AEP AMERICAN ELECTRIC POWER

Legal Department

April 6, 2017

Chairman Asim Z. Haque
Public Utilities Commission of Ohio
180 East Broad Street
Columbus, OH 43215-3793

Re: **In the Matter of the Application of**	**)**	
Jeru Real Estate LLC	**)**	
and Ohio Power Company	**)**	**Case No. 17-0700-EL-EEC**
for Approval of a Special Arrangement	**)**	
Agreement with a Mercantile Customer	**)**	

Ryan Aguiar
Fellow
Regulatory Services
(614) 716-2931 (T)
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raguiar@aep.com

Dear Chairman Haque,

Attached please find the Joint Application of Ohio Power Company (AEP Ohio) and the above-referenced mercantile customer 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 2017 (hereinafter "Joint Application").

Amended Substitute Senate Bill 221, codified at R.C. 4928.66, sets forth EE/PDR benchmarks that electric distribution utilities are 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. The attached Joint Application and affidavit conforms with AEP Ohio's version of the streamlined sample application. As requested by Commission Staff, any confidential information referenced in the Joint Application has been provided confidentially to Commission Staff for filing in Commission Docket 10-1599-EL-EEC and subject to the confidentially protections of R.C. 4901.16 and OAC 4901-1-24(E). AEP Ohio respectfully requests that the Commission treat the two cases as associated dockets and that any confidential information provided to Staff for filing in connection with the Joint Application be subject to the protective order requested in Docket 10-1599-EL-EEC.

Cordially,

/s/ Ryan Aguiar
Ryan Aguiar

Attachments

Ohio | Public Utilities Commission

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

Case No.: 17-0700-**EL-EEC**

Mercantile Customer: JERU REAL ESTATE LLC

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: JERU REAL ESTATE LLC

Principal address: 61830 Bailey Road, Barnesville, Oh 43713

Address of facility for which this energy efficiency program applies: 66774 Belmont Morristown Rd, Belmont, Oh 43718-9596

Name and telephone number for responses to questions:

Tj Jefferis, Jeru Real Estate Llc, (740) 391-2472

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, 10/9/2015 and the date on which the customer would have replaced your equipment if you had not replaced it early. Please include a brief explanation for how the customer determined this future replacement date (or, if not known, please explain why this is not known)).

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

☐ Installation of new equipment to replace equipment that needed to be replaced. The customer installed new equipment on the following date(s):

☐ Installation of new equipment for new construction or facility expansion. The customer installed new equipment on the following date(s):

☐ Behavioral or operational improvement.

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

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

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

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

Annual savings: 24,472 kWh

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

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

Annual savings: kWh

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

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

Annual savings: kWh

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

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

Section 4: Demand Reduction/Demand Response Programs

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

☒ Coincident peak-demand savings from the customer's energy efficiency program.

☐ Actual peak-demand reduction. (Attach a description and documentation of the peak-demand reduction.)

☐ Potential peak-demand reduction check the one that applies):

- Choose one or more of the following that applies:

  ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a tariff of a regional transmission organization (RTO) approved by the Federal Energy Regulatory Commission.

  ☐ The customer's peak-demand reduction program meets the requirements to be counted as a capacity resource under a program that is equivalent to an RTO program, which has been approved by the Public Utilities Commission of Ohio.

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

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

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

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

KW Demand Reduction = Unit Quantity (watts) x (Deemed KW/Unit (watts))

11.0 kW

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

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

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

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

A) The customer is applying for:

☒ Option 1: A cash rebate reasonable arrangement.

OR

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

OR

☐ Commitment payment

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

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

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

OR

☒ A cash rebate valued at no more than 50% of the total project cost, which is equal to $ 3,034.50. (Attach documentation and calculations showing how this payment amount was determined.)

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

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

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

OR

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

OR

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

Section 6: Cost Effectiveness

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

☐ Total Resource Cost (TRC) Test. The calculated TRC value is: _____ (Continue to Subsection 1, then skip Subsection 2)

☒ Utility Cost Test (UCT) . The calculated UCT value is: 3.42 (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 $ 10,874.81

The utility's program costs were $ 146.83

The utility's incentive costs/rebate costs were $ 3,034.50.

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 confidentially 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.

Ohio | Public Utilities Commission

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

Case No.: 17-0700-EL-EEC

State of Ohio :

Nigma Mustafa, Affiant, being duly sworn according to law, deposes and says that:

1. I am the duly authorized representative of:

   DNV GL Energy Services USA 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.

Nigma Mustafa Engineer
Signature of Affiant & Title

Sworn and subscribed before me this 16th day of March, 2017 Month/Year

Signature of official administering oath

Dawn G. Irving / Notary
Print Name and Title

My commission expires on 9-3-2019

NOTARIAL SEAL STATE OF OHIO

DAWN G IRVING
NOTARY PUBLIC
STATE OF OHIO
Comm. Expires
September 03, 2019

AEP OHIO
A unit of American Electric Power

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	**JERU REAL ESTATE LLC**	
Project Number	**AEP-16-17993**	
Customer Premise Address	**66774 BELMONT MORRISTOWN RD, BELMONT, OH 43718-9596**	
Customer Mailing Address	**61830 Bailey Road, Barnesville, OH 43713**	
Date Received	**4/26/2016**	
Project Installation Date	**10/9/2015**	
Annual kWh Reduction	**24,472**	
Total Project Cost	**$12,096.80**	
Unadjusted Energy Efficiency Credit (EEC) Calculation	**$4,046.00**	
Simple Payback (yrs)	**6.2**	
Utility Cost Test (UCT) for EEC	**3.42**	
Utility Cost Test (UCT) for Exemption	**0.09**	
		Please Choose One Option Below and Initial
Self Direct EEC: 75%	**$3,034.50**	[X] **Initial:** JP
EE/PDR Rider Exemption	**12 Months (with possible extension up to N/A months after PUCO Approval)**	[ ] **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?

X 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.
Installation of two Ice Makers 101-400 lbs/24hrs
Installation of one Ice Maker 401-1000 lbs/24hrs
Installation of One Solid Freezer and One Solid Door Refrigerato
Installation of 87 Packaged Terminal Air Conditioners
Installed 6 Unitary and Split Air Conditioning System

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: _____
Title: Manager
Date: 3/13/2017

JERU REAL ESTATE LLC

By: _____
Title: member
Date: 3-10-17

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APPLICATION GUIDELINES

All 2016 AEP Ohio Business Incentives Program projects must be completed and Final Applications received no later than October 28, 2016, in order to qualify for incentives identified in this application.

Step 1: Verify Eligibility

- ✓ Customer must have a valid AEP Ohio account.
- ✓ Equipment/measure must be installed at facilities served by the AEP Ohio account.
- ✓ Project must produce permanent reduction in electrical energy use (kWh).
- ✓ All installed equipment must meet or exceed the specifications in the application.
- ✓ **Please see the Terms and Conditions for Self-Direct or**
- ✓ **Terms and Conditions for all other programs for program eligibility and requirements.**

Step 2: Complete Applicant Information

- ✓ All fields in customer and project information sections must be completed.
- ✓ Solution Provider/contractor information must be completed if project is not self-performed.

Step 3: Complete the Incentive Worksheet(s)

- ✓ Find and read specifications related to the project.
- ✓ Ensure new equipment/measure meets or exceeds the specifications.
- ✓ Choose the incentive category on the worksheet based on the installed equipment and specifications.
- ✓ Complete all fields (fixture description, operating hours, etc.) on the related worksheet.

Step 4: Sign Customer Agreement

- ✓ Read the Terms and Conditions before signing and submitting the application.
- ✓ Sign Pre-Approval Agreement and submit the application to reserve funds.
- ✓ Sign Final Application Agreement and submit the application after the project is completed.
- ✓ Complete Third Party Payment Release Authorization ONLY if incentive payment is to be paid to an entity other than AEP Ohio customer listed on the Applicant Information page.

Step 5: Submit Pre-Approval Application[1]

(For Self-Direct applications, skip to Step 7)

- ✓ Submitting a Pre-Approval Application to determine qualification and reserve program funds for a project is strongly recommended.
- ✓ All custom measures require pre-approval.
- ✓ Complete all fields for Pre-Approval Agreement section.
- ✓ **Pre-Approval Application must be submitted with:**
  - **Proposed scope of work (type and quantity of old and new equipment must be listed)**
  - **Specification sheets for all proposed equipment**
  - **W-9 form**
- ✓ Submit application via email, fax or mail.
- ✓ During the application review, an inspection may be required; the team will contact applicants requiring an inspection for scheduling.

Step 6: Complete Project

- ✓ New equipment must be installed and operational to submit a Final Application.

Step 7: Submit Final Application

- ✓ Submit a Final Application.
- ✓ Use the same application used during pre-approval (if applicable).
  - Change Application Type to Final Application
- ✓ Complete all fields for Final Application Agreement section.
- ✓ Update the application if there are any changes (customer contact, incentive measure, equipment, etc.).
- ✓ **Final Application must be submitted with:**
  - **Dated and itemized material invoice**
  - **External labor invoice (if applicable)**
  - **If Pre-Approval Application was not submitted, include the documents listed on Step 5**
- ✓ Submit application via email, fax or mail.
- ✓ During the application review, an inspection may be required; the team will contact applicants requiring an inspection for scheduling.

Additional steps are required for Self-Direct applications after application submission. Please see the Self-Direct Terms and Conditions for details.

AEP Ohio Business Incentives Program
5777 Frantz Road, Dublin, OH 43017
Phone: (877) 607-0739 | Fax: (877) 607-0740
aepohioincentives@dnvgl.com
Visit our website at AEPohio.com/solutions

[1]A Pre-Approval Application is not a guarantee of an incentive; the actual incentive will be based on the energy savings and equipment installed as determined in the Final Application. Funds are reserved for 90 days, unless an applicant is granted an extension. The program team reserves the right to contact the customer before the reservation expiration date to ensure that the project is moving forward. If the project is not underway, the reservation may be cancelled. Reserved funds are not transferable to other projects, facilities and/or customers. A waiting list will be established when funds become fully subscribed.

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CHECKLIST

PRE-APPROVAL APPLICATION

Required Attachments

- ☐ Completed Applicant Information form
- ☐ Completed Incentives Requested section of Application form
- ☐ Signed Customer Agreement form
- ☐ Equipment specifications
- ☐ Proposed scope of work (required on Custom projects and recommended for all projects)
- ☐ W-9 (required for LLC, individual, partnership, property management companies)

Applicable Incentive Worksheets

Please complete worksheets for checked boxes.

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

Application date_____
Estimated incremental project cost_____
Expected completion date_____

Incomplete applications will delay processing and reservation of funds.

FINAL APPLICATION

Required Attachments

- ☐ Completed Applicant Information form
- ☐ Completed and signed Final Payment Agreement and Customer Agreement forms
- ☐ Completed Third-Party Payment Release
- ☐ Authorization section (optional)
- ☐ Itemized invoices
- ☐ Equipment specifications[1]
- ☐ Updated scope of work[1]
- ☐ W-9[1] (required for LLC, individual, partnership, property management companies)

Incentive Worksheets

Please complete worksheets for checked boxes.

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

Application date_____
Final incremental project cost_____
Final completion date_____

Incomplete applications will delay processing and incentive payment.
[1]If submitted with a pre-application, required only if project changed.

Revised Submittal

Please complete below if this is a revised submittal.

Submittal date_____ AEP Project Number (if known) AEP - _ _ - _ _ _ _ _

AEP Ohio Business Incentives Program
5777 Frantz Road, Dublin, OH 43017
Phone: (877) 607-0739 | Fax: (877) 607-0740
aepohioincentives@dnvgl.com
Visit our website at AEPohio.com/solutions

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APPLICANT INFORMATION

AEP Application Number AEP - _ _ - _ _ _ _ _

Application Type (Select One)

Customer Information

Business Name _____

Name as It Appears on Utility Bill _____

AEP Ohio Account Number* at Project Site _____ Multiple AEP Ohio Account Numbers for this Project? (Select O

Taxpayer ID _____ - _____ W-9 Tax Status (Select One)

Contact Name _____ Contact Title _____

Mailing Address - where check will be sent

Mailing Address _____ City _____ State OH Zip _____

Phone _____ Ext. _____ Contact Email _____

How Did You Hear About the Program? (Select One) AEP OH Energy Advisor _____

Project Information

Project Name (if applicable) _____

☐ Check if mailing address and project site address are the same.

