



Public Utilities Commission

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

Case No.: 13-0134-EL-EEC

Mercantile Customer: Mantaline Corporation

Electric Utility: Ohio Edison Company

Program Title or
Description: Lighting Retrofit

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: Mantaline Corporation

Principal address: 4754 East High Street, Mantua, Ohio 44255

Address of facility for which this energy efficiency program applies: 4754 East High Street, Mantua, Ohio 44255

Name and telephone number for responses to questions: Nancy Van Ginkel, (330) 274-2264

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

- ☒ The customer uses more than seven hundred thousand kilowatt hours per year at the above facility. (Please attach documentation.)
- ☐ The customer is part of a national account involving multiple facilities in one or more states. (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: Ohio Edison Company

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)). **If Checked, Please see Exhibit 1 and Exhibit 2**
- ☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s): _____.
- ☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s): _____.
- ☐ Behavioral or operational improvement.

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

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

Annual savings: 209,728 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. **Please see Exhibit 1 if applicable**

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

Annual savings: _____ kWh

Please describe the less efficient new equipment that was rejected in favor of the more efficient new equipment. **Please see Exhibit 1 if applicable**

- 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?

10/29/2012

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

38 kW

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

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

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

A) 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 \$____. (Rebate shall not exceed 50% project cost. Attach documentation showing the methodology used to determine the cash rebate value and calculations showing how this payment amount was determined.)

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

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

OR

☐ A commitment payment valued at no more than \$____. (Attach documentation and calculations showing how this payment amount was determined.)

OR

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

Section 6: Cost Effectiveness

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

- ☐ Total Resource Cost (TRC) Test. The calculated TRC value is: _____(Continue to Subsection 1, then skip Subsection 2)
- ☒ Utility Cost Test (UCT) . The calculated UCT value is: **See Exhibit 3** (Skip to Subsection 2.)

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

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

The electric utility's avoided supply costs were _____.

Our program costs were _____.

The incremental measure costs were _____.

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

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

Our avoided supply costs were **See Exhibit 3**

The utility's program costs were **See Exhibit 3**

The utility's incentive costs/rebate costs were **See Exhibit 3**

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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



Public Utilities Commission

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

Case No.: 13-0134-EL-EEC

State of Ohio :

Nancy Van Ginkel, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

Manteline Corporation

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

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

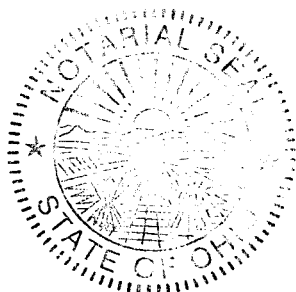
Nancy van Ginkel VP Finance
Signature of Affiant & Title

Sworn and subscribed before me this 18 day of February, 2013 Month/Year

Cynthia D. Allen
Signature of official administering oath

Cynthia D. Allen
Print Name and Title

My commission expires on 10-13-2013



CYNTHIA D ALLEN
Notary Public, State of Ohio
Portage County
My Commission Expires Oct. 13, 2013

Customer Legal Entity Name: Mantaline Corporation
Site Address: High Street
Principal Address: 4754 East High Street

| Project No. | Project Name | Narrative description of your program including, but not limited to, make, model, and year of any installed and replaced equipment: | Description of methodologies, protocols and practices used in measuring and verifying project results | What date would you have replaced your equipment if you had not replaced it early? Also, please explain briefly how you determined this future replacement date. | Please describe the less efficient new equipment that you rejected in favor of the more efficient new equipment. |
|-------------|-------------------|---|---|--|--|
| 1 | Lighting Retrofit | Replaced plant lighting -removing old T12 HO fixtures and installing new T5 and T8 fixtures with electronic ballasts. Reduced the total number of fixtures in plant. Retrofit office lighting from T12 to T8 with electronic ballasts. Installed some occupancy sensors in offices and a few in plant area. | Lighting inventory was performed with pre & post ECM fixture consumption and demand utilized in school. Specified retrofits and replacements of the existing fixtures. Electrical Usage (kWh) = (Number of fixtures x watts per fixture x Operating hours). Electrical Demand (kWd) = (Number of fixtures x watts per fixture) ; Electrical Energy Cost = (kWh x \$/kwh) ; Existing KWh - Retrofit KWh = Savings. SeeMantaine_High Street_Lighting Rebate Calculator for details. Measurement and Verification is based on IPMVP Option A. Calculations based on physical assessment of operational factors and commonly accepted usage assumptions." | N/A | N/A |
| | | | | | |
| | | | | | |
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| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |

Exhibit 2

Customer Legal Entity Name: Mantaline Corporation

Site: High Street

Principal Address: 4754 East High Street

| | Unadjusted Usage, kwh (A) | Weather Adjusted Usage, kwh (B) | Weather Adjusted Usage with Energy Efficiency Addbacks, kwh (C) | Note 1 |
|----------------|------------------------------|------------------------------------|--|--------|
| 2011 | 6,471,129 | 6,471,129 | 6,471,129 | |
| 2010 | 5,838,290 | 5,838,290 | 5,838,290 | |
| 2009 | 0 | 0 | 0 | |
| Average | 4,103,140 | 4,103,140 | 4,103,140 | |

| Project Number | Project Name | In-Service Date | Project Cost \$ | KWh Saved/Year Counting towards Utility compliance | KWh Saved/Year (D) eligible for incentive | Utility Peak Demand Reduction Contribution, KW |
|----------------|-------------------|-----------------|-----------------|--|--|--|
| 1 | Lighting Retrofit | 10/29/2012 | \$51,617 | 209,728 | 209,728 | 38 |
| | | | | - | - | - |
| | | | | - | - | - |
| | | | | - | - | - |
| | | | | - | - | - |
| | | | | - | - | - |
| | | | | - | - | - |
| Total | | | | 209,728 | 209,728 | 38 |

Docket No. 13-0134

Site: 4754 East High Street

Savings as percent of usage 5.1% Note 2

= Total (D) divided by Average (C)

Customer Eligible Exemption Period: 62 Month(s) Note 3

Notes

(1) Customer's usage is adjusted to account for the effects of the energy efficiency programs included in this application. When applicable, such adjustments are prorated to the in-service date to account for partial year savings.

(2) Savings as a percent of usage is equal to the of total project savings (D) divided by the 3 year average Weather Adjusted Usage with Energy Efficiency Addbacks (C).

(3) Customer exemption determined by savings percentage in relation to energy efficiency schedule as set forth in O.R.C. 4928.66(A)(1)(a).

(4) The exemption period reflects the maximum potential exemption period. NOTE: The FirstEnergy Utilities cannot guarantee the length of the exemption period that will ultimately be approved by the Commission. Depending on the Commission's order, periods greater than 24 months may be capped at 24 months.

Exhibit 3 Utility Cost Test

UCT = Utility Avoided Costs / Utility Costs

| Project | Total Annual Savings, MWh (A) | Utility Avoided Cost \$/MWh (B) | Utility Avoided Cost \$ (C) | Utility Cost \$ (D) | Cash Rebate \$ (E) | Administrator Variable Fee \$ (F) | Total Utility Cost \$ (G) | UCT (H) |
|--------------|----------------------------------|------------------------------------|--------------------------------|------------------------|-----------------------|--------------------------------------|------------------------------|-------------|
| 1 | 210 | \$ 308 | \$ 64,655 | \$ 4,050 | \$0 | \$2,097 | \$ 6,147 | 10.5 |
| Total | 210 | \$ 308 | 64,655 | 4,050 | \$0 | \$2,097 | 6,147 | 10.5 |

Notes

- (A) From Exhibit 2, = kWh saved / 1000
- (B) This value represents avoided energy costs (wholesale energy prices) from the Department of Energy, Energy Information Administration's 2009 Annual Energy Outlook (AEO) low oil prices case. The AEO represents a national average energy price, so for a better representation of the energy price that Ohio customers would see, a Cinergy Hub equivalent price was derived by applying a ratio based on three years of historic national average and Cinergy Hub prices. This value is consistent with avoided cost assumptions used in EE&PDR Program Portfolio and Initial Benchmark Report, filed Dec 15, 2009 (See Section 8.1, paragraph a).
- (C) = (A) * (B)
- (D) Represents the utility's costs incurred for self-directed mercantile applications for applications filed and applications in progress. Includes incremental costs of legal fees, fixed administrative expenses, etc.
- (E) This is the amount of the cash rebate paid to the customer for this project.
- (F) Based on approximate Administrator's variable compensation for purposes of calculating the UCT, actual compensation may be less.
- (G) = (D) + (E) + (F)
- (H) = (C) / (G)

Manteline Corporation ~ High Street
Docket No. 13-0134

Site: 4754 East High Street

Project Cost Summary

| <u>Site Name</u> | <u>Project</u> | <u>Project Name</u> | <u>Purchase Order Number</u> | <u>Amount</u> |
|------------------|----------------|---------------------|------------------------------|---------------|
| High Street | 1 | Lighting Retrofit | 2824 | \$ 19,327.20 |
| High Street | 1 | Lighting Retrofit | 2829 | \$ 32,290.26 |
| Total | | | | \$ 51,617.46 |

Lighting Inventory Form

| | |
|-----------------|-------------|
| Applicant Name: | Martaline |
| Facility Name: | High Street |
| Date: | 1/21/2012 |

Instructions: Please use one line for each fixture type in a room or area.

