



Maintenance and Operations

RFP # 2023-05 HVAC UNITS REQUEST FOR PROPOSAL

Proposal Due Date

Monday, June 12, 2023, at 12:00 P.M.

REQUEST FOR INFORMATION

Last Day for Questions

Tuesday, May 31, 2023, at 2:00 P.M.

SUBMIT BIDS TO:

Lodi Unified School District
Maintenance and Operations
880 N. Guild Ave.
Lodi, California 95240

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Notice To Bidders

NOTICE IS HEREBY GIVEN that Lodi Unified School District of San Joaquin County, California, acting by and through its Governing Board, hereinafter referred to as the District, will receive up to, but no later than **Monday, June 12, 2023 at 12:00 P.M.** proposals for the award of a contract for:

RFP # 2023-05

PARTS ONLY

District Modular Buildings Heating Ventilation Air Conditioning (HVAC) Units

Proposals will be received on or before the time and date stated above at the offices of:

Lodi Unified School District
Maintenance and Operations Department
880 N. Guild Avenue
Lodi, California 95240

Proposals not received in the Department by the specified date and time will be returned unopened. Facsimile (FAX) and/or electronic copies of the proposal will not be accepted. Contracts will be awarded at a later date based on the most responsive, responsible bidder/vendor.

Each proposal must conform and be responsive to all pertinent Bidding and Contract Documents. Copies may be obtained from <https://www.lodiUSD.net/district/departments/business-services/maintenance-and-operations> or the Maintenance and Operations office.

The contract will be awarded to the most responsive, responsible bidder/vendor based on the criteria noted in the proposal. The District reserves the right to reject any or all proposals, and to waive any errors or corrections in a proposal or in the proposal process. The contract will be awarded based on a review and analysis of the proposals that determines which proposal best meets the needs of the District. Following the review and analysis of all responsive proposals, the District will make a recommendation to their Board of Education at its regularly scheduled meeting.

All questions regarding this RFP must be submitted by Wednesday, May 31, 2023, at 2:00 P.M. Send all questions to Joe Patty, Mechanical Supervisor at jpatty@lodiUSD.net reference **RFP #2023-05** in subject. No questions will be answered after the above listed date and time: telephone and fax questions will not be answered. Responses to all questions will be posted at <https://www.lodiUSD.net/district/departments/business-services/maintenance-and-operations> by end of business Monday, June 5, 2023.

Advertising dates: May 19, 2023 and May 26, 2023

BASIC INFORMATION ABOUT LODI UNIFIED SCHOOL DISTRICT

The District encompasses 350 square miles and serves the cities of Lodi, North Stockton, and the communities of Acampo, Clements, Lockeford, Victor, and Woodbridge in the Central Valley of Northern California. Student enrollment is 29,800, and there are 49 school sites, including, 33 elementary, 7 middle, 4 comprehensive high schools, and 2 continuation high schools.

SCOPE OF WORK

The Lodi Unified School District (District) is requesting a Request for Proposal (RFP) for Heating, Ventilation Air Conditioning (HVAC) Units. The fulfillment of orders with quantities requested, as well as time and manner of delivery are essential factors in proper performance. The District is seeking only one vendor. This is a fixed price request for proposal.

PARTS ONLY

PROVIDE 96 EA 4 TONN VERTICAL WALL MOUNTED 208VOLT SINGLE PHASE HVAC HEAT PUMP UNITS

**-TO BE BARD, EUBANKS OR EQUAL UNIT --SEE EUBANKS PART #
EAA104HA050D++Z=1C5+B32+++
OR BARD PART# W48H#A04DPXXE
AS REFERENCE**

PROVIDE 48 EA 4 TONN VERTICAL WALL MOUNTED 208VOLT THREE PHASE HVAC HEAT PUMP UNITS

**- TO BE BARD, EUBANKS OR EQUAL UNIT --SEE EUBANKS PART#
EAA104HC060++Z+1CE+B32+++
OR BARD PART # W48H#B09DP4XXE
AS REFERENCE**

PROVIDE 9 EA 5 TONN VERTICAL WALL MOUNTED 208 VOLT SINGLE PHASE HVAC HEAT PUMP UNITS

- TO BE BARD, EUBANKS OR EQUAL UNIT—SEE BARD PART# W60HC-A05DP4XXE AS REFERENCE

FOR A TOTAL OF 153 UNITS

ALL UNITS WILL BE INSTALL WITH ECONOMIZERS AND HAVE THE CAPACITY OF HAVING A MERV 13 FILTER INSTALLED, COLOR WILL BE GREY

ALL UNITS WILL BE COMPATABLE WITH THE PELICAN SYSTEM

Product to be delivered by January 31, 2024 and provide a two (2) year parts warranty.

Partial proposals or proposals listing items as special order will not be accepted; such proposals will be considered as non-responsive.

The District reserves the right to accept or reject any or all proposals or any combination thereof and to waive any informality in the proposal process.

Copies of the RFP documents may be obtained at <https://www.lodiusd.net/district/departments/business-services/maintenance-and-operations>. Refer any questions to: Joe Patty, Mechanical Supervisor, subject line RFP 2023-05 HVAC Units Parts Only, e-mail: jpatty@lodiusd.net. Responses to all questions will be posted at <https://www.lodiusd.net/district/departments/business-services/maintenance-and-operations> by end of business Monday, June 5, 2023.

Please fill out Bidder Information Sheet and email to jpatty@lodiusd.net to ensure receipt of addenda to this proposal.

INSTRUCTIONS TO BIDDERS

If you are participating in this Request for Proposal (RFP), please respond to Bidder Information Sheet (Attachment C) so that you may be added to the bidder's list to receive addenda to this proposal.

No Request for Proposal (RFP) shall receive consideration by Lodi Unified School District unless made in accordance with the following instructions:

1. Preparation of Request for Proposal (RFP)

Lodi Unified School District (LUSD) is seeking a Request for Proposal (RFP) on the form attached to be submitted at such time and place as is stated in the Notice to Bidders. All blanks in the proposal form must be appropriately filled in, and all prices must be stated in figures. All prices and quotations must be in ink or typewritten. No pencil figures or erasures permitted. Mistakes may be crossed out and corrections inserted adjacent thereto and must be initialed in ink by person signing quotation. No oral, telegraphic or telephone quotations or modifications will be accepted.

Request for Proposal (RFP) must be submitted to Maintenance and Operations Department in a sealed envelope with bidder's name & address, RFP number and name of RFP listed on the outside of the sealed envelope no later than the time and date specified. If not presented in person, the above envelope with all the above information must be sent in a separate envelope, sealed, within. Any RFP received after the due date and time will be returned to the bidder unopened. LUSD will not be responsible for failure of service on the part of the U.S. Postal Service, courier companies, or any other form of delivery service chosen by the vendor.

Proposals must be addressed to: Lodi Unified School District – Maintenance and Operations Department, Attention: Joe Patty, Structural Supervisor, 880 N. Guild Avenue, Lodi, CA 95240. Include RFP number on outside mail packaging.

Proposals not submitted in the format as instructed by this proposal may not be accepted. Addendums to this proposal, once filed, may be submitted in a sealed envelope only, and properly identified, prior to the due date and time.

2. Signature

Signature on Request for Proposal (RFP) must be in ink to be considered acceptable. All Request for Proposals (RFP) must be signed only by an authorized contracting authority of the bidding entity. A signature is required in all designated places.

3. Bidders Responsibility

Before submitting a proposal, bidders shall carefully examine, and become familiar with the terms and requirements of the contract and proposal documents. Bidders shall fully inform themselves as to all existing conditions affecting the performance of the contract and the cost of all work, materials, and equipment to perform all operations required within this request for proposal. Bidders shall insure that unit cost are reflected in the bid. No allowance will be made because of lack of such examination or knowledge on the part of the bidder.

4. Requests for Information

Any questions relative to this Request for Proposal (RFP) should be directed to Joe Patty, Structural Supervisor, jpatty@lodiUSD.net. Responses to all questions will be posted at <https://www.lodiUSD.net/district/departments/business-services/maintenance-and-operations>.

4. Identification of the Bidder

Each proposal must give the full business address of the bidder and must be signed by the bidder with his or her usual signature. Bids by partnerships must furnish the full names of all partners and must be signed in the partnership name by a general partner with authority to bind the partnership in such matters. Proposals by corporations must be signed with the legal name of the corporation, followed by the signature and designation of the president, secretary, or other person authorized to bind the corporation in this matter. The name of each person signing shall also be typed or printed below the signature. When requested by the District, satisfactory evidence of the authority of the officer signing on behalf of the corporation shall be furnished. A bidder's failure to properly sign required forms may result in rejection of the bid.

6. Withdrawal of, Request for Proposal (RFP)

Proposals may be withdrawn by written request, at any time before the due date. Request for Proposal cannot be corrected once submitted.

7. Acceptance or Rejection of, Request for Proposal (RFP)

Lodi Unified School District reserves the right to reject any and all proposals or any portion or combination thereof, to contract work with whomever and in whatever manner the District decides, to abandon the work entirely, and to waive any informality or non-substantive irregularity as the interests of the District may require. Proposals that arrive after the due date and time will be returned to the bidder unopened.

8. Evaluation, Award of Contract and Notification

The contract will be evaluated and awarded to the most responsive and responsible bidder(s) using the Best Value Point System. Proposals will be evaluated on; competency, experience, service reliability, references, compliance with all aspects of the specifications and price. The District reserves the right, in its absolute discretion, to accept proposals, or any part of any proposal, and to make an award of contract(s) in the best interest of the District. Notification of award will be made by Notice of Award letter accompanied by signed contract, following Board approval of award of contract.

9. Evidence of Responsibility

Upon the request of the District, a bidder shall submit promptly to the District satisfactory evidence showing the bidder's financial resources, the bidder's experience in the type of work being required by the District, the bidder's organization available for the performance of the contract and any other required evidence of the bidder's qualifications, competency, and responsibility to perform the proposed contract. The District may consider such evidence before making its decision awarding the proposed contract. Failure to submit evidence of a bidder's responsibility to perform the proposed contract may result in rejection of the proposal. The District reserves the right to reject the proposal of any vendor who has previously failed to perform properly or to complete on time contracts of a nature similar to this project.

10. Pre-Award Conference

The apparent most responsive and responsible bidder may be required to attend a pre-award conference with District representatives, within five (5) calendar days of District request.

The purpose of the pre-award conference will be to discuss and evaluate the bidder's experience in the performance of a contract of similar scope, to discuss the invoicing and credit requirements, and to assure District representatives that the bidder possesses an understanding of the scope of the contract, including the service, insurance and delivery requirements of the District. The decision of the District's representatives as to the ability of the bidder to successfully service this contract in accordance with the requirements shall be final.

11. Prices and Notations

All freight charges must be included in the bid price. All pricing must include on-site off loading and inside delivery.

The agreement shall be effective upon award and purchases will be put into effect by means of purchase orders or suitable contract documents executed by the District. All purchase orders placed under this agreement shall be delivered and invoiced at the agreement price.

12. Quantities

The quantities indicated on the Line Item Specification Sheet are the District's best estimate, as determined from previous annual totals and projected usages, and do not obligate the District to purchase the indicated quantities. The actual quantities required may be more or less than indicated herein.

13. Specifications and Acceptable Brands

The use of the name of a manufacturer or any special brand or make in the specifications is not intended to restrict bidders. The specification establishes the character or quality of the article desired, but the goods on which proposals are submitted must, in all cases, be equal in every particular way to the item specified, and must clearly state the brand and product number. Such substitution shall be accepted only if determined by the District to be equal or superior in all respects to that specified. If the brand offered as "equal" is not acceptable by the District as "equal" to the brand and product specified, vendor must furnish one of the specified brands at the same price quoted in the original proposal submitted.

Any bidder offering a brand other than those specified shall furnish specification sheets, product information and other pertinent literature with their proposal.

GENERAL CONDITIONS

1. Agreement Period

Product to be delivered by January 31, 2024 and provide a two (2) year parts warranty.

2. Assignment of Contract

The successful bidder shall agree not to assign, transfer, convey, sublet, or otherwise dispose of the obligation to perform the contract or any rights accruing thereunder or any power to execute the same without prior consent in writing from LUSD. Notice is hereby given that LUSD will not honor any assignment made by the bidder unless consent in writing, as indicated above, has been given.

3. Ability to Supply

Quote prices only if merchandise can be obtained and delivered at specified time. Item bid shall be considered binding. LUSD shall have the option to collect a default penalty of (a) ten percent (10%) of the bid price value of the defaulted items ordered but not delivered as specified, or (b) the difference between the bid price value and the cost of identical items obtained by quotation through another vendor. Strikes, Acts of God, and similar causes not under control of the bidder will be considered exempt from this default provision. This is intended only as a last recourse and not as deterrent to bidders. Bidders should confirm their inventories and suppliers before bidding.

4. Force Majeure

Neither Party will be liable for any failure or delay in performing an obligation under this Agreement that is due to any of the following causes (which causes are hereinafter referred to as “Force Majeure”), to the extent beyond its reasonable control: acts of God, accident, riots, war, terrorist act, epidemic, pandemic, quarantine, civil commotion, breakdown of communication facilities, natural catastrophes, governmental acts or omissions, changes in laws or regulations, national strikes, fire, explosion, or generalized lack of availability of raw materials or energy.

For the avoidance of doubt, Force Majeure shall not include (a) financial distress nor the inability of either party to make a profit or avoid a financial loss, (b) changes in the market prices or conditions, or (c) a party's financial inability to perform its obligations hereunder.

5. Emergency Procurement

Lodi Unified School District reserves the right to source elsewhere if awarded bidder cannot hold to the current contract language, including but not limited to pricing.

6. Pricing

Product to be delivered by January 31, 2024 and provide a two (2) year parts warranty. Any pricing adjustment for commercial items must be based on the verified cost of goods from the manufacturer. In the event of a price adjustment, a written 30 day notice and a formal letter from the manufacturer to the distributor or a third-party market report must be attached.

7. Invoices

Invoices shall contain the following information: purchase order number, delivery location, item number, item description, quantity, unit price, extended totals, Value Pass Through, other applicable discounts for items delivered and point of origin as requested. Failure to enter the above information on the invoice may cause a delay in payment. Payment shall be made on partial deliveries accepted by LUSD. Terms are net 60. All invoices and

monthly statements must be sent to facilitypayables@lodiUSD.net. A legible delivery discrepancy receipt shall be left at the site in the case of damaged, returned, or shorted items. Credits shall be issued within 30 days.

8. Orders

Orders shall be placed as product is needed. All orders shall be delivered direct to LUSD Maintenance and Operations Department, as listed on the Delivery Site Location Sheet, as mutually agreed upon within time parameters.

9. Inspection and Acceptance

Inspection and acceptance of all items shall be at destination. Items found to be defective or not in accordance with the bid specifications shall be replaced by the vendor at no cost to LUSD. Failures to replace items not meeting the bid specifications and/or defective items shall be considered sufficient cause for default action under the DEFAULT provision of the Agreement.

10. Delivery

The Lodi Unified School District (LUSD) shall have the power and authority to reject any and all materials furnished which, in its opinion, are not in strict compliance and conformity with the requirements of the specification or equal in every respect to the proposal or to the sample submitted by the vendor. All articles so rejected shall be promptly removed from the premises at the vendor's expense. No brand substitutions will be accepted without prior approval from the District.

The time and manner of delivery are essential factors in proper performance under the contract. All items shall be securely and properly packed and clearly marked as to contents. All shipments shall be accompanied by a packing slip which bears the relevant District purchase order number.

11. Product Substitution and Discontinued Items

The District will not allow substitutions in quality or quantity without prior approval from Maintenance and Operations Department in order to qualify for payment. In the event the vendor is unable to deliver an item as specified in this contract, notification of shortage must be made orally, by facsimile or by electronic mail at least 24 hours prior to scheduled delivery.

In the event an item awarded under this contract is discontinued, vendor is required to notify the Maintenance and Operations Department immediately. Contract items that are discontinued by their manufacturer during the term of the contract may be substituted with a same or similar item only if it equals or exceeds the specifications of the original item. Written documentation from the manufacturer of product discontinuation shall be submitted directly to the Department. The vendor may not discontinue any items from inventory which are not discontinued by their manufacturer, without providing advance written notification and receiving District approval for discontinuation.

12. Warranty

The Vendor agrees that all items furnished under this Agreement shall be covered by a two (2) year Warranty.

13. Insurance Requirements

The successful bidder(s) shall maintain insurance adequate to protect them from claims under Workers' Compensation Laws and from claims for damages for personal injury, including death and damage to property, which may arise from bidder's operations under the contract. Also, the bidder must file proof of such insurance, naming Lodi Unified School District as an additional insured by separate endorsement as follows: The bidder is

required to provide proof of insurance to LUSD of a comprehensive general liability insurance policy providing \$1,000,000 per occurrence and \$3,000,000 aggregate coverage to be in effect during the term of the contract. Failure to furnish such evidence and insurance may be considered default by the bidder(s).

14. Indemnification and Hold Harmless

The vendor agrees to hold harmless, defend and to indemnify the District from every claim or demand which may be made by reason of:

Any injury to person or property sustained by the vendor or by any person, firm, or corporation, employed directly or indirectly by them upon or in connection with the work, however caused; and

Any injury to person or property sustained by any person, firm, or corporation, caused by any act, neglect, default, or omission of the vendor or any other person, firm or corporation directly, or indirectly employed by them upon or in connection with the work, whether the said injury or damage occurs upon or adjacent to the work; the vendor at their own cost, expense and risk, shall defend any and all actions, suits, or other legal proceedings, that may be brought or instituted against the District on any such claim or demand, and pay or satisfy the judgment that may be rendered against the District in any such action, suit or legal proceedings or result thereof.

Vendor shall defend, indemnify, protect, and hold harmless Lodi Unified School District and its agents, officers and employees from and against any and all claims asserted or liability established for damages or injuries to any person or property which arise from or are connected with or are caused or claimed to be caused by vendor's failure to comply with all of the requirements contained in Education Code section 45125.1, including, but not limited to, the requirement prohibiting vendor from using employees who may have contact with pupils who have been convicted or have charges pending for a felony as defined in Education Code section 45122.1.

15. Prevailing Law

In the event of any conflict or ambiguity between a) the Instructions to Bidders, General Conditions, Specifications, Agreement, or any other document forming a part of this request for proposal, and b) state or federal law or regulations, the latter shall prevail. Additionally, all items and equipment to be supplied or services to be performed under the bid and contract shall conform to all applicable requirements of local, state and federal law.

16. Right to Cancel or Default

The District may cancel the contract at any time if the vendor refuses or fails to perform all or any part of its obligations under the contract or the bid documents. The District shall provide the vendor with thirty-calendar day's written notice of such cancellation. Should the District exercise its right to cancel, such cancellation shall become effective on the date as specified in the notice to cancel and the District may purchase said goods, supplies and/or services elsewhere.

17. Governing Law

This contract shall be construed in and governed under and by the laws of the State of California. All proposals submitted by any bidder/vendor will become the permanent property of the District and retained as required, and are subject to being publicly disclosed under California regulations.

18. Disclosure

Vendor shall note any and all relationships that might be a conflict of interest and include such information with the proposal.

19. Protest Procedures

All protests shall be in writing and be delivered to the Lodi Unified School District, 1305 E. Vine Street, Lodi, CA 95240, attention Leonard Kahn, Chief Business Officer. A protest of an award shall be filed within ten days of Award Notification Letter date.

Only a bidder who has actually submitted a bid, and who could be awarded the contract if the bid protest is upheld, is eligible to submit a protest.

A protest shall include:

- _ The name, address, and telephone number of the protestor;
- _ The signature of the protestor or an authorized representative of the protestor;
- _ Identification of the proposal and the RFP#;
- _ A detailed statement of the legal and factual grounds of the protest including copies of relevant documents;
- _ The form of relief requested

Protest procedures can be located under the Board of Education tab on the Lodi Unified School District website at www.lodiUSD.net . Reference: Series 3000 - Business and Non-Instructional Operations, Board Policy & Rule #3311.

20. Code of Conduct

The rules and responsibilities of, or proper practices for the officers, employees, or agents engaged in the selection, awards and administration of contracts can be located under the Board of Education tab on the Lodi Unified School District website at www.lodiUSD.net . Reference: Series 3000 - Business and Non-Instructional Operations, Board Policy #3315.

21. Equal Opportunity Employment Act of 1975

The LUSD policy is in firm support of the provisions of the Equal Opportunity Act of 1975. LUSD, therefore, must be assured by the successful Vendor in this bid that is an equal opportunity employer according to the provisions of the Act.

22. Anti-Discrimination

The Governing Board of the Lodi Unified School District has adopted an Affirmative Action Program for equal employment opportunities for all school district purchasing contracts. The Contractor shall familiarize themselves with these requirements and is to consider them as a binding part of the contract.

23. Clean Air/Clean Water Statement

Compliance with all applicable standards, orders, or requirements issued under section 306 of the Clean Air Act (42 U.S.C. 15857(h) Clean Air and Water Certification. Bidder certifies that none of the facilities it uses to produce goods provided under the contract are on the Environmental Protection Authority (EPA) List of Violating Facilities. Bidder will immediately notify the District of the receipt of any communication indicating that any of the Bidder's facilities are under consideration to be listed on the EPA List of Violating Facilities.

24. Required Forms and Certifications

The following forms must be completed, signed and returned with the Request for Proposal.

- Bidder's Checklist
- Bidders Information Sheet
- Distributor Statement
- Non-Collusion Affidavit: Per Public Contract Code 7106
- Iran Contracting Act Certification: Per Public Contract Code 2200-2207– A Certification and Disclosure must be completed for all contracts \$1,000,000 and over.
- Authorized Vendor Signature
- Addendum Acknowledgement
- RFP Line Item Proposal Worksheet

BEST VALUE POINT SYSTEM

Evaluation will use information provided in the required documents returned with the RFP.

Bidders will be ranked based on the following criteria. 100 points possible

Evaluation Criteria

- 5 points Quality of product and samples
- 5 points Quality of service
- 5 points References
- 5 points Reliability and responsibility
- 5 points On time delivery
- 10points Fulfillment of orders
- 5 points Responsive to required return documents Past performance
- 5 points Lead times for orders
- 5 points Minimum for delivery
- 30 points Price

Bidder's Checklist

RFP# 2023-05 HVAC UNITS REQUEST FOR PROPOSAL

Bidder _____

The following documents must be signed and included in bidder's sealed bid package, and submitted no later than 2:00 pm on June 12, 2023 to the Maintenance and Operations Department, at Lodi Unified School District, Maintenance and Operations Department, 880 North Guild Avenue, Lodi, California 95240.

Check below to indicate that the documents are included in your bid package

Required Documents

- ☐ Bidder's Checklist
- ☐ Bidder Information Sheet
- ☐ Distributor Statement
- ☐ Iran Contracting Act Certification
- ☐ Authorized Vendor Signature
- ☐ Addendum Acknowledgement, if applicable
- ☐ RFP Line Item Cost Worksheet

I verify that the documents listed above are included in the RFP packet

Authorized Signature

Date

Submit this Bidder's Checklist with your RFP documents.

Failure to submit this required checklist and documents may deem your RFP as non-responsive.



Bidder Information Sheet

Lodi Unified School District Bids/Proposals are available on-line. If you have downloaded or received an invitation to submit via e-mail a Bid/Proposal, you are required to e-mail the following information to jpatty@lodiUSD.net so that you may be added to the bidders list to receive addenda to this proposal.

Attention: Mechanical Supervisor at Maintenance and Operations

E-mail: jpatty@lodiUSD.net

Re:

LUSD RFP# _____

Name: _____

Title: _____

Organization: _____

Street Address: _____

City: _____

State/Zip Code: _____

Work Phone: _____

Fax: _____

E-mail: _____

DISTRIBUTOR STATEMENT

DISTRIBUTOR INFORMATION

1. What is your lead time required for an order?
2. Please state your minimum delivery amounts (case quantity, weight, etc.)
3. Please explain your ordering procedures.
4. What is your procedure for notifying customers of shortages?
5. Has your firm backed out of a distribution contract to a school district(s) within the last 2 years?
If so, please explain.
6. Has your firm defaulted or been replaced within the last 2 years? If so, please explain.
7. How many years has your company been in the HVAC parts business? How would you describe your company's financial stability?

By signing this, I certify that I am an authorized representative of the vendor (or individual) and that information contained in this proposal is accurate, true, and binding upon the vendor.	
Company Name	
Signature of Company Official	
Name of Signer	
Title of Signer	
Date	

DISTRIBUTOR STATEMENT

REFERENCES

Please submit three (3) references from current large customer orders.

Reference #1

School District/Customer	
Contact Person & Title	
Telephone Number	
Email address	

Reference #2

School District/Customer	
Contact Person & Title	
Telephone Number	
Email address	

Reference #3

School District/Customer	
Contact Person & Title	
Telephone Number	
Email address	

Must be submitted with RFP

NON-COLLUSION DECLARATION

TO BE EXECUTED BY AND SUBMITTED WITH BID

I, _____, declare that I am the party making the foregoing proposal, that the proposal is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the proposal is genuine and not collusive or sham; that the proponent has not directly or indirectly induced or solicited any other proponent to put in a false or sham proposal and has not directly or indirectly colluded, conspired, connived, or agreed with any proponent or anyone else to put in a sham proposal, or that anyone shall refrain from responding; that the proponent has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix any overhead, profit, or cost element of the proposal price, or of that of any other proponent, or to secure any advantage against the public body awarding the Contract of anyone interested in proposed Contract; that all statements contained in the proposal are true, and, further, that the proponent has not, directly or indirectly, submitted his or her proposal price of any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Date

Name of Vendor

Printed Name of Authorized Company Representative

Signature of Authorized Company Representative

This form must be submitted with RFP

IRAN CONTRACTING ACT CERTIFICATION

(Public Contract Code sections 2202-2208)

MUST BE SUBMITTED WITH BID PROPOSAL IF BID AMOUNT IS \$1,000,000 OR MORE

Prior to bidding on, submitting a proposal, or executing a contract or renewal for a public entity contract for goods or services of \$1,000,000 or more, a vendor must either: a) certify it is **not** on the current list of persons engaged in investment activities in Iran created by the California Department of General Services ("DGS") pursuant to Public Contract Code section 2203(b) and is not a financial institution extending \$20,000,000 or more in credit to another person, for 45 days or more, if that other person will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS; or b) demonstrate it has been exempted from the certification requirement for that solicitation or contract pursuant to Public Contract Code section 2203(c) or (d).

To comply with this requirement, please insert your vendor or financial institution name and Federal ID Number (if available) and complete **one** of the options below. Please note: California law establishes penalties for providing false certifications, including civil penalties equal to the greater of \$250,000 or twice the amount of the contract for which the false certification was made, contract termination, and three-year ineligibility to bid on contracts. (Pub. Cont. Code § 2205.)

OPTION #1 - CERTIFICATION

I, the official named below, certify I am duly authorized to execute this certification on behalf of the vendor/financial institution identified below, and the vendor/financial institution identified below is **not** on the current list of persons engaged in investment activities in Iran created by DGS and is not a financial institution extending twenty million dollars (\$20,000,000) or more in credit to another person/vendor, for 45 days or more, if that other person/vendor will use the credit to provide goods or services in the energy sector in Iran and is identified on the current list of persons engaged in investment activities in Iran created by DGS.

I certify (or declare) under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

<i>Vendor Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

OPTION #2 – EXEMPTION

Pursuant to Public Contract Code sections 2203(c) and (d), a public entity may permit a vendor/financial institution engaged in investment activities in Iran, on a case-by-case basis, to be eligible for, or to bid on, submit a proposal for, or enters into or renews, a contract for goods and services.

If you have obtained an exemption from the certification requirement under the Iran Contracting Act, please fill out the information below, and attach documentation demonstrating the exemption approval.

<i>Vendor Name/Financial Institution (Printed)</i>	<i>Federal ID Number (or n/a)</i>
<i>By (Authorized Signature)</i>	
<i>Printed Name and Title of Person Signing</i>	<i>Date Executed</i>

Authorized Vendor Signature

Prime Point of Contact

Proposal Submitted by:

The undersigned declares under penalty of perjury under the laws of the State of California that the presentations made in this bid are true and correct.

Name: _____

Address: _____

Title: _____

City, State, Zip: _____

Company: _____

Phone Number: _____

Federal Tax ID Number: _____

Fax Number: _____

Email: _____

Signature

Date

This form must be submitted with RFP

Addendum Acknowledgement

Addenda – This bid is submitted with respect to the changes to the contract included in addendum number/s _____ (fill in number/s if addenda have been received.)

Addendum No. _____

Dated _____

Addendum No. _____

Dated _____

Addendum No. _____

Dated _____

Addendum No. _____

Dated _____

Addendum No. _____

Dated _____

Warning: If an addendum or addenda have been issued by the administering agency and not noted above as being received by the bidder, this bid may be rejected.

Company Name

Authorized Signature/Date

This form must be submitted with RFP

All Units will be installed with Economizers and have the Capacity of Having a MERV 13 Filter Installed, Color Will be Grey						
All Units will be Compatable with the Pelican System - Parts Only						
Line Item	# of Units	Ton	Size	Brand	Description	Delivered Cost
District Modular Buildings HVAC Units						
1	96	4	208 Volt Single Phase		Vertical Wall Mounted Single Phase HVAC Heat Pump Unis	
2	48	4	208 Volt Three Phase		Vertical Wall Mounted Three Phase HVAC Heat Pump Unis	
3	9	5	208 Volt Single Phase		Vertical Wall Mounted Single Phase HVAC Heat Pump Unis	
TOTAL	153					



11EER W18H-W60H Series WALL-MOUNT™

The Bard Wall-Mount Heat Pump is an energy efficient self contained system, which is designed to offer maximum indoor comfort at a minimal cost without using valuable indoor floor space or outside ground space. This unit is the ideal product for versatile applications such as: new construction, modular offices, school modernization, telecommunication structures, portable structures, correctional facilities and many more. Factory or field installed accessories are available to meet specific job requirements for your unique application.

- Complies with efficiency requirements of ANSI/ASHRAE/IES 90.1-2019.
- Certified to AHRI Standard 390-2021 for SPVU (Single Package Vertical Units).
- Intertek ETL Listed to Standard for Safety Heating and Cooling Equipment ANSI/UL 1995/CSA 22.2 No. 236-05 Fourth Edition.
- Commercial Product - Not intended for residential applications.
- Bard is an ISO 9001:2015 Certified Manufacturer.
- The AHRI Certified® mark indicates Bard Manufacturing Company participation in the AHRI Certification program. For verification of individual certified products, go to www.ahridirectory.org.



