



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**)
Heidelberg University)
and Ohio Power Company) **Case No. 14-1234-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 Heidelberg University 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.: 14-1234-EL-EEC

Mercantile Customer: HEIDELBERG UNIVERSITY

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: HEIDELBERG UNIVERSITY

Principal address: 310 E Market St, Tiffin, Oh 44883

Address of facility for which this energy efficiency program applies: 132 Rebecca St, Tiffin, Oh 44883

Name and telephone number for responses to questions:

Rodney Morrison, Heidelberg University, (419) 448-2399

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, and the date on which the customer would have replaced such equipment if it had not been replaced early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).
- ☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s):
- ☒ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s): 8/1/2012
- ☐ 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:

Annual savings: kWh

- 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:

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

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

Annual savings: 24,656 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.

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

The less efficient new equipment is the minimum required by Ohio State code or Federal Standard whichever is more stringent. For those measures where no code applies the baseline equipment is assumed to be the least efficient equipment available in the marketplace or standard practice, whichever results in the most conservative annual savings. Any information available describing the less efficient new equipment option is provided in 10-1599-EL-EEC for the work papers that provide all methodologies, protocols, and practices used in this application for prescriptive measures.

- 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 (choose which 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):

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

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

9.6 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 seeking is:

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

☒ A cash rebate of \$ 4,078.46. (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.)

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: 2.43 (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 \$ 10,271.59

The utility's program costs were \$ 147.94

The utility's incentive costs/rebate costs were \$ 4,078.46.

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.

Case No.: 14-1234-EL-EEC

State of Ohio :

Brian Larcey 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.

[Signature] Energy Efficiency Engineer
Signature of Affiant & Title

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

[Signature]
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	HEIDELBERG UNIVERSITY		
Project Number	AEP-14-12461		
Customer Premise Address	132 REBECCA ST, TIFFIN, OH 44883		
Customer Mailing Address	310 E Market St, Tiffin, OH 44883		
Date Received	2/4/2014		
Project Installation Date	8/1/2012		
Annual kWh Reduction	24,656		
Total Project Cost	\$15,613.65		
Unadjusted Energy Efficiency Credit (EEC) Calculation	\$5,437.95		
Simple Payback (yrs)	5.3		
Utility Cost Test (UCT) for EEC	2.43		
Utility Cost Test (UCT) for Exemption	0.06		
<i>Please Choose One Option Below and Initial</i>			
Self Direct EEC: 75%	\$4,078.46	<input checked="" type="checkbox"/>	Initial: <i>DM</i>
EE/PDR Rider Exemption	12 Months (with possible extension up to N/A months after PUCO Approval)	<input type="checkbox"/>	Initial: N/A

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.

Major renovation of exercise facility with 4,103 watts reduced from ASHRAE 90.1-2007 lighting power density baseline:

- Installed (2) 10 ton energy efficient Trane YHC120E RTUs
- Installed (2) 5 ton energy efficient Trane YHC060E RTUs
- Installed (1) 12.5 ton energy efficient Trane YCD151C RTU
- Installed (1) 7.5 ton energy efficient Trane YHC092E RTU
- Installed (1) 8.5 ton energy efficient Trane YHC102E RTU
- Installed (1) 7.5 ton energy efficient Trane YHC092E RTU
- Installed (3) 4 ton energy efficient Trane YHC048E RTUs

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: *John J. Williams*

Title: Manager

Date: 6/26/2014

HEIDELBERG UNIVERSITY

By: *[Signature]*

Title: Associate V-P Facilities

Date: 06.25.14

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

This customer is mercantile.

Customer Name	Service Address	Service City	Service State	Service Zip
HEIDELBERG UNIVERSITY	139 REBECCA ST	TIFFIN	OH	44883-2454
HEIDELBERG UNIVERSITY	77 GREENFIELD ST	TIFFIN	OH	44883-2422



FEATURES & SPECIFICATIONS

INTENDED USE — 2RT5 is designed for applications that require the extremely energy efficient delivery of comfortable volumetric light from a lay-in fixture that is appealing and shallow in depth. Ideal for offices, schools, hospitals, retail and numerous other commercial applications. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

OPTICAL SYSTEM — Delivers volumetric lighting by filling the entire volume of space with light, delivering the ideal amount of light to walls, cubicles, work surfaces and people.

Luminous characteristics are carefully managed at high angles, providing just enough intensity to deliver the volumetric effect.

Regressed, two-piece refractive system obscures and softens the lamp and smoothly washes the reflector with light.

Linear faceted reflector softens and distributes light into the space and minimizes the luminance ratio between the fixture and the ceiling.

Mechanical cut-off across the reflector and fresnel refraction along the refractor provide high angle shielding and a quiet ceiling.

Sloped endplates provide a balanced fixture to ceiling ratio while enhancing the perception of fixture depth.

CONSTRUCTION — Impact modified acrylic prismatic refractor with polymer light diffusing film.

Rugged, one-piece, cold-rolled steel reflector with embossed facets with coated polyester powder paint after fabrication.

Rigid structure with ballast box and endplates. End plates feature integral T-bar clips.

Fixtures may be mounted end-to-end.

ELECTRICAL SYSTEM — Highly efficient program start electronic ballasts, Class P, thermally protected, resetting, HPF, non PCB, UL Listed, CSA Certified, sound rated A.

F14T5 uses GEB115, producing 1.22 ballast factor standard for typical applications. F24T5H0 is available for higher ceiling applications.

Bi-level dimming option allows system to be switched to 50% power for compliance with common energy codes while maintaining fixture appearance.

SS option available for use with SIMPLY5™ Lighting Intelligence system with multi-level dimming. See SYNERGY® Control Systems specification sheets for more information.

MAINTENANCE — Side mounted ballast tray accessed by removing adjacent ceiling tile. Ballast tray may be removed from fixture during service.

Lamps accessed by squeezing refractor to release from retention tabs.

LISTING — UL Listed (standard). Optional: Canada CSA or cUL Mexico NOM.

WARRANTY — 1-year limited warranty. Complete warranty terms located at

www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx.

Protected by one or more of US Patents Nos. 7,229,192; D541,467; D541,468; D544,633; D544,634; D544,992; D544,933 and additional patent pending.

NOTE: Specifications subject to change without notice.

Catalog Number
Notes
Type



2RT5

2'X 2'
2 Lamps
T5



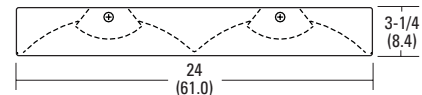
SIMPLY5™
LIGHTING INTELLIGENCE

Specifications

Length: 24 (61.0)

Width: 24 (61.0)

Depth: 3-1/8 (7.9)



All dimensions are inches (centimeters) unless otherwise specified.

ORDERING INFORMATION

For shortest lead times, configure products using **bolded options**.

Example: 2RT5 14T5 MVOLT GEB115 LP835

2RT5					
Series	Lamp type	Voltage	Ballast	Lamp ⁵	Options
2RT5 Recessed T5	14T5 14W T5 (22") 24T5H0 24T5H0 T5 (22") ¹	MVOLT ² 347 ³	GEB115 1.15 ballast factor GEB115S 1.15 ballast factor, step dimming GEB10PS 1.0 ballast factor, programmed start ¹ SS 0.95 ballast factor SIMPLY5 system ⁴	LP835 3500° K LP830 3000° K LP841 4100° K	GLR Internal fast-blow fuse ⁶ PWS1836 6' prewire, 3/8" diameter, 18-gauge, 3-wire (n/a with GEB115S) ⁷ PWS1846 6' prewire, 3/8" diameter, 18-gauge, 4-wire ⁸ EL14 Emergency battery pack ⁹ HW Hardware for SIMPLY5™ system; replaces RELOC® CSA Listed and labeled to comply with Canadian standards QFC_ Quick-flex cable ⁶

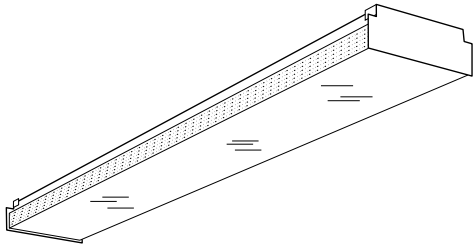
Notes

- ¹ For T5H0 use GEB10PS only; not available with 14T5.
- ² MVOLT (120-277 volts), 50-60HZ.
- ³ For 347V use GEB10PS ballast only.
- ⁴ SIMPLY5 includes 13' SS SSC RELOC® wiring system, specify voltage unless HW (hardwire or PWS) is ordered.
- ⁵ Required. All fixtures shipped with lamps installed.
- ⁶ Must specify voltage, 120 or 277.
- ⁷ For use with standard ballast.
- ⁸ For use with step dimming ballast.
- ⁹ See PS1400QD spec sheet for EL lumen output information.

