29/2011	31	166,765
7/29/2011	30	162,193
6/29/2011	29	132,830
5/31/2011	32	118,148
4/29/2011	30	105,178
3/30/2011	29	115,864
3/1/2011	29	118,427
1/31/2011	32	128,341
Total		1,458,290

Appendix B - Hartwell Energy Savings Achieved

ECM #	Facility	Baseline Used			Post Project Actual			Hours of Operation ¹	Savings	
		Description	Annual kWh	Summer Coincident kW	Description	Annual kWh	Summer Coincident kW		Annual kWh	Summer Coincident kW
1	Hartwell	25,540 CFM for AHU 1 without heat recovery	35,963	29.4	Heat recovery unit added to AHU 1	9,622	7.9	1,225	26,341	21.5
2	Hartwell	24,400 CFM for AHU 2 without heat recovery	34,218	27.9	Heat recovery unit added to AHU 2	9,872	8.1	1,225	24,346	19.8
3	Hartwell	Lighting Power Density Per Code	175,242	See Note 2	Lighting Power Density Improvement Over Code As Per Application	159,852	See Note 2	2,080	15,390	7.0
Totals			245,423	57		179,346	16		66,077	48

After consideration of line losses, total energy savings are **70,544 kWh and 28.2 summer coincident kW**. These values may also reflect minor DSMore modeling software rounding error.

Notes:

- 1 Hours of operation do not apply simply to heat recovery unit measures. kWh and kW values presented are the results of bin analysis presented in the attached pages.
- 2 Building Code baseline lighting power density allowances as well as the as installed fixture wattages & quantities are detailed on the attached pages.
Annual energy (kWh) savings values validated in the applicant lighting energy model were input into the DSMore analysis software and modeled against a representative customer load shape to determine the coincident peak demand (kW) savings for this application

DETAILED CALCULATIONS

JAN 2012 V2.0

Salesforce Opportunity Name	Cincinnati Public Schools - Hartwell - HVAC and Lig
Project Name	Cincinnati Public Schools - Hartwell - HVAC and Lighting
ECM	1

Application # 12-313 MSD

Rev.	0
State	OH

Note: all data from Part 2 of the application, except as otherwise noted

2,080	hr/yr operation - before implementation
2,080	hr/yr operation - after implementation

Site ID	Existing						Proposed						Savings		Other Annual Savings	Incremental Implementation Costs
	Square Footage	Qty	Watts per sq ft	kw per fixture	total kw	kw-hr/yr	Type -Fixture	Qty	Watts per fixture	kw per fixture	total kw	kw-hr/yr	kw	kw-hr/yr		
1	Floor area affected	70,209	1.2	0.001	84.3	175,242	A1-2L 4' T8 32W HP	68	59	0.059	4.0	8,345	80.2	166,897	\$	7,289.60
				0.000	0.0	0	A2-2L 4' T8 32W HP	37	58	0.058	2.1	4,464	-2.1	-4,464	\$	4,565.80
				0.000	0.0	0	A31 3L 4' T8 32W	17	84	0.084	1.4	2,970	-1.4	-2,970	\$	2,306.90
				0.000	0.0	0	B24-2L 4' T8 32W	4	63	0.063	0.3	524	-0.3	-524	\$	536.48
				0.000	0.0	0	B28-4L 8' T8 32W	55	126	0.126	6.9	14,414	-6.9	-14,414	\$	7,970.05
				0.000	0.0	0	B34- 3L 4' T8 32W	18	97	0.097	1.7	3,632	-1.7	-3,632	\$	2,751.48
				0.000	0.0	0	B38-3L 8' T8 32W	150	194	0.194	29.1	60,528	-29.1	-60,528	\$	26,037.00
				0.000	0.0	0	C31-3L 2X4 T8 32W	22	91	0.091	2.0	4,164	-2.0	-4,164	\$	3,198.80
				0.000	0.0	0	C32 -3L 2X4 T8 32W	20	91	0.091	1.8	3,786	-1.8	-3,786	\$	2,908.00
				0.000	0.0	0	D5-2L WB T8 32W	13	63	0.063	0.8	1,704	-0.8	-1,704	\$	3,817.97
				0.000	0.0	0	D7 -2LWP T8 32W	7	63	0.063	0.4	917	-0.4	-917	\$	758.59
				0.000	0.0	0	G3-3L 2X4 T8 32W	13	87	0.087	1.1	2,352	-1.1	-2,352	\$	1,541.80
				0.000	0.0	0	J31-3L 2X4 T8 32W	82	91	0.091	7.5	15,521	-7.5	-15,521	\$	22,082.60
				0.000	0.0	0	J32-3L 2X4 T8 32W	6	91	0.091	0.5	1,136	-0.5	-1,136	\$	1,615.80
				0.000	0.0	0	K-2L 4' IND T8 32W	21	63	0.063	1.3	2,752	-1.3	-2,752	\$	1,134.21
				0.000	0.0	0	K4 -2L 4' IND T8 32W	22	74	0.074	1.6	3,386	-1.6	-3,386	\$	1,567.50
				0.000	0.0	0	K8 -4L 8' IND T8 32W	39	74	0.074	2.9	6,003	-2.9	-6,003	\$	3,829.80
				0.000	0.0	0	L14 1L STRIP T8 32W	10	34	0.034	0.3	707	-0.3	-707	\$	844.50
				0.000	0.0	0	PS2 TRI 4PIN 32W	18	64	0.064	1.2	2,396	-1.2	-2,396	\$	2,884.86
				0.000	0.0	0	PS3 TT 4L 24W PEND	10	106	0.106	1.1	2,205	-1.1	-2,205	\$	4,812.50
				0.000	0.0	0	S1 TRI 4PIN 32W	2	36	0.036	0.1	150	-0.1	-150	\$	212.40
				0.000	0.0	0	XBA 8L TRI 4PIN 42W	23	372	0.372	8.6	17,796	-8.6	-17,796	\$	6,297.17
Totals		70,209			84.3	175,242		657			76.9	159,852	7.4	15,390	\$ -	\$ 108,963.81

DETAILED CALCULATIONS

JAN 2012 V2.0

Salesforce Opportunity Name Cincinnati Public Schools - Hartwell - HVAC and Lighting Application # 12-313 MSD
 Project Name Cincinnati Public Schools - Hartwell - HVAC and Lighting
 ECM 2 Cincinnati Public Schools - Hartwell - HVAC and Lighting - Energy Recovery Wheel for AHU-1

Rev. 0
 State OH

Note: all data from "Hartwell.HRW.Calcs.xlsx", except as otherwise noted

USA_OH_Cincinnati.Muni.AP-Lunken.Field.724297_TMY3.bin
 HEAT RECOVERY WHEEL SAVINGS AHU-1

Minimum Fraction Outdoor Air: 43.18%
 Heat Recover Effectiveness: 77.10%
 Set Point Temperature: 75.6 F
 Set Point Enthalpy: 27.281 Btu/lba
 Supply Air Temperature: 51.4 F
 Supply Air Enthalpy: 20.996 Btu/lba
 Supply Air Volume: 25,540 cfm
 Supply Air Density: 0.075 lb/ft^3

StrTemp (F)	EndTemp (F)	Toa (F)	hoa (Btu/lba)	hrs	foa	Tma (F)	hma (Btu/lba)	Savings	Baseline	Proposed
								Q (mmBTU)	Q (mmBTU)	Q (mmBTU)
105	109	107.0	0	0	43%	89.2	15.50	0.00	0.00	0.00
100	104	102.0	0	0	43%	87.0	15.50	0.00	0.00	0.00
95	99	96.1	42.6	12	43%	84.5	33.90	7.03	9.12	2.09
90	94	92.2	39.6	41	43%	82.8	32.60	19.32	25.06	5.74
85	89	87.6	37.7	142	43%	80.8	31.78	56.60	73.41	16.81
80	84	82.4	35.0	250	43%	78.5	30.61	73.83	95.76	21.93
75	79	77.2	33.4	287	43%	76.3	29.92	67.19	87.14	19.96
70	74	72.5	31.9	241	100%	72.5	31.90	98.64	127.94	29.30
65	69	68.0	29.1	252	100%	68.0	29.10	40.62	52.68	12.06
60	64	62.6	24.8	322	100%	62.6	24.80	0.00	0.00	0.00
55	59	57.1	21.9	222	100%	57.1	21.90	0.00	0.00	0.00
50	54	52.0	19.2	226	100%	52.0	19.20	0.00	0.00	0.00
45	49	47.5	17.3	151	86%	51.4	18.69	0.00	0.00	0.00
40	44	43.1	15.2	211	74%	51.4	18.29	0.00	0.00	0.00
35	39	37.6	12.9	206	64%	51.4	18.12	0.00	0.00	0.00
30	34	32.4	10.8	135	56%	51.4	18.05	0.00	0.00	0.00
25	29	27.7	9.0	99	51%	51.4	18.05	0.00	0.00	0.00
20	24	23.3	7.5	66	46%	51.4	18.13	0.00	0.00	0.00
15	19	18.3	5.9	36	43%	50.9	18.05	0.00	0.00	0.00
10	14	12.5	4.1	16	43%	48.4	17.27	0.00	0.00	0.00
5	9	7.5	2.7	5	43%	46.2	16.67	0.00	0.00	0.00
0	4	3.0	1.4	0	43%	44.3	16.11	0.00	0.00	0.00
Annual Total mmBTU:								363.23	471.12	107.89

Energy recovery wheel motor	
Motor Size hp:	1.50
Load Factor:	0.85
Motor Efficiency:	84.0%
hp to kW conversion:	0.7456
Motor kW:	1.132
Motor kWh:	1,386

Annual Ton-hours:	30,269	39,260	8,991
Chiller IPLV:	13.1	13.1	13.1
Chiller kW/Ton:	0.916	0.916	0.916
Cooling kWh:	27,728	35,963	8,236
Heat Recovery Hours of Operation:	1,225	1,225	1,225
Cooling kW:	22.63	29.36	6.72

Allocation of annual savings by month (Added During Tech Review)

Trade ally only provided annual savings numbers. Combine HRW savings and motor use, then use % of cooling degree days by month to distribute annual savings appropriately.

Cooling Degree Day Source: <http://www.climate-zone.com/climate/united-states/ohio/greater-cincinnati-airport/>

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
CDD by Month	0.0	0.0	0.0	0.0	86.0	191.0	313.0	266.0	120.0	20.0	0.0	0.0	996.0
Degree Days % of Annual	0.0%	0.0%	0.0%	0.0%	8.6%	19.2%	31.4%	26.7%	12.0%	2.0%	0.0%	0.0%	100%
Degree Days % of Maximum	0.0%	0.0%	0.0%	0.0%	27.5%	61.0%	100.0%	85.0%	38.3%	6.4%	0.0%	0.0%	
Baseline kWh	0	0	0	0	3,105	6,897	11,302	9,605	4,333	722	0	0	35,963
Proposed kWh	0	0	0	0	831	1,845	3,024	2,570	1,159	193	0	0	9,622
kWh Savings	0	0	0	0	2,274	5,051	8,278	7,035	3,174	529	0	0	26,341
Baseline kW	0.00	0.00	0.00	0.00	8.07	17.91	29.36	24.95	11.26	1.88	0.00	0.00	29.36
Proposed kW	0.00	0.00	0.00	0.00	2.16	4.79	7.85	6.68	3.01	0.50	0.00	0.00	7.85
kW Savings	0.00	0.00	0.00	0.00	5.91	13.12	21.50	18.27	8.24	1.37	0.00	0.00	21.50

DETAILED CALCULATIONS

JAN 2012 V2.0

Salesforce Opportunity Name **Cincinnati Public Schools - Hartwell - HVAC and Lighting** Application # **12-313 MSD**
 Project Name **Cincinnati Public Schools - Hartwell - HVAC and Lighting**
 ECM **3** Cincinnati Public Schools - Hartwell - HVAC and Lighting - Energy Recovery Wheel for AHU-2

Rev. **0**
 State **OH**

Note: all data from "Hartwell.HRW.Calcs.xlsx", except as otherwise noted

USA_OH_Cincinnati.Muni.AP-Lunken.Field.724297_TMY3.bin
 HEAT RECOVERY WHEEL SAVINGS AHU-2

Minimum Fraction Outdoor Air: 42.89%
 Heat Recover Effectiveness: 75.20%
 Set Point Temperature: 75.6 F
 Set Point Enthalpy: 27.281 Btu/lba
 Supply Air Temperature: 51.4 F
 Supply Air Enthalpy: 20.996 Btu/lba
 Supply Air Volume: 24,400 cfm
 Supply Air Density: 0.075 lb/ft^3

StrTemp (F)	EndTemp (F)	Toa (F)	hoa (Btu/lba)	hrs	foa	Tma (F)	hma (Btu/lba)	Savings	Baseline	Proposed
								Q (mmBTU)	Q (mmBTU)	Q (mmBTU)
105	109	107.0	0	0	43%	89.1	15.58	0.00	0.00	0.00
100	104	102.0	0	0	43%	86.9	15.58	0.00	0.00	0.00
95	99	96.1	42.6	12	43%	84.4	33.85	6.51	8.66	2.15
90	94	92.2	39.6	41	43%	82.7	32.56	17.89	23.79	5.90
85	89	87.6	37.7	142	43%	80.7	31.75	52.39	69.67	17.28
80	84	82.4	35.0	250	43%	78.5	30.59	68.34	90.88	22.54
75	79	77.2	33.4	287	43%	76.3	29.91	62.19	82.70	20.51
70	74	72.5	31.9	241	100%	72.5	31.90	91.91	122.23	30.31
65	69	68.0	29.1	252	100%	68.0	29.10	37.85	50.33	12.48
60	64	62.6	24.8	322	100%	62.6	24.80	0.00	0.00	0.00
55	59	57.1	21.9	222	100%	57.1	21.90	0.00	0.00	0.00
50	54	52.0	19.2	226	100%	52.0	19.20	0.00	0.00	0.00
45	49	47.5	17.3	151	86%	51.4	18.69	0.00	0.00	0.00
40	44	43.1	15.2	211	74%	51.4	18.29	0.00	0.00	0.00
35	39	37.6	12.9	206	64%	51.4	18.12	0.00	0.00	0.00
30	34	32.4	10.8	135	56%	51.4	18.05	0.00	0.00	0.00
25	29	27.7	9.0	99	51%	51.4	18.05	0.00	0.00	0.00
20	24	23.3	7.5	66	46%	51.4	18.13	0.00	0.00	0.00
15	19	18.3	5.9	36	43%	51.0	18.11	0.00	0.00	0.00
10	14	12.5	4.1	16	43%	48.5	17.34	0.00	0.00	0.00
5	9	7.5	2.7	5	43%	46.4	16.74	0.00	0.00	0.00
0	4	3.0	1.4	0	43%	44.5	16.18	0.00	0.00	0.00
Annual Total mmBTU:								337.09	448.25	111.17
Annual Ton-hours:								28,090	37,354	9,264
Chiller IPLV:								13.1	13.1	13.1
Chiller kW/Ton:								0.916	0.916	0.916
Cooling kWh:								25,732	34,218	8,486
Heat Recovery Hours of Operation:								1,225	1,225	1,225
Cooling kW:								21.01	27.93	6.93

Energy recovery wheel motor	
Motor Size hp:	1.50
Load Factor:	0.85
Motor Efficiency:	84.0%
hp to kW conversion:	0.7456
Motor kW:	1.132
Motor kWh:	1,386

Allocation of annual savings by month (Added During Tech Review)

Trade ally only provided annual savings numbers. Combine HRW savings and motor use, then use % of cooling degree days by month to distribute annual savings appropriately.

Cooling Degree Day Source: <http://www.climate-zone.com/climate/united-states/ohio/greater-cincinnati-airport/>

	Jan	Feb	Mar	April	May	June	July	Aug	Sep	Oct	Nov	Dec	Annual
CDD by Month	0.0	0.0	0.0	0.0	86.0	191.0	313.0	266.0	120.0	20.0	0.0	0.0	996.0
Degree Days % of Annual	0.0%	0.0%	0.0%	0.0%	8.6%	19.2%	31.4%	26.7%	12.0%	2.0%	0.0%	0.0%	100%
Degree Days % of Maximum	0.0%	0.0%	0.0%	0.0%	27.5%	61.0%	100.0%	85.0%	38.3%	6.4%	0.0%	0.0%	
Baseline kWh	0	0	0	0	2,955	6,562	10,753	9,138	4,123	687	0	0	34,218
Proposed kWh	0	0	0	0	852	1,893	3,102	2,637	1,189	198	0	0	9,872
kWh Savings	0	0	0	0	2,102	4,669	7,651	6,502	2,933	489	0	0	24,345
Baseline kW	0.00	0.00	0.00	0.00	7.67	17.05	27.93	23.74	10.71	1.78	0.00	0.00	27.93
Proposed kW	0.00	0.00	0.00	0.00	2.21	4.92	8.06	6.85	3.09	0.51	0.00	0.00	8.06
kW Savings	0.00	0.00	0.00	0.00	5.46	12.13	19.87	16.89	7.62	1.27	0.00	0.00	19.87

Appendix C - Hartwell - Cash Rebate Calculation

HVAC and Lighting

Measure	Quantity	Cash Rebate Rate	Cash Rebate
Heat Recovery Unit Added - AHU - 1	1	50% of incentive that would be offered by the Smart \$aver Custom program	\$2,000.00
Heat Recovery Unit Added - AHU - 2	1	50% of incentive that would be offered by the Smart \$aver Custom program	\$1,900.00
Lighting Power Density Improvement Over Code As Per Application	1	50% of incentive that would be offered by the Smart \$aver Custom program	\$600.00
Totals	3		\$4,500.00

Cincinnati Public Schools (Hartwell)
Mercantile Self Direct Custom Application
Documents Not Attached Due To Size But
Available Upon Request

- Lighting Plans
- Lighting Specifications

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
0250-2096-01			

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:

<input checked="" type="checkbox"/> All sections of appropriate application(s) are completed	<input checked="" type="checkbox"/> Proof of payment.*	<input checked="" type="checkbox"/> Manufacturer's Spec sheets	<input checked="" type="checkbox"/> Energy model/calculations and detailed inputs for Custom applications
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* 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 <input type="checkbox"/> Custom Lighting Worksheet <input type="checkbox"/>	MSD Prescriptive Lighting <input type="checkbox"/>	MSD Prescriptive Lighting <input type="checkbox"/>
		MSD Custom Part 1 <input type="checkbox"/> Custom Lighting Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input checked="" type="checkbox"/> Custom Lighting Worksheet <input checked="" type="checkbox"/>
Heating & Cooling	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Prescriptive Heating & Cooling <input type="checkbox"/>
			MSD Custom Part 1 <input checked="" type="checkbox"/> MSD Custom General Worksheet <input checked="" type="checkbox"/>
Window Films, Programmable Thermostats, & Guest Room Energy Management Systems	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General and/or EMS Worksheet(s) <input type="checkbox"/>	MSD Prescriptive Heating & Cooling <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General and/or EMS Worksheet(s) <input type="checkbox"/>
Chillers & Thermal Storage	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Prescriptive Chillers & Thermal Storage <input type="checkbox"/>
			MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>
Motors & Pumps	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Prescriptive Motors, Pumps & Drives <input type="checkbox"/>
			MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>
VFDs	Not Applicable	MSD Prescriptive Motors, Pumps & Drives <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom VFD Worksheet <input type="checkbox"/>
		MSD Custom Part 1 <input type="checkbox"/> MSD Custom VFD Worksheet <input type="checkbox"/>	
Food Service	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Prescriptive Food Service <input type="checkbox"/>
			MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>
Process	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	MSD Prescriptive Process <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>
		MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>	
Energy Management Systems	MSD Custom Part 1 <input type="checkbox"/> MSD Custom EMS Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom EMS Worksheet <input type="checkbox"/>	MSD Custom Part 1 <input type="checkbox"/> MSD Custom EMS Worksheet <input type="checkbox"/>
Behavioral*** & No/Low Cost	MSD Custom Part 1 <input type="checkbox"/> MSD Custom General Worksheet <input type="checkbox"/>		

** 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	Cincinnati	State	OH	Zip Code	45219
Title					
Office Phone		Mobile Phone		Fax	
E-mail Address					

Equipment Vendor / Contractor / Architect / Engineer Contact Information					
Company Name	Plug Smart				
Address	1275 Kinnear Road Suite 229				
City	Columbus	State	OH	Zip Code	43085
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					

Payment Information					
Payee Legal Company Name (as shown on Federal income tax return):	Cincinnati Public Schools				
Mailing Address	2651 Burnett Ave				
City	Cincinnati	State	OH	Zip Code	45219
Type of organization (check one) <input type="checkbox"/> Individual/Sole Proprietor <input type="checkbox"/> Corporation <input type="checkbox"/> Partnership <input checked="" type="checkbox"/> Unit of Government <input type="checkbox"/> Non-Profit (non-corporation)					
Payee Federal Tax ID # of Legal Company Name Above:	31-6000758				
Who should receive incentive payment? (select one) <input checked="" type="checkbox"/> Customer <input type="checkbox"/> 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.
Addition of heal wheels to a new air handler, lighitng compliance check
- C. When did you start and complete implementation?
Start date / (mm/yyyy) End date / (mm/yyyy)
- D. Are you also applying for Self-Direct Prescriptive incentives and, if so, which one(s)¹?
Premium efficient motors, prescriptive occupancy sensors
- 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**



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 Don Elbe

Date 6-6-12

**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 ANY 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	<input checked="" type="checkbox"/> Completed the contact information for the Duke Energy customer? <input checked="" type="checkbox"/> 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	<input checked="" type="checkbox"/> Answered the questions A-E, including providing a description of your project. <input checked="" type="checkbox"/> Completed and attached the lighting, compressed air, VFD, EMS and/or General worksheet(s)?
3. Signature	<input checked="" type="checkbox"/> Signed your name? <input checked="" type="checkbox"/> Printed your name? <input checked="" type="checkbox"/> Entered the date?
Supplementary information (Required)	<input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> (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.

**Mercantile Self Direct
Nonresidential Custom Rebate Application
PART 1**



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.
- Incentive already 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.



For each project, answer the following questions (use one worksheet per project)

App No.	0
Rev.	0

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? (Required)

Operating Hours (see note 4)

24 x 7	Weekday		Saturday		Sunday		Weeks of Use in Year (see note 5)	Total Annual Hours of Use
	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	51,980 kWh	0 kWh	51,980 kWh	
Electric Demand	0 kW	0 kW	0 kW	
Calculations attached	Yes	Yes	(Required)	

Simple Payback

Average electric rate (\$/kWh) on the applicable accounts (see note 6)	\$0.10
Estimated annual electric savings	\$5,198
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)	\$16,000.00
Copy of vendor proposal is attached (see note 8)	Yes
Simple Electric Payback in years (see note 9)	3.078106964
Total Payback in years	3.078106964

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:

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?
<i>Example</i>	<i>Distribution Center</i>	<i>12345678 01</i>	<i>Example: 123 Main Street, Anywhere USA 12345</i>	<i>1000</i>	<i>Warehouse</i>	<i>Industrial</i>	<i>Indoor</i>
1	Hartwell	0250-2096-01	8320 Vine St Cincinnati OH 45216	70,209	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."



Project/ Site	Hours of Use (see note 3)								Controls (see note 5)				
	24 x 7	Weekday		Saturday		Sunday		Weeks of Use in Year (see note 4)	Total Annual Hours of Use	Existing		Proposed	Description
		Start Hour	End Hour	Start Hour	End Hour	Start Hour	End Hour			Type of Control	Hours Reduction	Type of Control	
<i>Example</i>	<i>No</i>	<i>8:00 AM</i>	<i>7:00 PM</i>	<i>10:00 AM</i>	<i>6:00 PM</i>	<i>1:00 PM</i>	<i>6:00 PM</i>	<i>52</i>	<i>3,536</i>	<i>None</i>	<i>0%</i>	<i>Occupancy</i>	<i>Applying for Prescriptive Incentive</i>
1	No	7:00:00 AM	3:00:00 PM					52	2,080	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 not being used for holiady or summer break, or spring break, due to school not being in session. Janitorial/Maintenance and some office work expected to continue, however.

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.



Project/ Site	Existing Fixture(s)								
	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)
<i>Example</i>	1995	High Pressure Sodium	Manufacturer	Model #	1		190	175	33
1	2010	Other (enter by typing)	Comcheck	Code Specs			84,250	1	84
2									
3									
4									
5									
6									
7									
8									
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									
20									

Application Total **1** **84**

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.



Project/ Site	Proposed Fixture(s)										Projected Savings			Incremental Project Cost \$ (see note 11)
	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)	
<i>Example</i>	<i>T8 Fluorescent</i>	<i>Manufacturer</i>	<i>Model #</i>	<i>5.0</i>	<i>1.0</i>	<i>78</i>	<i>225</i>	<i>18</i>		<i>0</i>		<i>55,515</i>	<i>\$1,265</i>	<i>\$29,215</i>
1	Comcheck	Proposed				76,366	1	76		0	8	16,399		\$108,964
2														
3														
4														
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														
16														
17														
18														
19														
20														

Application Total 1 76 8 16,399 \$0 \$108,964
 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.



Invoice Letter

Page 1 of 3

September 10, 2012

To whom it may concern:

This letter is to confirm for the **custom** rebate application, the lighting project and heat recovery wheels; and for the **prescriptive** rebate application, the occupancy sensors, premium efficiency motors, and a chiller were installed with a minimum unit cost listed below.