BARDHVAC.COM

FORM NO. S3584-0922



Climate Control Solutions

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Wall-Mount Nomenclature

Digit #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	W	6	0	H	C	-	A	O	Z	X	P	X	X	X	X

UNIT SERIES

Wall-Mount

NOMINAL CAPACITY

18 - 1.5 Ton
24 - 2.0 Ton
30 - 2.5 Ton
36 - 3.0 Ton
42 - 3.5 Ton
48 - 4.0 Ton
60 - 5.0 Ton

UNIT TYPE

H - Heat Pump

REVISION

B - Revision W18-W36
C - Revision W42-W60

PLACEHOLDER

- - Standard Unit
D - Hot Gas Reheat Dehumidification
L - Low Ampacity with Dehumidification

VOLTAGE

A - 230 Volt 1 Phase 60 Hz
B - 230 Volt 3 Phase 60 Hz
C - 460 Volt 3 Phase 60 Hz

ELECTRIC HEAT

00 - 0Kw with Lug Connection
0Z - 0Kw with Circuit Breaker
05 to 20 - Kw Heat with Circuit Breaker
See *Electrical Specs* for further details

Nomenclature Notes:

- W18, W24, W30 and W36 models are available with the unit control panel located on the right unit side. W42, W48, W60 models have the unit control panel located in the front of the unit.
- Hot Gas Reheat Dehumidification is available for W24, W30, W36, W42, W48, and W60 models.
- Accessories and control options may not be available for all models. See factory installed controls options section for further details.
- All units have an external data tag with the model and serial number on the left side of the unit. A secondary data tag with the model and serial number is located inside the control panel area on or near the low voltage terminal box.
- *L - Low ampacity models inhibit concurrent compressor and electric heat operation which results in a lower ampacity requirement. Not recommended for normal use due to lower heating btu capability and no electric heat usage during defrost mode. Feature available with dehumidification models only. Additional order processing time may apply.

ACCESSORIES AND CONTROLS OPTIONS

X - Standard controls (HPS,LPS,CCM)
E - Low Ambient Control (LAC)
Q - Standard controls and Outdoor Thermostat (ODT)
R - Standard controls, LAC, and Outdoor Thermostat (ODT)
S - Standard controls and PTCR Hard Start Kit.
T - Standard controls, LAC, ODT, and PTCR Hard Start Kit.
J - LAC and Alarm Relay (ALR)
F - LAC and Alarm Relay (ALR), Filter Switch (FS) (W42 thru W60 only).

COIL & UNIT COATING OPTIONS

X - Standard Copper/Aluminum coils.
1 - Coated Evaporator coil.
2 - Coated Condenser coil.
3 - Coated Evaporator and Condenser coils.
4 - Coated coils and unit condenser section coating.
5 - Coated coils and inside/outside of unit coating.

SUPPLY OUTLET

X - Standard

COLOR AND CABINET FINISH

X - Standard Beige baked enamel finish
1 - White baked enamel finish
4 - Buckeye Gray baked enamel finish
5 - Desert Brown baked enamel finish
8 - Dark Bronze baked enamel finish
S - Stainless Steel
A - Aluminum

FILTER

X - Standard 1" MERV2 Disposable Filter
W - 1" MERV2 Washable Filter
P - 2" MERV8 Disposable Filter
M - 2" MERV11 Disposable Filter
N - 2" MERV13 Disposable Filter
A - 2" MERV13 Filter with UVC-LED Light.

VENT PACKAGE

X - Standard Fresh Air Damper (Intake only)
A - Fresh Air Damper w/Exhaust
B - Block Off Plate
M - Commercial Room Ventilator, ON/OFF
V - Comm. Room Ventilator, Modulating
D - Economizer, 2-10V No Controls
Y - Full Flow Economizer, Temperature
Z - Full Flow Economizer, Enthalpy
R - Energy Recovery Ventilator
S - Partial flow Economizer, Enthalpy no hood (W18-W36 only)



/////// Engineered Features W18 Through W36 Unit Models

NEW! EXCLUSIVE *Non-Fiberglass Foil Faced Insulation: Environmentally friendly high “R” value non-fiberglass insulation that is made with recycled denim and cotton materials used with a FSK foil face that is both durable and cleanable.

Durable Cabinet Construction: Multiple cabinet construction options are available for different outdoor conditions. Optional cabinet coatings may be ordered for extreme outdoor environments. See cabinet finish and coatings section for further details.

Easy Filter Access: A separate filter door is provided for ease of filter access during routine unit maintenance. 1” and 2” filters are available with a rating of up to MERV13. See filter section for further details.

Field or Factory Installed Vents: Multiple ventilation options are available to provide outdoor air for ventilation and/or energy savings. Ventilation options may be factory or field installed. See vent section for further details.

Electric Strip Heat: Reliable, comfortable heater packages feature an automatic limit and thermal cut-off safety control. Heater packages may be factory or field installed. See optional electric heat section for further details.

Built-in Circuit Breakers: Standard on all electric heat versions of single (208/230 volt) and three phase (208/230 volt) equipment. Toggle disconnects are standard on all electric heat versions of three phase (460 volt) equipment.

Reliable, Easy-to-Use Controls: Easily accessible right side control panel location. A lockable hinged access cover to circuit protection is provided. Phase rotation monitor is standard on all 3 phase models. Solid state heat pump operation and defrost control board with diagnostic light is standard on all models. Electrical entrances provided through the back and side areas.

Green Fin Hydrophilic Evaporator Coil: Green fin stock enhances coil wettability to help prevent mold growth, aids with condensate drainage, and provides a limited amount of protection to corrosive particulates in the airstream.

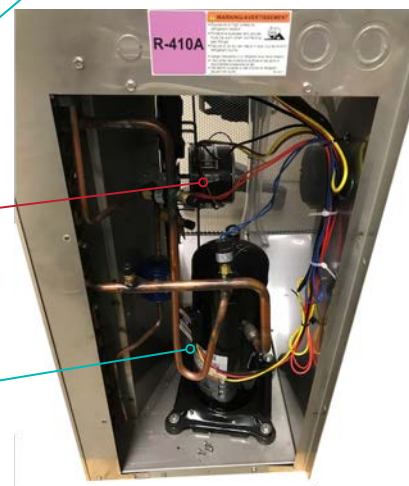
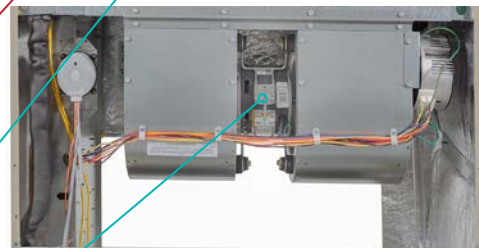
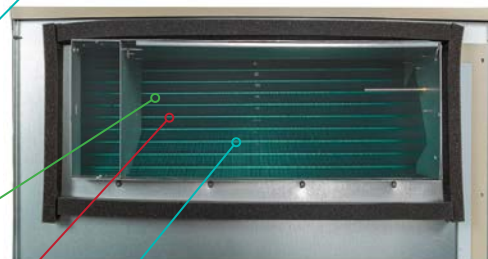
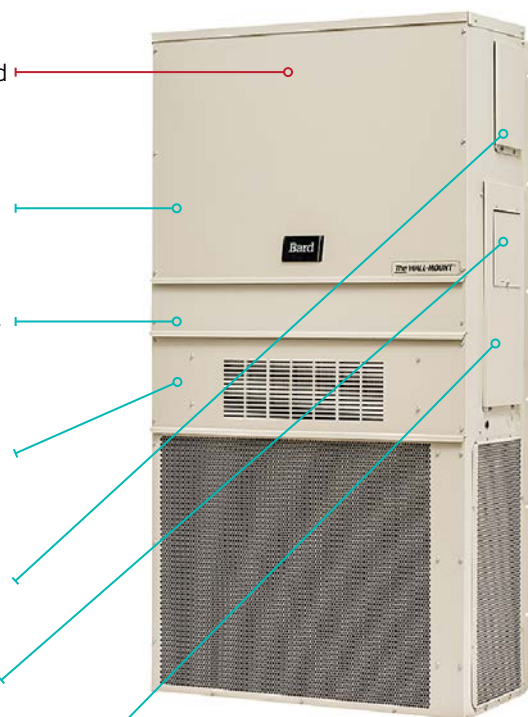
***Balanced Climate™ Technology (patent pending):** High latent capacity humidity & sound reduction removes up to 35% more humidity than any other on the market with the use of a 2 stage thermostat or controlling device. Bard Balanced Climate™ innovation comes standard on all models.

Optional Mechanical Dehumidification: Models are available with hot gas reheat dehumidification for energy efficient humidity removal. Electronic Expansion Valves are standard for all dehumidification models.

ECM Indoor Motor Technology: 5 speed dual shaft motor provides quiet airflow operation when used with a twin blower assembly. Motor overload protection standard on all models.

Enclosed Condenser Motor: An enclosed casing condenser motor with ball bearings is used for reliable operation and extended motor life. Enclosed condenser motors are standard on all units.

High Efficiency Cooling: Scroll compressors for quiet, efficient cooling. Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the Montreal protocol and 2010 EPA requirements. A liquid line filter-drier is used to protect the system from moisture, and is standard on all units.



////// Engineered Features - W42 Through W60 Unit Models

NEW! EXCLUSIVE *Non-Fiberglass Foil Faced Insulation: Environmentally friendly high “R” value non-fiberglass insulation that is made with recycled denim and cotton materials used with a FSK foil face that is both durable and cleanable.

Durable Cabinet Construction: Multiple cabinet construction options are available for different outdoor conditions. Optional cabinet coatings may be ordered for extreme outdoor environments. See cabinet finish and coatings section for further details.

ECM Indoor Motor Technology: 5 speed dual shaft motor provides quiet airflow operation when used with a twin blower assembly. Motor overload protection standard on all models.

Electric Strip Heat: Reliable, comfortable heater packages feature an automatic limit and thermal cut-off safety control. Heater packages may be factory or field installed. See optional electric heat section for further details.

Field or Factory Installed Vents: Multiple ventilation options are available to provide outdoor air for ventilation and/or energy savings. Ventilation options may be factory or field installed. See vent section for further details.

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Easy Filter Access: A separate filter door is provided for ease of filter access during routine unit maintenance. 1” and 2” filters are available with a rating of up to MERV13. See filter section for further details.

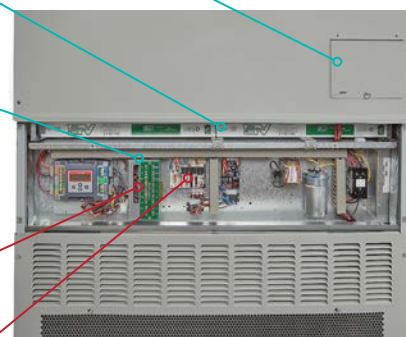
Reliable, Easy-to-Use Controls: Easily accessible through front control panel location. A lockable hinged access cover to circuit protection is provided. Phase rotation monitor is standard on all 3 phase models. Solid state heat pump operation and defrost control board with diagnostic light is standard on all models. Electrical entrances provided through the back and side areas.

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High Efficiency Cooling: Scroll compressors for quiet, efficient cooling. Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the Montreal protocol and 2010 EPA requirements. A liquid line filter-drier is used to protect the system from moisture, and is standard on all units.



///// Unit Modes of Operation

Cooling Operation:

The Bard WH Series products offer single stage compressor cooling operation using R410A refrigerant. Copper tube/Aluminum hydrophilic green fin coils are used to provide high efficiency and easy serviceability. Scroll compressor technology delivers years of quiet, reliable operation. Economizer vent options are available for increased energy efficiency during cooling operation when outdoor conditions are favorable.

Heating Operation:

The Bard WH Series products offer efficient single stage heat pump heating and optional single or two stage heating operation using resistance heaters. Circuit breaker disconnect protection is standard in all units equipped with electric heat.

Mechanical Dehumidification (Hot Gas Reheat) Operation:

Mechanical Dehumidification provides an energy efficient way to remove humidity from the indoor air stream without over cooling or overheating the indoor space. The Bard W30 through W60 Series products offer optional dehumidification operation that removes moisture from air entering the unit. A three-way valve, reheat coil, and electronic expansion valve (EEV) are standard with all models. The dehumidification circuit incorporates an independent heat exchanger coil in the supply air stream. This coil reheats the supply air after it passes over the cooling coil without requiring the electric resistance heater to be used for reheat purposes. This results in very high mechanical dehumidification capability from the air conditioner on demand without using electric resistance reheat (electric heat is available for heating purposes). Airflow during dehumidification is reduced resulting in quiet and comfortable operation.

Ventilation:

The Wall-Mount product provides the perfect platform to not only cool and heat an indoor area, but also provide a means of bringing outdoor air into the building. By including ventilation in the Wall-Mount, expensive costs associated with additional outdoor air systems can be avoided. The Bard WH Series products offer optional ventilation operation that brings outdoor air into the structure, and vents can be factory or field installed. Ventilation can be used to bring in outdoor air for occupants, save energy by using outdoor air for free cooling, or positively pressurize a structure. Exhaust air options allow room air to be vented outdoors when fresh air is being brought into the structure. Energy recovery options are also available for occupied structures to save energy when ventilation is necessary regardless of outdoor temperature.

Filtration and Indoor Air Quality:

Providing the best air filtration solution is important to occupants and equipment inside a room or structure. Bard provides several filter options based on MERV filtration, and also other solutions to improve indoor air quality.

Balanced Climate™ Operation:

Balanced Climate™ is a great feature to remove additional room humidity during cooling operation. All units include this feature as an optional method of having a separate cooling stage that uses a lower indoor blower speed. Remove the Y1/Y2 jumper, and install a two stage cooling thermostat. Once enabled, a first stage of increased humidity removal and lowered cooling capacity will extend unit runtime and increase latent (humidity removal) capacity. Second stage operation will use the standard blower speed. This is a great option where additional humidity reduction is a benefit during normal cooling operation.

Note: Balanced Climate is not recommended for applications where room temperatures will typically be lower than 72°F or duct static will cause airflow to be below rated CFM amounts provided in the Airflow CFM chart in this document. Low Ambient Control use is required for Balanced Climate operation. Hot Gas Reheat is recommended for high humidity environments that require moisture removal without cooling or applications that require a large amount of ventilation air for occupied areas.

Low Outdoor Temperature Cooling Operation:

Equipment cooling often requires indoor areas to remain cool regardless of outdoor temperature. If your application requires operation of the compressor to provide cooling below 65° outdoor conditions, then just like any other HVAC system, a low ambient control (LAC) kit must be installed. The LAC will help maintain higher refrigerant pressure during compressor operation at lower outdoor temperatures. This is achieved by limiting outdoor fan operation based on low side system pressure. As temperatures decrease outdoors, outdoor fan use will continue to decrease. Applications that require cooling functionality from 0°F to -40°F outdoor temperatures must use economizer cooling operation.

Note: The LAC kit also includes a freeze stat installed on the unit indoor evaporator coil. The freeze stat helps monitor the indoor evaporator coil temperature and will cycle compressor operation when temperatures below freezing are indicated. Use of Balanced Climate or applications where indoor airflow will be reduced require the use of the LAC kit to help maintain adequate evaporator coil temperatures.

High Outdoor Temperature Cooling Operation:

The Bard WH Series products are designed and tested to function when used in higher outdoor temperature areas. Wall-Mount products utilize large, efficient condenser coils with high airflow condenser fan systems to save energy and lower high side refrigerant pressures. It is always important to follow all clearance guidelines supplied in the unit dimension section of this specification, and additional information provided in the user manual. Properly cleaning the condenser coil using a regular maintenance schedule along with filter changes will help maintain unit operation during high outdoor ambient temperature use. Always follow maintenance procedures provided in the user manual and installation instructions provided with your Bard product.



Capacity and Efficiency Ratings

MODELS	W18HB	W24HB	W30HB	W36HB	W42HC	W48HC	W60HC
Cooling Capacity in BTUH ①	17,500 BTUH	23,400 BTUH	29,000 BTUH	36,000 BTUH	42,000 BTUH	47,500 BTUH	54,500 BTUH
Unit efficiency in EER	11.3 EER	11.3 EER	11.0 EER	11.1 EER	11.0 EER	11.0 EER	11.0 EER
High Temp Heating	16,800	22,400	26,600	33,000	39,000	42,500	52,500
Coefficient of Performance (COP)	3.5	3.3	3.4	3.3	3.3	3.3	3.3

① Capacity is certified in accordance with ANSI/AHRI Standard 390-2021.

② EER = Energy Efficiency Ratio. EER and COP are certified in accordance with ANSI/ARI Standard 390-2021.

All ratings based on fresh air intake being 100% closed (no outside air introduction).

General Unit Specifications W18 (1-1/2 Ton) Through W48 (4 Ton)

MODELS	W18HB-A	W24HB-A	W24HB-B	W24HB-C	W30HB-A	W30HB-B	W30HB-C	W36HB-A	W36HB-B	W36HB-C
Unit Voltage Rating - Phase - 60Hz	230/208 - 1	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253 V	197-253 V	197-253 V	414-506 V	197-253 V	197-253 V	414-506 V	197-253 V	197-253 V	414-506 V
Compressor Electrical Circuit										
Voltage	230/208 V	230/208 V	230/208 V	460 V	230/208 V	230/208 V	460 V	230/208 V	230/208 V	460 V
Rated Load Amps	6.9/8.0	8.0/9.0	5.7/6.4	3.0	9.6/11.3	6.2/7.2	3.4	12.4/14.1	7.8/8.8	4.9
Branch Circuit Selection Current	9.0	10.9	7.7	3.6	14.2	9.0	4.2	16.7	10.5	5.8
Lock Rotor Amps	56.3/56.3	61.6/61.6	55.4/55.4	28	73/73	58/58	28	79/79	73/73	38
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Outdoor Fan Motor & Condenser Fan										
Outdoor Fan Motor Horsepower - RPM	1/5 - 1090	1/5 - 1090	1/5 - 1090	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075
Outdoor Fan Motor - Amps	1.1 A	1.1 A	1.1 A	0.6 A	1.2 A	1.2 A	0.6 A	1.2 A	1.2 A	0.6 A
Outdoor Fan--Diameter and CFM	18" - 1800	18" - 1800	18" - 1800	18" - 1800	20" - 2400	20" - 2400	20" - 2400	20" - 2200	20" - 2200	20" - 2200
Indoor Blower Motor & Indoor Airflow										
Indoor Blower Motor - HP - Speeds	1/3HP-5 sp	1/3HP-5 sp	1/3HP-5 sp	1/3HP-5 sp	1/2HP-5 sp	1/2HP-5 sp	1/2HP-5 sp	1/2HP-5 sp	1/2HP-5 sp	1/2HP-5 sp
Indoor Blower Motor - Amps	1.0 A	1.7 A	1.7 A	1.2 A	2.3 A	2.3 A	1.1 A	2.5 A	2.5 A	1.2 A
Indoor Motor Type	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM
Rated indoor CFM and static pressure (ESP) with wet coil and Standard filter	600 - .1	800 - .1	800 - .1	800 - .1	950 - .15	950 - .15	950 - .15	1150 - .15	1150 - .15	1150 - .15
Filter Size inches (cm) standard filter listed, 1 required	16x25x1 (41x64x3)	16x25x1 (41x64x3)	16x25x1 (41x64x3)	16x25x1 (41x64x3)	16x30x1 (41x77x3)	16x30x1 (41x77x3)	16x30x1 (41x77x3)	16x30x1 (41x77x3)	16x30x1 (41x77x3)	16x30x1 (41x77x3)
Basic Unit Weight without Vent lbs. (kg)	325 (148)	335 (152)	335 (152)	335 (152)	350 (159)	350 (159)	350 (159)	380 (173)	380 (173)	380 (173)
X - Barometric Fresh Air Damper	4.0 (1.8)	4.0 (1.8)	4.0 (1.8)	4.0 (1.8)	5.0 (2.3)	5.0 (2.3)	5.0 (2.3)	5.0 (2.3)	5.0 (2.3)	5.0 (2.3)
A - Barometric Damper w/ Exhaust	8.0 (3.6)	8.0 (3.6)	8.0 (3.6)	8.0 (3.6)	9.0 (4.0)	9.0 (4.0)	9.0 (4.0)	9.0 (4.0)	9.0 (4.0)	9.0 (4.0)
B - Blank-Off Plate	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)	1.0 (.5)
M, V - Commercial Room Ventilator	31.0 (14.0)	31.0 (14.0)	31.0 (14.0)	31.0 (14.0)	35.0 (15.9)	35.0 (15.9)	35.0 (15.9)	35.0 (15.9)	35.0 (15.9)	35.0 (15.9)
D, Y, Z - Economizer	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)	37.0 (16.8)
R - Energy Recovery Ventilator	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)	54.0 (24.4)

MODELS	W42HC-A	W42HC-B	W42HC-C	W48HC-A	W48HC-B	W48HC-C
Unit Voltage Rating - Phase - 60Hz	230/208 V - 1 PH	230/208 V - 3 PH	460 V - 3 PH	230/208 V - 1 PH	230/208 V - 3 PH	460 V - 3 PH
Operating Voltage Range	197-253 V	197-253 V	414-506 V	197-253 V	197-253 V	414-506 V
Compressor Electrical Circuit						
Voltage	230/208 V	230/208 V	460 V	230/208 V	230/208 V	460 V
Rated Load Amps	17.2/19.3	11.8/13.2	6.0	16.0/18.6	10.1/11.7	5.3
Branch Circuit Selection Current	19.9	13.6	6.1	21.8	13.8	6.3
Lock Rotor Amps	109/109	83.1/83.1	41	117/117	83.1/83.1	41
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Outdoor Fan Motor & Condenser Fan						
Outdoor Fan Motor Horsepower - RPM	1/3 HP - 825RPM	1/3 HP - 825RPM	1/3 HP - 825RPM	1/3 HP - 825RPM	1/3 HP - 825RPM	1/3 HP - 825RPM
Outdoor Fan Motor - Amps	2.4 A	2.4 A	1.0 A	2.4 A	2.4 A	1.0 A
Outdoor Fan--Diameter and CFM	24" - 2900CFM	24" - 2900CFM	24" - 2900CFM	24" - 3000CFM	24" - 3000CFM	24" - 3000CFM
Indoor Blower Motor & Indoor Airflow						
Indoor Blower Motor - HP - Speeds	1/2 HP - 5 Spd	1/2 HP - 5 Spd	1/2 HP - 5 Spd	3/4 HP - 5 Spd	3/4 HP - 5 Spd	3/4 HP - 5 Spd
Indoor Blower Motor - Amps	2.4 A	2.4 A	1.2 A	3.3 A	3.3 A	1.7 A
Indoor Motor Type	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM
Rated indoor CFM and static pressure (ESP) with wet coil and Standard filter	1350CFM-.15ESP	1350CFM-.15ESP	1350CFM-.15ESP	1550CFM-.20ESP	1550CFM-.20ESP	1550CFM-.20ESP
Filter Size inches (cm) standard filter listed, 2 required	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)
Basic Unit Weight without Vent lbs (kg)	500 (227)	500 (227)	500 (227)	505 (229)	505 (229)	505 (229)
X - Barometric Fresh Air Damper	13 (5.9)	13 (5.9)	13 (5.9)	13 (5.9)	13 (5.9)	13 (5.9)
A - Barometric Damper w/ Exhaust	16 (7.3)	16 (7.3)	16 (7.3)	16 (7.3)	16 (7.3)	16 (7.3)
B - Blank-Off Plate	14 (6.4)	14 (6.4)	14 (6.4)	14 (6.4)	14 (6.4)	14 (6.4)
M, V - Commercial Room Ventilator	42 (19.1)	42 (19.1)	42 (19.1)	42 (19.1)	42 (19.1)	42 (19.1)
D, Y, Z - Economizer	44 (20)	44 (20)	44 (20)	44 (20)	44 (20)	44 (20)
R - Energy Recovery Ventilator	87 (39.5)	87 (39.5)	87 (39.5)	87 (39.5)	87 (39.5)	87 (39.5)



General Unit Specifications W60 (5 Ton)

MODELS	W60HC-A	W60HC-B	W60HC-C
Unit Voltage Rating - Phase - 60Hz	230/208 V - 1 PH	230/208 V - 3 PH	460 V - 3 PH
Operating Voltage Range	197-253 V	197-253 V	414-506 V
Compressor Electrical Circuit			
Voltage	230/208 V	230/208 V	460 V
Rated Load Amps	20.3/23.0	13.4/15.1	7.4
Branch Circuit Selection Current	24.4	16.0	7.8
Lock Rotor Amps	144.2/144.2	110/110	52
Compressor Type	Scroll	Scroll	Scroll
Outdoor Fan Motor & Condenser Fan			
Outdoor Fan Motor Horsepower - RPM	1/3 HP - 825RPM	1/3 HP - 825RPM	1/3 HP - 825RPM
Outdoor Fan Motor - Amps	2.4 A	2.4 A	1.0 A
Outdoor Fan--Diameter and CFM	24" - 3100CFM	24" - 3100CFM	24" - 3100CFM
Indoor Blower Motor & Indoor Airflow			
Indoor Blower Motor - HP - Speeds	3/4 HP - 5 Spds	3/4 HP - 5 Spds	3/4 HP - 5 Spds
Indoor Blower Motor - Amps	3.2 A	3.2 A	1.7 A
Indoor Motor Type	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM
Rated indoor CFM and static pressure (ESP) with wet coil and Standard filter	1750CFM -.20ESP	1750CFM -.20ESP	1750CFM -.20ESP
Filter Size inches (cm) standard filter listed, 2 required	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)	20" x 20" x 1" (51 x 51 x 3)
Basic Unit Weight without Vent lbs. (kg)	515 (234)	515 (234)	515 (234)
X - Barometric Fresh Air Damper	13 (5.9)	13 (5.9)	13 (5.9)
A - Barometric Damper w/ Exhaust	16 (7.3)	16 (7.3)	16 (7.3)
B - Blank-Off Plate	14 (6.4)	14 (6.4)	14 (6.4)
M, V - Commercial Room Ventilator	42 (19.1)	42 (19.1)	42 (19.1)
D, Y, Z - Economizer	44 (20)	44 (20)	44 (20)
R - Energy Recovery Ventilator	87 (39.5)	87 (39.5)	87 (39.5)

Note: All units have a Short Circuit Current Protection Rating (SCCR) of 5kA RMS Symmetrical.

R410A Unit Charge Rates

WALL-MOUNT UNIT MODEL	STANDARD UNIT CHARGE RATE	DEHUMIDIFICATION UNIT CHARGE RATE
W18HB	4.375 lbs. (1.98 kg)	N/A
W24HB	5.250 lbs. (2.38 kg)	5.375 lbs. (2.43 kg)
W30HB	7.000 lbs. (3.17 kg)	6.875 lbs. (3.11 kg)
W36HB	8.000 lbs. (3.62 kg)	7.500 lbs. (3.40 kg)
W42HC	7.625 lbs. (3.45 kg)	7.625 lbs. (3.45 kg)
W48HC	9.75 lbs. (4.42 kg)	9.500 lbs. (4.30 kg)
W60HC	10.75 lbs. (4.87 kg)	10.188 lbs. (4.62 kg)

Note: Charge rates provided on unit serial plate. Unit hi/low pressure chart for unit charging provided in unit installation manual and on inner control panel door.



///// Indoor EC Motor Blower Speeds

Indoor airflow is measured in Cubic Feet per Minute (CFM) and will vary based on static pressure created by supply duct work, return duct work, unit filter type, deflection of the air by the supply grille, or any other restriction of air entering or leaving the unit. The indoor fan motor of the WA series product has the capability of running at multiple speeds. Indoor blower speed is selected inside the control panel area using the speed tap terminal block.

Blower and Vent Only Speed: The WA series uses this speed when **fan only (G) or ventilation operation (A)** is used. See airflow performance chart for CFM amount. If cooling and heating speed is adjusted from LO to MED or HI, the Blower and Vent Only speed will not change.

Balanced Climate Speed: The WA series uses this speed when the **Balanced Climate option (Y1) or mechanical dehumidification option (D)** is used. The Balanced Climate speed reduces unit airflow by approximately 30% which increases moisture removal (latent capacity) during cooling operation. Units with the hot gas reheat dehumidification option also use this speed to increase moisture removal when running in dehumidification mode. Unit capacity performance when using Balanced Climate can be calculated using the -30% capacity multiplier factor provided in the Cooling Application Data. Unit capacity performance for hot gas reheat dehumidification units can be found in the Dehumidification performance supplemental manual #7960-811. See airflow performance chart for CFM amount.

To use Balanced Climate, remove the jumper between Y1 and Y2 on the low voltage terminal strip. A 2 stage cooling thermostat is then used to control blower airflow stages. Be sure to follow all guidelines provided in the installation manual. A controls kit that includes a low ambient control (LAC) must be used for Balanced Climate Operation if ventilation options are to be used or cooling operation will occur below a 60° outdoor temperature. Balanced Climate can be used for duct free and ducted applications below ESP total static shown in indoor airflow performance charts. Balanced Climate provides increased moisture removal during the cooling cycle, but is not a replacement for optional mechanical dehumidification. Optional mechanical dehumidification provides moisture removal without significantly cooling the space being conditioned. Mechanical dehumidification is highly recommended for applications requiring indoor humidity control for schools, public areas, agricultural, pharmaceutical, and areas with high outdoor humidity and varying indoor heat load.

LO Speed (Default): The WA series uses this speed by default when using **standard cooling (Y2) or heating operation (B/W1/W2)**. This speed is labeled as LO on the speed selection terminal strip inside the unit control panel. All units ship with cooling and heating operation at LO cooling and heating speed, and provides the **optimal airflow amount for normal use**. See airflow performance chart for CFM amount.

MED Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2) or heating operation (B/W1/W2)**. This speed is labeled as MED on the speed selection terminal strip inside the unit control panel. The MED speed tap provides an **increase in unit airflow** per the airflow performance chart.

HI Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2) or heating operation (B/W1/W2)**. This speed is labeled as HI on the speed selection terminal strip inside the unit control panel. The HI speed tap provides **maximum unit airflow** per the airflow performance chart.

///// Indoor Airflow Static and Unit Performance

The airflow amount that passes through the unit is very important when considering cooling capacity and proper unit operation. Restriction of the amount of air passing through the unit is called external static pressure (ESP). As the amount of air passing through the unit is restricted, the ESP value increases. This will have a direct impact on how heating and cooling equipment performs when used in an application. It is important to have a professional HVAC contractor, distributor, or technician complete a duct static calculation if supply or return ducts are used with the WA series unit. Unit filter static must also be calculated into the total ESP value.

Supply Duct Static: Supply duct static will include duct work connected to the unit supply opening, supply registers, filtration installed in the supply duct, or any other device in the supply airstream that will restrict airflow. All ducts must be sealed to reduce duct air leakage, and flex duct work must not include restriction due to installation. Duct static must be calculated by a HVAC professional and include all factors of the duct design.