Columbia
LIGHTING

AWN

8⁵/₁₆" Wide Low Profile Wraparound / 2-Lamp T5, T5HO, T8



FEATURES

- Clear acrylic prismatic diffuser, flat bottom with vertical sides
- Two, three, or four-lamp cross sections
- Hinges from either side
- White steel end plates with flush knockouts for continuous row mounting
- Heavy gauge steel housing die embossed for maximum rigidity
- Heat sink embossments and levelling projections allow direct mounting of HPF fixtures on combustible low density cellulose fiberboard ceilings
- All metal parts are treated with a five stage phosphate bonding process and finished with a baked white enamel

PROJECT INFORMATION

Project Name _____

Type _____

Catalog No. _____

Date _____

BALLASTS

Energy efficient, thermally protected, automatic resetting, Class P, high power factor, sound rated A, unless otherwise specified. CEE NEMA Premium compliant.

ELECTRICAL

Standard class "P", thermally protected, auto-resetting HPF ballast, sound rated A. CEE NEMA Premium compliant. All ballast leads extend a minimum of 6" through access location. NEC/CEC-compliant ballast disconnect is standard.

FINISH

All parts pre-painted with high gloss baked white enamel, minimum reflectance 86%, applied over iron phosphate pre-treatment for maximum adhesion and rust resistance.

SHIELDING

100% clear prismatic acrylic.

CERTIFICATION

All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard. Emergency-equipped fixtures labeled UL 924.

ORDERING INFORMATION

EXAMPLE AWN4-232-EU

AWN		2					
MODEL	LENGTH	NO. OF LAMPS IN CROSS SECTION	LAMP TYPE	BALLAST	VOLTAGE	OPTIONS	
AWN 8 ⁵ / ₁₆ " Wide Low Profile Wraparound	2 2' 4 4' 8 8'	2 Two	17 2', T8: 17 Watt 28 4', T5: 28 Watt 32 4', T8: 32, 30, 28 or 25 Watt 54 4', T5HO: 54 or 51 Watt	E Electronic T8, Instant Start 4E 4-Lamp Electronic T8, Instant Start EP Electronic T5 or T8, Programmed Start 4EP 4-Lamp Electronic T5HO or T8, Programmed Start	U 120V-277V 347 347V	GLR Fast Blow Fuse EL Emergency Battery Pack PAF Paint After Fabrication NYC NYC Compliant NYCU NYC Compliant, Union Label	
				For a specific ballast vendor, show as option.			
							ACCESSORIES (ORDER SEPARATELY)
							S18 18" Stem, Canopy
							SS18 18" Swivel Stem - 45° Swivel

Columbia

LIGHTING

AWN

8⁵/₁₆" Wide Low Profile Wraparound / 2-Lamp T5, T5HO, T8

PHOTOMETRIC DATA

Test 12409 Test Date 7/23/03

LUMINAIRE DATA

Luminaire	AWN4-232 AWN/AWW Wraparound 8" x 48" 2-Lamp with Wraparound Acrylic Prismatic Lens
Ballast	B232I120RH
Ballast Factor	0.88
Lamp	F32T8
Lumens per Lamp	2900
Watts	54
Shielding Angle	N/A
Spacing Criterion	0° = 1.28 90° = 1.36
Luminous Opening in Feet	Length: 3.99 Width: 0.68 Height: 0.12

ZONAL LUMEN SUMMARY

Zone	Lumens	% Lamp	% Fixt.
0-30	1089	18.8	26.2
0-40	1800	31.0	43.3
0-60	2948	50.8	70.9
0-90	3665	63.2	88.1
90-120	385	6.6	9.3
90-130	428	7.4	10.3
90-150	476	8.2	11.4
90-180	493	8.5	11.9
0-180	4158	71.7	100.0

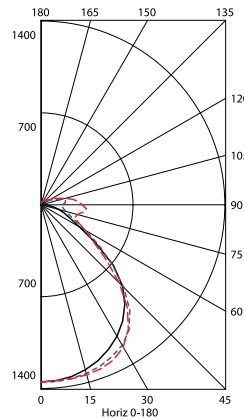
ENERGY DATA

Total Luminaire Efficiency	71.7%
Luminaire Efficacy Rating (LER)	68
IESNA RP-1-1993 Compliance	Noncompliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$3.53 based on 3000 hrs. and \$0.08 per KWH

COEFFICIENTS OF UTILIZATION (%)

RCR	RC	80				70				50				0
		RW	70	50	30	10	70	50	30	10	50	30	10	0
1	76	72	69	66	66	73	70	67	64	65	63	61	52	
2	69	63	58	54	66	61	57	53	57	54	51	44		
3	63	56	50	46	61	54	49	45	51	47	43	38		
4	58	50	44	39	56	48	43	38	46	41	37	32		
5	54	45	39	34	52	43	38	33	41	36	32	28		
6	50	40	34	30	48	39	34	29	37	32	28	25		
7	46	37	31	26	44	36	30	26	34	29	25	22		
8	43	34	28	24	41	33	27	23	31	26	23	20		
9	40	31	25	21	39	30	25	21	29	24	20	18		
10	38	28	23	19	36	28	23	19	26	22	19	16		

INDOOR CANDELA PLOT



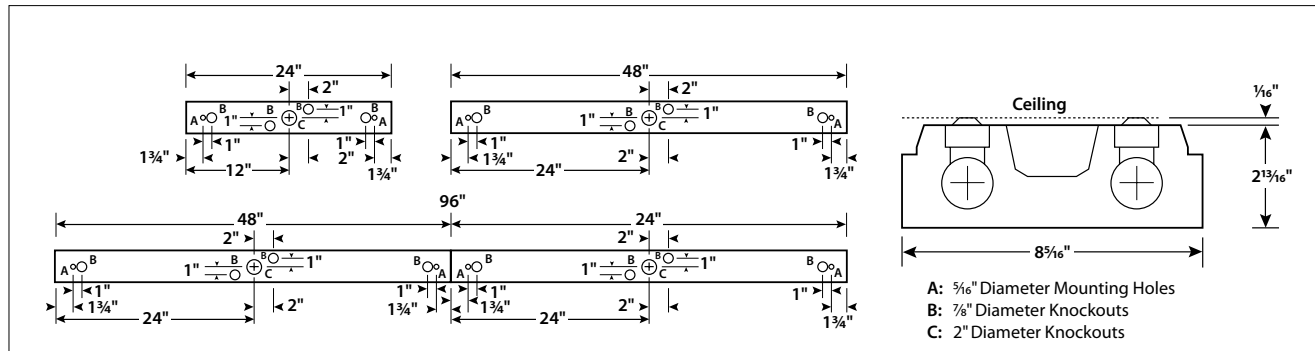
AVG. LUMINANCE (Candela/Sq. M.)

	0.0	22.5	45.0	67.5	90.0
Average Luminance Angle					
0	5356	5356	5356	5356	5356
30	5205	5124	5218	5214	5201
40	5006	4920	4849	4675	4615
45	4782	4605	4357	4089	4006
50	4290	4068	3706	3331	3279
55	3362	3476	3073	2630	2679
60	2526	2840	2489	2266	2340
65	2143	2221	2073	2111	2098
70	2025	1848	1879	2117	2148
75	1971	1707	1925	2404	2652
80	1932	1720	2174	3169	3677
85	1762	1917	2711	4499	5220

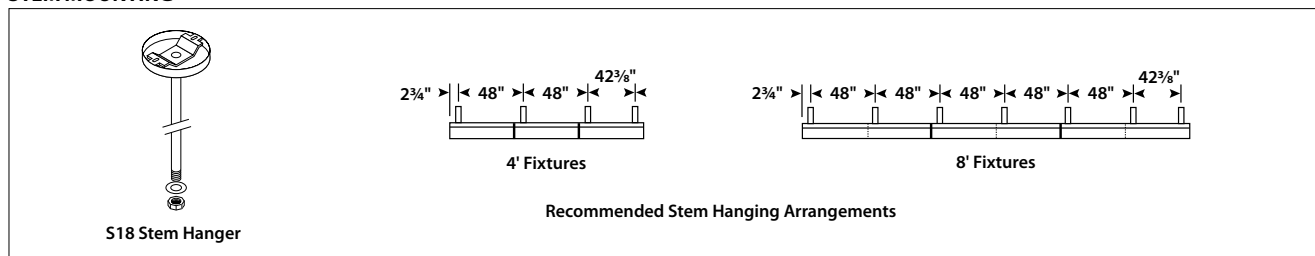
RCR = Room Cavity Ratio

RC = Effective Ceiling Cavity Reflectance RW = Wall Reflectance

DIMENSIONAL DATA



STEM MOUNTING

**NOTE:** All dimensions are in inches; dimensions and specifications are subject to change without notice. Please consult factory or check sample for verification.



FEATURES & SPECIFICATIONS

INTENDED USE

Specification premium, high performance, static T8 luminaires provide general illumination for recessed applications; ideal for restricted plenum spaces.

ATTRIBUTES

Designed exclusively for use with T8 lamps, electronic ballasts and sockets.

CONSTRUCTION

Smooth hemmed sides and smooth, inward formed end flanges for safe handling. Lighter weight fixture allows safe, easy installation.

Standard steel door frame has superior structural integrity with premium extruded appearance and precision flush mitered corners. Steel door allows easy lens replacement without frame disassembly (for lenses up to .156" thick). Powder-painted, steel latches provide easy, secure door closure.