Building Name	Hartwell (New)
Building Code	427
Address 1	8320 Vine St
City Code	CINCINNATI
State Code	OH
Postal Code	45216

Custom Rebate Items	Quantity	Price/Fixture	Cost to Replace
427-LGHT-A1 - Prismatic Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	62	77.00	4,774.00
427-LGHT-A1X- Prismatic Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	6	175.00	1,050.00
427-LGHT-A2 - Prismatic Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	31	77.00	2,387.00
427-LGHT-A2X- Prismatic Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	6	175.00	1,050.00
427-LGHT-A31- Prismatic Lamp info: T8 32W 4100K 75 CRI (Min); qty 3	11	77.00	847.00
427-LGHT-B34- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 3	4	77.00	308.00
427-LGHT-B38- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 3	7	77.00	539.00
427-LGHT-C31- Parabolic Lamp: T8 32W 4100K 75 CRI (MIN); qty 3	15	77.00	1,155.00
427-LGHT-C32- Parabolic Master-Satellite Lamp:T8 32W 4100K, qty 3	24	77.00	1,848.00
427-LGHT-D5 - Wall Bracket Lamp: T8 32W 4100K 75 CRI (MIN); qty 2	12	77.00	924.00
427-LGHT-D5X- Wall Bracket Lamp: T8 32W 4100K 75 CRI (MIN); qty 2	1	175.00	175.00
427-LGHT-D7 - Wraparound Lamp: T8 32W 4100K 75 CRI (MIN); qty 2	15	77.00	1,155.00
427-LGHT-DA - Wall Mount Lamp: CFTR 42W 4100K 82 CRI; qty 2	8	77.00	616.00
427-LGHT-EX - Exit Sign - AC Only Lamp: LED; qty 1	53	77.00	4,081.00
427-LGHT-G3 - Prismatic Sealed Lamp T8 32W 4100K 75 CRI (MIN); qty 3	11	77.00	847.00
427-LGHT-G3X- Prismatic Sealed Lamp T8 32W 4100K 75 CRI (MIN); qty 3	2	175.00	350.00
427-LGHT-J31- Recessed Indirect Lamp: T8 32W 4100K 75 CRI (MIN)	42	77.00	3,234.00
427-LGHT-J32- Rec. Ind. Master-SAT, Lamp: T8 32W 4100K 75; qty 3	6	77.00	462.00
427-LGHT-K - Industrial Closed Lamp: T8 32W 4100K 75 CRI (MIN); qty 2	20	77.00	1,540.00
427-LGHT-K4 - Heavy Industrial Lamp: T8 32W 4100K 75 CRI (MIN);	18	77.00	1,386.00



Invoice Letter

Page 2 of 3

September 10, 2012

Custom Rebate Items	Quantity	Price/Fixture	Cost to Replace
qty 2			
427-LGHT-K4E- Heavy Industrial 120V Lamp: T8 32W 4100K; qty 2	2	77.00	154.00
427-LGHT-K4X- Heavy Industrial Lamp: T8 32W 4100K 75 CRI (MIN);	5	175.00	875.00
qty 2			
427-LGHT-K8 - Heavy Industrial Lamp: T8 32W 4100K 75 CRI (MIN);	26	77.00	2,002.00
qty 2			
427-LGHT-K8X- Heavy Industrial Lamp: T8 32W 4100K 75 CRI (MIN);	13	175.00	2,275.00
qty 2			
427-LGHT-KX - Industrial Closed Lamp: T8 32W 4100K 75 CRI (MIN);	1	175.00	175.00
qty 2			
427-LGHT-L14- Performance Cove Lamp: T8 32W 4100K 75 CRI (MIN);	12	77.00	924.00
qty 1			
427-LGHT-PS1- Decorative Pendant Lamp: CFL 50W 4100K 82 CRI; qty	25	77.00	1,925.00
8			
427-LGHT-PS2- Corner Mount Lamp: T8 32W 4100K 75 CRI (MIN); qty	18	77.00	1,386.00
2			
427-LGHT-PS3- Decorative Pendant Lamp: CFDT 26W 4100K 82 CRI;	9	77.00	693.00
qty 4			
427-LGHT-PS4- Decorative Sconce Lamp: Incandescent 60W; qty 1	6	77.00	462.00
427-LGHT-PS5- Track Lightning, Lamp: CFL 18W 4100K 82 CRI; qty 2	9	77.00	693.00
427-LGHT-S1 - Fluorescent Downlight, Lamp: CFTR 32W 4100K 82 CRI;	2	77.00	154.00
qty 1			
427-LGHT-S4 - Fluorescent Shower Light Lamp: CFTR 32W 4100K 82	3	77.00	231.00
CRI; qty 1			
427-LGHT-SL2- Wall Mounted Area Light Lamp: PSMH 150W E17 65	1	77.00	77.00
CRI; qty 1			
427-LGHT-SL3- Exterior Decorative Pendant Lamp: PSMH 100W 65	3	77.00	231.00
CRI; qty 1			
427-LGHT-SL4- Ext Decorative Bracket Mount Lamp: PSMH 70W 65	10	77.00	770.00
CRI; qty 1			
427-LGHT-Y1 - Attic light fixture	40	77.00	3,080.00
427-LGT-A31X- Prismatic Lamp info: T8 32W 4100K 75 CRI (Min); qty	5	175.00	875.00
3			
427-LGT-B24D- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min);	1	77.00	77.00
qty 2			
427-LGT-B28 - LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty	6	77.00	462.00
2			
427-LGT-B34D- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min);	17	77.00	1,309.00
qty 3			
427-LGT-B38D- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min);	116	77.00	8,932.00
qty 3			
427-LGT-B38X- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min);	2	175.00	350.00



Invoice Letter

Page 3 of 3
September 10, 2012

Custom Rebate Items	Quantity	Price/Fixture	Cost to Replace
qty 3 427-LGT-C31X- Parabolic Lamp: T8 32W 4100K 75 CRI (MIN); qty 3	6	175.00	1,050.00
427-LGT-J31X- Recessed Indirect Lamp: T8 32W 4100K 75 CRI (MIN)	41	175.00	7,175.00
427-LGT-PS1X- Decorative Pendant Lamp: CFL 50W 4100K 82 CRI; qty 8	6	175.00	1,050.00
427-LGT-X8-A- Fluorescent Highbay Lamp: CFTR 42W 4100K 82 CRI; qty 8	18	575.00	10,350.00
427-LGTB24DX- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	1	175.00	175.00
427-LGTB28D - LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	35	77.00	2,695.00
427-LGTB28DX- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 2	12	175.00	2,100.00
427-LGTB34DX- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 3	1	175.00	175.00
427-LGTB38DX- LF Pendant Lamp info: T8 32W 4100K 75 CRI (Min); qty 3	19	175.00	3,325.00
427-LGTX8-AX- Fluorescent Highbay Lamp: CFTR 42W 4100K 82 CRI; qty 8	5	575.00	2,875.00

Custom Rebate Items Total | 87,810.00

Prescriptive Rebate Items	Quantity	Price/Fixture	Cost to Replace
427-CH-1 - Water Cooled Screw Chiller - 175.3 Tons	1	150,000.00	150,000.00

Prescriptive Rebate Items Total | 150,000.00

Thank you for your attention to this matter,

Don Elbe
9-19-12

Report Prepared by GBBN Architects, on behalf of
Don Elbe
Utility Management Coordinator

Turner  **TYS**
Rebuilding Cincinnati Public Schools

October 29, 2010

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

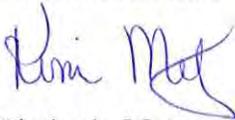
Dear Angie:

Attached are **Pay Applications** for the **Hartwell School**, please **process payment for the November 19, 2010 check distribution.**

Contractor	Application #	Monthly Billing	Total Billing To Date	Contract Amount to Date
BP#6B United	#17	\$ 32,219.60	\$ 1,646,161.40	\$1,681,770.50

Please call if you have any questions.

Sincerely,
TURNER/DAG/TYS



Kimberly Metz
Asst. Accountant

Attachments

cc: Vince Terry – Moody/Nolan
Darris Storms – Turner/DAG/TYS
File 0025 – 14591MF

T:PROJECTS/Hartwell/00250 Pay Application/2010-10-29 United Pay App. Ltr. Doc

APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER: HARTWELL ELEMENTARY SCHOOL

PROJECT:
HARTWELL ELEMENTARY
125 W. NORTH BEND ROAD
CINCINNATI OHIO 45206

APPLICATION No: 17
PERIOD TO: 9.30.2010
PROJECT NOS: Bid Package 6B
CONTRACT DATE:

FROM CONTRACTOR: UNITED ELECTRIC

VIA CONSTRUCTION MANAGER: TURNER/DAG

****when at 75% close out documents must be submitted**

ARCHITECT: MOODY NOLAN

CONTRACT FOR: BID PACKAGE 6B - ELECTRICAL/TECHNOLOGY

CONTRACTOR'S APPLICATION FOR PAYMENT

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 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.

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

1. ORIGINAL CONTRACT SUM.....\$	1,568,000.00
2. Net Change by Change Orders.....\$	113,770.50
3. CONTRACT SUM TO DATE.....\$	1,681,770.50
4. TOTAL COMPLETED & STORED TO DATE.....\$	1,646,161.40
5. RETAINAGE	
a. 8% Labor to 50% total Contract.....\$	31,462.40
b. 8% of Stored Material.....\$	0.00
Total Retainage.....\$	31,462.40
6. TOTAL EARNED LESS RETAINAGE.....\$	1,614,699.00
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....\$	1,582,479.40
8. CURRENT PAYMENT DUE.....\$	32,219.60
9. BALANCE TO FINISH, INCLUDING RETAINAGE.....\$	67,071.50

UNITED ELECTRIC CO., INC.

Thomas E. Mc...
Contractor

9.24.2010

Based upon on-site observations, the firm affirms that the work has progressed to the percentage of completeness indicated on the pay request.

Chas R. Pruch
Architect

10/28/10
Date

David Thomas
Construction Manager

9/30/10
Date

Approved:

School District Treasurer

Date

Change Order/Contract	ADDITIONS	DEDUCTIONS
Total Changes approved in Previous months by Owner	113770.50	
Total approved this month	0.00	
TOTALS	113770.50	0.00
NET CHANGES by Change Order	113770.50	

The Ohio School Facilities Commission
 88 East Broad Street
 Suite 1400
 Columbus, Ohio 43215

Contractor's Name:
 Address:

UNITED ELECTRIC CO., INC.
 1309 ETHAN AVENUE, CINCINNATI OHIO 45225

Contractor Pay Application Summary

Project Name:
Contract

HARTWELL ELEMENTARY
 BID PACKAGE 6B ELECTRICAL/TECHNOLOGY

1	Original Contract Amount	\$	1,568,000.00	
2	Net Changes to Date	\$	113,770.50	
3	Current Contract Amount	\$	1,681,770.50	
4	Labor Completed to Date	\$	763,245.90	
5	Material Completed to Date	\$	882,915.50	
6	Total Work Completed to Date	\$	1,646,161.40	
7	Store Material to Date	\$	0.00	0.00
8	Less Retained to Date	\$	31,462.40	
9	Total Amount Due	\$	1,614,699.00	
10	Less Previous Payments	\$	1,582,479.40	
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	\$	32,219.60	
15	Balance to Complete	\$	67,071.50	

OSFC approval required for the following contract adjustments:

1. Assessment of liquidated damages
2. Other amounts withheld

Ohio School Facilities Commission _____ Date _____

Comments:

PROJECT NAME: HARTWELL ELEM
 ARCHITECT: Moody Nolan
 CONSTRUCTION MANAGER: TURNER/DAG
 CONTRACTOR: UNITED ELECTRIC INC.

SUBMITTAL DATE: 9.24.10
 PAY APPLICATION NO: 17.00

ITEM NUMBER	DESCRIPTION OF WORK		SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED	TOTAL COMPLETED & STORED TO DATE		BALANCE TO FINISH	RETAINAGE
				PREVIOUS APPS.	THIS PERIOD		%			
HARTWELL ELEMENTARY SCHOOL										
1	BOND / PERMITS / INSURANCE	MATERIAL	30,000.00	30,000.00	0.00	0.00	30,000.00	100.00%	0.00	0.00
2	SUPERINTENDENT	LABOR	15,000.00	14,250.00	750.00	0.00	15,000.00	100.00%	0.00	0.00
3	MOBILIZATION	LABOR	5,000.00	5,000.00	0.00	0.00	5,000.00	100.00%	0.00	0.00
4	DE-MOBILIZATION	LABOR	3,500.00	0.00	1,750.00	0.00	1,750.00	50.00%	1,750.00	140.00
5	FINAL CLEANING	LABOR	1,000.00	0.00	700.00	0.00	700.00	70.00%	300.00	56.00
6	DAILY CLEANING	LABOR	10,000.00	8,500.00	1,000.00	0.00	9,500.00	95.00%	500.00	0.00
7	SAFETY	LABOR	5,500.00	4,950.00	550.00	0.00	5,500.00	100.00%	0.00	0.00
8	MEP CORDINATION	LABOR	10,000.00	10,000.00	0.00	0.00	10,000.00	100.00%	0.00	0.00
9	PROJECT CLOSEOUT	MATERIAL	25,000.00	10,000.00	2,500.00	0.00	12,500.00	50.00%	12,500.00	1,000.00
10	TEMPORARY	LABOR	25,000.00	25,000.00	0.00	0.00	25,000.00	100.00%	0.00	0.00
11	TRAINING / COMMISIONING	LABOR	2,500.00	0.00	0.00	0.00	0.00	0.00%	2,500.00	0.00
12	SUBMITTALS	LABOR	7,500.00	7,500.00	0.00	0.00	7,500.00	100.00%	0.00	0.00
13	PUNCH LIST	LABOR	10,000.00	0.00	2,500.00	0.00	2,500.00	25.00%	7,500.00	0.00
14	PROGRESS MEETINGS	LABOR	15,000.00	14,250.00	750.00	0.00	15,000.00	100.00%	0.00	0.00
15									0.00	0.00
16	LIGHTING CONDUIT BASEMENT FL.	LABOR	9,900.00	9,900.00	0.00	0.00	9,900.00	100.00%	0.00	0.00
17	LIGHTING CONDUIT BASEMENT FL.	MATERIAL	6,500.00	6,500.00	0.00	0.00	6,500.00	100.00%	0.00	0.00
18	LIGHTING WIRE BASEMENT FL.	LABOR	2,310.00	2,310.00	0.00	0.00	2,310.00	100.00%	0.00	0.00
19	LIGHTING WIRE BASEMENT FL.	MATERIAL	1,500.00	1,500.00	0.00	0.00	1,500.00	100.00%	0.00	0.00
20	LIGHTING FIXTURES BASEMENT FL.	LABOR	3,815.00	3,815.00	0.00	0.00	3,815.00	100.00%	0.00	0.00
21	LIGHTING FIXTURES BASEMENT FL.	MATERIAL	10,000.00	10,000.00	0.00	0.00	10,000.00	100.00%	0.00	0.00
22	LIGHTING DEVICES BASEMENT FL.	LABOR	420.00	420.00	0.00	0.00	420.00	100.00%	0.00	0.00
23	LIGHTING DEVICES BASEMENT FL.	MATERIAL	650.00	650.00	0.00	0.00	650.00	100.00%	0.00	0.00
24	LIGHTING CONDUIT 1ST FL.	LABOR	17,500.00	17,500.00	0.00	0.00	17,500.00	100.00%	0.00	0.00
25	LIGHTING CONDUIT 1ST FL.	MATERIAL	15,500.00	15,500.00	0.00	0.00	15,500.00	100.00%	0.00	0.00
26	LIGHTING WIRE 1ST FL.	LABOR	4,500.00	4,500.00	0.00	0.00	4,500.00	100.00%	0.00	0.00
27	LIGHTING WIRE 1ST FL.	MATERIAL	5,500.00	5,500.00	0.00	0.00	5,500.00	100.00%	0.00	0.00
28	LIGHTING FIXTURES 1ST FL.	LABOR	16,000.00	12,800.00	3,200.00	0.00	16,000.00	100.00%	0.00	0.00
29	LIGHTING FIXTURES 1ST FL.	MATERIAL	38,500.00	38,500.00	0.00	0.00	38,500.00	100.00%	0.00	0.00
30	LIGHTING DEVICES 1ST FL.	LABOR	5,000.00	5,000.00	0.00	0.00	5,000.00	100.00%	0.00	0.00
31	LIGHTING DEVICES 1ST FL.	MATERIAL	9,000.00	9,000.00	0.00	0.00	9,000.00	100.00%	0.00	0.00
32	LIGHTING CONDUIT 2ND FLOOR	LABOR	14,000.00	14,000.00	0.00	0.00	14,000.00	100.00%	0.00	0.00
33	LIGHTING CONDUIT 2ND FLOOR	MATERIAL	11,500.00	11,500.00	0.00	0.00	11,500.00	100.00%	0.00	0.00
34	LIGHTING WIRE 2ND FL.	LABOR	3,290.00	3,290.00	0.00	0.00	3,290.00	100.00%	0.00	263.20
35	LIGHTING WIRE 2ND FL.	MATERIAL	4,500.00	4,500.00	0.00	0.00	4,500.00	100.00%	0.00	0.00
36	LIGHTING FIXTURES 2ND FL.	LABOR	12,000.00	12,000.00	0.00	0.00	12,000.00	100.00%	0.00	960.00
37	LIGHTING FIXTURES 2ND FL.	MATERIAL	36,000.00	36,000.00	0.00	0.00	36,000.00	100.00%	0.00	0.00
38	LIGHTING DEVICES 2ND FL.	LABOR	5,500.00	5,500.00	0.00	0.00	5,500.00	100.00%	0.00	440.00
39	LIGHTING DEVICES 2ND FL.	MATERIAL	12,000.00	12,000.00	0.00	0.00	12,000.00	100.00%	0.00	0.00
40										
41	DEMOLITION BASEMENT	LABOR	18,500.00	18,500.00	0.00	0.00	18,500.00	100.00%	0.00	0.00
42	DEMOLITION 1ST FLOOR	LABOR	15,000.00	15,000.00	0.00	0.00	15,000.00	100.00%	0.00	0.00
43	DEMOLITION 2ND FLOOR	LABOR	15,000.00	15,000.00	0.00	0.00	15,000.00	100.00%	0.00	0.00
44									0.00	
45										
										0.00
		LABOR	252,735.00	228,985.00	11,200.00	0.00	240,185.00	95.03%	12,550.00	10,109.40
		MATERIAL	206,150.00	191,150.00	2,500.00	0.00	193,650.00	93.94%	12,500.00	0.00
	HARTWELL ELEMENTARY		458,885.00	420,135.00	13,700.00	0.00	433,835.00	94.54%	25,050.00	10,109.40

GRAND TOTAL

GRAND TOTAL

PROJECT NAME: HARTWELL ELEM
 ARCHITECT: Moody Nolan
 CONSTRUCTION MANAGER: TURNER/DAG
 CONTRACTOR: UNITED ELECTRIC INC.

0.00

SUBMITTAL DATE: 9.24.10
 PAY APPLICATION NUMBER: 17.00

ITEM NUMBER	DESCRIPTION OF WORK		SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED	TOTAL COMPLETED & STORED TO DATE		BALANCE TO FINISH	RETAINAGE
				PREVIOUS APPS.	THIS PERIOD		%			
HARTWELL ELEMENTARY										
LIGHTING CONT.										
1	LIGHTING CONDUIT GYM ADDITION	LABOR	6,500.00	6,500.00	0.00	0.00	6,500.00	100.00%	0.00	0.00
2	LIGHTING CONDUIT GYM ADDITION	MATERIAL	4,500.00	4,500.00	0.00	0.00	4,500.00	100.00%	0.00	0.00
3	LIGHTING WIRE GYM ADDITON	LABOR	800.00	800.00	0.00	0.00	800.00	100.00%	0.00	64.00
4	LIGHTING WIRE GYM ADDITON	MATERIAL	400.00	400.00	0.00	0.00	400.00	100.00%	0.00	0.00
5	LIGHTING FIXTRES GYM ADDITION	LABOR	6,000.00	6,000.00	0.00	0.00	6,000.00	100.00%	0.00	480.00
6	LIGHTING FIXTRES GYM ADDITION	MATERIAL	3,500.00	3,500.00	0.00	0.00	3,500.00	100.00%	0.00	0.00
7	LIGHTING DEVICES GYM ADDITION	LABOR	2,000.00	1,500.00	500.00	0.00	1,500.00	75.00%	500.00	0.00
8	LIGHTING DEVICES GYM ADDITION	MATERIAL	2,300.00	2,300.00	0.00	0.00	2,300.00	100.00%	0.00	0.00
BRANCH POWER										
17	POWER CONDUIT BASEMENT	LABOR	12,000.00	12,000.00	0.00	0.00	12,000.00	100.00%	0.00	0.00
18	POWER CONDUIT BASEMENT	MATERIAL	8,500.00	8,500.00	0.00	0.00	8,500.00	100.00%	0.00	0.00
19	POWER WIRE BASEMENT	LABOR	3,500.00	3,500.00	0.00	0.00	3,500.00	100.00%	0.00	0.00
20	POWER WIRE BASEMENT	MATERIAL	1,100.00	1,100.00	0.00	0.00	1,100.00	100.00%	0.00	0.00
21	POWER DEVICES BASEMENT	LABOR	420.00	420.00	0.00	0.00	420.00	100.00%	0.00	0.00
22	POWER DEVICES BASEMENT	MATERIAL	350.00	350.00	0.00	0.00	350.00	100.00%	0.00	0.00
23	POWER CONDUIT 1ST FL.	LABOR	28,000.00	28,000.00	0.00	0.00	28,000.00	100.00%	0.00	0.00
24	POWER CONDUIT 1ST FL.	MATERIAL	20,000.00	20,000.00	0.00	0.00	20,000.00	100.00%	0.00	0.00
25	POWER WIRE 1ST FL.	LABOR	12,000.00	12,000.00	0.00	0.00	12,000.00	100.00%	0.00	0.00
26	POWER WIRE 1ST FL.	MATERIAL	8,500.00	8,500.00	0.00	0.00	8,500.00	100.00%	0.00	0.00
27	POWER DEVICES 1ST FL.	LABOR	2,870.00	2,296.00	574.00	0.00	2,870.00	100.00%	0.00	0.00
28	POWER DEVICES 1ST FL.	MATERIAL	1,918.00	1,918.00	0.00	0.00	1,918.00	100.00%	0.00	0.00
29	POWER CONDUIT 2ND FL.	LABOR	26,500.00	26,500.00	0.00	0.00	26,500.00	100.00%	0.00	0.00
30	POWER CONDUIT 2ND FL.	MATERIAL	20,000.00	20,000.00	0.00	0.00	20,000.00	100.00%	0.00	0.00
31	POWER WIRE AREA 2ND FL.	LABOR	10,000.00	10,000.00	0.00	0.00	10,000.00	100.00%	0.00	0.00
32	POWER WIRE 2ND FL.	MATERIAL	8,500.00	8,500.00	0.00	0.00	8,500.00	100.00%	0.00	0.00
33	POWER DEVICES 2ND FL.	LABOR	1,575.00	1,575.00	0.00	0.00	1,575.00	100.00%	0.00	0.00
34	POWER DEVICES 2ND FL.	MATERIAL	1,400.00	1,400.00	0.00	0.00	1,400.00	100.00%	0.00	0.00
		LABOR	112,165.00	111,091.00	1,074.00	0.00	111,665.00	99.55%	500.00	4,486.60
		MATERIAL	80,968.00	80,968.00	0.00	0.00	80,968.00	100.00%	0.00	0.00
	HARTWELL		193,133.00	192,059.00	1,074.00	0.00	192,633.00	99.74%	500.00	4,486.60
GRAND TOTAL JOB										

PROJECT NAME: HARTWELL ELEM
 ARCHITECT: Moody Nolan
 CONSTRUCTION MANAGER: TURNER/DAG
 CONTRACTOR: UNITED ELECTRIC INC.

