



Legal Department

American Electric Power
1 Riverside Plaza
Columbus, OH 43215-2373
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July 15, 2014

Chairman Thomas W. Johnson
Ohio Power Siting Board
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, OH 43215-3793

Yazen Alami
Regulatory Services
(614) 716-2920 (P)
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Re: **In the Matter of the Application of**)
Cardinal Health)
and Ohio Power Company) **Case No. 14-1237-EL-EEC**
for Approval of a Special Arrangement)
Agreement with a Mercantile Customer)

Dear Chairman Johnson,

Attached please find the Joint Application of Ohio Power Company (OPCo) and mercantile customer Cardinal Health for approval of a Special Arrangement of the commitment of energy efficiency/peak demand reduction (EE/PDR) resources toward compliance with the statutory benchmarks for 2014.

Amended Substitute Senate Bill 221 sets forth in R.C. 4928.66 EE/PDR benchmarks that electric distribution utilities shall be required to meet or exceed. The statute allows utilities to include EE/PDR resources committed by mercantile customers for integration into the utilities programs to be counted toward compliance with a utility's EE/PDR benchmarks. The statute also enables the Commission to approve special arrangements for mercantile customers that commit EE/PDR resources to be counted toward compliance with EE/PDR benchmarks.

The Commission's Order in Case No. 10-834-EL-EEC, established a streamlined process to expedite review of these special arrangements by developing a sample application process for parties to follow for consideration of such programs implemented during the prior three calendar years. Attached is OPCo's version of that application and accompanying affidavit. Any confidential information referenced in the Joint Application has been provided to the Commission Staff for filing in Commission Docket 10-1799-EL-EEC, under a request for protective treatment. OPCo respectfully requests that the Commission treat the two cases as associated dockets.

Cordially,

/s/ Yazen Alami
Yazen Alami

Attachments



Case No.: 14-1237-EL-EEC

Mercantile Customer: CARDINAL HEALTH

Electric Utility: Ohio Power

Program Title or Description: AEP Ohio Business Incentives for Energy Efficiency: Self Direct Program

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: Company Information

Name: CARDINAL HEALTH

Principal address: 7000 Cardinal Place, Dublin, Oh 43017

Address of facility for which this energy efficiency program applies: 7000 Cardinal Pl, Dublin, Oh 43017-1091

Name and telephone number for responses to questions:

Kris Austin, Cardinal Health, (614) 757-7533

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

- ☒ The customer uses more than seven hundred thousand kilowatt hours per year at our facility. (Please attach documentation.)

See Confidential and Proprietary Attachment 4 – Calculation of Rider Exemption and UCT which provides the facility consumption for the last three years, benchmark kWh, and the last 12 months usage.

- ☐ The customer is part of a national account involving multiple facilities in one or more states. (Please attach documentation.) When checked, see Attachment 6 – Supporting Documentation for a listing of the customer’s name and service addresses of other accounts in the AEP Ohio service territory.

Section 2: Application Information

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

- ☐ Individually, on our own.
- ☒ Jointly with our electric utility.

B) Our electric utility is: Ohio Power Company

The application to participate in the electric utility energy efficiency program is "Confidential and Proprietary Attachment 3 – Self Direct Program Project Completed Application."

C) The customer is offering to commit (choose which applies):

- ☐ Energy savings from our 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 demand reduction 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 (choose whichever applies):

- ☒ Early replacement of fully functioning equipment with new equipment. (Provide the date on which the customer replaced fully functioning equipment, 6/25/2013 and the date on which the customer would have replaced your equipment if you had not replaced it 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)).

The remaining life of the equipment varies and is not known with certainty. The future replacement date is unknown and has historically been at the end of equipment life. Replacement was completed early to achieve energy savings and to reduce future maintenance costs.

- ☐ 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 your energy efficiency program:

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

Unit Quantity (watts) = Existing (watts x units) - Installed (watts x units)

kWh Reduction (Annual Savings) = Unit Quantity x (Deemed kWh/Unit)

Annual savings: 93,190 kWh

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for annual energy savings calculations and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

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

Annual savings: kWh

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

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

Annual savings: kWh

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

- 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):

➤ Choose one or more of the following 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?

The coincident peak-demand savings are permanent installations that reduce demand through energy efficiency and were installed on the date specified in Section 3 A above.

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

$$\text{Unit Quantity (watts)} = \text{Existing (watts x units)} - \text{Installed (watts x units)}$$

$$\text{KW Demand Reduction} = \frac{\text{Unit Quantity (watts)}}{\text{(watts)}} \times \text{(Deemed KW/Unit)}$$

22.6 kW

See Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation for peak demand reduction calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.

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 cost recovery mechanism implemented by the electric utility.

OR

☐ Commitment payment

B) The value of the option that the customer is are 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.)

OR

☒ A cash rebate valued at no more than 50% of the total project cost, which is equal to \$ 4,420.80. (Attach documentation and calculations showing how this payment amount was determined.)

See Confidential and Proprietary Attachment 5 – Self Direct Program Project Calculation for incentive calculations for this mercantile program.

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 an ongoing efficiency program that is practiced by our organization. (Attach documentation that establishes your organization's ongoing efficiency program. In order to continue the exemption beyond the initial 24 month period your organization will need to provide a future application establishing additional energy savings and the continuance of the organization's energy efficiency program.)

Section 6: Cost Effectiveness

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

- ☐ Total Resource Cost (TRC) Test. The calculated TRC value is: _____
(Continue to Subsection 1, then skip Subsection 2)
- ☒ Utility Cost Test (UCT) . The calculated UCT value is: 6.58 (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 utility's 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 \$ 32,786.00

The utility's program costs were \$ 559.14

The utility's incentive costs/rebate costs were \$ 4,420.80.

Section 7: Additional Information

Please attach the following supporting documentation to this application:

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

See Attachment 1 - Self Direct Project Overview and Commitment for a description of the project. See Attachment 6 - Supporting Documentation, for the specifications of the replacement equipment 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed. Due to the length of time since the equipment replacement, the make, model and year of the replaced equipment is not available.

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

- 1) any confidentiality requirements associated with the agreement;

See Attachment 2 - Self Direct Program Project Blank Application including Rules and Requirements. All confidentiality requirements are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.)

- 2) a description of any consequences of noncompliance with the terms of the commitment;

See Attachment 2 - Self Direct Program Project Blank Application including Rules and Requirements. All consequences of noncompliance are pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.

- 3) a description of coordination requirements between the customer and the electric utility with regard to peak demand reduction;

None required because the resources committed are permanent installations that reduce demand through increased efficiency during the Company's peak summer demand period generally defined as May through September and do not require specific coordination and communication to provide demand reduction capabilities to the Company.

- 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,

See Attachment 2 - Self Direct Program Blank Application including Rules and Requirements granting such permission pursuant to the Retrospective Projects/Rules and Requirements that are part of the signed application which is provided as Confidential and Proprietary Attachment 3 - Self Direct Program Project Completed Application.

- 5) a commitment by you to provide an annual report on your energy savings and electric utility peak-demand reductions achieved.

See Attachment 1 - Self Direct Project Overview and Commitment for the commitment to comply with any information and compliance reporting requirements imposed by rule or as part of the approval of this arrangement by the Public Utilities Commission of Ohio.

- 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.

The Company applies the same methodologies, protocols, and practices to Self Direct Program retrospective projects that are screened and submitted for approval as it does to prospective projects submitted through its Prescriptive and Custom Programs. The Commission has not published a technical reference manual for use by the Company so deviations can not be identified. The project submitted is a prescriptive project and energy savings are determined as described in Confidential and Proprietary Attachment 5 - Self Direct Program Project Calculation, and 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures, as needed.