Project Site Address _____ City _____ State OH Zip _____

Building Type (Select One) Shift (Select One)

Annual Operating Hours _____ Building Area (sq. ft.) _____

Construction Type (Select One)

Does the facility have a data center? (Select One)

*Please only enter the first eleven digits of the account number.

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APPLICANT INFORMATION

Solution Provider/Contractor Information (If project is not self-performed by customer)

Contracting Company Name _____

Contact Name_____ Title of Contact _____

Mailing Address _____ City_____ State OH Zip_____

Phone _____ Ext. _____ Contact Email _____

Who should we contact with questions about the application? ☐ Customer ☐ Contractor

Primary Contact Information

Contact Name_____ Title of Contact_____

Phone _____ Ext. _____ Contact Email _____

INCENTIVE SUMMARY TABLE (THIS TABLE SELF-POPULATES FROM WORKSHEETS)

Incentive Category	Applied for Incentives	Applicable Self- Direct Incentives
Lighting		
HVAC		
Motors		
Motor Rewind		
Drives		
Compressed Air		
Refrigeration/Food Service		
Agriculture		
Miscellaneous		
Custom		
NC Lighting (SD Only)		
Total		

AEP Application Number AEP - _ _ - _ _ _ _ _

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CUSTOMER AGREEMENT

Pre-Approval Agreement

By signing this document, I agree to program requirements outlined in the measure specifications, Terms and Conditions, and Final Application Agreement. As an eligible customer, I verify the information is correct and request consideration for participation under this program. Furthermore, I concur that I meet all eligibility criteria in order to receive payment under this program.
Link to Prescriptive/Custom Terms and Conditions and Final Application Agreement.

Estimated Completion Date _____

Estimated Project Cost _____

Total Incentive Requested[1] _____

Date _____

AEP Ohio Customer Signature _____

Print Name _____

Final Application Agreement

By signing this document, I agree to program requirements outlined in the measure specifications, Terms and Conditions for the applicable program and Final Application Agreement. As an eligible customer, I verify the information is correct and request consideration for participation under this program. Furthermore, I concur that I meet all eligibility criteria in order to receive payment under this program.

Link to Prescriptive/Custom Terms and Conditions, and Final Application Agreement
Link to Self-Direct Terms and Conditions, and Final Application Agreement

Project Completion Year (Select One) _____

Self-Direct _____

Project Completion Date _____

Total Project Cost $ 0.00 _____

Date _____

Total Applied for Incentive _____

Total Requested Incentive[1] _____

Total Self-Direct Requested Incentive[2] _____

Print Name _____

AEP Ohio Customer Signature _____

SUBMIT VIA EMAIL

PRINT APPLICATION

[1]Incentives are capped at 50% of the project cost and total incentives are capped at $25,000.
[2]Self-Direct incentives are 75% of Total Requested Incentive, after 50% of the project cost cap and tiering is applied.

AEP Application Number AEP - _ _ - _ _ _ _ _

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THIRD PARTY PAYMENT

Third Party Payment Release Authorization (Optional, NOT APPLICABLE TO Self-Direct)

Complete this section ONLY if incentive payment is to be paid to an entity other than the AEP Ohio customer.

Make checks payable to: Company/Individual _____

Mailing Address _____ City_____ State OH Zip_____

Phone _____ Ext. _____

Taxpayer ID of 3rd Party _____ - _____ W-9 Tax Status _____

By signing this document, I authorize the payment of the incentive to the third party named above and understand that I will not receive the incentive payment from AEP Ohio. I also understand that my release of the payment to a third party does not exempt me from the program requirements outlined in the measure specifications, Terms and Conditions, and Final Application Agreement.

Print Name	**Date**	**Customer Signature (AEP Ohio Customer)**
_____	_____	_____

Manitowoc

APPROVED

ES

Indigo™ thinking inside the box

Indigo™ Series 322 Ice Cube Machine

Model: ☐ ID-0322A ☐ IY-0324A ☐ ID-0323W ☐ IY-0325W

ENERGY STAR PARTNER

Indigo Series i-322
Ice Machine on B-320 Bin

Designed for operators who know that ice is critical to their business, the Indigo™ Series ice machine's preventative diagnostics continually monitor itself for reliable ice production. Improvements in cleanability and programmability make your ice machine easy to own and less expensive to operate.

- **Space-Saving Design** – Up to 350 lbs. (159 kgs.) daily ice production and only 22" (55.88 cm) wide.
- **Intelligent Diagnostics** – provide 24 hour preventative maintenance and diagnostic feedback for trouble free operation.
- **Acoustical Ice Sensing Probe** – for reliable operation in challenging water conditions.
- **EasyRead Display** – communicates operating status, cleaning reminders, and asset information through a blue illuminated display.
- **Programmable Ice Production** – by On/Off Time, Ice Volume or Bin Level (with accessory bin level control) further improves energy efficiency and savings.
- **Easy to Clean Foodzone** – Hinged front door swings out for easy access. Removable water-trough, distribution tube, curtain, and sensing probes for fast and efficient cleaning. Select components made with AlphaSan® antimicrobial.
- **DuraTech™ Exterior** – provides superior corrosion resistance. Stainless finish with innovative clear-coat resists fingerprints and dirt.
- Available **LuminIce™ Growth Inhibitor** controls the growth of bacteria and yeast within the foodzone.

Ice Machine Electric

115/60/1 standard.
(208-230/60/1 and 230/50/1 also available)

Minimum circuit ampacity:
Air-cooled: 11.5 *1ph*
Water-cooled: 10.7 *1ph*

Maximum fuse size:
Air-cooled: 15 amps
Water-cooled: 15 amps

Specifications

BTU Per Hour:
3,300 (average) 4,500 (peak)

Refrigerant:
R-404A CFC-free

Operating Limits:
- Ambient Temperature Range:
  35˚ to 110˚F (1.7˚ to 43.3˚C)
  Water Temperature Range:
  35˚ to 90˚F (1.7˚ to 32.2˚C)
- Water Pressure Ice Maker
  Water In:
  Min. 20 psi (137.9 kPA)
  Max. 80 psi (551.1 kPA)

COMMERCIAL WARRANTY

ICE MAKER	EVAPORATOR	COMPRESSOR
3 YEAR PARTS AND LABOR	5 YEAR PARTS AND LABOR	5 YEAR PARTS 3 YEAR LABOR

Ice Shape

Half Dice
⅜" x 1⅛" x ⅞"
(.95 x 2.86 x 2.22 cm)

Dice
⅞" x ⅞" x ⅞"
(2.22 x 2.22 x 2.22 cm)

CALIFORNIA LOW LEAD QUALIFIED

NSF c UL US LISTED CE

AutoQuotes

QUALITY MANAGEMENT SYSTEM CERTIFIED BY DNV ISO 9001:2008

2110 South 26th Street
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www.manitowocice.com

Manitowoc

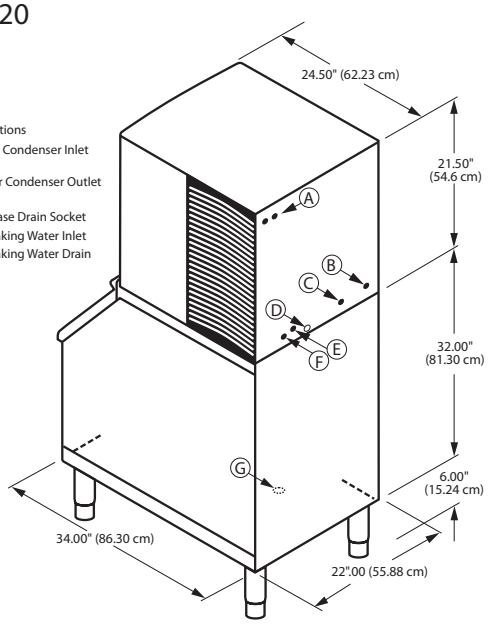
Indigo™ Series 322 Ice Cube Machine

Manitowoc

Indigo™ Series 322 Ice Cube Machine

i-322 on B-320 Storage Bin

Ⓐ Electrical Entrance (2) Options
Ⓑ 3/8" (0.95 cm) F.P.T. Water Condenser Inlet (water-cooled units)
Ⓒ 1/2" (1.27 cm) F.P.T. Water Condenser Outlet (water-cooled units)
Ⓓ 1/2" (1.27 cm) Auxillary Base Drain Socket
Ⓔ 3/8" (0.95 cm) F.P.T. Ice Making Water Inlet
Ⓕ 1/2" (1.27 cm) F.P.T. Ice Making Water Drain
Ⓖ 3/4" (1.91 cm) Bin Drain



Installation Note
Minimum installation clearance:

Top/side: 12" (30.50 cm)
Back is 5" (12.7 cm)

Space-Saving Designs

	i-322 B-320	i-322 B-420
Height	59.50" 151.13 cm	71.50" 181.61 cm
Width	22.00" 55.88 cm	22.00" 55.88 cm
Depth	34.00" 86.30 cm	34.00" 86.30 cm
Bin Storage	210 lbs. 95 kgs.	310 lbs. 141 kgs.

Height includes adjustable bin legs 6.00" to 8.00", (15.24 to 20.32 cm) set at 6.00" (15.24 cm).

Specifications

	Model	Ice Shape	Ice Production 24 Hours 70°Air/ 50°F Water	Ice Production 24 Hours 90°Air/ 70°F Water	Power Usage kWh/100 lbs. @90°Air/70°F	Water Usage/100 lbs. 45.4 kgs. of Ice Potable Water	ENERGY STAR®
AIR-COOLED	ID-0322A	dice	335 lbs.	225 lbs.	7.49	23.9 Gal.	★
			152 kgs.	102 kgs.		90.5 L	
	IY-0324A	half-dice	350 lbs.	230 lbs.	7.32	23.9 Gal.	★
			159 kgs.	104 kgs.		90.5 L	
WATER-COOLED	ID-0323W	dice	330 lbs.	270 lbs.	6.19	23.9 Gal.	NA
			150 kgs.	122 kgs.		90.5 L	
	IY-0325W	half-dice	350 lbs.	290 lbs.	5.94	23.9 Gal.	NA
			159 kgs.	132 kgs.		90.5 L	

* Water-cooled Condenser Water Usage / 100 lbs. /45.4 kgs. Of Ice: 193 gal/731 L.
* Water-cooled models are excluded from ENERGY STAR qualification.

Order ice storage bin separately.

Accessories

LuminIce™ Growth Inhibitor reduces yeast and bacteria growth for a cleaner ice machine.

Bin Level Control Allows ice bin level to be automatically set. Built-in LED light illuminates bin.

Arctic Pure® Water Filters Reduces sediment and chlorine odors for better tasting ice.

AuCS® schedules and performs routine ice machine cleaning automatically.

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www.manitowocice.com

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APPROVED

ES

Manitowoc

INDIGO®

Indigo™ Series 450 Ice Cube Machine

Model: ☐ ID-0452A ☐ IY-0454A ☐ ID-0453W ☐ IY-0455W

Indigo Series i-450
Ice Machine on B-400 Bin

Designed for operators who know that ice is critical to their business, the Indigo™ Series ice machine's preventative diagnostics continually monitor itself for reliable ice production. Improvements in cleanability and programmability make your ice machine easy to own and less expensive to operate.

- **Space-Saving Design** – Up to 450 lbs. (204 kgs.) daily ice production and only 30" (76.20 cm) wide.
- **Intelligent Diagnostics** – provide 24 hour preventative maintenance and diagnostic feedback for trouble free operation.
- **Acoustical Ice Sensing Probe** – for reliable operation in challenging water conditions.
- **EasyRead Display** – communicates operating status, cleaning reminders, and asset information through a blue illuminated display.
- **Programmable Ice Production** – by On/Off Time, Ice Volume or Bin Level (with accessory bin level control) further improves energy efficiency and savings.
- **Easy to Clean Foodzone** – Hinged front door swings out for easy access. Removable water-trough, distribution tube, curtain, and sensing probes for fast and efficient cleaning. Select components made with AlphaSan® antimicrobial.
- **DuraTech™ Exterior** – provides superior corrosion resistance. Stainless finish with innovative clear-coat resists fingerprints and dirt.
- Available **LuminIce™ Growth Inhibitor** controls the growth of bacteria and yeast within the foodzone.