SUBMITTAL DATE: 9.24.2010
 PAY APPLICATION NUMBER: 17.00

ITEM NUMBER	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED	TOTAL COMPLETED & STORED TO DATE	%	BALANCE TO FINISH	RETAINAGE
			PREVIOUS APPS.	THIS PERIOD					
HARTWELL ELEM SCHOOL									
1									
2									
3	TELE/ DATA CONDUIT LABOR	LABOR 13,500.00	13,500.00	0.00	0.00	13,500.00	100.00%	0.00	0.00
4	TELE/ DATA CONDUIT MATERIAL	MATERIAL 9,500.00	9,500.00	0.00	0.00	9,500.00	100.00%	0.00	0.00
5	HORIZONTAL CABLING LABOR	LABOR 40,000.00	40,000.00	0.00	0.00	40,000.00	100.00%	0.00	0.00
6	HORIZONTAL CABLING MATERIAL	MATERIAL 60,675.00	60,675.00	0.00	0.00	60,675.00	100.00%	0.00	0.00
7	FIBER / COPPER BACKBONE LABOR	LABOR 3,000.00	3,000.00	0.00	0.00	3,000.00	100.00%	0.00	0.00
8	FIBER / COPPER BACKBONE MATERIAL	MATERIAL 5,000.00	5,000.00	0.00	0.00	5,000.00	100.00%	0.00	0.00
9	AV CONDUIT LABOR	LABOR 14,000.00	14,000.00	0.00	0.00	14,000.00	100.00%	0.00	0.00
10	AV CONDUIT MATERIAL	MATERIAL 11,000.00	11,000.00	0.00	0.00	11,000.00	100.00%	0.00	0.00
11	CLASSROOM SOUND LABOR	LABOR 14,740.00	12,529.00	737.00	0.00	13,266.00	90.00%	1,474.00	0.00
12	CLASSROOM SOUND MATERIAL	MATERIAL 19,945.00	16,953.25	997.25	0.00	17,950.50	90.00%	1,994.50	0.00
13	A/V LABOR	LABOR 5,960.00	2,384.00	2,682.00	0.00	5,066.00	85.00%	894.00	0.00
14	A/V MATERIAL	MATERIAL 61,000.00	61,000.00	0.00	0.00	61,000.00	100.00%	0.00	0.00
15	CCTV CONDUIT LABOR	LABOR 10,500.00	10,500.00	0.00	0.00	10,500.00	100.00%	0.00	0.00
16	CCTV CONDUIT MATERIAL	MATERIAL 8,500.00	8,500.00	0.00	0.00	8,500.00	100.00%	0.00	0.00
17	CCTV CABLING/EQUIPMENT LABOR	LABOR 28,094.00	22,475.20	4,214.10	0.00	26,689.30	95.00%	1,404.70	0.00
18	CCTV CABLING/EQUIPMENT MATERIAL	MATERIAL 56,000.00	56,000.00	0.00	0.00	56,000.00	100.00%	0.00	0.00
19	ACCESS CONTROL CONDUIT LABOR	LABOR 7,500.00	7,500.00	0.00	0.00	7,500.00	100.00%	0.00	0.00
20	ACCESS CONTROL CONDUIT MATERIAL	MATERIAL 5,500.00	5,500.00	0.00	0.00	5,500.00	100.00%	0.00	0.00
21	ACCESS CONTROL CABLING/EQUIP. LABOR	LABOR 18,482.00	14,785.60	1,848.20	0.00	16,633.80	90.00%	1,848.20	0.00
22	ACCESS CONTROL CABLING/EQUIP. MATERIAL	MATERIAL 11,602.00	11,602.00	0.00	0.00	11,602.00	100.00%	0.00	0.00
23	PAGING CONDUIT LABOR	LABOR 5,500.00	5,500.00	0.00	0.00	5,500.00	100.00%	0.00	0.00
24	PAGING CONDUIT MATERIAL	MATERIAL 4,000.00	4,000.00	0.00	0.00	4,000.00	100.00%	0.00	0.00
25	PAGING CABLING/EQUIP. LABOR	LABOR 18,817.00	14,112.75	2,822.55	0.00	16,935.30	90.00%	1,881.70	0.00
26	PAGING CABLING/EQUIP. MATERIAL	MATERIAL 18,225.00	18,225.00	0.00	0.00	18,225.00	100.00%	0.00	0.00
27	NETWORK ELECTRONICS LABOR	LABOR 1,205.00	602.50	602.50	0.00	1,205.00	100.00%	0.00	0.00
28	NETWORK ELECTRONICS MATERIAL	MATERIAL 68,700.00	68,700.00	0.00	0.00	68,700.00	100.00%	0.00	0.00
29	EQUIPMENT ROOM BULD. LABOR	LABOR 2,000.00	1,000.00	800.00	0.00	1,800.00	90.00%	200.00	0.00
30	EQUIPMENT ROOM BULD. MATERIAL	MATERIAL 10,000.00	10,000.00	0.00	0.00	10,000.00	100.00%	0.00	0.00
31	GYM A/V CONDUIT LABOR	LABOR 2,500.00	2,500.00	0.00	0.00	2,500.00	100.00%	0.00	0.00
32	GYM A/V CONDUIT MATERIAL	MATERIAL 2,000.00	2,000.00	0.00	0.00	2,000.00	100.00%	0.00	0.00
33	GYM A/V CABLING EQUIP. LABOR	LABOR 6,295.00	3,147.50	2,518.00	0.00	5,665.50	90.00%	629.50	0.00
34	GYM A/V CABLING EQUIP. MATERIAL	MATERIAL 25,964.00	25,964.00	0.00	0.00	25,964.00	100.00%	0.00	0.00
35	BATTERY CLOCK LABOR	LABOR 2,432.00	0.00	0.00	0.00	0.00	0.00%	2,432.00	0.00
36	BATTERY CLOCK MATERIAL	MATERIAL 3,864.00	3,864.00	0.00	0.00	3,864.00	100.00%	0.00	0.00
37									0.00
38									0.00
39	ALLOWANCE	LABOR 5,000.00	5,000.00	0.00	0.00	5,000.00	100.00%	0.00	0.00
40	ALLOWANCE	MATERIAL 5,000.00	5,000.00	0.00	0.00	5,000.00	100.00%	0.00	0.00
42	change order 001 FWO 113	LABOR 2,462.50	2,462.50	0.00	0.00	2,462.50	100.00%	0.00	0.00
43	change order 001 FWO 113	MATERIAL 2,462.50	2,462.50	0.00	0.00	2,462.50	100.00%	0.00	0.00
44	change order 002 BP 06 - PCO 066 Items 1 & 2 labor	LABOR 8,513.50	8,513.50	0.00	0.00	8,513.50	100.00%	0.00	0.00
45	change order 002 BP 06 - PCO 066 Items 1 & 2 mat	MATERIAL 8,513.50	8,513.50	0.00	0.00	8,513.50	100.00%	0.00	0.00
46	change order 003 COP 12 and 23	LABOR 1,878.00	1,878.00	0.00	0.00	1,878.00	100.00%	0.00	0.00
47	change order 003 COP 12 and 23	MATERIAL 1,878.00	1,878.00	0.00	0.00	1,878.00	100.00%	0.00	0.00
48	change order 004 PCO 158	LABOR 4,239.50	4,239.50	0.00	0.00	4,239.50	100.00%	0.00	0.00
49	change order 004 PCO 158	MATERIAL 4,239.50	4,239.50	0.00	0.00	4,239.50	100.00%	0.00	0.00
50	change order 005 PCO 227	LABOR 2,379.50	2,379.50	0.00	0.00	2,379.50	100.00%	0.00	0.00
51	change order 005 PCO 227	MATERIAL 2,379.50	2,379.50	0.00	0.00	2,379.50	100.00%	0.00	0.00
52	change order 006 PCO 203, 205	LABOR 3,481.00	3,481.00	0.00	0.00	3,481.00	100.00%	0.00	0.00
53	change order 006 PCO 203, 205	MATERIAL 3,481.00	3,481.00	0.00	0.00	3,481.00	100.00%	0.00	0.00
54	change order 007 PCO 220	LABOR 1,102.00	1,102.00	0.00	0.00	1,102.00	100.00%	0.00	0.00
55	change order 007 PCO 220	MATERIAL 1,102.00	1,102.00	0.00	0.00	1,102.00	100.00%	0.00	0.00
56	change order 008 PCO 243	LABOR 1,493.50	1,493.50	0.00	0.00	1,493.50	100.00%	0.00	0.00
57	change order 008 PCO 243	MATERIAL 1,493.50	1,493.50	0.00	0.00	1,493.50	100.00%	0.00	0.00
58	change order 009 PCO 135, 237	LABOR 709.50	709.50	0.00	0.00	709.50	100.00%	0.00	0.00
59	change order 009 PCO 135, 237	MATERIAL 709.50	709.50	0.00	0.00	709.50	100.00%	0.00	0.00



Ohio School Facilities Commission
 88 East Broad Street, Suite 1400
 Columbus, OH 43215

Project / Contract #: -- Contract Name

Certification of Material Stored Off Site

Line Item Reference	Invoice #	Pay Request #	Material Supplier	Description	Previous Amount	New Materials Stored (Add)	Mat. Installed This Period (Deduct)	Total Materials Stored off site
		8	Structured Cabling	Horizonatl Cabling Mat'l	\$6,067.50	\$0.00		\$0.00
		8	Structured Cabling	Fiber Copper Backbone m	\$1,500.00	\$0.00		\$0.00
		8	Structured Cabling	Classroom Sound mat'l	\$9,972.50	\$0.00		\$0.00
		8	Structured Cabling	A/V Material	\$30,500.00	\$0.00		\$0.00
		8	Structured Cabling	CCTV Cabling Equip Mat	\$22,400.00	\$0.00		\$0.00
		8	Structured Cabling	Access Ctrl Conduit mat'l	\$1,100.00	\$0.00		\$0.00
		8	Structured Cablin	Paging Cabling equip/mat	\$1,822.50	\$0.00		\$0.00
		9	Structured Cablin	Tele Data conduit mat	\$2,375.00	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	horz. Cabling mat'l	\$45,506.25	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	Fiber Copper Backbone m	\$3,000.00	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	A/V Conduit material	\$4,400.00	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	CCTV Conduit mat'l	\$3,400.00	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	Access Ctrl Conduit mat'l	\$2,750.00	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	paging conduit mat'l	\$1,000.00	\$0.00	\$0.00	\$0.00
		9	Structured Cablin	Gym A/V conduit mat'l	\$800.00	\$0.00	\$0.00	\$0.00
		10	Structured Cablin	Classroom Sound mat'l	\$398.90	\$0.00	\$0.00	\$0.00
		10	Structured Cablin	A/V Material	\$1,220.00	\$0.00	\$0.00	\$0.00
		10	Structured Cablin	CCTV Cabling Equip Mat	\$1,120.00	\$0.00	\$0.00	\$0.00
		10	Structured Cablin	Paging, cabling equip mat	\$911.25	\$0.00	\$0.00	\$0.00
		11	Structured Cablin	Access Ctrl Cabling/Equip	\$6,961.20	\$0.00	\$0.00	\$0.00
		11	Structured Cablin	Paging/cabling equip mat	\$10,935.00	\$0.00	\$0.00	\$0.00
		11	Structured Cablin	Network electronics mat'l	\$68,700.00	\$0.00	\$0.00	\$0.00
		11	Structured Cablin	Equip Rm bldg mat'l	\$9,000.00	\$0.00	\$0.00	\$0.00
		12	Structured Cablin	Classroom Sound mat'l	\$997.25	\$0.00	\$0.00	\$0.00
		12	Structured Cablin	A/V Material	\$3,050.00	\$0.00	\$0.00	\$0.00
		12	Structued Cabling	CCTV Cabling Equip Mat	\$1,680.00	\$0.00	\$0.00	\$0.00

Total \$0.00
 Less 8% Retainage \$0.00
Total Stored at Site \$0.00

The undersigned have visited, reviewed, and approved the place for storage of the fabricated materials for which the Contractor is requesting payment. The fabricated materials are in conformity with the Specifications and have been tagged with the Project name and number for delivery to the Project.

UNITED ELECTRIC CO., INC.
Thomas B. [Signature] 09/24/10
 Contractor

Approved:

Architect	Date

State of Ohio,
 County of Hamilton, Ohio 9.24 2010
THOMAS G. MURRAY, being first duly sworn, says that (s)he is (1) ACCOUNTING
 of (2) UNITED ELECTRIC CO., INC.
 contractor having a contract with (2) CPS FACILITIES/OHIO SCHOOL COMMISSION
 the (3) OWNER for (4) _____
 a SCHOOL situated on or around or in front of the following property,
 (5) in Hamilton County, Ohio, viz: HARTWELL ELEMENTARY SCHOOL
LOCATED AT 125 W. NORTH BEND ROAD, CINCINNATI OHIO 45216
 whereof (2) CPS FACILITIES/OHIO SCHOOL BD. COMMISSION was the Onwer, Part-Owner or Lessee:

SUB-CONTRACTORS

Affiant further says that the following shows the names and adresses of every sub-contractor in the employ of said
 (2) _____ giving the amount, if any, which is due, or about to become due, to them, or any
 of them, for work done, or machinery, material or fuel furnished to date hereof, under said contracts.

NOTE: This statement must be accompanied by a similar sworn statement signed by each of the subcontractors listed below.

NAME	ADDRESS	TRADE	AMOUNT
			\$0.00

MATERIAL MEN

Said affiant further says that the following shows the names and addresses of every person furnishing machinery,
 material or fuel to (2) _____ giving the amount, if any, which is due, or to become due, to
 them, or to any of them, for machinery, material or fuel furnished to date hereof, under the said contracts.

NAME	ADDRESS	TRADE	AMOUNT
F.D. LAWRENCE			\$3,676.30
ELEX INC.			\$1,167.03
WESCO DISTRIBUTION			\$529.71
			-
			-
			-
			-
			-

NOTE: The above must be accompanied by "Certificate of Materialman" in lieu of such certificates, there may be furnished a Waiver of Lien, a written release or receipt.

LABOR

Said affiant further says that the following shows the names and addresses of every unpaid laborer in the employ of (2) _____ furnishing labor under said 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 laborer has been paid in full." If not, then give each unpaid laborer's name and address and the amount due or to become due.

NAME	ADDRESS	HOURS	AMOUNT DUE
ALL LABORERS HAVE BEEN PAID IN FULL.			

Affiant further states that there is due or to become due to _____ for work performed or machinery or fuel furnished to _____ CPS FACILITIES/OHIO SCHOOL BOARD COMMISSION to date hereof under said contract, the sum of \$ 32,219.60 (Owner or Contractor)

That the amounts due or to become due to said sub-contractors, material men and laborers, for work done or machinery, material or fuel furnished to the date hereof to (2) UNITED ELECTRIC CO., INC. are fully and correctly set forth opposite their names, respectively, in the aforesaid statements, and further evidenced by certificates of every person furnishing machinery, material or fuel, hereto attached, and made a part hereof.

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 mentioned, and owes no labor performed, or machinery, material or fuel furnished, under said contracts, other than above set forth.

Thomas G. Munn

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



Daniel Leesman
Notary Public, State of Ohio
My Commission Expires 04-08-2014

Thomas G. Munn

NOTARY PUBLIC, HAMILTON COUNTY, OHIO

- | | |
|--|---|
| <ol style="list-style-type: none"> 1. Secy., Treas, one of them or agent, as cause may be 2. Name and address 3. "Owner," "Part Owner," or "Lessee," or "authorized agent of the owner, part owner or lessee," or "original" or "principal contractor under a contract with the owner, part owner or lessee," as the case may be. | <ol style="list-style-type: none"> 4. "Constructing, altering or repairing a boat, vessel or other watercraft," or "erecting, altering repairing or removing a house, mill, manufactory or any furnace, or furnace material therein, or other building appurtenance, fixture, bridge or other structure," or "digging," "drilling, broing, operating, completing and repairing any gas well, oil well, or other well," or "altering, repairing or constructing any oil derrick, oil tank, oil or gas pipe line," or "furnishing tile for the drainage of any lot or land," as the case may be. 5. Accurate description of property 6. Contractor or subcontractor executing affidavit. |
|--|---|

AFFIDAVIT OF

ORIGINAL OR SUB-CONTRACTOR

OWNER: CPS FACILITIES/OHIO SCHOOL BD. COMMISSION
 HEAD CONTRACTOR: UNITED ELECTRIC CO., INC.
 SUB-CONTRACTOR: _____
 DATE: _____

Statement of Compliance

Date: SEPTEMBER 24, 2010

Contract Number: BID PACKAGE 6B

9-19

I, TOM MURRAY, PAYROLL DEPARTMENT do hereby state:

(1) That I pay or supervise the payment of the persons employed by United Electric Co., Inc. on the HARTWELL ELEMENTARY, that during the payroll period commencing on the 13 day of SEPTEMBER, 2010 and ending the 19 day of SEPTEMBER, 2010, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said United Electric Co., Inc. from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

() In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

() Each laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (Craft)	EXPLANATION
REMARKS	
NAME AND TITLE TOM MURRAY, PAYROLL DEPARTMENT	SIGNATURE 
The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.	

United Electric Co., Inc.
4333 Robards Lane

Louisville, KY 40218
502 459-5242

Pay Period Date: 09/19/10
Week Ending: 09/19/10
Payroll No: 75

Certified Payroll Report

Contract #: BID PACKAGE 6B
Job No: 09-16024
Job Name: HARTWELL ELEMENTARY

Employee	# Exemptions Social Security Work Class	Hours							Total	Rate	Other Job Pay Job Gross Total Gross	FICA Fed W/H State	Local Union Oth Ded	Tot Ded Benefits Net Chk	
		MON 13	TUE 14	WED 15	THU 16	FRI 17	SAT 18	SUN 19							
RATZ, JOSEPH MICHAEL	Ex: S-01 C M O ***_**_4824 S 49% APPRENTICE	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 0.00	0.00 40.00	0.00 13.84	0.00 553.60 553.60	42.36 50.85 18.17	11.63 31.70 25.00	179.71 0.00 373.89	
													Check #:	181205	
REDDING, RAMON D	Ex: S-01 B M O ***_**_2885 S 58% PERCENT	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 0.00	0.00 40.00	0.00 15.14	0.00 605.60 605.60	46.32 58.65 15.82	12.72 34.30 0.00	167.81 0.00 437.79	
													0.00	Check #:	181206
SCHRAND, RAYMOND PIERCE,	Ex: M-00 C M O ***_**_2014 S JOURNEYMAN 1ST SHIFT	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 0.00	0.00 40.00	0.00 28.72	0.00 1,148.80 1,148.80	87.88 122.32 37.92	24.12 61.45 0.00	333.69 0.00 815.11	
													0.00	Check #:	181214

Statement of Compliance

Date: SEPTEMBER 8, 2010

Contract Number: BID PACKAGE 6B

I, TOM MURRAY, PAYROLL DEPARTMENT do hereby state:

(1) That I pay or supervise the payment of the persons employed by United Electric Co., Inc. on the HARTWELL ELEMENTARY, that during the payroll period commencing on the 16 day of AUGUST, 2010 and ending the 22 day of AUGUST, 2010, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said United Electric Co., Inc. from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

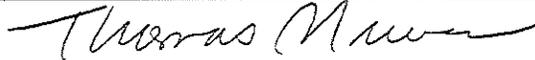
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

() In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

() Each laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (Craft)	EXPLANATION
REMARKS	
NAME AND TITLE TOM MURRAY, PAYROLL DEPARTMENT	SIGNATURE 
The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.	

United Electric Co., Inc.
 4333 Robards Lane
 Louisville, KY 40218
 502 459-5242

Pay Period Date: 08/22/10
 Week Ending:
 Payroll No:

Certified Payroll Report

Contract #: BID PACKAGE 6B
 Job No: 09-16024
 Job Name: HARTWELL ELEMENTARY

Employee	# Exemptions Social Security Work Class	Hours							Total	Rate	Other Job Pay Job Gross Total Gross	FICA Fed W/H State	Local Union Oth Ded	Tot Ded Benefits Net Chk
		MON 16	TUE 17	WED 18	THU 19	FRI 20	SAT 21	SUN 22						
HOWELL, MARCIA R	Ex: S-02 B F O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	44.47	12.21	222.20
	***-**-4929 S	0.00	8.00	6.50	8.00	8.00	0.00	0.00	30.50	19.06	581.33	44.48	32.11	0.00
	53% W/COPE - 4TH YEA										581.33	13.93	75.00	359.13
													Check #:	180457
LOCKARD, JAY H	Ex: M-04 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	47.95	13.16	200.09
	***-**-7147 S	0.00	0.00	8.00	8.00	8.00	0.00	0.00	24.00	26.11	626.64	8.14	82.65	0.00
	JOURNEYMAN 1ST SHIFT										626.64	15.19	33.00	426.55
													Check #:	180465
MILLER, MICHAEL J	Ex: M-04 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.90	21.93	338.03
	***-**-9249 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	26.11	1,044.40	64.54	139.75	0.00
	JOURNEYMAN										1,044.40	31.91	0.00	706.37
													Check #:	180469
RATZ, JOSEPH MICHAEL	Ex: S-01 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.35	11.63	179.70
	***-**-4824 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	13.84	553.60	50.85	31.70	0.00
	49% APPRENTICE										553.60	18.17	25.00	373.90
													Check #:	180474
REDDING, RAMON D	Ex: S-01 B M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.32	12.72	167.81
	***-**-2885 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	15.14	605.60	58.65	34.30	0.00
	58% PERCENT										605.60	15.82	0.00	437.79
													Check #:	180475
SCHRAND, RAYMOND PIERCE, JR	Ex: M-00 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.89	24.12	324.71
	***-**-2014 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	28.72	1,148.80	122.32	61.45	0.00
	JOURNEYMAN 1ST SHIFT										1,148.80	37.92	-8.99	824.09
													Check #:	180484

Statement of Compliance

Date: SEPTEMBER 9, 2010

Contract Number: BID PACKAGE 6B

I, TOM MURRAY, PAYROLL DEPARTMENT do hereby state:

(1) That I pay or supervise the payment of the persons employed by United Electric Co., Inc. on the HARTWELL ELEMENTARY, that during the payroll period commencing on the 23 day of AUGUST, 2010 and ending the 29 day of AUGUST, 2010, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said United Electric Co., Inc. from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

- (4) That:
- (a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS
 - () In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4(c) below.
 - (b) WHERE FRINGE BENEFITS ARE PAID IN CASH
 - () Each laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (Craft)	EXPLANATION
REMARKS	
NAME AND TITLE TOM MURRAY, PAYROLL DEPARTMENT	SIGNATURE 
The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.	

United Electric Co., Inc.
4333 Robards Lane

Pay Period Date:
Week Ending: 08/29/10
Payroll No:

Certified Payroll Report

Contract #: BID PACKAGE 6B
Job No: 09-16024
Job Name: HARTWELL ELEMENTARY

Louisville, KY 40218
502 459-5242

Employee	# Exemptions Social Security Work Class	Hours							Total	Rate	Other Job Pay Job Gross Total Gross	FICA Fed W/H State	Local Union Oth Ded	Tot Ded Benefits Net Chk
		MON 23	TUE 24	WED 25	THU 26	FRI 27	SAT 28	SUN 29						
HOWELL, MARCIA R	Ex: S-02 B F O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	58.32	16.01	283.94
	***-**-4929 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	19.06	762.40	71.64	42.10	0.00
	53% W/COPE - 4TH YEA											762.40	20.87	75.00
													Check #:	180655
MAINS, JASON EARL	Ex: S-00 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	42.36	11.63	173.30
	***-**-7668 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	13.84	553.60	61.38	31.70	0.00
	40% APP W/COPE										553.60	26.23	0.00	380.30
													Check #:	180664
MILLER, MICHAEL J	Ex: M-04 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	79.89	21.93	338.02
	***-**-9249 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	26.11	1,044.40	64.54	139.75	0.00
	JOURNEYMAN										1,044.40	31.91	0.00	706.38
													Check #:	180667
RATZ, JOSEPH MICHAEL	Ex: S-01 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	39.18	10.75	165.63
	***-**-4824 S	8.00	8.00	8.00	8.00	5.00	0.00	0.00	37.00	13.84	512.08	44.62	29.32	0.00
	49% APPRENTICE										512.08	16.76	25.00	346.45
													Check #:	180672
REDDING, RAMON D	Ex: S-01 B M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	46.33	12.72	167.82
	***-**-2885 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	15.14	605.60	58.65	34.30	0.00
	58% PERCENT										605.60	15.82	0.00	437.78
													Check #:	180673
REED, MARK DELBERT	Ex: M-00 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	63.91	17.55	468.64
	***-**-0941 S	0.00	8.00	8.00	8.00	8.00	0.00	0.00	32.00	26.11	835.52	75.33	111.80	0.00
	JOURNEYMAN										835.52	25.05	175.00	366.88
													Check #:	180674
SCHRAND, RAYMOND PIERCE, JR	Ex: M-00 C M O	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	87.88	24.12	333.69
	***-**-2014 S	8.00	8.00	8.00	8.00	8.00	0.00	0.00	40.00	28.72	1,148.80	122.32	61.45	0.00
	JOURNEYMAN 1ST SHIFT										1,148.80	37.92	0.00	815.11
													Check #:	180682

Statement of Compliance

Date: SEPTEMBER 15, 2010

Contract Number: BID PACKAGE 6B

I, TOM MURRAY, PAYROLL DEPARTMENT do hereby state:

(1) That I pay or supervise the payment of the persons employed by United Electric Co., Inc. on the HARTWELL ELEMENTARY, that during the payroll period commencing on the 30 day of AUGUST, 2010 and ending the 5 day of SEPTEMBER, 2010, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said United Electric Co., Inc. from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work to be performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

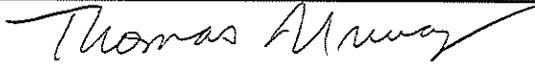
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

() In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

() Each laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CmR)	EXPLANATION
REMARKS	
NAME AND TITLE TOM MURRAY, PAYROLL DEPARTMENT	SIGNATURE 
The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.	