For existing or proposed control, choose OCC for Occupancy Sensor, DAYLTO for photosensor, or NONE for none. Controls must save energy to qualify.

The total of Column S, the quantities of CFLs and exit signs in Column M, and the quantities of sensors in Column R, will be used to calculate your incentive on the NonStandard Lighting form.

| PROJECT BASIC INFORMATION | | | | | | PRE-INSTALLATION | | | | | | POST-INSTALLATION | | | | | | Energy Calculations | | | | | | | | | | | | | | | | | | | | | |
|---------------------------|------------------|-------|------------------|------------------------------|------------------------------------|------------------|-----------------|------------------|-------------------------|--------------------------|---------------------------|--------------------------|-----------------|-------------------|--------------------------|---------------------------|-------------------------------|--------------------------|--|--|--|---|-------------------|------------------------------|-----------------------|--------------|--------------|--|--|---|---|--------------------------|---|---|------------------------------------|---------------------------------|-------------------------------|-----|---|
| Line Item | Building Address | Floor | Area Description | Interior or Exterior Fixture | Predominant Space Type | Area to be Lit | Pre Fixture Qty | Pre Fixture Code | Pre Fixture Fixture (W) | Pre Fixture Space (sqft) | Existing Controls and dim | Existing Sensor Quantity | Pre Fixture Qty | Post Fixture Code | Post Fixture Fixture (W) | Post Fixture Space (sqft) | Proposed Control (CFL or LED) | Proposed Sensor Quantity | Fixture Change in Connected Load (W) including CFL or Exit Signs | Fixture Change in Connected Load (W) including CFL or Exit Signs | Change in Connected Load (W) CFL or LED only | Applicable Coefficient of Use (CU) Estimate | Correction Factor | Installation Factor (demand) | Usage Factor (energy) | Power Factor | Power Factor | Interior Demand (AW) including CFL or Exit Signs | Exterior Demand (AW) including CFL or Exit Signs | Storage Demand (AW) including CFL or Exit Signs | Applicable Equipment Full Load Hours (FLH) Estimate | Proposed Full Load Hours | Annual Interior Fixture kWh Saved (including CFL or Exit Signs) | Annual Exterior Fixture kWh Saved (including CFL or Exit Signs) | Annual kWh Saved (CFL or LED only) | Annual kWh Saved (Sensors only) | Post Fixture kWh Saved Number | | |
| 0-0 | 407 North Street | 2 | Office | Interior | Office - Small | Cooled Space | 3 | F4461 | 112 | 0.34 | NONE | | 3 | CF7501-BX | 66 | 0.17 | CCC | 3 | | | 0.18 | 0.17 | 84% | 84% | 34% | 12% | | 30% | | | | 0.19 | 2.68 | 3.436 | | | 648 | 194 | 1 |
| 1 | 407 North Street | 2 | Office | Interior | Reception / Entry Area | Uncooled Space | 4 | F4461 | 112 | 0.34 | NONE | | 4 | CF7501-BX | 66 | 0.17 | CCC | 4 | | | 0.18 | 0.17 | 84% | 84% | 34% | 12% | | 30% | | | | 0.19 | 2.68 | 3.436 | | | 648 | 194 | 1 |
| 2 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 30 | F4236 | 85 | 2.55 | NONE | | 30 | F4236 | 85 | 2.55 | NONE | | | | 7.53 | | | | | | | | | | | | | | | | | | |
| 3 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 34 | F4463 | 139 | 19.18 | NONE | | 37 | F4236 | 59 | 2.77 | NONE | | | | 7.38 | | | | | | | | | | | | | | | | | | |
| 4 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 13 | F4236 | 237 | 2.61 | NONE | | 11 | F4236 | 73 | 6.46 | NONE | | | | 2.38 | | | | | | | | | | | | | | | | | | |
| 5 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 3 | F4236 | 136 | 1.84 | NONE | | 11 | F4236 | 113 | 1.33 | NONE | | | | 0.91 | | | | | | | | | | | | | | | | | | |
| 6 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 4 | F4236 | 85 | 1.26 | NONE | | 11 | F4236 | 33 | 4.24 | NONE | | | | 0.99 | | | | | | | | | | | | | | | | | | |
| 7 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 30 | F4236 | 85 | 1.53 | NONE | | 20 | Cur Street 1 | 19 | 6.30 | NONE | | | | 0.98 | | | | | | | | | | | | | | | | | | |
| 8 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 1 | F4236 | 103 | 0.27 | NONE | | 1 | F4236 | 69 | 0.27 | NONE | | | | 0.04 | | | | | | | | | | | | | | | | | | |
| 9 | 435A High Street | 1 | Office | Interior | Office - Small | Cooled Space | 1 | F4236 | 103 | 0.15 | NONE | | 1 | F4236 | 69 | 0.08 | NONE | | | | 0.04 | | | | | | | | | | | | | | | | | | |
| 10 | 435A High Street | 1 | Plant | Interior | Other - Phase estimate CF and EFLH | Uncooled Space | 380 | F4236 | 237 | 65.53 | NONE | | 31 | F4236 | 354 | 27.05 | NONE | | | | 30.99 | | | 50% | 50% | | | | | | | | | | | | | | |
| 11 | 435A High Street | 1 | Plant | Interior | Other - Phase estimate CF and EFLH | Uncooled Space | 3 | M44011 | 69 | 1.37 | NONE | | 1 | F4236 | 113 | 11.93 | NONE | | | | 10.93 | | | 50% | 50% | | | | | | | | | | | | | | |
| 12 | 435A High Street | 1 | Plant | Interior | Other - Phase estimate CF and EFLH | Uncooled Space | 1 | F4236 | 86 | 0.02 | NONE | | 12 | F4236 | 112 | 1.36 | NONE | | | | 1.25 | | | 50% | 50% | | | | | | | | | | | | | | |
| 13 | 435A High Street | 1 | Plant | Interior | Other - Phase estimate CF and EFLH | Uncooled Space | 5 | F4236 | 237 | 1.14 | NONE | | 11 | F4236 | 113 | 1.76 | NONE | | | | 0.65 | | | 50% | 50% | | | | | | | | | | | | | | |
| 14 | 435A High Street | 1 | Plant | Interior | Other - Phase estimate CF and EFLH | Uncooled Space | 5 | F4236 | 237 | 1.14 | NONE | | 6 | F4236 | 76 | 0.49 | NONE | | | | 0.67 | | | 50% | 50% | | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | 15 | | | 1.92 | NONE | | | | 1.92 | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 29 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 32 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 33 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 34 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 35 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 36 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 37 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 38 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 39 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 40 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 41 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 42 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 43 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 44 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 45 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 46 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 47 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 48 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 49 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 50 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 51 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 52 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 53 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 54 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 55 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 56 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 57 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 58 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 59 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 60 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 61 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 62 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 64 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | | | | | | | | | | |
| 65 | | | | | | | | | | | | | | | | | NONE | | | | | | | | | | | | | </ | | | | | | | | | |

[illegible]

Project Estimated Annual Savings Summary

| | |
|--------------------------------|---------|
| Estimated Annual kWh Savings | 209,728 |
| Total Change in Connected Load | 38.22 |

| | |
|-------------------------------|-------------|
| Annual Estimated Cost Savings | \$20,972.80 |
| Annual Operating Hours | 4,637 |

| | |
|---|-------------|
| Interior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs) | \$10,486.40 |
| Exterior Lighting Incentive @ \$0.05/kWh (excluding retrofit CFLs, sensors, or LED exit signs) | \$0.00 |
| Total retrofit CFL Incentive @ \$1/screw-in CFL lamp; \$15/hard-wired CFL lamp (includes all retrofit CFLs, both interior and exterior) | \$0.00 |
| Total retrofit LED Exit Incentive @ \$10/exit sign | \$0.00 |
| Total Lighting Controls Incentive @ \$25/sensor (includes all Lighting Controls, both interior and exterior) | \$0.00 |

| | |
|----------------------------|-------------|
| Total Calculated Incentive | \$10,486.40 |
|----------------------------|-------------|

| | |
|--|-----|
| Total Fixture Quantity excluding retrofit CFLs and LED Exit Sign | 307 |
| Total Lamp Quantity for retrofit Screw-In CFLs | 0 |
| Total Lamp Quantity for retrofit Hard-Wired CFLs | 0 |
| Total Fixture Quantity for retrofit LED Exit Signs | 0 |
| Total Quantity for Occupancy Sensors | 0 |
| Total Quantity for Daylight Sensors | 0 |