Superior mechanical light seal requires no foam gasketing. Integral T-bar clips secure fixture to T-bar system. Housing formed from cold-rolled steel. Acrylic shielding material 100% UV stabilized. No asbestos is used in this product.

US PATENTS: 6,210,025; 6,231,213; 6,213,625; 2,288,471.

FINISH

Five-stage iron-phosphate pretreatment ensures superior paint adhesion and rust resistance. Painted parts finished with highly reflective matte white enamel.

OPTICAL

A12 lens features reverse apex technology for superior lamp obscuration and improved visual comfort.

ELECTRICAL SYSTEM

Standard ballast is electronic, thermally protected, resetting, Class P, HPF, non-PCB, UL Listed, CSA certified ballast, universal voltage and sound rated A.

Luminaire is suitable for damp locations. AWM, TFN or THHN wire used throughout, rated for required temperatures.

LISTING

Standard: UL Optional: Canada — CSA or cUL; Mexico — NOM.

WARRANTY

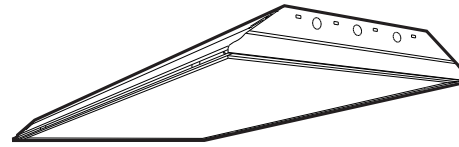
Guaranteed for one year against mechanical defects in manufacture.

Specifications subject to change without notice.

Catalog Number	
Notes	Type

Specification Premium T8 Troffer

SP8 2'x4'



2, 3, 4 or 6 Lamps
T8



Specifications

Length: 48 (1218)

Width: 24 (609)

Depth: 3-11/16 (94)

Weight: 22 lbs (9.9 kg)



All dimensions are inches (millimeters).

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2SP8 G 3 32 A12 MVOLT 1/3 GEB10IS

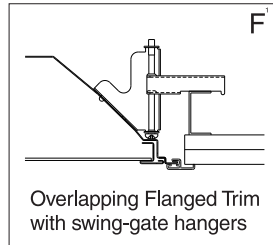
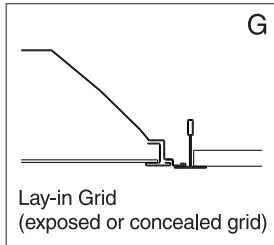
2SP8					
Series	Number of lamps	Door frame	Voltage	Options ¹	
2SP8 2'wide	2 3 4 6 Not included.	(blank) Flush steel, white FN Flush aluminum, natural FM Flush aluminum, matte black FW Flush aluminum, white RN Regressed aluminum, natural RM Regressed aluminum, matte black RW Regressed aluminum, white	120 277 347 MVOLT Others available.	1/4 One 4-lamp ballast 1/3 One 3-lamp ballast GEB10IS Electronic ballast, ≤10% THD, instant start GEB10RS Electronic ballast, ≤10% THD, rapid start EL Emergency battery pack (nominal 300 lumens) EL14 Emergency battery pack (nominal 1400 lumens) GLR Internal fast-blow fuse GMF Internal slow-blow fuse LST Tandem-wired fixture pairs (shared ballasts)	
Trim type	Lamp type	Diffuser type		PWS1836 6' prewire, 3/8" dia., 18-gauge, 1 circuit PWS1846 6' prewire, 3/8" dia., 18-gauge, 2 circuits LP735 Lamped, 700-series, 3500K LP__ Lamped; specify lamp type and color JP Palletized and stretch-wrapped without individual cartons CSA CSA Certified NOM NOM Certified	
G Grid F Overlapping flanged	32 32W T8 (48")	A12 #12 pattern acrylic, reverse apex A12125 #12 pattern acrylic, .125" thick RA125 #12 pattern acrylic, .125" thick, reverse apex A19 #19 pattern acrylic, .156" thick A15 #15 pattern acrylic, .2" thick PC1S 1/2" x 1/2" x 1/2" plastic cube louver, silver PC2S 1-1/2" x 1-1/2" x 1" plastic cube louver, silver w/ flange PC3S 3/4" x 3/4" x 1/2" plastic cube louver, silver			

NOTE:

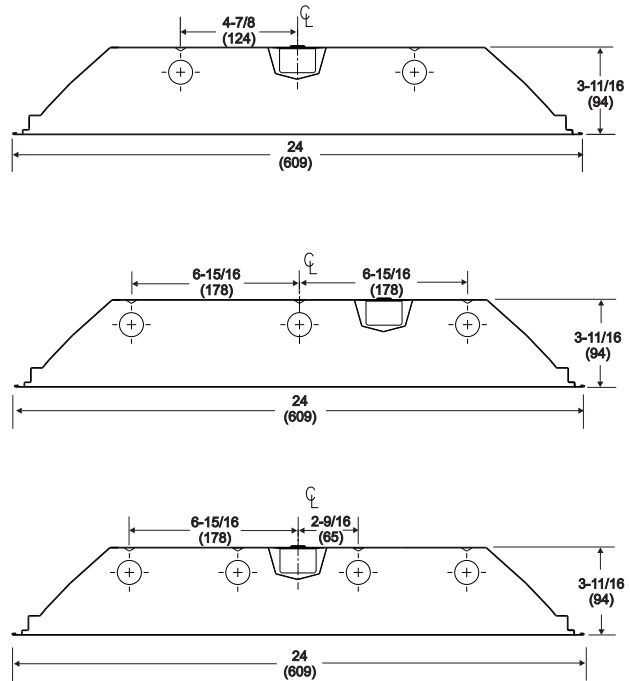
¹ MVOLT standard for 120-277V applications, 50-60 hz operation. Some options require voltage specified.

SP8 2'x4' Static T8 Troffer**MOUNTING DATA**

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).

**NOTE:**

- 1 Recommended rough-in dimensions for F-trim fixtures 24"x48". (Tolerance is +1/4"-0".)
Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture swing-gate points require additional 9/16" over nominal fixture height.

DIMENSIONS**PHOTOMETRICS**

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

2SP8 2 32 A12***Report LTL 7525**

Lumens per lamp - 2850 – Lum. eff. - 85.5%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling Wall	80%			70%			50%		
	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	102	102	102	99	99	99	95	95	95
1	94	90	87	92	88	85	85	82	80
2	86	80	74	84	78	73	75	71	68
3	79	71	64	77	70	64	67	62	58
4	73	63	56	71	62	56	60	55	50
5	67	57	50	66	56	49	54	48	44
6	62	52	44	61	51	44	49	43	39
7	58	47	40	57	46	40	45	39	34
8	54	43	36	53	42	36	41	35	31
9	51	39	33	49	39	33	38	32	28
10	47	36	30	46	36	30	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1541	27.0	31.6
0-40	2571	45.1	52.7
0-60	4192	73.5	86.0
0-90	4874	85.5	100.0
90-180	0	0	0
0-180	4874	85.5	100.0

2SP8 3 32 A12***Report LTL 7492**

Lumens per lamp - 2850 – Lum. eff. - 83.6%

S/MH (along) 1.3 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	100	100	100	97	97	97	93	93	93
1	92	88	85	90	86	83	83	80	78
2	84	78	73	82	77	72	74	70	66
3	78	70	63	76	68	62	66	61	57
4	72	62	55	70	61	55	59	54	49
5	66	56	49	64	55	49	53	48	43
6	61	51	44	60	50	43	49	43	38
7	57	46	39	56	46	39	44	38	34
8	53	42	36	52	42	35	41	35	31
9	50	39	32	49	38	32	38	32	28
10	47	36	30	46	36	29	35	29	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	2319	27.1	32.4
0-40	3833	44.8	53.6
0-60	6164	72.1	86.2
0-90	7147	83.6	100.0
90-180	0	0	0
0-180	7147	83.6	100.0

2SP8 4 32 A12***Report LTL 7526**

Lumens per lamp - 2850 – Lum. eff. - 81.5%

S/MH (along) 1.2 (across) 1.4

Coefficient of Utilization

Ceiling	80%			70%			50%		
Wall	70%	50%	30%	70%	50%	30%	50%	30%	10%
0	97	97	97	95	95	95	91	91	91
1	90	86	83	87	84	81	81	78	76
2	82	76	71	80	75	70	72	68	65
3	76	68	62	74	67	61	64	59	55
4	70	61	54	68	60	53	58	52	48
5	64	55	48	63	54	47	52	46	42
6	60	50	43	58	49	42	47	42	37
7	56	45	38	54	44	38	43	37	33
8	52	41	35	51	41	34	40	34	30
9	48	38	32	47	38	31	37	31	27
10	46	35	29	44	35	29	34	28	25

Zonal Lumens Summary

Zone	Lumens	%Lamp	%Fixture
0-30	3029	26.6	32.6
0-40	4999	43.8	53.8
0-60	8017	70.3	86.3
0-90	9292	81.5	100.0
90-180	0	0	0
0-180	9292	81.5	100.0

Energy (Calculated in accordance with NEMA standard LE-5)

LER.FL	ANNUAL ENERGY COST**	LAMP DESCRIPTION	LAMP LUMENS	BALLAST FACTOR	WATTS
77	\$3.12	(2) 32W T8	2850	.90	57
74	\$3.24	(3) 32W T8	2850	.87	85
77	\$3.12	(4) 32W T8	2850	.88	107

** Comparative yearly lighting energy cost per 1000 lumens

* With reverse apex lens



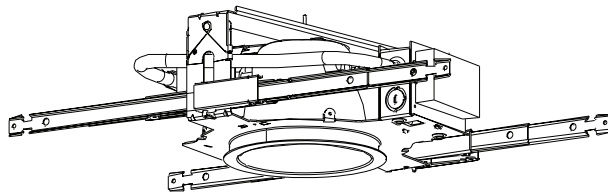
An Acuity Brands Company

Sheet #: SP8-2x4

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Lithonia Lighting
Fluorescent

One Lithonia Way, Conyers, GA 30012
Phone: 800-858-7763 Fax: 770-929-8789
www.lithonia.com

Luminaire Type:
Catalog Number
(autopopulated):Gotham Architectural Downlighting
Compact Fluorescent Downlights**6" AF**
Open ReflectorHorizontal Lamp
Double Twin-Tube

FEATURES

OPTICAL SYSTEM

- Self-flanged, semi-specular, matte-diffuse, or specular reflector. Patented Bounding Ray™ Optical Principle design (U.S. Patent No. 5,800,050). Minimum flange matches reflector finish.