United Electric Co., Inc.
4333 Robards Lane

Pay Period Date:
Week Ending: 09/05/10
Payroll No:

Certified Payroll Report

Contract #: BID PACKAGE 6B
Job No: 09-16024
Job Name: HARTWELL ELEMENTARY

Louisville, KY 40218
502 459-5242

Employee	# Exemptions Social Security Work Class	Hours							Total	Rate	Other Job Pay Job Gross Total Gross	FICA Fed W/H State	Local Union Oth Ded	Tot Ded Benefits Net Chk
		MON 30	TUE 31	WED 01	THU 02	FRI 03	SAT 04	SUN 05						
HOWELL, MARCIA R	Ex: S-02 B F O ***-**-4929 S 53% W/COPE - 4TH YEA	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 40.00	0.00 19.06	0.00 762.40 762.40	58.33 71.64 20.87	16.01 42.10 75.00	283.95 0.00 478.45	
												Check #:	180827	
LAYMON, WILLIAM EDWARD	Ex: M-04 C M O ***-**-6765 S JOURNEYMAN 1ST SHIFT	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 0.00	0.00 32.00	0.00 28.72	0.00 919.04 919.04	70.31 45.74 27.65	19.30 122.68 75.00	360.68 0.00 558.36	
													Check #:	180833
MAINS, JASON EARL	Ex: S-00 C M O ***-**-7668 S 40% APP W/COPE	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 40.00	0.00 13.84	0.00 553.60 553.60	42.34 61.38 26.23	11.63 31.70 0.00	173.28 0.00 380.32	
													Check #:	180836
MILLER, MICHAEL J	Ex: M-04 C M O ***-**-9249 S JOURNEYMAN	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 40.00	0.00 26.11	0.00 1,044.40 1,044.40	79.90 64.54 31.91	21.93 139.75 0.00	338.03 0.00 706.37	
													Check #:	180839
RATZ, JOSEPH MICHAEL	Ex: S-01 C M O ***-**-4824 S 49% APPRENTICE	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 40.00	0.00 13.84	0.00 553.60 553.60	42.35 50.85 18.17	11.63 31.70 25.00	179.70 0.00 373.90	
													Check #:	180844
REDDING, RAMON D	Ex: S-01 B M O ***-**-2885 S 58% PERCENT	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 40.00	0.00 15.14	0.00 605.60 605.60	46.34 58.65 15.82	12.72 34.30 0.00	167.83 0.00 437.77	
													Check #:	180845
REED, MARK DELBERT	Ex: M-00 C M O ***-**-0941 S JOURNEYMAN	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 0.00	0.00 0.00	0.00 24.00	0.00 26.11	0.00 626.64 1,253.28	95.89 137.99 43.70	26.32 167.70 175.00	646.60 0.00 606.68	
													Check #:	180846
SCHRAND, RAYMOND PIERCE, JR	Ex: M-00 C M O ***-**-2014 S JOURNEYMAN 1ST SHIFT	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 40.00	0.00 28.72	0.00 1,148.80 1,148.80	87.88 122.32 37.92	24.12 61.45 -37.15	296.54 0.00 852.26	
													Check #:	180854

Statement of Compliance

Date: SEPTEMBER 17, 2010

Contract Number: BID PACKAGE 6B

I, TOM MURRAY, PAYROLL DEPARTMENT do hereby state:

(1) That I pay or supervise the payment of the persons employed by United Electric Co., Inc. on the HARTWELL ELEMENTARY, that during the payroll period commencing on the 6 day of SEPTEMBER, 2010 and ending the 12 day of SEPTEMBER, 2010, all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said United Electric Co., Inc. from the full weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 CFR Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948.63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

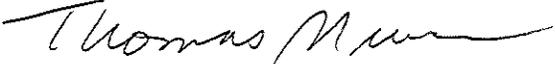
(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

() In addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in Section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

() Each laborer or mechanic listed in the above referenced payroll has been paid as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in Section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (Craft)	EXPLANATION
REMARKS	
NAME AND TITLE TOM MURRAY, PAYROLL DEPARTMENT	SIGNATURE 
The willful falsification of any of the above statements may subject the contractor or subcontractor to civil or criminal prosecution. See Section 1001 of Title 18 and Section 231 of Title 31 of the United States Code.	

United Electric Co., Inc.
4333 Robards Lane

Louisville, KY 40218
502 459-5242

Pay Period Date: 09/12/10
Week Ending: 09/12/10
Payroll No: 74

Certified Payroll Report

Contract #: BID PACKAGE 6B
Job No: 09-16024
Job Name: HARTWELL ELEMENTARY

Employee	# Exemptions Social Security Work Class	Hours							Total	Rate	Other Job Pay Job Gross Total Gross	FICA Fed W/H State	Local Union Oth Ded	Tot Ded Benefits Net Chk
		MON 06	TUE 07	WED 08	THU 09	FRI 10	SAT 11	SUN 12						
HOWELL, MARCIA R	Ex: S-02 B F O ***-**-4929 S 53% W/COPE - 4TH YEA	0.00 0.00	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 24.00	0.00 19.06	0.00 457.44 457.44	34.99 25.90 9.19	9.61 25.26 75.00	179.95 0.00 277.49	
												Check #:	181013	
LAYMON, WILLIAM EDWARD	Ex: M-04 C M O ***-**-6765 S JOURNEYMAN 1ST SHIFT	0.00 0.00	0.00 3.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 27.00	0.00 28.72	0.00 775.44 919.04	70.30 45.74 27.65	18.43 122.68 75.00	359.80 0.00 559.24	
												Check #:	181019	
MAINS, JASON EARL	Ex: S-00 C M O ***-**-7668 S 40% APP W/COPE	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 32.00	0.00 13.84	0.00 442.88 608.96	46.59 69.69 29.44	9.30 34.46 0.00	189.48 0.00 419.48	
												Check #:	181022	
MILLER, MICHAEL J	Ex: M-04 C M O ***-**-9249 S JOURNEYMAN	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 32.00	0.00 26.11	0.00 835.52 835.52	63.92 33.21 24.81	17.55 111.80 0.00	251.29 0.00 584.23	
												Check #:	181025	
RATZ, JOSEPH MICHAEL	Ex: S-01 C M O ***-**-4824 S 49% APPRENTICE	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 32.00	0.00 13.84	0.00 442.88 442.88	33.87 34.24 14.40	9.30 25.36 25.00	142.17 0.00 300.71	
												Check #:	181030	
REDDING, RAMON D	Ex: S-01 B M O ***-**-2885 S 58% PERCENT	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 32.00	0.00 15.14	0.00 484.48 484.48	37.06 40.48 11.18	10.17 27.44 0.00	126.33 0.00 358.15	
												Check #:	181031	
REED, MARK DELBERT	Ex: M-00 C M O ***-**-0941 S JOURNEYMAN	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 8.00	0.00 0.00	0.00 32.00	0.00 26.11	0.00 835.52 1,148.88	87.89 122.33 39.04	17.55 153.34 175.00	595.15 0.00 553.73	
												Check #:	181032	
SCHRAND, RAYMOND PIERCE,	Ex: M-00 C M O ***-**-2014 S JOURNEYMAN 1ST SHIFT	0.00 0.00	0.00 8.00	0.00 8.00	0.00 8.00	0.50 8.00	0.00 0.00	0.50 32.00	43.08 28.72	0.00 940.58 940.58	71.96 91.09 28.62	19.75 50.30 0.00	261.72 0.00 678.86	
												Check #:	181040	



March 28, 2011

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

Dear Angie:

Attached are Pay Applications for the Hartwell School, please process payment for the April 22, 2011 check distribution.

Contractor	Application #	Monthly Billing	Total Billing To Date	Contract Amount to Date
BP#5B- Blau	#22	\$ 8,220.48	\$ 1,421,993.00	\$1,421,993.00
BP#5B- Blau	#23	\$37,725.67	\$ 1,421,993.00	\$1,421,993.00
BP#3B- Triton	#18	\$29,059.52	\$ 594,336.00	\$ 594,336.00
BP#3B- Triton	#17	\$ 113.00	\$ 594,336.00	\$ 594,336.00

Please call if you have any questions.

Sincerely,
TURNER/DAG/TYS

Kimberly Metz
Accountant

Attachments

cc: Vince Terry – Moody/Nolan
Darris Storms – Turner/DAG/TYS
File 0025 – 14591MF

T:\PROJECTS\Hartwell\00250 Pay Application\2011-03-28BlauPay App. Ltr. Doc

The Ohio School Facilities Commission

10 West Broad Street
Suite 1400
Columbus, Ohio 43215

Contractor's Name: Blau Mechanical Inc
Address: 1532 Russell Street Covington, Ky 41011

Contractor Pay Application Summary

138122

Project Name Hartwell PK-8 Elementary School
Bid Package No. 5B HVAC

14-Mar-11

1	Original Contract Amount	\$	1,212,000.00
2	Net Changes to Date	\$	209,993.00
3	Current Contract Amount	\$	1,421,993.00
4		\$	
5	Completed to Date	\$	1,421,993.00
6	Total Work Completed to Date	\$	1,421,993.00
7	Store Material to Date	\$	-
8	Less Retained to Date	\$	37,725.67
9	Total Amount Due	\$	1,384,267.33
10	Less Previous Payments	\$	1,376,046.85
11	Less Amount Retained to Cover Lien	\$	
12	Less Amount Retained for Liquidated Damages	\$	-
13	Less Other Amounts Withheld	\$	-
14	Current Due	\$	8,220.48
15	Balance to Complete	\$	37,725.67

OSFC approval required for the following contract adjustments:

- 1. Assessment of liquidated damages
- 2. Other amounts withheld

Ohio School Facilities Commission

Date

Comments:

APPLICATION AND CERTIFICATE FOR PAYMENT

TO OWNER: CINCINNATI PUBLIC SCHOOLS
2315 IOWA AVENUE
CINCINNATI, OHIO 45206

PROJECT: Hartwell PK-8 Elementary School

APPLICATION No: 138122
PERIOD TO: 14-Mar-11
PROJECT NOS:
CONTRACT DATE:

FROM CONTRACTOR: BLAU MECHANICAL INC
1532 RUSSELL ST
COVINGTON, KY 41011

VIA ARCHITECT: Moody Nolan Inc

CONTRACT FOR: BP 5B - HVAC

CONTRACTOR'S APPLICATION FOR PAYMENT

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

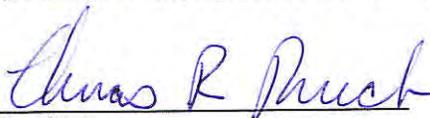
1. ORIGINAL CONTRACT SUM.....\$	1,212,000.00
2. Net Change by Change Orders.....\$	209,993.00
3. CONTRACT SUM TO DATE.....\$	1,421,993.00
4. TOTAL COMPLETED & STORED TO DATE.....\$	1,421,993.00
5. RETAINAGE	
a. 8-50% of Completed Labor.....\$	37725.67
b. 8% of Stored Material.....\$	
Total Retainage.....\$	37,725.67
6. TOTAL EARNED LESS RETAINAGE.....\$	1,384,267.33
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT.....\$	1,376,046.85
8. CURRENT PAYMENT DUE.....\$	8,220.48
9. BALANCE TO FINISH, INCLUDING RETAINAGE.....\$	37,725.67

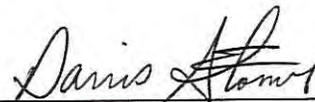
Change Order/Contract	ADDITIONS	DEDUCTIONS
Total Changes approved in Previous months by Owner	209993.00	
Total approved this month		
TOTALS	209993.00	0.00
NET CHANGES by Change Order		

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 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.


Blau Mechanical Inc. 15-Mar-11
Date
Vicente Salazar, President

Based upon on-site observations, the firm affirms that the work has progressed to the percentage of completeness indicated on the pay request.


Architect 3/28/11
Date


Construction Manager 3/28/11
Date

Approved:

School District Treasurer Date

CONTINUATION SHEET

ITEM NUMBER	BP#7a HVAC DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED	TOTAL COMPLETED & STORED TO DATE	%	BALANCE TO FINISH	4% RETAINAGE
			PREVIOUS APPS.	THIS PERIOD					
	HVAC								
	Bond Insurance Permits Tests	19,900.00	19,900.00			19,900.00	100%	0.00	796.00
	Mobilization & Submittals	10,000.00	10,000.00			10,000.00	100%	0.00	400.00
	Job Meetings	8,500.00	8,500.00			8,500.00	100%	0.00	340.00
	Cleanup - daily	3,000.00	3,000.00			3,000.00	100%	0.00	120.00
	Cleanup - final	2,000.00	2,000.00			2,000.00	100%	0.00	80.00
	Punch List	3,000.00	3,000.00			3,000.00	100%	0.00	120.00
	Training & Demonstration	1,500.00	1,500.00			1,500.00	100%	0.00	60.00
	Commissioning	2,500.00	2,500.00			2,500.00	100%	0.00	60.00
	Close Out	25,000.00	25,000.00			25,000.00	100%	0.00	600.00
						0.00		0.00	0.00
						0.00		0.00	0.00
	DuctWork								
	Submittals	1,500.00	1,500.00			1,500.00	100%	0.00	60.00
	Drafting	33,333.00	33,333.00			33,333.00	100%	0.00	1,333.32
	Mobilization	2,637.00	2,637.00			2,637.00	100%	0.00	105.48
						0.00		0.00	0.00
	HV101 Basement A								
	Labor	5,000.00	5,000.00			5,000.00	100%	0.00	200.00
	Materials	2,000.00	2,000.00			2,000.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV102 Basement B								
	Labor	13,300.00	13,300.00			13,300.00	100%	0.00	532.00
	Materials	6,000.00	6,000.00			6,000.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV111 1st fl A								
	Labor	25,300.00	25,300.00			25,300.00	100%	0.00	1,012.00
	Materials	10,208.00	10,208.00			10,208.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV112 1st fl B								
	Labor	27,500.00	27,500.00			27,500.00	100%	0.00	1,100.00
	Materials	12,000.00	12,000.00			12,000.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV113 1st Fl C								
	Labor	45,500.00	45,500.00			45,500.00	100%	0.00	1,820.00
	Materials	13,000.00	13,000.00			13,000.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV121 2nd fl A								
	Labor	22,000.00	22,000.00			22,000.00	100%	0.00	880.00
	Materials	9,000.00	9,000.00			9,000.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV122 2nd Fl B (no Gym)								
	Labor	20,000.00	20,000.00			20,000.00	100%	0.00	800.00
	Materials	8,000.00	8,000.00			8,000.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV123 2nd Fl C								
	Labor	22,000.00	22,000.00			22,000.00	100%	0.00	880.00
	Materials	7,100.00	7,100.00			7,100.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV131 Attic A								
	Labor	22,000.00	22,000.00			22,000.00	100%	0.00	880.00
	Materials	12,750.00	12,750.00			12,750.00	100%	0.00	0.00
						0.00		0.00	0.00
	HV132 Attic B								
	Labor	6,200.00	6,200.00			6,200.00	100%	0.00	248.00
	Materials	2,200.00	2,200.00			2,200.00	100%	0.00	0.00
						0.00		0.00	0.00
						0.00		0.00	0.00
	TOTAL, page 3	403,928.00	403,928.00	0.00	0.00	403,928.00	100%	0.00	12,426.80

CONTINUATION SHEET

ITEM NUMBER	BP#7a HVAC DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED		MATERIALS PRESENTLY STORED	TOTAL COMPLETED & STORED TO DATE	%	BALANCE TO FINISH	4% RETAINAGE
			PREVIOUS APPS.	THIS PERIOD					
	HVAC								
	HV121 2nd fl A								
	Materials	3,000.00	3,000.00			3,000.00	100%	0.00	0.00
	Labor	2,000.00	2,000.00			2,000.00	100%	0.00	80.00
						0.00		0.00	0.00
	HV122 2nd Fl B (no Gym)								
	Materials	4,800.00	4,800.00			4,800.00	100%	0.00	0.00
	Labor	3,200.00	3,200.00			3,200.00	100%	0.00	128.00
						0.00		0.00	0.00
	HV123 2nd Fl C								
	Materials	4,800.00	4,800.00			4,800.00	100%	0.00	0.00
	Labor	3,200.00	3,200.00			3,200.00	100%	0.00	128.00
						0.00		0.00	0.00
	HV131 Attic A								
	Materials	3,000.00	3,000.00			3,000.00	100%	0.00	0.00
	Labor	2,000.00	2,000.00			2,000.00	100%	0.00	80.00
						0.00		0.00	0.00
	HV132 Attic B								
	Materials	3,000.00	3,000.00			3,000.00	100%	0.00	0.00
	Labor	2,000.00	2,000.00			2,000.00	100%	0.00	80.00
						0.00		0.00	0.00
	HV133 Attic C								
	Materials	7,800.00	7,800.00			7,800.00	100%	0.00	0.00
	Labor	5,200.00	5,200.00			5,200.00	100%	0.00	208.00
						0.00		0.00	0.00
	HV401 Boiler Room								
	Materials	12,000.00	12,000.00			12,000.00	100%	0.00	0.00
	Labor	8,000.00	8,000.00			8,000.00	100%	0.00	320.00
						0.00		0.00	0.00
	HV122 Gym								
	Materials	4,800.00	4,800.00			4,800.00	100%	0.00	0.00
	Labor	3,200.00	3,200.00			3,200.00	100%	0.00	128.00
						0.00		0.00	0.00
						0.00		0.00	0.00
	Temperature Controls								
	Materials	13,485.00	13,485.00			13,485.00	100%	0.00	0.00
	Labor	76,415.00	76,415.00			76,415.00	100%	0.00	3,056.60
						0.00		0.00	0.00
	Mechanical - Materials								
	Pumps & Hydronic Accessories	11,326.00	11,326.00			11,326.00	100%	0.00	0.00
	Water Treatment & Glycol	10,100.00	10,100.00			10,100.00	100%	0.00	0.00
	Ductless Splits Systems	22,400.00	22,400.00			22,400.00	100%	0.00	0.00
	Terminal Units (BB,UH,FC)	10,500.00	10,500.00			10,500.00	100%	0.00	0.00
	Pipe Valves Fittings HP101	5,490.00	5,490.00			5,490.00	100%	0.00	0.00
	Pipe Valves Fittings HP102	16,900.00	16,900.00			16,900.00	100%	0.00	0.00
	Pipe Valves Fittings HP103	25,500.00	25,500.00			25,500.00	100%	0.00	0.00
	Pipe Valves Fittings HP111	10,800.00	10,800.00			10,800.00	100%	0.00	0.00
	Pipe Valves Fittings HP112	23,300.00	23,300.00			23,300.00	100%	0.00	0.00
	Pipe Valves Fittings HP113	31,012.00	31,012.00			31,012.00	100%	0.00	0.00
	Pipe Valves Fittings HP121	6,600.00	6,600.00			6,600.00	100%	0.00	0.00
	Pipe Valves Fittings HP122	11,600.00	11,600.00			11,600.00	100%	0.00	0.00
	Pipe Valves Fittings HP123	6,700.00	6,700.00			6,700.00	100%	0.00	0.00
	Pipe Valves Fittings HP131	8,300.00	8,300.00			8,300.00	100%	0.00	0.00
	Pipe Valves Fittings HP132	11,900.00	11,900.00			11,900.00	100%	0.00	0.00
	Pipe Valves Fittings HP133	8,700.00	8,700.00			8,700.00	100%	0.00	0.00
	Pipe Valves Fittings HP401	38,194.00	38,194.00			38,194.00	100%	0.00	0.00
	Total , Page 5	421,222.00	421,222.00	0.00	0.00	421,222.00	100%	0.00	4,208.60

State of Kentucky
County of Kenton ss Covington, Kentucky

March 15, 2011

Invoice #138122

VICENTE SALAZAR, being first duly sworn, says that he is **PRESIDENT** of Blau Mechanical, Inc. the contractor having a contract with, the owner Cincinnati Public Schools, for HVAC work at Hartwell Elementary School, a project situated on or around or in front of the following described property, in Hamilton County, Ohio via:

8320 Vine Street
Cincinnati, Ohio 45216

whereof Cincinnati Public Schools was the owner.

Sub-Contractors

Affiant further says that the following shows the name and addresses of every sub-contractor in the employ of said **BLAU MECHANICAL, INC** giving the amount, if any, which is due, or to become due, to them, or any of them, for work done, or machinery, material or fuel furnished to date hereof, under said contracts.

Name	Address	Trade	Amount
Jacobs Mechanical	Cincinnati, OH	Duct Work	\$ 0.00
Habegger Corporation	Cincinnati, OH	Controls	\$ 0.00
Priority III Insulation	Cincinnati, OH	Insulation	\$ 0.00

Material Men

Said affiant further says that the following shows the names and address of every person furnishing machinery, material or fuel to **BLAU MECHANICAL INC**, giving the amount, if any, which is due, to them, or any of them for machinery, material or fuel furnished to date hereof, under said contracts.

Name	Address	Material	Amount
NONE			

Labor

Said affiant further says that the following shows the names and addresses of every unpaid laborer in the employ of **BLAU MECHANICAL, INC.** furnishing labor under said contract, giving the amount, if any, which is due, or become due, for labor to date hereof.

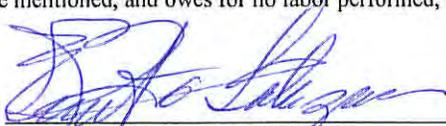
Name	Address	Hours	Amount
------	---------	-------	--------

.....**EVERY LABORER HAS BEEN PAID IN FULL**

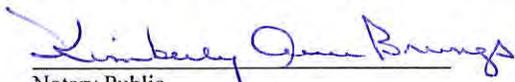
Affiant further states that there is due or to become due to **BLAU MECHANICAL, INC.** for work performed or machinery, material or fuel furnished to Cincinnati Public Schools to date hereof under said contracts, the sum of **\$8,220.48**.

That the amounts due or to become due to said sub-contractor, material-men and laborers, for work done or machinery, material or fuel furnished to the date hereof to **BLAU MECHANICAL, INC.** are fully and correctly set forth opposite their names, respectively, in the aforesaid statements, and further evidenced by certificates of every person furnishing machinery, material or fuel, hereto attached, and made a part hereof.

Affiant further says that **BLAU MECHANICAL, INC.** has not employed 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.


VICENTE SALAZAR, PRESIDENT

SWORN TO BEFORE ME AND SUBSCRIBED IN MY PRESENCE, AT COVINGTON, KY
THIS 15 DAY OF MARCH, 2011 .


Notary Public

KIMBERLY ANN BRUNGS
Notary Public, Kentucky State at Large
My Commission Expires July 21, 2012

HEAT RECOVERY WHEEL SAVINGS SUMMARY

	AHU-1	AHU-2	TOTAL
kWh:	26,945.5	25,034.6	51,980.0
Dollars:	\$ 2,155.64	\$ 2,002.76	\$ 4,158.40
75%	\$ 1,616.73	\$ 1,502.07	\$ 3,118.80



COMcheck Software Version 3.9.0

Interior Lighting and Power Compliance Certificate

90.1 (2004) Standard

Section 1: Project Information

Project Type: **New Construction**

Project Title :

Construction Site:

Owner/Agent:

Designer/Contractor:

Section 2: Interior Lighting and Power Calculation

A	B Floor Area	C Allowed Watts / ft2	D Allowed Watts
School/University	70209	1.2	84251
Total Allowed Watts =			84251

Section 3: Interior Lighting Fixture Schedule

A Fixture ID : Description / Lamp / Wattage Per Lamp / Ballast	B Lamps/ Fixture	C # of Fixtures	D Fixture Watt.	E (C X D)
School/University (70209 sq.ft.)				
Linear Fluorescent 1: A1: 48" T8 32W (Super T8) / Electronic	2	68	59	4012
Linear Fluorescent 2: A2: 48" T8 32W (Super T8) / Electronic	2	37	58	2146
Linear Fluorescent 3: A31: 48" T8 32W / Electronic	3	17	84	1428
Linear Fluorescent 4: B24: 48" T8 32W / Electronic	2	4	63	252
Linear Fluorescent 5: B28: 48" T8 32W / Electronic	2	55	126	6930
Linear Fluorescent 6: B34: 48" T8 32W / Electronic	3	18	97	1746
Linear Fluorescent 7: B38: 48" T8 32W / Electronic	3	150	194	29100
Linear Fluorescent 8: C31: 48" T8 32W / Electronic	3	22	91	2002
Linear Fluorescent 9: C32: 48" T8 32W / Electronic	3	20	91	1820
Linear Fluorescent 10: D5: 48" T8 32W / Electronic	2	13	63	819
Linear Fluorescent 11: D7: 48" T8 32W / Electronic	2	7	63	441
Linear Fluorescent 12: G3: 48" T8 32W / Electronic	3	13	87	1131
Linear Fluorescent 13: J31: 48" T8 32W / Electronic	3	82	91	7462
Linear Fluorescent 14: J32: 48" T8 32W / Electronic	3	6	91	546
Linear Fluorescent 15: K: 48" T8 32W / Electronic	2	21	63	1323
Linear Fluorescent 16: K4: 48" T8 32W / Electronic	2	22	74	1628
Linear Fluorescent 17: K8: 48" T8 32W / Electronic	2	39	74	2886
Linear Fluorescent 18: L14: 48" T8 32W / Electronic	1	10	34	340
Compact Fluorescent 1: PS2: Triple 4-pin 32W / Electronic	2	18	64	1152
Compact Fluorescent 2: PS3: Twin Tube 24/26/27W / Electronic	4	10	100	1000
Compact Fluorescent 3: S1: Triple 4-pin 32W / Electronic	1	2	36	72
Compact Fluorescent 4: XBA: Triple 4-pin 42W / Electronic	8	23	372	8556
Total Proposed Watts =			76792	

Section 4: Requirements Checklist

Lighting Wattage:

1. Total proposed watts must be less than or equal to total allowed watts.



WI-200 Passive Infrared Wall Switch Sensor



PROJECT
LOCATION/TYPE

Product Overview

Description

The WI-200 is a passive infrared wall switch that turns lighting systems on and off based on occupancy and ambient light levels. The WI-200 replaces an existing wall switch with a quick and easy installation and operates at 120 or 277 VAC.

Operation

The WI-200 uses advanced passive infrared technology to detect occupancy. The sensors detect the difference between the infrared energy from a human body in motion and the background space. For manual-ON, occupants press the auto/OFF button on the face of the unit. Once the space is vacated and the user-set time delay elapses, lights turn off. A reset delay allows the sensor 30 seconds to detect occupancy and turn lights back on automatically. With auto-ON set, lights automatically turn on when occupants enter the controlled area. Once the space is vacated and the user-set time delay elapses, lights automatically turn off.