Public Utilities Commission

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

Case No.: 14-1237-EL-EEC

State of Ohio :

Amanda M Craig, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

KEMA Services, Inc agent of Ohio Power
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.

Amanda M Craig, E.E. Engineer
Signature of Affiant & Title

Sworn and subscribed before me this 14th day of July, 2014 Month/Year

Brenda Walke
Signature of official administering oath

Brenda Walke, Notary
Print Name and Title

My commission expires on 01-16-2018



Brenda Walke
Notary Public, State of Ohio
My Commission Expires 01-16-2018



Self Direct Project Overview & Commitment

The Public Utility Commission of Ohio (PUCO) will soon review your application for participation in AEP Ohio's Energy Efficiency/Peak Demand Response program. Based on your submitted project, please select by initialing one of the two options below, sign and fax to 877-607-0740.

Customer Name	CARDINAL HEALTH	
Project Number	AEP-14-13316	
Customer Premise Address	7000 CARDINAL PL, DUBLIN, OH 43017-1091	
Customer Mailing Address	7000 Cardinal Place, Dublin, OH 43017	
Date Received	5/21/2014	
Project Installation Date	6/25/2013	
Annual kWh Reduction	93,190	
Total Project Cost	\$21,612.80	
Unadjusted Energy Efficiency Credit (EEC) Calculation	\$5,894.40	
Simple Payback (yrs)	3.1	
Utility Cost Test (UCT) for EEC	6.58	
Utility Cost Test (UCT) for Exemption	0.04	
<i>Please Choose One Option Below and Initial</i>		
Self Direct EEC: 75%	\$4,420.80	<input checked="" type="checkbox"/> Initial: <u>KA</u>
EE/PDR Rider Exemption	6 Months (After PUCO Approval)	<input type="checkbox"/> Initial: _____

Note: This is a one time selection. By selecting EEC, the customer will receive payment in the amount stated above. Selection of EE/PDR rider exemption, will result in the customer not being eligible to participate in any other energy efficiency programs offered by AEP Ohio during the period of exemption. In addition, the term of EE/PDR rider exemption is subject to ongoing review for compliance and could be changed by the PUCO.

If EEC has been selected, will the Energy Efficiency Funds selected help you move forward with other energy efficiency projects?

____ YES ____ NO

Note: Exemptions for periods beyond 24 months are subject to look-back or true-up adjustments every year to ensure that the exemption accurately reflects the EEDR savings. Applicants must file for renewal for any exemption beyond 12 months.

Project Overview:

The Self Direct (Prescriptive and Custom) project that the above has completed and applied is as follows.

Replaced (333) 4' 3L T12 with (333) 4' 2L T8
Replaced (20) 4' 2L T12 U-tube with (20) 2' 2L T8

The documentation that was included with the application proved that the energy measures applied for were purchased and installed.

By signing this document, the Mercantile customer affirms its intention to commit and integrate the above listed energy efficiency resources into the utility's peak demand reduction, demand response, and energy efficiency programs. By signing, the Mercantile customer also agrees to serve as a joint applicant in any filings necessary to secure approval of this arrangement by the Public Utilities Commission of Ohio, and comply with any information and compliance reporting requirements imposed by rule or as part of that approval.

Ohio Power Company

By: [Signature]
Title: Manager
Date: 6/30/2014

CARDINAL HEALTH

By: [Signature] Kris Austin
Title: Director, Workplace Services
Date: 6/27/14

Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



STEPS FOR SUBMITTING YOUR APPLICATION

Step 1: Verify Project, Equipment and Customer Eligibility

- ✓ Project must be a facility improvement that produces a permanent reduction in electrical energy usage (kWh).
- ✓ Facilities must be AEP electric customers that are considered "mercantile" under the definition of the Public Utilities Commission of Ohio (PUCO).
- ✓ Projects must operate at least 2,245 hours per year to qualify for cash rebates. Projects with annual energy (kWh) savings greater than the facility's annual energy (kWh) consumption are not eligible.
- ✓ All installed equipment must meet or exceed the specifications outlined in the application.
- ✓ Equipment must be installed in facilities served by AEP Ohio.
- ✓ Customer must have a valid AEP Ohio account number on an eligible AEP Ohio non-residential account.
- ✓ The Self-Direct program applies to customer facilities served by AEP Ohio's retail electric distribution rates that are defined as "mercantile" and meet the minimum energy usage requirements of 700,000 kWh per year, or that are part of a national account involving multiple facilities in one or more states.

Step 2: Submit Application

- ✓ Complete the Checklist page.
- ✓ Agree to the Terms and Conditions and Final Payment Agreement.
- ✓ Attach the documentation listed:
 - Completed Applicant Information form
 - Completed and signed Customer Agreement form
 - Measure worksheet(s)
 - Scope of work (type, quantity, and specifications of old and new equipment)
 - Dated and itemized invoices for the purchase and installation of all equipment installed
 - Specifications for all installed equipment installed showing that it meets program specifications
- ✓ Submit the signed Final Application via email, fax or mail prior to November 14, 2014, for any projects completed on or after January 1, 2011. Any applications received after the deadline may not be submitted to the Public Utilities Commission of Ohio (PUCO) by December 31, 2014, which may jeopardize approval.

Step 3: Project Review

- ✓ The program team will review your application. The review of some projects will require an inspection; the team will contact applicants requiring an inspection for scheduling.
- ✓ After approval by AEP Ohio, the customer will receive an

Overview and Commitment form to sign and return. The project will then be submitted to the PUCO for consideration. The PUCO will assign a case number and review the project details prepared by AEP Ohio. The PUCO may request additional information, or approve or reject the energy efficiency cash rebates.

Step 4: Receive Energy Efficiency Cash Rebates

- ✓ The program team will issue energy efficiency cash rebates four to six weeks after the PUCO approves a project.
- ✓ In lieu of a one-time energy efficiency cash rebate, you may elect to seek an exemption from the Energy Efficiency/Peak Demand Reduction (EE/PDR) rider for the associated electric account(s) for a defined period of time as will be stated in this filing. For this exemption, the energy efficiency cash rebate amount (Option 1) is compared to the estimated value of the EE/PDR obligation (Option 2), as calculated by AEP Ohio. If exemption is elected, the affected account is not eligible for other programs offered by AEP Ohio during the exemption period. Unless additional energy efficiency projects are undertaken, you will, after the specified number of months exempted, again be subject to the EE/PDR rider. New construction projects are not eligible to elect Option 2. Major renovation projects that do not have a representative billing history for three years prior to the project installation also are not eligible to elect Option 2.
- ✓ If the energy efficiency cash rebate is elected, you remain in the EE/PDR rider for the period of time that an exemption would have been in effect and may also participate in AEP Ohio programs. However, during that period of time, you are not allowed to elect the Option 2 exemption for any additional self-direct projects for the same account number.
- ✓ You are allowed and encouraged to consider using all or a portion of the energy cash rebates, as received from AEP Ohio under this program, to help fund other energy efficiency and demand-reduction projects you choose to initiate in the future. Current year and future projects may also qualify for higher cash rebates under the prescriptive or custom programs.

AEP Ohio Business Incentives Program

2740 Airport Drive, Suite 160
Columbus, OH 43219

Phone: (877) 607-0739

Fax: (877) 607-0740

aepohioincentives@dnvkema.com

Visit our website at aepohio.com/solutions.