MECHANICAL SYSTEM

- 16-gauge galvanized steel construction; maximum 2-1/4" ceiling thickness.
- Telescopic mounting bars maximum of 32" and minimum of 15", preinstalled, 4" vertical adjustment.
- Toolless post-installation adjustments.
- Junction box capacity: 8 (4 in, 4 out) 12AWG rated for 90°C.

ELECTRICAL SYSTEM

- Horizontally mounted, positive-latch, thermoplastic socket.
- Class P, thermally protected, high-power-factor electronic ballast mounted to the junction box.
- SIMPLY5™ technology available.

LISTING

- Fixtures are UL Listed for thru-branch wiring, non-IC recessed mounting and damp locations. Listed and labeled to comply with Canadian standards.

WARRANTY

- 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

ORDERING INFORMATION

EXAMPLE: AF 2/18DTT 6AR MVOLT

Series	Wattage/Lamp	Aperture/Trim color	Finish	Lens type	Voltage	Ballast ³
AF	1/13DTT	6AR	Clear	(blank)	No lens	(blank)
	2/13DTT	6PR	Pewter	LD	CGL	Electronic ballast
	1/18DTT	6WTR	Wheat		CAL	ECOS ^{2,4}
	2/18DTT	6BC ¹	Black cone		PCL	ADEZ ^{4,5}
	1/26DTT	6MB ¹	Black baffle		T73	ADZT ⁷
	2/26DTT	6WR ¹	White painted		PPC	S5 ⁶
		6WB ¹	White baffle			

Options

DS	Dual switching	TRBL	Black painted flange
EL^{5,7}	Emergency battery pack with integral test switch	RRL⁸	RELOC®-ready luminaire. Provides compatibility with Lithonia RELOC system. Access above ceiling required.
ELR^{5,7}	Emergency battery pack with remote test switch	HW	Hardwire for S5 system; replaces RELOC®
ELHL^{5,7}	High-lumen-output emergency battery pack with integral test switch	CP⁹	Chicago plenum
ELRHL^{5,7}	High-lumen-output emergency battery pack with remote test switch	BDP^{9,10}	Ballast disconnect plug
GMF⁵	Single, slow-blow fuse	NEPP	Interface for Sensor Switch® nLight® network with integral power supply. Refer to TN-623-01.
GLR⁵	Single, fast-blow fuse	WL	Wet location; lens required
WLP	With 3500 K lamp (shipped separately)	WRL¹¹	Wattage restriction label
TRW	White painted flange (standard on MB and WB)	TWS	Twist lock socket

ACCESSORIES order as separate catalog numbers (shipped separately)

SCA6 Sloped ceiling adapter. Degree of slope must be specified (10D, 15D, 20D, 25D, 30D). Ex: SCA6 10D.

6" AF

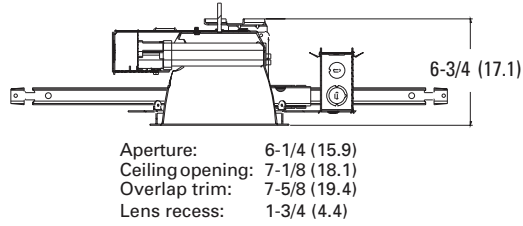
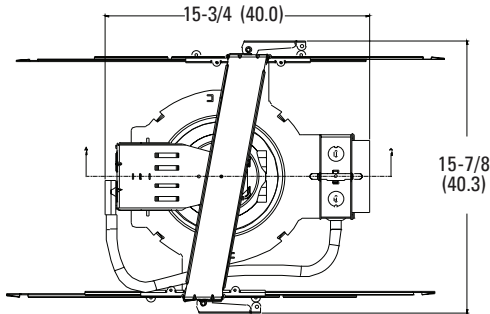
Open Reflector

Horizontal Lamp, Double Twin-Tube



DIMENSIONAL DATA

All dimensions are inches (centimeters) unless otherwise noted.



ELECTRICAL

ENERGY (Calculated in accordance with NEMA standard LE-5A)

LER.DOL	Annual* Energy Cost	Lamps	Lamp Lumens	Ballast Factor	Input Watts
44	\$5.51	(2) 18W DTT	2500	0.98	38
40	\$6.08	(2) 26W DTT	3200	1.00	55

*Comparative yearly lighting energy cost per 1000 lumens

NOTES

ORDERING NOTES

- Not available with finishes.
- Multi-volt electronic ballast capable of operating on any voltage from 120V through 277V, 50 or 60 Hz.
- For additional ballast types, refer to [TECH-250](#).
- Not available with 13DTT.
- Available in 120V or 277V only.
- SIMPLY5 includes 9' S5 MLC RELOC wiring system (shipped separately). Available in 120V or 277V only. Not available with 13W or 18W. See [simply5.net](#) for more information.
- For dimensional changes, refer to [TECH-140](#).
- For compatible RELOC systems, refer to [TECH-110](#).
- Not available with emergency options.
- Meets codes that require in-fixture disconnect.
- Must specify wattage. EX.:WRL32





6" AF

Open Reflector


Horizontal Lamp, Double Twin-Tube

PHOTOMETRY

Distribution Curve Distribution Data Output Data Coefficient of Utilization Illuminance: Single Luminaire 30" Above Floor

AF 2/18DTT 6AR

(2) CF18DD/E/835 LAMP, 2500 TOTAL RATED LUMENS, 1.4 S/MH, TEST NO. LTL10964

		From 0°	cp.	Lumens	Zone	Lumens	%lamp	p f pc pw	80%		20%		50%		Mount height	Initial fc at beam center	50%		10%	
									50%	30%	50%	30%	50%	30%			beam angle 67.9°	beam angle 97.6°		
		0°	652	0	0°-30°	576	23.0	1	53	51	52	50	50	49			Beam diameter	fc at beam edge	Beam diameter	fc at beam edge
150		5°	679	66	0°-40°	915	36.6	2	48	46	47	45	46	44						
		15°	734	206	0°-60°	1203	48.1	3	44	41	43	41	42	40						
300		25°	658	304	0°-90°	1205	48.2	4	40	37	40	37	39	36						
		35°	561	339	90°-180°	0	0.0	5	37	34	37	34	36	33						
450		45°	312	240	0°-180°	1205	48.2*	6	34	31	34	31	33	30						
		55°	38	48	*Efficiency			7	32	28	31	28	31	28						
600		65°	1	2				8	29	26	29	26	28	25						
		75°	0	0				9	27	24	27	24	26	23						
750		85°	0	0				10	25	22	25	22	25	22						
		90°	0	0																

AF 1/26DTT 6AR

(1) CF26DTT LAMP, 1825 TOTAL RATED LUMENS, 1.4 S/MH, TEST NO. LTL17856

	Ave	Lumens	Zone	Lumens	% Lamp	pf pc pw	80%			20%			50%			Mounting Height	Initial FC Center	50% beam -		10% beam -	
							50%	30%	10%	50%	30%	10%	50%	30%	10%			68.3°		99.2°	
							50%	30%	10%	50%	30%	10%	50%	30%	10%			Diameter	FC	Diameter	FC
0°	505		0° - 30°	411.1	22.5	0	62	62	62	61	61	61	58	58	58	8.0	16.7	7.5	8.3	12.9	1.7
5°	506	48	0° - 40°	681.6	37.3	1	57	55	54	56	54	53	54	52	51	10.0	9.0	10.2	4.5	17.6	0.9
15°	487	139	0° - 60°	942.4	51.6	2	52	49	47	51	48	47	49	47	45	12.0	5.6	12.9	2.8	22.3	0.6
25°	490	225	0° - 90°	950.2	52.1	3	47	44	41	46	43	41	45	42	40	14.0	3.8	15.6	1.9	27.0	0.4
35°	441	271	90° - 180°	0.0	0.0	4	43	39	37	42	39	37	41	38	36	16.0	2.8	18.3	1.4	31.7	0.3
45°	263	205	0° - 180°	950.2	*52.1	5	39	36	33	39	35	33	38	35	32						
55°	47	56	*Efficiency			6	36	32	29	35	32	29	35	31	29						
65°	5	6				7	33	29	27	33	29	26	32	29	26						
75°	1	2				8	30	27	24	30	27	24	29	26	24						
85°	0	0				9	28	24	22	28	24	22	27	24	22						
90°	0	0				10	26	22	20	26	22	20	25	22	20						