Features

- ASIC technology reduces components and enhances reliability
- Pulse Count Processing eliminates false offs without reducing sensitivity
- Detection Signature Analysis eliminates false triggers; provides immunity to RFI and EMI
- Zero crossing circuitry reduces stress on the relay and results in increased sensor life
- Choice of Manual-ON or Auto-ON operation for increased flexibility
- Time delay adjustment from 15 seconds to 30 minutes
- DIP switch adjustments for ON-mode operation, time delay, sensitivity, and light level control
- Four-level patented Fresnel lens provides superior desktop detection
- Patented voltage drop protection
- For safety, there is no leakage to load in the OFF mode and sensor is safety grounded
- Units are tamper resistant
- LED indicates occupancy detection

Light Level Sensing

A built-in light level sensor provides increased energy savings in areas with abundant natural light. This feature holds lighting OFF if a user-specified level of ambient light already exists. A user can simply bypass this feature by placing his hand over the sensor for a second.

Applications

The WI-200's great coverage, ease of installation, and full-featured options ranging from ON mode operation to built-in light level sensing add up to great energy savings and return on investment. Its convenience and reliability provide satisfaction at all levels – especially to the occupants. These sensors work well in many enclosed building spaces including offices, utility rooms, and small conference rooms.

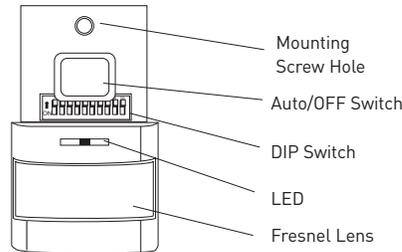


Specifications

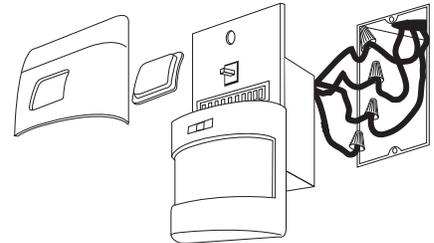
- Dual 120/277 VAC
- Coverage of 180 degrees, maximum 1000 ft² (92.9 m²), 500 ft² (46.5 m²) for desktop activity
- Digital time delay adjustable from 15 seconds to 30 minutes
- Built-in light level sensor, works from 10 to 150 footcandles (107 to 1,614 lux)
- Compatible with all electronic ballasts and PL lamp ballast systems
- Dimensions: 2.8" x 4.8" x 1.5" (71.1mm x 121.9mm x 38.1mm)
- UL and CUL listed; 5 year warranty

Controls & Installation

Product Controls

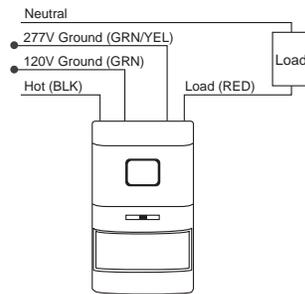


Installation

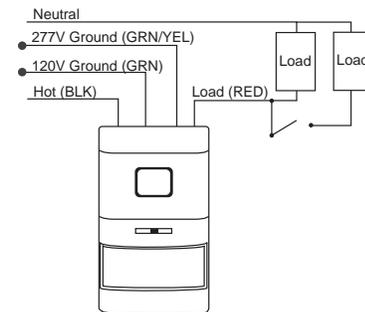


Wiring

Single Level Wiring

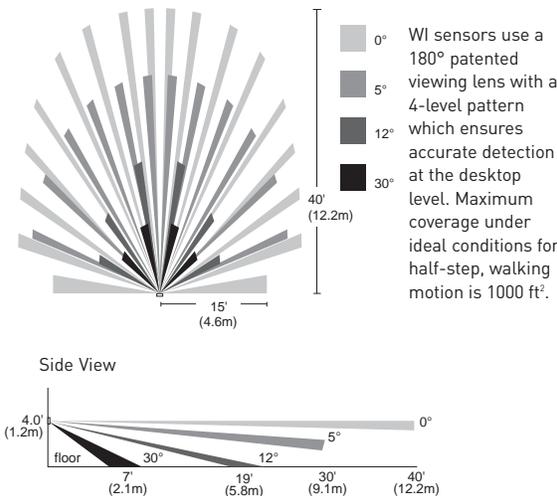


Manual Bi-level Lighting



Coverage & Settings

Coverage



DIP Switch Settings

DIP Switch #	1	2	3	4
Time Delays				
15 seconds	X	X	X	X
2 minutes	X	X	X	O
4 minutes	X	X	O	X
6 minutes	X	X	O	O
8 minutes	X	O	X	X
10 minutes	X	O	X	O
12 minutes	X	O	O	X
14 minutes	X	O	O	O
16 minutes	O	X	X	X
18 minutes	O	X	X	O
20 minutes	O	X	O	X
22 minutes	O	X	O	O
24 minutes	O	O	X	X
26 minutes	O	O	X	O
28 minutes	O	O	O	X
30 minutes	O	O	O	O

#	5	6	7
Light Level			
Low (~10FC)	O	O	O
Medium (~50FC)	X	O	O
High (~150FC)	X	X	O
Override	X	X	X

#	8
Sensitivity	
High	X
Low	O

#	9
Mode	
Manual On	X
Automatic On	O

#	10
Override	
Normal	O
Override	X

X=On O=Off
 ◆=Factory Presets

Ordering Information

Catalog No.	Color	Voltage	Load Requirement	Coverage
<input type="checkbox"/> WI-200-W	White	120 VAC; 60 Hz or 277 VAC; 60 Hz	0-800 Watt Ballast or 0-1200 Watt Ballast	180°, 1000 ft ² (92.9 m ²)
<input type="checkbox"/> WI-200-A	Lt. Almond			

Pub. No. 4508

Order ASP-121 for blank cover plate for 2-gang box; Order ASP-122 for cover plate for 2-gang box with switch option.



Ceiling and Wall Mount Occupancy Sensors

LightOWL™ Dual Technology Ultrasonic and PIR Sensor featuring IntelliDAPT®



LODT

KEY FEATURES

- IntelliDAPT self-adaptive technology—no manual adjustment required
- All-digital dual technology (ultrasonic [US] and passive infrared [PIR]) sensor
- Non-volatile memory for sensor settings
- 1,600 square-foot coverage area
- Optional relay and photocell control
- Optional Quick to Install (QTI) connector
- UL and cUL listed
- California Title 24 compliant
- Five-year warranty

OVERVIEW

The LODT combines ultrasonic (US) and passive infrared (PIR) technologies to turn lighting on and off based on occupancy. Designed specifically for areas where ceiling sensors are not appropriate, this sensor features Hubbell Building Automation’s patented IntelliDAPT technology, which makes all the sensor adjustments automatically. Throughout the product’s lifespan, smart software analyzes the controlled area and makes digital adjustments to sensitivity and timer settings. Occupancy sensors with IntelliDAPT provide a maintenance-free install-and-forget operation.

FEATURES and BENEFITS

Features	Benefits
IntelliDAPT technology	<ul style="list-style-type: none"> • Sensor automatically determines optimum setting for an area • Excellent false trip immunity (for improved accuracy) • No manual sensitivity or timer adjustments required • Provides a maintenance-free install-and-forget operation
All-Digital, multi-technology (ultrasonic [US] and passive infrared [PIR]) sensor	<ul style="list-style-type: none"> • Superior US minor-motion detection with excellent PIR long-range major-motion detection
Non-volatile memory for sensor settings	<ul style="list-style-type: none"> • Learned and adjusted settings will not be lost during power outages
Optional relay and photocell control	<ul style="list-style-type: none"> • Easy integration with Building Automation Systems • Increases energy savings by preventing lights from turning on when there is sufficient natural light
Optional Quick-to-Install (QTI) connector	<ul style="list-style-type: none"> • Dramatically reduces installation costs by removing the time-consuming process of manually wiring a sensor to a power pack • Easy to install; fast and efficient; no cutting, stripping, or wire nuts required

APPLICATIONS

- Offices
- Small conference rooms
- Break rooms

SPECIFICATIONS

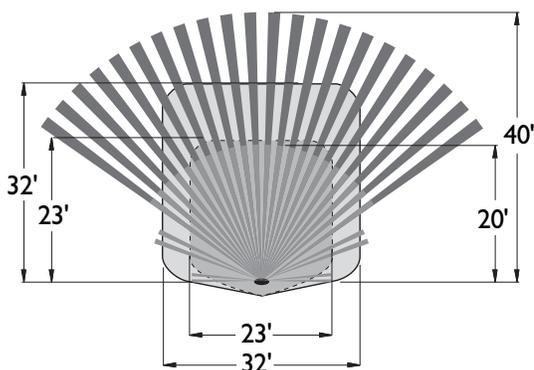
IntelliDAPT technology	<ul style="list-style-type: none"> • Auto reset from test setting • Self-adjusting timer • Self-adjusting ultrasonic and passive infrared thresholds • Automatic false-on/false-off corrections
LED lamps	<ul style="list-style-type: none"> • Red – infrared motion • Green – ultrasonic motion
Timer timeout	<ul style="list-style-type: none"> • Automatic mode: 8–30 minutes (self-adjusts based on occupancy) • Test mode: 8 seconds (for an easy check at installation)
Ultrasonic (US) output RP option	<ul style="list-style-type: none"> • Operating frequency: 32kHz • Relay and photocell included • Relay: N/O + N/C contacts; SPDT; 500 mA rated @ 24 VDC; three-wire isolated relay • Photocell: adjustable natural-light override ranges from 0 to 100 foot-candles (0–1,000 lux) • Factory set at 3,000 lux (disable photocell)
Coverage	<ul style="list-style-type: none"> • 1,600 square feet
Power requirements	<ul style="list-style-type: none"> • 24 VDC, 33 mA (uses UVPP and MP-Series power pack—not included)
Output	<ul style="list-style-type: none"> • 24 VDC active high-logic control signal with short circuit protection and optional dry contact (see: RP Option)
Operating environment	<ul style="list-style-type: none"> • Indoor use only • Operating temperature: 32° –104°F (0°–40°C) • Relative humidity (non-condensing): 0%–95%
Construction	<ul style="list-style-type: none"> • Casing—rugged, high-impact, injection-molded plastic KJB ABS Cyclocac (UL-945VA) • Color-coded leads are 6" long
Size and weight	<ul style="list-style-type: none"> • Size: 6.58" x 3.63" x 3.72" • Weight: 5.0 oz (142g)
Color	<ul style="list-style-type: none"> • Off-white
Mounting	<ul style="list-style-type: none"> • Mounting base provided • Recommended MAX mounting height: 12ft.
Certifications	<ul style="list-style-type: none"> • UL and cUL listed
Warranty	<ul style="list-style-type: none"> • Five years

ORDERING INFORMATION

Catalog Number	Description	Color	Coverage
LODT	Ultrasonic and Passive Infrared Wall and Ceiling Sensor with IntelliDAPT	Off-white	1,600 sq. ft.
LODTRP	Ultrasonic and Passive Infrared Wall and Ceiling Sensor with IntelliDAPT (Relay and Photocell)	Off-white	1,600 sq. ft.

*Add QTI to end of catalog number for optional Quick To Install connector

RANGE DIAGRAM



Hubbell Building Automation, Inc.
 9601 Dessau Road | Building One | Austin, Texas 78754
 {512} 450-1100 | {512} 450-1215 fax
hubbell-automation.com



Ceiling and Wall Mount Occupancy Sensors

OMNI™ Ultrasonic Ceiling Sensor

featuring IntelliDAPT®

KEY FEATURES

- IntelliDAPT self-adaptive technology—no manual adjustment required
- All-digital ultrasonic (US) technology
- Non-volatile memory for sensor settings
- 500–2,000 square-foot coverage area (depending on model)
- Optional relay and photocell control
- Optional Quick-to-Install (QTI) connector
- UL and cUL listed
- California Title 24 compliant
- Five-year warranty



OMNIUS500

OVERVIEW

The OMNIUS uses ultrasonic (US) technology to turn lighting on and off based on occupancy. Designed specifically for both areas with obstructions (e.g. columns, cubicles, stalls, and filing cabinets) and areas with long periods of minor-motion activity (e.g. typing), this sensor features Hubbell Building Automation’s patented IntelliDAPT technology, which makes all the sensor adjustments automatically. Throughout the product’s lifespan, smart software analyzes the controlled area and makes digital adjustments to sensitivity and timer settings. Occupancy sensors with IntelliDAPT provide a maintenance-free install-and-forget operation.

FEATURES and BENEFITS

Features

IntelliDAPT technology

All-digital ultrasonic (US) sensor

Non-volatile memory for sensor settings

Optional relay and photocell control

Optional Quick-to-Install (QTI) connector

Benefits

- Sensor automatically determines the ideal setting for an area
- Excellent false trip immunity (for improved accuracy)
- No manual sensitivity and timer adjustments required
- Provides a maintenance-free install-and-forget operation.
- Superior US minor-motion detection
- Learned and adjusted settings will not be lost during power outages
- Easy integration with Building Automation Systems
- Increases energy savings by preventing lights from turning on when there is sufficient natural light
- Dramatically reduces installation costs by removing the time-consuming process of manually wiring a sensor to a power pack
- Easy to install; fast and efficient; no cutting, stripping, or wire nuts required

APPLICATIONS

- Hallways
- Restrooms

SPECIFICATIONS

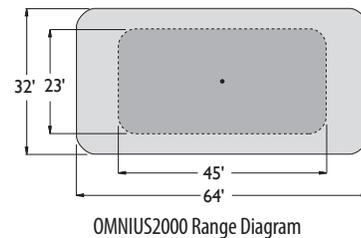
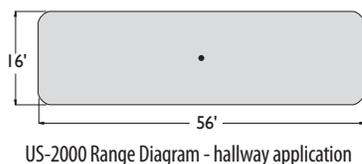
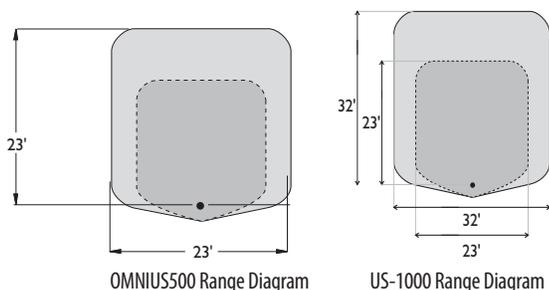
IntelliDAPT	<ul style="list-style-type: none"> • Auto reset from test setting • Self-adjusting timer • Self-adjusting ultrasonic thresholds • Automatic false-on/false-off corrections
LED lamp	<ul style="list-style-type: none"> • Green—ultrasonic motion
Timer timeout	<ul style="list-style-type: none"> • Automatic mode: 8–30 min. (self-adjusts based on occupancy) • Test mode: 8 seconds (for an easy check at installation)
Ultrasonic (US) output	<ul style="list-style-type: none"> • OMNIUS500: 40kHz output • OMNIUS1000 and OMNIUS2000: 32kHz output
RP option	<ul style="list-style-type: none"> • Relay and photocell included • Relay: N/O + N/C contacts; SPDT; 500 mA rated @ 24VDC; three-wire isolated relay • Photocell: adjustable natural-light override ranges from 0 to 100 foot-candles (0–1,000 lux)
Coverage	<ul style="list-style-type: none"> • 500–2,000 square feet (depending on model)
Power requirements	<ul style="list-style-type: none"> • 24 VDC, 33 mA (uses UVPP and MP-Series power pack—not included)
Output	<ul style="list-style-type: none"> • 24 VDC active high-logic control signal with short circuit protection and optional dry contact (see: RP Option)
Operating environment	<ul style="list-style-type: none"> • Indoor use only • Operating temperature: 32°–104°F (0°–40°C) • Relative humidity (non-condensing): 0%–95%
Construction	<ul style="list-style-type: none"> • Casing—rugged, high-impact, injection-molded plastic KJB ABS Cycolac (UL-945VA) flame class rating, UV inhibitors • Color-coded leads are 6” long
Size and weight	<ul style="list-style-type: none"> • Size: 4.5” diameter, 1.5” height (114 mm diameter, 38mm height) • Weight: 5.0 oz (142g)
Color	<ul style="list-style-type: none"> • Off-white
Mounting	<ul style="list-style-type: none"> • Mounting base provided • Recommended MAX mounting height: 12ft.
Certifications	<ul style="list-style-type: none"> • UL and cUL listed
Warranty	<ul style="list-style-type: none"> • Five years

HOW TO ORDER

Catalog Number	Description	Color	Coverage
OMNIUS500	Ultrasonic Ceiling Mount Sensor with IntelliDAPT	Off-white	500 sq. ft.
OMNIUS500RP	Ultrasonic Ceiling Mount Sensor with IntelliDAPT (Relay and Photocell)	Off-white	500 sq. ft.
OMNIUS1000	Ultrasonic Ceiling Mount Sensor with IntelliDAPT	Off-white	1,000 sq. ft.
OMNIUS1000RP	Ultrasonic Ceiling Mount Sensor with IntelliDAPT (Relay and Photocell)	Off-white	1,000 sq. ft.
OMNIUS2000	Ultrasonic Ceiling Mount Sensor with IntelliDAPT	Off-white	2000 sq. ft.
OMNIUS2000RP	Ultrasonic Ceiling Mount Sensor with IntelliDAPT (Relay and Photocell)	Off-white	2000 sq. ft.

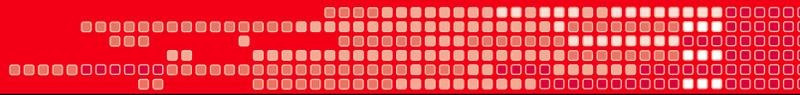
*Add QTI to end of catalog number for optional Quick-to-Install connector.

RANGE DIAGRAMS



Building Automation, Inc.

Hubbell Building Automation, Inc.
 9601 Dessau Road | Building One | Austin, Texas 78754
 {512} 450-1100 | {512} 450-1215 fax
hubbell-automation.com



OMNI-DT/OMNI-DT-RP (Option RP) *Dual Technology Ceiling Mount Sensor*

KEY FEATURES

- INTELLIGENT – Continuously Adapting sensor.
- Ultrasonic & Infrared Sensing
- Simple, Fast Installation
- Snap-Lock Sensor, Ceiling Mounting
- Excellent false tripping immunity
- Non-Volatile Memory: settings saved in protected memory are not lost during power outages.
- Optional Photocell Control and Relay
- 500 to 2000 sq. ft. mounted at 8'
- Multiple Sensor and Power Pack Connections
- 24VDC, Class 2 low voltage wiring
- Designed & Manufactured in USA



GENERAL OPERATION

Occupancy sensors have two tasks; keeping the lights on while the room is occupied and keeping the lights off when unoccupied. Hubbell Building Automation's intelligent, continuously adapting sensor technology eliminates manual sensitivity and timer adjustments during installation and over the life of the product. The self-adapting microprocessor constantly assures maintenance free "Install and Forget" operation.

The OMNI-DT is a ceiling mount occupancy sensor that combines both ultrasonic (US) and passive infrared (PIR) sensing. Hubbell Building Automation's self-adapting OMNI-DT addresses areas with complex environments that are difficult to control with single technology sensors. The internal microprocessor analyzes the information from both the US and PIR technologies and determines the optimum setting to use in order to properly cover the space. The automatic timer and automatic sensitivity features of the Omni-DT work independently to prevent "false-offs" and

"false-ons." When the sensor detects motion immediately after it turns the lights out, a "false-off" is detected, timer and sensitivity are increased. If the sensor turns the lights on, but detects no immediate follow-up motion, "false-on" is detected, timer and sensitivity are decreased. The "Intelligent software" algorithm determines, for example, if the lights are staying on due to adjacent hallway traffic and responds by adapting its program to compensate for the false trigger and turns out the lights. The OMNI-DT is the sensor replacement combining both the superior minor motion detection of ultrasonic with the excellent long-range major motion detection of passive infrared.

In addition, the OMNI-DT has an optional photocell, which increases energy savings when engaged by preventing the lights from turning on when there is sufficient natural light. This feature is factory disabled and may be activated by the installer.

Designed specifically to meet the challenges found in rooms where tasks entail minor motion for long periods of time. Ultrasonic (doppler shift) motion detection gives maximum sensitivity yet can be vulnerable to false triggering from air conditioning currents, corridor activity and movement of inanimate objects. Infrared motion detection gives immunity to these false triggers, but lacks sensitivity at greater distances. Hubbell Building Automation's intelligent software reads the environment and adapts to meet these specific challenges. Should the room suddenly be reallocated into a copy room with high traffic patterns, the intelligent software will adapt as needed to provide the correct time out for the

The OMNI-DT is the sensor replacement combining both the superior minor motion detection of ultrasonic with the excellent long-range major motion detection of passive infrared.



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lights. Using PIR sensing (high error immunity) with US (high sensitivity) provides good performance. Conventional ceiling mounted dual tech sensors use a simple formula for operation: BOTH for ON, EITHER for KEEP ON. This method requires that both sensors receive fixed-strength signals for ON or a single fixed-level signal for KEEP ON. The OMNI-DT uses a more sophisticated method called a composite signal where the signal strengths are added together to form a composite sum. The advantage of this method is that a weak PIR signal plus a strong US signal will turn the lights on because the sum is enough. The installer need not worry that the signal level be balanced for reliable lights on. This technology eliminates time consuming adjustments and callbacks found in non-intelligent sensors.

The sensor requires a 24V DC, MP Series power pack. The mounting base, provided with the sensor, allows quick and easy mounting.

ADAPTIVE FUNCTIONS

The OMNI constantly analyzes and adapts to changing conditions:

Period	Time	Action
Installation	60 minutes	Timer automatically resets from Test (8 seconds) to 8 minutes.
Learning	Four weeks	1. Response to Error Conditions: (false-ons, false offs) 2. Air current adaption 3. Timer optimization

Adjustments Made:
 Ultrasonic sensitivity
 Infrared sensitivity
 Timer
 Air current threshold

Post learning Occupancy Periods (Circadian)	After Four weeks	1. 24 hour occupancy periods learned (circadian) 2. Weekly occupancy periods learned
---	------------------	---

Adjustments Made:
 a. Generally occupied periods: Threshold+High Sensivity mode
 b. Generally unoccupied periods: Threshold=Miser mode

SPECIFICATIONS

LED Lamp:	Red Infrared motion, Green Ultrasonic motion
Construction:	Two ultrasonic transmitters and two narrow bandwidth receivers each 16mm in diameter. Frequency — Crystal controlled to $\pm .005\%$. Transducers — Oriented north and south (DT2000 only, others use single pairs), angled 30° down from horizontal. Housing — Rugged, high-impact, injection molded plastic KJB ABS Cyolac (UL-945VA)

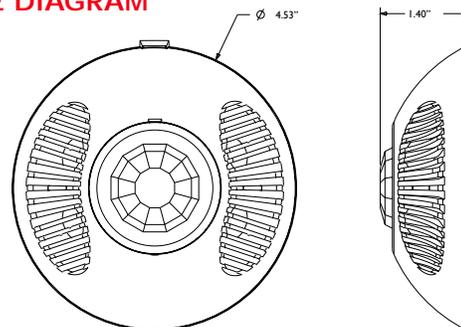
flame class rating, UV inhibitors. Color-coded leads are 6".

Size & Weight:	4.5" dia., 1.5" height; 5 oz. (114 mm dia., 38 mm height; 142 g.)
Color:	White.
Power Requirements:	24 VDC, 33 mA (use MP-series power pack.)
Timer Setting:	Automatic - 8 min. to 32 min.; test mode - 8 seconds
Output:	24 VDC active high logic control signal with short circuit protection and optional dry contact (see -RP option).
Operating Environment:	32°F to 104°F (0°C to 40°C); 0% to 95% non-condensing, relative humidity. For indoor use only.
RP Option:	Relay and Photocell Included (both). Relay: NO + NC contacts, 500ma rated @ 24vdc, three wire, isolated relay. Photocell, 0-1000 Lux adjustable.
Warranty:	5 years limited.

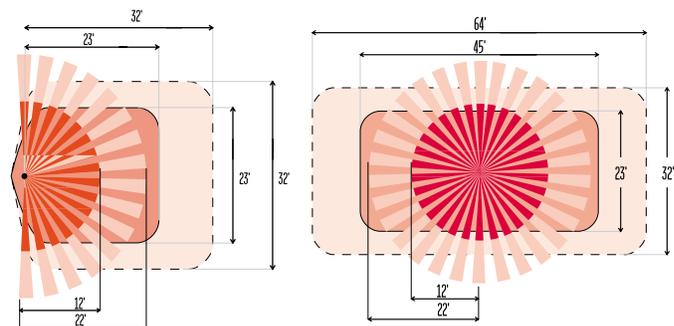
MODELS

Cat. No.	Color	Coverage	Application
OMNI-DT500	Off White	500 sq. ft.	Private Office
OMNI-DT500-RP	Off White	500 sq. ft.	Private Office
OMNI-DT1000	Off White	1000 sq. ft.	Open Office
OMNI-DT1000-RP	Off White	1000 sq. ft.	Open Office
OMNI-DT2000	Off White	2000 sq. ft.	Open Office
OMNI-DT2000-RP	Off White	2000 sq. ft.	Open Office

RANGE DIAGRAM



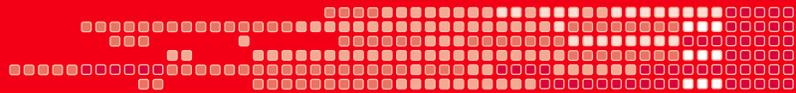
ORTHOGRAPHIC PROJECTION



DT-1000 Range Diagram
 DT-500 Range Pattern is not provided

DT-2000 Range Diagram





OMNI-IR/OMNI-IR-RP (Option RP) *Infrared Ceiling Mount Sensor*

KEY FEATURES

- INTELLIGENT – Continuously Adapting sensor.
- Passive Infrared Sensing
- Simple, Fast Installation
- Snap-Lock Sensor, Ceiling Mounting
- Excellent false tripping Immunity
- Non-Volatile Memory: settings saved in protected memory are not lost during power outages.
- Optional Photocell Control and Relay
- 450 and 1500 sq. ft. mounted at 8'
- Multiple Sensor and Power Pack Connections
- 24VDC, Class 2 low voltage wiring
- Designed & Manufactured in USA



GENERAL OPERATION

Occupancy sensors have two tasks; keeping the lights on while the room is occupied and keeping the lights off when unoccupied. Hubbell Building Automation's intelligent, continuously adapting sensor technology eliminates manual sensitivity and timer adjustments during installation and over the life of the product. The self-adapting microprocessor constantly assures maintenance free "Install and Forget" operation.