Ice Machine Electric

115/60/1 standard.
(208-230/60/1 and 230/50/1 also available)

Minimum circuit ampacity:
Air-cooled: 13.2
Water-cooled: 12.5

Maximum fuse size:
20 amps *1ph*

Specifications

BTU Per Hour:
5,400 (average) 6,300 (peak)

Refrigerant:
R-404A CFC-free

Operating Limits:
- Ambient Temperature Range:
  35˚ to 110˚F (1.7˚ to 43.3˚C)
  Water Temperature Range:
  35˚ to 90˚F (1.7˚ to 32.2˚C)
- Water Pressure Ice Maker
  Water In:
  Min. 20 psi (137.9 kPa)
  Max. 80 psi (551.1 kPa)

COMMERCIAL WARRANTY

ICE MAKER	EVAPORATOR	COMPRESSOR
3 YEAR PARTS AND LABOR	5 YEAR PARTS AND LABOR	5 YEAR PARTS 3 YEAR LABOR

Ice Shape

Half Dice
⅜" x 1⅛" x ⅞"
(.95 x 2.86 x 2.22 cm)

Dice
⅞" x ⅞" x ⅞"
(2.22 x 2.22 x 2.22 cm)

CALIFORNIA LOW LEAD QUALIFIED

AHRI CERTIFIED

NSF c UL US LISTED CE

AutoQuotes

COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV = ISO 9001:2008 =

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Manitowoc

Indigo™ Series 450 Ice Cube Machine

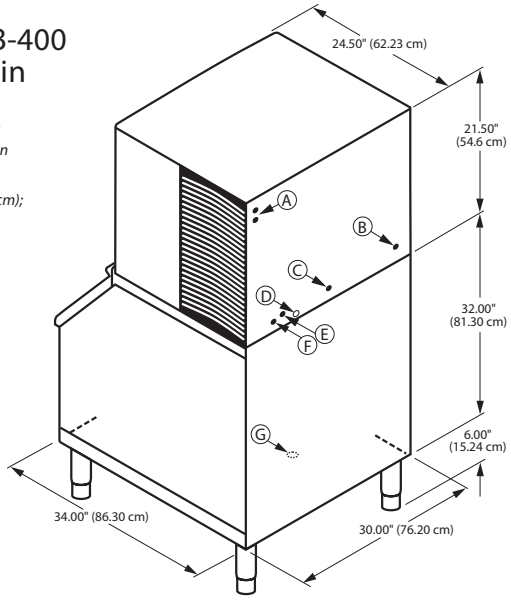
Manitowoc

Indigo™ Series 450 Ice Cube Machine

i-450 on B-400 Storage Bin

Installation Note
Minimum installation clearance:

Top/sides: 8" (20.32 cm); Back is 5" (12.7 cm)



Ⓐ Electrical Entrance (2) Options
Ⓑ 3/8" (0.95 cm) F.P.T. Water Condenser Inlet (water-cooled units)
Ⓒ 1/2" (1.27 cm) F.P.T. Water Condenser Outlet (water-cooled units)
Ⓓ 1/2" (1.27 cm) Auxillary Base Drain Socket
Ⓔ 3/8" (0.95 cm) F.P.T. Ice Making Water Inlet
Ⓕ 1/2" (1.27 cm) F.P.T. Ice Making Water Drain
Ⓖ 3/4" (1.91 cm) Bin Drain

Space-Saving Designs

	i-450 B-400	i-450 B-570
Height	59.50" 151.13 cm	71.50" 181.61 cm
Width	30.00" 76.20 cm	30.00" 76.20 cm
Depth	34.00" 86.30 cm	34.00" 86.30 cm
Bin Storage	290 lbs. 131.7 kgs.	430 lbs. 195.2 kgs.

Height includes adjustable bin legs 6.00" to 8.00", (15.24 to 20.32 cm) set at 6.00" (15.24 cm).

Specifications

	Model	Ice Shape	Ice Production 24 Hours 70°Air/ 50°F Water	Ice Production 24 Hours 90°Air/ 70°F Water	Power Usage kWh/100 lbs. @90°Air/70°F 1 Ph	Water Usage/ 100 lbs. 45.4 kgs. of Ice Potable Water	ENERGY STAR®
AIR-COOLED	ID-0452A	dice	420 lbs.	316 lbs	6.36	20 Gal.	★
			191 kgs.	143 kg		75.7 L	
	IY-0454A	half-dice	450 lbs.	335 lbs	5.97	20 Gal.	★
			204 kgs.	152 kg		75.7 L	
WATER-COOLED	ID-0453W	dice	430 lbs.	360 lbs	4.70	20 Gal.	NA
			195 kgs.	163 kg		75.7 L	
	IY-0455W	half-dice	450 lbs.	360 lbs	4.70	20 Gal.	NA
			204 kgs.	163 kg		75.7 L	

* Water-cooled Condenser Water Usage / 100 lbs. /45.4 kgs. Of Ice: 169 gal/640 L.
* Water-cooled models are excluded from ENERGY STAR qualification.

Order ice storage bin separately.

Accessories

LuminIce™ Growth Inhibitor reduces yeast and bacteria growth for a cleaner ice machine.

Bin Level Control Allows ice bin level to be automatically set. Built-in LED light illuminates bin.

Arctic Pure® Water Filters Reduces sediment and chlorine odors for better tasting ice.

iAuCS® schedules and performs routine ice machine cleaning automatically.

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APPROVED

Project Name: _____
Location: _____
Item #: _____ Qty: _____
Model #: Meets ES specifications

AIA #
SIS #

Model:
T-19

T-Series:
Reach-In Solid Swing Door Refrigerator

Scan code for video

T-19

- True's solid door reach-in's are designed with enduring quality that protects your long term investment.
- Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- Oversized, factory balanced, refrigeration system holds 33°F to 38°F (.5°C to 3.3°C) for the best in food preservation.
- Stainless steel solid door and front. The very finest stainless with higher tensile strength for fewer dents and scratches.
- Adjustable, heavy duty PVC coated shelves.
- Positive seal self-closing door. Lifetime guaranteed door hinges and torsion type closure system.

Bottom mounted units feature:

- "No stoop" lower shelf.
- Storage on top of cabinet.
- Compressor performs in coolest, most grease free area of kitchen.
- Easily accessible condenser coil for cleaning.

ROUGH-IN DATA

Specifications subject to change without notice.
Chart dimensions rounded up to the nearest ⅛" (millimeters rounded up to next whole number).

Model	Doors	Shelves	Cabinet Dimensions (inches) (mm) L	D	H*	HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
T-19	1	3	27 686	24½ 623	75¼ 1912	⅓ N/A	115/60/1	8.9 N/A	5-15P	9 2.74	240 109

* Height does not include 3¼" (83 mm) for castors or 6" (153 mm) for optional legs.

6/15 Printed in U.S.A.

APPROVALS:

AVAILABLE AT:

Model:
T-19

T-Series:
Reach-In Solid Swing Door Refrigerator

STANDARD FEATURES

DESIGN
- True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM
- Factory engineered, self-contained, capillary tube system using environmentally friendly (CFC free) 134A refrigerant.
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser; maintains 33°F to 38°F (.5°C to 3.3°C) for the best in food preservation.
- Sealed, cast iron, self-lubricating evaporator fan motor(s) and larger fan blades give True reach-in's a more efficient low velocity, high volume airflow design. This unique design ensures faster temperature recovery and shorter run times in the busiest of food service environments.
- Bottom mounted condensing unit positioned for easy maintenance. Compressor runs in coolest and most grease free area of the kitchen. Allows for storage area on top of unit.

CABINET CONSTRUCTION
- Exterior - Stainless steel front. Anodized quality aluminum ends, back and top.
- Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.
- Insulation - entire cabinet structure and solid door are foamed-in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- Welded, heavy duty steel frame rail, black powder coated for corrosion protection.
- Frame rail fitted with 2½" (64 mm) diameter stem castors - locks provided on front set.

DOOR
- Stainless steel exterior with white aluminum liner to match cabinet interior. Door extends full width of cabinet shell. Door lock is standard.
- Lifetime guaranteed recessed door handle. Door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing door. Lifetime guaranteed door hinges and torsion type closure system.
- Magnetic door gasket of one piece construction, removable without tools for ease of cleaning.

SHELVING
- Three (3) adjustable, heavy duty PVC coated wire shelves 22⅞"L x 18¼"D (582 mm x 464 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on ½" (13 mm) increments.

LIGHTING
- Interior lighting - safety shielded. Lights activated by rocker switch mounted above door.

MODEL FEATURES
- Exterior temperature display.
- Evaporator is epoxy coated to eliminate the potential of corrosion.
- NSF-7 compliant for open food product.

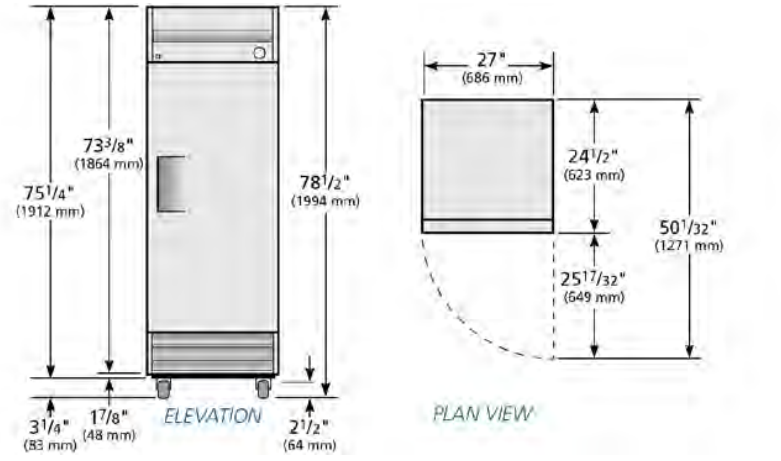
ELECTRICAL
- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.


115/60/1
NEMA-5-15R

OPTIONAL FEATURES/ACCESSORIES
Upcharge and lead times may apply.
- ❑ 6" (153 mm) standard legs.
- ❑ 6" (153 mm) seismic/flanged legs.
- ❑ Additional shelves.

***CABINET INTERIOR**
Beginning in October of 2014, True Manufacturing began the process of changing the standard interior finishes on select products. The interior liners of these units have changed from the traditional NSF-approved white aluminum to an NSF-approved clear coated aluminum that is silver in color. In addition, the traditional white PVC coated shelves have been switched to a gray PVC coating. There are no functional differences created by any of these changes, the difference is only in the appearance. The following product lines are affected by this change: T-Series, TUC, TWT, TSSU, TFP, TPP, TMC, TRCB. A sticker will be placed on the outside packaging so that units with this change can be identified in inventory.

PLAN VIEW



WARRANTY*
Three year warranty on all parts and labor and an additional 2 year warranty on compressor. (U.S.A. only)

*RESIDENTIAL APPLICATIONS: TRUE assumes no liability for parts or labor coverage for component failure or other damages resulting from installation in non-commercial or residential applications.

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Model	Elevation	Right	Plan	3D	Back
T-19	TFE045E	TFE045S	TFE015P	TFE0453	

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Parts Dept. (800)424-TRUE • Parts Dept. Fax# (636)272-9471 • www.truemfg.com

Project Name:
Location:
Item #: _____ *Qty:* _____
Model #: Meets ES specifications

APPROVED

AIA #

SIS #

Model:
T-19F

T-Series:
Reach-In Solid Swing Door -10°F Freezer

Scan code for video

T-19F

- True's solid door reach-in's are designed with enduring quality that protects your long term investment.
- Designed using the highest quality materials and components to provide the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser maintains -10°F (-23.3°C) cabinet temperatures. Ideally suited for both frozen foods and ice cream.
- Stainless steel solid door and front. The very finest stainless with higher tensile strength for fewer dents and scratches.
- Adjustable, heavy duty PVC coated shelves.
- Positive seal self-closing door. Lifetime guaranteed door hinges and torsion type closure system.
- Automatic defrost system time-initiated, temperature-terminated. Saves energy consumption and provides shortest possible defrost cycle.

Bottom mounted units feature:

- "No stoop" lower shelf.
- Storage on top of cabinet.
- Compressor performs in coolest, most grease free area of kitchen.
- Easily accessible condenser coil for cleaning.

ROUGH-IN DATA

Specifications subject to change without notice.
Chart dimensions rounded up to the nearest ⅛" (millimeters rounded up to next whole number).