AF 2/26DTT 6MB

(2) CF26DD/E/835 LAMP, 3600 TOTAL RATED LUMENS, 1.2 S/MH, TEST NO. LTL7796

	From 0°	cp.	Lumens	Zone	Lumens	%lamp	p f pc pw	80%			20%			50%			Mount height	Initial fc at beam center	50%		10%	
								50%	30%	10%	50%	30%	10%	50%	30%	10%			beam angle 59.4°		beam angle 97.4°	
								50%	30%	10%	50%	30%	10%	50%	30%	10%			Beam diameter	fc at beam edge	Beam diameter	fc at beam edge
160	0°	762	0	0°-30°	576	16.0	1	38	37	37	36	36	35				8'	25.2	6.3'	12.6	12.5'	2.5
	5°	780	74	0°-40°	900	25.0	2	34	33	34	32	33	31				10'	13.5	8.5'	6.8	17.1'	1.4
	15°	749	209	0°-60°	1239	34.4	3	31	29	31	29	30	28				12'	8.4	10.8'	4.2	21.6'	0.8
	25°	635	293	0°-90°	1241	34.5	4	29	26	28	26	28	26				14'	5.8	13.1'	2.9	26.2'	0.6
	35°	518	323	90°-180°	0	0.0	5	26	24	26	24	25	23				16'	4.2	15.4'	2.1	30.7'	0.4
	45°	345	264	0°-180°	1241	34.5*	6	24	22	24	22	23	21									
	55°	65	75	*Efficiency			7	22	20	22	20	22	19									
	65°	2	2				8	21	18	20	18	20	18									
	75°	0	0				9	19	17	19	17	19	16									
	85°	0	0				10	18	15	18	15	17	15									
	90°	0	0																			

AF 2/26DTT 6BC

(1) CF26DD/E/835 LAMP, 3600 TOTAL RATED LUMENS, 1.2 S/MH, TEST NO. LTL7795

	From 0°	cp.	Lumens	Zone	Lumens	%lamp	p f pc pw	80%			20%			50%			Mount height	Initial fc at beam center	50%		10%	
								50%	30%	10%	50%	30%	10%	50%	30%	10%			beam angle 60.1°		beam angle 97.7°	
								50%	30%	10%	50%	30%	10%	50%	30%	10%			Beam diameter	fc at beam edge	Beam diameter	fc at beam edge
160	0°	764	0	0°-30°	583	16.2	1	38	37	38	37	36	35				8'	25.3	6.4'	12.6	12.6'	2.5
	5°	776	74	0°-40°	912	25.3	2	35	33	34	33	33	32				10'	13.6	8.7'	6.8	17.2'	1.4
	15°	752	211	0°-60°	1259	35.0	3	32	30	31	29	30	29				12'	8.5	11.0'	4.2	21.7'	0.8
	25°	645	297	0°-90°	1262	35.0	4	29	27	29	27	28	26				14'	5.8	13.3'	2.9	26.3'	0.6
	35°	529	329	90°-180°	0	0.0	5	27	24	26	24	26	24				16'	4.2	15.6'	2.1	30.9'	0.4
	45°	350	269	0°-180°	1262	35.0*	6	25	22	24	22	24	22									
	55°	69	78	*Efficiency			7	23	20	22	20	22	20									
	65°	2	3				8	21	18	21	18	20	18									
	75°	0	0				9	19	17	19	17	19	17									
	85°	0	0				10	18	16	18	16	18	15									
	90°	0	0																			

PHOTOMETRY NOTES

- Tested to current IES and NEMA standards under stabilized laboratory conditions.
- Actual performance may differ as a result of end-user environment and application.
- Consult factory or IES file for microgroove baffle, black cone or other photometric reports.



FEATURES & SPECIFICATIONS

INTENDED USE — RT8S is designed for applications that require the extremely energy efficient delivery of comfortable volumetric light from a lay-in fixture that is appealing and shallow in depth and where room-side ballast access is required. Ideal for offices, schools, hospitals and numerous other commercial applications. **Certain airborne contaminants can diminish integrity of acrylic.** [Click here for Acrylic Environmental Compatibility table for suitable uses.](#)

OPTICAL SYSTEM — Delivers volumetric lighting by filling the entire volume of space with light, providing the ideal amount to walls, cubicles, work surfaces and people.

Luminous characteristics are carefully managed at high angles, distributing just enough intensity to deliver the volumetric effect.

98% reflective Alanod MIRO® silver optical assembly efficiently redirects lamp output to the refractor.

Regressed refractive system obscures and softens the lamp and smoothly washes the reflector with light.

Linear faceted reflector softens and distributes light into the space and minimizes the luminance ratio between the fixture and the ceiling.

Mechanical cut-off across the reflector and fresnel refraction along the refractor provide high angle shielding and a quiet ceiling.

Sloped endplates provide a balanced fixture to ceiling ratio while enhancing the perception of fixture depth.

CONSTRUCTION — Rugged, steel reflector with embossed facets. Painted after fabrication.

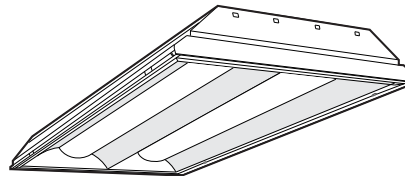
Fixtures may be mounted end-to-end.

ELECTRICAL SYSTEM — High-efficiency, CEE qualified, instant-start, ≤ 10% THD, universal voltage and sound rated A are available as quick-ship items. Optional program-start and step-dimming ballasts available.

Designed and optimized for use with CEE (Consortium for Energy Efficiency) qualified, high-lumen, long life T8 lamps and energy-efficient electronic ballasts.

MAINTENANCE — Lamps accessed by unlatching trim and allowing it to hinge open for easy maintenance. Ballast is accessed from below by removing channel cover.

Catalog Number	
Notes	Type



2RT8S

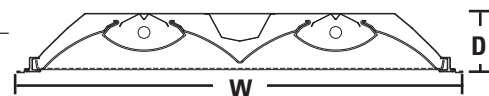
2'x 4'
2 Lamps T8

Specifications

Length: 48 (1218)

Width: 24 (610)

Depth: 3-3/16 (81)



All dimensions are inches (millimeters) unless otherwise specified.

LISTING — UL Listed to U.S. and Canadian standards.

WARRANTY — Fixture guaranteed for one year against mechanical defects in manufacture. Lamp and ballast system warranty (36 months for lamp, 60 months for ballast) by lamp and ballast manufacturer.

Protected by one or more of US Patents Nos. 7,229,192; D541,467; D541,468; D544,633; D544,634; D544,992; D544,933 and additional patent pending.

NOTE: Specifications subject to change without notice.

ORDERING INFORMATION

For shortest lead times, configure product using **standard options (shown in bold)**.

Example: 2RT8S 2 32 MVOLT BINP L835HT8

2RT8S	2	32				
Series	Number of lamps	Voltage	Ballast	Lamp ³	Options	
2RT8S	2	347 MVOLT ¹	BILP IS, high efficiency, .78 bf (low) ²	L835HT8 3100 lumen, long life, 3500°K	GLR Fast-blow fuse ⁴	
Trim type		Wattage	BINP IS, high efficiency, .88 bf (normal) ²	LP735 2800 lumen, 3500°K	EL Emergency battery pack (see Life Safety section)	
(blank) Lay-in grid		32 32W T8 (48")	GEB10IS IS, .88 ballast factor		EL14 Emergency battery pack (see Life Safety section)	
F Over-lapping flanged			BIHP IS, high efficiency, 1.20 bf (high) ²		PWS1836 6' prewire, 3/8" diameter, 18-gauge, 3-wires ⁵	
			BSNP PS, step-dimming, high efficiency, .88 bf (normal) ^{2,3}		PWS1846 6' prewire, 3/8" diameter, 18-gauge, 4-wires ⁶	
					QFC Quick-flex fixture cable, factory installed prewired cable (RELOC®) ⁴	

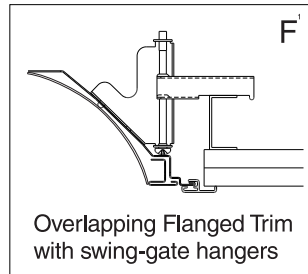
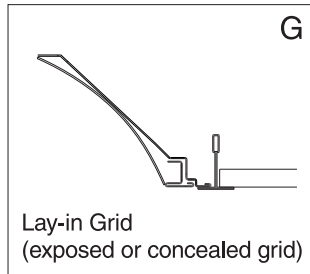
NOTES:

- 1 MVOLT standard for 120V-277V applications.
- 2 CEE qualified HPT8, NEMA premium ballast to qualify for many utility rebates.
- 3 Not available with 347 volt.
- 4 Must specify voltage, 120 or 277.
- 5 For use with standard ballast.
- 6 For use with step-dimming ballast.

2RT8S Volumetric Recessed Lighting 2' x 4'

MOUNTING DATA

Continuous row mounting of flanged units requires CRE and CRM trim options (see Options).