Return Duct Static: Return duct static will include duct work connected to the unit return opening, return registers, filtration installed in the return duct, or any other device in the return airstream that will restrict airflow. All ducts must be sealed to reduce duct air leakage, and flex duct work must not include restriction due to installation. Duct static must be calculated by a HVAC professional and include all factors of the duct design.

Unit Filter Static: The WA series uses a unit filter installed before the indoor blower assembly that filters both indoor air from the room and outdoor air entering through the ventilation device. When additional filtration is required (higher MERV rating), additional static will need to be added to the total external static pressure (ESP). The following chart is to be used to estimate additional static pressure for a installed clean filter.

FILTER CODE	FILTER MERV RATING	FILTER STATIC INCHES WC.	FILTRATION LEVEL
X	MERV 2	0" WC	Low Filtration, 1" Thickness Disposable Media.
W	MERV 2	-.02" WC	Low Filtration, 1" Thickness Permanent Media.
P	MERV 8	.03" WC	Average Filtration, 2" Thickness Pleated Disposable Media.
M	MERV 11	.05" WC	Above Average Filtration, 2" Thickness Pleated Disposable Media.
N	MERV 13	.08" WC	High Filtration, 2" Thickness Pleated Disposable Media.

Calculating Total External Static Pressure: Supply duct static, return duct static, unit filter static, and any other source of additional static pressure are added together. Once this is calculated, the actual unit airflow amount can be reviewed by using the Indoor Airflow CFM charts provided.

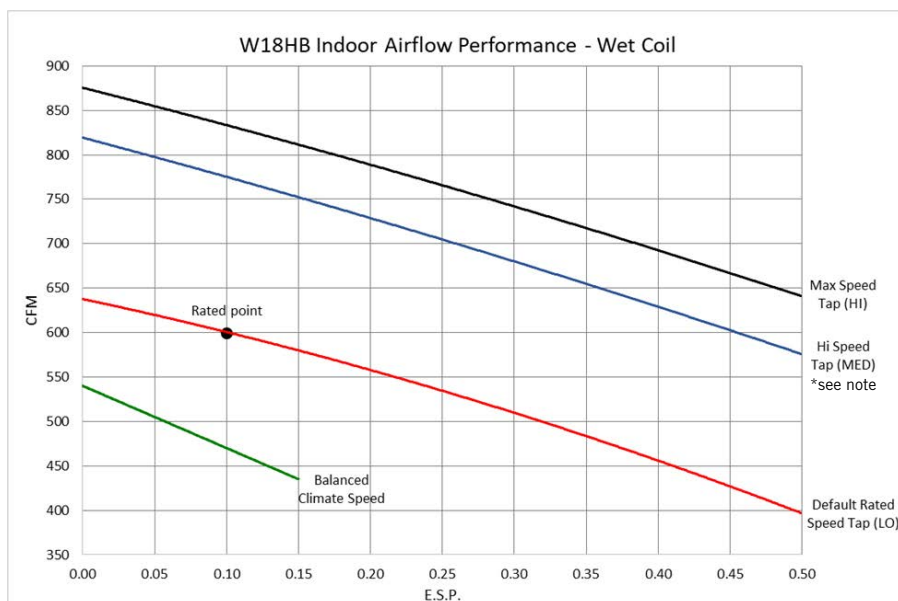
Total External Static Pressure Calculation:

Supply Duct Static + Return Duct Static + Filter Static + Additional External Static = Total External Static Pressure (ESP)

Non-Ducted Applications: Applications that do not include supply or return ducts inside the structure, use Bard supplied supply and return louvers, and do not have additional sources of external static will typically reflect rated airflow amounts shown in the Indoor Airflow CFM charts. Additional filter static must still be added as necessary to the rated airflow total external static pressure (ESP). Field supplied supply and return louvers must match Bard supplied supply and return louvers to achieve shown in the Indoor Airflow CFM charts. Adjustment of 4-way deflection supply louver may effect unit supply airflow. See louver deflection and throw characteristics provided in this document.



Indoor Airflow CFM @ Static Pressures and Adjustable Speeds - W18, W24, W30 Units



Total External Static Pressure Calculation:

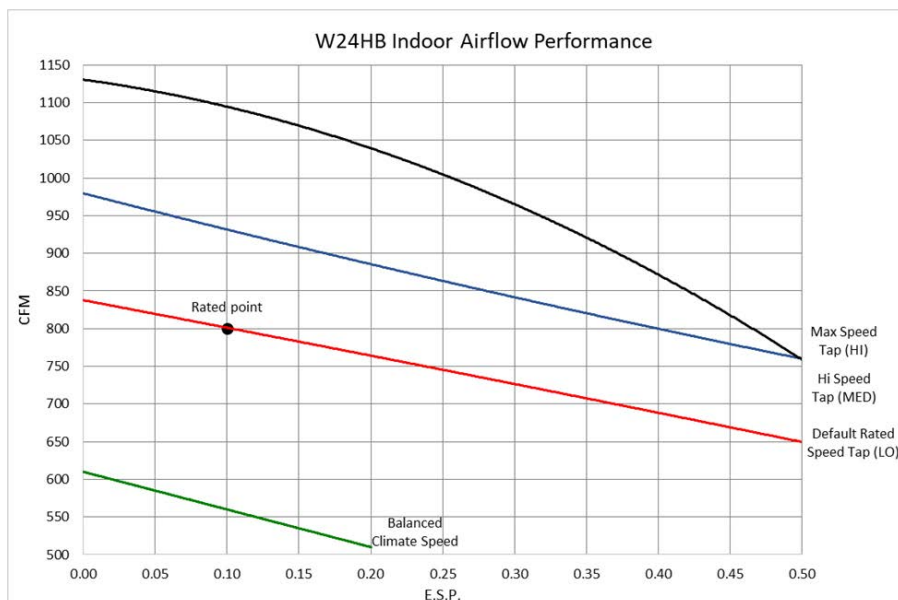
Supply Duct Static + Return Duct Static + Filter Static + Additional External Static = Total External Static Pressure (ESP)

Total External Static Adjustment:

Indoor airflow data shown in the performance charts represent the unit running in cooling with a wet evaporator coil. A dry evaporator coil will provide less static. See adjustment factor in below table.

Indoor airflow data shown in the performance charts represent the unit with a 1" disposable MERV2 filter. For other filter options, external static pressure needs to be adjusted. See adjustment factor in below table.

FILTER CODE	FILTER MERV RATING	ADJUST STATIC
	DRY COIL AIRFLOW	-.04" WC
W	MERV 2 (Washable)	-.02" WC
X	MERV 2 (Disposable)	0" WC
P	MERV 8	+.03" WC
M	MERV 11	+.05" WC
N	MERV 13	+.08" WC



Indoor Airflow Speeds:

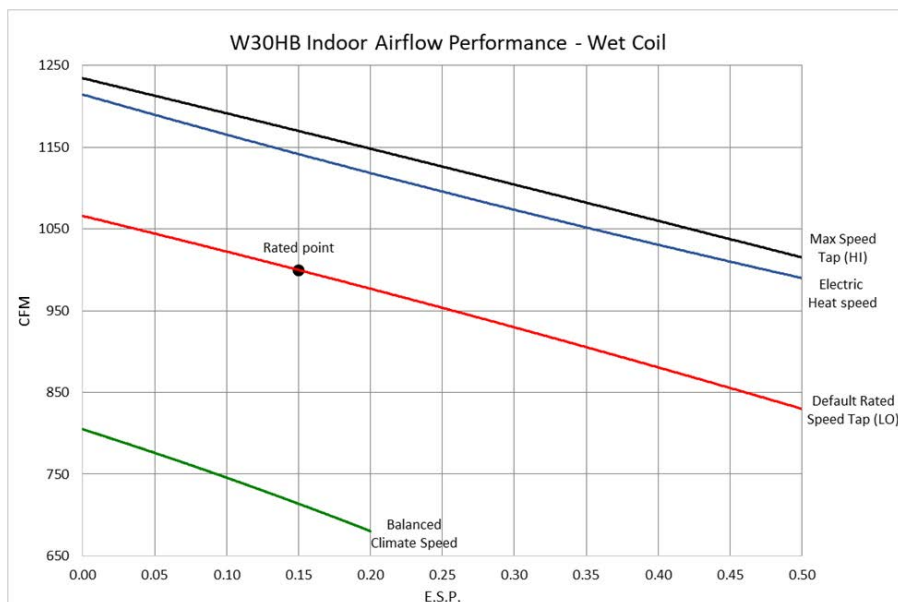
Balanced Climate Speed: The WA series uses this speed when the **Balanced Climate option (Y1)** or **mechanical dehumidification option (D)** is used. Not recommended for static levels higher than Balanced Climate airflow data provided.

LO Speed (Default): The WA series uses this speed by default when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as LO on the speed selection terminal strip inside the unit control panel. The WA series also uses this speed when **fan only (G)** or **ventilation operation (A)** is used. All units ship with cooling and heating operation at LO cooling and heating speed, and provides the **optimal airflow amount for normal use**.

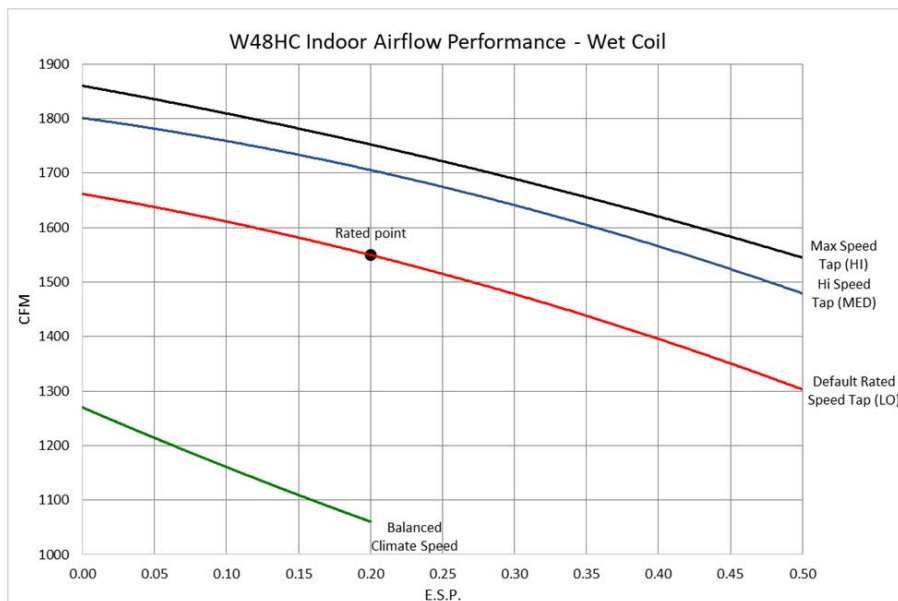
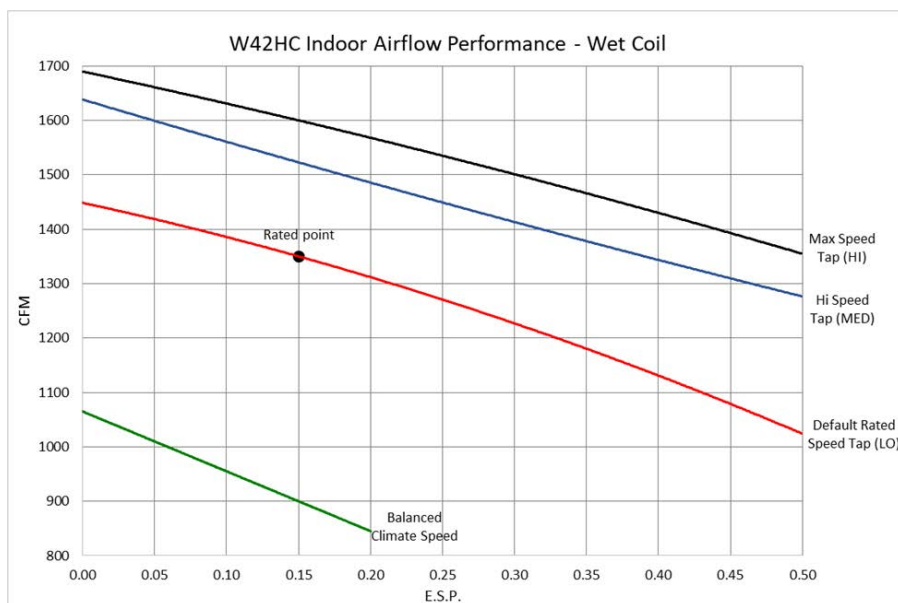
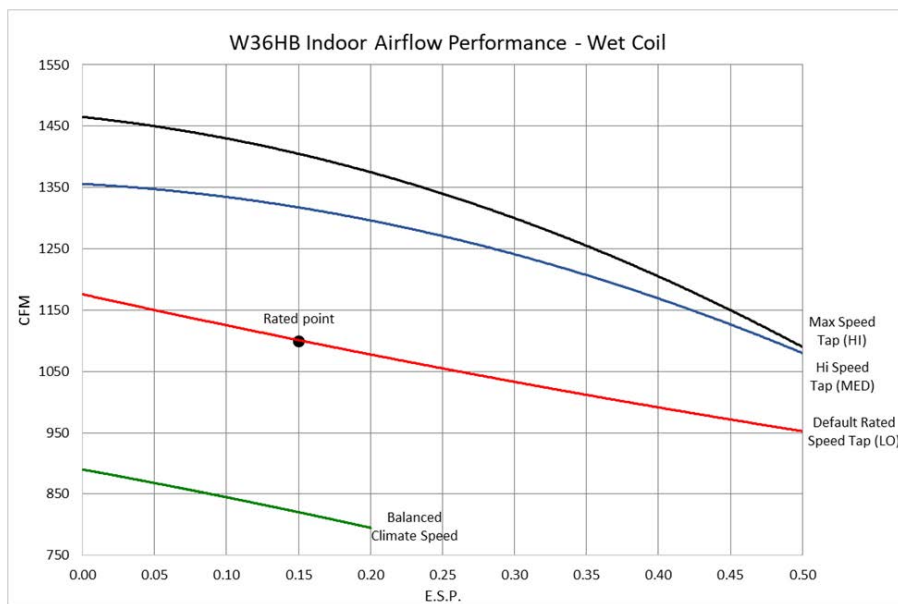
MED Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as MED on the speed selection terminal strip inside the unit control panel. The MED speed tap provides an **increase in unit airflow** per the airflow performance chart. Fan only and dehumidification fan operation is not effected by using MED speed.

HI Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as HI on the speed selection terminal strip inside the unit control panel. The HI speed tap provides **maximum unit airflow** per the airflow performance chart. Fan only and dehumidification fan operation is not effected by using HI speed.

**Note: W18HB unit has a dedicated electric heat speed and does not have a user selectable MED speed for airflow adjustment. See installation manual for additional information.*



Indoor Airflow CFM @ Static Pressures and Adjustable Speeds - W36, W42, W48 Units



Total External Static Pressure Calculation:

Supply Duct Static + Return Duct Static + Filter Static + Additional External Static = Total External Static Pressure (ESP)

Total External Static Adjustment:

Indoor airflow data shown in the performance charts represent the unit running in cooling with a wet evaporator coil. A dry evaporator coil will provide less static. See adjustment factor in below table.

Indoor airflow data shown in the performance charts represent the unit with a 1" disposable MERV2 filter. For other filter options, external static pressure needs to be adjusted. See adjustment factor in below table.

FILTER CODE	FILTER MERV RATING	ADJUST STATIC
	DRY COIL AIRFLOW	-.04" WC
W	MERV 2 (Washable)	-.02" WC
X	MERV 2 (Disposable)	0" WC
P	MERV 8	+.03" WC
M	MERV 11	+.05" WC
N	MERV 13	+.08" WC

Indoor Airflow Speeds:

Balanced Climate Speed: The WA series uses this speed when the **Balanced Climate option (Y1)** or **mechanical dehumidification option (D)** is used. Not recommended for static levels higher than Balanced Climate airflow data provided.

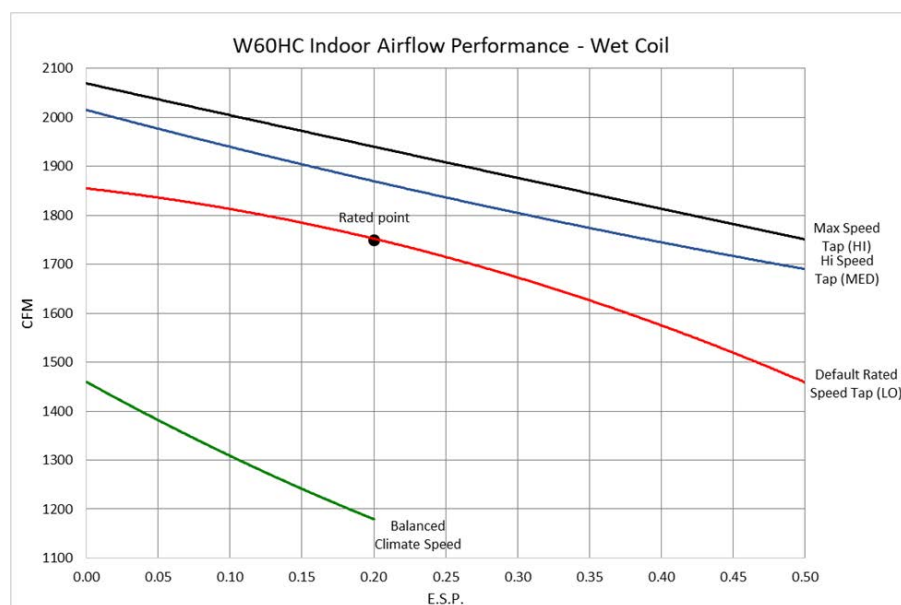
LO Speed (Default): The WA series uses this speed by default when using **standard cooling (Y2)** or **heating operation (W1/W2)**. This speed is labeled as LO on the speed selection terminal strip inside the unit control panel. The WA series also uses this speed when **fan only (G)** or **ventilation operation (A)** is used. All units ship with cooling and heating operation at LO cooling and heating speed, and provides the **optimal airflow amount for normal use**.

MED Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as MED on the speed selection terminal strip inside the unit control panel. The MED speed tap provides an **increase in unit airflow** per the airflow performance chart. Fan only and dehumidification fan operation is not effected by using MED speed.

HI Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as HI on the speed selection terminal strip inside the unit control panel. The HI speed tap provides **maximum unit airflow** per the airflow performance chart. Fan only and dehumidification fan operation is not effected by using HI speed.



Indoor Airflow CFM @ Static Pressures and Adjustable Speeds - W60 Unit



Total External Static Pressure Calculation:

Supply Duct Static + Return Duct Static + Filter Static + Additional External Static = Total External Static Pressure (ESP)

Total External Static Adjustment:

Indoor airflow data shown in the performance charts represent the unit running in cooling with a wet evaporator coil. A dry evaporator coil will provide less static. See adjustment factor in below table.

Indoor airflow data shown in the performance charts represent the unit with a 1" disposable MERV2 filter. For other filter options, external static pressure needs to be adjusted. See adjustment factor in below table.

FILTER CODE	FILTER MERV RATING	ADJUST STATIC
	DRY COIL AIRFLOW	-.04" WC
W	MERV 2 (Washable)	-.02" WC
X	MERV 2 (Disposable)	0" WC
P	MERV 8	+.03" WC
M	MERV 11	+.05" WC
N	MERV 13	+.08" WC

Indoor Airflow Speeds:

Balanced Climate Speed: The WA series uses this speed when the **Balanced Climate option (Y1)** or **mechanical dehumidification option (D)** is used. Not recommended for static levels higher than Balanced Climate airflow data provided.

LO Speed (Default): The WA series uses this speed by default when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as LO on the speed selection terminal strip inside the unit control panel. The WA series also uses this speed when **fan only (G)** or **ventilation operation (A)** is used. All units ship with cooling and heating operation at LO cooling and heating speed, and provides the **optimal airflow amount for normal use**.

MED Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as MED on the speed selection terminal strip inside the unit control panel. The MED speed tap provides an **increase in unit airflow** per the airflow performance chart. Fan only and dehumidification fan operation is not effected by using MED speed.

HI Speed (User Selectable): This speed is user selectable when using **standard cooling (Y2)** or **heating operation (B/W1/W2)**. This speed is labeled as HI on the speed selection terminal strip inside the unit control panel. The HI speed tap provides **maximum unit airflow** per the airflow performance chart. Fan only and dehumidification fan operation is not effected by using HI speed.



Cooling Application Data at Rated Airflow

MODEL	INDOOR RETURN AIR (DB/WB)	COOLING CAPACITY (BTUH)	DRY BULB OUTDOOR AIR TEMPERATURE ENTERING UNIT CONDENSER AREA										
			75°F 23.9°C	80°F 26.6°C	85°F 29.4°C	90°F 32.2°C	95°F 35°C	100°F 37.8°C	105°F 40.5°C	110°F 43.3°C	115°F 46.1°C	120°F 48.8°C	125°F 51.6°C
W18	75/62°F	Total Cooling	19,700	18,500	17,300	16,300	15,300	14,500	13,600	12,900	12,300	11,700	11,100
	23.8/16.6°C	Sensible Cooling	15,200	14,600	14,000	13,500	13,000	12,600	12,200	11,800	11,600	11,400	11,100
	80/67°F	Total Cooling	21,000	20,100	19,200	18,400	17,500	16,800	16,000	15,300	14,700	14,100	13,500
	26.6/19.4°C	Sensible Cooling	14,700	14,300	13,800	13,500	13,100	12,800	12,500	12,200	12,000	11,900	11,700
W24	85/72°F	Total Cooling	25,100	23,500	22,100	20,800	19,500	18,400	17,300	16,300	15,500	14,700	13,900
	29.4/22.2°C	Sensible Cooling	15,100	14,600	13,900	13,400	12,900	12,400	12,000	11,500	11,100	10,800	10,400
	75/62°F	Total Cooling	25,700	24,300	23,000	21,700	20,500	19,400	18,300	17,300	16,300	15,400	14,500
	23.8/16.6°C	Sensible Cooling	20,100	19,500	18,900	18,300	17,800	17,200	16,600	16,100	15,500	15,000	14,500
W30	80/67°F	Total Cooling	27,400	26,400	25,500	24,500	23,400	22,600	21,600	20,600	19,600	18,600	17,600
	26.6/19.4°C	Sensible Cooling	19,500	19,100	18,700	18,300	17,900	17,500	17,000	16,600	16,100	15,700	15,200
	85/72°F	Total Cooling	32,700	30,900	29,300	27,700	26,100	24,800	23,300	21,900	20,600	19,400	18,100
	29.4/22.2°C	Sensible Cooling	20,000	19,400	18,800	18,200	17,600	17,000	16,200	15,600	14,900	14,200	13,500
W36	75/62°F	Total Cooling	31,900	30,100	28,500	26,900	25,400	24,100	22,700	21,500	20,300	19,200	18,200
	23.8/16.6°C	Sensible Cooling	25,700	24,900	24,100	23,300	22,700	22,000	21,500	20,900	20,300	19,200	18,200
	80/67°F	Total Cooling	34,000	32,800	31,600	30,400	29,000	28,000	26,800	25,600	24,400	23,200	22,100
	26.6/19.4°C	Sensible Cooling	24,900	24,400	23,800	23,300	22,900	22,400	22,000	21,600	21,300	21,000	20,700
W42	85/72°F	Total Cooling	40,500	38,400	36,300	34,300	32,400	30,700	28,900	27,300	25,700	24,100	22,800
	29.4/22.2°C	Sensible Cooling	25,500	24,800	23,900	23,200	22,500	21,700	21,000	20,300	19,600	19,000	18,300
	75/62°F	Total Cooling	39,600	37,400	35,200	33,300	31,400	29,700	28,100	26,600	25,200	23,900	22,800
	23.8/16.6°C	Sensible Cooling	30,600	29,500	28,400	27,400	26,600	25,800	25,000	24,300	23,700	23,100	22,600
W48	80/67°F	Total Cooling	42,300	40,700	39,100	37,600	36,000	34,600	33,100	31,700	30,300	29,000	27,700
	26.6/19.4°C	Sensible Cooling	29,700	28,900	28,100	27,400	26,800	26,200	25,600	25,100	24,600	24,200	23,800
	85/72°F	Total Cooling	50,400	47,600	44,900	42,500	40,000	37,900	35,700	33,700	31,900	30,200	28,500
	29.4/22.2°C	Sensible Cooling	30,400	29,400	28,300	27,200	26,300	25,400	24,400	23,600	22,700	21,900	21,100
W60	75/62°F	Total Cooling	44,600	42,500	40,500	38,500	36,600	34,800	33,100	31,300	29,700	28,000	26,400
	23.8/16.6°C	Sensible Cooling	35,300	34,000	32,900	31,800	30,800	30,000	29,100	28,400	27,600	27,100	26,400
	80/67°F	Total Cooling	47,600	46,300	44,900	43,500	42,000	40,500	39,000	37,300	35,700	33,900	32,100
	26.6/19.4°C	Sensible Cooling	34,200	33,300	32,600	31,800	31,100	30,500	29,800	29,300	28,700	28,300	27,800
W60	85/72°F	Total Cooling	56,700	54,100	51,600	49,100	46,700	44,300	42,100	39,700	37,500	35,200	33,000
	29.4/22.2°C	Sensible Cooling	35,000	33,800	32,800	31,600	30,500	29,500	28,400	27,500	26,500	25,600	24,600
	75/62°F	Total Cooling	54,100	50,500	47,200	44,200	41,400	38,800	36,500	34,300	32,300	30,500	28,800
	23.8/16.6°C	Sensible Cooling	41,600	40,000	38,500	37,100	35,800	34,600	33,500	32,600	31,700	30,500	28,800
W60	80/67°F	Total Cooling	57,700	55,000	52,400	49,900	47,500	45,200	43,000	40,900	38,900	36,900	35,100
	26.6/19.4°C	Sensible Cooling	40,300	39,200	38,100	37,100	36,100	35,200	34,400	33,700	33,000	32,400	31,800
	85/72°F	Total Cooling	68,700	64,300	60,200	56,300	52,800	49,500	46,400	43,500	40,900	38,400	36,100
	29.4/22.2°C	Sensible Cooling	41,300	39,800	38,300	36,900	35,400	34,100	32,800	31,600	30,400	29,300	28,200
W60	75/62°F	Total Cooling	58,100	55,300	52,600	50,000	47,500	45,200	42,800	40,600	38,500	36,400	34,400
	23.8/16.6°C	Sensible Cooling	45,700	44,500	43,300	42,100	41,000	40,000	39,000	37,900	37,000	36,100	34,400
	80/67°F	Total Cooling	62,000	60,200	58,400	56,500	54,500	52,600	50,500	48,400	46,300	44,100	41,900
	26.6/19.4°C	Sensible Cooling	44,300	43,600	42,900	42,100	41,400	40,700	40,000	39,200	38,500	37,800	37,000
W60	85/72°F	Total Cooling	73,900	70,400	67,100	63,800	60,500	57,500	54,500	51,500	48,700	45,800	43,100
	29.4/22.2°C	Sensible Cooling	45,400	44,300	43,100	41,800	40,600	39,400	38,100	36,800	35,500	34,200	32,700

- Notes:
- Unit compressor cooling operation below 60°F requires a Low Ambient Control (LAC).
 - 1000 BTUH = .29307 kW
 - Outdoor air temperatures provided are an average of the condenser inlet air temperature.

Capacity Multiplier Factors							
% of Rated Airflow	-30%	-20%	-10%	Rated	+10%	+20%	+30%
Total BTUH	0.93	0.95	0.97	1	1.01	1.02	1.04
Sensible BTUH	0.90	0.93	0.95	1	1.02	1.05	1.09

Capacity Multiplier Calculation: Capacity multipliers are used to estimate unit capacity performance when airflow rates are decreased or increased compared to rated airflow. Rated airflow is the standard CFM amount used for capacity and efficiency calculations. Airflow rates may be effected by external static pressure (ESP) from supply ducts, return ducts, advanced filter options, or use of additional blower speeds. See unit airflow charts for additional information on unit airflow at different indoor blower speeds, filter static levels, and indoor airflow using Balanced Climate operation.

Example: Due to additional supply duct static, the actual supply airflow CFM for a installed W60 unit is 10% lower than the rated airflow shown in the blower performance chart. We want to know the actual BTUH amount of the unit at 85/72°F indoor and 100°F outdoor temperature for this application. The following formula will be used to calculate actual unit BTUH at the new supply airflow CFM amount:

Rated unit BTUH capacity x capacity multiplier factor = actual unit BTUH capacity.

Example: 60,700 rated Total BTUH x .97 capacity multiplier = 58,879 actual Total BTUH.

Example: 40,300 rated Sensible BTUH x .95 capacity multiplier = 38,285 actual Sensible BTUH.



Heating Application Data at Rated Airflow

MODEL	UNITS	DRY BULB OUTDOOR AIR TEMPERATURE ENTERING UNIT CONDENSER AREA													
		0°F -17.7°C	5°F -15°C	10°F -12.2°C	15°F -9.4°C	20°F -6.6°C	25°F -3.8°C	30°F -1.1°C	35°F 1.6°C	40°F 4.4°C	45°F 7.2°C	50°F 10°C	55°F 12.7°C	60°F 15.5°C	65°F 18.3°C
W18	BTUH	6,005	7,062	8,140	9,240	10,362	11,506	12,672	13,859	15,069	16,301	17,554	18,830	20,127	24,447
	Watts	1,271	1,279	1,288	1,298	1,309	1,320	1,332	1,346	1,360	1,375	1,391	1,408	1,425	1,444
	COP	1.38	1.61	1.85	2.08	2.32	2.55	2.78	3.01	3.24	3.47	3.69	3.91	4.13	4.35
W24	BTUH	9,277	10,509	11,779	13,089	14,437	15,823	17,248	18,712	20,215	21,756	23,336	24,954	26,611	28,306
	Watts	1,618	1,646	1,672	1,698	1,724	1,749	1,773	1,797	1,820	1,843	1,865	1,887	1,908	1,928
	COP	1.67	1.87	2.06	2.25	2.45	2.65	2.85	3.05	3.25	3.45	3.66	3.87	4.08	4.30
W30	BTUH	13,230	14,201	15,267	16,426	17,680	19,029	20,471	22,009	23,640	25,366	27,186	29,101	31,110	33,213
	Watts	2,053	2,070	2,089	2,109	2,129	2,151	2,175	2,199	2,224	2,251	2,279	2,308	2,338	2,369
	COP	1.88	2.00	2.14	2.28	2.43	2.59	2.75	2.93	3.11	3.30	3.49	3.69	3.89	4.10
W36	BTUH	17,423	18,331	19,383	20,580	21,922	23,407	25,037	26,812	28,731	30,794	33,001	35,353	37,849	40,490
	Watts	2,627	2,635	2,647	2,663	2,682	2,705	2,732	2,763	2,798	2,837	2,879	2,925	2,975	3,028
	COP	1.94	2.03	2.14	2.26	2.39	2.53	2.68	2.84	3.00	3.18	3.35	3.54	3.72	3.91
W42	BTUH	18,600	20,300	22,000	23,900	25,900	28,000	30,200	32,500	34,900	37,400	40,100	42,800	45,700	48,600
	Watts	3,020	3,040	3,070	3,100	3,130	3,160	3,200	3,250	3,290	3,350	3,400	3,460	3,530	3,600
	COP	1.80	1.95	2.10	2.25	2.42	2.59	2.76	2.93	3.10	3.27	3.45	3.62	3.79	3.95
W48	BTUH	18,600	20,300	22,200	24,300	26,500	28,900	31,400	34,200	37,100	40,100	43,400	46,800	50,400	54,200
	Watts	3,330	3,350	3,380	3,420	3,460	3,500	3,550	3,600	3,660	3,720	3,790	3,860	3,930	4,010
	COP	1.63	1.77	1.92	2.08	2.24	2.42	2.59	2.78	2.97	3.15	3.35	3.55	3.75	3.96
W60	BTUH	25,300	27,500	29,800	32,200	34,800	37,600	40,400	43,400	46,500	49,700	53,100	56,600	60,300	64,000
	Watts	3,920	4,000	4,080	4,160	4,240	4,310	4,380	4,450	4,520	4,580	4,640	4,700	4,760	4,820
	COP	1.89	2.01	2.14	2.26	2.40	2.55	2.70	2.85	3.01	3.18	3.35	3.52	3.71	3.89

- Notes:
- Performance given for 70°F DB indoor return air at rated CFM. Data includes defrost operation below 45° outdoor temperature.
 - Supplemental Electric heaters are recommended for applications requiring heating below a 15°F outdoor temperature.
 - 1000 BTUH = .29307 kW
 - Outdoor air temperatures provided are an average of the condenser inlet air temperature.