Model	Doors	Shelves	Cabinet Dimensions (inches) (mm) L	D	H*	HP	Voltage	Amps	NEMA Config.	Cord Length (total ft.) (total m)	Crated Weight (lbs.) (kg)
T-19F	1	3	27 686	24½ 623	75¼ 1912	⅓ ⅓	115/60/1 230-240/50/1	6.8 2.6	5-15P ▲	9 2.74	250 114

* Height does not include 3¼" (83 mm) for castors or 6" (153 mm) for optional legs.

▲Plug type varies by country.

MADE IN U.S.A. SINCE 1945 · 5 YEAR COMPRESSOR WARRANTY USA · c UL us · NSF · CE

2/15 Printed in U.S.A.

APPROVALS:

AVAILABLE AT:

Model:
T-19F

T-Series:
Reach-In Solid Swing Door -10°F Freezer

STANDARD FEATURES

DESIGN
- True's commitment to using the highest quality materials and oversized refrigeration systems provides the user with colder product temperatures, lower utility costs, exceptional food safety and the best value in today's food service marketplace.

REFRIGERATION SYSTEM
- Factory engineered, self-contained, capillary tube system using environmentally friendly (CFC free) R404A refrigerant.
- Extra large evaporator coil balanced with higher horsepower compressor and large condenser; maintains -10°F (-23.3°C). Ideally suited for both frozen foods and ice cream.
- Sealed, cast iron, self-lubricating evaporator fan motor(s) and larger fan blades give True reach-in's a more efficient low velocity, high volume airflow design. This unique design ensures faster temperature recovery and shorter run times in the busiest of food service environments.
- Bottom mounted condensing unit positioned for easy cleaning. Compressor runs in coolest and most grease free area of the kitchen. Allows for storage area on top of unit.
- Automatic defrost system time-initiated, temperature-terminated. Saves energy consumption and provides shortest possible defrost cycle.

CABINET CONSTRUCTION
- Exterior - Stainless steel front. Anodized quality aluminum ends, back and top.
- Interior - attractive, NSF approved, clear coated aluminum liner. Stainless steel floor with coved corners.
- Insulation - entire cabinet structure and solid door are foamed-in-place using Ecomate. A high density, polyurethane insulation that has zero ozone depletion potential (ODP) and zero global warming potential (GWP).
- Welded, heavy duty steel frame rail, black powder coated for corrosion protection.
- Frame rail fitted with 2½" (64 mm) castors - locks provided on front set.

DOOR
- Stainless steel exterior with white aluminum liner to match cabinet interior. Door extends full width of cabinet shell. Door lock is standard.
- Lifetime guaranteed recessed door handle. Door fitted with 12" (305 mm) long recessed handle that is foamed-in-place with a sheet metal interlock to ensure permanent attachment.
- Positive seal self-closing door. Lifetime guaranteed door hinges and torsion type closure system.
- Magnetic door gasket of one piece construction, removable without tools for ease of cleaning.

SHELVING
- Three (3) adjustable, heavy duty PVC coated wire shelves 22⅞"L x 18¼"D (582 mm x 464 mm). Four (4) chrome plated shelf clips included per shelf.
- Shelf support pilasters made of same material as cabinet interior; shelves are adjustable on ½" (13 mm) increments.

LIGHTING
- Incandescent interior lighting - safety shielded. Lights activated by rocker switch mounted above door.

MODEL FEATURES
- Exterior temperature display.
- Evaporator is epoxy coated to eliminate the potential of corrosion.
- Rear airflow guards prevent product from blocking optimal airflow.
- NSF-7 compliant for open food product.

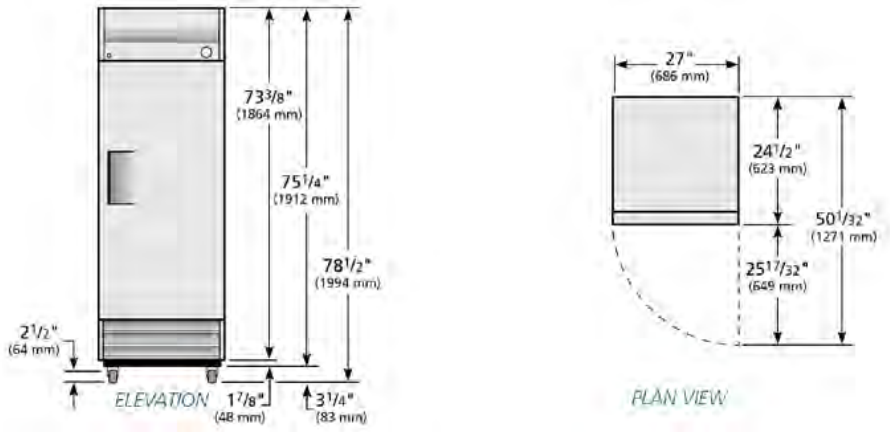
ELECTRICAL
- Unit completely pre-wired at factory and ready for final connection to a 115/60/1 phase, 15 amp dedicated outlet. Cord and plug set included.

115/60/1
NEMA-5-15R

OPTIONAL FEATURES/ACCESSORIES
Upcharge and lead times may apply.
- ❑ 230 - 240V / 50 Hz.
- ❑ 6" (153 mm) standard legs.
- ❑ 6" (153 mm) seismic/flanged legs.
- ❑ Novelty baskets.
- ❑ Additional shelves.

***CABINET INTERIOR**
Beginning in October of 2014, True Manufacturing began the process of changing the standard interior finishes on select products. The interior liners of these units have changed from the traditional NSF-approved white aluminum to an NSF-approved clear coated aluminum that is silver in color. In addition, the traditional white PVC coated shelves have been switched to a gray PVC coating. There are no functional differences created by any of these changes, the difference is only in the appearance. The following product lines are affected by this change: T-Series, TUC, TWT, TSSU, TFP, TPP, TMC, TRCB. A sticker will be placed on the outside packaging so that units with this change can be identified in inventory.

PLAN VIEW



WARRANTY*
Three year warranty on all parts and labor and an additional 2 year warranty on compressor. (U.S.A. only)

*RESIDENTIAL APPLICATIONS: TRUE assumes no liability for parts or labor coverage for component failure or other damages resulting from installation in non-commercial or residential applications.

METRIC DIMENSIONS ROUNDED UP TO THE NEAREST WHOLE MILLIMETER

SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE

Model	Elevation	Right	Plan	3D	Back
T-19F	TFE045E	TFE045S	TFE015P	TFE0453	

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Heating & Air Conditioning
Amana
LASTS AND LASTS AND LASTS.™

Product Specifications

WITH

DigiSmart™ Control Board

DigiSmart™ PTAC

Packaged Terminal Air Conditioner and Heat Pump

We have designed the Amana® brand Packaged Terminal Air Conditioner for customer comfort and owner piece of mind. No other unit in the industry offers so many energy management features as standard. With the ability of the DigiSmart™ PTAC to reduce operating costs by 35%, there is no need to settle for anything less than an Amana® brand PTAC.

Features

- *Energy Efficiency* — Amana® brand PTACs have an EER of up to 12.8 (on heat pumps, a COP of up to 3.6) to keep energy consumption to a minimum
- *On-board Energy Management System* — Amana® brand units are equipped with EMS technology to better control room temperature and save energy dollars
- *DigiSmart™ Control Board* — ready for wireless or wired operation
- *Programmable Set-back Program* — owner-controlled settings allows automatic temperature setback when unit is idle
- *Network Ready* — Amana® brand DigiSmart™ units connected to a Tridium JACE controller automatically build their own wireless network
- *DigiSmart™ Suite of Peripherals* — remote occupancy sensor, remote thermostat, RF antennas, and RF platform controller provide everything you need to reduce energy costs by 35%

c UL us
UL (Underwriters Laboratories)
USA and Canada

ARI PERFORMANCE CERTIFIED
ARI Standard 310/380 PTAC
ARI (Air Conditioning & Refrigeration Institute)
Standards 310/380

5 YEAR PARTS LIMITED WARRANTY

Full Warranty
- 1st Year
- 2nd through 5th Year — Sealed System

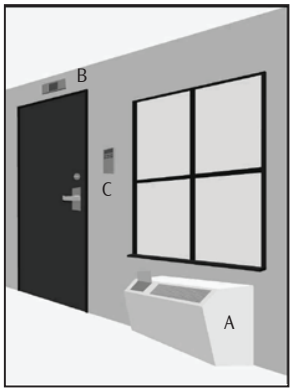
Limited Warranty
- 2nd through 5th Year — Parts

Specification Sheet

DigiSmart™ System

The Amana® DigiSmart™ suite of products work together to let you control and monitor each air conditioning unit.

In-Room Products



A *PTAC* — The PTAC itself contains all the processing power and software to manage energy consumption, unit status, and comfort performance.

B *Occupancy Control* — The remote sensor above the door determines if the room is occupied or not. If occupied, normal routines run, but if unoccupied the PTAC can change temperature settings based upon configurations set by owner.

C *Remote Thermostat* — The DigiSmart™ remote thermostat works just like the one at home but unlike other PTACs does not disable the unit's own controls. Remote and PTAC control panels work at the same time and show the same information.

- *Set-up* — Best of all, no wiring. All of the peripheral devices can be installed by your handy man without calling an expensive electrician. A touch of a button connects the peripherals to the air conditioner in that room.

Property-Wide Network

- The Tridium Jace™ controller connects all Amana® DidgSmart™ PATCs in a property automatically through a self-detection routine.
- Once connected to your PC, the status and operating condition of each unit can be viewed remotely and its settings changed.
- The Tridium Jace™ controller through its NiagaraAX protocol has already built connections to more than 100 commercially available building management systems. So once the network is up and running, Amana® PTACS can be integrated with your existing building management system or if desired, controlled remotely through the internet.

For more information, go to www.amana-ptac.com.

Product Features

On-Board Energy Management System (EMS)

- *Set-Back Mode* — the owner can determine amount of time unit is left 'untouched' (buttons not pushed) before the PTAC begins a set-back routine and new thermostat temperature takes effect. All set-back routines can be changed by owner.
- *Maintenance Status* — Separate green LED indicator light to show if unit requires maintenance
- *Electronic Temperature Limits* – owner can set separate cooling and heating temperature ranges and limit operation to one-degree increments, saving energy by preventing guests from over-cooling or over-heating.
- *Enhanced Dehumidification Cooling Mode* — the unit can be set to lengthen cooling cycles while the room is occupied or unoccupied. This passes more air through the unit while the coil is below the dew point, increasing the amount of moisture removed.
- *Unit Diagnostics* — when switched to diagnostics mode, the unit shows ten different self-diagnosis codes to help keep the unit running most efficiently.
- *Freeze Protection* — when sensors show an outdoor temperature of 40ºF or below, the unit automatically activates the fan motor and the electric or hydronic heat to help prevent burst water pipes or broken fixtures caused by freezing temperatures.
- *Extended Heating with the Heat-Pump* — heat pump models will operate in heat-pump mode with external temperatures as low 24ºF to provide additional energy savings.
- *30-Second Fan-Off Delay* — the fan continues to run for 30 seconds after the compressor has stopped or after electric heat has been turned off. This improves efficiency by dispersing the cooled or heated air still on the coil into the room.