Self-Direct Program Application

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CHECKLIST

FINAL APPLICATION

Required Attachments

- ☐ Completed and signed Applicant Information form
- ☐ Completed Final Payment Agreement form including Energy Efficiency Cash Rebates Requested section
- ☐ Itemized invoices
- ☐ Equipment specifications
- ☐ Scope of work
- ☐ W-9 (required for LLC, individual, partnership, property management companies)

Cash Rebate Worksheets¹

- ☐ Lighting
- ☐ HVAC
- ☐ Motors & Drives
- ☐ Compressed Air
- ☐ Refrigeration/Food Service
- ☐ Agriculture & Miscellaneous
- ☐ Transformers
- ☐ UPS
- ☐ Custom
- ☐ New Construction Lighting

Application date _____

Estimated incremental project cost _____

Expected completion date _____

¹Incomplete applications will delay processing and receipt of energy efficiency cash rebates.

Revised Submittal

Please complete below if this is a revised submittal.

Submittal date _____ AEP Project Number (if known) AEP - 1 ____ - ____ - ____ - ____

AEP Ohio Business Incentives Program

2740 Airport Drive, Suite 160

Columbus, OH 43219

Phone: (877) 607-0739

Fax: (877) 607-0740

aepohioincentives@dnvkema.com

Visit our website at aepohio.com/solutions.

Self-Direct Program Application

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TERMS AND CONDITIONS

AEP Ohio offers prescriptive and custom cash rebates under the AEP Ohio Business Incentives Program to recognize the implementation of past cost-effective energy efficiency improvements for non-residential customers. AEP Ohio provides energy efficiency cash rebates (EEC) for the purchase and installation of qualifying cost-effective equipment in the customer's facility under the Terms and Conditions provided in this application and subject to regulatory approvals. EEC will only be provided in the form of a check or an Energy Efficiency/Peak Demand Reduction (EE/PDR) rider exemption under this program.

Please note that funds are limited and subject to availability.

Program Effective Dates

AEP Ohio Business Incentives Program offers cash rebates until approved funds are exhausted or November 14, 2014, whichever comes first. The effective dates of the current AEP Ohio Business Incentives Program and application submittal requirements are as follows:

- Self-direct projects are projects completed since January 1, 2011. Self-direct projects are eligible to apply for EEC with this application. Current or future projects should apply using a prescriptive or custom application.
- All 2014 AEP Ohio Business Incentives Program applications should be received no later than November 14, 2014. Any applications received after the deadline may not be submitted to the Public Utility Commission of Ohio (PUCO) by December 31, 2014, which may jeopardize approval. AEP Ohio reserves the right to extend or shorten this timeline.

Program and Project Eligibility

The AEP Ohio Business Incentives Program offers both prescriptive cash rebates for some of the more-common energy efficiency measures and custom cash rebates for other eligible improvements not included on the list of prescriptive measures. Cash rebates available under the AEP Ohio Business Incentives Program include non-residential accounts served on AEP Ohio's regulated retail rates.

Qualifying projects must be installed in a facility in AEP Ohio's electric service territory in Ohio. Cash rebates are available to all non-residential accounts that pay into the EE/PDR rider and receive their electricity over AEP Ohio wires, regardless from which retail electric supplier the customer has chosen to purchase power. A customer may neither apply for nor receive cash rebates for the same measure, equipment or service from more than one electric distribution utility.

The Self-Direct program applies only to customer facilities served by AEP Ohio's retail electric distribution rates, which are defined as "mercantile" and meet the minimum energy usage requirements of 700,000 kWh per year, or that are part of a national account involving multiple facilities in one or more states.

All applications are subject to review and approval by AEP Ohio, its contractor(s)/agent(s) and the PUCO prior to any EEC payments or exemptions from the EE/PDR rider in this program.

Projects must involve measures that result in a reduction in electric energy usage due to an improvement in system efficiency. Projects that result in reduced energy consumption without an improvement in system efficiency are not eligible for a custom cash rebate. The project simple payback for custom projects prior to the cash rebate payment generally should fall between 1 to 7 years, or pass cost-effectiveness test(s) determined by AEP Ohio to qualify for a cash rebate. Incentives are based on energy savings during the first 12 months following installation.

Projects involving measures covered by the prescriptive cash rebate portion of the program are not eligible for a custom cash rebate. However, the applicant has the option to apply for a custom cash rebate for whole building integrated projects or systems, even if they include prescriptive measures. Prescriptive elements of a whole building integrated project may be paid at the deemed savings and/or cash rebate level.

Project requirements under the AEP Ohio Business Incentives Program include the following:

- Projects must involve a new facility improvement with capital improvements that results in a permanent reduction in electrical energy usage (kWh). Existing/old lighting equipment must be functional and in operation at the time of replacement.
- Any measures installed at a facility must produce verifiable and persistent energy reduction and must be sustainable and provide 100% of the energy benefits as stated in the application for a period of at least five (5) years or for the life of the measure, whichever is less. If the customer ceases to be a delivery service customer of AEP Ohio or removes the equipment or systems at any time during the 5-year period or the life of the measure, the customer may be required to return a prorated amount of cash rebate funds to AEP Ohio.
- All equipment must be new. In rare circumstances, AEP Ohio reserves the right to allow used or rebuilt equipment if the customer can prove the existing equipment cannot be replaced with new equipment.
- All installed equipment must exceed state, federal and local codes and requirements.
- Equipment must be purchased, installed and operating (or capable of operating in the case of seasonal uses) prior to

Self-Direct Program Application

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TERMS AND CONDITIONS

- submitting an application for a cash rebate.
- AEP Ohio will issue cash rebate payments in the form of checks or an energy efficiency Peak Demand Reduction Rider Exemption.
- The cash rebate is paid as a one-time, one-program offer and cannot be combined with incentive payments from other AEP Ohio programs. The customer may be eligible to participate in other programs offered by AEP Ohio, as long as no single project receives more than one cash rebate or incentive.

Confidential information contained in any documents associated with this application will be protected from public filings. However, this information will be disclosed to the PUCO and AEP's independent evaluators for further review and approval. Customers who require a non-disclosure agreement ("NDA") will be required to permit disclosure of certain information to support the submission of their application to the PUCO to be eligible to participate.

Projects that are NOT eligible for a cash rebate include the following:

- Fuel switching (e.g., electric to gas or gas to electric)
- Changes in operational and/or maintenance practices or simple control modifications not involving capital costs (Please visit aepohio.com/solutions for Retro-Commissioning Program or Continuous Improvement Program)
- Removal or termination of existing processes, facilities and/or operations
- On-site electricity generation
- Projects involving gas-driven equipment in place of or to replace electric equipment (such as a chiller)
- Projects focused primarily on power factor improvement
- Projects that involve only peak-shifting without kWh savings
- Renewables (Please visit aepohio.com/save for Renewables Program)
- Projects required by state or federal law, building or other codes, or projects that are standard industry practice
- Projects easily reverted/removed
- Projects installed entirely for reasons other than improving energy efficiency
- Other conditions as may be determined by AEP Ohio

Energy Efficiency Cash Rebate Limits

For both prescriptive and custom measures in this application, the **total EEC shall be 75% of the lesser of:** 1) The calculated cash rebate as approved by AEP Ohio or 2) 50% of incremental project cost (not including internal labor). In calculating the savings and EEC for custom measures, please contact the AEP Ohio Business Incentives Program office to determine an appropriate baseline for savings. In addition to the above incremental project cost limit, cash rebate payment rates vary when a customer's calculated cash rebate exceeds the tiers listed in the chart.