Please briefly describe how you estimated your coincidence factor (CF) and applicant equivalent full-load hours (EFLH) for facility type "Other" indicated on the Lighting Form tab

Demand Savings (For Internal Use Only)

37.10



HIGH POWER FACTOR SOUND RATED A



For 32W Lamps

| No. of Lamps | Input Volts | Lamp Starting Method | Ballast Family | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |
|--------------------------------|-------------|----------------------|----------------|--------------------|--------------------------|----------------|------------|---------------------|-----------------------------|-------|-------------|
| F32T8, FBO31T8, F32T8/U6 (32W) | | | | | | | | | | | |
| 2 | 120 | IS | AmbiStar† | REB-2P32-SC | 56 | 0.88 | 120 | 0.80 | 0/-18 | B | 64 |
| | | PS | Centium | RCN-2S32-SC | 63 | 0.88 | 10 | 0.53 | 32/0 | | 21 |
| | | 277 | RS | PowrKut | RK-2S32-TP | 66 | 0.86 | 15 | 0.60 | 50/10 | A |
| | PS | | Centium | VCN-2S32-SC | 63 | 0.88 | 10 | 0.23 | 32/0 | B | *65 |
| | RS | PowrKut | VK-2S32-TP | 66 | 0.85 | 15 | 0.26 | 50/10 | A | 21 | |
| | 120-277 | IS | Centium | ICN-2M32-MC | 59 | 0.88 | 10 | 0.50-0.21 | 0/-18 | A2 | 64 |
| | | | | ICN-2P32-LW-SC | 50-49 | 0.77 | 10 | 0.42-0.12 | | | |
| | | | | ICN-2P32-N | 59 | 0.88 | 10 | 0.49-0.22 | | | |
| | | | | ICN-3P32-LW-SC | 57-56 | 0.86 | 10 | 0.48-0.21 | | | |
| | | | | ICN-3P32-SC | 65 | 1.01 | 10 | 0.54-0.24 | | | *65 |
| | | | Optanium | IOP-2P32-LW-SC | 48 | 0.77 | 10 | 0.41-0.17 | -20/-29 | B | 64 |
| | | | | IOPA-2P32-LW-SC | | | | | | | |
| | | | | IOP-2P32-SC | 55-54 | 0.87 | 10 | 0.47-0.20 | | | |
| | | | | IOP-2P32-HL-SC | 74-72 | 1.18 | 10 | 0.62-0.26 | | | |
| | | | | IOPA-2P32-HL-SC | | | | | | | |
| | | | | IOP-3P32-LW-SC | 55-54 | 0.85 | 10 | 0.46-0.20 | | | *65 |
| | | | | IOPA-3P32-LW-SC | | | | | | | |
| | | | | IOP-3P32-SC | 63-62 | 1.00 | 10 | 0.53-0.23 | | | |
| | | | | IOPA-3P32-SC | | | | | | | |
| | | | | IOP-3P32-HL-90C-SC | 80-79 | 1.38 | 10 | 0.67-0.29 | | | |
| | | | | IOPA-3P32-HL-SC | | | | | | | |
| | | PS | IOP-2S32-LW-SC | 47-46 | 0.71 | 10 | 0.38-0.17 | 0/-18 | | 21 | |
| | | | IOP-2S32-SC | 56-55 | 0.88 | 10 | 0.47-0.20 | | | | |
| | 347 | IS | Optanium | GOPA-2P32-LW-SC | 48 | 0.78 | 10 | 0.14 | -20/-29 | B | 64 |
| | | | | GOPA-2P32-SC | 54 | 0.88 | | 0.16 | | | |
| | | | | GOPA-3P32-LW-SC | 55 | 0.86 | | 0.16 | | | *65 |
| | | | | GOPA-3P32-SC | 63 | 1.00 | | 0.18 | | | |

† The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



See pages I-3 and I-4 for specific SKU's that meet the NEMA Premium Standard

Refer to page I-41 and I-42 for dimensions
 Refer to page I-59 and I-60 for wiring diagrams
 Refer to pages 9-24 to 9-28 for lead lengths and shipping data

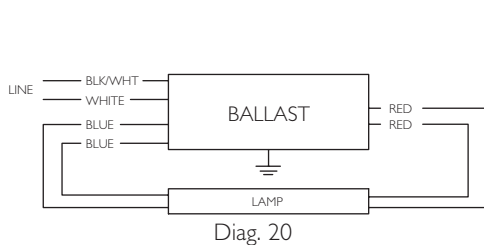


For 30W-48" Lamps

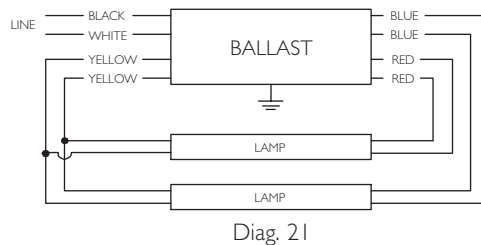
HIGH POWER FACTOR SOUND RATED A



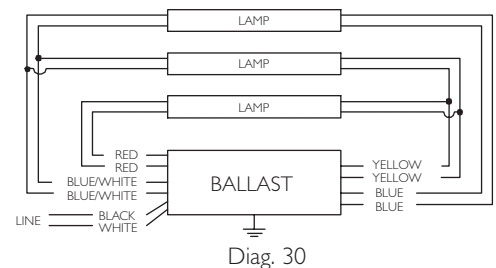
| No. of Lamps | Input Volts | Lamp Starting Method | Ballast Family | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. | |
|----------------------|-------------|----------------------|------------------|--------------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|-----|
| F32T8/ES (30W - 48") | | | | | | | | | | | | |
| 3 | 120 | PS | Centium | RCN-3S32-SC | 22 | 0.88 | 10 | 0.72 | 60/16 | B | 30 | |
| | 277 | | | VCN-3S32-SC | 85 | 0.88 | 10 | 0.31 | | | | |
| | 120-277 | IS | Centium | ICN-3P32-LW-SC | 69-68 | 0.77 | 10 | 0.57-0.25 | 60/16 | B | 65 | |
| | | | | ICN-3P32-SC | 79 | 0.88 | 10 | 0.66-0.29 | | | *66 | |
| | | | | ICN-4P32-LW-SC | 75-74 | 0.80 | 10 | 0.62-0.27 | | | 65 | |
| | | | | ICN-4P32-SC | 87 | 1.00 | 10 | 0.73-0.32 | | | | |
| | | | Optanium | IOP-3P32-LW-SC | 68-67 | 0.77 | 10 | 0.57-0.25 | | | | *66 |
| | | | | IOPA-3P32-LW-SC | | | | | | | | |
| | | | | IOP-3P32-SC | 77-76 | 0.87 | 10 | 0.65-0.28 | | | | |
| | | | | IOPA-3P32-SC | | | | | | | | |
| | | | | IOP-3P32-HL-90C-SC | 106-104 | 1.20 | 10 | 0.88-0.38 | | | | |
| | | | | IOPA-3P32-HL-SC | | | | | | | | |
| | | | | IOP-4P32-LW-SC | 75-74 | 0.84 | 10 | 0.63-0.27 | | | | |
| | | | | IOPA-4P32-LW-SC | | | | | | | | |
| | | | | IOP-4P32-SC | 84-82 | 0.97 | 10 | 0.70-0.30 | | | | |
| | | | | IOPA-4P32-SC | | | | | | | | |
| | | | | IOP-4P32-HL-90C-G | 115-114 | 1.24 | 10 | 0.97-0.42 | | | G | |
| | | | | IOPA-4P32-HL | | | | | | | A | |
| | | PS | IOP-3PSP32-LW-SC | TBD | 0.71 | 10 | TBD | B | | TBD | | |
| | | | IOP-3PSP32-SC | 79 | 0.88 | 10 | 0.66-0.29 | | | 30 | | |
| | | | IOP-3S32-LW-SC | 66-65 | 0.71 | 10 | 0.55-0.24 | | | | | |
| | | | IOP-3S32-SC | 77-76 | 0.88 | 10 | 0.64-0.28 | | | | | |
| | 347 | IS | Optanium | GOPA-3P32-LW-SC | 67 | 0.77 | 10 | 0.19 | 60/16 | B | 65 | |
| | | | | GOPA-3P32-SC | 76 | 0.88 | | 0.22 | | | *66 | |
| | | | | GOPA-4P32-LW-SC | 74 | 0.81 | | 0.22 | | | | |
| | | | | GOPA-4P32-SC | 84 | 0.95 | | 0.25 | | | | |