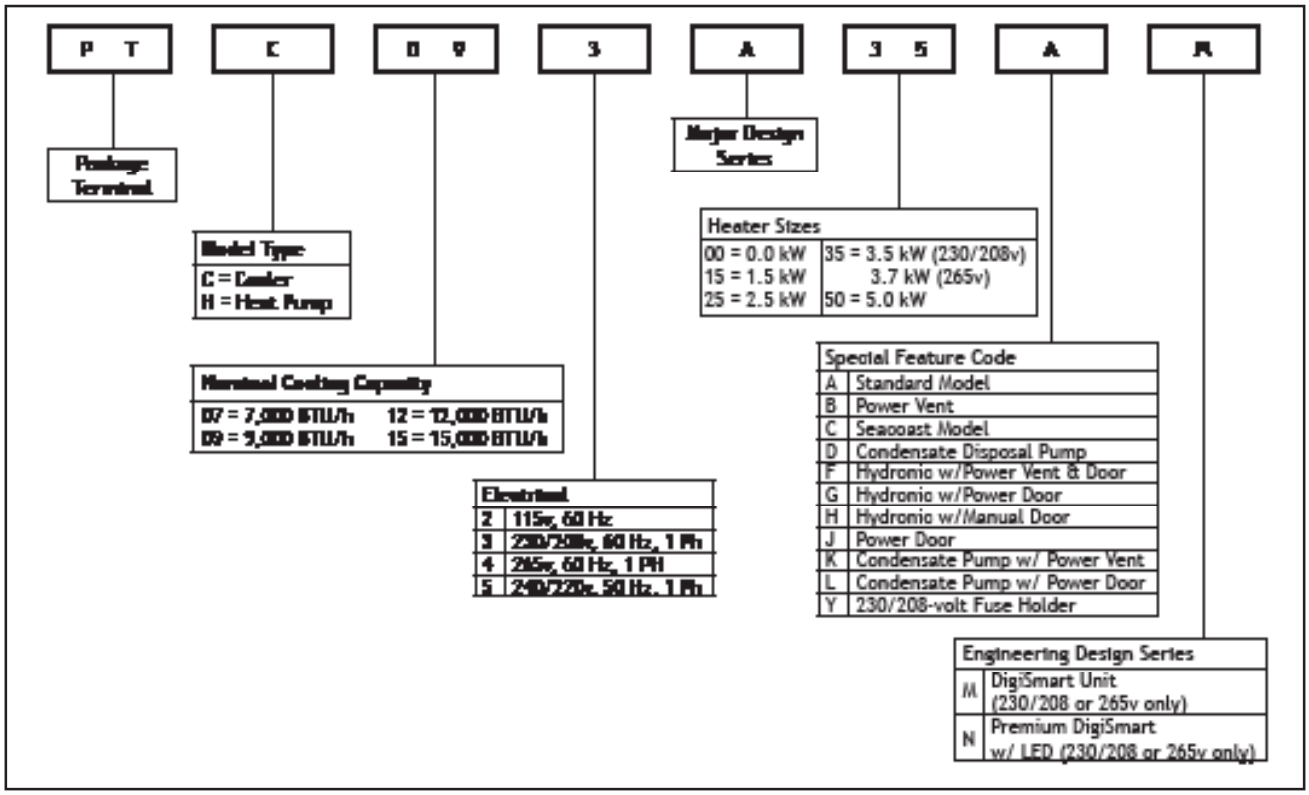
EMS ACCESSORIES (@ WWW.AMANA-PTAC.COM)

- DigiDoor: Wireless RF Occupancy Sensor
- DigiPlatform: WEB-Enabled Platform Controller
- DigiStat" RF Wireless Remote-Mounted Thermostat
- DigiSmart Control Board Upgrade Kit
- DigiTenna: Wireless RF Gateway Transceiver Antenna

PTAC ACCESSORIES (@ WWW.AMANA-PTAC.COM)

- Wall Sleeves
- Grilles
- Condensate Drain Kits
- Thermostats – wired and wireless
- Wire Harness Kit
- Remote Escutcheon Kit (10 pack)
- Sub-base Kits
- Duct Extension Kits
- Vent Door Kits
- Power Door Kit – 230/208V & 265V
- Hydronic Valves and Kits

NOMENCLATURE



Specification Sheet

Product Specifications

PTC Models — Cooling/Electric Heat

Model [1, 7, 9, 10, 12]		PTC 073B**A-	PTC 074B**A-	PTC 093B**AM	PTC 094B**AM	PTC 123B**AM	PTC 124B**AM	PTC 153B**AM	PTC 154B**AM
Voltage [1, 3, 11]		230/208	265	230/208	265	230/208	265	230/208	265
Capacity (BTU/h)	M Models	M= 7,100/ 6,900	M = 7,100	9,100/ 8,900	9,100	12,000/ 11,900	12,000	14,000/ 13,900	14,000
	N Models	N= 7,400/ 7,300	N = 7,300	N/A	N/A	N/A	N/A	N/A	N/A
Amps[12]		2.8/3.0	2.3	3.7/3.8	3.0	4.6/5.0	4.3	6.3/6.9	5.9
Watts[12]		610/595	610	790/775	790	1,110/ 1,100	1,130	1,470/ 1,450	1,470
EER	M Models	M= 11.6/11.6	M = 11.6	11.5	11.5	10.8	10.8	9.5	9.5
	N Models	N= 12.4/12.8	N = 12.4	N/A	N/A	N/A	N/A	N/A	N/A
Unit without Electric Heater									
Min. Circuit Amps [2, 4, 12]		4.0	3.6	5.1	4.4	6.4	5.7	8.8	7.7
CFM (Cool/Wet Coil)	High	245/240	245	245/240	245	325/315	325	325/315	325
	Low	220/205	220	220/205	220	250/229	250	250/220	250
CFM (Dry Coil)	High	265/260	265	265/260	265	345/335	345	345/335	345
	Low	230/215	230	230/215	230	265/235	265	265/235	265
Ventilated Air, CFM (Fan Only)*		65*	65*	65*	65*	70*	70*	70*	70*
Ventilated Air, CFM (Compressor & Fan)*		65*	65*	65*	65*	70*	70*	70*	70*
Dehumidification (Pints/Hr.)		1.6	1.6	2.6	2.6	3.5	3.5	4.4	4.4
Net Weight (lbs.)		90	90	95	95	105	105	110	110
Shipping Weight (lbs.)		105	105	110	110	120	120	125	125

- Denotes M or N models

* Approximately 95 CFM with optional power vent kit. Actual vent CFM performance will vary due to application and installation conditions.

Notes:

1– All 265-volt models must use an Amana® brand sub-base (PTSB4**E) or an Amana® brand hard-wire kit (PTPWHWK4).
2– Minimum Circuit Ampacity (MCA) ratings conform to the National Electric Code; however, local codes should apply.
3– Minimum voltage on 230/208-volt models is 197 volts; maximum is 253 volts.
Minimum voltage on 265-volt models is 238.5 volts; maximum is 291.5 volts.
4– Overcurrent protection for **all units without electric heaters** is 15 amps. Overcurrent protection on 265-volt models must be cartridge-style time-delay fuses (included and factory-installed on all Amana® brand 265-volt chassis). See heater performance for total MCA.
5– Heating capacity and efficiency based on unit operation without condensate pump; unit automatically switches to electric heat at approximately 24°F outdoor ambient.
6– Total watts for 12,000 and 15,000 BTU/h models; subtract 70 watts for PT07/09*B**A*
7– Specify two-digit heater kW size to complete model number.
8– Total amps for 12,000 and 15,000 BTU/h models; subtract 0.2 amps for PT07/09*B*A*.
9– R-22 refrigerant used in all systems.
10– All units meet or exceed ASHRAE 90.1 standards.
11– All units less than 250 volts have a Leak Current Detector Interrupter (LCDI) power cord and meet UL 484 standards.
12– Refer to electric heat performance data for total MCA and recommended overcurrent protection. Amps and Watts notation refers to compressor only.

PRODUCT SPECIFICATIONS (CONT.)

PTC AND PTH MODELS — ELECTRIC HEAT PERFORMANCE

(Primary Heating for PTC Models; Auxiliary Heating for PTH Models; See below for Power Cord Configuration)

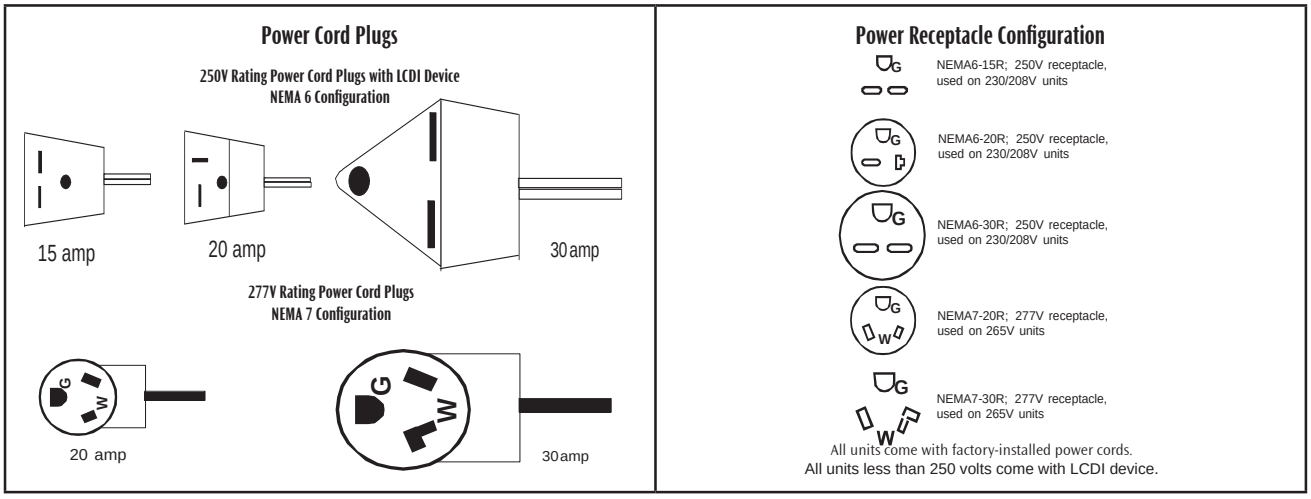
Voltage	Electric Heater Size (kW)	No. of Stages	Nominal Heating (BTU/h)			Total Watts6	Total Amps[8]	Minimum Circuit Ampacity[2]	MOD[4] (amps)	Power Cord
			@ 230V	@ 208V	@ 265V					
230/208V	2.5/2.0	1	8,500	6,800	- -	2,650/2,140	11.5/10.2	14.2	15	6 - 15 P
230/208V	3.5/2.9	1	12,000	9,900	- -	3,650/3,040	15.8/14.5	19.6	20	6 - 20 P
230/208V	5.0/4.1	1*	17,100	14,000	- -	5,150/4,240	22.3/20.3	27.7	30	6 - 30 P
265V	2.5	1	- -	- -	8,500	2,650	10.0	12.4	15	7 - 20 P
265V	3.7	1	- -	- -	12,600	3,850	14.6	18.1	20	7 - 20 P
265V	5.0	1*	- -	- -	17,100	5,150	19.5	24.2	25	7 - 30 P

* PTH/PTC09*B50*G/K has the same airflow as a PTC/PTH12*B***G (not available on 7,000 BTU/h models).

Notes:

1– All 265-volt models must use an Amana® brand sub-base (PTSB4**E) or an Amana® brand hard-wire kit (PTPWHWK4).
2– Minimum branch circuit ampacity ratings conform to the National Electric Code; however, local codes should apply.
3– Minimum voltage on 230/208-volt models is 197 volts; maximum is 253 volts.
Minimum voltage on 265-volt models is 238.5 volts; maximum is 291.5 volts.
4– Overcurrent protection for **all units without electric heaters** is 15 amps. Overcurrent protection on 265-volt models must be cartridge-style time-delay fuses (included and factory-installed on all Amana® brand 265-volt chassis).
5– Heating capacity and efficiency based on unit operation without condensate pump; unit automatically switches to electric heat at approximately 24°F outdoor ambient.
6– Total watts for 12,000 and 15,000 BTU/h models; subtract 70 watts for PT07/09*B**A*
7– Specify two-digit heater kW size to complete model number.
8– Total amps for 12,000 and 15,000 BTU/h models; subtract 0.2 amps for PT07/09*B*A*.
9– R-22 refrigerant used in all systems.
10– All units meet or exceed ASHRAE 90.1 standards.
11– All units less than 250 volts have a Leak Current Detector Interrupter (LCDI) power cord and meet UL 484 standards.

POWER CORD CONFIGURATION



CONTRACT BID SPECIFICATIONS

Please visit www.amana-ptac.com to download the contractor bid specifications information.

Specification Sheet

Product Specifications (cont.)