Capacity Multiplier Factors							
% of Rated Airflow	-30%	-20%	-10%	Rated	+10%	+20%	+30%
BTUH	0.93	0.95	0.97	1	1.01	1.02	1.04

Capacity Multiplier Calculation: Capacity multipliers are used to estimate unit capacity performance when airflow rates are decreased or increased compared to rated airflow. Rated airflow is the standard CFM amount used for capacity and efficiency calculations. Airflow rates may be effected by external static pressure (ESP) from supply ducts, return ducts, advanced filter options, or use of additional blower speeds. See unit airflow charts for additional information on unit airflow at different indoor blower speeds, filter static levels, and indoor airflow using Balanced Climate operation.

Example: Due to additional supply duct static, the actual supply airflow CFM for a installed W60 unit is 10% lower than the rated airflow shown in the blower performance chart. We want to know the actual BTUH amount of the unit at 85/72°F indoor and 100°F outdoor temperature for this application. The following formula will be used to calculate actual unit BTUH at the new supply airflow CFM amount:

Rated unit BTUH capacity x capacity multiplier factor = actual unit BTUH capacity.

Example: 60,700 rated BTUH x .97 capacity multiplier = 58,879 actual Total BTUH.



//////// **Electrical Specifications: W18 to W60 Units Without Dehumidification**

Model. See notes 3 and 4.	Rated Volts & Phase	No. Field Power Circuits	Single Circuit. See Notes 1 and 2.				Dual Circuit. See Notes 1 and 2.							
			Minimum Circuit Ampacity	Maximum External Fuse or Ckt. Brkr.	Field Power Wire Size	Ground Wire	Minimum Circuit Ampacity		Maximum External Fuse or Ckt. Breaker		Field Power Wire Size. See note 5.		Ground Wire Size See note 5.	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B
W18HB-A00, A0Z A04 A08	230/208-1	1 1 1	16 37 57	20 40 60	12 8 6	12 10 10								
W24HB-A00, A0Z A04 A08	230/208-1	1 1 1 or 2	19 41 62	25 45 70	10 8 6	10 10 8	41	21	45	25	8	10	10	10
W24HB-B00, B0Z B05	230/208-3	1 1	15 30	20 30	12 10	12 10								
W24HB-C00, C0Z C05	460-3	1 1	8 16	15 20	14 12	14 12								
W30HB-A00, A0Z A05 A10	230/208-1	1 1 1 or 2	24 50 76	35 50 80	8 8 4	10 10 8	50	26	50	30	8	10	10	10
W30HB-B00, B0Z B05 B09	230/208-3	1 1 1	18 34 45	25 35 45	10 8 8	10 10 10								
W30HB-C00, C0Z C05 C09	460-3	1 1 1	9 18 23	15 20 25	14 12 10	14 12 10								
W36HB-A00, A0Z A05 A10 A15	230/208-1	1 1 1 or 2 1 or 2	27 53 79 85	40 60 80 90	8 6 4 4	10 10 8 8	53 27	26 58	60 30	30 60	6 10	10 6	10 10	10 10
W36HB-B00, B0Z B05 B09	230/208-3	1 1 1	20 35 47	25 40 50	10 8 8	10 10 10								
W36HB-C00, C0Z C05 C09	460-3	1 1 1	11 19 25	15 20 25	14 12 10	14 12 10								
W42HC-A00, A0Z A04 A05 A10 A15	230/208-1	1 1 1 1 or 2 1 or 2	32 53 58 84 84	45 60 60 90 90	8 6 6 4 4	10 10 10 8 8	32 58	52 26	50 60	60 45	8 6	6 8	10 10	10 10
W42HC-B00, B0Z B05 B09 B15	230/208-3	1 1 1 1	24 39 51 51	35 45 60 60	8 8 6 6	10 10 10 10								
W42HC-C00, C0Z C05 C09 C15	460-3	1 1 1 1	12 21 25 26	15 25 30 30	14 10 10 10	14 10 10 10								
W48HC-A00, A0Z A04 A05 A10 A15 A20	230/208-1	1 1 1 or 2 1 or 2 1 or 2 1 or 2	35 56 61 87 87 110	50 60 70 90 90 125	8 6 6 3 3 2	10 10 8 8 8 6	35 35 35 58	26 52 52 52	40 50 50 60	30 60 60 60	8 8 8 6	10 6 6 6	10 10 10 10	10 10 10 10
W48HC-B00, B0Z B05 B09 B15 B18	230/208-3	1 1 1 1 2	25 40 52 53 N/A	35 50 60 60 N/A	8 8 6 6 N/A	10 10 10 10 N/A	52	28	60	30	6	10	10	10
W48HC-C00, C0Z C05 C09 C15	460-3	1 1 1 1	12 20 25 26	15 25 30 30	14 10 10 10	14 10 10 10								
W60HC-A00, A0Z A05 A10 A15 A20	230/208-1	1 1 or 2 1 or 2 1 or 2 1 or 2	42 67 93 93 112	60 80 100 100 125	8 4 3 3 2	10 8 8 8 6	41 41 41 60	26 52 52 52	50 50 60 60	30 60 60 60	8 8 8 6	10 6 6 6	10 10 10 10	10 10 10 10
W60HC-B00, B0Z B09 B15 B18	230/208-3	1 1 1 2	29 56 56 N/A	40 60 60 N/A	8 6 6 N/A	10 10 10 N/A	55	28	60	30	6	10	10	10
W60HC-C00, C0Z C09 C15	460-3	1 1 1	14 28 28	20 30 30	12 10 10	12 10 10								

SEE NOTES ON NEXT PAGE.



Electrical Specifications: W24 to W60 Units With Dehumidification

Model. See notes 3 and 4.	Rated Volts & Phase	No. Field Power Circuits	Single Circuit. See Notes 1 and 2.				Dual Circuit. See Notes 1 and 2.							
			Minimum Circuit Ampacity	Maximum External Fuse or Ckt. Brkr.	Field Power Wire Size	Ground Wire	Minimum Circuit Ampacity		Maximum External Fuse or Ckt. Breaker		Field Power Wire Size. See note 5.		Ground Wire Size. See note 5.	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt.	Ckt. B	Ckt. A	Ckt. B
W24HBDA00, AOZ A04 A08	230/208-1	1 1 1 or 2	19 40 61	25 45 70	10 8 6	10 10 8	42	19	45	25	8	10	10	10
W24HDBD00, BOZ B05	230/208-3	1 1	15 30	20 30	12 10	12 10								
W24HBDC00, COZ C05	460-3	1 1	8 16	15 20	14 12	14 12								
W30HBDA00, AOZ A05 A10	230/208-1	1 1 1 or 2	24 50 76	35 50 80	8 8 4	10 10 8	50	26	60	30	8	10	10	10
W30HDBD00, BOZ B05 B09	230/208-3	1 1 1	18 33 45	25 35 50	10 8 8	10 10 10								
W30HBDC00, COZ C05 C09	460-3	1 1 1	9 16 22	15 20 25	14 12 10	14 12 10								
W36HBDA00, AOZ A05 A10	230/208-1	1 1 1 or 2	28 54 80	40 60 80	8 6 4	10 10 8	54	26	60	30	6	10	10	10
W36HDBD00, BOZ B05 B09	230/208-3	1 1 1	20 35 47	25 40 50	10 8 8	10 10 10								
W36HBDC00, COZ C05 C09	460-3	1 1 1	11 19 24	15 20 25	14 12 10	14 12 10								
W42HCDA00, AOZ A05 A10 A15	230/208-1	1 1 1 or 2 1 or 2	34 60 86 86	45 60 90 90	8 6 3 3	10 10 8 8	34 34	52 52	40 40	60 60	8 8 6 6	10 10 6 6	10 10 10 10	10 10 10 10
W42HDCD00, BOZ B05 B09 B15	230/208-3	1 1 1 1	25 41 53 53	35 45 60 60	8 8 6 6	10 10 10 10								
W42HCDC00, COZ C05 C09 C15	460-3	1 1 1 1	12 20 26 26	15 20 30 30	14 12 10 10	14 12 10 10								
W48HCDA00, AOZ A05 A10 A15	230/208-1	1 1 or 2 1 or 2 1 or 2	35 61 87 87	50 70 90 90	8 6 3 3	10 8 8 8	35 35 35	26 52 52	45 50 50	30 60 60	8 8 8	10 6 6	10 10 10	10 10 10
W48HDCD00, BOZ B05 B09 B15	230/208-3	1 1 1 1	25 40 52 53	35 50 60 60	8 8 6 6	10 10 10 10								
W48HCDC00, COZ C05 C09 C15	460-3	1 1 1 1	12 21 26 27	15 25 30 30	14 10 10 10	14 10 10 10								
W60HCDA00, AOZ A05 A10 A15	230/208-1	1 1 or 2 1 or 2 1 or 2	41 67 93 93	60 80 100 100	8 4 3 3	10 8 8 8	41 41 41	26 52 52	50 50 50	30 60 60	8 8 8	10 6 6	10 10 10	10 10 10
W60HDCD00, BOZ B09 B15	230/208-3	1 1 1	28 55 55	40 60 60	8 6 6	10 10 10								
W60HCDC00, COZ C09 C15	460-3	1 1 1	14 28 28	20 30 30	12 10 10	12 10 10								

- (1) The "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electrical Code (latest version), Article 310 for power conductor sizing.
CAUTION: When more than one field power circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of Table 310 regarding Ampacity Adjustment Factors when more than three (3) conductors are in a raceway.
- (2) Maximum size of the time delay fuse or circuit breaker for protection of field wiring conductors.
- (3) Three Phase Maximum KW that can operate with the heat pump on is 9KW. Full heat available during emergency heat mode.
- (4) Single Phase Maximum KW that can operate with the heat pump on is 10KW. Full heat available during emergency heat mode.
- (5) Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.
- IMPORTANT: While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses & conductor wires in accordance with the National Electrical Code & all local codes.

Note: MOCP (Maximum Overcurrent Protection) value listed is the maximum value as per UL 1995 calculations for MOCP (branch-circuit conductor sizes in this chart are based on this MOCP). The actual factory installed Overcurrent Protective Device (Circuit Breaker) in this model may be lower than the maximum UL 1995 allowable MOCP value, but still above the UL 1995 minimum calculated value or Minimum Circuit Ampacity (MCA) listed.



Field Installed Heater Packages

Field installed heater packages are available to add, increase, or reduce the amount of electric heat to units that are already shipped from the factory. The kit includes the following:

- Resistance heaters that provide heating BTUH amounts shown in the heater kit chart. Heaters ship pre-installed with needed limits and thermal cutoffs.
- Heating contactor(s) that energize when a signal is sent from a thermostat or controller. Contactors are pre-mounted on a base plate for easy installation along with a plug-in connector.
- Wires, screws, wire ties and other accessories needed for installation.
- A wiring diagram, installation instructions, and labels to show electric heat is installed.

It is always important to review all instructions provided with the heater package kit and Wall-Mount unit before installation. Review all electrical specifications for the unit and building including wire and breaker sizes along with clearances to combustible materials before installation and use of the heater package kits.

Heater Packages - Field Kits for W18 to W60 Standard Units

• Designed for adding Electric Heat to 0 KW Units			• ETL US & Canada Listed			
• Circuit Breaker Standard on 230/208V Models			• Toggle Disconnect Standard on 460V Models			
Air Conditioner Models	-A00 Models 230/208-1		-B00 Models 230/208-3		-C00 Models 460-3	
	Heater Model #	KW	Heater Model #	KW	Heater Model #	KW
W18HB	WMCB-02A EHW18H-A04 EHW18H-A08	0Z 04 08	N/A		N/A	
W24HB	WMCB-03A EHW2HB-A04 EHW2HB-A08	0Z 04 08	WMCB-02B EHW2HB-B05	0Z 05	WMPD-01C EHW2HB-C05	0Z 05
W30HB	WMCB-05A EHW30HB-A05 EHW30HB-A10	0Z 05 10	WMCB-03B EHW30HB-B05 EHW3HB-B09	0Z 05 09	WMPD-01C EHW3HB-C05 EHW3HB-C09	0Z 05 09
W36HB	WMCB-06A EHW3HB-A05 EHW3HB-A10 EHW3HB-A15	0Z 05 10 15	WMCB-03B EHW3HB-B05 EHW3HB-B09	0Z 05 09	WMPD-01C EHW3HB-C05 EHW3HB-C09	0Z 05 09
W42HC	WMCBC-07A EHW3HC-A04 EHW3HC-A05 EHW6HCDA10 EHW3HC-A15	0Z 04 05 10 15	WMCBC-05B EHW3HC-B05 EHW3HC-B09 EHW3HC-B15	0Z 05 09 15	WMCBC-06C EHW3HC-C05 EHW3HCDC09 EHW3HC-C15	0Z 05 09 15
W48HC	WMCBC-08A EHW4HC-A04 EHW4HC-A05 EHW6HCDA10 EHW4HC-A15 EHW4HC-A20	0Z 04 05 10 15 20	WMCBC-05B EHW3HC-B05 EHW4HC-B09 EHW4HC-B15 EHW4HC-B18	0Z 05 09 15 18	WMCBC-06C EHW4HC-C05 EHW4HC-C09 EHW4HC-C15	0Z 05 09 15
W60HC	WMCBC-09A EHW6HCDA05 EHW6HCDA10 EHW6HC-A15 EHW6HC-A20	0Z 05 10 15 20	WMCBC-06B EHW6HC-B09 EHW6HC-B15 EHW6HC-B18	0Z 09 15 18	WMCBC-06C EHW6HC-C09 EHW4HC-C15	0Z 09 15



//////// Heater Packages - Field Kits for W24 to W60 Dehumidification Units

• Designed for adding Electric Heat to 0 KW Units			• ETL US & Canada Listed			
• Circuit Breaker Standard on 230/208V Models			• Toggle Disconnect Standard on 460V Models			
Air Conditioner Models	-A00 Models 230/208-1		-B00 Models 230/208-3		-C00 Models 460-3	
	Heater Model #	KW	Heater Model #	KW	Heater Model #	KW
W24HBD	EHW2TH-A04 EHW2TH-A08	04 08	EHW2HB-B05	05	EHW2HB-C05	05
W30HBD	EHW2HBDA05 EHW3HBDA10	05 10	EHW3HBDB05 EHW3HBDB09	05 09	EHW3HBDC05 EHW3HBDC09	05 09
W36HBD	EHW3HBDA05 EHW3HBDA10	05 10	EHW3HBDB05 EHW3HBDB09	05 09	EHW3HBDC05 EHW3HBDC09	05 09
W42HCD	EHW3HC-A05 EHW3HCDA10 EHW3HCDA15	05 10 15	EHW3HC-B05 EHW3HCDB09 EHW3HCDB15	05 09 15	EHW3HCDC05 EHW3HCDC09 EHW3HCDC15	05 09 15
W48HCD	EHW4HCDA05 EHW6HCDA10 EHW4HCDA15	05 10 15	EHW4HCDB05 EHW4HC-B09 EHW4HCDB15	05 09 15	EHW3HC-C05 EHW4HC-C09 EHW4HCDC15	05 09 15
W60HCD	EHW6HCDA05 EHW6HCDA10 EHW6HCDA15	05 10 15	EHW6HCDB09 EHW6HC-B15	09 15	EHW6HCDC09 EHW4HCDC15	09 15

//////// Electric Heat Table - Refer to Electrical Specifications for Availability by Unit Model

NOMINAL KW	AT 240V (1)				AT 208V (1)				AT 480V (2)			AT 460V (2)		
	KW	1-PH AMPS	3-PH AMPS	BTUH	KW	1-PH AMPS	3-PH AMPS	BTUH	KW	3-PH AMPS	BTUH	KW	3-PH AMPS	BTUH
4.0	4.0	16.7		13,652	3.00	14.4		10,239						
5.0	5.0	20.8	12.5	17,065	3.75	18.0	10.4	12,799						
6.0	6.0		14.4	20,478	4.50		12.5	15,359	6.0	7.2	20,478	5.52	6.9	18,840
8.0	8.0	33.3		27,304	6.00	28.8		20,478						
9.0	9.0		21.7	30,717	6.75		18.7	23,038	9.0	10.8	30,717	8.28	10.4	28,260
10.0	10.0	41.7		34,130	7.50	36.1		25,598						
15.0	15.0	62.5	36.1	51,195	11.25	54.1	31.2	38,396	15.0	18.0	51,195	13.80	17.3	47,099
18.0	18.0		43.3	61,434	13.50		37.5	46,076	18.0	21.7	61,434	16.56	20.8	56,519
20.0	20.0	83.3		68,260	15.00	72.1		51,195						

(1) Listed electric heaters are available for 230/208V units only.

(2) Listed electric heaters are available for 480V units only.

//////// Field Generator Use

Generator power is often used in the field for critical cooling and heating applications. When using generator power it is important to understand the capability of the generator used. Review and follow all instructions and guidelines provided with the generator. The following must be considered when selecting a generator provide power to HVAC equipment;

- When calculating the kW size of the generator, it is important to use the MCA values of the unit models being used. This value can be found in the electrical specifications section of this document.
- When calculating inrush current that the generator will see during unit startup, use the Locked Rotor Amp values of the unit being used. This value can be found in the general specifications section in the beginning of this document.

It is important to remember to review power usage for all units that will be operating off of the generator. It is also important to consider all equipment that will consume power (not just HVAC equipment) when calculating a generator size. Bard does offer a Secure Start kit Bard part #8551-014 for units up to a 5 ton cooling capacity that is designed to reduce inrush current load during cooling mode.





Ventilation Option Selection Chart

VENT CODE	FIELD INSTALLED KIT PART NUMBER	UNIT MODEL NUMBER	VENT OPERATION	VENT USE
X	FAD-NE2	W18HB, W24HB	Barometric Intake Damper, No Room Exhaust	Outdoor air intake damper that may be used to provide slight building positive pressurization or bring an adjustable amount of outdoor air into a structure. The damper opens during indoor blower operation and provides intake air only.
	FAD-NE3	W30HB, W36HB		
	FAD-NE5	W42HC, W48HC, W60HC		
A	FAD-BE2	W18HB, W24HB	Barometric Intake Damper with Room Exhaust	Outdoor air intake damper that may be used to bring an adjustable amount of outdoor air into a structure. The damper opens during indoor blower operation and an exhaust damper provides barometric room pressure relief.
	FAD-BE3	W30HB, W36HB		
	FAD-BE5	W42HC, W48HC, W60HC		
B	BOP-2	W18HB, W24HB	No ventilation, provides best protection against water, dirt, and debris infiltration.	Insulated plates are installed over the vent intake and exhaust openings. When used, the plates provide a degree of protection from splashing water and dirt/debris entry into the unit.
	BOP-3	W30HB, W36HB		
	BOPLATE-5	W42HC, W48HC, W60HC		
M	CRV-F2-*	W18HB, W24HB	Motorized Intake Damper with Room Exhaust. Vent opens to user adjustable open position when energized. Vent is energized when 24VAC is applied to the "A" terminal located on the unit low voltage terminal strip.	The CRV-F provides a simple means of bringing in outdoor air when a motorized spring closed damper is required. Vent option provides up to 50% outdoor air intake. It also provides room pressure relief. Motor uses linkage to operate damper blades and springs closed when power to the damper motor is removed. No intake hood is required for all models.
	CRV-F3-*	W30HB, W36HB		
	CRV-F5	W42HC, W48HC, W60HC		
V	CRV-V2-*	W18HB, W24HB	Motorized Intake Damper with Room Exhaust. Vent opens to user adjustable minimum position when "A" terminal located on the unit low voltage terminal strip is energized with 24VAC. 0-10VDC modulating operation option. Room pre-purge option.	The CRV-V provides a control board with advanced options for bringing in outdoor air when a motorized spring closed damper is required. Vent option provides up to 50% outdoor air intake. It also provides room pressure relief. Motor uses linkage to operate damper blades and springs closed when power to the damper motor is removed. Includes solid state control board for multiple ventilation settings. No intake hood is required for all models.
	CRV-V3-*	W30HB, W36HB		
	CRV-V5	W42HC, W48HC, W60HC		
D	ECON-NC2-*	W18HB, W24HB	Motorized Intake Damper with Room Exhaust. Vent opens to user setting based on 0-10VDC input. 10k outdoor sensor is included with vent option. This vent does not include solid state board or JADE controller to operate economizer functionality.	The no controls economizer option is used where the controls contractor will provide a field installed logic board and indoor/outdoor sensors or other means to decide when conditions are favorable for free cooling. Vent option provides up to 100% outdoor air intake. It also provides room pressure relief. Motor uses linkage to operate damper blades and springs closed when power to the damper motor is removed. 7" intake hood (included) required for ECON-NC2 and ECON-NC3 options. No intake hood is required for ECON-NC5 option.
	ECON-NC3-*	W30HB, W36HB		
	ECON-NC5	W42HC, W48HC, W60HC		
S	ECON-S2-*	W18HB, W24HB	Motorized Intake Damper with Room Exhaust. JADE economizer control uses outdoor temperature and humidity to provide free cooling operation based on enthalpy curve setting. Optional 0-10VDC input for modulating ventilation control. Optional user selected minimum position when "A" terminal located on the unit low voltage terminal strip is energized with 24VAC.	The economizer with enthalpy control is often used to provide free cooling for applications where humidity levels outdoors are relatively high, or indoor humidity levels need to be kept at a low amount. Vent option provides partial outdoor air intake based on outdoor temperature and humidity. It also provides room pressure relief. Motor uses linkage to operate damper blades and springs closed when power to the damper motor is removed. No intake hood is required.
	ECON-S3-*	W30HB, W36HB		
Y	ECON-DB2-*	W18HB, W24HB	Motorized Intake Damper with Room Exhaust. JADE economizer control uses outdoor temperature to provide free cooling operation based on user settings. Optional 0-10VDC input for modulating ventilation control. Optional user selected minimum position when "A" terminal located on the unit low voltage terminal strip is energized with 24VAC.	The dry bulb economizer option is often used in areas with low outdoor humidity levels or applications where indoor humidity levels can be relatively high. Vent option provides up to 100% outdoor air intake based on outdoor temperature. It also provides room pressure relief. Motor uses linkage to operate damper blades and springs closed when power to the damper motor is removed. 7" intake hood (included) required for ECON-DB2 and ECON-DB3 options. No intake hood is required for ECON-DB5 option.
	ECON-DB3-*	W30HB, W36HB		
	ECON-DB5	W42HC, W48HC, W60HC		
Z	ECON-WD2-*	W18HB, W24HB	Motorized Intake Damper with Room Exhaust. JADE economizer control uses outdoor temperature and humidity to provide free cooling operation based on enthalpy curve setting. Optional 0-10VDC input for modulating ventilation control. Optional user selected minimum position when "A" terminal located on the unit low voltage terminal strip is energized with 24VAC.	The economizer with enthalpy control is often used to provide free cooling for applications where humidity levels outdoors are relatively high, or indoor humidity levels need to be kept at a low amount. Vent option provides up to 100% outdoor air intake based on outdoor temperature and humidity. It also provides room pressure relief. Motor uses linkage to operate damper blades and springs closed when power to the damper motor is removed. 7" intake hood (included) required for ECON-DB2 and ECON-DB3 options. No intake hood is required for ECON-DB5 option.
	ECON-WD3-*	W30HB, W36HB		
	ECON-WD5	W42HC, W48HC, W60HC		
R	ERV-FA2-*	W18HB, W24HB - 208/230VAC voltage units	The Energy Recovery Ventilator Provides a solution to condition intake air entering the room while exhausting room air to minimize room pressurization. Heat is transferred from the entering air into the exhaust air during cooling seasons. Heat is transferred from the air being exhausted from the room into the air intake are during heating seasons. This is accomplished using energy recovery wheels, an intake blower assembly, and an exhaust blower assembly. Operation is controlled when the "A" terminal located on the unit low voltage terminal strip is energized with 24VAC.	The Energy Recovery Ventilator is often used to provide ventilation for an occupied area that requires outdoor air intake regardless of outdoor conditions. Vent option provides outdoor air intake and room pressure relief with optimal energy efficiency during warm or cool outdoor conditions. Intake and exhaust blower assemblies have 3 independent adjustable speed selections. 3" intake hood (included) required for ERV-F2 and ERV-F3 options. No intake hood is required for ERV-F5 option.
	ERV-FA3-*	W30HB, W36HB - 208/230VAC voltage units		
	ERV-FA5	W42HC, W48HC, W60HC 208/230VAC voltage units		
	ERV-FC2-*	W18HB, W24HB - 460VAC voltage units		
	ERV-FC3-*	W30HB, W36HB - 460VAC voltage units		
	ERV-FC5	W42HC, W48HC, W60HC - 460VAC voltage units		



///// Fresh Air Damper and Commercial Ventilator Specifications

“X” Vent Code Option – Standard Barometric Fresh Air Damper without Exhaust (FAD-NE)

The barometric fresh air damper without exhaust is a standard feature on all models, and can be ordered pre-installed from Bard or may be field installed with the FAD-NE vent kit. Fresh air dampers are typically used when a small amount of outdoor air is required in a room or structure when the indoor blower is on. The intake damper opens when the indoor blower is operational and negative pressure in the vent area of the unit pulls the blade open. When the blade is open, the damper allows outdoor air to be brought into the structure. Pins are provided that allow for airflow adjustment. See FAD-NE airflow charts provided in this specification for airflow amounts. Room air exhaust is not provided with the FAD-NE vent.

The barometric fresh air damper without exhaust includes the following options:

- The damper opens when the indoor blower is operational.
- The vent provides up to 25% of the total airflow rating of the unit.
- Adjustable blade pins allow different amounts of outside air to be introduced into the building and can be easily locked closed if required.
- The ventilation exhaust air path is sealed with an insulated block-off plate.
- Slight room pressurization is achieved during indoor blower operation.



Fresh Air Damper Intake (FAD-NE and FAD-BE)

“A” Vent Code Option – Standard Barometric Fresh Air Damper with Barometric Exhaust (FAD-BE)

The barometric fresh air damper with exhaust is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the FAD-BE vent kit. Fresh air dampers are typically used when a small amount of outdoor air is required in a room or structure when the indoor blower is on. The intake damper opens when the indoor blower is operational and negative pressure in the vent area of the unit pulls the blade open. When the blade is open, the damper allows outdoor air to be brought into the structure. Blade stops are provided that allow for intake airflow adjustment. See FAD-BE airflow charts provided in this specification for airflow amounts. Room air exhaust using room air pressure is provided with a separate assembly. This allows room air to pass through the vent area and out of the unit. Blade stops allow for adjustment of exhaust air amounts. Operation of the damper is dependent on room pressurization to open the exhaust blade and allow room air to leave the structure.

The barometric fresh air damper without exhaust includes the following options:

- The damper opens when the indoor blower is operational.
- The vent provides up to 25% of the total airflow rating of the unit.
- Adjustable blade pins allow different amounts of outside air to be introduced into the building and can be easily locked closed if required.
- Adjustable room exhaust is provided through secondary exhaust damper assembly.
- Room pressurization is adjustable during indoor blower operation.



Fresh Air Damper Exhaust (FAD-BE only)

“B” Vent Code Option – Block off Plate (BOP)

The block off plate is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the BOP vent kit. The block off plate option provides a way to seal the intake and exhaust air openings. This will provide the best protection from splashing water, dust and dirt entering the unit, and air infiltration reduction.

The barometric fresh air damper without exhaust includes the following options:

- Insulated plates are installed to cover vent intake and exhaust openings.
- Plate installation provides a degree of protection from air, water, dirt, and dust infiltration.

“M” Vent Code Option – Basic Commercial Room Ventilator (CRV-F)

The basic commercial room ventilator is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the CRV-F vent kit. Commercial Room Ventilators are designed to provide an adjustable amount of outdoor air inside a room or structure, exhaust room air, and close when outdoor air is not needed. The intake damper opens when 24VAC power is applied to the ventilation terminal inside the unit control panel (A). The damper blade is operated by a 24VAC actuator motor and blade linkage. When the blade is open, the damper allows outdoor air to be brought into the structure. A blade stop is provided that allows for airflow adjustment. See CRV-F airflow charts provided in this specification for airflow amounts. Air exhaust is provided using room air pressure that allows room air to pass through the vent area and out of the unit. Exhaust damper linkage controls the exhaust air amount and air intake amount simultaneously.

The basic commercial room ventilator includes the following options:

- The intake and exhaust damper opens when the unit ventilation terminal (A) is energized with 24VAC.
- Spring closed motorized damper closes within 30 seconds when unit power is removed.
- The vent provides a maximum of over 50% of the total airflow rating of the unit.
- Adjustable blade stop allows adjustable amounts of outside air to be introduced into the building.
- Room exhaust is provided through the ventilation assembly reducing room pressure.