Diag. 20



Diag. 21



Diag. 30

Refer to page I-41 and I-42 for dimensions
Refer to page I-56 for additional wiring diagrams
Refer to pages 9-24 to 9-28 for lead lengths and shipping data



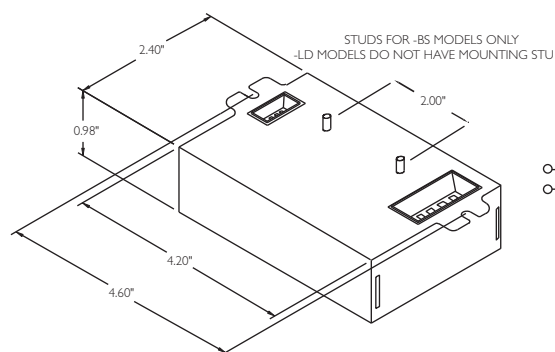
For 24-54W Lamps

HIGH POWER FACTOR SOUND RATED A

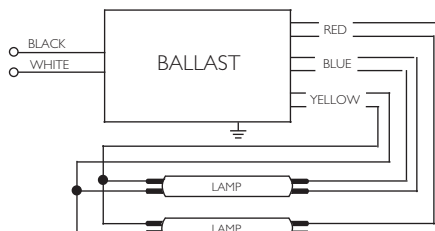


| No. of Lamps | Input Volts | Lamp Starting Method | Ballast Family | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. |
|----------------|-------------|----------------------|----------------|--------------------|--------------------------|----------------|------------|---------------------|-----------------------------|------------------|-------------|
| F24T5/HO (24W) | | | | | | | | | | | |
| 1 | 120-277 | PS | Centium | ICN-2S24+ | 27 | 1.02 | 10 | 0.23-0.10 | 0/-18 | D | 73 |
| | | | | ICN-2S39 | 29 | 1.12 | 15 | 0.25-0.12 | | | |
| 2 | 120-277 | PS | Centium | ICN-2S24+ | 52 | 1.00 | 10 | 0.44-0.19 | 0/-18 | D | 74 |
| | | | | ICN-2S39 | 55 | 1.10 | 10 | 0.47-0.21 | | | |
| F39T5/HO (39W) | | | | | | | | | | | |
| 1 | 120-277 | PS | Centium | ICN-2S24+ | 40 | 0.90 | 10 | 0.34-0.15 | 0/-18 | D | 73 |
| | | | | ICN-2S39 | 43 | 1.02 | 10 | 0.36-0.16 | | | |
| 2 | 120-277 | PS | Centium | ICN-2S39 | 87-85 | 1.00 | 10 | 0.73-0.31 | 0/-18 | D | 74 |
| F54T5/HO (49W) | | | | | | | | | | | |
| 1 | 120-277 | PS | Centium | ICN-2S54+ | 58 | 1.02 | 10 | 0.49-0.21 | -20/-29 | D | 73 |
| | | | | ICN-2S54-90C+ | | | | | | | |
| | | | | ICN-2S54-90C-SC | | | | | | | |
| | 347-480 | | Optanium | IOP-2PSP54-SC | 57 | 1.00 | 10 | 0.47-0.21 | | B | 78 |
| 2 | 120-277 | PS | Centium | ICN-2S54+ | 112-109 | 1.00 | 10 | 0.93-0.40 | -20/-29 | D | 74 |
| | | | | ICN-2S54-90C+ | | | | | | | |
| | | | | ICN-2S54-90C-SC | | | | | | IOP-2PSP54-SC | 109-105 |
| | 347-480 | | Centium | HCN-2S54-90C-WL | 112-109 | 1.00 | 10 | 0.35-0.25 | | L | 74 |
| 3 | 120-277 | PS | Centium | ICN-4S54-90C-2LS | 168-165 | 1.00 | 10 | 1.52-0.66 | -20/-29 | E | 75 |
| | | | | ICN-4S54-90C-2LS-G | | | | | | | |
| | | | | Optanium | | | | | | IOP-4PSP54-2LS-G | 162-159 |
| | 347-480 | | Centium | HCN-4S54-90C-2LS-G | 175-172 | 1.00 | 10 | 0.54-0.39 | | G | 75 |
| 4 | 120-277 | PS | Centium | ICN-4S54-90C-2LS | 222-216 | 1.00 | 10 | 2.00-0.86 | -20/-29 | E | 75A |
| | | | | ICN-4S54-90C-2LS-G | | | | | | | |
| | | | | Optanium | | | | | | IOP-4PSP54-2LS-G | 224-208 |
| | 347-480 | | Centium | HCN-4S54-90C-2LS-G | 223-221 | 1.00 | 10 | 0.69-0.50 | | G | 75A |

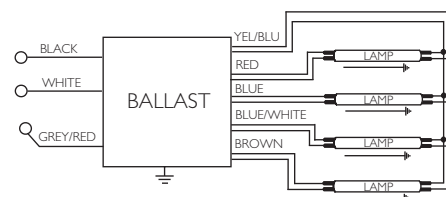
+ Also available with leads (ICN-2S24-WL, ICN-2S54-WL, or ICN-2S54-90C-WL)



Size I Enclosure



Diag. 78



Diag. 79

Refer to pages I-37 and I-38 for wiring diagrams
Refer to page I-40 for dimensions B, D, G, L, and E
Refer to pages 9-24 to 9-28 for lead lengths and shipping data



For 17W Lamps

HIGH POWER FACTOR SOUND RATED A



| No. of Lamps | Input Volts | Lamp Starting Method | Ballast Family | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. | |
|----------------------|-------------|----------------------|-----------------------|-----------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|---------|
| F17T8, FBO16T8 (17W) | | | | | | | | | | | | |
| 2 | 120 | IS | AmbiStar [‡] | REB-2P32-SC | 31 | 0.91 | 140 | 0.45 | 0/-18 | B | 64 | |
| | | 277 | PS | Centium | RCN-2S32-SC | 39 | 1.00 | 10 | 0.33 | | 32/0 | 21 |
| | VCN-2S32-SC | | | | 39 | 1.00 | 10 | 0.15 | | | | |
| | 120-277 | IS | Centium | ICN-2M32-MC | 31 | 0.88 | 10 | 0.26-0.11 | 0/-18 | A2 | 64 | |
| | | | | ICN-2P32-LW-SC | 28 | 0.79 | 20 | 0.23-0.10 | | | | |
| | | | | ICN-2P32-N | 33 | 0.93 | 15 | 0.28-0.13 | | | | |
| | | | | ICN-3P32-LW-SC | 32 | 0.88 | 20 | 0.27-0.18 | | | | |
| | | | | ICN-3P32-SC | 38 | 1.07 | 15 | 0.32-0.14 | | | | |
| | | | | Optanium | IOP-2P32-LW-SC | 27 | 0.80 | 10 | | | 0.23-0.10 | -20/-29 |
| | | | IOPA-2P32-LW-SC | | | | | | | | | |
| | | | IOP-2P32-SC | | 31 | 0.90 | 10 | 0.26-0.11 | *65 | | | |
| | | | IOPA-2P32-SC | | | | | | | | | |
| | | | IOP-2P32-HL-SC | | 41 | 1.23 | 15 | 0.34-0.15 | | | | |
| | | | IOPA-2P32-HL-SC | | | | | | | | | |
| | | | IOP-3P32-LW-SC | 31 | 0.87 | 20 | 0.26-0.12 | | | | | |
| | | IOPA-3P32-LW-SC | | | | | | | | | | |
| | | IOP-3P32-SC | 35 | 1.01 | 15 | 0.30-0.14 | | | | | | |
| | | IOPA-3P32-SC | | | | | | | | | | |
| | | IOP-3P32-HL-90C-SC | 47 | 1.37 | 10-30 | 0.39-0.20 | | | | | | |
| | | IOPA-3P32-HL-SC | | | | | | | | | | |
| | | PS | IOP-2S32-LW-SC | 25 | 0.73 | 10 | 0.21-0.09 | 0/-18 | 21 | | | |
| | IOP-2S32-SC | | | 29 | 0.90 | 15 | 0.24-0.11 | | | | | |
| | 347 | IS | Optanium | GOPA-2P32-LW-SC | 27 | 0.78 | 10 | 0.08 | -20/-29 | B | 64 | |
| | | | | GOPA-2P32-SC | 30 | 0.88 | | 0.09 | | | | |
| | | | | GOPA-3P32-LW-SC | 30 | 0.87 | | 0.09 | | | | |
| | | | | GOPA-3P32-SC | 34 | 1.01 | | 0.10 | | | *65 | |

[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'