PTH Models — Cooling/Heat Pump/Electric Heat

Model [1, 7, 9, 10, 12]		PTH073B**A-	PTH 074B**A-	PTH 093B**AM	PTH 094B**AM	PTH 123B**AM	PTH 124B**AM	PTH 153B**AM	PTH 154B**AM
Voltage [1, 3, 11]		230/208	265	230/208	265	230/208	265	230/208	265
Capacity (BTU/h)	M Models	M=7,000/ 6,800	M=7,000	9,100/ 8,900	9,100	12,000/ 11,800	12,000	14,000/ 13,900	14,000
	N Models	N=7,400/ 7,300	N=7,300	N/A	N/A	N/A	N/A	N/A	N/A
Amps		2.8/3.0	2.3	3.5/3.8	3.0	4.6/5.0	4.3	6.3/6.9	5.9
Watts[12]		605/585	605	790/775	790	1,110/1,090	1,110	1,505/1,495	1,505
	M Models	M=11.6/11.6	M=11.6	11.5	11.5	10.8	10.8	9.3	9.3
EER	N Models	N=12.4/12.8	N=12.4	N/A	N/A	N/A	N/A	N/A	N/A
Units without Electric Heater									
MCA [2, 4, 12]		4.0	3.6	5.1	4.4	6.4	5.7	8.8	7.7
CFM (Cool/Wet Coil)	High	245/240	245	245/240	245	325/315	325	325/315	325
	Low	220/205	220	220/205	220	250/229	250	250/220	250
CFM (Dry Coil)	High	265/260	265	265/260	265	345/335	345	345/335	345
	Low	230/215	230	230/215	230	265/235	265	265/235	265
Ventilated Air, CFM (Fan Only)*		65*	65*	65*	65*	70*	70*	70*	70*
Ventilated Air, CFM (Compressor and Fan)*		65*	65*	65*	65*	70*	70*	70*	70*
Dehumidification (Pints/Hr.)		1.6	1.6	2.6	2.6	3.5	3.5	4.4	4.4
Net Weight (lbs.)		95	95	100	100	110	110	115	115
Shipping Weight (lbs.)		110	110	115	115	125	125	130	130

- Denotes M or N models
* Approximately 95 CFM with optional power vent kit; actual vent CFM performance will vary due to application and installation conditions.
** EER = Energy Efficiency Rating per Air Conditioning & Refrigeration Institute (ARI) and Canadian Standards Association (CSA) EEV Test Procedures.

Notes:
1– All 265-volt models must use an Amana® brand sub-base (PTSB4**E) or an Amana® brand hard-wire kit (PTPWHWK4).
2– Minimum Circuit Ampacity (MCA) ratings conform to the National Electric Code; however, local codes should apply.
3– Minimum voltage on 230/208-volt models is 197 volts; maximum is 253 volts.
Minimum voltage on 265-volt models is 238.5 volts; maximum is 291.5 volts.
4– Overcurrent protection for **all units without electric heaters** is 15 amps. Overcurrent protection on 265-volt models must be cartridge-style time-delay fuses (included and factory-installed on all Amana® brand 265-volt chassis). See heater performance for total MCA.
5– Heating capacity and efficiency based on unit operation without condensate pump; unit automatically switches to electric heat at approximately 24°F outdoor ambient.
6– Total watts for 12,000 and 15,000 BTU/h models; subtract 70 watts for PT07/09*B**A*
7– Specify two-digit heater kW size to complete model number.
8– Total amps for 12,000 and 15,000 BTU/h models; subtract 0.2 amps for PT07/09*B*A*.
9– R-22 refrigerant used in all systems.
10– All units meet or exceed ASHRAE 90.1 standards.
11– All units less than 250 volts have a Leak Current Detector Interrupter (LCDI) power cord and meet UL 484 standards.
12– Refer to electric heat performance data for total MCA and recommended overcurrent protection. Amps and Watts notation refers to compressor only.

PRODUCT SPECIFICATIONS (CONT.)

PTH MODELS — REVERSE-CYCLE HEATING PERFORMANCE

Heating Capacity[1]		PTH 073B**A-	PTH 074B**A-	PTH 093B**AM	PTH 094B**AM	PTH 123B**AM	PTH 124B**AM	PTH 153B**AM	PTH 154B**AM
BTU/h[5]	M Models	M=6,200/ 6,000	M = 6,200	8,200/ 8,000	8,200	10,800/ 10,600	10,800	13,300/ 13,200	13,300
	N Models	N=6,400/ 6,300	N = 6,200	---	---	---	---	---	---
Amps[12]		2.6/ 3.0	2.2	3.2/ 3.6	2.6	4.5/ 5.1	3.9	5.7/ 6.3	5.4
Watts[12]		550/ 530	550	750/ 730	750	1,020/ 1,000	1,020	1,340/ 1,330	1,340
COP[5]	M Models	M= 3.3/ 3.3	M = 3.3	3.2	3.2	3.1	3.1	2.9	2.9
	N Models	N= 3.5/ 3.6	N = 3.5	---	---	---	---	---	---
CFM (Dry)		235/ 230	235	235/ 230	230	310/ 290	310	345/ 335	345
Heating (BTU/h)[5] Outdoor Ambient Rating Point	62 °F	7,200/ 7,000	7,200	9,800/ 9,600	9,800	13,000/ 12,800	13,000	15,800/ 15,700	15,800
	57 °F	6,900/ 6,700	6,900	9,300/ 9,100	9,300	12,300/ 12,100	12,300	15,000/ 14,900	15,000
	52 °F	6,500/ 6,300	6,500	8,700/ 8,500	8,700	11,600/ 11,400	11,600	14,200/ 14,100	14,200
	47 °F	6,200/ 6,000	6,200	8,200/ 8,000	8,200	10,800/ 10,600	10,800	13,300/ 13,200	13,300
	COP*	3.3/ 3.3	3.3	3.2/ 3.2	3.2	3.1/ 3.1	3.1	2.9/ 2.9	2.9
	42 °F	5,900/ 5,700	5,900	7,700/ 7,500	7,700	10,100/ 9,900	10,100	12,500/ 12,400	12,500
	37 °F	5,600/ 5,400	5,500	7,200/ 7,000	7,200	9,400/ 9,200	9,400	11,700/ 11,600	11,700
	32 °F	5,300/ 5,100	5,200	6,700/ 6,500	6,700	8,600/ 8,400	8,600	10,800/ 10,700	10,800
	27 °F	5,000/ 4,800	5,000	6,200/ 6,000	6,200	7,900/ 7,700	7,900	10,000/ 9,900	10,000
	24 °F	4,800/ 4,600	4,800	5,900/ 5,700	5,900	7,500/ 7,300	7,500	9,500/ 9,400	9,500
Watts Outdoor Ambient	62 °F	580/ 560	580	810/ 790	810	1,120/ 1,100	1,120	1,465/ 1,455	1,465
	57 °F	575/ 555	575	800/ 780	800	1,090/ 1,075	1,090	1,440/ 1,430	1,440
	52 °F	555/ 535	555	775/ 755	775	1,060/ 1,045	1,060	1,405/ 1,395	1,405
	47 °F	550/ 530	550	750/ 730	750	1,020/ 1,005	1,020	1,340/ 1,330	1,340
	42 °F	540/ 525	560	730/ 710	730	985/ 970	985	1,325/ 1,315	1,325
	37 °F	530/ 515	545	705/ 685	705	950/ 935	950	1,285/ 1,275	1,285
	32 °F	515/ 500	535	690/ 670	690	900/ 885	900	1,240/ 1,230	1,240
	27 °F	505/ 490	525	660/ 640	660	855/ 840	855	1,190/ 1,180	1,190
	24 °F	500/ 485	520	640/ 620	640	830/ 815	830	1,180/ 1,170	1,180

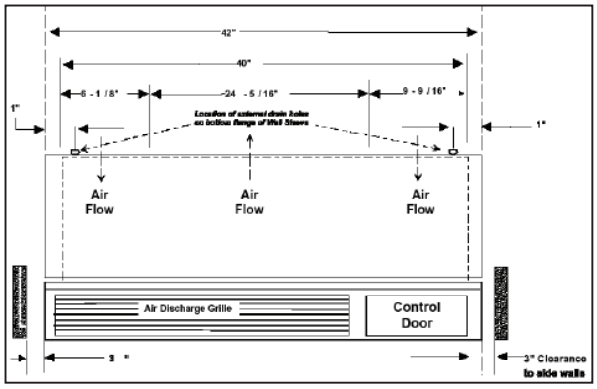
- Denotes M or N models
COP = Coefficiency of Performance; per ARI Test Procedures, units are rated for capacities and efficiencies.

See Page 6 for Notes and Auxiliary Electric Heater Performance.

Specification Sheet

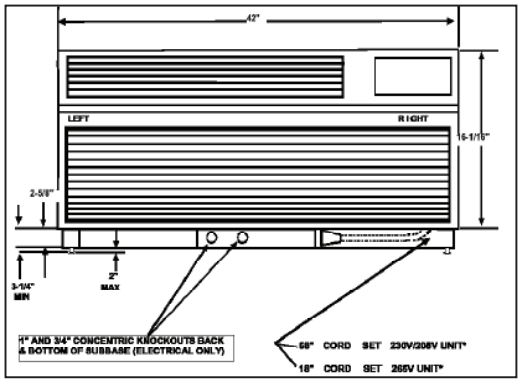
Unit with Accessory Wall Sleeve and Sub-base Accessory

Top View

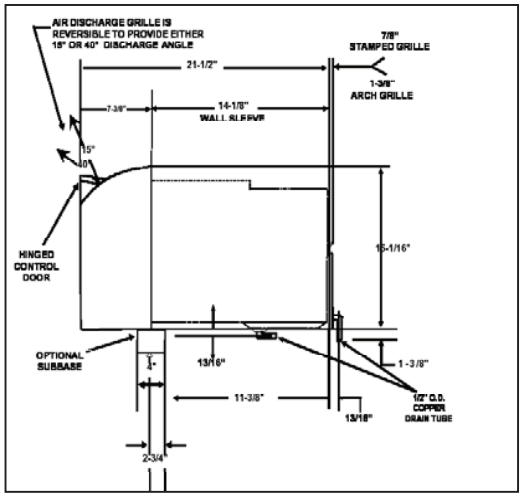


Front View

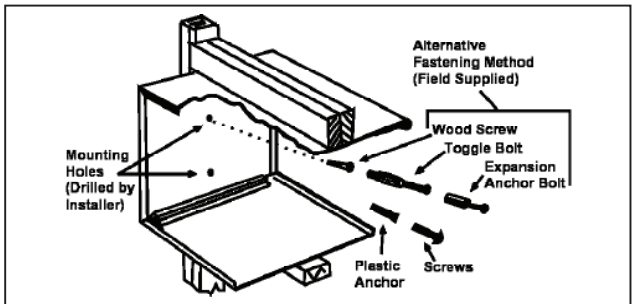
58" LCDI CORD SET — 230V/208V UNIT*



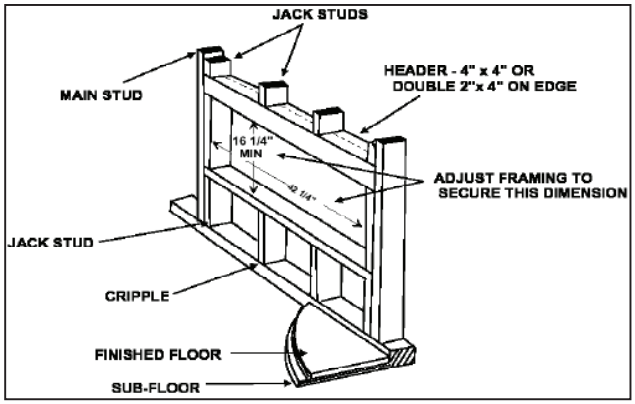
Right View



Framing for Accessory Wall Sleeve (WS900D)



Wall Sleeve must extend a minimum of ¼" beyond outside wall to allow for proper caulking.



Wall Sleeve Opening Height Should Be Squared with Wall Sleeve Opening Width	H = 16¼"
	W = 42¼"

Fastening Wall Sleeve

When installed in an opening, the Wall Sleeve must be horizontally level (side-to-side) and pitched **¼ bubble** to the outside. (**NOTE:** To ensure unit's maximum efficiency, **DO NOT** over- or under-pitch.)

Installation Notes

1. If **Sub-base** (PTSB***E) is installed, allow minimum 3¼" height clearance and maximum 5" height clearance between wall sleeve and floor; allow minimum 2¾" protrusion from a finished wall. *See Note 4 if using hydronic units.*
2. **Drain Kit** (DK900D) shipped separately. Can be mounted either right side, left side or bottom of sleeve. If mounted to bottom of sleeve, allow 2" height clearance from floor to bottom of sleeve.
3. For UL approval, 265V units must use Amana® brand **Sub-base** (PTSB***E) or Amana® brand **Hard Wire Kit** (PTPWHWK4). Overcurrent protection on 265V units must be by cartridge-style time delay fuses, **which are included and factory-installed on the Amana® brand 265V chassis.**
4. If **Hydronic Kit** (HWK03 or HVK03) is installed, **Wall Sleeve** must extend exactly 3" into the room from the finished interior wall. If using the Amana® brand **Sub-base** (PTSB***E), only the minimum 3¼" height clearance between wall sleeve and floor is permissible. Unit must also be operated with a remote-mounted thermostat.
5. If **Duct Kit** (MDK02B) is installed, allow a minimum of 2⅜" into the room from the finished interior wall.