PROGRAM ENERGY EFFICIENCY CASH REBATES	
Energy efficiency cash rebate levels for one-year energy savings	See tables for prescriptive cash rebates. Custom cash rebates: \$0.08/kWh x 75%.
Minimum/maximum simple payback before energy efficiency cash rebate applied	Must pass cost effectiveness test(s) determined by AEP Ohio; generally between one and seven years
Maximum payout	75% of 50% of the incremental project cost, excluding internal labor (additional caps and tiering may also apply)
Energy efficiency cash rebate levels for projects completed since 1/1/2011	Calculated amount on the prescriptive or custom worksheets attached and subject to funding limits
Cash rebate limit	See Cash Rebate Limits and Tiering section
Cash rebate calculation order	Measure cash rebate caps are applied first. Project-cost cash rebate limits are applied second. Cash rebate tiering is applied third. Lastly, 75% factor is applied to cash rebate.

Energy Efficiency Cash Rebate Tiering

The total cash rebate paid for any self-direct application cannot exceed 50% of the incremental project cost (not including internal labor). In addition to the above incremental project cost limit, cash rebate payment rates vary when a customer's calculated cash rebate exceeds the tiers listed below:

- Tier 1 \$0 - \$100,000 = 100% of eligible calculated cash rebate value
- Tier 2 \$100,001 - \$300,000 = 50% of eligible calculated cash rebate value
- Tier 3 \$300,001 - \$500,000 = 25% of eligible calculated cash rebate value
- Tier 4 \$500,001 - beyond = 10% of eligible calculated cash rebate value

Application Review Process

Applications are not a guarantee of program acceptance and energy efficiency cash rebates. AEP Ohio will review applications for eligibility and completeness. Completed applications will be reviewed in the order received. Funds are reserved for the project when AEP Ohio receives a completed application and determines that the project meets the program eligibility requirements. Upon review of the application, the program will notify applicants who submit incomplete applications of deficiencies; applicants may lose their place in the review process until receipt of all requested information. Applications must be completed and all information received by the deadlines defined above to begin processing. Applicants are encouraged to call the program hotline with any questions about documentation requirements.

TERMS AND CONDITIONS

Application

Projects completed on or after January 1, 2011, must submit an application and all required supporting documentation by November 14, 2014, to be applicable for the 2014 program year. Any applications received after the deadline may not be submitted to the PUCO by December 31, 2014, and could jeopardize approval.

A signed application with supporting project documentation verifying project installation and capital improvements must be submitted to AEP Ohio prior to application approval. Project documentation, such as (but not limited to) copies of dated invoices for the purchase and installation of the measures, equipment specification sheets, energy-savings analysis, complete application and W-9 forms (LLC, individual, partnership, property management companies), is required. The invoice should be itemized sufficiently to separate the project cost from the costs of other services not related to the energy efficiency project and other repairs. The location or business name on the invoice must be consistent with the application information. Requested information such as proof of project completion could include equipment purchase dates, installation dates, proof that the equipment was operational, manufacturer specifications, warranty information, invoices and proof of owner co-payment.

Inspections

The AEP Ohio Business Incentives Program reserves the right to inspect all projects to verify compliance with the program rules and verify the accuracy of project documentation. This may include installation inspections, verification of detailed lighting layout descriptions, metering, data collection, interviews and utility bill or monitoring data analysis. Customers are required to allow access to project documents and the facility where the measures were installed for a period of five years after receipt of cash rebate payment by AEP Ohio. In the event a building(s) is turned over to a new account holder/owner before AEP Ohio officially measures and verifies incentivized equipment, AEP Ohio reserves the right to do so under new ownership. Customer understands and agrees that program installations may also be subject to inspections by the PUCO, its designee or AEP's independent evaluators, and photographs of installation may be required.

Requirements for Custom Project Electricity Savings Calculation

The annual electricity savings must be calculated for custom projects using industry-accepted engineering algorithms or simulation models. The applicant may estimate the annual electricity usage of both the existing and proposed equipment based on the current operation of the facility. A listing of the pre-existing information requirements is provided at the end of the custom application section. If equipment is replaced prior to the end of its rated service life in order to achieve energy savings,

the existing equipment performance may be used as the baseline in the energy-savings calculations. Documentation of early replacement decision and/or actual equipment energy usage will be required. If equipment is replaced due to failure or for other reasons (such as obsolescence or a need for more capacity), the baseline performance used in the savings calculation must be either the minimum performance that would be required by code in effect for that equipment type at the time of installation and application (where a code applies) or industry standard when a code does not apply.

If the previous equipment was at the end of its useful life, the applicant must use, as the baseline, the equipment that would meet the applicable federal and local energy codes in effect at the time of installation or industry standard, if no code exists.

The applicant must be able to clearly describe the method used to calculate the savings. The applicant must provide all assumptions used in the calculations and document the sources for these assumptions. If no savings analysis is provided by the customer/contractors, AEP Ohio reserves the right to utilize its approved methodology and analysis to determine energy savings.

The method and assumptions used by the applicant to calculate the annual savings will be reviewed by AEP Ohio. AEP Ohio is solely responsible for the final determination of the annual energy savings and peak-demand reduction used in calculating the cash rebate amount. AEP Ohio also reserves the right to require specific measurement and verification activities, including monitoring the retrofit to determining the cash rebate. Verification of the pre-existing consumption may also be required.

For custom projects, the applicant is required to provide information in order to allow AEP Ohio to verify the baseline usage of the pre-existing equipment in order to use the existing equipment as the baseline. AEP Ohio may need to conduct inspections of projects to verify equipment and operating conditions.

Customers are encouraged to contact the hotline to speak with program staff prior to submitting projects that warrant special treatment. These non-typical projects will be considered on a case-by-case basis by AEP Ohio.

Tax Liability

Cash rebates are taxable and, if more than \$600, will be reported to the IRS unless the customer is exempt. AEP Ohio is not responsible for any taxes that may be imposed on your business as a result of your receipt of cash rebate. A W-9 for LLC, individual, partnership and property management companies must be provided with all applications.

TERMS AND CONDITIONS

Disclaimer

Any and all energy savings and coincident demand generated by the project described in this application are hereby committed to AEP Ohio. That retained demand can be used to count against AEP Ohio's benchmark requirements in S.B. 221, regardless; any retained demand provided to PJM generation auctions must be done so by AEP Ohio only.

Peak-demand reduction is defined as the reduction in average load over the performance hours as a result of replacing existing electrical equipment with more-efficient electrical equipment. Peak performance hours are defined as the time between June 1 and August 31 on weekdays and non-holidays, between the hours 3:00 p.m. and 6:00 p.m. Eastern Standard Time. PJM Peak Hours are defined as the time between June 1 and August 31 on weekdays and non-holidays, between the hours 2:00 p.m. and 6:00 p.m. Eastern Standard Time.

AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measures eligible for cash rebates under this program. AEP Ohio has no obligations regarding and does not endorse or guarantee any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures. AEP Ohio is not responsible for the proper disposal/recycling of any waste generated as a result of this project. AEP Ohio is not liable for any damage caused by the operation or malfunction of the installed equipment.

Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



APPLICANT INFORMATION

Important: Please read the Terms and Conditions before signing and submitting this application. Complete all information and provide required documentation to avoid processing delays.

Project Information

Building Type (click here for
Building Type definitions)

W-9 Tax Status

How Did You Hear About the
Program?

Shift

Affected Area Square Footage

Dodge Report Number (if applicable)

Building Operating Hours

Equipment Operating Hours

Does the Facility Have a Data Center?

Name of Applicant's Business _____

Project Name (if applicable) _____ Name as It Appears on Utility Bill _____

AEP Ohio Account Number Where Measure Installed _____ Taxpayer ID (SSN/FEIN) _____

Mailing Address _____ City _____ State _____ Zip _____

☐ Check if mailing address and installation address are the same.