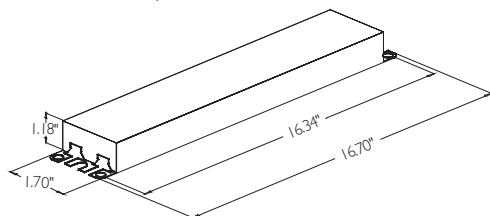


Fig. G

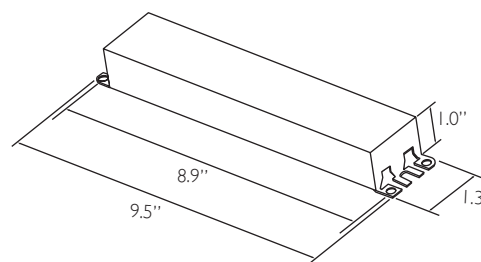


Fig. N

Refer to page I-41 for additional dimensions

Refer to page I-43 and I-44 for wiring diagrams

Refer to pages 9-24 to 9-28 for lead lengths and shipping data

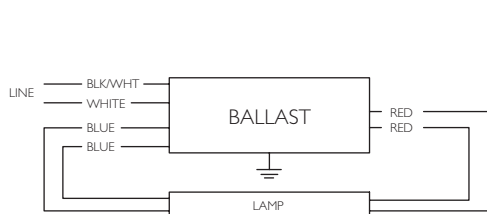


For 17W Lamps

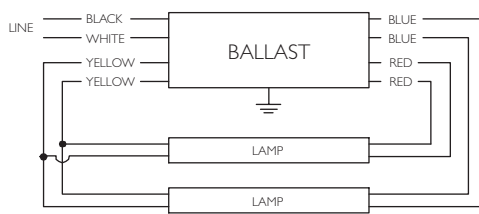
HIGH POWER FACTOR SOUND RATED A



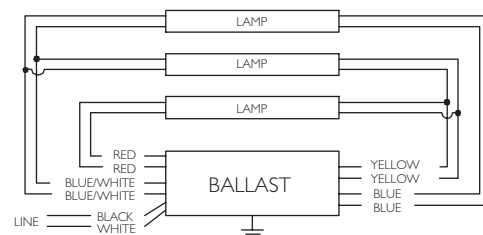
| No. of Lamps | Input Volts | Lamp Starting Method | Ballast Family | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. | | | | | | | |
|----------------------|-------------|----------------------|-----------------------|--------------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|---------|-------|-----|---------|---------|-----|----|
| F17T8, FBO16T8 (17W) | | | | | | | | | | | | | | | | | | |
| 3 | 120 | IS | AmbiStar [‡] | REB-4P32-SC | 44 | 0.81 | 135 | 0.87 | 0/-18 | B | *66 | | | | | | | |
| | 277 | PS | Centium | RCN-3S32-SC | 61 | 1.00 | 10 | 0.51 | 32/0 | | 30 | | | | | | | |
| | | | | VCN-3S32-SC | 61 | 1.00 | 10 | 0.22 | | | | | | | | | | |
| | 120-277 | IS | Centium | ICN-3P32-LW-SC | 42 | 0.80 | 15 | 0.35-0.16 | 0/-18 | B | 65 | | | | | | | |
| | | | | ICN-3P32-SC | 48 | 0.92 | 15 | 0.39-0.17 | | | *66 | | | | | | | |
| | | | | ICN-4P32-LW-SC | 43 | 0.85 | 15 | 0.36-0.16 | | | | -20/-29 | B | 65 | | | | |
| | | | | ICN-4P32-SC | 53 | 1.04 | 15 | 0.45-0.20 | | | *66 | | | | | | | |
| | | | Optanium | IOP-3P32-LW-SC | 40 | 0.81 | 10 | 0.34-0.15 | -20/-29 | B | | | | | 65 | | | |
| | | | | IOPA-3P32-LW-SC | | | | | | | | | | | | | | |
| | | | | IOP-3P32-SC | 45 | 0.90 | 10 | 0.38-0.17 | | | | | | *66 | | | | |
| | | | | IOPA-3P32-SC | | | | | | | | | | | | | | |
| | | | | IOP-3P32-HL-90C-SC | 59 | 1.22 | 10-15 | 0.49-0.22 | | | | | | | | -20/-29 | B | 65 |
| | | | | IOPA-3P32-HL-SC | | | | | | | | | | | | | | |
| | | | | IOP-4P32-LW-SC | 43 | 0.85 | 20 | 0.36-0.17 | | | | | | | | | | |
| | | | | IOPA-4P32-LW-SC | | | | | | | | | | | | | | |
| | | | IOP-4P32-SC | 49 | 1.00 | 15 | 0.41-0.18 | -20/-29 | | | B | | | | 65 | | | |
| | | | IOPA-4P32-SC | | | | | | | | | | | | | | | |
| | | | IOP-4P32-HL-90C-G | 69 | 1.28 | 10-15 | 0.58-0.26 | | | | | *66 | | | | | | |
| | | | IOPA-4P32-HL | | | | | | | | | | | | | | | |
| | | PS | IOP-3PSP32-LW-SC | TBD | 0.71 | 10 | TBD | | | | | | 0/-18 | B | TBD | | | |
| | | | IOP-3PSP-SC | 47 | 0.90 | 10 | 0.39-0.17 | | | | | | | | 30 | | | |
| | | | IOP-3S32-LW-SC | 37 | 0.72 | 10 | 0.31-0.14 | | | | | | | | | | | |
| | | | IOP-3S32-SC | 43 | 0.89 | 10 | 0.36-0.16 | | | | | | | | | | | |
| | 347 | | IS | Optanium | GOPA-3P32-LW-SC | 39 | 0.81 | | 10 | 0.12 | | | | | -20/-29 | B | 65 | |
| | | | | | GOPA-3P32-SC | 44 | 0.92 | | | 0.13 | | | | | | | *66 | |
| | | GOPA-4P32-LW-SC | | | 45 | 0.82 | 0.13 | | | | | | | | | | | |
| | | GOPA-4P32-SC | | | 50 | 1.00 | 0.15 | | | | | | | | | | | |

[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'

Diag. 20



Diag. 21



Diag. 30

Refer to page I-41 and I-42 for dimensions
Refer to page I-44 for additional wiring diagrams
Refer to pages 9-24 to 9-28 for lead lengths and shipping data



For 32W Lamps

HIGH POWER FACTOR SOUND RATED A

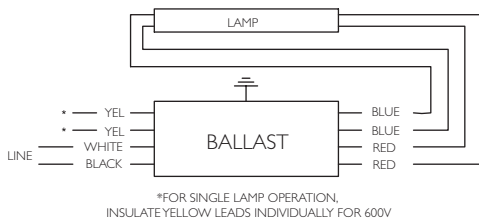


| No. of Lamps | Input Volts | Lamp Starting Method | Ballast Family | Catalog Number | Input Power ANSI (Watts) | Ballast Factor | Max. THD % | Line Current (Amps) | Min. Starting Temp. (°F/°C) | Dim. | Wiring Dia. | |
|--------------------------------|-------------|----------------------|-----------------------|-------------------|--------------------------|----------------|------------|---------------------|-----------------------------|------|-------------|---|
| F32T8, FBO3IT8, F32T8/U6 (32W) | | | | | | | | | | | | |
| 4 | 120 | IS | AmbiStar [†] | REB-4P32-SC | 103 | 0.81 | 125 | 1.57 | 0/-18 | B | 66 | |
| | | PS | Standard | RCN-4S32-SC | 121 | 0.88 | 10 | 1.03 | 32/0 | | 138 | |
| | 277 | | Centium | VCN-4S32-SC | 121 | 0.88 | 10 | 0.45 | | | | |
| | 120-277 | IS | Centium | ICN-4P32-LW-SC | 97-95 | 0.77 | 10 | 0.81-0.34 | 0/-18 | B | 66 | |
| | | | | ICN-4P32-SC | 112 | 0.88 | 10 | 0.94-0.41 | | | | |
| | | | Optanium | IOP-4P32-LW-SC | 96-94 | 0.77 | 10 | 0.81-0.35 | -20/-29 | | | |
| | | | | IOPA-4P32-LW-SC | | | | | | | | |
| | | | | IOP-4P32-SC | 109-106 | 0.87 | 10 | 0.92-0.39 | | | | |
| | | | | IOPA-4P32-SC | | | | | | | | |
| | | | | IOP-4P32-HL-90C-G | 146-143 | 1.18 | 10 | 1.23-0.53 | | | | G |
| | | | | IOPA-4P32-HL | | | | | | | | A |
| | | | | PS | IOP-4PSP-LW-SC | TBD | 0.71 | 10 | | TBD | 0/-18 | B |
| | | | IOP-4S32-LW-SC | | 93-91 | 0.71 | 10 | 0.77-0.33 | 138 | | | |
| | | | IOP-4PSP32-SC | | 110 | 0.88 | 10 | 0.93-0.40 | 177 | | | |
| | IOP-4S32-SC | 110 | 0.88 | | 10 | 0.92-0.40 | 138 | | | | | |
| | 347 | IS | Optanium | GOPA-4P32-LW-SC | 92 | 0.78 | 10 | 0.27 | -20/-29 | B | 66 | |
| | | | | GOPA-4P32-SC | 107 | 0.88 | | 0.31 | | | | |