The OMNI-IR is a ceiling mount occupancy sensor that uses passive infrared (PIR) sensing to detect occupancy. The sensor uses a small semiconductor heat detector that resides behind a multi-zone optical lens. This Fresnel™ lens establishes dozens of zones of detection. The sensor's detector is sensitive to the heat emitted by the human body. In order to trigger the sensor, the source of heat must move from one zone of detection to another. Non-moving hot objects will not cause the lights to turn on. The internal microprocessor analyzes the information from the PIR technology and determines the optimum setting to use in order to properly cover the space. The automatic timer and automatic sensitivity features of the OMNI-IR work independently to prevent

"false-offs" and "false-ons." When the sensor detects motion immediately after it turns the lights out, a "false-off" is detected, and both the timer and sensitivity are increased. If the sensor turns the lights on, but detects no immediate follow-up motion, a "false-on" is detected; again both the timer and sensitivity are decreased. The "Intelligent software" algorithm determines, for example, if the lights are staying on due to adjacent hallway traffic and responds by adapting its program to compensate for the false trigger and turns out the lights. The OMNI-IR is the sensor that provides the best long-range major motion detection.

Designed to meet the challenges found in a wide variety of spaces the OMNI-IR provides reliable detection with high error immunity. The sensor utilizes Hubbell Building Automation's intelligent software that reads the environment and adapts to meet the specific challenges. Should the room suddenly be reallocated into a room with high traffic patterns versus low, the intelligent software will adapt as needed to provide the correct time out for the lights. Conventional ceiling mounted PIR sensors use simple ON/OFF triggers for operation. This method leaves no room for adaptation or environment changes. This technology eliminates time consuming adjustments and callbacks found in non-intelligent sensors.

In addition, the OMNI-IR has an optional photocell, which increases energy savings when engaged by preventing the lights from turning on when there is sufficient natural light. This feature is factory disabled and may be activated by the installer. The sensor requires a 24V DC, MP Series power

The OMNI-IR is the sensor replacement providing the best long-range major motion detection.



Distributed by:



Phone: (480) 782-5600
Fax: (480) 782-5601
www.engenuity.com



pack. The mounting base, provided with the sensor, allows quick and easy mounting.

FEATURES

Timer Setting: Automatic - 8 min. to 100 min. Manual - 8 min. to 32 min. Test mode - 8 sec.

MODELS

Cat. No.	Color	Coverage	Application
OMNI-IR	Off White	450 sq. ft.	Work Area
OMNI-IR-RP	Off White	450 sq. ft.	Work Area
OMNI-IR-L	Off White	1,500 sq. ft.	Work Area
OMNI-IR-L-RP	Off White	1,500 sq. ft.	Work Area

CONTROLS

PC (Photocell Adjustment): 20 to 3,000 Lux (photocell optional).

SPECIFICATIONS

Timer Adjustment

(Manual): 8 sec. to 32 min.

LED Lamp: Red Infrared motion.

Lens: The long range lens provides up to 1500 sq. ft. of coverage, whereas the factory standard extra dense lens provides 450 sq. ft. of coverage.

Note: Although the OMNI-IR lens covers a smaller area, the dense coverage provides better detection of small motions.

Construction: Housing — Rugged, high-impact, injection molded plastic. Color coded leads are 6" long (16.24 cm).

Size & Weight: 4.5" dia., 1.5" height; 5 oz.

(114 mm dia., 38 mm height; 142 g).

Color: White.

Power

Requirements: 24 VDC, 33 mA from the MP-series power pack.

Output: 24 VDC active high logic control signal with short circuit protection; optional dry contact included in RP option.

Operating

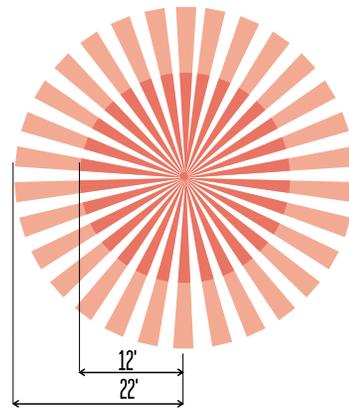
Environment: 32°F to 104°F (0°C to 40°C); 0% to 95% relative humidity, non-condensing. For indoor use only.

Warranty: 5 years.

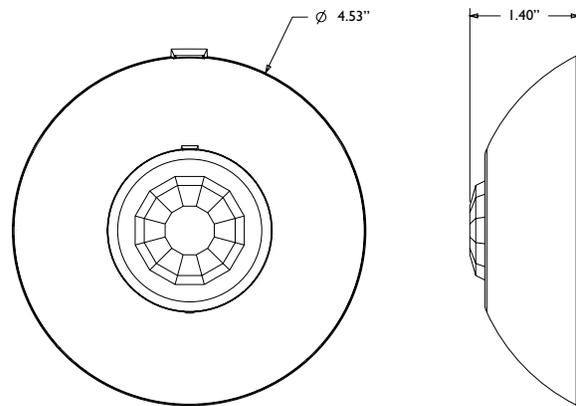
RP: Relay: SPDT, 500 ma rated @ 24VAC/DC, three wire, isolated relay.

Photocell: 20-3,000 Lux adjustable.

RANGE DIAGRAM

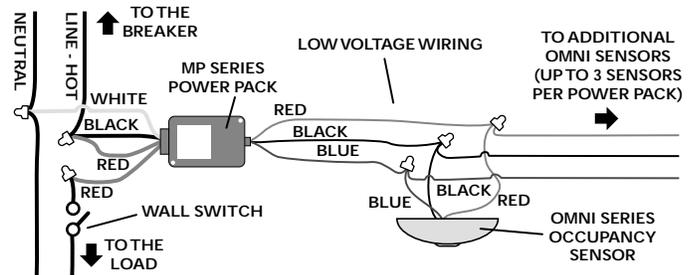


ORTHOGRAPHIC PROJECTION

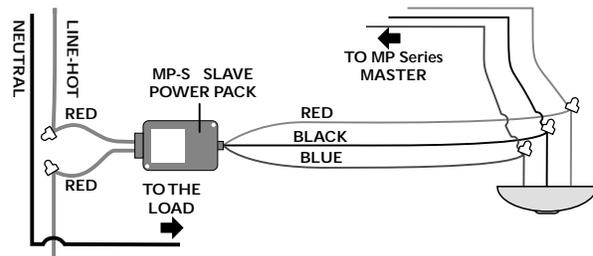


PHYSICAL WIRING

Using MP-SERIES Power Pack



Using MP-S SERIES Slave Power Pack



Distributed by:

Engenuity
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WPIR Passive Infrared Ceiling Sensor

PIR sensor turns lights on and off based on occupancy

User-adjustable time delay of 30 seconds to 30 minutes

Automatic or manual-on operation when used with a BZ-150 Power Pack



ASIC technology reduces components and provides greater reliability

30-segment, multi-element Fresnel lens

PROJECT

LOCATION/TYPE

Product Overview

Description

WattStopper's WPIR Sensor is a versatile ceiling-mount sensor that utilizes the latest passive infrared (PIR) technology to turn lights on and off based on occupancy. The WPIR controls lighting in a wide variety of applications, but is especially adept at controlling small spaces with well-defined coverage.

Operation

The WPIR Ceiling Sensor utilizes the latest PIR technology to detect the difference between the infrared energy from a person in motion and the background space within the controlled area. When occupancy is detected, this 24 VDC sensor turns lighting or HVAC systems on through a WattStopper power pack controlled through low voltage wiring. When occupants leave the area, lighting is switched off after the user-adjustable time delay has elapsed.

Fresnel Lens and Coverage

The WPIR is equipped with a multi-element Fresnel lens that allows the sensor to efficiently collect infrared energy and provides optical gain over a defined field of view. The profile of each groove facet is determined by computer simulation to produce the sharpest images possible from a distant object. The use of a 30-segment lens allows overlapping coverage within the defined field of view. The coverage is partially determined by the view available to the sensor. Mounted to a wall, the WPIR will produce a completely different viewing pattern. Zone 4 and 5 (see diagram on back) are then capable of sensing up to 45 feet.

Applications

The WPIR can effectively cover small offices, utility areas or computer rooms. Additional applications include racquetball courts, garage areas, library aisles and storage rooms.

Features

- ASIC technology enhances reliability and provides immunity to RFI and EMI
- Uses the latest PIR technology to reliably control lighting in a variety of applications
- User-adjustable time delay of 30 seconds to 30 minutes
- Incorporated daylight filter prevents short-wavelength infrared waves, such as those emitted by the sun, from affecting WPIR
- Multi-element Fresnel lens allows the sensor to efficiently collect infrared energy and provide optical gain over a defined field of view
- Alternate viewing patterns depending on mounting choice
- Optional on override through logic key/on bypass
- LED indicates occupancy detection
- Qualifies for ARRA-funded public works projects

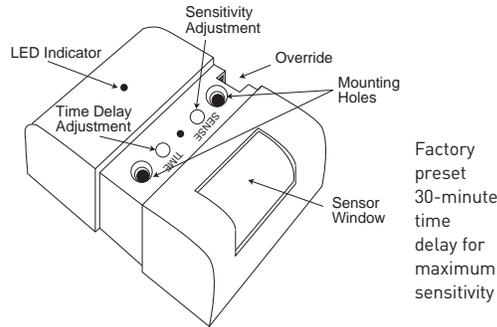


Specifications

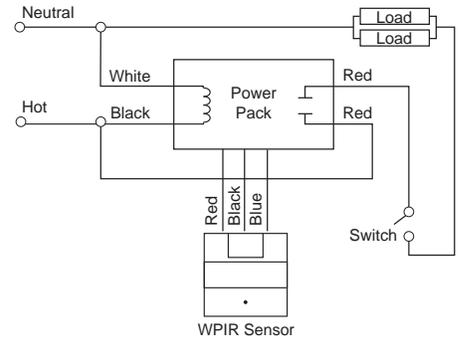
- Dual-element, temperature compensated pyroelectric sensor
- Adjustable time delay: 30 seconds to 30 minutes
- Poly IR4 lens, optical filter material
- Control output: 100mA maximum
- Max. units per power pack: B = eight; BZ = ten
- Dimensions: 2.5" x 2.5" x 1.14" (64mm x 64mm x 29mm) W x L x D
- UL and cUL listed
- Five year warranty

Wiring & Controls

Product Controls

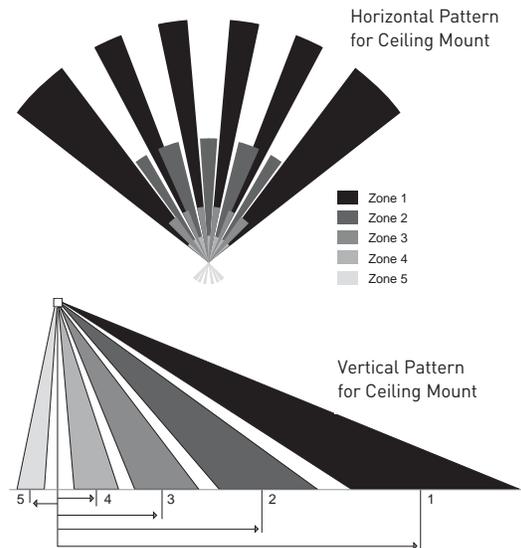


Wiring Diagram

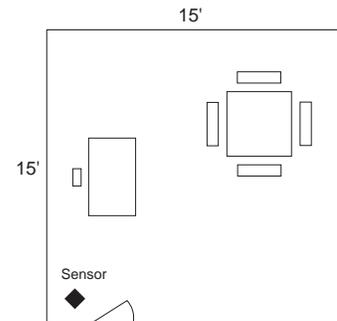


Coverage & Placement

Coverage Pattern



Typical Office Placement

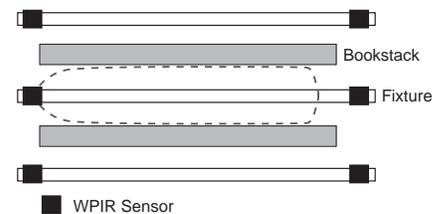


For an enclosed office, the WPIR should be placed in the corner of the room so that it will detect occupants as they enter the room. For the aisleway between bookstacks, the WPIR should be placed at the end of each bookstack to detect occupancy upon entrance to the aisle way from either direction. For longer bookstacks, two or more WPIRs can be used.

Ceiling Height	Detection Zones				
	Zone 5	Zone 4	Zone 3	Zone 2	Zone 1
8'	-1	1	4	8	15
10'	-1.5	1.5	5	10	19
12'	-2	2	6	12	23
15'	-2.5	2.5	8	15	29
20'	-3	3	10	18	36
25'	-4	4	12	23	45
*8'	50	40	25	15	5

* Wall mounted Horizontally

Aisleway Library Bookstack Placement



Ordering Information

Catalog No.	Voltage	Current	Coverage
□ WPIR	24 VDC	14 mA	300 ft ² (27.9 m ²)

All units are white and use WattStopper power packs.

WD-170 and WD-180 Dimmable PIR Wall Switch



△ SPECIFICATIONS

- Voltage:**
 WD-170 120VAC, 60Hz
 WD-180 277VAC, 60Hz
- Load Rating:**
 @120VAC 10–500W ballast or incandescent load
 @277VAC 10–500W ballast load
- Tungsten:** Dims incandescent lamps
- Ballasts:** Use with Advance® Mark X™
 or Philips Ecotron® electronic dimming ballasts
 (line voltage forward phase-cut dimming ballasts)
- Dimmer Adjustment:** 5%–100%
- Time Delay Adjustment:** 30 sec.–30 min.



U.S. Patents:
 4,787,722
 4,874,962
 5,124,566
 1(800)879-8585 1(972)578-1699 5,640,113

△ ORDERING INFORMATION

WD-170	Dimmable PIR Wall Switch; 120VAC, 60Hz
WD-180	Dimmable PIR Wall Switch; 277VAC, 60Hz
ASP-211*	Cover plate for single gang box
ASP-422	Blank cover plate for 2-gang box
ASP-432	Switch option cover plate for 2-gang box

Add **-W** for White, **-I** for Ivory, **-G** for Gray, **-B** for Black, or **-A** for Almond to the catalog number.
 * One ASP-211 is included with each sensor.

△ WARRANTY INFORMATION

The Watt Stopper®, Inc. warrants its products to be free of defects in materials and workmanship for a period of five years. There are no obligations or liabilities on the part of The Watt Stopper, Inc. for consequential damages arising out of or in connection with the use or performance of this product or other indirect damages with respect to loss of property, revenue, or profit, or cost of removal, installation or reinstatement.



2800 De La Cruz Boulevard, Santa Clara, CA 95050 USA
 Technical Support: 1(800)879-8585 1(972)578-1699
 86-0480-00 4/98

△ TROUBLESHOOTING

- Lights will not turn on:** (LED flashes with body motion)
1. Press the Auto/Off button to the auto position.
 2. Check all wire connections.
 3. For technical support call 1(800)879-8585.

- Lights will not turn on:** (LED does **not** flash)
1. Make sure the main circuit breaker is on.
Note: Whenever the main power is restored to the switch, the occupancy sensor charges and may take up to one minute to function properly.
 2. Check all wire connections.
 3. For technical support call 1(800)879-8585.

- Lights will not turn off:**
1. Depending on the time delay setting, there can be up to a 30 minute time delay after the last occupancy motion is detected.
 2. To test if unit is operating properly, set time delay to minimum and move out of the sensor's view. Lights should turn off after 30 seconds.
 3. For technical support call 1(800)879-8585.

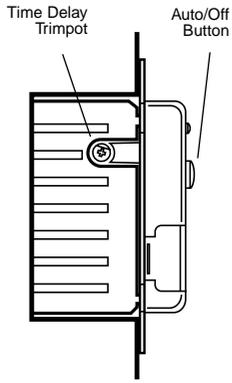
- Sensing motion outside detection areas:**
- Opaque adhesive tape is included with the sensor and can be used to limit the detection areas. See "Masking the lens".
- IMPORTANT:** Rapid successive pressing of the Auto/Off button will cause a delay in proper function.

△ ADJUSTMENTS

⚠ CAUTION ⚠
WHEN ADJUSTING THE TIME DELAY OR WHEN SWITCH IS UNSECURED, YOU SHOULD TURN OFF POWER TO THE SWITCH AT THE CIRCUIT BREAKER.

To test and adjust the unit:

1. With a phillips screwdriver, turn time delay trimpot (see diagram) to minimum (all the way counterclockwise).
2. Temporarily secure the switch to the wall box.
3. Turn on power to the switch at circuit breaker and allow a one minute warm-up.



Note: Whenever the main power is restored to the switch, such as when turning on the circuit breaker, the occupancy sensor charges and may take up to a minute to function properly.

4. Test the unit by pushing the Auto/Off button to the auto position to turn lights on. Leave the room and lights should go off after 30 seconds.
5. Adjust the time delay trimpot to desired setting, between 30 seconds to 30 minutes (clockwise increases time). For most applications, about 10 minutes is recommended.
6. Align wide holes on attached metal bracket with holes in wall box and secure switch with screws provided.
7. Install cover plate to switch assembly with provided screws.
8. Push the Auto/Off button to the auto position to turn lights on.

☎ **Call (800) 879-8585 For Technical Support** ☎

△ UNIT DESCRIPTION

The Watt Stopper's WD-170 and WD-180 are dimmable passive infrared wall switches that turn lighting systems on and off based on occupancy in the controlled area. A dimming slider adjusts the light level from minimum to maximum.

The switches work with the Advance® Mark X™ or Philips Ecotron® electronic dimming ballasts (ballasts that have line voltage forward phase-cut dimming control). The WD-170 also works with incandescent fixtures.

The sensors feature a hard vandal resistant lens which allows them to be used in a wide range of applications, including public spaces.

△ OPERATION

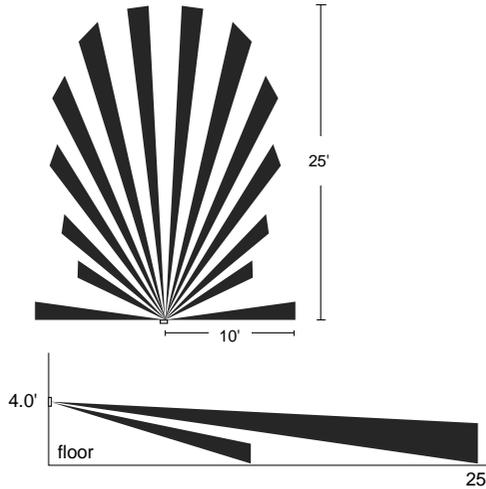
The WD-170 and WD-180 sensors turn lights on when a person enters the controlled area. Lights turn on to the level set with the dimming slider. The dimming slider does not turn the lights off, it allows users to increase or decrease the light level.

The lights remain on while the space is occupied. When the space is vacated and the adjustable time delay of 30 seconds to 30 minutes (set during installation) elapses, the lights turn off.

The lights can be manually turned off at any time by pressing the Auto/Off button.

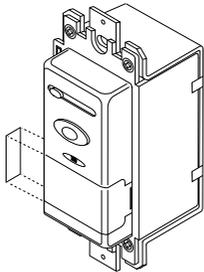
△ COVERAGE PATTERNS

The WD-170 and WD-180 will cover up to 300 sq. ft. The recommended coverage for typical desktop activity is 150 sq ft. The sensor has a two-tiered, multi-cell viewing Fresnel lens with a 180° field of view.



Masking the lens

Opaque adhesive tape is supplied so that sections of the sensor's view can be masked. This allows you to eliminate coverage in unwanted areas. Since masking removes bands of coverage, remember to take this into account when trouble-shooting coverage problems.



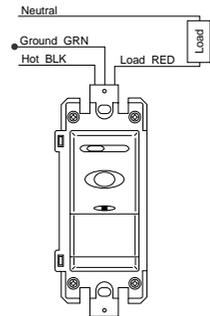
△ INSTALLATION

The WD-170 and WD-180 switches can be connected to single or multiple loads, up to 500 watts maximum.

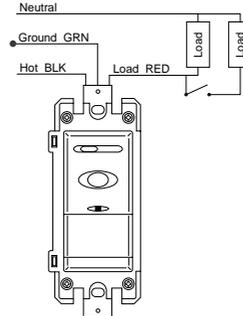


TURN POWER OFF AT CIRCUIT BREAKER BEFORE WIRING SWITCHES. ALWAYS FOLLOW PROPER PRECAUTIONS WHEN WORKING WITH OR NEAR HIGH VOLTAGE.

1. Make sure that power has been turned **off** at circuit breaker.
2. Connect leads to sensor with UL listed wire connectors (BLACK to line, GREEN to ground, RED to load).
3. Do not attach switch to wall box at this time. See "Adjustments".



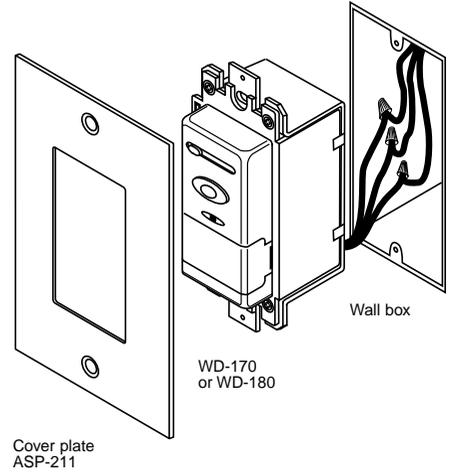
Single-Level Wiring



Manual Bi-Level Wiring



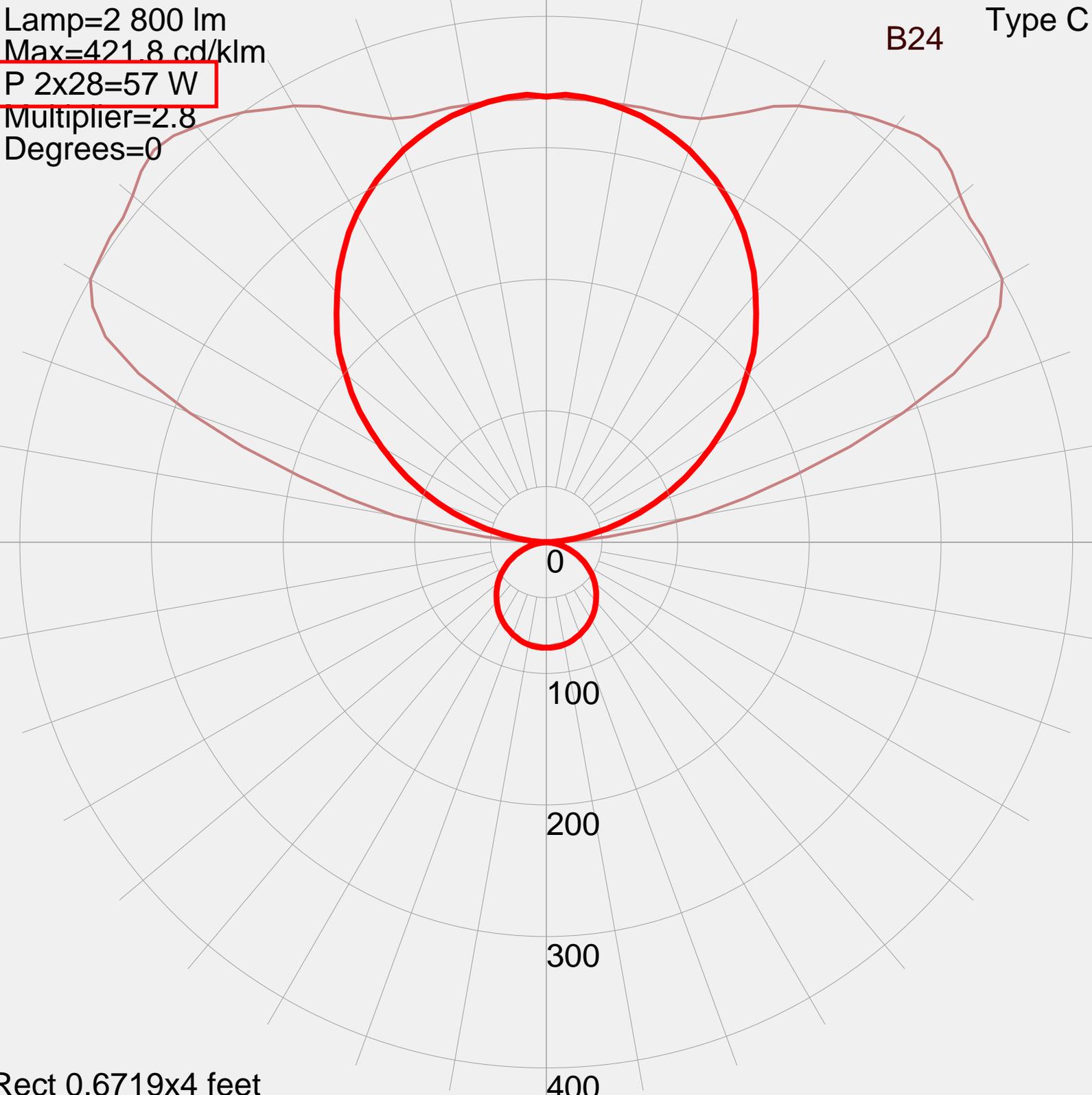
THE GROUND MUST BE TIGHTLY SECURED OR THE SENSOR WILL NOT WORK!