Commercial Room Ventilator-Fixed and Modulating

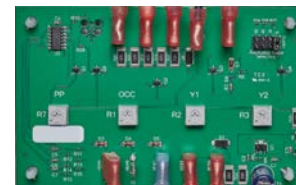
////// Commercial Ventilator Specifications, CRV-V

“V” Vent Code Option – Advanced Commercial Room Ventilator (CRV-V)

The advanced commercial room ventilator is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the CRV-V vent kit. Commercial Room Ventilators are designed to provide an adjustable amount of outdoor air inside a room or structure, exhaust room air, and close when outdoor air is not needed. The intake damper opens when 24VAC power is applied to the ventilation terminal inside the unit control panel (A), or modulating control is possible when a 2-10VDC signal is supplied by a CO2 sensor or control device. The damper blade is operated by a 24VAC actuator motor and blade linkage. When the blade is open, the damper allows outdoor air to be brought into the structure. A solid-state board has adjustable potentiometers for blade position when ventilation is active, or 2-10VDC can be used to modulate damper position. See CRV-V airflow charts provided in this specification for airflow amounts. Air exhaust is provided that allows room air to pass through the vent area and out of the unit. Exhaust damper linkage controls the exhaust air amount and air intake amount simultaneously.

The basic commercial room ventilator includes the following options:

- The intake and exhaust damper opens when the unit ventilation terminal (A) is energized with 24VAC.
- Blade position potentiometer allows adjustment of the outside air amount entering into the building intended for occupant air quality improvement or light industrial room pressurization purposes.
- Optional 0-10VDC modulating damper control for operation with DDC system or external modulating CO2 control. When used, damper allows varying amounts of outside air to be brought into the building.
- Room pre-purge feature with 30/60/90 minute timer allows outdoor air to be brought in to room before occupants enter if ventilation is controlled by a schedule using a thermostat or room controller.
- Spring closed motorized damper closes within 30 seconds when unit power is removed.
- The vent provides a maximum of over 50% of the total airflow rating of the unit.
- Room exhaust is provided through the ventilation assembly reducing room pressure.
- Design based on requirements of ANSI/ASHRAE Standard 62.1 and other state and local ventilation codes.
- Improved damper blade seals for reduced air leakage.



“V” Vent Control Board

////// Economizer Specifications, ECON-NC

“D” Vent Code Option – Economizer without Bard Supplied Controls (ECON-NC)

The Economizer without Bard supplied controls is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the ECON-NC vent kit. Economizers are designed to provide free cooling when outdoor conditions are acceptable, and provide a small amount of outdoor air intake if needed for a room or structure if required. The ECON-NC ventilation option is designed for customers who are using their own ventilation controls package and only need the economizer damper assembly and economizer damper motor. The intake damper opens and closes based on a 2-10VDC signal is supplied by a field supplied control device. Bard does not supply a logic board that will decide when conditions are favorable for free cooling. An outdoor temperature sensor (10k) is supplied with the economizer assembly. The damper blade is operated by a 24VAC actuator motor and blade linkage. When the blade is open, the damper allows outdoor air to be brought into the structure. See ECON-NC airflow charts provided in this specification for airflow amounts. Air exhaust is provided that allows room air to pass through the vent area and out of the unit. Room pressure forces air out the exhaust. Exhaust damper linkage controls the exhaust air amount and air intake amount simultaneously.

The economizer without Bard supplied controls includes the following options:

- The intake and exhaust damper opens when a 2-10VDC signal is received from field-supplied controls.
- A 10k dry bulb outdoor sensor is supplied with the vent option assembly.
- Spring closed motorized damper closes within 30 seconds when unit power is removed.
- When completely open, the vent provides outdoor air intake of the full airflow rating of the unit.
- Room exhaust is provided through the ventilation assembly reducing room pressure.



Economizer Assembly

///// Economizer Specifications, ECON-DB, ECON-S, and ECON-WD

“Y” Vent Code Option – Economizer with JADE Controls and Dry Bulb Outdoor Sensor (ECON-DB)

The Economizer with JADE controls and dry bulb outdoor sensor is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the ECON-DB vent kit. Economizers are designed to provide free cooling when outdoor conditions are acceptable, and provide a small amount of outdoor air intake if required during non-economizer use. This saves energy and reduces compressor run time extending the life of the cooling equipment components. The ECON-DB ventilation option uses the JADE economizer controller and a 10k outdoor temperature sensor to decide when outdoor temperature is acceptable for free cooling operation. During free cooling economizer operation, the indoor blower will draw air through the economizer assembly mixing room air and outdoor air to provide a standard supply temperature. The damper blade is operated by a 24VAC actuator motor and blade linkage. See ECON-DB airflow charts provided in this specification for airflow amounts. Air exhaust is provided that allows room air to pass through the vent area and out of the unit. Room pressure forces air through the exhaust opening. Exhaust damper linkage controls the exhaust air amount and air intake amount simultaneously. Minimum vent position feature allows ventilation air to be brought into a room or structure when the unit ventilation terminal (A) is energized with 24VAC.

The economizer with JADE and dry bulb outdoor sensor includes the following options:

- Saves energy and reduces compressor-cooling runtime.
- The intake and exhaust damper opens to provide free cooling based on outdoor temperature. Outdoor temperature for economizer operation is user adjustable between 48°F and 80°F (8.8°C to 26.6°C). Default is 60°F (15.5°C).
- An economizer supply mixed air sensor provides a mixed air temperature of 53°F (11.6°C) by default.
- A 10k outdoor sensor is supplied with the vent option assembly to measure outdoor temperature.
- Spring closed motorized damper closes within 30 seconds when unit power is removed.
- When completely open, the vent provides outdoor air intake of the full airflow rating of the unit.
- Room exhaust is provided through the ventilation assembly reducing room pressure.
- Minimum vent position feature for outdoor air intake during non-economizer operation. Minimum position is used for meeting ANSI/ASHRAE Standard 62.1 air quality requirements or slight positive room pressurization for light industrial applications.
- 2-10VDC input for modulating ventilation when used with a CO2 sensor or other control device.
- Economizer may be used to provide cooling down to -40°F (-40°C) outdoor temperatures without compressor use.
- The JADE controller provides an easy to use LCD interface with user settings and diagnostics.
- Economizer assembly including damper seals and linkage meets 4cfm per ft2 leakage requirements.



Economizer Assembly

“S” and “Z” Vent Code Option – Economizer with JADE Controls and Enthalpy Outdoor Sensor (ECON-S and ECON-WD)

The Economizer with JADE controls and enthalpy outdoor sensor is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with a vent kit. The “S” economizer option (ECON-S) is available for the W18 thru W36 models and provides up to 75% outdoor air intake without the need for an intake hood. The “Z” economizer option (ECON-WD) is available for all unit models and provides 100% outdoor air intake. W18 thru W36 models include 7” intake hood. Economizers are designed to provide free cooling when outdoor conditions are acceptable, and provide a small amount of ventilation air if needed during non-economizer operation. This saves energy and reduces compressor run time extending the life of the cooling equipment components. The ventilation options use the JADE economizer controller and an outdoor enthalpy (temperature and humidity) sensor to decide when outdoor conditions are acceptable for free cooling operation. During free cooling economizer operation, the indoor blower will draw air through the economizer assembly mixing room air and outdoor air to provide a standard leaving supply temperature. The damper blade is operated by a 24VAC actuator motor and blade linkage. See ECON-WD airflow charts provided in this specification for airflow amounts. Air exhaust is provided that allows room air to pass through the vent area and out of the unit. Room air pressure forces air through the exhaust opening. Exhaust damper linkage controls the exhaust air amount and air intake amount simultaneously. Minimum vent position feature allows ventilation air to be brought into a room or structure if required during non-economizer use when the unit ventilation terminal (A) is energized with 24VAC.

The economizer with JADE and enthalpy outdoor sensor includes the following options:

- Saves energy and reduces compressor-cooling runtime.
- The intake and exhaust damper opens to provide free cooling based on outdoor temperature and humidity. Enthalpy curves are pre-set and user selectable to maximize free cooling runtime or minimize indoor humidity levels during free cooling.
- An economizer supply mixed air sensor provides a mixed air temperature of 53°F (11.6°C) by default.
- An enthalpy sensor is supplied with the vent option assembly to measure outdoor temperature.
- Spring closed motorized damper closes within 30 seconds when unit power is removed.
- When completely open, the vent provides outdoor air intake of the full airflow rating of the unit.
- Room exhaust is provided through the ventilation assembly reducing room pressure.
- Minimum vent position feature for outdoor air intake during non-economizer operation. Minimum position is used for meeting ANSI/ASHRAE Standard 62.1 air quality requirements or slight positive room pressurization for light industrial applications.
- 2-10VDC input for modulating ventilation when used with a CO2 sensor or other control device.
- Economizer may be used to provide cooling down to -40°F (-40°C) outdoor temperatures without compressor use.
- The JADE controller provides an easy to use LCD interface with user settings and diagnostics.
- Economizer assembly including damper seals and linkage meets 4cfm per ft2 leakage requirements.



//////// Economizer Control Specifications, JADE Controller

JADE Economizer Control Features and Benefits

The JADE control is an important component of the ECON-DB and ECON-WD economizer ventilation options. It provides the logic to control the economizer operation based on outdoor conditions and includes an easy to use interface with an LCD display screen. Bard has pre-programmed the JADE from the factory to provide standard settings that apply for common installations.

The following basic setup menu items are available through the JADE menu settings:

- **Mixed Air Temperature:** This set point is used to control the air temperature that is provided by the economizer assembly. The mixed air temperature is set from the factory to provide optimal cooling performance during economizer use. Default setting is 53°F and can be adjusted between 38°F and 65°F.
- **Low T Lock:** This set point is used to lock out compressor operation when outdoor temperature is extremely low. Default setting is 0°F and can be adjusted between -45°F and 80°F.
- **Dry bulb Set point (ECON-DB only):** Provides the maximum outdoor temperature for economizer use. Default setting is 60°F and can be adjusted between 48°F and 80°F.
- **Enthalpy Curve Set point (ECON-WD only):** Provides the enthalpy (temperature and humidity) boundary curves for economizer use. Default setting is ES3 and can be set between ES1 and ES5.
- **Minimum Position:** Used to set the outdoor ventilation amount to be brought into the room or structure when the unit (A) terminal is energized. Default setting is 2VDC and can be set between 2VDC and 10VDC.
- **Demand Control Vent set point (DCV):** DCV is available when 2-10VDC signal is received from a CO2 sensor or other device. This is set to the maximum allowable CO2 level for the space when used with a CO2 sensor. Default setting is 1100ppm and can be adjusted between 500 to 2000ppm. Default setting is recommended, and CO2 level is normally adjustable at the CO2 sensor.
- **Auxiliary output:** An auxiliary output is available that will send 24VAC to terminal 6 on the unit control panel low voltage terminal strip. This feature can be easily set using the JADE interface to function as needed for certain applications. When set to EXH2, the auxiliary output can be used to control a secondary exhaust fan system during economizer operation. When set to SYS, the auxiliary output can be used to signal an issue with the economizer when the JADE has an active alarm. The alarm signal can be connected to a thermostat or controls system with the ability to signal a service alarm.

JADE Technical Specifications

- Voltage 20 to 30 VAC RMS
- Operating Temperature Range (F) -40 F to +150 F
- Operating Temperature Range (C) -40 C to +65 C
- Approvals, Federal Communications Commission Compliant
- Approvals, CE Compliant
- Complies with California Title 24
- Mixed air and Outdoor Enthalpy Sensor using Sylk Bus.
- Output 2-10 VDC to actuator, Sylk Bus.



Jade Control Module

Optional Return Air Sensor Kit Bard Part #8620-340 and #8620-334

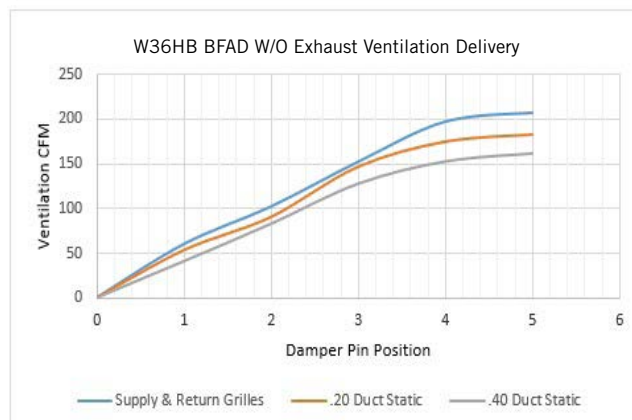
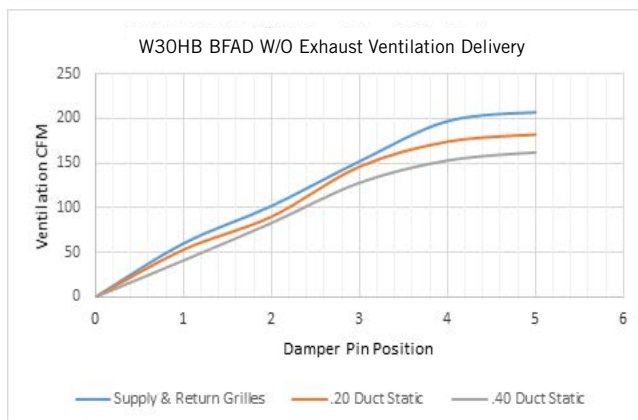
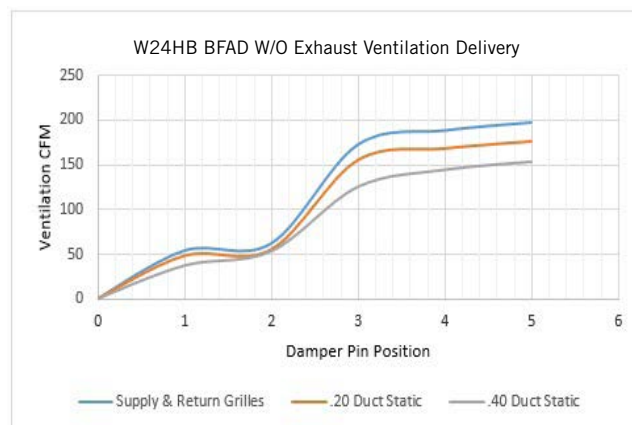
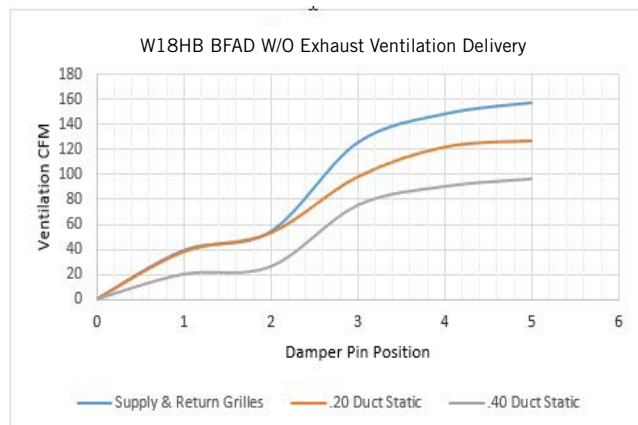
The optional return air sensor kit provides a optional sensor that is field installed in the return airstream. When installed, the JADE economizer will monitor and adjust outdoor air intake based on comparing room temperature and outdoor temperature. This kit is optional, but may be required to meet state and local building codes in certain installation areas.

General Ventilation Option Guidelines

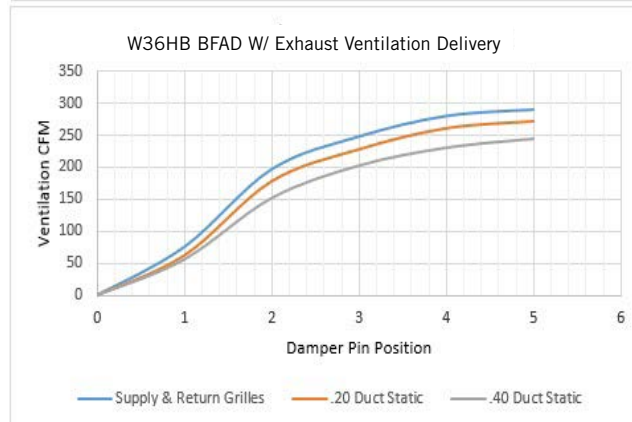
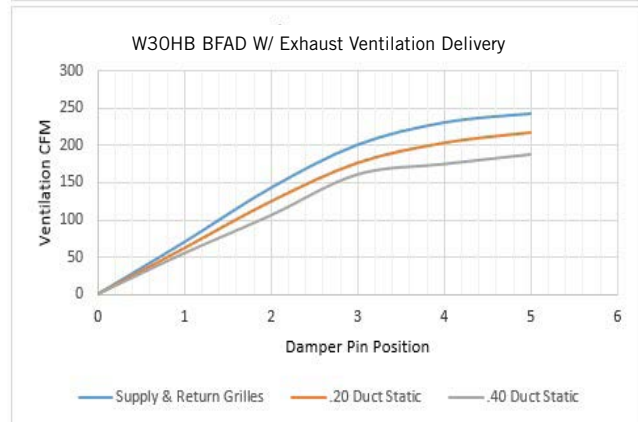
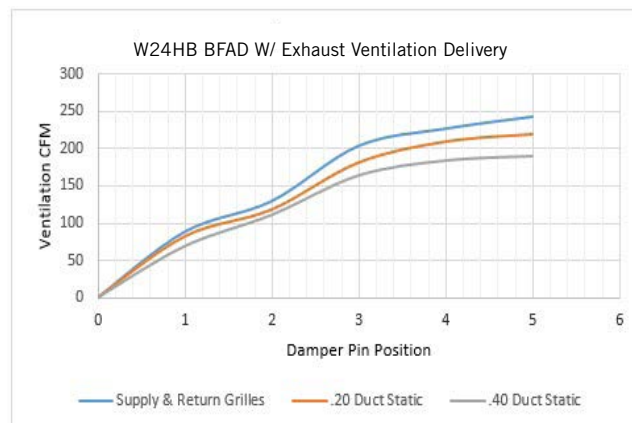
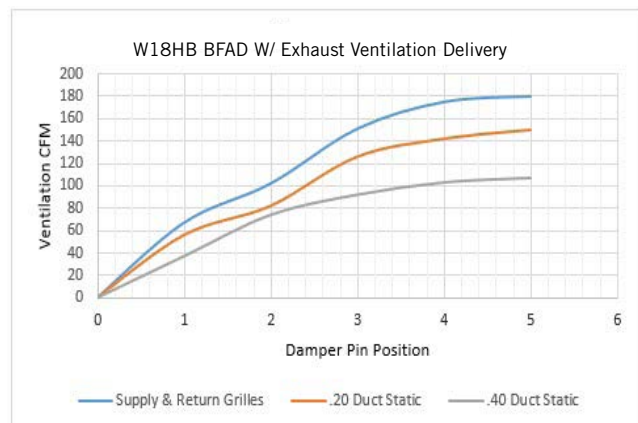
Applying heating and cooling equipment for various applications in the field requires careful planning to ensure the results provide are acceptable for occupants and heat generating equipment inside a room or structure. Products must be reviewed to meet all national, state, and local codes. When providing ventilation air to an indoor area, it is important that the equipment heating and cooling capacity be sized properly for the amount outdoor air being brought into the room or structure. Building pressurization requirements for specified pressurization amounts may require additional exhaust dampers, intake dampers, or fan pressurization systems. Avoid bringing in excessive ventilation amounts when it is not required per the application. Building codes may require special consideration regarding fire suppression systems, building pressurization, and other ventilation needs. Thermostats, CO2 sensors, and multiple unit lead/lag controllers that are used to control the equipment including ventilation must be reviewed per the application requirements. Follow all codes and standards that apply to the location where the equipment will be used, and review ASHRAE recommendations and guidelines for the application.

Barometric Damper Airflow Charts for W18 - W36

"X" (FAD-NE2 and FAD-NE3) Barometric Damper Without Exhaust Vent Code Options

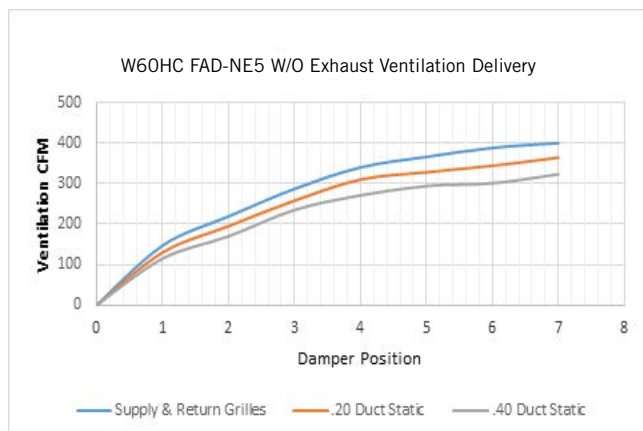
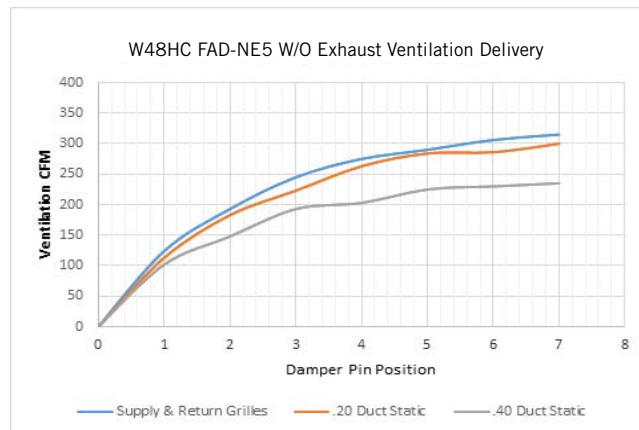
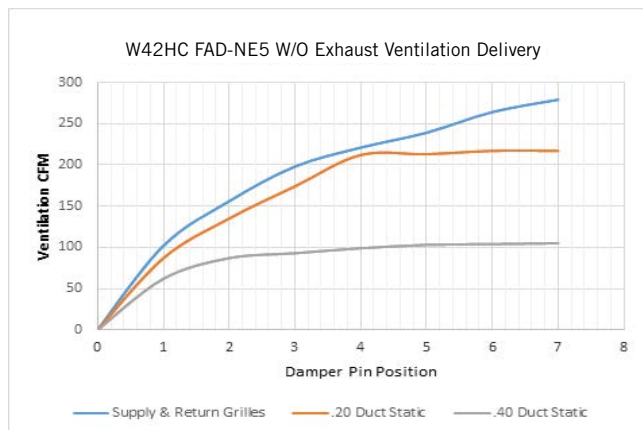


"A" (FAD-BE2 and FAD-BE3) Barometric Damper With Exhaust Vent Code Options

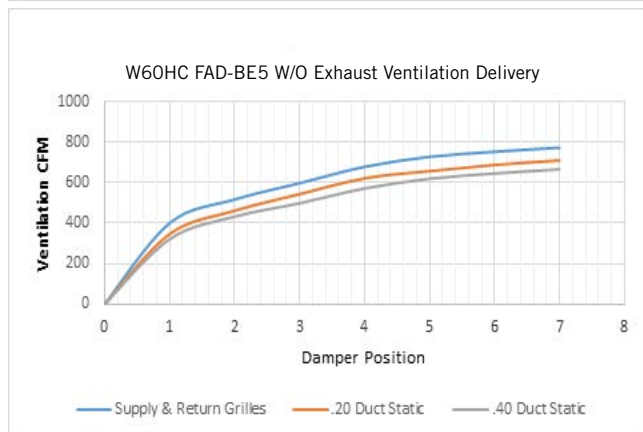
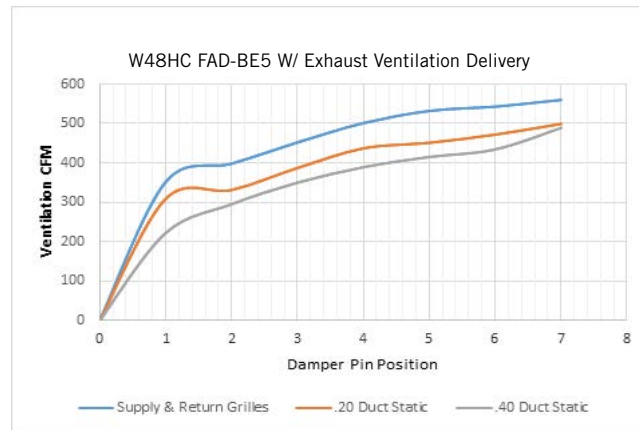
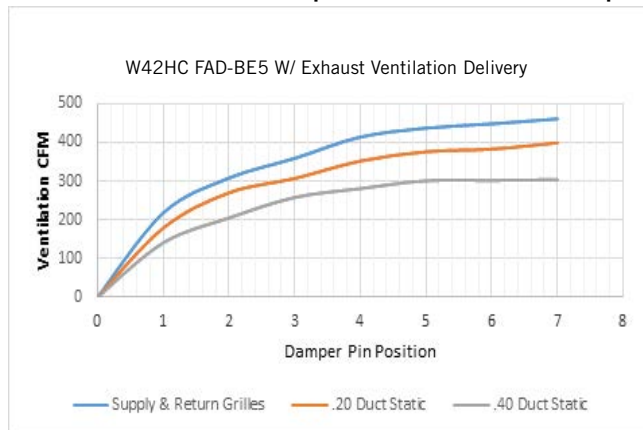


Barometric Damper Airflow Charts for W42 - W60

"X" (FAD-NE5) Barometric Damper Without Exhaust Vent Code Options

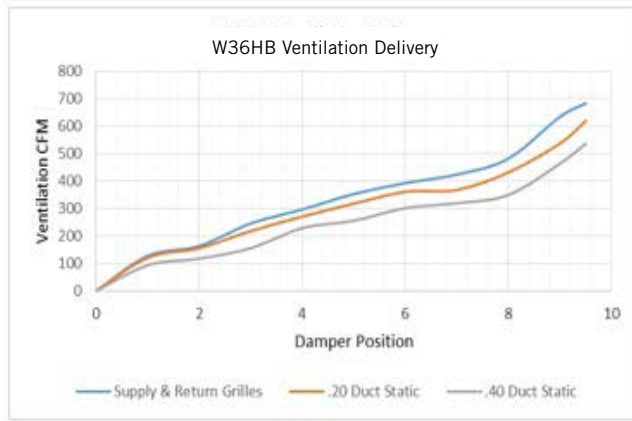
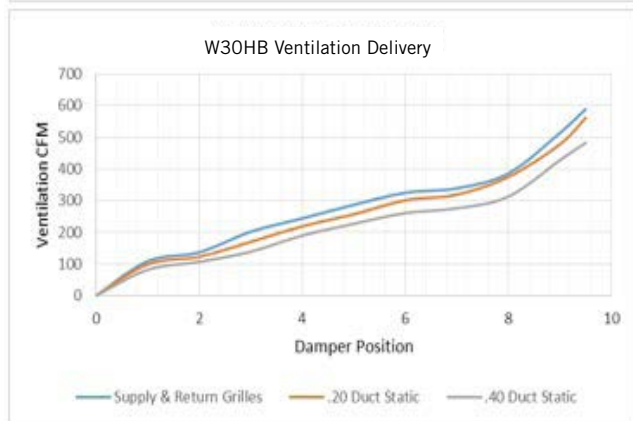
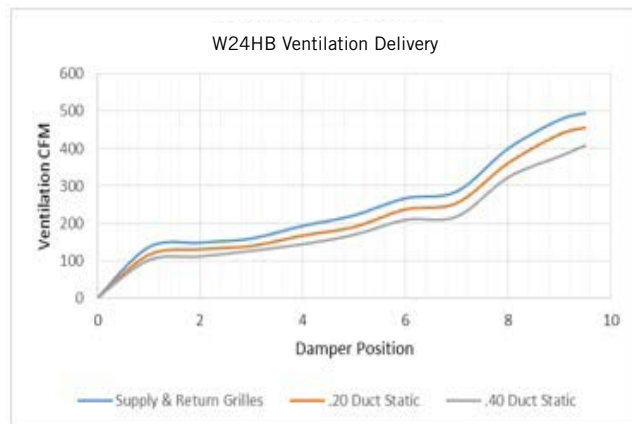
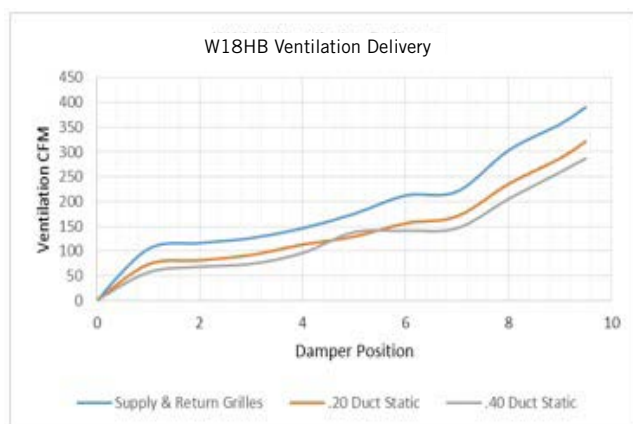


"A" (FAD-BE5) Barometric Damper With Exhaust Vent Code Options

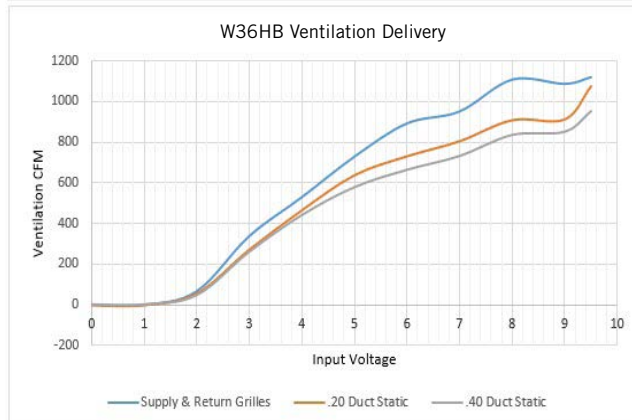
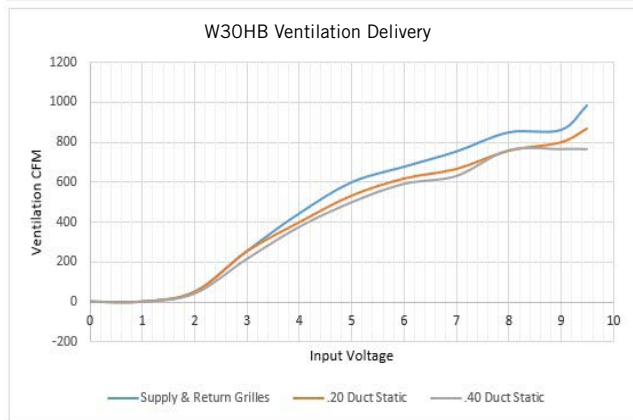
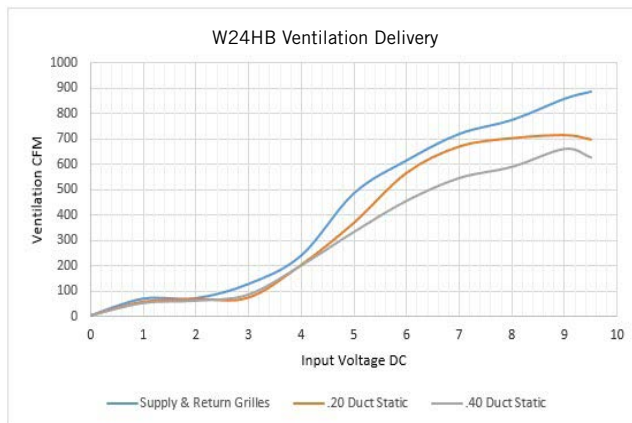