Installation Address _____ City _____ State _____ Zip _____

Customer Contact

Please provide all contacts we may need to process this project. List the project decision-maker, the technical contact, etc. as the contractor contact.

Name of Contact(s) (preferred contact for documentation) _____

Title of Contact _____ Phone # _____ Ext. _____

Contact Fax # _____ Contact Email _____

Solution Provider/Contractor Information¹

Name of Contracting Company _____

Name of Contact Person _____ Title of Contact _____

Mailing Address _____ City _____ State _____ Zip _____

Phone # _____ Ext. _____ Contact Fax # _____ Contact Email _____

If there are questions about the application who should we contact? ☐ Customer ☐ Contractor

¹Solution provider/contractor is the party involved in the application submittal (i.e., specs, scope of work, etc.).

Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



FINAL PAYMENT AGREEMENT

Final Payment Agreement

I understand that the application and all required documentation should be received by the AEP Ohio Business Incentives Program by November 14, 2014, for any projects completed on or after January 1, 2011. Any applications received after the deadline may not be submitted to the PUCO by December 31, 2014, and could jeopardize approval of any cash rebate by the PUCO. All equipment must be purchased, installed and fully operational prior to submitting the application.

I understand that AEP Ohio or its representatives have the right to ask for additional information at any time. AEP Ohio Business Incentives Program will make the final determination of cash rebate levels for this project.

I understand that this project must involve a facility improvement that results in improved energy efficiency.

As an eligible AEP Ohio account holder, I certify that decisions to acquire and install the indicated energy efficiency measures, which will be demonstrated with supporting documentation required by AEP Ohio, were made after January 1, 2011, and that work was completed on this project on or after January 1, 2011. The energy efficiency measures are for use in my business facility and not for resale.

I understand that the location and business name on the project documentation must be consistent with the application information. Project documentation, measure specification sheets and details of measure installation are included. Documentation indicating contract dates prior to January 1, 2011, may render this application ineligible. I understand that all submissions become the property of AEP Ohio. It is recommended to keep a copy of the application for your records.

I agree that if: (1) I did not install the related measure(s) identified in my application or (2) I remove the related measure(s) identified in my application before a period of five (5) years or the end of the measure life, whichever is less, I shall refund a prorated amount of energy efficiency cash rebates to AEP Ohio based on the actual period of time the related measure(s) were installed and operating. This is necessary to assure that the project's related energy benefits will be achieved. (3) AEP Ohio will pay 75% of the lesser of: 1) The calculated cash rebate as approved by AEP Ohio, subject to funding limits or 2) 50% of the incremental project cost (subject to application caps). I understand that AEP Ohio or its representatives have the right to ask for additional information at any time. AEP Ohio Business Incentives Program will make the final determination of energy efficiency cash rebate levels for this project.

I agree to be responsible to comply with any applicable codes or ordinances. I also understand that all materials removed, including lamps and PCB ballasts, must be permanently taken out of service and disposed of in accordance with local codes and ordinances. I understand it is my responsibility to be aware of any applicable codes or ordinances. Information about hazardous waste disposal can be found at epa.gov/epawaste/hazard/index.htm.

I agree to verification by the utility or its representatives of both sales transactions and equipment installation. I understand that these cash rebates are available to all non-residential accounts that pay into the Energy Efficiency and Demand Response (EE/PDR) rider and receive their electricity over AEP Ohio wires, regardless from which retail electric distribution supplier the customer has chosen to purchase power.

I understand that AEP Ohio reserves the right to refuse payment and participation if the customer or contractor violates program rules and requirements. AEP Ohio is not liable for energy efficiency cash rebates promised to customers as a result of misrepresentation of the program.

I understand that AEP Ohio does not guarantee the energy savings and does not make any warranties associated with the measure eligible for energy efficiency cash rebates under this program. Furthermore, AEP Ohio has no obligations regarding any claims, promises, work or equipment made, performed or furnished by any contractors or equipment vendors that sell or install any energy efficiency measures and does not endorse or guarantee same.

Energy efficiency cash rebates will be based upon the Final Application and program terms and conditions, as well as the availability of funds.

I understand that the program has a limited budget. Applications will be processed until allocated funds are reserved or spent. Final Applications should be received by November 14, 2014, to be eligible for funding under the current program period.

I certify that the information on this application is true and correct, and that the taxpayer ID number, tax status and W-9 are the applicant's. I understand that cash rebates exceeding \$600 will be reported to the IRS, unless the payee is exempt. I understand that cash rebates assume related energy benefits over a period of five (5) years or for the life of the measure, whichever is less.

I understand that the program may be modified or terminated at any time without prior notice.

FINAL PAYMENT AGREEMENT

I understand and agree that all other terms and conditions as specified in the application, including all attachments and exhibits attached to this application, will serve as a contract for the customer's commitment of energy and demand resources to AEP Ohio and shall apply.

I understand that any and all energy savings and coincident demand generated by the project described in this application are hereby committed to AEP Ohio. That retained demand can be used to count against AEP Ohio's benchmark requirements in S.B. 221, regardless; any retained demand provided to PJM generation auctions must be done so by AEP Ohio only.

Self-Direct Program Application

ENERGY IS PRECIOUS. LET'S NOT WASTE IT.



CUSTOMER AGREEMENT

- ☐ I have read and understand the program requirements, measure specifications, and [Terms and Conditions and Final Application Agreement](#) and agree to abide by those requirements. Furthermore, I concur that I meet all eligibility criteria in order to receive payment under this program. For final applications, sign and submit only after all equipment is installed and operational. A customer signature is required for payment. Signed applications received by email or fax will be treated the same as original applications received by mail.
- ☐ As an eligible customer, I verify the information is correct and request consideration for participation under this program.

Digital Signature Instructions

1. Click in the signature box.
2. Follow the digital signature directions displayed in the "Add Digital ID" pop-up box.
3. Establish a digital ID and password.
4. In the "Sign Document" pop-up box, you can select to change the signature appearance from typed font to an imported graphic.
5. Follow directions to save signed application; signature and verification information will appear in the signature box.

Total Incremental Project Cost

Customer Signature (AEP Ohio Customer)

Date

Total Cash Rebates Requested

Print Name

Project Completion Date

SUBMIT VIA EMAIL

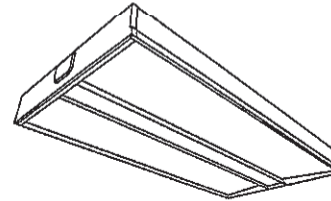
PRINT APPLICATION

Vectra



Project Name	CARDINAL HEALTH
Spec Type	2 X 4
Notes	MID CITY ELECTRIC

Recessed
2'x4'
2 T8



Order Guide

Some combinations of product options may not be available. Consult factory for assistance with your specification.