NOTES:

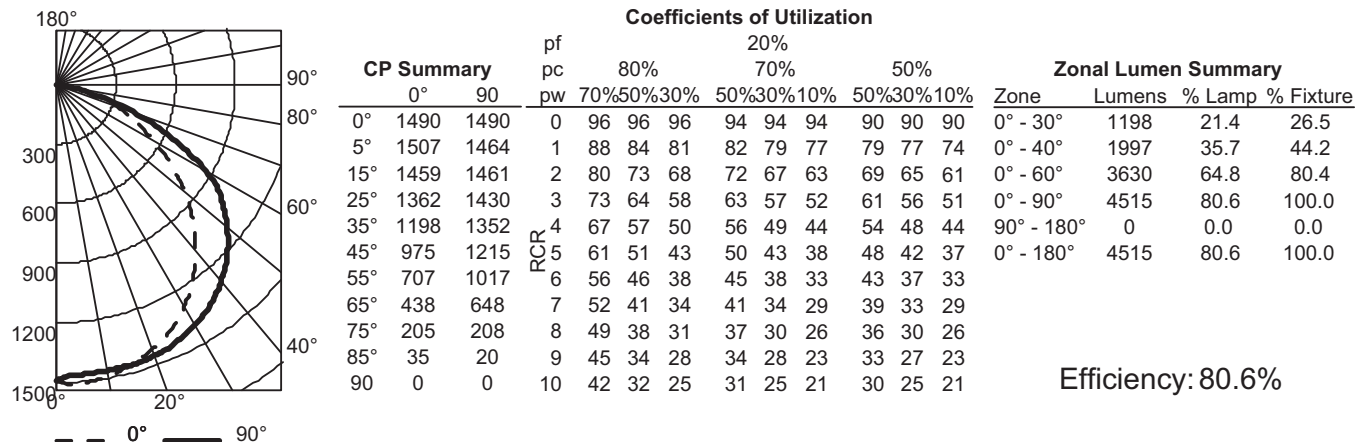
- 1 Recommended rough-in dimensions for F-trim fixtures 24"x48" (Tolerance is +1/4"-0").
Swing-gate range 1-3/16" to 3-15/16". Swing-gate span 23-3/8" to 26-11/16". Fixture
swing-gate points require additional 1-1/16" over nominal fixture height.

T8 Energy Comparison

System	Lamp Type	Ballast Factor	Input Watts	Watts Saved Compared to 3 lamp T8
3-lamp T8 Parabolic	F32T8	0.88	85	—
2RT8S 2-lamp BINP T8	F32T8	0.88	55	30
2RT8S 2-lamp BILP T8	F32T8	0.78	48	37

PHOTOMETRICS

2RT8S 2 32, (3) F032 lamps, 2800 lumens per lamp, s/m 1.28 (along) 1.4 (across), test no. LTL18481



*The LER (Luminaire Efficacy Rating) is the lumens per watt rating for this fixture. It is used to compare the energy efficiency of various products. This photometric report is based upon IES testing procedures, as stated in LM-41-1998.



An Acuity Brands Company



FEATURES & SPECIFICATIONS

INTENDED USE — General illumination for indoor and outdoor, covered ceiling locations. Ideal for showers, locker rooms, recreational facilities and other applications calling for a wet location listing.

CONSTRUCTION — Available for lay-in grid ceilings or with mitered flanged trim with swing-out hangers.

Code gauge steel housing formed from cold rolled steel. Closed-cell neoprene gasketing between the lens, doorframe, housing and mounting surface. Extruded aluminum doorframe features mitered corners. Cam latches on doorframe ensure a positive seal. Lenses available to meet a variety of lighting needs and feature 100% UV stabilized acrylic. Lenses feature optional internal prisms to maintain a smooth, easy-to-clean outer surface.

Finish: All metal parts are finished with electrostatically deposited, thermally set, polyester powder paint after fabrication.

ELECTRICAL — Thermally protected, resetting, Class P, HPF, non-PCB, UL listed, CSA certified ballast is standard. Energy-saving and electronic ballasts are sound rated A. Standard combinations conform to UL 935. Tested in compliance with Federal Standard 209E by independent lab.

LISTINGS — UL Listed (standard). CSA Certified or NOM Certified (see Options). UL Listed for wet locations.

WARRANTY — 1-year limited warranty. Complete warranty terms located at www.acuitybrands.com/CustomerResources/Terms_and_conditions.aspx

Actual performance may differ as a result of end-user environment and application.

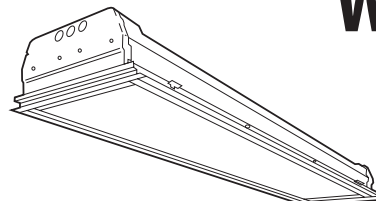
Note: Specifications subject to change without notice.

Catalog Number
Notes
Type

Recessed Wet Location Troffer

WRT 1' X 4'

1, 2 OR 3 LAMPS



Specifications

Length: 48 (121.9)

Width: 12 (30.5)

Depth: 4-1/2 (11.4)

Weight: 17 lbs (7.7 kg)

All dimensions are inches (centimeters) unless otherwise specified.



ORDERING INFORMATION

For shortest lead times, configure products using **standard options (shown in bold)**.

Example: WRT G 2 32 A12125 MVOLT GEB10IS

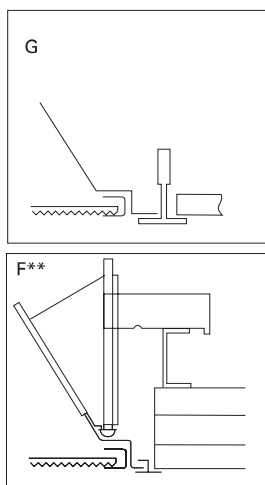
WRT							
Series	Trim type	Lamps ¹	Lamp type	Door frame	Diffuser type ³	Voltage	Options
WRT Recessed wet location troffer	G Lay-in grid trim F Overlapping flanged trim	1	T8	(blank) Flush aluminum, white FN Flush aluminum, natural FM Flush aluminum, matte black	A12125 #12 pattern acrylic, .125" thick A15 #15 pattern acrylic, .2" thick A19 #19 pattern acrylic, .156" thick	120 277 347 MVOLT⁴	<u>Shipped installed in fixture</u>
		2	32 32W T8 (48")				GEB Electronic ballast(s) ≤20% THD
		3	T5				GEB10IS Electronic ballast(s) ≤10% THD, instant start
			28 28W T5 54 54W T5 ²				GEB10PS Electronic programmed rapid start ⁵ GEB10RS Electronic ballast(s) ≤10% THD, rapid start ELDW Emergency battery pack (nominal 300 lumens) ⁶ ELSDW Emergency battery pack (nominal 500 lumens) ⁶ EL6DW Emergency battery pack (nominal 600 lumens) ⁶ EL14DW Emergency battery pack (nominal 1400 lumens) ⁶ GLR Internal fast-blow fuse ⁷ GMF Internal slow-blow fuse ⁷ PWS1836 Pre-wire system, 18-gauge, three-wire (one circuit), 6' length (others available) SW Palletized and stretch-wrapped CSA CSA Certified NOM NOM Certified

Notes

- Lamps not included.
- 54W three-lamp max.
- Add the suffix V for internal prisms. Example: A12125V
- Electronic ballast 120-277V only. Must specify GEB10IS or GEB10PS.
- T5 lamps only.
- Must specify voltage; 120 or 277 only.
- Must specify voltage. Not available MVOLT.

WRT 1 x 4 Recessed Wet Location Troffer

MOUNTING DATA



**Recommended rough-in dimensions for F trim fixtures: 12" x 48" (Tolerance is + 1/4" or -0").
Swing-gate range: 1-1/16" — 3-11/16", span 10-3/4" — 14-3/4".

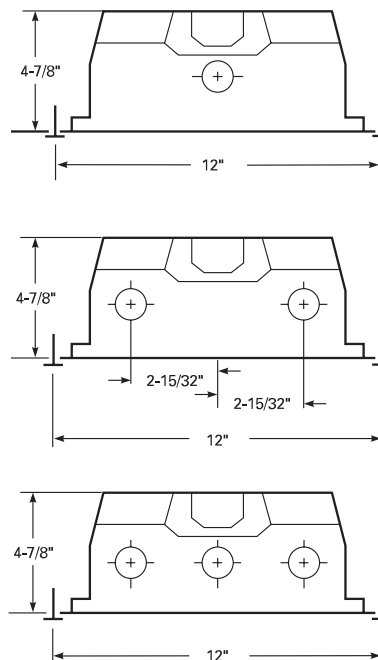
DIMENSIONS

All dimensions are inches (centimeters) unless otherwise specified. Specifications subject to change without notice.

Example: **WRT G 2 32 FW A12125 120 GEB**

Length: 48 (121.9)

Weight: 25 lbs.



PHOTOMETRICS

Calculated using the zonal cavity method in accordance with IESNA LM41 procedure. Floor reflectances are 20%. Lamp configurations shown are typical. Full photometric data on these and other configurations available upon request.