Heating & Air Conditioning Amana®

SUBMITTAL DH105CAV / UH105CAV

Medium static, ducted, single zone split system

Job Name	Location		
Purchaser	Engineer		
Submitted to	Reference	Approval	Construction
Unit Designation	Schedule #		

Specifications

Performance	Nominal Capacity	Cooling (Btu/h)	36,000
		Heating (Btu/h)	38,200
	Capacity Range	Cooling (Btu/h)	9,900 - 39,000
		Heating (Btu/h)	11,500 - 52,000
	SEER / EER		15.1 / 10.45
	HSPF		9.5
	Condensate (pints/hour)		8.0
Power	Voltage (ø/V/Hz)		1 / 208-230 / 60
	Rated Current	Cooling/heating (A)	15.2 / 14.5
	Max. Breaker		40 A
	Min. Circuit Ampacity		25 A
Dimensions	W X H X D (inches)	Indoor Unit	45 1/4 X 12 5/8 X 18 7/8
		Outdoor Unit	36 11/16 X 45 3/4 X 14 3/4
	Weight (lbs.)	Indoor Unit	86
		Outdoor Unit	198
	Supply duct connection (inches)		9 X 35 1/2
	Condensate Connection		OD 1 1/4", ID 1"
Heat Exchanger	Indoor & Outdoor Unit	Type	Aluminum Fin - Copper Tube
		FPI	18
		Pipe Diameter	1/4 inch
Sound Pressure Level (dB)	Indoor Unit	Cooling / Heating	48 / 49
	Outdoor Unit		66
Operating Temperatures	Cooling	°F	14 ≤ T ≤ 115
	Heating	°F	−4 ≤ T ≤ 75
Pipe Connections	Indoor & Outdoor	High side (flare)	3/8"
		Low side (flare)	5/8"
	Maximum Line Set Length		246 ft.
	Maximum Vertical Separation		98 ft.
	Oil Trap		Every 32.8' of vertical separation
Refrigerant	Type		R410A
	Control Method		Electronic Expansion Valve
	Factory Charge		98.8 oz
	Charged for		25 feet
	Additional Refrigerant		0.4 oz/ft over 25'
Compressor	Manufacturer		Samsung
	Type		DC, Inverter Driven, Twin Rotary
	RLA (A)		17.0
Evaporator Fan	Type		Sirocco (2)
	Air Volume L/M/H (CFM)	Cooling	510 / 640 / 785
		Heating	610 / 750 / 910
	External Static Pressure	Standard/max. ("WC)	.31 / .47
Condenser Fan	Motor		BLDC With Axial Type Fan (2)
	Output	W	250
	FLA	Amps	2.0
Accessories	Samsung condensate pump		MDP-075SGU1
	Wireless Remote Control*	Wireless remote	MR-BH01U
		Wire from receiver to unit	MRW-10AU
		Wireless signal receiver	MRK-A00U
	Wall Bracket (for outdoor unit)		CKN-250
Safety Certifications			ETL & ETLc
Warranty	5 Years compressor, 3 Year Parts, 120 Day limited labor		

DH105CAV

UH105CAV

• Low ambient control built in

• Outdoor unit shall provide 208/230V power to indoor unit via 14AWG X 3 interconnect power cable

• Wired controller ships as standard

Construction
Indoor unit chassis shall be constructed from galvanized steel

The outdoor unit shall be galvanized steel with a baked on powder coated finish for durability

Heat Exchanger
The heat exchanger shall be mechanically bonded fin to copper tube

Refrigerant System
The compressor shall be hermetically sealed, inverter controlled, Twin BLDC Rotary

Refrigerant flow shall be controlled by EEV (electronic expansion valve) at outdoor unit

Indoor Fan
Indoor fans shall be statically and dynamically balanced,sirocco type with a single BLDC motor

Three fan speed settings and auto setting

Controls
Control signal shall be DDC type signal

Interconnect control wiring shall be 16AWG X 2 shielded wire between outdoor and indoor units

Unit shall be operated via wired or wireless controller

System shall connect to Samsung centralized control systems via interface module

Nominal cooling capacities are based on: Indoor temperature: 80°F DB, 67°F WB. Outdoor temperature: 95°F DB, 75°F WB.

Nominal heating capacities are based on: Indoor temperature: 70°F DB, 60°F WB. Outdoor temperature: 47°F DB, 43°F WB.

Quietside maintains a policy of ongoing development, specifications are subject to change without notice. Refer to www.AHRIdirectory.org for current reference numbers.

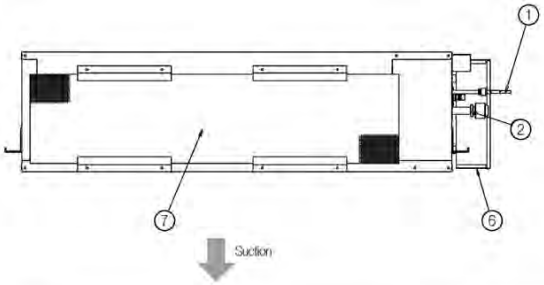
SAMSUNG

SUBMITTAL DH105CAV / UH105CAV

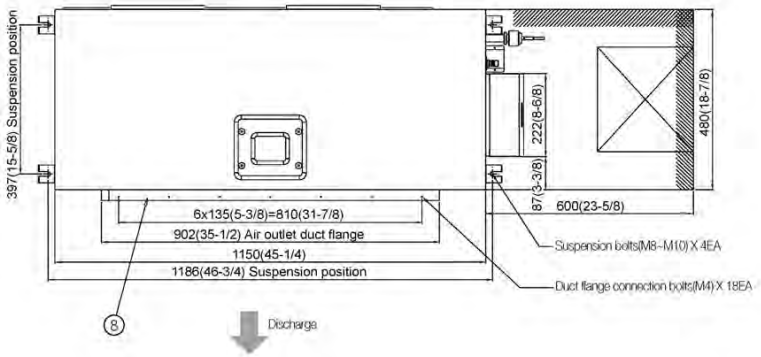
Medium static, ducted, single zone split system

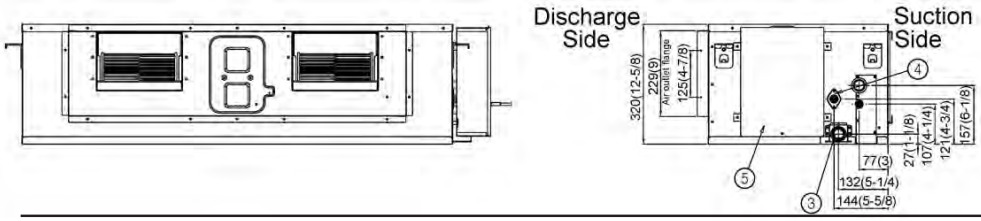
DH105CAV

Unit: mm (Inches)



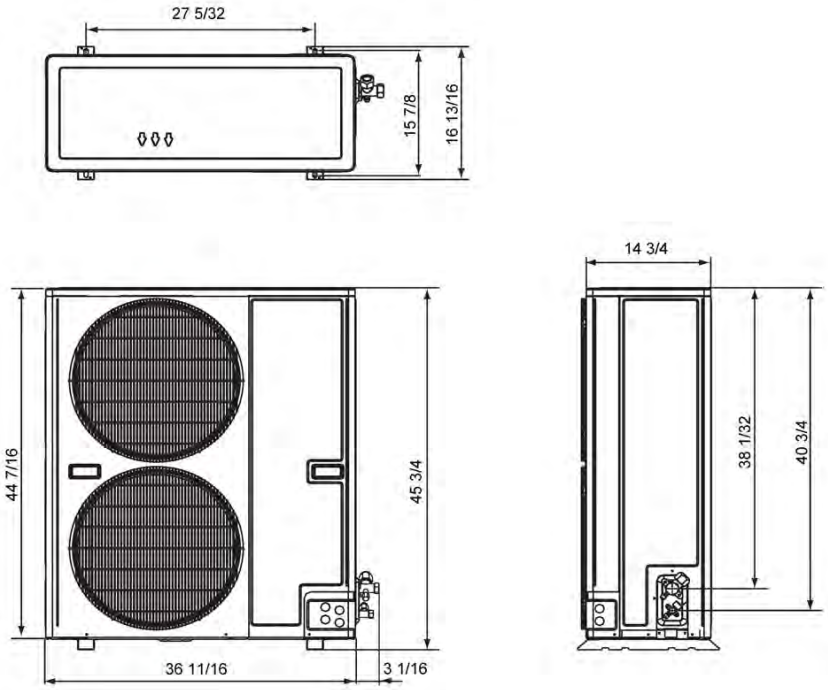
No.	Name	Description
1	Liquid pipe connection	3/8" flare
2	Gas pipe connection	5/8" flare
3	Drain pipe connection without optional drain pump kits	Quick lock
4	Drain pipe connection with optional drain pump kits	
5	Control unit	-
6	Conduit for power supply & communication wiring	-
7	Return air side	-
8	Air outlet duct flange	-





UH105CAV

Unit: Inches



SAMSUNG

SUBMITTAL DH105CAV / UH105CAV

MWR-WE10 Wired Air Handler & ERV Controller

Features*

Easy air handler and ERV control
- Air handler and ERV unified controller (can only control Samsung ERV's)
- Air handler operation ON/OFF
- Air handler operation mode, set temperature, air flow direction, fan speed
- Quiet and sleep modes
- Error display
- Filter replacement alarm display and reset
- Single indoor unit control or multiple unit control (maximum 16 units)

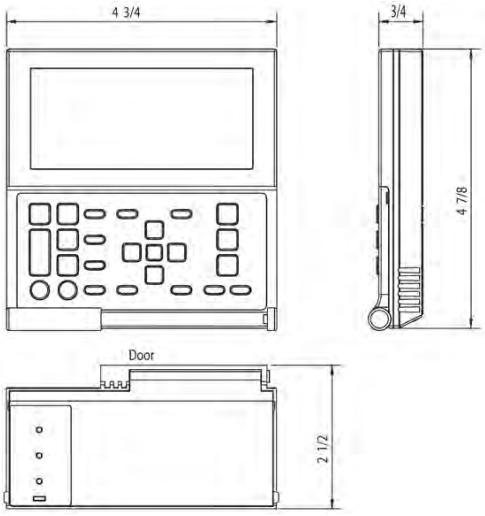
Energy saving operation
- Upper/lower temperature setting
- Automatic operation stop function
- Energy saving operation mode

Weekly operating schedule setting
- Weekly operating schedule (A/C only, ERV only, A/C + ERV)
- Able to set desired A/C operation mode, setting temperature and fan speed to operate based on weekly schedules
- Able to apply schedule exception day

Other features
- Partial button lock option (on/off, selection, temperature setting, fan speed, and schedule setting buttons can be locked individually)
- Backlight
- Daylight savings clock advance option
- Temperature limit setting option
- Real-time clock function; current time/day display function
- Built-in room sensor
- Indoor unit operation state display
- Service mode support (indoor unit cycle data monitoring, option code monitoring and setting, and dip switch state monitoring)

*Some features may not be available depending on the model of connected air handler(s)

- 4 Wire connection
- DC 12V (V1/V2) power supplied by indoor unit
- RS485 communication (F3/F4)
- Can sense temperature via internal sensor, temperature sensor inside the air handler, or use the average temperature between controller and air handler temperature sensors
- MWR-WE10 has screw terminals for all wiring connections, no wire is included
- 16AWG shielded cable is necessary for proper operation



Unit: inches

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YORK®
Heating and Air Conditioning

TECHNICAL GUIDE

AFFINITY

R-410A SPLIT-SYSTEM AIR CONDITIONERS

18 SEER

MODELS: CZH024 THRU 060*(C)
(2 THRU 5 NOMINAL TONS)

ARI PERFORMANCE CERTIFIED ™
ARI Standard 210/240
Unitary Small AC
Certification applies only when the complete system is listed with ARI.
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Additional rating information can be found at
www.ahridirectory.org

WARRANTY

Standard 5-year limited parts warranty.
10-year limited compressor warranty.
Premium System Warranty - Limited lifetime compressor when matched with an approved York Affinity furnace or UPG air handler and coil.