9724	D1	ST	T232	S	1	2	J	-L
Product Series & Size Vectra 2'x4'	Version D1 Standard T-Grid D2 Slot T-Grid A1 Air Return on Standard T-Grid A2 Air Return on Slot T-Grid See details on next page	Configuration ST Standalone CR Continuous Row SMS Standalone Master/Satellite CMS Continuous Row Master/Satellite	Lamping 2 T8 (32W)	Housing S Standard (22ga.) N New York (20ga.) C Chicago Plenum T Standard w/ Frame Restraint	Wiring 1 1 cct 5 1 cct w/ Battery Pack 7 1 cct Dimming Consult website for complete list of standard wiring options	Voltage 1 120V 2 277V 3 347V	Ballast E Standard Ballast J = PROGRAM START 10% THD BALLAST Consult website for ballast manufacturer information	

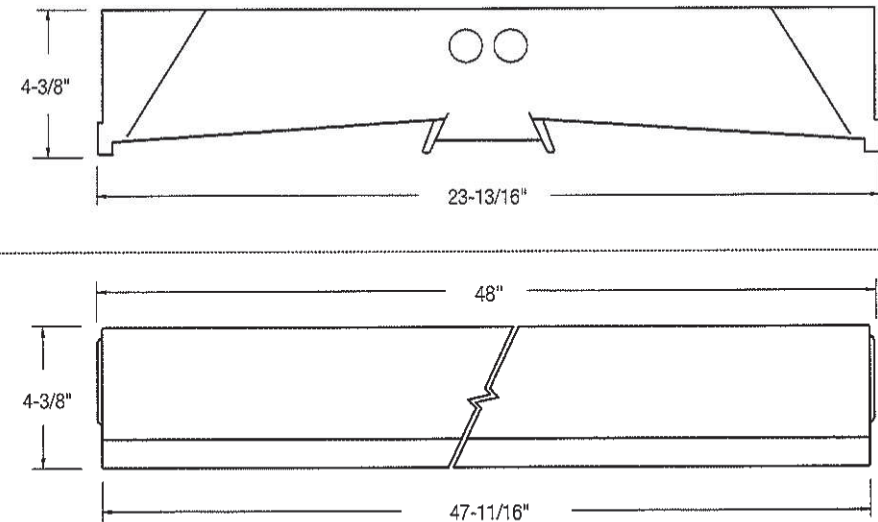
Upgrades & Accessories

Please indicate with check mark.

Cross Section

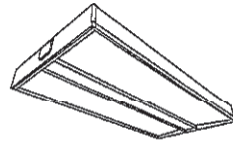
<input type="checkbox"/> Lamps Included	<input checked="" type="checkbox"/> Lamps Included & Installed F32T8/835 LAMPS
<input type="checkbox"/> Job Pack	<input type="checkbox"/> Flex Whip
<input type="checkbox"/> Drywall Kit 	Can be mounted to wood frame or with hanger wire Wood Frame Hanger Wire
<input type="checkbox"/> Response Daylight For details visit www.ledalite.com/response	

Side View



Vectra

Recessed
2'x4'
2 T8



Photometry

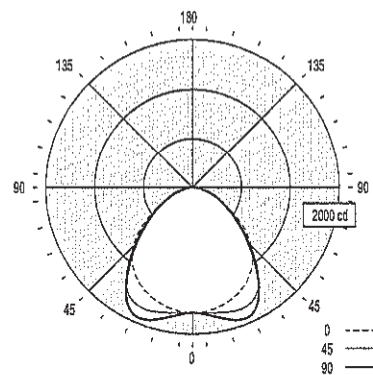
Report Summary

Report # 2101751
Filename 9724D1T232.ies
Efficiency 76.4%

Spacing Criteria 1.3 @ 0° along
1.4 @ 90° across

Candela Distribution

Vertical Angle	Horizontal Angle				Zonal Lumens
	0	22.5	45	67.5	
0	1761	1761	1761	1761	1761
5	1752	1757	1771	1786	1790
15	1693	1730	1815	1893	1920
25	1587	1663	1820	1906	1943
35	1421	1488	1577	1534	1552
45	1146	1124	1104	1022	1049
55	760	703	689	646	689
65	392	380	387	374	391
75	136	146	180	182	194
85	19	25	45	39	45
90	0	0	0	0	0



Coefficients of Utilization (%)

Ceiling:	80				70				50				0
	70	50	30	10	70	50	30	10	70	50	30	10	
0 RCR	91	91	91	91	89	89	89	89	85	85	85	85	76
1	84	81	78	75	82	79	76	76	76	74	72	66	66
2	77	71	67	63	75	70	66	67	64	61	58	56	56
3	71	64	58	53	69	62	57	60	56	52	49	49	49
4	65	57	51	46	64	56	50	54	49	45	42	42	42
5	60	51	45	40	59	50	44	49	43	39	37	37	37
6	56	46	40	35	54	46	39	44	39	35	33	33	33
7	52	42	36	31	51	41	35	40	35	31	29	29	29
8	48	39	32	28	47	38	32	37	32	28	26	26	26
9	45	35	29	25	44	35	29	34	29	25	24	24	24
10	42	33	27	23	41	32	27	32	26	23	21	21	21

Based on a floor reflectance of 0.2

Avg. Luminance (cd/m²)

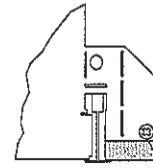
Vertical Angle	Horizontal Angle		
	0	45	90
55	1894	1717	1667
65	1326	1309	1323
75	751	994	1072
85	312	738	738

IES files for this and other photometric options can be downloaded online at www.ledalite.com

Additional Information

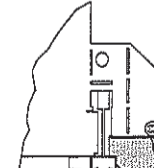
Mounting

Integrates with most common T-bar ceiling types.



D1 Standard T-Grid

Option D1 works with 9/16" and 15/16" flat T-grid ceilings. It can also be used with slot T-grid ceilings, but it will not sit flush with the bottom of the T-bar.

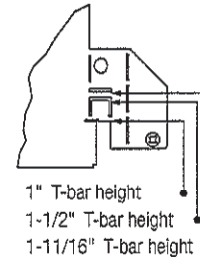


D2 Slot T-Grid

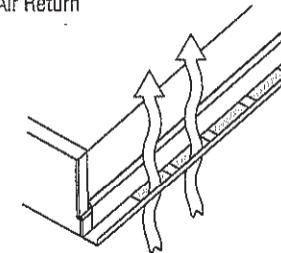
Option D2 is designed to sit flush with slot T-grid ceilings and some regular tile ceiling types.

Ceiling Types

Integrated mounting tabs can be field-adjusted to various T-bar ceiling heights for fastening directly to the T-bar grid and/or tied-off to the building structure.



Air Return



The air return version features slotted vents along the sides of the fixture. As a result, the installation method of the air return version is different to the standard version, and the fixture cannot be installed in continuous rows.

Specifications

Due to continuing product improvements, Ledalite reserves the right to change specifications without notice.

Housing

Die-formed, post-painted, 22 gauge cold-rolled steel (New York City version is 20 gauge). Wire entrances are positioned on the side of the housing to allow easy wiring access for the installer. Multiple wire entrances are available on top or side to allow continuous row mounting of fixtures. Optional frame restraint is available to provide additional support to the optical frame.

Weight

Maximum 40 lbs.

Optical System

Optical assembly consists of flat acrylic panels and flat acrylic lens. A protected MesoOptics® film layer creates optimal light distribution and high efficiency. The optical frame ends are constructed from die-formed cold-rolled steel assembled together with extruded aluminum profiles in a sturdy frame. The frame is hinged to allow easy access to the inside of the fixture. Maintenance can be performed from below the ceiling without tools. No hardware is visible.

Mounting

Fixture is compatible with most ceiling types. Integrated bend-out tabs are provided for different T-grid heights. Optional drywall kit is available for non-accessible ceilings. Use screws or hanger wire (supplied by others) to secure fixture.

Ballast

Electronic. Supplied with pre-installed ballast disconnects as per national electric codes.

Wiring

Optional flex whips are supplied in 6' lengths for 1x4, 2x2 and 2x4 fixtures. Flex connectors are supplied in 9' lengths for standard master/satellite configurations.

Air Return

Air return option available in 2'x2' and 2'x4' sizes only. Side rails are finished in black.

Approvals

Certified to UL & CSA Standards.
City of Chicago Approved CCEA (housing option C).
Designed to comply with NYC code requirements (Housing Option N).