WRT 2 32 A19 Test No. LTL 9805

COEFFICIENT OF UTILIZATION

rf	20%																				
rc	80%				70%				50%				30%				10%				0%
rw	70%	50%	30%	10%	70%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	50%	30%	10%	0%
0	70	70	70	70	68	68	68	68	65	65	65	62	62	62	60	60	60	58			
1	65	62	60	59	63	61	59	58	59	57	56	56	55	54	54	56	56	51			
2	60	56	56	50	59	55	52	49	53	50	48	51	49	47	49	48	46	45			
3	56	50	46	43	54	49	46	43	48	45	42	46	44	41	45	43	41	39			
4	52	46	41	38	50	45	41	37	43	40	37	42	39	37	41	38	36	35			
5	48	41	37	33	47	41	36	33	40	36	33	38	35	33	37	35	32	31			
6	45	38	33	30	44	37	33	30	36	32	29	35	32	29	34	31	29	28			
7	42	35	30	27	41	34	30	27	33	29	26	32	29	26	32	29	26	25			
8	39	32	27	24	38	31	27	24	31	27	24	30	26	24	29	26	24	23			
9	37	29	25	22	36	29	25	22	28	25	22	28	24	22	27	24	22	21			
10	34	27	23	20	34	27	23	20	26	23	20	26	22	20	25	22	20	19			

Zonal Lumens Summary

Zone	Lumens	% lamp
0°-30°	1314	22.7
0°-40°	2105	36.3
0°-60°	3070	52.9
0°-90°	3390	58.4
90°-180°	0	0.0
0°-180°	3390	*58.4

*Fixture efficiency

Energy Data: WRT 2 32 A 19 Instant Start T8

Energy (Calculated in accordance with NEMA Standards LE-5)

LER.FL	Annual* Energy Cost	Lamp Description	Lamp Lumens	Ballast Factor	Input Watts
51	\$4.75	F032T8	2,900	0.88	59

*Based on 3000 hrs./year at .08/kwh

Heidelberg Saurwein Health Ctr

October 25, 2011

3-10 Ton R410A PKGD Unitary Gas/Electric Rooftop (Qty: 10)

Item	Tag(s)	Qty	Description	Model Number
A1	RTU-1, RTU-5	2	Unitary Gas/Electric	YHC120E4RYA--H0C0C1B0B000
A2	RTU-2, RTU-10	2	Unitary Gas/Electric	YHC060E4RYA--H0C0C1B0B000
A3	RTU-4	1	Unitary Gas/Electric	YHC092E4RYA--H0C0C1B0B000
A4	RTU-6	1	Unitary Gas/Electric	YHC102E4RYA--H0C0C1B1B000
A5	RTU-7	1	Unitary Gas/Electric	YHC092E4RYA--H0C0C1B1B000
A6	RTU-8, RTU-9, RTU-11	3	Unitary Gas/Electric	YHC048E4RYA--H0C0C1B0B000

10 ton
5 ton
7.5 ton
8.5 ton
7.5 ton
4 ton

Product Data

All Units

DX cooling, gas heat
High efficiency
Convertible configuration
460/60/3
Microprocessor controls
Medium gas heat stainless steel heat exchanger
Economizer Comparative Enthalpy 0-100% with Barometric Relief
Hinged panels/2 in pleated filters Merv 7
Through the base gas & electrical
Non-fused disconnect
Powered convenience outlet
Dehumidification-hot gas reheat

Item: A1 Qty: 2 Tag(s): RTU-1, RTU-5
10 Ton
Programmable zone sensor (Fld)

Item: A2 Qty: 2 Tag(s): RTU-2, RTU-10
5 Ton
Programmable zone sensor (Fld)

Item: A3 Qty: 1 Tag(s): RTU-4
7.5 Ton Dual compressor
Programmable zone sensor (Fld)

Item: A4 Qty: 1 Tag(s): RTU-6
8.5 Ton
Trane communications interface

Item: A5 Qty: 1 Tag(s): RTU-7
7.5 Ton Dual compressor
Trane communications interface

Item: A6 Qty: 3 Tag(s): RTU-8, RTU-9, RTU-11
4 Ton
Programmable zone sensor (Fld)

Roof Top Unit Schedule

TAG	MANUFACTURER	MODEL
RTU-1	TRANE	YHC120E4RYB**
RTU-2	TRANE	YHC060E4RYB**
RTU-3	TRANE	YCD151E4
RTU-4	TRANE	YHC092E4RYB**
RTU-5	TRANE	YHC120E4RYB**
RTU-6	TRANE	YHC102E4RYB**
RTU-7	TRANE	YHC092E4RYB**
RTU-8	TRANE	YHC048E4RYB**
RTU-9	TRANE	YHC048E4RYB**
RTU-10	TRANE	YHC060E4RYB**
RTU-11	TRANE	YHC048E4RYB**

Quick Reference Guide

Precedent™ Cooling & Gas/Electric 3-10 Ton Packaged Rooftop Units

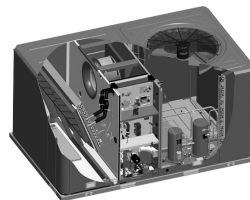
Model number description

TSC	Standard Efficiency Cooling Only (Electric Heat Optional)
THC	High Efficiency Cooling Only (Electric Heat Optional)
YSC	Standard Efficiency Gas Heat Unit
YHC	High Efficiency Gas Heat Unit

February 2014

RT-PRC037T-EN

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1

Table 1. List of factory installed options^(a)

0-50% Motorized Outside Air Damper	Manual Outside Air Damper
BACnet® Communication Interface (BCI-R)	MERV 8 Filters
Barometric Relief	MERV 13 Filters
Belt Drive Motor	Multiple Zone VAV (Variable Air Volume)
Black Epoxy Pre-Coated Condenser Coil	Multi-Speed Indoor Fan System
Clogged Filter Switch	NOVAR 2024 Controls
Complete Coat™ (Microchannel Condenser Coil)	NOVAR 3051 Controls Without Zone Sensor
Condensate Overflow Switch	NOVAR 3051 Zone Sensor
Crankcase Heater	NOVAR Return Air Sensor
Dehumidification	Powered Convenience Outlet
Demand Control Ventilation Wiring	ReliaTel™ Controls
Discharge Air Temperature Sensing Kit	Single Zone Variable Air Volume (SZVAV)
Economizer - Comparative Enthalpy	Stainless Steel Drain Pan
Economizer - Dry Bulb	Stainless Steel Heat Exchanger
Economizer - Reference Enthalpy	Supply, Return, and Plenum Air Smoke Detectors
Fan Failure Switch	Through-the-Base Electric Provision
Froststat™	Through-the-Base Gas Provision
Hail Guard	Unit Mounted Circuit Breaker
Hinged Access Panels	Unit Mounted Non-Fused Disconnect
Human Interface - 5 inch Color Touchscreen	Unpowered Convenience Outlet
LonTalk® Communication Interface (LCI)	

(a) Verify option availability in product catalog.

2

Table 2. 3-10 ton packaged rooftop performance data (gas or electric heat)

Nominal Size (Tons)	Standard Efficiency								High Efficiency						
	3	4	5	6	7.5 Single Compressor	7.5 Dual Compressors	8.5	10	3	4	5	6	7.5 Dual Compressors	8.5	10
Cooling Performance															
Supply Air (cfm) ^(a)	1,200	1,600	2,000	2,400	3,000	3,000	3,400	4,000	1,200	1,600	2,000	2,100	2,400	2,720	3,500
Tot / Sens Cap (MBh) ^{(b),(c)}	37.2/27.8	49.4/37.3	62.3/48.1	75.0/53.2	89.0/67.34	94.0/69.1	102.1/76.7	119/92.7	37.6/27.9	49.9/37.0	61.0/45.4	72/53	92/63.3	104/82	119/89
SEER/EER	13.0	13.0	13.0	11.2	11.2	11.2	11.2	11.3	15.0	15.0	15.0	12.6	12.6	12.5	12.5
IEER ^(d)	N/A	N/A	N/A	13.0	12.2	13.0	13.0	13.0	N/A	N/A	N/A	14.5	14.5	14.7	14.7
Gas Heating Performance^(d)															
Low Heat (Input/output) - (MBh)	60.0/48.0	60.0/48.0	60.0/48.0	80.0/64.0	120/96	120.0/96.0	120.0/96.0	150.0/120.0	60.0/48.0	60.0/48.0	60.0/48.0	80/64	120/96	120/96	150/120
Medium Heat (Input/output) - (MBh)	80.0/64.0	80.0/64.0	80.0/64.0	120.0/96.0	150/120	150.0/120.0	150.0/120.0	200.0/160.0	80.0/64.0	80.0/64.0	80.0/64.0	120/96	150/120	150/120	200/160
High Heat (Input/output) - (MBh)	120.0/96.0	120.0/96.0	130.0/104.0	150.0/120.0	200/160	200.0/160.0	200.0/160.0	250.0/200.0	120.0/96.0	120.0/96.0	130.0/104.0	150/120	200/160	200/160	250/200
Other Information															
Net Weight (Lbs) - Gas Heat	532	563	613	710	767	847	904	1058	532	711	755	822	1026	1035	1359
Net Weight (Lbs) - Electric Heat	480	511	561	667	686	797	856	960	480	642	679	740	928	937	1252
Roofturb	BAYCURB042A				BAYCURB043A				BAYCURB042A	BAYCURB043A				BAYCURB044A	
Unit Cabinet Size	B				C				B	C				D	
Filters ^(e) - Type Furnished	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway	Throwaway
Number Size Recommended	(2) 20x30x2	(2) 20x30x2	(2) 20x30x2	(4) 16x25x2	(4) 16x25x2	(4) 20x25x2	(4) 20x25x2	(4) 20x25x2	(2) 20x30x2	(2) 16x25x2	(4) 16x25x2	(4) 20x25x2	(4) 20x25x2	(4) 20x25x2	(3) 20x25x2 (2) 20x30x2