Extended 10-year limited parts warranty when product is registered online within 90 days of purchase for replacement or closing for new home construction.

DESCRIPTION

The 18 SEER Series unit is the outdoor part of a versatile climate system. It is designed with a matching indoor coil component from Johnson Controls Unitary Products. Available for typical applications this climate system is supported with accessories and documents to serve specific functions.

FEATURES

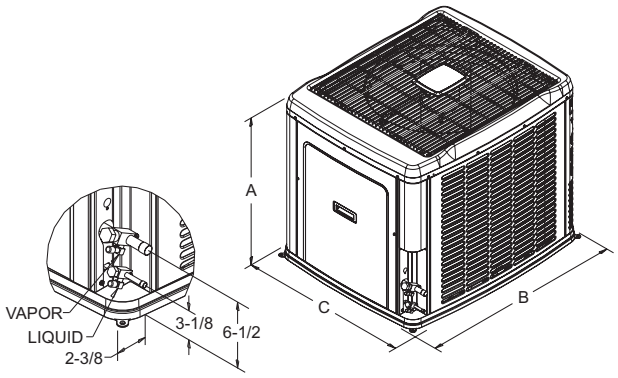
- **Superior Coil Protection –** A stamped decorative metal coil guard completely protects coil from debris and other large damaging material while a polymer mesh further protects the coil against smaller particles.
- **Isolated Compressor Compartment –** A molded composite bulkhead isolates the compressor from the rest of the unit reducing sound and vibration.
- **Protected Compressors –** Each compressor is protected against abnormal pressures by an internal pressure relief valve and factory installed high and low pressure controls. Additional protection against moisture and debris is provided by factory installed liquid line filter driers.
- **Environmentally Friendly Refrigerant –** Next generation refrigerant R-410A delivers environmentally friendly performance with zero ozone depletion.
- **Durable Finish –** Automotive quality finish provides the ultimate protection from harmful U.V. rays and rust creep ensuring long-lasting high quality appearance. A powder-paint topcoat is applied over a baked-on primer, using a galvanized, zinc coated steel base material. The result is a finish that has been proven in testing to provide 33% greater durability than conventional powder-coat finishes.
- **Lower Installed Cost –** Designed to provide enhanced installability by featuring a slide-down control compartment and angled service valves to reduce overall installation time and cost.
- **Low Operating Sound Levels –** A fan design boasting technology adapted from aeronautic and defense engineering provides for whisper quiet operation by allowing airflow to flow smoothly and efficiently across the fan tips.
- **Filter-Drier** – A factory installed, solid core liquid line filter-drier filters harmful debris and moisture from the system.
- **Easy Service Access –** A full end, full service, access panel with handle makes for easy entry to internal components.
- **Composite Base -** Strong and durable composite base pan resists rust and corrosion while it helps reduce vibrations and noise.
- **Quiet drive system -** Features combination of swept-wing fan, composite base pan, isolated compressor compartment and two-stage compressor to reduce overall sound to a mere whisper.
- **Low RPM fan motor -** Helps to reduce airflow noise.
- **Agency Listed -** U.L. and C.U.L. listed - approved for outdoor application. The unit is certified in accordance with the Unitary Small Equipment cerification program, which is based on ARI Standard 210/240.

561926-YTG-A-0410

Physical and Electrical Data

MODEL		CZH02411(C)	CZH03611(C)	CZH04811(C)	CZH06011(C)
Unit Supply Voltage		208-230V, 1ϕ, 60Hz			
Normal Voltage Range [1]		187 to 252			
Minimum Circuit Ampacity		15.6	23.6	29.2	34.8
Max. Overcurrent Device Amps [2]		25	40	50	60
Min. Overcurrent Device Amps [3]		20	25	30	35
Multi-stage Compressor		Yes	Yes	Yes	Yes
Compressor Type		Scroll	Scroll	Scroll	Scroll
Compressor Amps	Rated Load	10.3	16.7	21.2	25.6
	Locked Rotor	52	82	96	118
Crankcase Heater		No	No	No	No
Fan Motor Amps	Rated Load	2.8	2.8	2.8	2.8
Fan Diameter Inches		24	24	24	24
Fan Motor	Rated HP	1/3	1/3	1/3	1/3
	Nominal RPM	685	685	685	685
	Nominal CFM	2900	3200	3100	3150
Coil	Face Area Sq. Ft.	23.58	23.58	23.58	23.58
	Rows Deep	2	2	2	2
	Fins / Inch	16	16	14	14
Liquid Line Set OD (Field Installed)		3/8	3/8	3/8	3/8
Vapor Line Set OD (Field Installed)		3/4	3/4	7/8	7/8
Unit Charge (Lbs. - Oz.) [4]		15 - 1	13 - 7	12 - 9	13 - 5
Charge Per Foot, Oz.		0.62	0.62	0.67	0.67
Operating Weight Lbs.		305	305	310	330

1 Rated in accordance with ARI Standard 110, utilization range “A”.
2 Dual element fuses or HACR circuit breaker. Maximum allowable overcurrent protection.
3 Dual element fuses or HACR circuit breaker. Minimum recommended overcurrent protection.
4 The Unit Charge is correct for the outdoor unit, matched indoor coil and 15 feet of refrigerant tubing. For tubing lengths other than 15 feet, add or subtract the amount of refrigerant, using the difference in length multiplied by the per foot value.



All dimensions are in inches. They are subject to change without notice. Certified dimensions will be provided upon request.

Unit Model	Dimensions (Inches)			Refrigerant Connection Service Valve Size	
	A	B	C	Liquid	Vapor
24	39-1/2	42	34	3/8”	3/4”
36	39-1/2	42	34		
48	39-1/2	42	34		7/8”
60	39-1/2	42	34		

System Charge for Various Matched Systems				
Outdoor Unit	CZH02411(C)	CZH03611(C)	CZH04811(C)	CZH06011(C)
Approved System Thermal Expansion Valve[1]	1TVM4F1	1TVM4H1	1TVM4J1	1TVM4K1
Factory Charge, lbs-oz	15 - 1	13 - 7	12 - 9	13 - 5
Indoor Coil[2]	**TXV Kit[3] - Additional Charge, Oz**			
AHX18	0	–	–	–
AHX24	10	–	–	–
AHX30	12	–	–	–
AHX36	18	12	–	–
AHX42	–	22	–	–
AHX48	–	21	9	–
AHX60	–	27	15	14
AV24	2	–	–	–
AV36	19	12	–	–
AV/SV48	–	21	10	–
AV/SV60	–	–	10	7
F*FV060	–	–	0	0
F*FP048	–	–	–	–
F*FP060	–	–	–	–
FC/MC/PC30	4	–	–	–
FC/MC/PC32	12	–	–	–
FC/MC/PC35	12	6	–	–
FC/MC/PC36	5	0	–	–
FC/MC/PC37	18	12	–	–
FC/MC/PC42	–	3	–	–
FC/MC/PC43	18	12	–	–
FC/MC/PC48	29	21	10	–
FC/MC/PC60	–	–	9	7
FC/MC62	–	27	15	14
HC30	10	–	–	–
HC36	12	–	–	–
HC42	–	11	–	–
HC60	–	–	0	0
HD36	23	–	–	–
HD48	–	30	20	–
HD60	–	–	26	14
UC30	4	–	–	–
UC36	4	1	–	–
UC42	–	3	–	–
UC48	22	16	5	–
UC60	–	–	10	9

FOOTNOTES:

1 Systems matched with furnace or air handlers not equipped with blower-off delays may require blower Time Delay Kit 2FD06700224.
2 PC coils cannot be used in downflow or horizontal applications. FC coils cannot be used in horizontal applications.
3 A TXV kit must be used with these coils to obtain system performance.

Note: If a TXV is factory installed on the coil, it must be replaced with the listed TXV.

PROCEDURES:

1. Unit factory charge listed on the unit nameplate includes refrigerant for the condenser, the smallest evaporator and 15 feet of interconnecting line tubing.
2. Verify the TXV and additional charge required for specific evaporator coil in the system using the above table.
3. Additional charge for the amount of interconnecting line tubing greater than 15 feet at the rate specified in Physical and Electrical Data Table.
4. For TXV matches requiring additional charge, the refrigerant needs to be weighed in for specific coil match and lineset length.
5. Permanently mark the unit nameplate with the total system charge. Total System Charge = Base Charge (as shipped) + adder for evaporator + adder for line set.

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COOLING CAPACITY - With Air Handler Coils

UNIT MODEL	AIR HANDLER		COIL MODEL[1]	COOLING					
	MODEL	W		STAGE	RATED CFM	NET MBH		SEER	EER
1 PH 18 SEER AC WITH MV									
	MV12B	17	FC/MC/PC35B	1	620	18.2	13.8	17.05	13.80
				2	800	23.6	17.2		
	MV12B	17	FC/MC/PC35C	1	620	18.2	13.8	17.05	13.80
				2	800	23.6	17.2		
CZH02411(C)	MV12B	17	FC/MC/PC43B	1	620	18.5	14.0	17.20	14.00
				2	800	24.0	17.5		
	MV12B	17	FC/MC/PC43C	1	620	18.5	14.0	17.20	14.00
				2	800	24.0	17.5		
	MV12D	24	FC/MC/PC48D	1	645	18.9	14.3	18.00	14.45
				2	835	24.6	17.9		
	MV12B	17	FC/MC/PC43B	1	775	25.6	18.0	17.70	13.55
				2	1200	36.0	25.2		
	MV16C	21	FC/MC/PC43C	1	775	25.7	18.1	18.00	14.00
				2	1200	36.2	25.3		
CZH03611(C)	MV12D	24	FC/MC/PC48D	1	735	25.6	18.0	18.40	13.95
				2	1135	36.0	25.2		
	MV16C	21	FC/MC/PC48C	1	775	25.9	18.2	18.40	14.15
				2	1200	36.4	25.4		
	MV12D	24	FC/MC62D	1	735	25.7	18.1	18.50	14.25
				2	1135	36.6	25.6		
	MV16C	21	FC/MC/PC48C	1	1000	34.0	25.1	17.30	12.45
				2	1600	46.0	35.1		
	MV16C	21	FC/MC/PC48D	1	1000	34.0	25.1	17.30	12.45
CZH04811(C)				2	1600	46.0	35.1		
	MV20D	24	FC/MC/PC48D	1	1020	34.0	25.1	17.00	12.35
				2	1600	46.0	35.1		
	MV20D	24	FC/MC62D	1	1075	33.8	25.0	17.00	12.45
				2	1625	46.5	35.8		
	MV20D	24	FC/MC/PC60D	1	1030	40.2	27.3	15.30	11.55
CZH06011(C)				2	1800	55.5	40.5		
	MV20D	24	FC/MC62D	1	1030	42.1	28.6	16.00	12.00
				2	1800	58.0	42.3		
1 PH 18 SEER AC WITH AV / SV / F*FV									
CZH02411(C)	AV*24	17	–	1	540	17.4	12.2	16.50	13.25
				2	800	23.8	16.7		
	AV*36	21	–	1	505	17.6	12.2	17.00	13.75
				2	725	24.0	16.5		
CZH03611(C)	AV*36	21	–	1	765	24.8	17.1	18.00	13.50
				2	1190	36.0	25.3		
	AV/SV*48	24	–	1	815	25.2	17.6	18.00	13.50
				2	1220	36.2	25.5		
CZH04811(C)	AV/SV*48	24	–	1	1055	33.1	24.4	16.00	11.75
				2	1625	45.0	34.0		
	AV/SV*60	24	–	1	995	32.6	23.7	16.00	11.75
				2	1560	45.0	33.6		
	F4FV060	24	–	1	1200	33.6	24.8	16.85	12.15
				2	1600	44.5	34.0		
CZH06011(C)	AV/SV*60	24	–	1	1095	41.5	27.2	15.00	11.50
				2	1730	56.5	38.7		
	F4FV060	24	–	1	1200	41.8	28.4	15.55	11.60
				2	1780	55.5	40.5		

For Notes See Page 5.

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in

Case No(s). 17-0700-EL-EEC

Summary: Application Jeru Real Estate LLC and Ohio Power Company for approval of a special arrangement agreement with a mercantile customer electronically filed by Mr. Ryan F. M. Aguiar on behalf of Ohio Power Company