Type C

B24

Lamp=2 800 lm
Max=421.8 cd/klm
P 2x28=57 W
Multiplier=2.8
Degrees=0

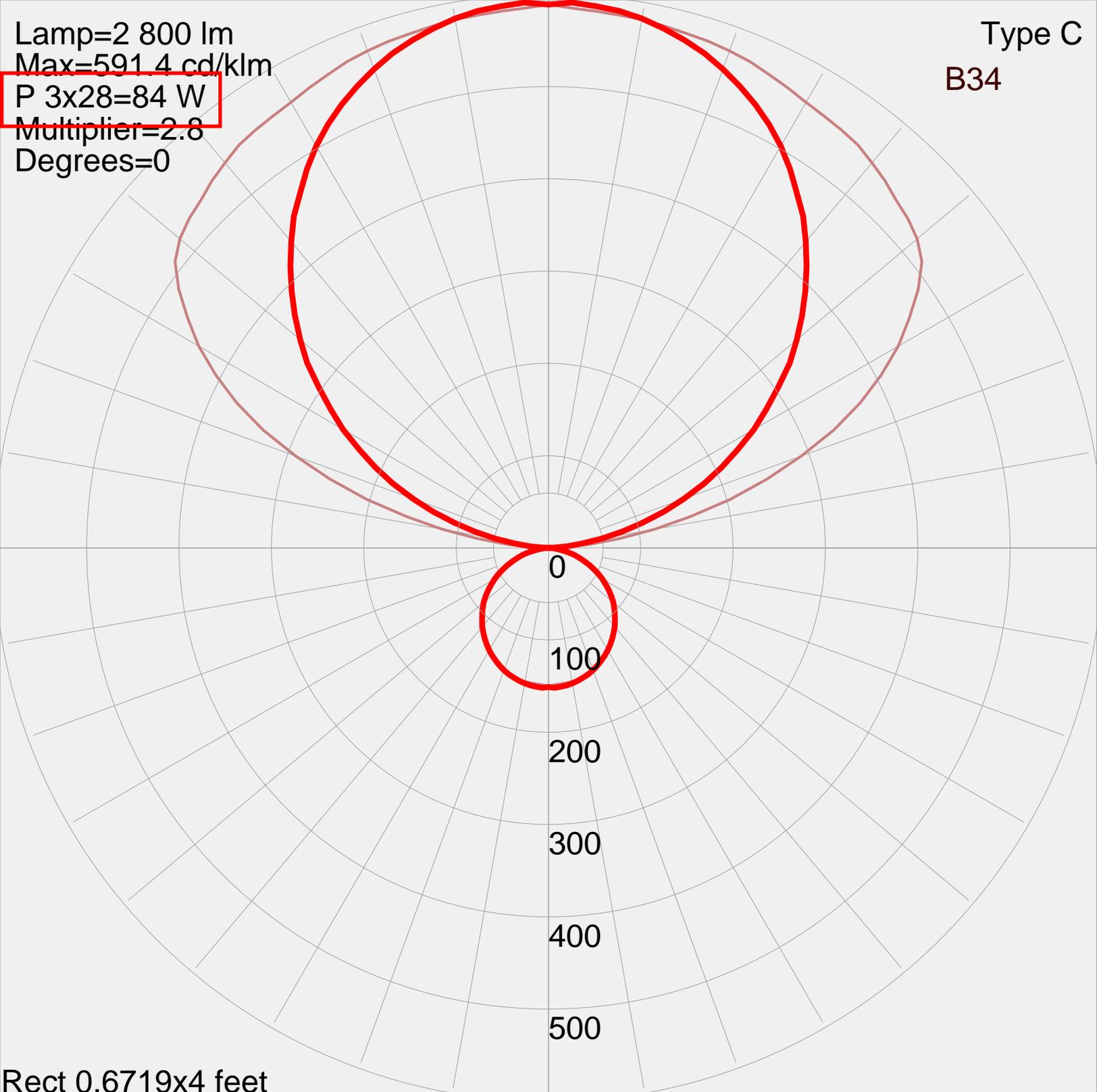


Rect 0.6719x4 feet

Manufacturer: FINELITE, INC.
Luminaire catalog: FINELITE S10-A12-2T8-EP-OPEN
Luminaire: DIRECT-INDIRECT, SUSPENDED LUMINAIRE
Lamp catalog: PHILLIPS F32T8/TL735 LINEAR FLUORESCENTS
Lamp: TWO 4' 32W T8 3500K FLUORESCENT LAMP

Type C
B34

Lamp=2 800 lm
Max=591.4 cd/klm
P 3x28=84 W
Multiplier=2.8
Degrees=0

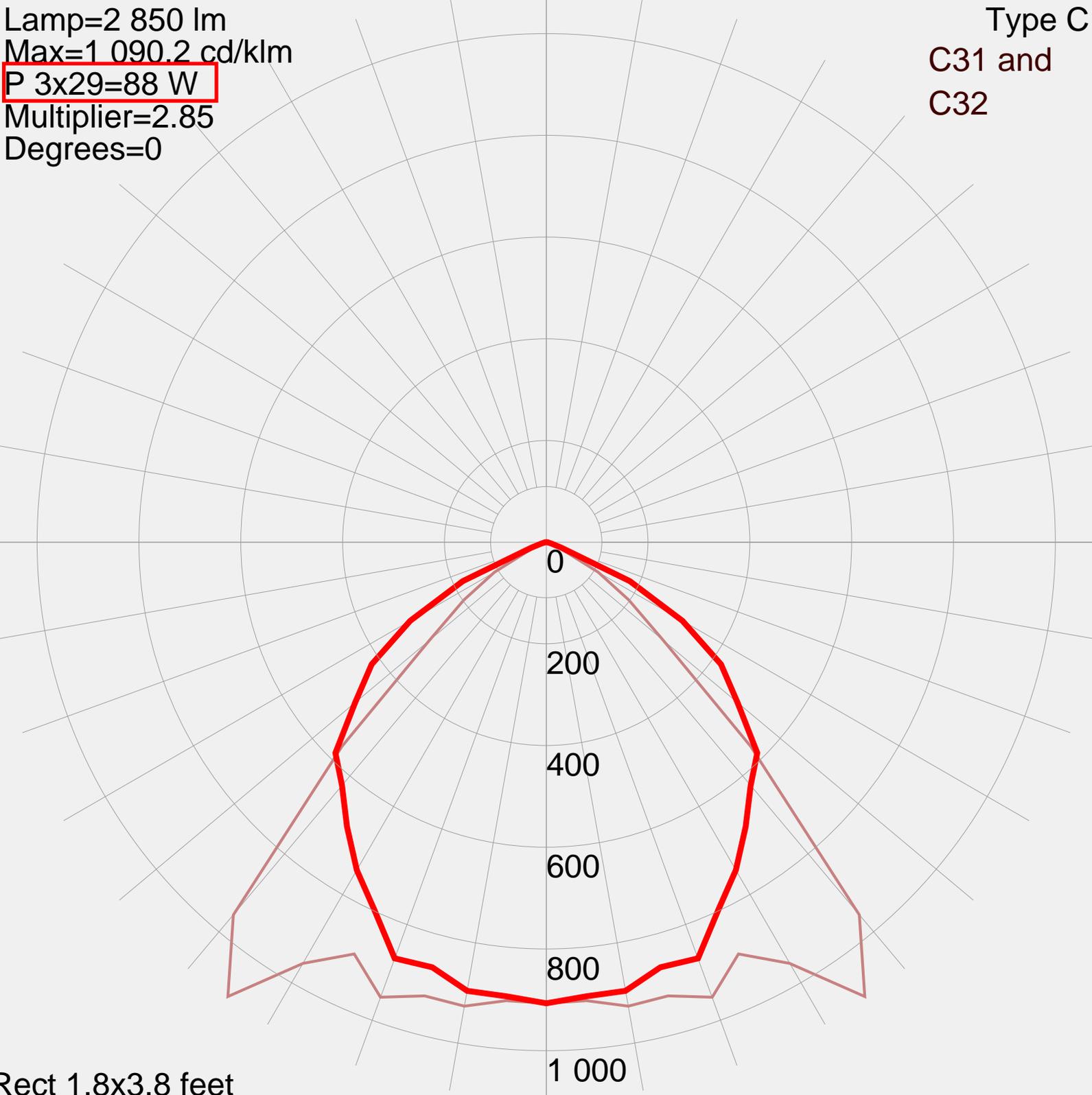


Rect 0.6719x4 feet

Manufacturer: FINELITE, INC.
Luminaire catalog: FINELITE S10-A12-3T8-91W-OPEN
Luminaire: DIRECT-INDIRECT, SUSPENDED LUMINAIRE
Lamp catalog: PHILLIPS F32T8/TL735 LINEAR FLUORESCENTS
Lamp: THREE 4' 32W T8 3500K FLUORESCENT LAMP

Lamp=2 850 lm
Max=1 090.2 cd/klm
P 3x29=88 W
Multiplier=2.85
Degrees=0

Type C
C31 and
C32

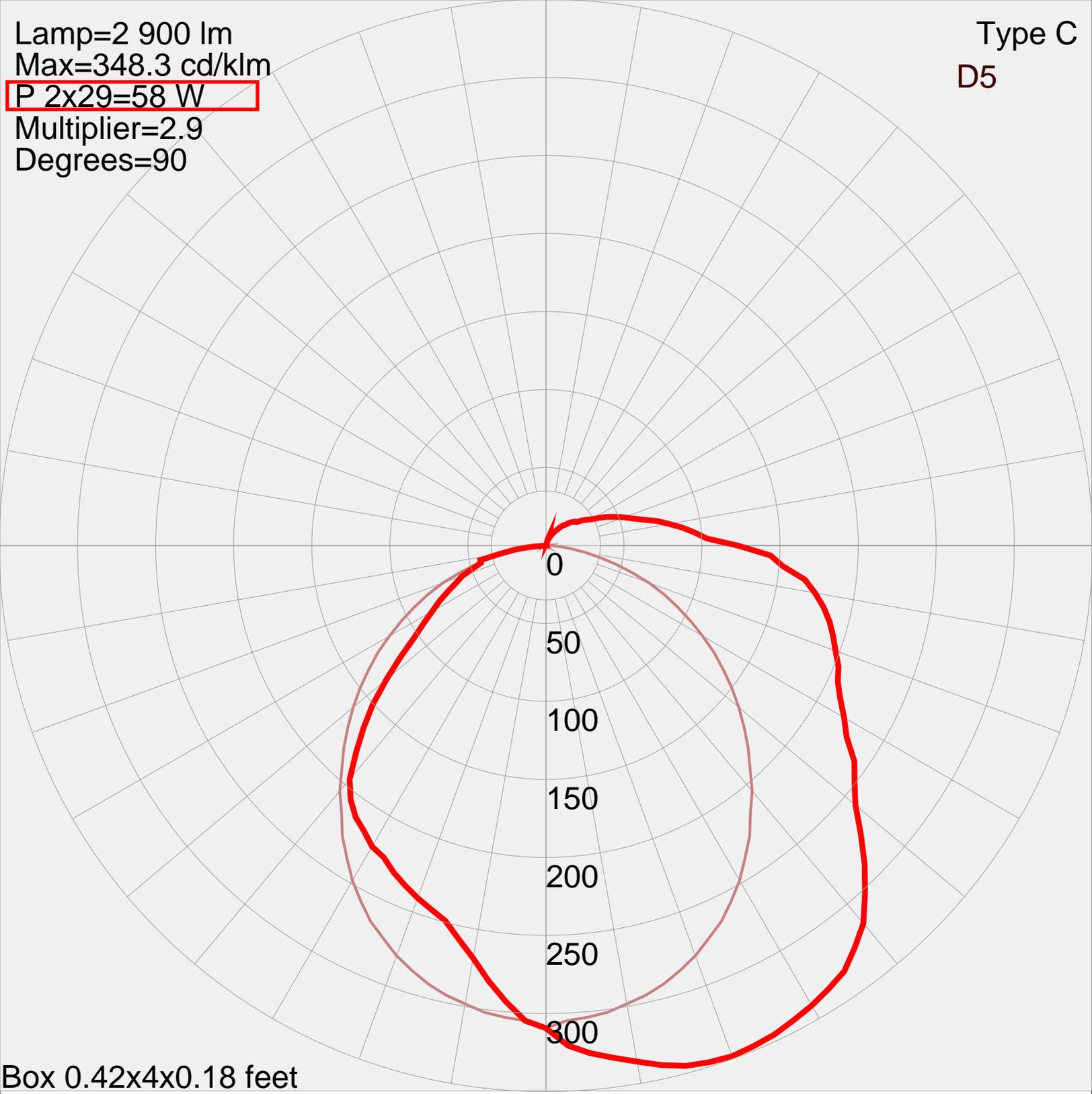


Rect 1.8x3.8 feet

Manufacturer: Lithonia Lighting
Luminaire catalog: 2PM3 3 32 18LD 1/3 TUBI
Luminaire: PARAMAX PARABOLIC TROFFER 2'X4' 3" LVR 3 LP T8 18 CEL
Lamp catalog: F32T8/735
Lamp: THREE 32-WATT T8 LINEAR FLUORESCENT

Type C
D5

Lamp=2 900 lm
Max=348.3 cd/klm
P 2x29=58 W
Multiplier=2.9
Degrees=90

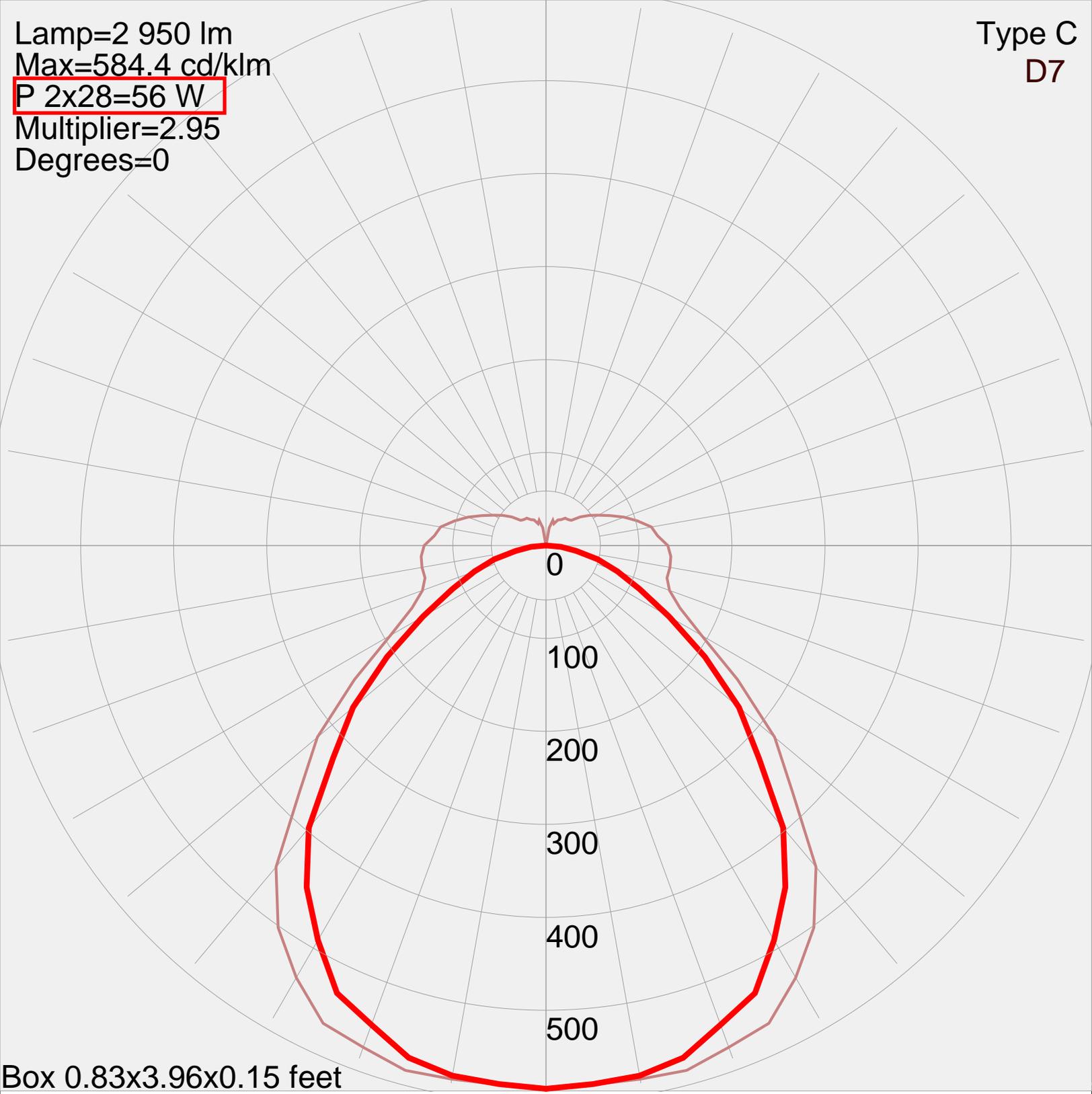


Box 0.42x4x0.18 feet

Manufacturer: Lithonia Lighting
Luminaire catalog: WP 2 32 DO TUBI
Luminaire: PRECEDENT WALL BRKT 4' 2 LMP
Lamp catalog: F32T8/SPX35
Lamp: TWO 32-WATT T8 LINEAR FLUORESCENT

Lamp=2 950 lm
Max=584.4 cd/klm
P 2x28=56 W
Multiplier=2.95
Degrees=0

Type C
D7



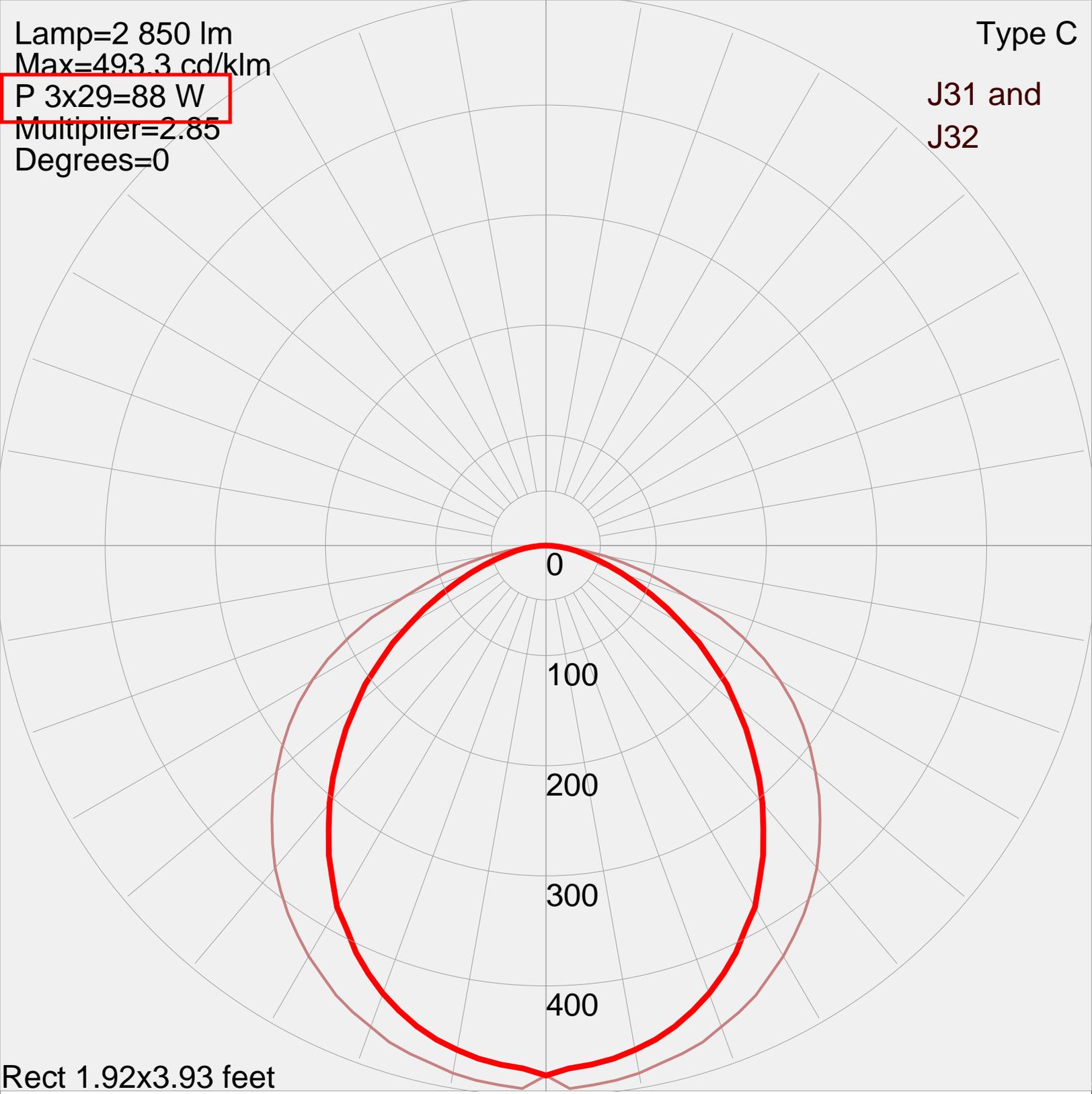
Box 0.83x3.96x0.15 feet

Manufacturer: Lithonia Lighting
Luminaire catalog: LB 2 32 MVOLT GEB10IS
Luminaire: 2/32W T8 LAMPS 4'SURFACE MNT CURVED BASKET WRAP L
Lamp catalog: F32T8/835/RS
Lamp: 32T8

Type C

J31 and
J32

Lamp=2 850 lm
Max=493.3 cd/klm
P 3x29=88 W
Multiplier=2.85
Degrees=0

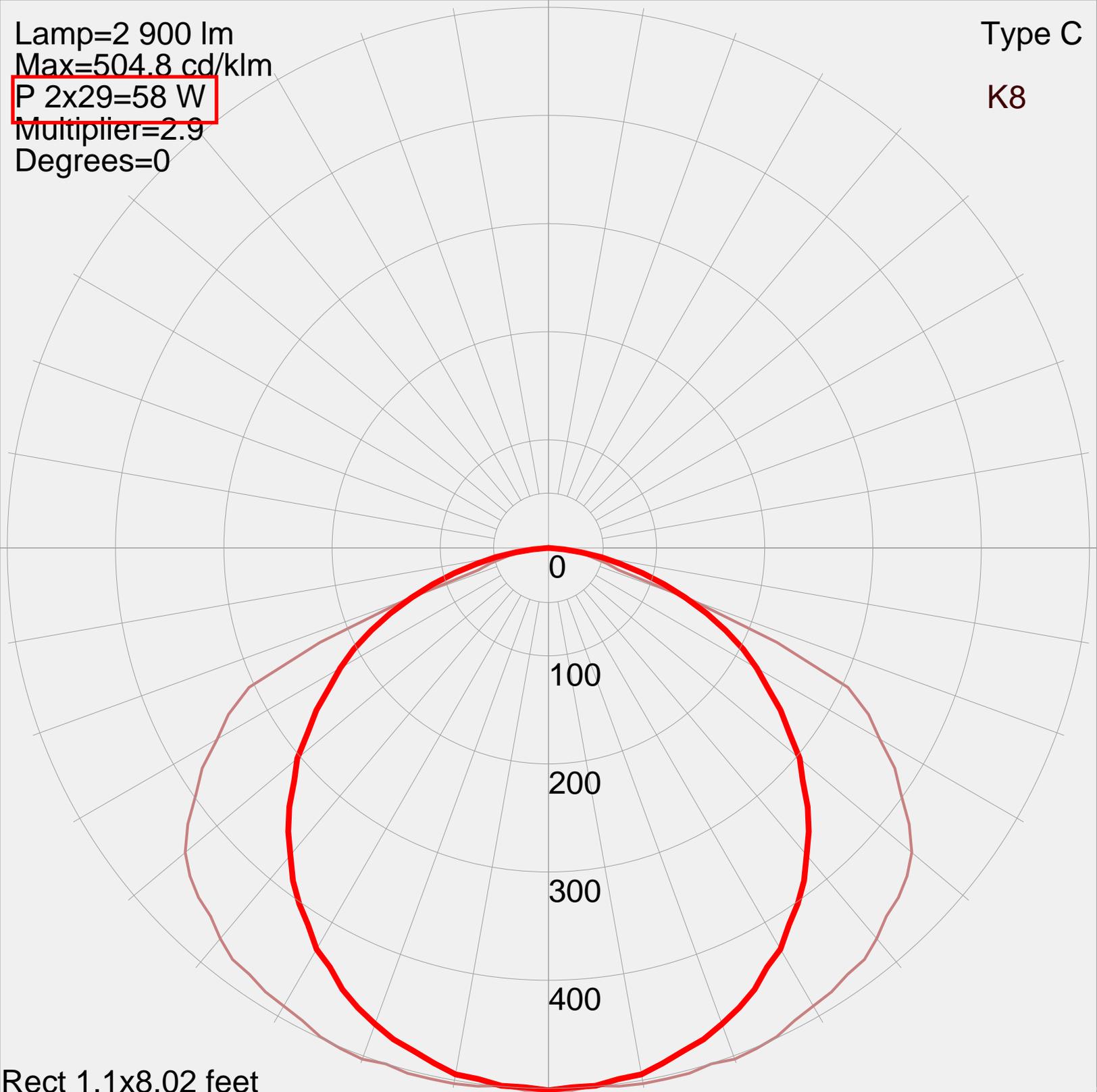


Rect 1.92x3.93 feet

Manufacturer: Lithonia Lighting
Luminaire catalog: 2AV G 3 32 MDR 1/3 ASR
Luminaire: 2X4 AVante, recessed, 3 lamp T8 32 watt, Metal Diffuser w/ Round
Lamp catalog: F32T8
Lamp: THREE 32-WATT T8 LINEAR FLUORESCENT.