(a) Nominal cfm

(b) Cooling performance is rated at 80/67/95

(c) All units listed utilize 3-phase voltage

(d) SZVAV and Multi-Speed Indoor Fan System IEER 7.5T - 15.0, 8.5T - 15.2, 10T, 15.0

(e) Optional 2" MERV 8 and MERV 13 filters also available



Model Number Description

RTU-3

Packaged Gas/Electric Unit Typical Model Nomenclature

Y	C	D	1	5	0	C	3	L	0	A	A
1	2	3	4	5	6	7	8	9	10	11	12

Digits 1, 2 - Product Type

YC = Packaged Gas/Electric

YF = With Factory Installed Options

Digit 3 - Airflow Configuration

D = Downflow

H = Horizontal

Digits 4, 5, 6 - Nominal Gross Cooling Capacity (MBh)

150	=	12½ Ton Standard Efficiency
151	=	12½ Ton High Efficiency
180	=	15 Ton Standard Efficiency
181	=	15 Ton High Efficiency
210	=	17½ Ton Standard Efficiency
211	=	17½ Ton High Efficiency
240	=	20 Ton Standard Efficiency
241	=	20 Ton High Efficiency
300	=	25 Ton Standard Efficiency
301	=	25 Ton High Efficiency

Digit 7- Major Development Sequence

Digit 8 - Electrical Characteristics

3 = 208-230/60/3

4 = 460/60/3

W = 575/60/3

K = 380/60/3

Digit 9 - Heating Capacity

L = Low Heat

M = Medium Heat

H = High Heat

Digit 10 - Factory-Installed Options

0 = Packed Stock, No Options

A = Downflow Economizer

B = Oversized Motor

C = Downflow Economizer and Oversized Motor

F = Trane Communications Interface (TCI)

G = Downflow Economizer and TCI

H = TXV/Face-Split Evaporator

J = Oversized Motor and TXV/Face-Split Evaporator

K = Downflow Economizer, Oversized Motor, and TXV/Face-Split Evaporator

L = Downflow Economizer with TXV/Face-Split Evaporator

M = Reheat Coil

N = Downflow Economizer and Reheat Coil

P = Oversized Motor and Reheat Coil

R = Downflow Economizer, Oversized Motor and Reheat Coil

Digit 11- Minor Design Sequence

Digit 12- Service Digit

Quick Reference Guide

Voyager™
12½-25 Ton Packaged Rooftop Units
Cooling & Gas/Electric

Table 1. Model number description

TCD	Cooling Only (Electric Heat Optional), Downflow
TCH	Cooling Only (Electric Heat Optional), Horizontal
YCD	Gas Heat Unit, Downflow
YCH	Gas Heat Unit, Horizontal

November 2011

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RT-PRC038-EN

1

Table 2. List of factory installed options (FIOPs)^(a)

2" MERV 7 or MERV 13 Pleated Filters	Modulating Gas Heat Furnace with a 5:1 Turndown Ratio ^(b)
BACnet™ Communication Interface (BCI)	Motor Shaft Grounding Ring ^(c)
Barometric Relief ^(d) (e)	NOVAR Return Air Sensor
Clogged Filter/Fan Failure Switch ^(b)	NOVAR Unit Controls (3051 and 2024)
Complete Coat™ Microchannel Condenser Coil	Oversized Motors
Dehumidification	Powered/Unpowered Convenience Outlet ^(f)
Discharge Air Sensing Kit ^(b)	Stainless Steel Heat Exchanger
Economizer - Downflow - Comparative Enthalpy ^{(d)(e)}	Supply & Return Air Smoke Detectors ^(b)
Economizer - Downflow - Dry Bulb ^(e)	Thermal Expansion Valve
Economizer - Downflow - Reference Enthalpy ^{(d)(e)}	Through the Base Electrical with Circuit Breaker
Electric Heaters	Through the Base Electrical with Disconnect Switch
Frostat™ ^(b)	Through the Base Gas Provision
High Efficiency Motors	Tool-less Hail Guard
Hinged Access Panels	Trane® Communication Interface (TCI) ^(g)
Horizontal Side Access with Circuit Breaker	Two Speed Fan Provision
Horizontal Side Access with Disconnect Switch	Variable Speed Fan Provision for Single Zone VAV
LonTalk® Communication Interface (LCI)	

(a) Most Factory Installed Options are available for downflow air discharge units only. Verify with ordering system for availability.

(b) Requires ReliaTel Options Module.

(c) Available with Two Speed Fan or Variable Speed Fan.

(d) Requires an Economizer.

(e) Some field set up required.

(f) Must be ordered with Through the Base Electrical option or Horizontal Side Access, and either Unit Mounted Disconnect switch or Circuit Breaker.

(g) TCI is for use with non-VariTrac™ systems and VariTrac systems.

2

Table 3. 12½-25 ton packaged rooftop performance data (gas or electric heat)

Nominal Size (Ton)	Standard Efficiency					High Efficiency				
	12.5	15	17.5	20	25	12.5	15	17.5	20	25
Cooling Performance										
Nominal Airflow CFM / ARI Rated CFM	5,000/4,400	6,000/5,300	7,000/6,125	8,000/7,000	10,000/8,000	5,000/4,000	6,000/5,300	7,000/5,600	8,000/7,000	10,000/8,000
Tot / Sens Cap (MBh) ^(a) (b)	150.1/116.0	186.1/139.1	210.3/165.0	258.9/197.3	296.4/228.4	149.6/113.4	181.5/138.0	212.7/165.5	259.0/192.5	295.3/234.2
EER ^(c)	11	11	11	10.0	10.0	12.0	12.0	12.0	11.0	10.6
IEER (One Speed Fan / Multi or Variable Speed Fan) ^(d)	12.2/13.5	12.2/13.2	11.8/12.9	11.5/12.3	10.4/12.0	12.6/14.2	13.6/14.2	12.5/13.6	11.7/13.1	11.5/13.0
Gas Heating Performance^(e)										
Low Heat (Input/output) - (MBh)	150.0/122.0	250.0/203.0	250.0/203.0	250.0/203.0	250.0/203.0	150.0/122.0	250.0/203.0	250.0/203.0	250.0/203.0	250.0/203.0
Medium Heat (Input/output) - (MBh)	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5	350.0/283.5
High Heat (Input/output) - (MBh)	250.0/203.0	350.0/284.0	350.0/284.0	400.0/324.0	400.0/324.0	250.0/203.0	350.0/284.0	350.0/284.0	400.0/324.0	400.0/324.0
Other Information										
Net Weight (Lbs) - Gas Heat	1508	1925	2007	2069	2054	2126	2129	2201	2203	2207
Net Weight (Lbs) - Electric Heat	1413	1822	1863	1925	1878	1981	1984	2051	2053	2027
Roofcurb	BAYCURB026B					BAYCURB027B				
Unit Cabinet Size	B					C				
Filters ^(f) - Type Furnished	Throwaway					Throwaway				
Number Size Recommended	Throwaway					Throwaway				
Downflow	(2) 20x20x2 (4) 20x25x2	(4) 20x20x2 (4) 20x25x2	(4) 20x20x2 (4) 20x25x2	(4) 20x20x2 (4) 20x25x2	(4) 20x20x2 (4) 20x25x2	(4) 20x20x2 (4) 20x25x2	(8) 20x20x2 (4) 20x16x2	(8) 20x20x2 (4) 20x16x2	(8) 20x20x2 (4) 20x16x2	(8) 20x20x2 (4) 20x16x2
Horizontal	(2) 20x20x2 (4) 20x25x2	(8) 20x25x2	(8) 20x25x2	(8) 20x25x2	(8) 20x25x2	(8) 20x25x2	(12) 20x20x2	(12) 20x20x2	(12) 20x20x2	(12) 20x20x2

(a) Cooling performance is rated at 80/67/95 & 400 cfm/ton.

(b) Short orifice metering device.

(c) EER is rated at ARI conditions and in accordance with ARI standard 210/240 or 360.

(d) Integrated Energy Efficiency Ratio (IEER) is rated in accordance with AHRI standard 210/240 or 360.

(e) Verify option availability in product data catalog.

(f) Optional 2" MERV 7 and MERV 13 filters also available.

This foregoing document was electronically filed with the Public Utilities

Commission of Ohio Docketing Information System on

7/15/2014 1:17:02 PM

in

Case No(s). 14-1234-EL-EEC

Summary: Application -Heidelberg University 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