Finish

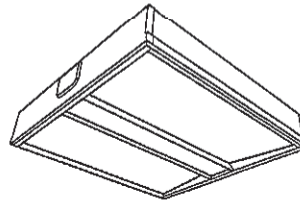
Housing and Frame: Post-painted, high quality powder coat. Available in white only.

Vectra

Recessed

2'x2'

2 T8

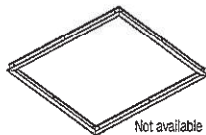
Project Name **Cardinal Health**Spec Type **2 x 4**Notes **Mid City Electric****Order Guide**

Some combinations of product options may not be available. Consult factory for assistance with your specification.

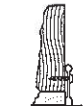
9722	D1	ST	T217	S	1	2	J	-L
Product Series & Size Vectra 2'x2'	Version D1 Standard T-Grid D2 Slot T-Grid A1 Air Return on Standard T-Grid A2 Air Return on Slot T-Grid See details on next page	Configuration ST Standalone CR Continuous Row SMS Standalone Master/Satellite CMS Continuous Row Master/Satellite	Lamping 2 T8 (17W)	Housing S Standard (22ga.) N New York (20ga.) C Chicago Plenum T Standard w/ Frame Restraint	Wiring 1 1 cct 5 1 cct w/ Battery Pack 7 1 cct Dimming Consult website for complete list of standard wiring options	Voltage 1 120V 2 277V 3 347V	Ballast E Standard Ballast J = PROGRAM START 10%THD BALLAST Consult website for ballast manufacturer information	

Upgrades & Accessories

Please indicate with check mark.

Cross Section☐ Lamps Included☒ Lamps Included & Installed**F17T835 LAMPS**☐ Job Pack☐ Flex Whip☐ Drywall Kit

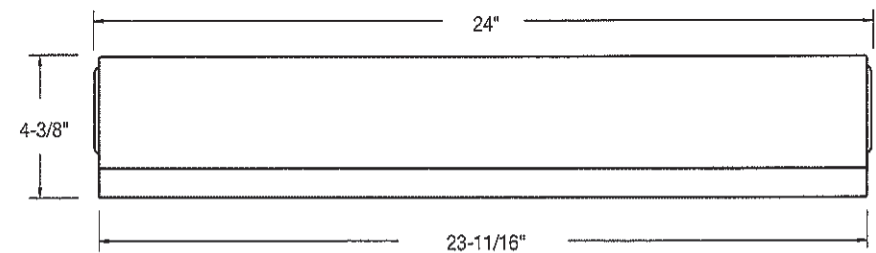
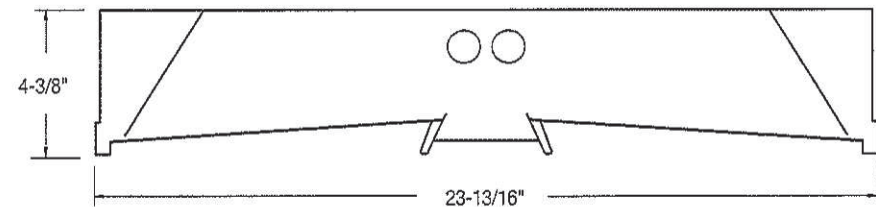
Not available in continuous row

Can be mounted
to wood frame
or with hanger wire

Wood Frame



Hanger Wire

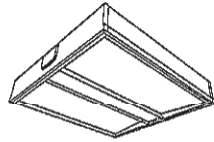
☐ Response DaylightFor details visit www.ledalite.com/response**Side View**

Vectra

Recessed

2'x2'

2 T8

**Photometry****Report Summary**

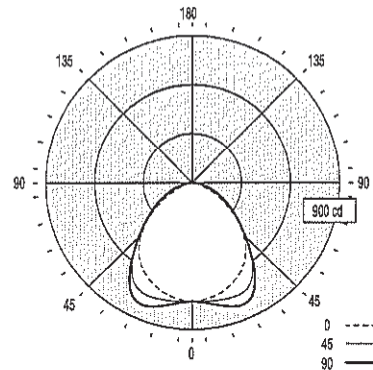
Report # 9900471
 Filename 9722D1T217.ies
 Efficiency 73%

Spacing Criteria 1.3 @ 0° along
 1.4 @ 90° across

Meets RP-1-04 recommendations for VDT-Normal spaces

Candela Distribution

Vertical Angle	Horizontal Angle				Zonal Lumens
	0	22.5	45	67.5	
0	728	728	728	728	728
5	723	726	731	736	738
15	695	710	743	771	785
25	643	676	740	792	806
35	563	601	648	672	666
45	442	453	458	471	464
55	282	284	295	310	308
65	140	149	172	189	187
75	46	58	83	97	96
85	6	10	18	22	18
90	0	0	0	0	0

**Coefficients of Utilization (%)**

Ceiling:	80				70				50				0			
	70	50	30	10	70	50	30	10	50	30	10	0	70	50	30	10
0 RCR	87	87	87	87	85	85	85	81	81	81	73		81	81	81	73
1	80	77	74	72	78	75	73	72	70	68	63		72	70	68	63
2	73	68	63	60	72	67	63	64	61	58	54		64	61	58	54
3	67	60	55	51	66	59	54	57	53	49	46		57	53	49	46
4	62	54	48	43	60	53	47	51	46	42	40		51	46	42	40
5	57	48	42	38	56	48	42	46	41	37	35		46	41	37	35
6	53	44	38	33	52	43	37	42	37	33	31		42	37	33	31
7	49	40	34	29	48	39	33	38	33	29	27		38	33	29	27
8	46	36	30	26	45	36	30	35	30	26	24		35	30	26	24
9	43	33	28	24	42	33	27	32	27	24	22		32	27	24	22
10	40	31	25	22	39	30	25	30	25	21	20		30	25	21	20

Based on a floor reflectance of 0.2

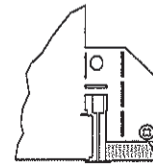
Avg. Luminance (cd/m²)

Vertical Angle	Horizontal Angle		
	0	45	90
55	1435	1501	1567
65	967	1188	1292
75	519	936	1083
85	201	603	603

IES files for this and other photometric options can be downloaded online at www.ledalite.com

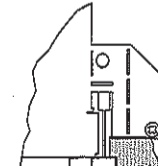
Additional Information**Mounting**

Integrates with most common T-bar ceiling types.



D1 Standard T-Grid

Option D1 works with 9/16" and 15/16" flat T-grid ceilings. It can also be used with slot T-grid ceilings, but it will not sit flush with the bottom of the T-bar.

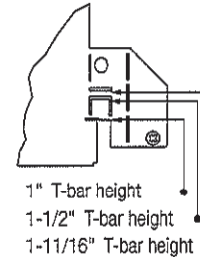
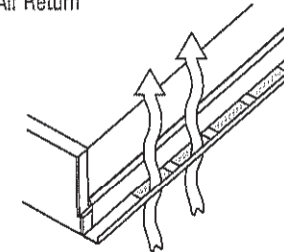


D2 Slot T-Grid

Option D2 is designed to sit flush with slot T-grid ceilings and some regular tile ceiling types.

Ceiling Types

Integrated mounting tabs can be field-adjusted to various T-bar ceiling heights for fastening directly to the T-bar grid and/or tied-off to the building structure.

**Air Return**

The air return version features slotted vents along the sides of the fixture. As a result, the installation method of the air return version is different to the standard version, and the fixture cannot be installed in continuous rows.

Specifications

Due to continuing product improvements, Ledalite reserves the right to change specifications without notice.

Housing

Die-formed, post-painted, 22 gauge cold-rolled steel (New York City version is 20 gauge). Wire entrances are positioned on the side of the housing to allow easy wiring access for the installer. Multiple wire entrances are available on top or side to allow continuous row mounting of fixtures. Optional frame restraint is available to provide additional support to the optical frame.