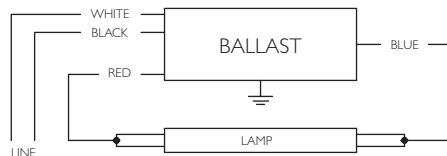
[‡] The above AmbiStar ballasts are normal power factor and labeled 'For Residential Use Only'



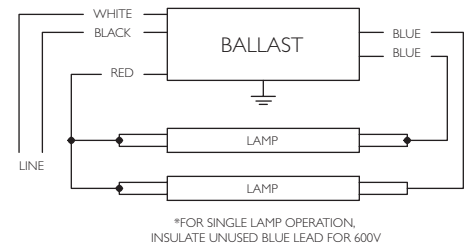
See pages I-3 and I-4 for specific SKU's that meet the NEMA Premium Standard



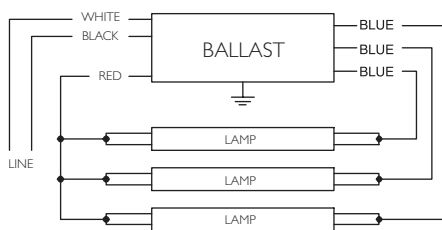
Diag. 39



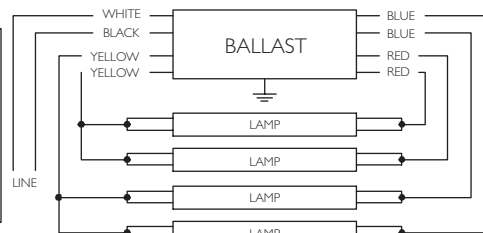
Diag. 63



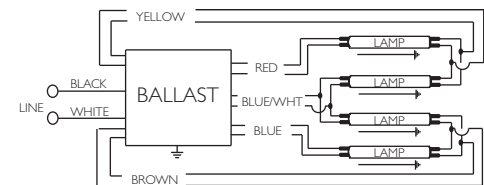
Diag. 64



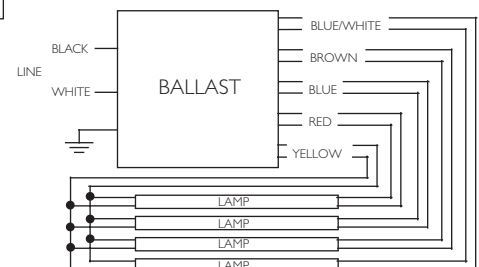
Diag. 65



Diag. 66



Diag. 138



Diag. 177

Refer to page I-62 for dimensions
Refer to page I-59 for additional wiring diagrams
Refer to pages 9-24 to 9-28 for lead lengths and shipping data



Floodlight Specifications

SpringLamp® Compact Fluorescent Flat Pars

NPF – 8,000 Hours

Applications:

A great energy saving solution for hard to reach light fixtures

- + Track Lights
- + Recessed Cans
- + Outdoor Fixtures



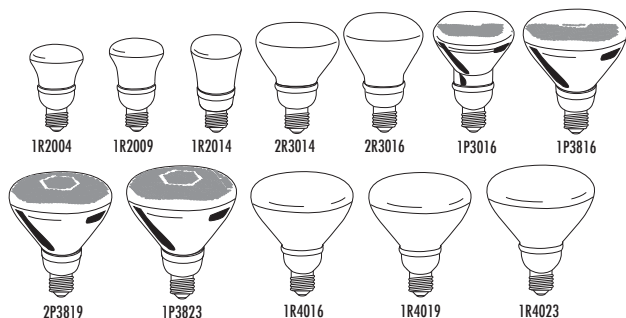
Kelvin Color Temperature Options (Ordering Suffix):

- Available in: 2700°K, 3000°K (30K), 3500°K (35K), 4100°K (41K), 5000°K (50K) and 6500°K (65K)

*Order items in 30K to replace PAR Halogen lamps

Features and Benefits

- Long life CFL, 8,000 hours average rated life
- NEW Amalgam technology- provides cooler operating temperatures for consistent performance in any position
- No lead glass- Better lumen maintenance over life of bulb
- 2700°K color temperature closest to incandescent light
- Medium base
- Replace less often, ideal for hard to reach places
- U.L. Listed for wet locations - use indoors or outdoors
- 12 Month Warranty



Special Application Notes

- UL approved for wet location in Base Up position only. Base Up position is defined as screw base in a 12:00 position. Any other base position must be in a UL approved weatherproof fixture.

Catalog Number

Notes

Type



Specifications

| | |
|-------------------------------------|----------------------|
| End of Life Protection..... | Yes |
| Ballast Type | Electronic |
| Starting Method | Modified Rapid Start |
| Input Line Voltage | 120VAC |
| Input Line Frequency | 50/60HZ |
| Lamp Life (rated) | 8,000 Hours |
| Color Rendering Index | 82 |
| Minimum Starting Temperature | -20 ° F |
| Maximum Operating Temperature | 160 ° F |
| U.L. / C.U.L. Listed | Yes |
| FCC Compliance | Part 18, Subpart C |
| Lamp Operating Frequency | 45 KHZ |
| Lamp Current Crest Factor | < 1.60 |
| Maximum Open Circuit Voltage | 600V |
| Power Factor | > .50 |
| Total Harmonic Distortion | < 150% |

Light Output

| 1R2009 | | | 2R3014 | | | 2R3016 | | | 1R4019 | | | 2P3819 | | |
|--------|-----|------|--------|------|------|--------|------|------|--------|------|------|--------|------|------|
| HT | FC | DIA | HT | FC | DIA | HT | FC | DIA | HT | FC | DIA | HT | FC | DIA |
| 4 | 4.0 | 18.5 | 4 | 10.0 | 12.3 | 4 | 11.2 | 11.3 | 4 | 14.4 | 12.4 | 4 | 19.6 | 13.4 |
| 6 | 1.8 | 24.6 | 6 | 4.5 | 18.5 | 6 | 5.0 | 17.1 | 6 | 6.4 | 18.5 | 6 | 8.7 | 20.0 |
| 8 | 1.0 | 30.8 | 8 | 2.5 | 24.6 | 8 | 2.8 | 22.9 | 8 | 3.6 | 24.6 | 8 | 4.9 | 26.6 |
| 10 | 0.6 | 37.0 | 10 | 1.6 | 30.8 | 10 | 1.8 | 28.6 | 10 | 2.3 | 30.8 | 10 | 3.1 | 33.3 |
| 12 | 0.5 | 43.1 | 12 | 1.1 | 37.0 | 12 | 1.3 | 34.3 | 12 | 1.6 | 37.0 | 12 | 2.2 | 39.9 |

HT = Mounting

Height in Feet

FC = Foot Candle Value at Center of Beam

DIA = Diameter in Feet

| Warranties and Certifications: | Item # | ENERGY STAR® | Description | Wattage | Incandescent Wattage Comparison | Initial Lumens | Input Line Current | M.O.L. (inches) | Diameter (inches) | Life vs. Incandescent | Power Factor |
|--|--------|--------------|-----------------|---------|---------------------------------|----------------|--------------------|-----------------|-------------------|-----------------------|--------------|
| 12 MONTH WARRANTY <p>TCP reserves the right to void the warranty for any mis-application of these products.</p> | 1R2004 | | 4W R20 Flood | 4 | 15 | 130 | .15A | 3.8 | 2.5 | 4X | NPF |
| | 1R2009 | ★ | 9W R20 Flood | 9 | 25 | 300 | .15A | 3.8 | 2.5 | 4X | NPF |
| | 1R2014 | ★ | 14W R20 Flood | 14 | 50 | 500 | .23A | 4.3 | 2.5 | 4X | NPF |
| | 2R3014 | ★ | 14W R30 Flood | 14 | 65 | 650 | .23A | 5.3 | 3.7 | 4X | NPF |
| | 2R3016 | ★ | 16W R30 Flood | 16 | 75 | 750 | .27A | 5.7 | 3.7 | 4X | NPF |
| | 1R4016 | | 16W R40 Flood | 16 | 75 | 750 | .27A | 5.9 | 4.7 | 4X | NPF |
| | 1R4019 | | 19W R40 Flood | 19 | 85 | 950 | .32A | 5.9 | 4.7 | 4X | NPF |
| | 1R4023 | ★ | 23W R40 Flood | 23 | 120 | 1200 | .38A | 6.5 | 4.8 | 3X | NPF |
| | 1P3016 | | 16W PAR30 Flood | 16 | 75 | 750 | .27A | 5.7 | 3.7 | 4X | NPF |
| | 1P3816 | | 16W PAR38 Flood | 16 | 75 | 750 | .27A | 5.9 | 4.6 | 4X | NPF |
| | 2P3819 | | 19W PAR38 Flood | 19 | 85 | 950 | .32A | 5.9 | 4.6 | 4X | NPF |
| | 1P3823 | | 23W PAR38 Flood | 23 | 90 | 1200 | .38A | 6.5 | 4.7 | 3X | NPF |

TCP, Inc.
325 Campus Dr. | Aurora, Ohio 44202 | P: 1-800-324-1496 | tcp.com

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TCP is proud to have been awarded
ENERGY STAR® Partner of the Year 2010.