Commercial Room Ventilator and Economizer Airflow Charts for W18 - W36

"M" (CRV-F), "V" (CRV-V), "S" (ECON-S) Vent Code Options

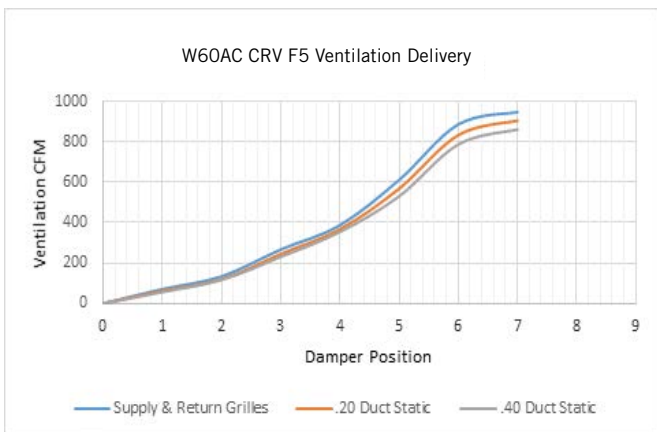
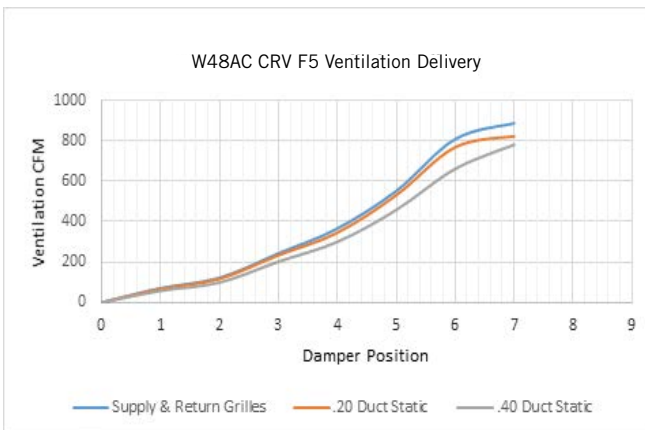
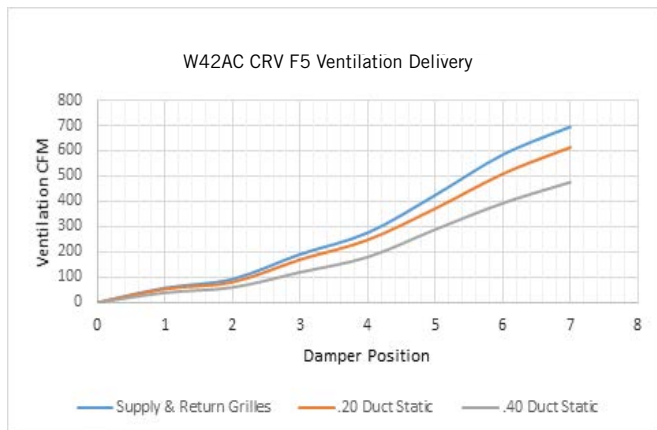


"D" (ECON-NC), "Y" (ECON-DB) and "Z" (ECON-WD) Vent Code Options

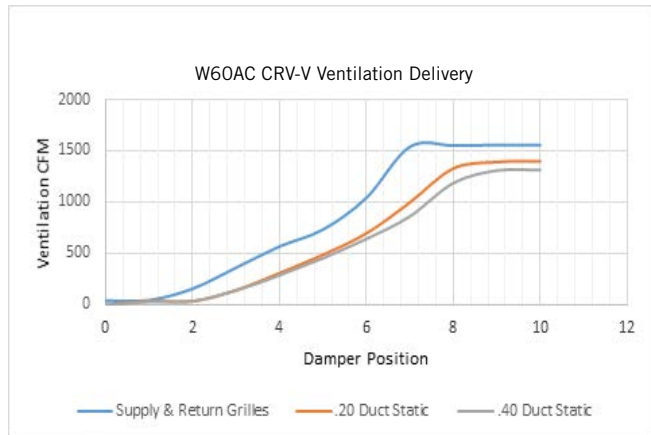
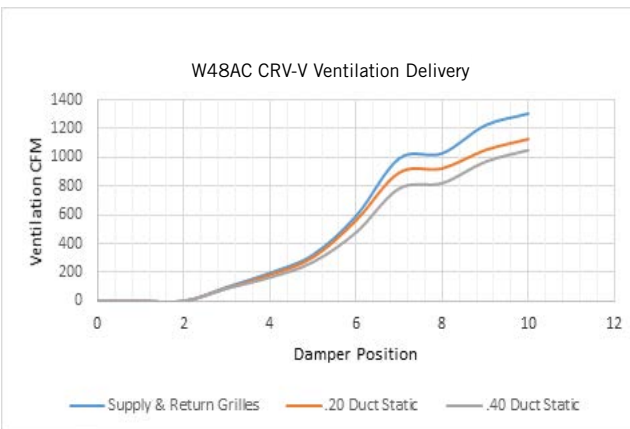
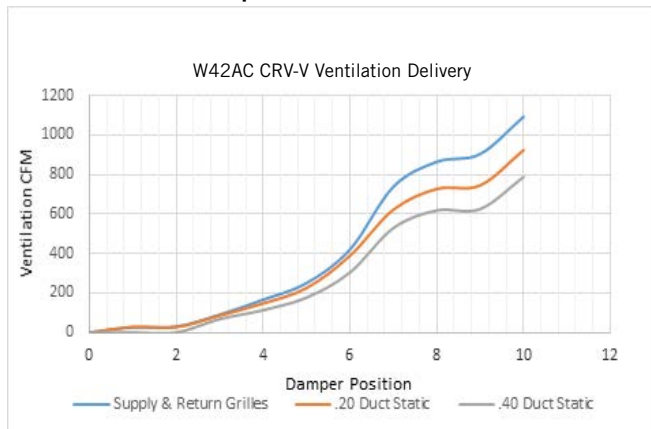


Commercial Room Ventilator and Economizer Airflow Charts for W42 - W60

"M" (CRV-F) Vent Code Options

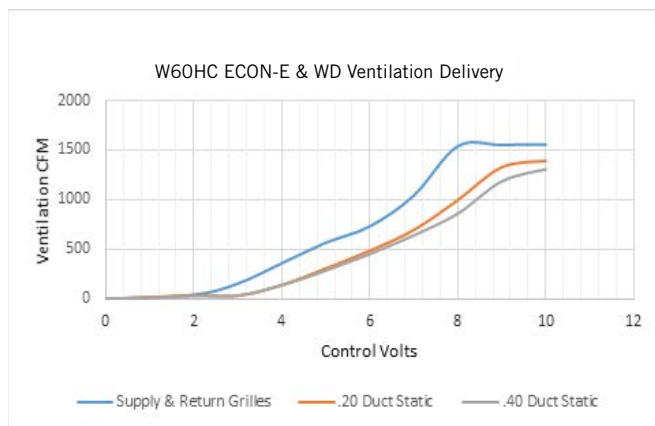
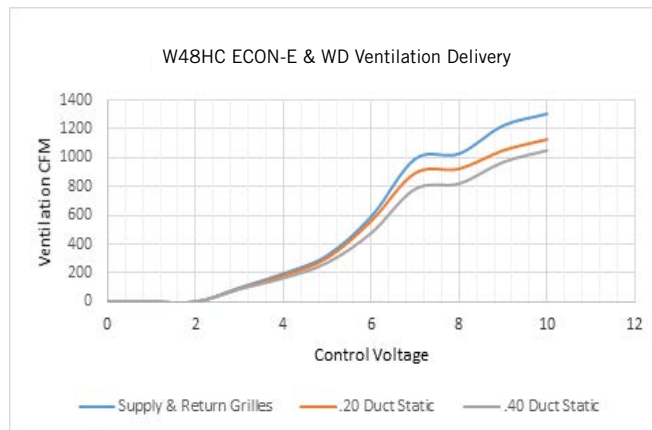
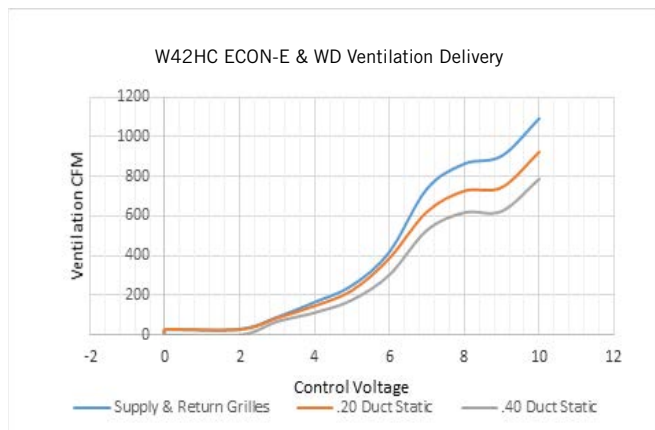


"V" (CRV-V) Vent Code Options



///// Economizer Airflow Charts for W42 - W60 (Continued)

“Y” (ECON-DB), “Z” (ECON-WD), and “D” (ECON-NC) Vent Code Options



Energy Recovery Ventilator (ERV) Specifications

"R" Vent Code Option – Energy Recovery Ventilator (ERV-F)

The Energy Recovery Ventilator is an optional feature on all models, and can be ordered pre-installed from Bard or may be field installed with the ERV-F vent kit. Energy Recovery Ventilators are designed to improve efficiency and comfort levels in a room when it is necessary to bring in outdoor air regardless of outdoor weather conditions. This saves energy and reduces compressor run time extending the life of the cooling equipment components. The ERV-F ventilation option has an intake and an exhaust air path that uses a separate intake and exhaust fan system. Both the intake and exhaust fans draw air through a rotary energy recovery cassette. The cassette transfers heat from one air path into the other.

- ERV-F use during warmer outdoor weather months: Heat is transferred from the intake airstream to the exhaust airstream. This operation allows heat to be removed from the outdoor air before entering the room.
- ERV-F use during cooler outdoor weather months: Heat is transferred from the exhaust airstream to the intake airstream. This operation allows heat to be added to the outdoor air before entering the room.
- The indoor and outdoor fan systems used in the ERV-F each have three user selectable speeds of operation. The rotary energy recovery cassette is easily removed and disconnected from power for service and cleaning. The cassette wheel media is cleanable with a mild soap/cleaning agent and water.
- ERV-F intake and exhaust airflow and energy efficiency charts are provided for ERV-F models based on Wall-Mount unit size.
- Up to 25% heating or cooling load reduction during ventilation operation by pre-conditioning the outdoor air being brought into the room.

Energy Recovery Ventilator (ERV) Performance - W18 and W24

"R" (ERV-FA2 and ERV-FC2) Vent Code Options for W18 & W24
SUMMER COOLING PERFORMANCE (INDOOR DESIGN CONDITIONS 75°DB/62°WB)

AMBIENT O.D.		VENTILATION RATE -- 250 CFM 62% EFFICIENCY						VENTILATION RATE -- 225 CFM 63% EFFICIENCY						VENTILATION RATE -- 200 CFM 63% EFFICIENCY					
DB/WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	11925	8100	1325	7394	5022	822	10727	7287	3441	6758	4591	2168	9540	6480	3060	6010	4082	1928
	70	8100	8100	0	5022	5022	0	7287	7287	0	4591	4591	0	6480	6480	0	4082	4082	0
	65	8100	8100	0	5022	5022	0	7287	7287	0	4591	4591	0	6480	6480	0	4082	4082	0
100	80	17550	6750	10800	10881	4185	6696	15788	6072	9716	9946	3826	6121	14040	5400	8640	8845	3402	5443
	75	11925	6750	5175	7394	4185	3209	10727	6072	4655	6758	3826	2933	9540	5400	4140	6010	3402	2608
	70	6863	6750	113	4255	4185	70	6173	6072	101	3889	3826	64	5490	5400	90	3458	3402	56
	65	6750	6750	0	4185	4185	0	6072	6072	0	3826	3826	0	5400	5400	0	3402	3402	0
	60	6750	6750	0	4185	4185	0	6072	6072	0	3826	3826	0	5400	5400	0	3402	3402	0
95	80	17550	5400	12150	10881	3348	7533	15788	4858	10930	9946	3060	6886	14040	4320	9720	8845	2722	6124
	75	11925	5400	6525	7394	3348	4046	10727	4858	5870	6758	3060	3698	9540	4320	5220	6010	2722	3289
	70	6863	5400	1463	4255	3348	907	6173	4858	1315	3889	3060	829	5490	4320	1170	3458	2722	737
	65	5400	5400	0	3348	3348	0	4858	4858	0	3060	3060	0	4320	4320	0	2722	2722	0
	60	5400	5400	0	3348	3348	0	4858	4858	0	3060	3060	0	4320	4320	0	2722	2722	0
90	80	17550	4050	13500	10881	2511	8370	15788	3643	12145	9946	2295	7651	14040	3240	10800	8845	2041	6804
	75	11925	4050	7875	7394	2511	4883	10727	3643	7084	6758	2295	4463	9540	3240	6300	6010	2041	3969
	70	6863	4050	2813	4255	2511	1744	6173	3643	2530	3889	2295	1594	5490	3240	2250	3458	2041	1417
	65	4050	4050	0	2511	2511	0	3643	3643	0	2295	2295	0	3240	3240	0	2041	2041	0
	60	4050	4050	0	2511	2511	0	3643	3643	0	2295	2295	0	3240	3240	0	2041	2041	0
85	80	17550	2700	14850	10881	1674	9207	15788	2429	13359	9946	1530	8416	14040	2160	11880	8845	1361	7484
	75	11925	2700	9225	7394	1674	5720	10727	2429	8298	6758	1530	5228	9540	2160	7380	6010	1361	4649
	70	6863	2700	4163	4255	1674	2581	6173	2429	3744	3889	1530	2359	5490	2160	3300	3458	1361	2098
	65	2700	2700	0	1674	1674	0	2429	2429	0	1530	1530	0	2160	2160	0	1361	1361	0
	60	2700	2700	0	1674	1674	0	2429	2429	0	1530	1530	0	2160	2160	0	1361	1361	0
80	75	11925	1350	10575	7394	837	6557	10727	1214	9513	6758	765	5993	9540	1080	8460	6010	680	5330
	70	6863	1350	5513	4255	837	3418	6173	1214	4959	3889	765	3124	5490	1080	4410	3458	680	2778
	65	2363	1350	1013	1465	837	628	2125	1214	911	1339	765	547	1890	1080	810	1190	680	510
	60	1350	1350	0	837	837	0	1214	1214	0	765	765	0	1080	1080	0	680	680	0
75	70	6863	0	6863	4255	0	4255	6173	0	6173	6889	0	3889	5490	0	5490	3458	0	3458
	65	2363	0	2363	1465	0	1465	2125	0	2125	1339	0	1339	1890	0	1890	1190	0	1190
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WERVP-A2 WINTER HEATING PERFORMANCE (INDOOR DESIGN CONDITIONS 70°F DB)

AMBIENT O.D.	VENTILATION RATE					
	250 CFM 74% EFF.		225 CFM 75% EFF.		200 CFM 75% EFF.	
DB/F	WVL	WHR	WVL	WHR	WVL	WHR
65	1350	999	1214	911	1080	810
60	2700	1998	2429	1822	2160	1620
55	4050	2997	3643	2733	3240	2430
50	5400	3996	4858	3643	4320	3240
45	6750	4995	6072	4554	5400	4050
40	8100	5994	7287	5465	6480	4860
35	9450	6993	8501	6376	7560	5670
30	10800	7992	9716	7287	8640	6480
25	12150	8991	10930	8198	9720	7290
20	13500	9990	12145	9108	10800	8100
15	14850	10989	13359	10019	11880	8910

NOTE: Sensible performance only is shown for winter application.

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery



Energy Recovery Ventilator (ERV) Performance - W30 and W36

"R" (ERV-FA3 and ERV-FC3) Vent Code Options for W30 & W36

SUMMER COOLING PERFORMANCE (INDOOR DESIGN CONDITIONS 75°DB/62°WB)

AMBIENT O.D.		VENTILATION RATE -- 400CFM 63% EFFICIENCY						VENTILATION RATE -- 325 CFM 64% EFFICIENCY						VENTILATION RATE -- 250 CFM 65% EFFICIENCY					
DB/ WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	19080	12960	6120	12020	8164	3855	15502	10530	4972	9921	6739	3182	11925	8100	3825	7751	5265	2486
	70	12960	12960	0	8164	8164	0	10530	10530	0	6739	6739	0	8100	8100	0	5265	5265	0
	65	12960	12960	0	8164	8164	0	10530	10530	0	6739	6739	0	8100	8100	0	5265	5265	0
100	80	28080	10800	17280	17690	6804	10886	22815	8775	14040	14601	5616	8985	17550	6750	10800	11407	4387	7019
	75	19080	10800	8280	12020	6804	5216	15502	8775	6727	9921	5616	4305	11925	6750	5175	7751	4387	3363
	70	10980	10800	180	6717	6804	113	8921	8775	146	5709	5616	93	6862	6750	112	4460	4387	73
	65	10800	10800	0	6804	6804	0	8775	8775	0	5616	5616	0	6750	6750	0	4387	4387	0
95	80	28080	8640	19440	17690	5443	12247	22815	7020	15795	14601	4492	10108	17550	5400	12150	11407	3510	7897
	75	19080	8640	10440	12020	5443	6577	15502	7020	8482	9921	4492	5428	11925	5400	6525	7751	3510	4241
	70	10980	8640	2340	6917	5443	1474	8921	7020	1901	5709	4492	1216	6862	5400	1462	4460	3510	950
	65	8640	8640	0	5443	5443	0	7020	7020	0	4492	4492	0	5400	5400	0	3510	3510	0
90	80	28080	6480	21600	17690	4082	13608	22815	5265	17550	14601	3369	11232	17550	4050	13500	11407	2632	8774
	75	19080	6480	12600	12020	4082	7938	15502	5265	10237	9921	3369	6552	11925	4050	7875	7751	2632	5118
	70	10980	6480	4500	6917	4082	2835	8921	5265	3656	5709	3369	2340	6862	4050	2812	4460	2632	1828
	65	6480	6480	0	4082	4082	0	5265	5265	0	3369	3369	0	4050	4050	0	2632	2632	0
85	80	28080	4320	23760	17690	2721	14968	22815	3510	19305	14601	2246	12355	17550	2700	14850	11407	1755	9652
	75	19080	4320	14760	12020	2721	9298	15502	3510	11992	9921	2246	7675	11925	2700	9225	7751	1755	5996
	70	10980	4320	6660	6917	2721	4195	8921	3510	5411	5709	2246	3463	6862	2700	4162	4460	1755	2705
	65	4320	4320	0	2721	2721	0	3510	3510	0	2246	2246	0	2700	2700	0	1755	1755	0
80	80	28080	2160	16920	12020	1360	10659	15502	1755	13747	9921	1123	8798	11925	1350	10575	7751	877	6873
	75	10980	2160	8820	6917	1360	5556	8921	1755	7166	5709	1123	4586	6862	1350	5512	4460	877	3583
	70	3780	2160	1620	2381	1360	1020	3071	1755	1316	1965	1123	842	2362	1350	1012	1535	877	658
	60	2160	2160	0	1360	1360	0	1755	1755	0	1123	1123	0	1350	1350	0	877	877	0
75	70	10980	0	10980	6917	0	6917	8921	0	8921	5709	0	5709	6862	0	6862	4460	0	4460
	65	3780	0	3780	2381	0	2380	3071	0	3071	1965	0	1965	2362	0	2362	1535	0	1535
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

WERVP-*3 WINTER HEATING PERFORMANCE (INDOOR DESIGN CONDITIONS 70°F DB)

AMBIENT O.D.	VENTILATION RATE					
	400 CFM 75% EFFICIENCY		325 CFM 76% EFFICIENCY		250 CFM 77% EFFICIENCY	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2160	1620	1755	1333	1350	1039
60	4320	3240	3510	2667	2700	2079
55	6480	4860	5265	4001	4050	3118
50	8640	6480	7020	5335	5400	4158
45	10800	8100	8775	6669	6750	5197
40	12960	9720	10530	8002	8100	6237
35	15120	11340	12285	9336	9450	7276
30	17280	12960	14040	10670	10800	8316
25	19440	14580	15795	12004	12150	9355
20	21600	16200	17550	13338	13500	10395
15	23760	17820	19305	14671	14850	11434

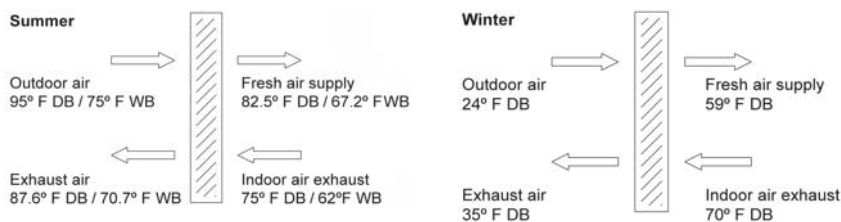
NOTE: Sensible performance only is shown for winter application.

LEGEND:

VLT = Ventilation Load - Total
VLS = Ventilation Load - Sensible
VLL = Ventilation Load - Latent
HRT = Heat Recovery - Total
HRS = Heat Recovery - Sensible
HRL = Heat Recovery - Latent
WVL = Winter Ventilation Load
WHR = Winter Heat Recovery



Energy Recovery Ventilator Cassette



Typical load reductions for ERV-F3



Energy Recovery Ventilator (ERV) Performance - W42 to W60

"R" (ERV-FA5 and ERV-FC5) Vent Code Options for W42, W48, and W60

SUMMER COOLING PERFORMANCE (INDOOR DESIGN CONDITIONS 75°DB/62°WB)

AMBIENT O.D.		VENTILATION RATE -- 450 CFM 63% EFFICIENCY						VENTILATION RATE -- 375 CFM 64% EFFICIENCY						VENTILATION RATE -- 300 CFM 65% EFFICIENCY					
DB/WB	F	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL	VLT	VLS	VLL	HRT	HRS	HRL
105	75	21465	14580	6884	13952	9477	4475	17887	12150	5737	11805	8018	3786	14310	9720	4590	9587	6512	3075
	70	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
	65	14580	14580	0	9477	9477	0	12150	12150	0	8018	8018	0	9720	9720	0	6512	6512	0
100	80	31590	12150	19440	20533	7897	12635	26325	10125	16200	17374	6682	10692	21060	8100	12960	14110	5427	8683
	75	21465	12150	9314	13952	7897	6054	17997	10125	7762	11805	6682	5123	14310	8100	6210	9587	5427	4160
	70	12352	12150	202	8029	7897	131	10293	10125	168	6793	6682	111	8235	8100	135	5517	5427	90
	65	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
	60	12150	12150	0	7897	7897	0	10125	10125	0	6682	6682	0	8100	8100	0	5427	5427	0
95	80	31590	9720	21870	20533	6318	14215	26325	8100	18225	17374	5345	12028	21060	6480	14580	14110	4341	9768
	75	21465	9720	11744	13952	6318	7634	17887	8100	9787	11805	5345	6459	14310	6480	7830	9587	4341	5246
	70	12352	9720	2632	8029	6318	1711	10293	8100	2193	6793	5345	1447	8235	6480	1755	5517	4341	1175
	65	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
	60	9720	9720	0	6318	6318	0	8100	8100	0	5345	5345	0	6480	6480	0	4341	4341	0
90	80	31590	7290	24300	20533	4738	15794	26325	6075	20250	17374	4009	13365	21060	4860	16200	14110	3256	10854
	75	21465	7290	14175	13952	4738	9213	17887	6075	11812	11805	4009	7796	14310	4860	9450	9587	3256	6331
	70	12352	7290	5062	8029	4738	3290	10293	6075	4218	6793	4009	2784	8235	4860	3375	5517	3256	2261
	65	7290	7290	0	4738	4738	0	4050	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	60	7290	7290	0	4738	4738	0	4050	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
85	80	31590	4860	26730	20533	3159	17374	26325	4050	22275	17374	2672	14701	21060	3240	17820	14110	2170	11939
	75	21465	4860	16605	13952	3159	10793	17887	4050	13837	11805	2672	9132	14310	3240	11070	9587	2170	7416
	70	12352	4860	7492	8029	3159	4870	10293	4050	6243	6793	2672	4120	8235	3240	4995	5517	2170	3346
	65	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
	60	4860	4860	0	3159	3159	0	4050	4050	0	2672	2672	0	3240	3240	0	2170	2170	0
80	75	21465	2430	19035	13952	1580	12372	17887	2025	15862	11805	1336	10469	14310	1620	12690	9587	1085	8502
	70	12352	2430	9922	8029	1580	6449	10293	2025	8268	6793	1336	5457	8235	1620	6615	5517	1085	4432
	65	4252	2430	1822	2764	1580	1184	3543	2025	1518	2338	1336	1002	2835	1620	1215	1899	1085	814
	60	2430	2430	0	1579	1580	0	2025	2025	0	1336	1336	0	1620	1620	0	1085	1085	0
75	70	12352	0	12352	8029	0	8029	10293	0	10293	6793	0	6793	8235	0	8235	5517	0	5517
	65	4252	0	4252	2764	0	2764	3543	0	3543	2338	0	2338	2835	0	2835	1899	0	1899
	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ERV-FA5 WINTER HEATING PERFORMANCE (INDOOR DESIGN CONDITIONS 70°F DB)

AMBIENT O.D.	VENTILATION RATE					
	450 CFM 80% EFF.		375 CFM 81% EFF.		300 CFM 82% EFF.	
DB/°F	WVL	WHR	WVL	WHR	WVL	WHR
65	2430	1944	2025	1640	1620	1328
60	4860	3888	4050	3280	3240	2656
55	7290	5832	6075	4920	4860	3985
50	9720	7776	8100	6561	6480	5313
45	12150	9720	10125	8201	8100	6642
40	14580	11664	12150	9841	9720	7970
35	17010	13608	14175	11481	11340	9298
30	19440	15552	16200	13122	12960	10627
25	21870	17496	18225	14762	14580	11955
20	24300	19440	20250	16402	16200	13284
15	26730	21384	22275	18042	17820	14612

NOTE: Sensible performance only is shown for winter application.

LEGEND:

VLT = Ventilation Load - Total
 VLS = Ventilation Load - Sensible
 VLL = Ventilation Load - Latent
 HRT = Heat Recovery - Total
 HRS = Heat Recovery - Sensible
 HRL = Heat Recovery - Latent
 WVL = Winter Ventilation Load
 WHR = Winter Heat Recovery



Unit Filter Options

Unit filter options for the Bard Wall-Mount provide multiple solutions for air filtration and indoor air quality improvement. Filter options allow for both room air passing through the unit and outdoor air provided by ventilation options to be cleaned before entering the indoor environment. Various filter types are available between MERV2 and MERV13 ratings. It is important to review application requirements, state and local codes, and ASHRAE recommendations to provide a clean, safe indoor area for occupants or heat generating equipment. Filter cleaning or replacement is an important part of ensuring that your Bard equipment is operating at optimal performance and indoor sound levels. A routine filter maintenance program based on room conditions is important, and higher MERV rated filters will normally require frequent filter changes. Filter trays are built into the unit with low filter bypass. Filter switch options are available that will help indicate when filter replacement or cleaning is necessary when used with a thermostat option to indicate filter change maintenance is needed.

“X” Filter Code Option – 1” Disposable MERV2 Filter

The 1” disposable non-pleated MERV2 filter is a standard feature on all models, and is normally used for low dust level areas where minimal filtration is required. Media material is typically polyester/fiberglass with a chipboard or cardboard frame. When maintenance is required, the filter is replaced. This option offers minimal filtration, low air resistance, and low maintenance costs.

“W” Filter Code Option – 1” Permanent MERV2 Filter

The 1” permanent non-pleated MERV2 filter is an optional feature on all models, and is normally used for low dust level areas where minimal filtration is required. Media material is typically foam with a plastic frame. When maintenance is required, the filter is cleaned and reused. If the filter media becomes damaged, the filter needs to be replaced. This option offers minimal filtration, low air resistance, and low maintenance costs.

“P” Filter Code Option – 2” Disposable MERV8 Filter

The 2” disposable pleated MERV8 filter is an optional feature on all models, and is normally used for moderate dust level areas where standard filtration is required. Media material is fiber based, provides high performance with an extended surface area that offers low-pressure drop. When maintenance is required, the filter is replaced. This option offers standard filtration, minimal air resistance, and average maintenance costs.

“M” Filter Code Option – 2” Disposable MERV11 Filter

The 2” disposable pleated MERV11 filter is an optional feature on all models, and is normally used for moderate to high filtration requirements. Media material is fiber based, provides high performance with an extended surface area that offers low-pressure drop. When maintenance is required, the filter is replaced. This option offers higher filtration, minimal air resistance, and average maintenance costs.

“N” Filter Code Option – 2” Disposable MERV13 Filter

The 2” disposable pleated MERV13 filter is an optional feature on all models, and is normally used for high filtration requirements. MERV13 filters are typically used where filtration of small particulates is required to offer a high level of indoor air quality. Often these filters are used in occupied areas including classrooms, gymnasiums, cafeterias, and other areas where filtration is at a high importance level. Media material is fiber based, provides high performance with an extended surface area that offers low-pressure drop. Filter replacement in 3-month or less intervals is recommended for the best filter and unit performance.

“A” Filter Code Option – 2” Disposable MERV13 Filter with UVC-LED Light

The 2” disposable pleated MERV13 filter is included with this option, and also a UVC-LED light used for disinfection. UVC-LED Light is a type of ultraviolet germicidal irradiation (UVGI) that disinfects the air through shortwavelength ultraviolet light. See UVC-LED Light specifications for further details.