Lamp=2 900 lm
Max=504.8 cd/klm
P 2x29=58 W
Multiplier=2.9
Degrees=0

Type C
K8



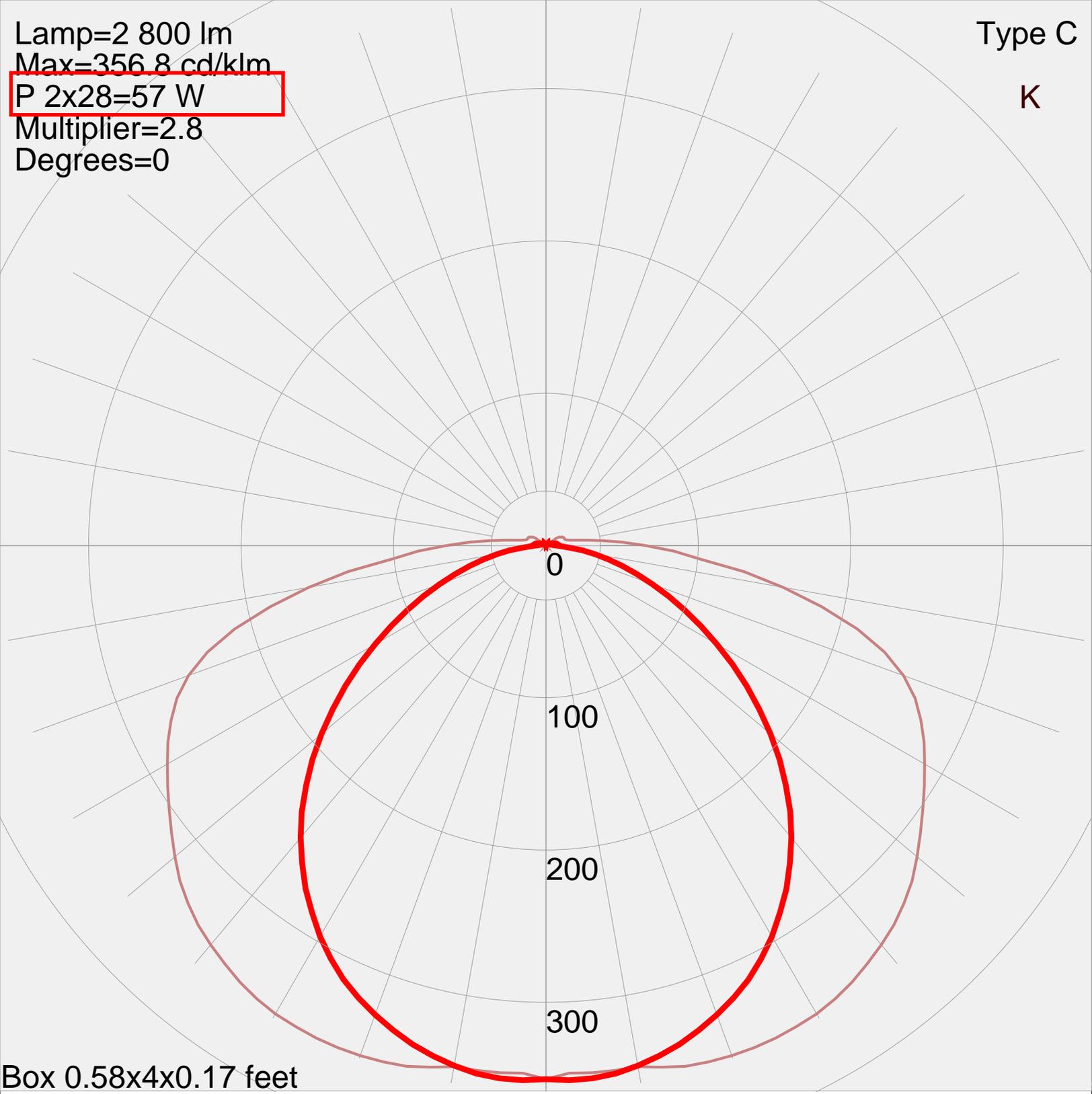
Rect 1.1x8.02 feet

Manufacturer: Lithonia Lighting
Luminaire catalog: TAF ST 1 32 MVOLT GEB10IS
Luminaire: TANDEM INDUSTRIAL TURRET 1' X 8' 2 LAMP T8 WHITE ENAM
Lamp catalog: FO32/35K
Lamp: TWO 32-WATT T8 LINEAR FLUORESCENT.

Type C

K

Lamp=2 800 lm
Max=356.8 cd/klm
P 2x28=57 W
Multiplier=2.8
Degrees=0



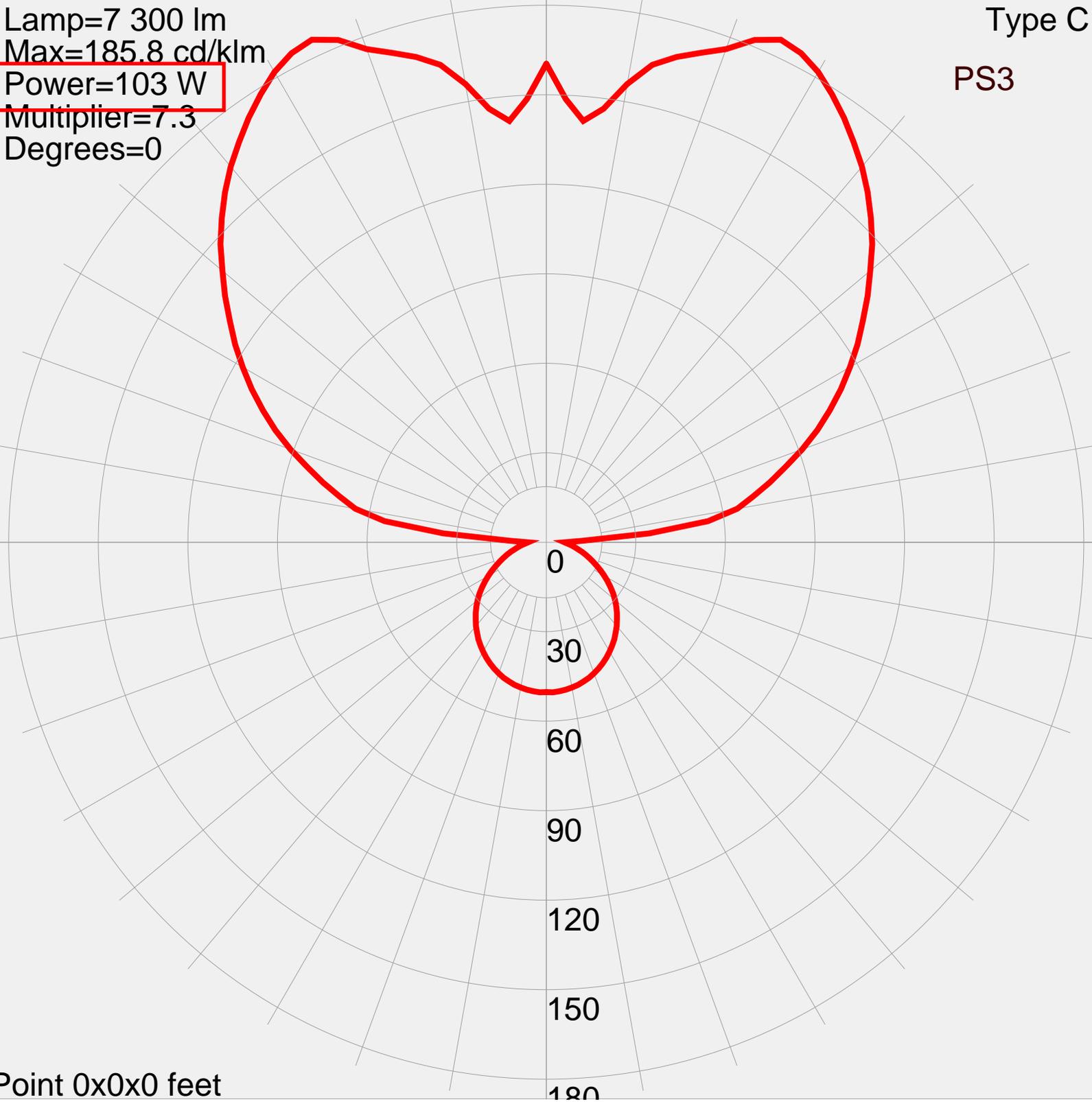
Box 0.58x4x0.17 feet

Manufacturer: Lithonia Lighting
Luminaire catalog: DMW 2 32
Luminaire: 4FT WET LOCATION ENCLOSURE WITH (2) T8 LAMPS, 50% D
Lamp catalog: F32T8
Lamp: TWO 32-WATT LINEAR FLUORESCENT T8, 735

Type C

PS3

Lamp=7 300 lm
Max=185.8 cd/klm
Power=103 W
Multiplier=7.3
Degrees=0

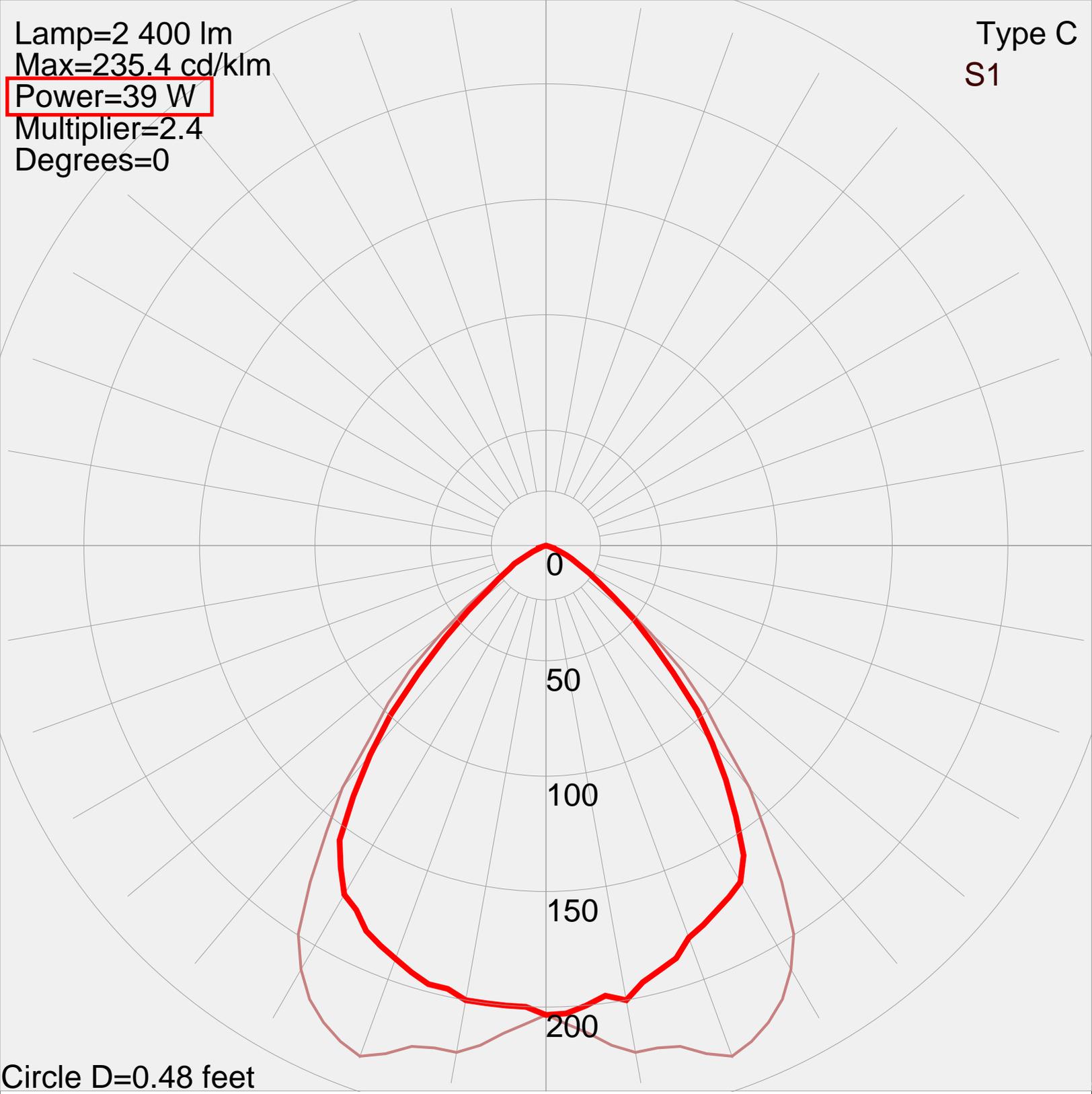


Point 0x0x0 feet

Manufacturer: COOPER LIGHTING - SHAPER
Luminaire catalog: 494-34-CF4/26-120SSB
Luminaire: PENDANT MOUNT LUMINAIRE
Lamp catalog: CF26DD/E/841. LUMEN RATING = 7300 LMS.
Lamp: FOUR SYLVANIA 26 WATT CPFL LAMPS

Lamp=2 400 lm
Max=235.4 cd/klm
Power=39 W
Multiplier=2.4
Degrees=0

Type C
S1



Circle D=0.48 feet



A JOHNSON CONTROLS COMPANY

Air Cooled Screw Chiller Performance Specification

Unit Tag	Qty	Model No.	Capacity (Tons)	Volts/Ph/Hz	Refrigerant
CH-1 C-1	1	YCIV0187SA46	175.3	460/3/60	R134a
Pin No: YCIV0187SA46VABBXTXXXXLXXXX42SXXXXHXXXSAXLXXX5RXXLXND2XXXX					

Evaporator Data		Evaporator Data (Cont.)		Performance Data	
EWT (°F)	56.0	GPM Min. Flow Rate	160.0	EER / COP	9.4 / 2.8
LWT (°F)	42.0	GPM Max. Flow Rate	750.0	EER NPLV/COP NPLV	12.7 / 3.7
Design Flow Rate (gpm)	317.7			Minimum Unit Capacity	10 %
Pressure Drop (ft.)	17.6	Condenser Data		Physical Data	
Fluid	P.G. 30.0%	Ambient Temp. Design (°F)	95.0	Rigging Wt. (lbs.)	13540.8
Fouling Factor	0.00010	Altitude (ft.)	0	Operating Wt. (lbs.)	14334.4
Water Volume (gal)	95.0	Ambient Temp. Min (°F)	0.0		

Electrical Data				
Circuit	1	2	3	4
Compressor RLA	162	120		
Fan QTY/FLA (each)	5/2.8	4/2.8		

Single Point				
Min. Circuit Ampacity	348			
Recommended Fuse/CB Rating	400			
Max. Inverse Time CB Rating	500			
Max. Dual Element Fuse Size (Amps)	500			
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	209.4	Total Fan kW	15.1	Total kW	224.5

Notes: OPERATING COST SAVINGS OPPORTUNITY! Consider upgrading to the OPTIMIZED IPLV model to save approximately \$4828 / YEAR in energy costs versus the standard model. Calculation based on; a) national average weather data, b) national average building load profile, c) average building annual run hours (5000 hrs.), and d) national average commercial energy cost (per D.O.E., 2005, \$0.0865/kwh). For a more detailed analysis based on your project please contact your YORK representative.

RATED OUTSIDE THE SCOPE OF ARI STANDARD 550/590.
* Use Copper Conductors only

Part Load Rating Data				
Load %	Ambient (°F)	Capacity (Tons)	Compressor kW	Unit Efficiency
100.0	95.0	175.3	209.4	9.4 / 2.8
75.0	80.0	131.5	109.4	12.7 / 3.7
50.0	65.0	87.7	76.7	12.9 / 3.8
25.0	55.0	43.8	40.8	12.4 / 3.6

Project Name: CPS SUBMITTAL	Sold To:	
Location:	Customer Purchase Order No.:	
Engineer:	York Contract No.:	
Contractor:	Date:	Revision Date:

Printed: 02/02/2009 AT 16:14
Unit Folder: IIART-1

Unit Version: 9.52.FDW (Data Source: v5_48_46)
YORKworks v.9.52

CH-1 Performance
Page 1 of 2

Standard Efficiency Ratings - English - 460V/60Hz

MODEL: YCIV0157S/P **S_IPLV= 13.2** **P_IPLV= 14.5**

AIR TEMPERATURE ON - CONDENSER (°F)

LCWT (°F)	75.0			80.0			85.0			90.0			95.0			100.0			105.0			110.0			115.0		
	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
40.0	149.1	131.5	12.3	148.0	141.8	11.4	146.7	152.6	10.6	145.4	164.1	9.8	143.9	176.0	9.1	142.2	189.4	8.4	138.9	202.0	7.7	136.4	216.0	7.1	132.7	229.5	6.6
42.0	153.7	132.5	12.6	152.5	142.6	11.7	151.2	153.5	10.9	149.8	165.0	10.1	148.2	177.0	9.3	146.5	190.5	8.6	142.7	202.7	7.9	139.9	217.0	7.3	136.1	230.5	6.7
44.0	158.3	133.5	12.9	157.1	143.6	12.0	155.7	154.4	11.1	154.3	165.9	10.3	152.6	177.9	9.6	150.8	191.5	8.8	146.5	203.4	8.1	143.6	217.8	7.5	139.6	231.3	6.8
45.0	160.7	134.0	13.1	159.4	144.1	12.1	158.1	154.9	11.3	156.5	166.4	10.4	154.9	178.4	9.7	153.0	192.0	8.9	148.4	203.7	8.2	145.5	218.2	7.5	141.4	231.8	6.9
46.0	163.1	134.6	13.2	161.8	144.6	12.3	160.4	155.4	11.4	158.8	166.9	10.6	157.1	178.9	9.8	155.2	192.5	9.0	150.4	204.0	8.3	147.4	218.5	7.6	143.2	232.3	7.0
48.0	167.9	135.7	13.5	166.6	145.7	12.6	165.1	156.5	11.7	163.5	167.9	10.8	161.7	180.0	10.0	159.7	193.6	9.3	154.3	204.7	8.5	151.2	219.3	7.8	146.9	233.2	7.1
50.0	172.8	137.0	13.8	171.4	146.9	12.8	169.9	157.7	11.9	168.2	169.0	11.1	166.4	181.1	10.3	164.3	194.7	9.5	158.2	205.4	8.7	155.0	220.0	8.0	148.9	228.5	7.4
52.0	177.8	138.4	14.0	176.4	148.2	13.1	174.8	158.9	12.2	173.1	170.2	11.3	171.2	182.3	10.5	168.6	195.6	9.7	162.2	206.1	8.9	158.9	220.7	8.1	150.6	222.7	7.7
55.0	185.4	140.6	14.4	184.0	150.3	13.5	182.3	160.8	12.6	180.5	172.1	11.7	178.5	184.1	10.8	175.0	196.8	10.0	168.3	207.2	9.2	164.9	221.8	8.4	153.1	214.2	8.1

MODEL: YCIV0177S/P **S_IPLV= 13.0** **P_IPLV= 14.8**

AIR TEMPERATURE ON - CONDENSER (°F)

LCWT (°F)	75.0			80.0			85.0			90.0			95.0			100.0			105.0			110.0			115.0		
	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
40.0	165.7	144.7	12.6	164.2	156.2	11.6	162.4	168.5	10.7	160.5	181.2	9.9	158.4	194.4	9.1	154.6	205.6	8.5	149.9	214.6	7.9	146.6	225.5	7.4	131.6	208.8	7.1
42.0	170.9	145.7	12.9	169.3	157.3	11.9	167.5	169.5	11.0	165.5	182.3	10.1	163.3	195.6	9.4	159.1	206.2	8.7	154.0	215.3	8.1	150.7	226.2	7.5	133.2	204.3	7.3
44.0	176.1	146.8	13.2	174.6	158.3	12.2	172.8	170.6	11.3	170.7	183.5	10.4	168.4	196.8	9.6	163.8	206.8	8.9	158.3	215.8	8.3	154.7	227.0	7.7	135.0	200.0	7.6
45.0	178.8	147.5	13.3	177.2	158.9	12.3	175.4	171.1	11.4	173.3	184.0	10.5	171.0	197.5	9.7	166.1	207.1	9.0	160.5	216.0	8.4	156.8	227.3	7.8	135.8	197.7	7.7
46.0	181.5	148.2	13.5	179.9	159.5	12.5	178.1	171.7	11.5	175.9	184.6	10.7	173.5	197.8	9.9	168.5	207.3	9.2	162.6	216.2	8.5	158.9	227.6	7.9	136.5	195.4	7.8
48.0	186.9	149.5	13.8	185.4	160.8	12.8	183.5	173.0	11.8	181.3	185.9	10.9	178.4	198.3	10.1	173.3	207.9	9.4	167.0	216.6	8.7	161.6	224.4	8.2	138.0	190.9	8.1
50.0	192.4	151.0	14.0	190.8	162.2	13.0	189.0	174.3	12.1	186.7	187.2	11.2	183.4	198.8	10.4	178.2	208.4	9.6	171.5	217.0	8.9	163.6	219.4	8.4	139.3	186.1	8.4
52.0	198.0	152.6	14.3	196.4	163.7	13.3	194.5	175.8	12.3	192.2	188.6	11.4	188.5	199.4	10.6	183.1	209.0	9.9	176.0	217.4	9.1	165.5	214.4	8.7	140.6	181.5	8.7
55.0	206.4	155.2	14.7	204.9	166.1	13.7	202.9	178.1	12.7	200.6	190.9	11.8	196.2	200.4	11.0	190.7	209.9	10.2	182.9	217.9	9.5	168.2	206.9	9.2	142.5	174.8	9.1

MODEL: YCIV0187S/P **S_IPLV= 13.1** **P_IPLV= 14.9**

AIR TEMPERATURE ON - CONDENSER (°F)

LCWT (°F)	75.0			80.0			85.0			90.0			95.0			100.0			105.0			110.0			115.0		
	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER	TONS	KW	EER
40.0	180.3	156.2	12.6	178.8	168.2	11.7	177.1	181.1	10.8	175.3	194.7	10.0	173.4	208.9	9.3	171.1	224.9	8.6	166.1	236.3	7.9	162.9	249.2	7.4	158.5	260.7	6.9
42.0	185.9	157.4	12.9	184.4	169.4	12.0	182.6	182.3	11.1	180.7	195.8	10.3	178.7	210.1	9.5	176.4	226.2	8.8	170.5	236.8	8.1	167.2	249.8	7.6	162.6	261.4	7.1
44.0	191.7	158.8	13.2	190.0	170.7	12.3	188.2	183.5	11.4	186.3	197.1	10.5	184.2	211.3	9.8	181.7	227.5	9.0	175.1	237.3	8.3	171.6	250.3	7.8	166.8	262.1	7.2
45.0	194.6	159.6	13.4	192.9	171.4	12.4	191.1	184.2	11.5	189.1	197.7	10.7	186.9	212.0	9.9	184.3	228.0	9.1	177.4	237.5	8.4	173.8	250.6	7.9	168.4	260.9	7.3
46.0	197.5	160.4	13.5	195.8	172.1	12.5	193.9	184.9	11.6	191.9	198.4	10.8	189.7	212.7	10.0	186.9	228.3	9.2	179.7	237.7	8.5	176.1	250.8	7.9	169.1	257.2	7.5
48.0	203.5	162.1	13.8	201.7	173.7	12.8	199.8	186.3	11.9	197.6	199.8	11.0	195.3	214.1	10.2	191.9	228.9	9.4	184.5	238.1	8.7	180.7	251.2	8.1	170.6	250.2	7.7
50.0	209.5	163.8	14.1	207.7	175.3	13.1	205.7	187.8	12.2	203.5	201.3	11.3	201.1	215.5	10.5	196.8	229.3	9.7	189.3	238.4	9.0	185.4	251.6	8.3	172.3	243.6	8.0
52.0	215.7	165.8	14.3	213.8	177.1	13.3	211.7	189.5	12.4	209.4	202.8	11.5	206.9	217.0	10.7	201.9	229.8	9.9	194.1	238.9	9.2	190.1	252.0	8.5	174.2	237.3	8.3
55.0	225.2	169.0	14.7	223.2	180.0	13.7	221.0	192.2	12.8	218.6	205.4	11.9	215.9	219.6	11.0	209.6	230.6	10.2	201.5	239.5	9.5	197.3	252.7	8.8	177.1	228.5	8.7

NOTES:

1. kW_i = Compressor Input Power
2. EER = Chiller EER (includes power from compressors, fans, and control panels 0.8 kW_i)
3. LCWT = Leaving Chilled Water Temperature
4. Ratings based on 2.4 GPM cooler water per ton
5. Rated IAW AHRI Standard 550/590
6. Certified IAW the AHRI Water-Chilling Packages Using the Vapor Compression Cycle Certification Program, which is based on AHRI Standard 550/590.