PARTNER OF THE YEAR

Mercantile Customer Project Commitment Agreement
Exemption Option

THIS MERCANTILE CUSTOMER PROJECT COMMITMENT AGREEMENT ("Agreement") is made and entered into by and between Ohio Edison Company, its successors and assigns (hereinafter called the "Company") and Mantaline Corporation, its permitted successors and assigns (hereinafter called the "Customer") (collectively the "Parties" or individually the "Party") and is effective on the date last executed by the Parties as indicated below.

WITNESSETH

WHEREAS, the Company is an electric distribution utility and electric light company, as both of these terms are defined in R.C. § 4928.01(A); and

WHEREAS, Customer is a mercantile customer, as that term is defined in R.C. § 4928.01(A)(19), doing business within the Company's certified service territory; and

WHEREAS, R.C. § 4928.66 (the "Statute") requires the Company to meet certain annual energy efficiency and peak demand reduction ("EE&PDR") benchmarks; and

WHEREAS, when complying with certain EE&PDR benchmarks the Company may include the effects of mercantile customer-sited EE&PDR projects; and

WHEREAS, Customer has certain customer-sited demand reduction, demand response, or energy efficiency project(s) as set forth in attached Exhibit 1 (the "Customer Energy Project(s)") that it desires to commit to the Company for integration into the Company's Energy Efficiency & Peak Demand Reduction Program Portfolio Plan ("Company Plan") that the Company will implement in order to comply with the Statute; and

WHEREAS, the Customer, pursuant to and consistent with the Statute, desires to pursue exemption from paying charges included in the Company's then current cost recovery mechanism (hereinafter, "Rider DSE") as approved by the Public Utilities Commission of Ohio ("Commission") for recovery of the DSE2 costs associated with the Company Plan; and is committing the Customer Energy Project(s) as a result of such exemption.

WHEREAS, Customer's decision to commit its Customer Energy Project(s) to the Company for inclusion in the Company Plan has been reasonably encouraged by the possibility of an exemption; and

WHEREAS, in consideration of, and upon receipt of, said exemption, Customer has consented to committing the Customer Energy Project(s) to the Company and complying with all other terms and conditions set forth herein, including without limitation, the submission of an annual report on the energy savings and/or peak-demand reductions achieved by the Customer Energy Project(s).

NOW THEREFORE, in consideration of the mutual promises set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties, intending to be legally bound, do hereby agree as follows:

1. **Customer Energy Projects.** Customer hereby commits to the Company and Company accepts for integration into the Company Plan the Customer Energy Project(s) set forth on attached Exhibit 1. Said commitment shall be for the life of the Customer Energy Project(s). Company will incorporate said project(s) into the Company Plan to the extent that such projects qualify. In so committing, and as evidenced by the affidavit attached hereto as Exhibit A, Customer

acknowledges that the information provided to the Company about the Customer Energy Project(s) is true and accurate to the best of its knowledge.

- a. By committing the Customer Energy Project(s) to the Company, Customer acknowledges and agrees that the Company shall control the use of the kWh and/or kW reductions resulting from said projects for purposes of complying with the Statute. By committing the Customer Energy Project(s), Customer further acknowledges and agrees that the Company shall take ownership of the energy efficiency capacity rights associated with said Project(s) and shall, at its sole discretion, aggregate said capacity into the PJM market through an auction. Any proceeds from any such bids accepted by PJM will be used to offset the costs charged to the Customer and other of the Company's customers for compliance with state mandated energy efficiency and/or peak demand requirements.
 - b. The Company acknowledges that some of Customer's Energy Projects contemplated in this paragraph may have been performed under certain other federal and/or state programs in which certain parameters are required to be maintained in order to retain preferential financing or other government benefits (individually and collectively as applicable, "Benefits"). In the event that the use of any such project by the Company in any way affects such Benefits, and upon written request from the Customer, Company will release said Customer's Energy Project(s) to the extent necessary for Customer to meet the prerequisites for such Benefits. Customer acknowledges that such release (i) may affect Customer's exemption benefits discussed in Article 3 below; and (ii) will not affect any of Customer's other requirements or obligations, including without limitation any reporting requirements, as set forth herein.
 - c. Any future Customer Energy Project(s) committed by Customer shall be subject to a separate application and, upon approval by the Commission, said projects shall become part of this Agreement.
 - d. Customer will provide Company or Company's agent(s) with reasonable assistance in the preparation of a joint application for approval of this Agreement ("Joint Application") that will be filed with the Commission, with such Joint Application being consistent with then current Commission requirements.
 - e. Upon written request and reasonable advance notice, Customer will grant employees or authorized agents of either the Company or the Commission reasonable, pre-arranged access to the Customer Energy Project(s) for purposes of measuring and verifying energy savings and/or peak demand reductions resulting from the Customer Energy Project(s). It is expressly agreed that consultants of either the Company or the Commission are their respective authorized agents.
2. **Joint Application to the Commission.** The Parties will submit the Joint Application using the Commission's standard "Application to Commit Energy Efficiency/Peak Demand Reduction Programs" in which they will seek the Commission's approval of (i) this Agreement; (ii) the commitment of the Customer Energy Project(s) for inclusion in the Company Plan; and (iii) the Customer's exemption from paying the DSE2 charge of the Company's Rider DSE.

The Joint Application shall include all information as set forth in the Commission's standard form which, includes without limitation:

- i. A narrative description of the Customer Energy Project(s), including but not limited to, make, model and year of any installed and/or replaced equipment;
- ii. A copy of this Agreement; and

- iii. A description of all methodologies, protocols, and practices used or proposed to be used in measuring and verifying program results.

3. **Customer Exemption and Annual Report.** Upon Commission approval of the request for exemption, the Company will exempt Customer from paying any Rider DSE charges consistent with any Commission directives as set forth in the Commission's Finding and Order approving the Joint Application. Such exempt status shall apply to those accounts identified by Customer that pertain to those Customer sites with one or more Customer Energy Project(s) approved for integration into the Company Plan by the Commission in the Joint Application.

- a. For purposes of this Agreement, a "site" shall be a single location with one or more facilities. As examples only, a site includes an industrial plant, a hospital complex or a university located on one or more parcels of land, provided that said parcels are contiguous.
- b. For purposes of this Agreement, an "account" shall be as defined by the Company through its normal business practices. Any account identified by Customer shall be eligible for exemption, provided that said account pertains to a specific site with at least one Customer Energy Project that qualifies Customer for exemption from paying Rider DSE charges.
- c. Any new accounts created at a site on which there is already an approved Customer Energy Project shall, at the option of the Customer, be included within the exemption granted under said project, and shall be included for purposes of calculating future eligibility for exemption under the project. Any such election shall become effective in the first billing cycle after March 15th following identification of said account in the annual report required under Section 3(d)(iii) below.
- d. Customer acknowledges and agrees that if it desires to pursue such exempt status, as evidenced in the Joint Application, Customer is obligated to provide to the Company an annual report on the energy savings and peak-demand reductions achieved by the Customer Energy Project(s) on a calendar year basis. Company shall provide Customer with such information as it may require, that is in Company's possession, for the purposes of preparing such report. Company shall provide a template for Customer to use in preparing the annual report and shall make available a designated Company representative to answer questions.
 - i. Said report shall be submitted annually on or before January 31 of each year after Commission approval of the Joint Application.
 - ii. Said report shall provide all information required under the Rules, and where the requirements of the Rules conflict with a requirement under this Agreement or the Joint Application, the requirements of the Rules shall control.
 - iii. Said report shall, at a minimum, include the following information for each Customer Energy Project that has been approved by the Commission:
 - 1. A demonstration that the energy savings and peak-demand reductions associated with the Customer Energy Project(s) meet the total resource cost test or that the Company's avoided cost exceeds the cost to the Company for the Customer's program;
 - 2. A statement distinguishing programs implemented before and after January 1 of the current year;

3. A quantification of the energy savings or peak-demand reductions for programs initiated prior to 2009 in the baseline period;
4. A recognition that the Company's baselines have been increased by the amount of mercantile customer energy savings and demand reductions;
5. A listing and description of the Customer Energy Projects that have been implemented, which provides the detail required by the Rules;
6. An accounting of expenditures made by the mercantile customer for each program and its component energy savings and peak-demand reduction attributes; and
7. A timeline showing when each Customer Energy Project went into effect and when the energy savings and peak-demand reductions occurred.
8. Any other information reasonably necessary for the Company to (i) verify Customer's continued eligibility for exemption from paying Rider charges; and (ii) report in the Company's annual status report to the Commission the EE&PDR results related to each Customer Energy Project.