Filter Replacement Part Number Chart

UNIT MODEL	FILTER CODE	FILTER MERV RATING	NUMBER OF FILTERS USED	BARD PART NUMBER	FILTER SIZE	FILTRATION LEVEL
W18, W24	X	MERV 2	1	7004-011	16 x 25 x 1	Low Filtration, 1” Thickness Disposable Media.
	W	MERV 2	1	7003-032	16 x 25 x 1	Low Filtration, 1” Thickness Permanent Media.
	P	MERV 8	1	7004-025	16 x 25 x 2	Average Filtration, 2” Thickness Pleated Disposable Media.
	M	MERV 11	1	7004-059	16 x 25 x 2	Above Average Filtration, 2” Thickness Pleated Disposable Media.
	N	MERV 13	1	7004-061	16 x 25 x 2	High Filtration, 2” Thickness Pleated Disposable Media.
W30, W36	X	MERV 2	1	7004-019	16 x 30 x 1	Low Filtration, 1” Thickness Disposable Media.
	W	MERV 2	1	7003-031	16 x 30 x 1	Low Filtration, 1” Thickness Permanent Media.
	P	MERV 8	1	7004-026	16 x 30 x 2	Average Filtration, 2” Thickness Pleated Disposable Media.
	M	MERV 11	1	7004-048	16 x 30 x 2	Above Average Filtration, 2” Thickness Pleated Disposable Media.
	N	MERV 13	1	7004-062	16 x 30 x 2	High Filtration, 2” Thickness Pleated Disposable Media.
W42, W48, W60	X	MERV 2	2	7004-012	20 x 20 x 1	Low Filtration, 1” Thickness Disposable Media.
	W	MERV 2	2	7003-085	20 x 20 x 1	Low Filtration, 1” Thickness Permanent Media.
	P	MERV 8	2	7004-052	20 x 20 x 2	Average Filtration, 2” Thickness Pleated Disposable Media.
	M	MERV 11	2	7004-060	20 x 20 x 2	Above Average Filtration, 2” Thickness Pleated Disposable Media.
	N	MERV 13	2	7004-063	20 x 20 x 2	High Filtration, 2” Thickness Pleated Disposable Media.



///// Cabinet Finishes and Construction

Unit cabinet finish options provide a way to have the Bard Wall-Mount blend in with existing building colors, provide additional corrosion protection, or reduce unit product weight. Unit top, structural sides, and front service panels are constructed using 20 guage materials. Base is constructed using 16 guage galvanized steel. Cabinet components are insulated with a non-fiberglass formaldehyde free insulation that has a high “R” value, is easy to clean with a FSK foil backing, and resists delamination.

Painted Steel Finish

This cabinet option uses zinc coated steel panels that are cleaned, rinsed, sealed and dried before a polyurethane primer is applied. The cabinet paint coating is comprised of a baked on textured enamel. The resulting finish is designed to withstand over 1000 hours of salt spray tests per ASTM B117-03.

The following painted steel colors are available:

- “X” Cabinet Finish Option – Beige
- “1” Cabinet Finish Option – White
- “4” Cabinet Finish Option – Gray
- “5” Cabinet Finish Option – Desert Brown
- “8” Cabinet Finish Option – Dark Bronze



X—Beige



1—White



4—Gray



5—Desert

Stainless Steel Finish

Exterior Stainless Steel finish cabinets are often selected for corrosion and chemical resistance. Higher grades of stainless steel are often specified to meet the requirements of harsh or corrosive environments. The Bard stainless steel unit offers a high quality stainless steel grade enclosure and fasteners for years of operation in these conditions.

Features of stainless steel “S” cabinet finish option:

- Sides, doors, grilles, back panels, and top are 316 grade stainless steel.
- Base, condenser partition, and fan shroud are 304 grade stainless steel.
- Stainless steel exterior cabinet screws, washers, nuts, and bolts, are used.
- Stainless steel outdoor motor mount and motor mount hardware.
- Compressor mounting hardware is stainless steel and hex no-spin rivet nuts are used in the unit base.
- Corrosion resistant coating is applied to fan blade.



8—Bronze



S—Stainless

Aluminum Finish

Aluminum external cabinet finish option “A” units are constructed of ASTM B 209 grade .06” thickness panels with a stucco appearance.



A—Aluminum

///// Evaporator Coil, Condenser Coil, and Cabinet Coatings

Unit condenser and evaporator coils are designed, manufactured, and tested by Bard. A rifled copper hairpin design provides enhanced unit performance when used with a stamped aluminum fin for excellent heat transfer. End plate design includes extruded collars for hairpin tube protection. All coils are pressure tested before use and leak tested after unit construction. A copper tube and aluminum fin design coil is easy to clean and maintain through the life of the unit.

“X” Code Option – Standard Evaporator and Condenser Coils

Standard products include a green protective coating applied to the aluminum fin stock used for the evaporator coil. The evaporator coil coating is hydrophilic (attracts water) and allows for proper condensate drainage along with mild corrosion protection. Resistance to corrosive agents include ammonia, sodium hydroxide, sodium chloride, acidic solutions and solvents. Condenser coil construction is a copper hairpin with aluminum fin design that is easy to clean and maintain. Unit coating options are also available that offer additional corrosion protection to the unit cabinet. Applications where external or internal cabinet components will be exposed to extremely harsh environments require additional protection to copper, steel, and other materials.

“1” Code Option – Corrosion Resistance Coated Evaporator and Standard Condenser Coil

Option includes a Technicoat AA protective coating applied to the entire evaporator coil. After the evaporator coil is assembled, the entire coil is dipped in the coating process. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. Dehumidification units also include a dipped hot gas reheat coil. Standard condenser coil construction is a copper hairpin with aluminum fin design that is easy to clean and maintain. This option provides the best indoor coil protection when harmful chemicals or agents may be present in the indoor airstream. The exterior and interior unit cabinet is not coated with this option.

///// **Evaporator Coil, Condenser Coil, and Cabinet Coatings (Continued)**

"2" Code Option – Standard Evaporator and Corrosion Resistance Coated Condenser Coil

Option includes a green protective coating applied to the aluminum fin stock used for the evaporator coil. The evaporator coil coating is hydrophilic (attracts water) and allows for proper condensate drainage along with mild corrosion protection. Resistance to corrosive agents include ammonia, sodium hydroxide, sodium chloride, acidic solutions and solvents. A Technicoat AA protective coating is applied to the entire condenser coil. After the condenser coil is assembled, the entire coil is dipped in the coating process. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. This option provides the best outdoor coil protection when harmful chemicals or agents may be present in the outdoor airstream. Also provides a level of protection when units are installed in applications near salt water. The exterior and interior unit cabinet is not coated with this option.

"3" Code Option – Corrosion Resistance Coated Evaporator and Corrosion Resistance Coated Condenser Coil

Option includes a Technicoat AA protective coating applied to the entire evaporator coil. After the evaporator coil is assembled, the entire coil is dipped in the coating process. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. Dehumidification units also include a dipped hot gas reheat coil. A Technicoat AA protective coating is applied to the entire condenser coil. After the condenser coil is assembled, the entire coil is dipped in the coating process. This provides the best coil resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. The exterior and interior unit cabinet is not coated with this option.

"4" Code Option – Corrosion Resistance Coated Evaporator and Condenser Coil, Condenser Section Only Coating

Option includes a Technicoat AA protective coating applied to the entire evaporator coil. After the evaporator coil is assembled, the entire coil is dipped in the coating process. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. Dehumidification units also include a dipped hot gas reheat coil. A Technicoat AA protective coating is applied to the entire condenser coil. After the condenser coil is assembled, the entire coil is dipped in the coating process. This provides the best coil resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. The interior of the lower unit condenser section is corrosion coated for additional protection including the unit base, compressor, and condenser area copper tubing, filter/drier, and condenser fan.

"5" Code Option – Corrosion Resistance Coated Evaporator and Condenser Coil, Interior/Exterior Unit Coating

Option includes a Technicoat AA protective coating applied to the entire evaporator coil. After the evaporator coil is assembled, the entire coil is dipped in the coating process. This provides the best resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. Dehumidification units also include a dipped hot gas reheat coil. A Technicoat AA protective coating is applied to the entire condenser coil. After the condenser coil is assembled, the entire coil is dipped in the coating process. This provides the best coil resistance to corrosive agents, and the coating process ensures the core of the aluminum fin pack is covered. The entire exterior of the unit including the lower condenser section is coated along with all copper tubing, refrigeration, and air moving components. The interior components of the unit are also coated for the best cabinet component corrosion protection available.

///// **Evaporator Coil and Condenser Coil Coatings Resistance List**

The Technicoat AA coil coating provides a robust, dipped corrosion protection solution designed for indoor evaporator and outdoor condenser coils. Both field and lab testing results show no deterioration in harsh environments including refineries, mining operations, paper/pulp processing plants, and wastewater treatment facilities. ASTM B-117 testing includes over 10,000 hours with over 3,000 hours of SWAAT test time.

Chemical resistance includes the following:

- Alkalines including Ammoniac solution, Potassium Hydroxide, Calcium Hydroxide, and Magnesium Hydroxide.
- Alcohols including Isopropanol, Butanol, Amyl Alcohol, Benzyl Alcohol, Diacetone Alcohol, Glycerine, Propanol, and Pentanol
- Aliphatic Hydrocarbons including White Spirit, Shellsol, Bitumen, Isopar G, and Paraffin.
- Amines including Triethanolamine, Aniline Sulphate, Hexamethylenetetraamine, Phenylamine, Triethylamine, and Methylamine.
- Inorganic Compounds including Hydrogen Carbonate, Hydrogen Sulfide, Nitrous Acid, Sulphuric Acid, and Selenic Acid.
- Aromatic Hydrocarbons including Xylene, Toluene, Asphalt, Anthracene, Benzapherene, Gumlac, Benzene, and Naphtha.
- Fuels and Oils including Diesel, Fuel Oil, Petrol, Super Petrol, Lubricating Oils, Kerosene, Spheric Oils, LPG, and Mineral Oil.
- Ethers including Ethric Oils, Vegetable Oils, Butane, Acetylene, and Methane.
- Halogenated Hydrocarbons including Amyl Acetate, Propyl Acetate, Ethyl Oxalate, Butyl Acetate, and Butyl Propionate.
- Softeners including Palatinol C, Chloroparaffine 5XX, Dioctylphosphate, Desavin, Mesamol, and Dibutylphosphate.
- Organic Compounds including Benzoic Acid, Lactic Acid, Phenols, Fatty Acids, Malic Acid, and Picric Acid.
- Salts and water solutions including Sodium, Potassium, Calcium, Aluminum, Ammonium, Barium, Copper, Lead, and Lithium.
- Many other agents including Phosphor, Zinc, Glucose Syrup, Sulfur, Urea, Menthol, Antimony, Hydrogen, Rubber, and Shellac.

Special Properties:

- Anti-Odor
- Hydrophilic / Hydrophobic
- Anti-Corrosive

EXPOSURE CONDITIONS INCLUDE: Food Processing & Storage, Airports, Office Buildings, Hotels, Schools, Warehouses, Water Treatment, Breweries, Paper Mills, Refineries, Power Plants, Meat Processing Industries, Automotive Industries and other locations near shorelines and salt water.

Contact your local Bard distributor or representative for a list of all chemicals and additional chemical resistance information.



/////// Cabinet Coatings Process and Resistance

Unit cabinet coatings involve a multi-step process that provides superior protection for conditions seen in harsh environments. Two different coating components are used to produce a chemically cured urethane based epoxy semi-gloss coating for industrial or architectural applications. Corrosion coating is also available for stainless steel construction units. Stainless steel components are scuffed and then coated with a gray tinted corrosion resistance coating.

Advantages include the following:

- Excellent corrosion protection.
- Suitable for salt and fresh water immersion.
- Excellent chemical and solvent resistance. Resists both splash and spillage of solvents, alkalis, salts, moisture, oils, greases, foodstuffs, and detergents.
- Low VOC, Self-priming and abrasion resistant.
- Excellent resistance to graffiti materials such as spray paint, magic markers, and lipstick.

Contact your local Bard distributor or representative for a list of all chemicals and additional chemical resistance information.

/////// Controls Options Definitions Including Switches, Sensors, Relays, and Start Kits

Unit controls include safety devices and accessories that can be used to customize the Bard Wall-Mount for uses in multiple applications. Controls can be supplied from the factory or field installed. The below listing provides a description of the controls options available for the Bard WA Series unit.

High Pressure Control Switch (HPC): The high-pressure control is standard in all units, and interrupts compressor operation if high side refrigerant pressures exceed switch settings. The switch is normally closed (NC) and opens during a high-pressure event. Events that can cause the switch to open include poor condenser coil cleaning maintenance, poor filter maintenance, condenser fan failure, or a restriction in the refrigeration system.

Low Pressure Control Switch (LPC): The low-pressure control is standard in all units, and interrupts compressor operation if low side refrigerant pressures reach an extremely low level. The switch is normally closed (NC) and opens during a low-pressure event. A typical event that can cause switch use includes loss of refrigerant in the system.

Heat Pump Control Board (HCB): The heat pump control board is standard in all heat pump units, and interrupts compressor operation if the high- or low-pressure switch circuits are open. It also controls defrost operation and uses a defrost sensor connected to the condenser coil. See unit manual for further details regarding the operation of the high and low-pressure control and defrost operation. The heat pump control board includes a diagnostic light to indicate modes of operation and status of the high- and low-pressure switches. Board logic includes a make-on-break and delay on make timer.

Alarm Relay (ALR): The alarm relay is an optional accessory that can be factory or field installed in the unit control panel. It consists of a relay that is energized based on a signal from the compressor control module. Once energized, the alarm relay will provide both normally open (NO) and normally closed (NC) contacts on the low voltage terminal strip to indicate an event has locked out compressor operation.

Low Ambient Control (LAC): The low ambient control is an optional accessory that can be factory or field installed in the unit condenser section. When installed, the LAC monitors high side system pressures and helps maintain a specific pressure range during compressor operation. To maintain high side system pressures, condenser fan operation is either turned on and off in cycles, or the speed of the condenser fan modulates. Low ambient controls are recommended for applications where compressor cooling is required at lower outdoor temperatures below 60°F (15.5°C). Models with the low ambient control option also include a freeze stat attached to the coldest refrigerant circuit of the indoor evaporator coil. If freezing temperatures are sensed by the freeze stat, compressor operation is disabled momentarily to help prevent ice buildup on the indoor evaporator coil.

Dirty Filter Indicator Switch (DFS): The dirty filter indicator switch is an optional accessory that can be factory or field installed in the unit filter area. The switch measures pressure before and after the filter. During a restricted filter event, normally closed (NC) contacts will open indicating the filter requires maintenance. Once maintenance is complete, the switch is manually reset to indicate maintenance is complete. Pressure differential is adjustable to match user preference for filter replacement.

Crankcase Heater (CCH): The crankcase heater is an optional accessory that can be field installed around the base of the compressor. When installed, the CCH provides heat to the compressor base when the compressor is not operational. Heating the compressor helps prevent refrigerant migration when the unit is not running. Standard compressor functionality does not require the crankcase heater, but it is recommended for compressor operation in extremely cold environments including northern Canada.

Outdoor Thermostat (ODT): The outdoor thermostat is an optional accessory that can be field installed in the unit control panel and condenser section. The outdoor thermostat measures outdoor temperatures and includes relay contacts (NC) breaking the compressor signal during cold outdoor conditions. This is useful when using both heat pump and electric heat operation to limit compressor heating use. The thermostat is in the control panel area and the sensor bulb is mounted to the fan shroud in the outdoor condenser section. Adjustment range is 0°F to 50°F. Default setting is 10°F.

PTCR Start Kit - Field installed option only. PTCR (Precision Temperature Coefficient Resistor) start kit includes the start device and wires needed for installation. The device is located inside the unit control panel near the compressor capacitor and provides an increase in starting torque. The PTCR Start Kit is not normally required when a clean, stable power source is available for the unit. The kit can only be used in 230 Volt single phase units.

Start Capacitor and Potential Relay Start Kit - Field installed option only. The kit includes a start capacitor and relay that is energized during startup of the compressor. The capacitor, relay, and needed wires are provided in a metal enclosure that is field installed in the outdoor section attached to the back. The Start Capacitor Kit is not normally required when a clean, stable power source is available for the unit. The kit can only be used in 230 Volt single phase units. Start capacitor kit cannot be used with the PTCR start kit installed.



///// **Factory Controls Options Chart Including Switches, Sensors, Relays, and Start Kits**

Factory installed controls are provided by Bard to enhance a Wall-Mount product before it is shipped. All Wall-Mount products are shipped with a auto-reset high pressure switch and an auto-reset low pressure switch to help protect refrigeration components. A heat pump defrost control board with delay on make and break, and high/low pressure diagnostics is also standard.

CONTROL CODE FOR STANDARD AND DEHUMIDIFICATION MODELS	DESCRIPTION OF FACTORY INSTALLED COMPONENTS
X	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module.
E	Hi Pressure Switch, Low Pressure Switch, Defrost Board, Low Ambient Control
F (W42 thru W60 only)	Hi Pressure Switch, Low Pressure Switch, Defrost Board, Low Ambient Control, Dirty Filter Press. Switch
J	Hi Pressure Switch, Low Pressure Switch, Defrost Board, Low Ambient Control, Alarm Relay
Q	Hi Pressure Switch, Low Pressure Switch, Defrost Board, Outdoor Thermostat
R	Hi Pressure Switch, Low Pressure Switch, Defrost Board, Low Ambient Control, Outdoor Thermostat
S	Hi Pressure Switch, Low Pressure Switch, Defrost Board, PTCR Start Kit
T	Hi Pressure Switch, Low Pressure Switch, Defrost Board, Low Ambient Control, Outdoor Thermostat, PTCR Start Kit

///// **Field Kit Controls Options Chart Including Switches, Sensors, Relays, and Start Kits**

Field installed kits provide accessories that can be installed in the field. Required components, wires, enclosures, screws, and instructions that are needed are provided within the kit.

CONTROL CODE	KIT PART NO.	UNITS USING KIT	DESCRIPTION OF FIELD INSTALLED KIT
E	CMH-33	W18H	Low Ambient Control allows compressor cooling between 0°F and 50°F outdoor temp. - modulating
E	CMH-34	W24H, W30H, W36H	Low Ambient Control allows compressor cooling between 0°F and 50°F outdoor temp. - fan cycling
E	CMH-35	W42H, W48H, W60H	Low Ambient Control allows compressor cooling between 0°F and 50°F outdoor temp. - fan cycling
NA	CMC-15	W18H, W24H, W30H, W36H	PTCR Start Kit. Increases starting torque by 2 to 3x. 230V-60hz-1 phase (A voltage) only. Cannot be used in combination with SK start kit
NA	CMC-32	W42H, W48H, W60H	PTCR Start Kit. Increases starting torque by 2 to 3x. 230V-60hz-1 phase (A voltage) only. Cannot be used in combination with SK start kit
NA	SK-111	W18H, W24H, W30H, W36H	Start Capacitor and Potential Relay Start Kit. Increases starting torque by 9x. 230V-60hz-1 phase (A voltage) only. Cannot be used in combination with CMC start kit
NA	CMH-28	W18H, W24H, W30H, W36H	Outdoor Thermostat Kit used to disable compressor cooling below 50°F outdoor temp. Adjustable between 50° and 0°F
NA	CMH-36	W42H, W48H, W60H	Outdoor Thermostat Kit used to disable compressor cooling below 50°F outdoor temp. Adjustable between 50° and 0°F
NA	CMC-34	W18H, W24H, W30H, W36H	Cooling Failure Alarm Relay Kit
NA	CMC-35	W42H, W48H, W60H	Cooling Failure Alarm Relay Kit
NA	CMC-36	W18H, W24H, W30H, W36H	Crank case heater kit. 230V units only.
NA	CMC-37	W18H, W24H, W30H, W36H	Crank case heater kit. 460V units only.
NA	CMC-38	W42H, W48H, W60H	Crank case heater kit. 230V units only.
NA	CMC-39	W42H, W48H, W60H	Crank case heater kit. 460V units only.
NA	CMC-29	W18H, W24H, W30H, W36H, W42H, W48H, W60H	Evaporator coil freezestat kit - Freezestat is a standard option on all units with a Low Ambient Control (LAC) or hot gas reheat dehumidification.



Field Installed Air Quality Kits

Field installed kits provide accessories that can be installed in the field. Required components, wirees, enclosures, screws, and instructions that are needed are provided within the kit.

CONTROL CODE	KIT PART NO.	UNITS USING KIT	DESCRIPTION OF FIELD INSTALLED KIT
NA	CMC-31	W18H, W24H, W30H, W36H	Dirty Filter Alarm Pressure Sensor Kit. Provides Normally Open Contacts to send an alarm signal to a thermostat or controller.
NA	CMC-33	W42H, W48H, W60H	Dirty Filter Alarm Pressure Sensor Kit. Provides Normally Open Contacts to send an alarm signal to a thermostat or controller.
NA	8620-343	W18H, W24H, W30H, W36H, W42H, W48H, W60H	LED UV-C Long Life Light Kit. 460V units only. Installed in evaporator coil entering airstream along with door safety switch. Indicator light provided to monitor LED use.
NA	8620-344	W18H, W24H, W30H, W36H, W42H, W48H, W60H	LED UV-C Long Life Light Kit. 230V units only. Installed in evaporator coil entering airstream along with door safety switch. Indicator light provided to monitor LED use.

Advanced Sensor Options and Kits

Field installed kits provide accessories that can be installed in the field. Required components, wirees, enclosures, screws, and instructions that are needed are provided within the kit.

CONTROL CODE	KIT PART NO.	UNITS USING KIT	DESCRIPTION OF FIELD INSTALLED KIT
NA	8620-340	W18H, W24H, W30H, W36H	Return Air Sensor Kit for use with all economizers with the JADE controller.
NA	8620-334	W42H, W48H, W60H	Return Air Sensor Kit for use with all economizers with the JADE controller.

Sound Reduction Accessories

Field installed kits provide accessories that can be installed in the field. Required components, wirees, enclosures, screws, and instructions that are needed are provided within the kit.

CONTROL CODE	KIT PART NO.	UNITS USING KIT	DESCRIPTION OF FIELD INSTALLED KIT
NA	8002-012	W18H, W24H, W30H, W36H	Compressor sound cover. Weatherized vinyl insulated cover that helps reduce compressor sound level.
NA	8002-013	W42H, W48H, W60H	Compressor sound cover. Weatherized vinyl insulated cover that helps reduce compressor sound level.

Optional Shipping Crates

Optional crates are available to help protect your valuable Wall-Mount investment during shipping. Constructed from OSB sheathing with steel corner posts, and sized for standard truck transportation. Treated for pests in accordance with the International Plant Protection Convention, Publication 15, Annex 1. Packaging is acceptable for international shipments.

CRATE NO.	UNIT MODELS	DESCRIPTION
8620-263	W18H, W24H	Standard Unit Crate, all vents except economizer.
8620-275	W18H, W24H	Units with Economizer vent (Factory Installed 7" Hood).
8620-262	W30H, W36H	Standard Unit Crate, all vents except economizer
8620-276	W30H, W36H	Units with Economizer vent (Factory Installed 7" Hood).
8620-304	W42H, W48H	Standard Unit Crate, all ventilation options
8620-305	W60H	Standard Unit Crate, all ventilation options



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NOTE: For side-by-side installation of two (2) WA models, there must be 20" between units. This can be reduced to 15" by using a WL model (left side compressor and controls) for the left unit and WA (right side compressor and controls) for right unit.

- ① Refer to the Installation Manual for more detailed information.

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN																
				A	B	C	D	E	F	G	I	J	K	L	M	N	O	P	Q	R	S	T
W18HB W24HB	33.300	17.125	74.563	7.88	19.88	11.88	19.88	35.00	10.88	29.75	20.56	30.75	32.06	33.25	31.00	2.63	34.13	26.06	10.55	3.94	12.00	9.00
W30HB W36HB	38.200	17.125	74.563	7.88	27.88	13.88	27.88	40.00	10.88	29.75	17.93	30.75	32.75	33.25	31.00	2.75	39.13	26.75	9.14	3.94	12.00	9.00



/////// Cabinet and Clearance Dimensions - W42 to W60 Series Units

CLEARANCES REQUIRED FOR SERVICE ACCESS AND ADEQUATE CONDENSER INLET AIRFLOW

MODELS	LEFT SIDE	RIGHT SIDE
W42HC, W48HC, W60HC	20"	20"

- 1.) Follow all national, state, and local codes and regulations regarding the installation of heating and cooling equipment regarding Single Packaged Vertical Units (SPVU) including electrical access clearances.
- 2.) Field ventilation installation with the unit installed requires 40" on the left or right side of the unit.
- 3.) Bard recommends a minimum of 10 ft. between the unit front condenser air outlet and solid objects including fences, walls, bushes, and other airflow obstructions.
- 4.) Bard recommends a minimum of 15 ft. between the condenser air outlets of 2 units that are facing each other.
- 5.) Bard recommends a minimum clearance of 4" under the unit cabinet for condenser defrost drainage during heat pump operation.

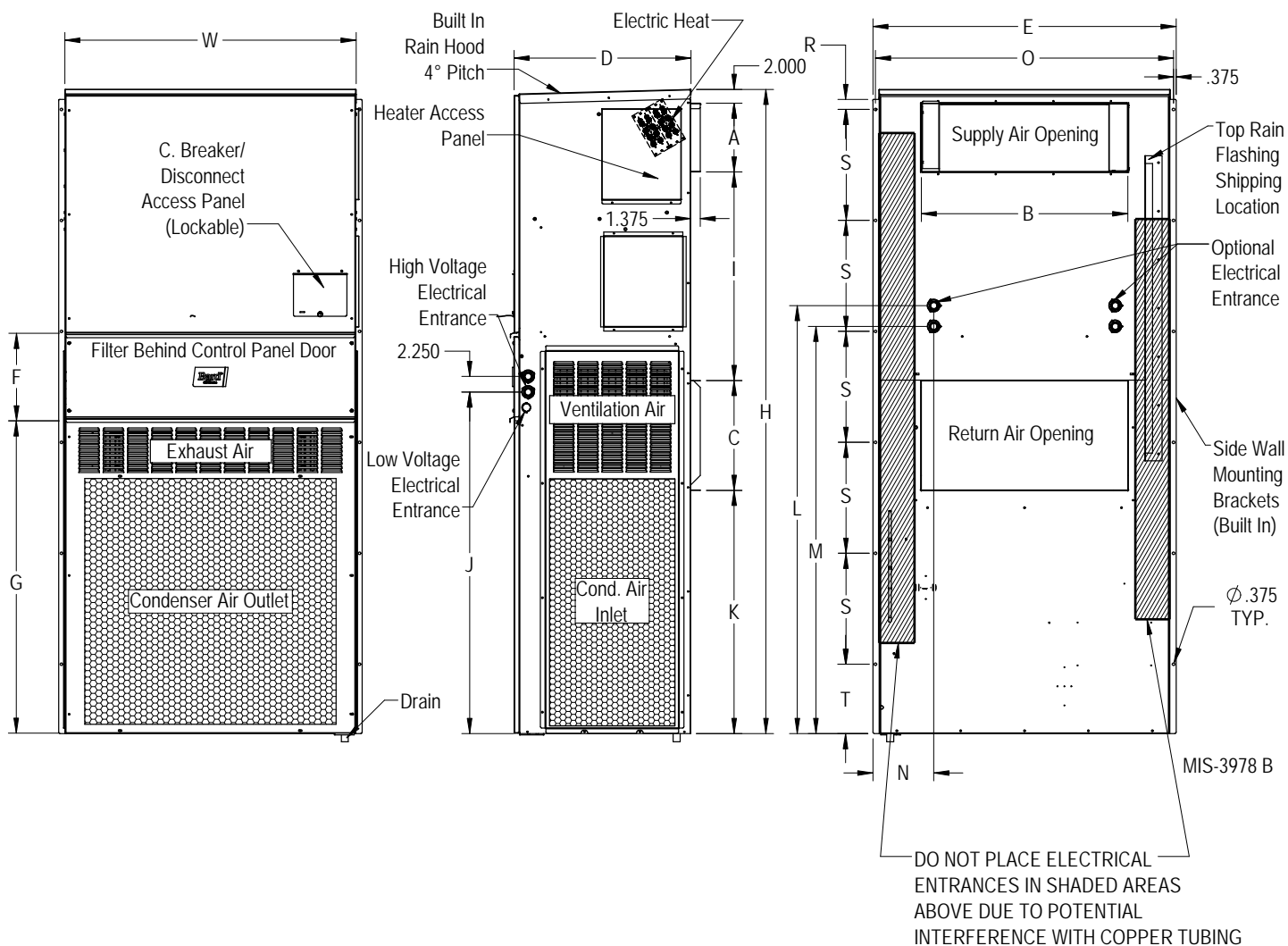
MINIMUM CLEARANCES REQUIRED TO COMBUSTIBLE MATERIALS

MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
W42HC, W48HC, W60HC	1/4"	0"

DIMENSIONS OF W42AC-72AC BASIC UNIT FOR ARCHITECTURAL & INSTALLATION REQUIREMENTS (NOMINAL)

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN														
				A	B	C	B	E	F	G	I	J	K	L	M	N	O	R	S	T
W42HC W48HC	42	25.52	84.88	9.88	29.88	15.88	29.88	43.88	12.63	39.06	30	53.75	26.94	55.59	52.59	8.82	43	1.438	16	1.88
W60HC	42	25.52	93.00	9.88	29.88	15.88	29.88	43.88	12.63	45	30	59.75	35.06	61.72	58.72	8.82	43	1.438	16	10.00

① Wall mounting holes in side flanges are 0.375.



Wall Curb Accessories

Optional wall curb accessories are available to help reduce vibration through the outer wall surface or to use existing wall openings when replacing equipment. Follow all static pressure airflow requirements, safety and installation guidelines in the instructions provided with the curb and Wall-Mount products.

CURB	UNITS USING CURB	DESCRIPTION
WMICF2 .*	W18H, W24H	Provides vibration isolation for reduced sound transmission through wall
WMICF3 .*	W30H, W36H	Provides vibration isolation for reduced sound transmission through wall
WMICF5 .*	W42H, W48H, W60H	Provides vibration isolation for reduced sound transmission through wall
WWC3 .*	W30H, W36H	Install to use with existing 2, 3, or 5 ton wall openings. Wall openings must provide sufficient airflow. Follow all instructions in curb and unit manual including clearances to combustibles and maximum duct static pressure.
WWC5 .*	W42H, W48H, W60H	Install to use with existing 3 and 5 ton wall openings. Wall openings must provide sufficient airflow. Follow all instructions in curb and unit manual including clearances to combustibles and maximum duct static pressure.

* Color Option

Indoor Sound Reduction Accessories

Optional sound accessories are available to help reduce sound transmission from the supply and return openings inside the indoor area. Follow all static pressure airflow requirements, safety and installation guidelines in the instructions provided with the accessories and Wall-Mount products.