Weight

Maximum 23 lbs.

Optical System

Optical assembly consists of flat acrylic panels and flat acrylic lens. A protected MesoOptics® film layer creates optimal light distribution and high efficiency. The optical frame ends are constructed from die-formed cold-rolled steel assembled together with extruded aluminum profiles in a sturdy frame. The frame is hinged to allow easy access to the inside of the fixture. Maintenance can be performed from below the ceiling without tools. No hardware is visible.

Mounting

Fixture is compatible with most ceiling types. Integrated bend-out tabs are provided for different T-grid heights. Optional drywall kit is available for non-accessible ceilings. Use screws or hanger wire (supplied by others) to secure fixture.

Ballast

Electronic. Supplied with pre-installed ballast disconnects as per national electric codes.

Wiring

Optional flex whips are supplied in 6' lengths for 1x4, 2x2 and 2x4 fixtures. Flex connectors are supplied in 9' lengths for standard master/satellite configurations.

Air Return

Air return option available in 2'x2' and 2'x4' sizes only. Side rails are finished in black.

Approvals

Certified to UL & CSA Standards.
 City of Chicago Approved CCEA (housing option C).
 Designed to comply with NYC code requirements (Housing Option N).

Finish

Housing and Frame: Post-painted, high quality powder coat. Available in white only.

Cardinal Health

Philips T8 Lamps featuring
ALTO II Technology

*Ideal for applications
requiring maximum
maintained light output*

T8 Collection

Alto II TCLP
Compliant*

**ALTO II means 50%
less mercury than the
original ALTO T8 lamps†**

* The EPA's TCLP test is used to determine if an item can be managed as hazardous or non-hazardous waste. Philips ALTO and ALTO II lamps are TCLP Compliant and can be managed as non-hazardous waste.

† This lamp is better for the environment because of its reduced mercury content. All Philips ALTO lamps give you end-of-life options, which can simplify and reduce your lamp disposal costs, depending on your state and local regulations. ALTO II Lamps have only 1.7mg of mercury.



Extra low mercury

Philips T8 Lamps are energy-efficient lighting solutions.

Extended life

- Reduce maintenance costs by extending the relamping cycle
- Limited warranty period based on usage†

Outstanding lumen performance

- 95% lumen maintenance and reduced lamp-end blackening

Better for the environment

- Only 1.7mg of mercury with ALTO II Technology
- Reduced impact on the environment without sacrificing performance

† See your Philips Sales Representative for details

PHILIPS

Philips T8 Lamps featuring ALTO II Technology

APPROVED

Ordering, Electrical and Technical Data

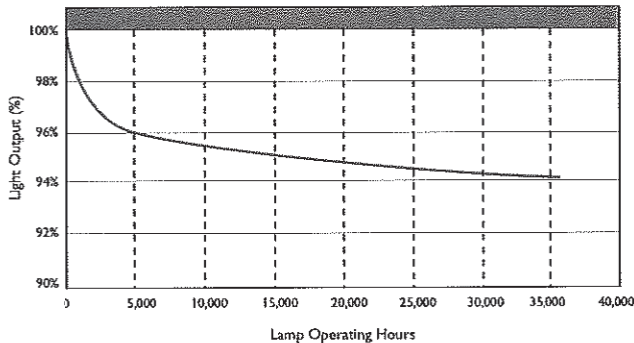
Product Number	Ordering Code	Watts	Pack Qty.	Color Temp. (Kelvin)	Nom. Length (In.)	Rated Average Life (Hrs) ¹		Approx. Initial Lumens ²	Design Lumens ³	CRI	Lumen Maint.
						T2-hr on Ins. Start	T2-hr on Prog. Start				
28188-1	F17T8/TL835/ALTO	17	30	3500	24	30,000	36,000	1350	1280	85	95%
28189-9	F17T8/TL841/ALTO	17	30	4100	24	30,000	36,000	1350	1280	84	95%
28090-9	F17T8/TL850/ALTO	17	30	5000	24	30,000	36,000	1300	1235	82	95%
28190-7	F25T8/TL835/ALTO	25	30	3500	36	30,000	36,000	2150	2040	85	95%
28191-5	F25T8/TL841/ALTO	25	30	4100	36	30,000	36,000	2150	2040	84	95%
28092-5	F25T8/TL850/ALTO	25	30	5000	36	30,000	36,000	2150	2040	82	95%
28151-9	F32T8/TL830/ALTO	32	30	3000	48	30,000	36,000	2850	2710	85	95%
28153-5	F32T8/TL835/ALTO	32	30	3500	48	30,000	36,000	2850	2710	84	95%
28155-0	F32T8/TL841/ALTO	32	30	4100	48	30,000	36,000	2850	2710	82	95%
28156-3	F32T8/TL850/ALTO	32	30	5000	48	30,000	36,000	2850	2710	82	95%
28162-5	F32T8/TL730/ALTO	32	30	3000	48	30,000	36,000	2700	2565	78	95%
28161-3	F32T8/TL735/ALTO	32	30	3500	48	30,000	36,000	2700	2565	78	95%
28157-5	F32T8/TL741/ALTO	32	30	4100	48	30,000	36,000	2700	2565	78	95%
38351-3	F32T8/TL741/ALTO	32	10	4100	48	30,000	36,000	2700	2565	78	95%
28163-4	F32T8/TL750/ALTO	32	30	5000	48	30,000	36,000	2600	2470	78	95%

2x2

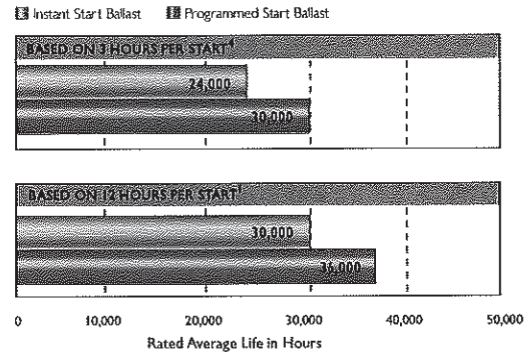
2x4

- 1) Average life under engineering data with lamps turned off and restarted once every 12 operating hours.
 - 2) Approximate initial lumens. The lamp lumen output is based upon lamp performance after 100 hours of operating life, when the output is measured during operation on a reference ballast under standard laboratory conditions. For expected lamp lumen output, commercial ballast manufacturers can advise the appropriate ballast factor for each of their ballasts when they are informed of the designated lamp. The ballast factor is a multiplier applied to the designated lamp lumen output.
 - 3) Design lumens are the approximate lamp lumen output at 40% of the lamp's rated average life. This output is based upon measurements obtained during lamp operation on a reference ballast under standard laboratory conditions. Design lumens rated at 3 hours per start on instant start ballast.
 - 4) Average life under specified test conditions with lamps turned off and restarted no more frequently than once every 3 operating hours. Lamp life is appreciably longer if lamps are started less frequently.
- Ⓔ Lamp meets US Federal Minimum Efficiency Standards.
- This lamp is better for the environment because of its reduced mercury content. All Philips ALTO II lamps give you end-of-life options which can simplify and reduce your lamp disposal costs depending on your state and local regulations.

95% Lumen Maintenance Philips T8 Lamps



Rated Average Life Philips T8 Lamps



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in

Case No(s). 14-1237-EL-EEC

Summary: Application -Cardinal Health and Ohio Power Company for approval of a special arrangement agreement with a mercantile customer electronically filed by Mr. Yazen Alami on behalf of Ohio Power Company