e. Customer's exemption shall automatically terminate:

- i. At the end of the exemption period as determined by the Commission
- ii. Upon order of the Commission or pursuant to any Commission rule;
- iii. If Customer fails to comply with the terms and conditions set forth in the Company's then current Rider DSE, or its equivalent, as amended from time to time by the Commission, within a reasonable period of time after receipt of written notice of such non-compliance;
- iv. If it is discovered that Customer knowingly falsified any documents provided to the Company or the Commission in connection with this Agreement or the Joint Application. In such an instance, Company reserves the right to recover any exempted rider charges from the date of approval of the Joint Application through the date said exemption is terminated; or
- v. If Customer fails to submit the annual report required in (d) above. In such an instance, Company reserves the right to recover any exempted rider charges from the date of approval of the Joint Application through the date said exemption is terminated. It is expressly agreed that this provision shall not apply should said report contain errors, provided that the submission of said report is made in good faith. It is further agreed that the Company will provide written notice of the date on which said report is due at least thirty (30) days prior thereto.

f. Company reserves the right to recover from Customer any Rider DSE charges incurred by Customer after the date Customer's exemption terminates.

3. Termination of Agreement. This Agreement shall automatically terminate:

- a. If the Commission fails to approve this Agreement through the Joint Application;

- b. Upon order of the Commission; or
- c. At the end of the life of the last Customer Energy Project subject to this Agreement.

Customer shall also have an option to terminate this Agreement should the Commission not approve the Customer's exemption, provided that Customer provides the Company with written notice of such termination within ten days of either the Commission issuing a final appealable order or the Ohio Supreme Court issuing its opinion should the matter be appealed.

Customer acknowledges that if a Customer Project is withdrawn pursuant to Paragraph 1(b) of this Agreement, the exemption or a portion of such exemption may be affected. Should Customer elect to withdraw a project pursuant to Paragraph 1(b), Customer shall provide Company with reasonable assistance in preparing any documentation that may be required by the Commission and, upon reasonable request, shall provide documentation supporting the necessity to withdraw such project.

- 4. **Confidentiality.** Each Party shall hold in confidence and not release or disclose to any person any document or information furnished by the other Party in connection with this Agreement that is designated as confidential and proprietary ("Confidential Information"), unless: (i) compelled to disclose such document or information by judicial, regulatory or administrative process or other provisions of law; (ii) such document or information is generally available to the public; or (iii) such document or information was available to the receiving Party on a non-confidential basis at the time of disclosure.
 - a. Notwithstanding the above, a Party may disclose to its employees, directors, attorneys, consultants and agents all documents and information furnished by the other Party in connection with this Agreement, provided that such employees, directors, attorneys, consultants and agents have been advised of the confidential nature of this information and through such disclosure are deemed to be bound by the terms set forth herein.
 - b. A Party receiving such Confidential Information shall protect it with the same standard of care as its own confidential or proprietary information.
 - c. A Party receiving notice or otherwise concluding that Confidential Information furnished by the other Party in connection with this Agreement is being sought under any provision of law, to the extent it is permitted to do so under any applicable law, shall endeavor to: (i) promptly notify the other Party; and (ii) use reasonable efforts in cooperation with the other Party to seek confidential treatment of such Confidential Information, including without limitation, the filing of such information under a valid protective order.
 - d. By executing this Agreement, Customer hereby acknowledges and agrees that Company may disclose to the Commission or its Staff any and all Customer information, including Confidential Information, related to a Customer Energy Project, provided that Company uses reasonable efforts to seek confidential treatment of the same.
- 5. **Taxes.** Customer shall be responsible for all tax consequences (if any) arising from the application of the exemption.
- 6. **Notices.** Unless otherwise stated herein, all notices, demands or requests required or permitted under this Agreement must be in writing and must be delivered or sent by overnight express mail, courier service, electronic mail or facsimile transmission addressed as follows:

If to the Company:

FirstEnergy Service Company
76 South Main Street
Akron, OH 44308
Attn: Victoria Nofziger
Telephone: 330-384-4684
Fax: 330-761-4281
Email: vmnofziger@firstenergycorp.com

If to the Customer:

Mantaine Corporation
4754 East High Street
Mantua, Ohio 44255
Attn: Nancy Van Ginkel
Telephone: (330) 274-2264
Fax:
Email: nvanginkel@mantaine.com

or to such other person at such other address as a Party may designate by like notice to the other Party. Notice received after the close of the business day will be deemed received on the next business day; provided that notice by facsimile transmission will be deemed to have been received by the recipient if the recipient confirms receipt telephonically or in writing.

7. **Authority to Act.** The Parties represent and warrant that they are represented by counsel in connection with this Agreement, have been fully advised in connection with the execution thereof, have taken all legal and corporate steps necessary to enter into this Agreement, and that the undersigned has the authority to enter into this Agreement, to bind the Parties to all provisions herein and to take the actions required to be performed in fulfillment of the undertakings contained herein.
8. **Non-Waiver.** The delay or failure of either party to assert or enforce in any instance strict performance of any of the terms of this Agreement or to exercise any rights hereunder conferred, shall not be construed as a waiver or relinquishment to any extent of its rights to assert or rely upon such terms or rights at any later time or on any future occasion.
9. **Entire Agreement.** This Agreement, along with related exhibits, and the Company's Rider DSE, or its equivalent, as amended from time to time by the Commission, contains the Parties' entire understanding with respect to the matters addressed herein and there are no verbal or collateral representations, undertakings, or agreements not expressly set forth herein. No change in, addition to, or waiver of the terms of this Agreement shall be binding upon any of the Parties unless the same is set forth in writing and signed by an authorized representative of each of the Parties. In the event of any conflict between Rider DSE or its equivalent and this document, the latter shall prevail.
10. **Assignment.** Customer may not assign any of its rights or obligations under this Agreement without obtaining the prior written consent of the Company, which consent will not be unreasonably withheld. No assignment of this Agreement will relieve the assigning Party of any of its obligations under this Agreement until such obligations have been assumed by the assignee and all necessary consents have been obtained.
11. **Severability.** If any portion of this Agreement is held invalid, the Parties agree that such invalidity shall not affect the validity of the remaining portions of this Agreement, and the Parties further agree to substitute for the invalid portion a valid provision that most closely approximates the economic effect and intent of the invalid provision.

12. **Governing Law.** This Agreement shall be governed by the laws and regulations of the State of Ohio, without regard to its conflict of law provisions.

13. **Execution and Counterparts.** This Agreement may be executed in multiple counterparts, which taken together shall constitute an original without the necessity of all parties signing the same page or the same documents, and may be executed by signatures to electronically or telephonically transmitted counterparts in lieu of original printed or photocopied documents. Signatures transmitted by facsimile shall be considered original signatures.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized officers or representatives as of the day and year set forth below.

Please Select Operating Company
(Company)

By: Joh P. Langu

Title: VP of Energy Efficiency

Date: 3-18-13

Mantaine Corporation_
(Customer)

By: NV Ginkel

Title: VP Finance

Date: 2-18-13

Affidavit of Mantaline Corporation – Exhibit A

STATE OF OHIO)
)
COUNTY OF Portage) SS:

I, Nancy Van Ginkel, being first duly sworn in accordance with law, deposes and states as follows:

1. I am the Vice President of Finance of Mantaline Corporation ("Customer") As part of my duties, I oversee energy related matters for the Customer.
2. The Customer has agreed to commit certain energy efficiency projects to Ohio Edison Company ("Company"), which are the subject of the agreement to which this affidavit is attached ("Project(s)").
3. In exchange for making such a commitment, the Company has agreed to provide Customer with a Rider Exemption ("Incentive"). This Incentive was a critical factor in the Customer's decision to go forward with the Project(s) and to commit the Project(s) to the Company.
4. All information related to said Project(s) that has been submitted to the Company is true and accurate to the best of my knowledge.

FURTHER AFFIANT SAYETH NAUGHT.

Nancy van Ginkel

Sworn to before me and subscribed in my presence this 20 day of Feb, 2013.

Cynthia D Allen
Notary



CYNTHIA D ALLEN
Notary Public, State of Ohio
Portage County
My Commission Expires Oct. 13, 2013

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

3/27/2013 4:21:30 PM

in

Case No(s). 13-0134-EL-EEC

Summary: Application to Commit Energy Efficiency/Peak Demand Reduction Programs of Ohio Edison Company and Mantaline Corporation electronically filed by Ms. Jennifer M. Sybyl on behalf of Ohio Edison Company and Mantaline Corporation