ACCESSORY	UNITS USING ACCESSORY	DESCRIPTION
WAPR11 .*	W18, W24, W30, W36, W42, W48, W60	Indoor acoustical return air plenum that offsets the return air path. Air intake near floor level

* Color Option

Non-Ducted Supply and Return Grilles

Supply and return louver grilles are of a brushed aluminum finish. 2" flange versions are recommended for standard installations to allow grille attachment when large wall openings are present. Return filter grilles are available for filter access from an indoor area. Filter grilles do not include a filter, and are not recommended for unit with ventilation due to filter location. A manual damper return grille is available for W42 thru W60 models. The manual damper is adjustable, and is only recommended for installations where increased return duct static pressure is required.

GRILLE NO.	UNITS USING GRILLE	DESCRIPTION OF LOUVER GRILLE
SG-2	W18H, W24H	8" x 20" with 1" Flange 4 way deflection supply grille.
SG-3	W30H, W36H	8" x 28" with 1" Flange 4 way deflection supply grille.
SG-5	W42H, W48H, W60H	10" x 30" with 1" Flange 4 way deflection supply grille.
RG-2	W18H, W24H	12" x 20" with 1" Flange return grille.
RG-3	W30H, W36H	12" x 28" with 1" Flange return grille.
RG-5	W42H, W48H, W60H	16" x 30" with 1" Flange return grille.
SG-2W	W18H, W24H	8" x 20" with 2" Flange 4 way deflection supply grille.
SG-3W	W30H, W36H	8" x 28" with 2" Flange 4 way deflection supply grille.
SG-5W	W42H, W48H, W60H	10" x 30" with 2" Flange 4 way deflection supply grille.
RG-2W	W18H, W24H	12" x 20" with 2" Flange return grille.
RG-3W	W30H, W36H	12" x 28" with 2" Flange return grille.
RG-5W	W42H, W48H, W60H	16" x 30" with 2" Flange return grille.
RFG-2W	W18H, W24H	12" x 20" with 2" Flange return grille with filter bracket.*
RFG-3W	W30H, W36H	12" x 28" with 2" Flange return grille with filter bracket.*
RFG-5W	W42H, W48H, W60H	16" x 30" with 2" Flange return grille with filter bracket.*
RGDK-2W	W18H, W24H	12" x 20" with 2" manual shutter style damper that is mounted in the return duct behind the return grille (sold separately). Adjustable to restrict return air from room.
RGDK-3W	W30H, W36H	12" x 28" with 2" manual shutter style damper that is mounted in the return duct behind the return grille (sold separately). Adjustable to restrict return air from room.
RGDK-5W	W42H, W48H, W60H	16" x 30" manual shutter style damper that is mounted in the return duct behind the return grille (sold separately). Adjustable to restrict return air from room.

* Not recommended to provide primary filtration with units that will bring in outdoor air.



Non-Ducted Supply Grilles - Spread and Throw Characteristics

One of the most important setup procedures for non-ducted supply applications is to adjust the 4 way supply grille blade positions. Placement of equipment, occupants, the thermostat, and room size can all play an important role in deciding how the conditioned supply air must be directed in an indoor area. The chart below may be used as a reference tool to help with this process.

SUPPLY GRILLE	AIRFLOW CFM	DEFLECTION	VELOCITY	TOTAL PRESSURE	THROW
SG-2 SG-2W	800 CFM	0°	1053	.076" WC	37-52 ft.
		22.5°	1143	.1" WC	28-40 ft.
		45°	1428	.162" WC	20-29 ft.
	865 CFM	0°	1138	.054" WC	40-55 ft.
		22.5°	1236	.075" WC	31-42 ft.
		45°	1544	.113" WC	21-30 ft.
SG-3 SG-3W	885 CFM	0°	852	.054" WC	37-54 ft.
		22.5°	1075	.075" WC	35-49 ft.
		45°	1162	.113" WC	21-30 ft.
	1285 CFM	0°	1237	.108" WC	42-66 ft.
		22.5°	1359	.147" WC	35-50 ft.
		45°	1687	.249" WC	25-37 ft.
SG-5 SG-5W	1450 CFM	0°	968	.073" WC	51-73 ft.
		22.5°	1071	.103" WC	39-56 ft.
		45°	1331	.169" WC	28-40 ft.
	2000 CFM	0°	1336	.130" WC	61-86 ft.
		22.5°	1477	.188" WC	54-65 ft.
		45°	1835	.335" WC	33-46 ft.

Sound Data - dBA @ 5 ft. and 10 ft.*

UNIT	DUCT FREE IN-DOOR COOLING OPERATION @ 5 FT.	DUCT FREE INDOOR COOLING OPERATION @ 10 FT.	DUCTED INDOOR COOLING OPERATION @ 5 FT.	DUCTED INDOOR COOLING OPERATION @ 10 FT.	OUTDOOR @ 10 FT.
W18HB	49.6	47.3	48.6	46.2	62.8
W24HB	52.4	50.4	51.9	48.9	62.3
W30HB	53.9	52.9	54.5	47.3	67.1
W36HB	53.9	52.9	54.5	47.3	67.1
W42HC	56.1	51.7	56.3	51.1	68.6
W48HC	57	52.7	57.8	52.8	69
W60HC	56.5	53.3	56	52.7	66.8

Integrated values calculated per ANSI/ASA S12.60-2009/Part 2, Section 5.2.2.1.



Controller, Thermostat, Humidistat and CO2 Ventilation Control Options

Bard provides a wide variety of controllers for equipment cooling, thermostats, for equipment and comfort cooling, humidistats for dehumidification units, and CO2 sensors for ventilation control. Lockable thermostat covers are available for applications where security or supervisory control is desired.

CONTROLLER	OPERATION	DESCRIPTION
MC4002	1 to 2 Unit Lead/Lag Controller	Standard unit Lead/Lag Controller with remote alarming capability. Optional alarm board and SNMP or web page communication board. On board temperature sensor that can be remote mounted. Can use up to (2) remote temperature sensors.
MC5300	1 to 3 Unit Lead/Lag Controller	Advanced multi-unit Lead/Lag Controller with remote alarming capability. All models have Modbus communication and web pages. Optional alarm board with NO/NC contacts. On board temperature and humidity sensor that can be remote mounted. Can use up to (2) remote temperature sensors.
MC5600	1 to 6 Unit Lead Lag Controller	Advanced multi-unit Lead/Lag Controller with remote alarming capability. All models have Modbus communication and web pages. Optional alarm board with NO/NC contacts. On board temperature and humidity sensor that can be remote mounted. Can use up to (2) remote temperature sensors.

THERMOSTAT	OPERATION	DESCRIPTION
8403-060	3 Heat/3 Cool	Programmable or Nonprogrammable, ventilation output, dehumidification operation
8403-089	1 Heat/1 Cool	Temp. Settings per Day 4, 2, 1, 0 Programs per Week 7, 5-2, 5-1-1 or Nonprogrammable
8403-090	2 Heat/2 Cool	Temp. Settings per Day 4, 2, 1, 0 Programs per Week 7, 5-2, 5-1-1 or Nonprogrammable
8403-091	1 Heat/1 Cool	Easy to use, Nonprogrammable. FEMA use
8403-092	2 Heat/2 Cool	Programmable or Nonprogrammable, ventilation output, Wi-Fi
8403-095	2 Heat/1 Cool	Temp. Settings per Day 4, 2, 1, 0 Programs per Week 7, 5-2, 5-1-1 or Nonprogrammable

HUMIDISTAT	OPERATION	DESCRIPTION
8403-038	Humidity %RH	Easy to use w/SPDT switching. Ratings: Pilot duty 50VA @24V, 120VA @ 120/240V
8403-047	Humidity %RH	Electronic with display, EEPROM memory, lockable keypad, humidity sensor calibration

CO2 CONTROL	OPERATION	DESCRIPTION
S8403-096	CO2 PPM	CO2 ventilation control with digital display. On/Off or modulating ventilation operation

THERMOSTAT COVER*	SIZE	DESCRIPTION
8405-003	(Inside) 5-1/16" H x 6-1/16" W (Outside) 6-1/2" H x 7-1/2" W x 2-15/16" D	Clear acrylic with ventilation. Fits all thermostats except 8403-060
8405-005	(Inside) 5-7/8" H x 8-3/8" W (Outside) 7-1/4" H x 9-3/4" W x 3-3/8" D	Clear acrylic with ventilation. Fits all thermostats.
8405-006	(Inside) 5-1/16" H x 6-1/16" W (Outside) 6-3/8" H x 7-3/8" W x 2-7/8" D	Clear acrylic with ventilation. Fits all thermostats except 8403-060

* Thermostat covers include ventilation, but may effect temperature control reaction time. If security control lockout is needed, the 8403-060 thermostat provides input control lockout features.



Bard Manufacturing Company, Inc.
1914 Randolph Dr., Bryan, OH 43506
419-636-1194

www.bardhvac.com

Due to our continuous product improvement policy,
all specifications subject to change without notice.



11 EER 1.5-5 Ton Vertical Packaged Wall Mount Heat Pumps

EAA20-24-30-36-42-48-60 (High Efficiency Single Stage Cooling)

General Description

The Eubank® EAA family of wall mounted heat pumps are the ideal HVAC system for a wide variety of applications. The exterior mounting means that no valuable interior space is required. Eubank EAA heat pumps are packaged units – the refrigerant piping and internal wiring are factory assembled and thoroughly tested. All components are readily accessible for easy service and maintenance. The energy efficient operation keeps operating costs to a minimum and makes the Eubank heat pumps ideal problem solvers for a wide variety of applications, including offices, classrooms and telecommunication shelters.

Eubank heat pumps meet all federal efficiency requirements with an Energy Efficiency Ratio (EER) of 11. The Eubank EAA is available in cooling capacities of 1½, 2, 2½, 3, 3½, 4, and 5 tons (20,000 to 60,000 BTUH).

➤ Outside Air for Ventilation or Free Cooling

A full range of accessories and options allows Eubank heat pumps to be optimized for each application. For classrooms, a complete range of ventilation options are available to meet the fresh air requirements of the ASHRAE 62 standard, "Ventilation for Acceptable Indoor Air Quality". Where cooling is required during cool or cold weather, e.g., telecommunications shelters, a factory installed economizer should be used. To insure proper operation and optimum performance, all outside air ventilation packages are non-removable, factory installed and factory calibrated.

➤ Safety Listed and Energy Certified

All Eubank heat pumps are built to UL standard 1995, 4th edition and CAN/CSA C22.2, No. 236-11. For energy efficiency and performance, the units are tested and rated in accordance to the ANSI/AHRI (Air-Conditioning Heating and Refrigeration Institute) Standard 390 (Single Package Vertical Units). All units meet or exceed the efficiency requirements of ANSI/ASHRAE/IESNA 90.1.2016.

Eubank heat pumps are commercial units and are not intended for use in residential applications



EAA1036HA



FEATURES AND BENEFITS

Meets DOE Efficiency Requirements

- All Models 11EER
- All Models 3.3 COP

R-410A Refrigerant

- Efficient Heat Release
- Non-Ozone Depleting Refrigerant
- Synthetic Lubricant
- Reduced Compressor Wear

High Efficiency and Reliability

- No Wall Mount Heat Pump is More Efficient
- Optional Economizer Reduces Energy Usage
- High Efficiency Compressor and Lanced Coil Fins
- High/Low Pressure Switches with Lockout & Short Cycle Protection

Ease of Installation and Service

- Single Point Power Entry
- Built-In Mounting Flanges and Internal Disconnect
- Standard Access Valves and Filters, Status LEDs

Eubank Heat Pump Features

➤ High Efficiency

- Scroll compressors are standard on all units.
- Lanced fins and rifled tubing on the indoor & outdoor coils maximize heat transfer.
- Electronically commutated indoor blower motor on all models

➤ Engineered Reliability

- PC board simplifies wiring, consolidates several of the electrical functions in one device.
- High refrigerant pressure switch with lockout relay protects the compressor in the event of insufficient condenser air flow.
- Loss of charge pressure switch with lockout relay protects the compressor in the event of a loss of refrigerant or inadequate evaporator air flow.
- Time delay for short cycle protection.

➤ Ease of Installation

- Sloped top with flashing eliminates need of rain hood.
- Built-in mounting flanges facilitate installation and minimize chance of water leaks.
- Factory installed phase monitor is standard on all 3Ø units and will turn the air conditioner off if power supply is not phased properly.
- Factory installed disconnect on all units, including 460v. models.
- Outside air hood included with each unit.
- Single Point Power Entry complies with latest edition of U.L. Standard 1995.

➤ Rugged Construction

- Baked on finish over galvaneel steel on exterior sheet metal.
- Copper tube, aluminum fin evaporator and condenser coils.
- Corrosion resistant Dacromet® external fasteners.

➤ Ease of Service

- LED's on the control board indicate operational status and fault conditions.
- Refrigerant access valves are standard
- All major components are readily accessible
- Front control panel allows easy access and complies with NEC clearance codes on side by side units.
- Major components accessible from either side.



Options for Outside Air for Ventilation

ASHRAE standard 62 requires 30 cfm of outside air per occupant of a classroom. To meet this requirement, Eubank offers seven ventilation packages for every budget and requirement.

➤ Configuration “N”: Manual Fresh Air Damper (*Standard*)

Manual damper capable of up to 15% of rated airflow of outside air; field adjustable, no pressure relief.

➤ Configuration “Y”: Field Adjustable Manual Damper (*Optional*)

Manually field adjustable to allow up to 450 cfm, or 40% of the heat pump's total rated airflow of outside air.

➤ Configuration “Z”: Field Adjustable Manual Damper with Pressure Relief (*Optional*)

Manually adjustable to allow up to 450 cfm, or 40% of the heat pump's total rated airflow of outside air and includes pressure relief.

➤ Configuration “D”: Motorized Fresh Air Damper with Pressure Relief Ventilation (*Optional*)

Motorized, two position damper (open and closed) includes pressure relief. A 24-volt actuated motor controls the damper. The damper may be controlled from an external input such as a time clock, CO2 sensor, energy management system or a manual switch upon request.

➤ Configuration “C”: Economizer (*Optional*)

The economizer reduces the cost of air conditioning by using outside air when acceptable to cool the room. The factory installed Eubank® economizer has integral pressure relief. On a signal from a thermostat that cooling is required, either mechanical cooling with the compressor or free cooling with the economizer is provided. The Eubank economizer is capable of bringing in outside air equal to 100% of the rated cooling capacity of the unit and has built in pressure relief.

An internal enthalpy controller determines whether the outside air is sufficiently cool and dry to be used with cooling. If suitable, the compressor is locked out and the economizer damper opens to bring in outside air. The temperature at which the economizer opens is adjustable from approximately 55°F (13°C) to 73°F (23°C) at 50% RH. If the outside air becomes too hot or humid, the economizer damper closes completely or to a minimum position and mechanical cooling is activated. When used with minimum position potentiometer (optional), the Eubank® economizer can meet requirements of ASHRAE Std. 62.

Outside Air Ventilation Schedule

Ventilation Package Designator*	Description	Outside Air Capability	Pressure Relief
N	Manual, fixed position damper	0-15% of rated air flow	No
Y	Manual damper, field adjustable	Up to 450 cfm, but not to exceed 40% of the rated air flow of the heat pump.	No
Z	Manual damper, field adjustable	Up to 450 cfm, but not to exceed 40% of the rated air flow of the heat pump.	Yes
D	Motorized, two position damper (open and closed) includes pressure relief. A 24-volt actuated motor controls the damper. The damper may be controlled from an external input such as a time clock, CO2 sensor, energy management system or a manual switch upon request.	Up to 450 cfm, but not to exceed 40% of the rated air flow of the heat pump.	Yes
C	Economizer	100% of rated air flow of outside air	Yes

Heat Pump PC Board

Every Eubank heat pump has a PC board that controls the operation of the indoor blower, the compressor and the reversing valve while providing high refrigerant pressure and loss of refrigerant protection with an integral defrost function. In addition, the board has user selectable pins and potentiometers for multi-function control.

➤ High & Loss of Refrigerant Protection

If either of these fault conditions occur twice within an one hour, the control board will enter into and indicate the lockout mode. In the lockout mode, the compressor will not operate, the alarm output is energized and the red LED will blink to indicate which fault has occurred. The user can select either Normally Open or Normally Closed contacts.

➤ Compressor Anti-Short Cycle Protection

An integral three minute delay prevents compressor from destructive short cycling.

➤ Loss of Refrigerant By-pass Timer

To prevent nuisance fault alarms, the board ignores a loss of charge fault for three minutes on start-up of the compressor.

➤ Defrost Control

The defrost cycle removes ice build-up on the outdoor coil during the heating cycle. If the defrost sensor senses a coil temperature of 32°F while in the heat mode, a 30, 60 or 90 minute (user selectable) delay period will begin. After the delay period if the sensor is still calling for a defrost cycle, the outdoor fan will be stopped and the reversing valve energized. The defrost cycle will stop if the defrost sensor registers a temperature of 50°F or after 10 minutes. By moving the EHDD pin, the user can have electric heat operate during the defrost cycle or not operate.

➤ Electric Heat During Defrost (EHDD)

The control board has an EHDD jumper pin marked YES or NO. When the YES pins are jumped, electric heat WILL operate during a defrost cycle. When the NO pins are jumped, electric heat will NOT operate during a defrost cycle.

Note: When EHDD is set to YES, the S-circuit jumpers must be set to NO.

➤ S-Circuit

The control board has an S-CIRCUIT jumper pin marked YES or NO. When the YES pins are jumped, electric heat will NOT operate with the compressor. When the NO pins are jumped, electric heat WILL operate with the compressor.

Note: When S-Circuit is set to YES, the EHDD jumpers must be set to NO.

➤ Indoor Blower Speed Control

A speed control potentiometer mounted on the board allows the user to vary the blower speed on the EAA heat pumps from 40% to 100% of rated air flow. (Not applicable on models with the electronically commutated indoor blower motor).

➤ Ventilation Damper Relay

The control board has an DRO/DRC jumper pin marked YES and NO. When the YES pins are jumped, the "D" Damper will drive open when the indoor fan operates. When the NO pins are jumped, the "D" Damper will NOT drive open when the indoor fan operates. This control is for two position - Open & Closed motorized fresh air damper (Ventilation Configuration "D"). Independent damper control from an external input such as a time clock, CO2 sensor, energy management system or a manual switch upon request.

Protection of the Refrigerant Components

➤ High Refrigerant Pressure Switch

The high pressure switch is located on the liquid line. It is electrically connected to the PC board and will turn the compressor off if the pressure rises above the set point twice within one hour. This protects the compressor if airflow is significantly reduced or lost through the coil performing the condenser function.

➤ Loss of Charge Switch

The loss of charge switch is located on the liquid line. It is electrically connected to the PC board and will turn the compressor off if the pressure drops below the set point twice within one hour. This protects the compressor if airflow is significantly reduced or lost through the coil performing the evaporator function or there is a loss of refrigerant.

Eubank EAA Heat Pump Options

Eubank® options can be used to provide optimum performance over a full range of operating conditions.

➤ Adjustable Outdoor Thermostat

Will not allow electric resistance heat to be energized unless the outdoor temperature is below the desired set point. Field or factory installed. Available on all EAA units.

➤ Energy Management System (EMS) Relay Kit

Relay to control the unit. Available in 24, 120 or 240 VAC. Field or factory installed.

➤ Electric Reheat

Control provides simultaneous operation of compressor when in cooling mode and the electric elements to provide dehumidification without over cooling the room. The electric element (kW) must be properly sized for each model for proper operation. Factory installed. Available on all EAA units. Consult factory for details.

➤ Compressor Sound Jackets

Reduces sound of compressor.

Special Application Packages and Coil Coatings

➤ Protective Coating Packages

Typically, only non-economizer units are used in corrosive environments, but all Eubank air conditioner are available with corrosion protection. Two corrosion protection packages are offered - one for the condenser section (Coastal Environmental Package) and the other for the entire unit (Coat-All Package).

The Coastal Environmental Package includes:

- Corrosion resistant fasteners
- Sealed or partially sealed condenser fan motor
- Protective coating applied to all exposed internal copper and metal in the condenser section
- Protective coating on the condenser coil (Luvata Insitu®) contains ES2 (embedded stainless steel pigment) technology.

The Coat all Package includes all of the above, plus:

- Protective coating on the evaporator coil (Luvata Insitu®) contains ES2 (embedded stainless steel pigment) technology
- Protective coating on exterior and interior components and sheet metal. (**Note:** the internal sheet metal which is insulated, bottom outside panel, and the internal control box are not coated)

➤ Protective Coil Coatings

The Condenser Coil or the Evaporator Coil or Both can be coated. Coating the Evaporator Coil is not common. For harsh conditions, e.g., power plants, paper mills or sites where the unit will be exposed to salt water, the coils should be protected by a protective coating.

Note: Cooling capacity may be reduced by up to 5% on units with coated coils.

Accessories

➤ Thermostats for Single Stage Heat Pumps (no electric heat)

Digital, Non-Programmable ThermostatP/N 50121
1 stage heat, 1 stage cool. Fan switch: Auto & On. Manual changeover system switch: Cool-Off-Heat. Low temperature protection. °F or °C selectable. Thirty minute power loss memory retention.

Digital, Seven Day Programmable ThermostatP/N 50123
1 stage heat, 1 stage cool. Fan switch: Auto & On. Auto-changeover. Keypad lockout. Non-volatile program memory. Title 24 compliant.

Digital, Non-Programmable ThermostatP/N 50186
 One stage cool/One stage heat. Manual or auto changeover. Fan mode: Auto or On. Permanent retention of settings upon power loss. Field adjustable temperature calibration. Max heat and minimum cool set points. Adjustable temperature differential. Remote sensor capable. Keypad lock out. Status LED. °F or °C selectable.

➤ **Thermostats for Heat Pumps with 2-Stage Heat**

Digital, 7 Day, 5-2 and 5-1-1 Day Programmable Thermostat.....P/N 50107
 Two stage heat/Two stage cool. Manual or auto changeover. Fan: Auto & On. Permanent retention of setting on power loss. Field adjustable temperature calibration. Adjustable max. setpoint for heating and min. adjustable setpoints for cooling. Adjustable temperature differential. Keypad lockout. Status LED. °F or °C selectable. Title 24 compliant.

Digital, 7 Day, 2 Occupied & 2 Unoccupied Periods for Each Day of the Week Programmable Thermostat.....P/N 50248
 Three stage heat/Three stage cool. Manual or auto changeover. Fan: Auto & On. Ten year retention of programming settings and 48 hour clock and day settings on power loss. Adjustable max. setpoint for heating and min. adjustable setpoints for cooling. Adjustable temperature differential. Keypad lockout. Status LED. °F or °C selectable. Optional remote sensors for outdoor air, supply air and humidity. Title 24 compliant.

Digital, Non-Programmable ThermostatP/N 50252
 Two stage heat/Two stage cool. Manual or auto changeover. Fan: Auto & On. Permanent retention of setting on power loss. Field adjustable temperature calibration. Adjustable max. setpoint for heating and min. adjustable setpoints for cooling. Adjustable temperature differential. Keypad lockout. Status LED. °F or °C selectable.

➤ **MAR7000 Thermostat/Controller**

The MAR7000 thermostat/controller is a stand alone, self-programming HVAC controller designed to optimize performance of Eubank's heat pumps and air conditioners. It can function as an independent controller or be used in conjunction with a BACnet network.

With built-in temperature, humidity sensors, motion sensing and an optional CO2 detection sensor, the MAR7000 can control:

- Temperature and humidity,
- Single or 2-stage air conditioners or heat pumps with supplemental hot water or electric heat,
- Hot gas dehumidification operation,
- An economizer cycle, and
- Eubank's various ventilation options including the Eubank GreenWheel® Energy Recovery Ventilator.



The intelligent occupancy anticipation feature of the MAR7000 automatically programs occupied and unoccupied settings for temperature, humidity, and ventilation requirements. The ventilation control can be based on occupancy, demand, time, or a combination of these features. When vacant, the thermostat automatically reduces the run time of the unit and adjusts ventilation to save energy. The intelligent occupancy feature can be turned off, and the MAR7000 can be connected to a BACnet control system for remote control and operation of Eubank heat pumps or air conditioners. The MAR7000 thermostat includes a precise, real time clock with capacitor back up to maintain the program and set points for extended power outages.

Features include:

- User-friendly English-language menus (no obscure numeric codes) on a 64 x 128 pixel, dot-matrix LCD display with 5 buttons for data selection and entry,
- Built-in, factory-tested libraries of configurable application control sequences,
- Schedules that can easily be set uniquely by weekdays (Mon.–Fri.), weekend (Sat.–Sun.), entire week (Mon.–Sun.), individual days, and/or holidays,
- Six On/Off and independent heating and cooling set point periods are available per day, and
- Three levels of password-protected access (user/operator/administrator) prevent disruption of operation and configuration

➤ **Thermostat Guards**

Clear Thermostat Guard with Keylock & Clear Plastic Cover & Base.....P/N 50092
 For use with 50121, 50123, 50186, 50107 and 50252 thermostats.

Clear Thermostat Guard with Keylock & Clear Plastic Cover & Base.....P/N 50119
 For use with 50248 thermostat.

➤ **Humidity Controller**

Digital Humidity Controller P/N 50254

To be used with units with Hot Gas or electric reheat. Programmable dehumidistat, ventilation control. Permanent memory retention of set points. Humidity sensor can be field calibrated. High & low dehumidification set points. Outdoor temperature and humidity sensor included. °F or °C selectable.

➤ **Grilles**

Description	Size	Eubank P/N
<i>For the EAA1020H/1024H</i>		
Double Deflection, Aluminum Supply Grille	20" x 8" (509mm x 203mm)	80674
Aluminum Return Grille	20" x 12" (509mm x 305mm)	80677
Return Filter Grille	20" x 12" (509mm x 305mm)	80671
<i>For the EAA1030H/1036H</i>		
Double Deflection, Aluminum Supply Grille	28" x 8" (711mm x 203mm)	80675
Aluminum Return Grille	28" x 14" (711mm x 356mm)	80678
Return Filter Grille*	28" x 14" (711mm x 356mm)	80672
<i>For the EAA1042H/1048H/1060H</i>		
Double Deflection, Aluminum Supply Grille	30" x 10" (762mm x 254mm)	80676
Aluminum Return Grille	30" x 16" (762mm x 406mm)	80679
Return Filter Grille	30" x 16" (762mm x 406mm)	80673
Note: Return filter grilles should be used when the 2" (51mm) filter in the EAA unit is not accessible from the exterior of the building. Filter used in the return filter grille is a 1" (25mm) thick filter. The return filter grille is not recommended for use with the EAA II heat pumps with economizers.		

Eubank Heat Pump Model Identification

Example	E	A	A	1	0	3	6	H	A	0	5	0	C	+	+	+	+	1	E	A	+	A	1	8	+	+	+	+	+	+																		
Position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30																		
1	Unit Designation/Family				E = Eubank Wall Mount S = Stock Unit										17 Indoor Air Quality Features D = Dry Bulb Sensor E = Dry Bulb Sensor w/Dirty Filter G = Dirty Filter Sensor + = None \$ = Special																																	
2	Energy Efficiency Ratio (EER)				A = 11																																											
3	Refrigerant Type				A = R-410a																																											
4	Compressor Type/Quantity				1 = Single																																											
5	Unit Capacity/Nominal Cooling (BTUH)				020 = 20,000				042 = 42,000						18 Air Flow 1 = Top Supply/Bottom Return \$ = Special																																	
6					024 = 24,000				048 = 48,000																																							
7					030 = 30,000				060 = 60,000																																							
7					036 = 36,000																																											
8	System Type				H = Heat Pump										19 Compressor Location C = Center - All 6 ton units and above D = Left Hand - All 3 1/2 to 5 ton units E = Right Hand - All 1 1/2 to 3 ton units																																	
9	Power Supply (Volts-Phase-Hz)				A = 208/230-1-60 C = 208/230-3-60				D = 460-3-60																																							
10	Heat Designation @ Rated Voltage				000 = No Heat				090 = 9KW																																							
11					040 = 4KW				100 = 10KW																																							
12					050 = 5KW				120 = 12KW						20 Filter Option A = 2" Pleated (MERV 8, AC/HP-C) C = 2" Charcoal D = MERV 11 High Filtration Package E = MERV 13 High Filtration Package F = Filter Access Through Return Air Grille W = Aluminum Washable + = None \$ = Special																																	
12					060 = 6KW				150 = 15KW																																							
12					080 = 8KW																																											
13	Ventilation Configuration				N = Barometric Damper w/15% OSA Y = Manual Damper w/No Pressure Relief Z = Manual Damper w/Pressure Relief D = Motorized Damper w/Pressure Relief C = Economizer + = None \$ = Special																									21 Corrosion Protection A = Condenser Coil Only C = Evaporator Coil Only D = Both Coils Condenser & Evaporator E = All Coils Cond/Evap/Reheat F = Coat All G = Coastal Package & Evaporator Coil K = Coastal Package + = None \$ = Special																		
14	Dehumidification				R = Electric Reheat T = Electric Reheat w/Humidity Control + = None \$ = Special																																											
15	Controls				A = Power Fail Alarm w/Additional Lockouts C = 24V EMS Relay Kit D = 24V EMS Relay Kit w/Factory Installed T-Stat E = Factory Installed T-Stat + = None \$ = Special										24 Cabinet Color 1 = Marvair Beige 2 = Gray 3 = Carlsbad Canyon 4 = White 5 = Stainless Steel Exterior 6 = Dark Bronze 7 = .050 Aluminum Stucco 8 = Mesa Tan 9 = Pebble Gray A = Stainless Steel - Unit \$ = Custom Color (Powder Coat)																																	
16	Operating Condition				A = Evaporator Freeze Sensor (EFS) C = EFS w/Hot Gas Bypass D = Desert Duty E = Extreme Duty F = Desert Duty w/Hard Start G = Desert Duty w/EFS H = Desert Duty w/Hard Start & EFS J = Extreme Duty w/Hard Start K = Extreme Duty w/EFS M = Extreme Duty w/Hard Start & EFS N = Hard Start P = Hard Start w/Low Ambient & CCH Q = Hard Start w/Low Ambient & Fan Cycle Control (FCC) R = Crank Case Heater (CCH) T = Hard Start w/EFS U = Hard Start w/Hot Gas Bypass V = Hard Start w/Low Ambient & CCH & EFS W = Low Ambient w/CCH X = Hot Gas Bypass Y = Low Ambient w/CCH & FCC Z = Low Ambient w/CCH & EFS 1 = Low Ambient w/FCC 2 = Low Ambient w/FCC & EFS 3 = CCH w/Hot Gas Bypass + = None \$ = Special																																											
22					Engineering Revision				A1																					25 Sound Attenuation 2 = Compressor Blanket + = None																		
23					Level																																											
24																			26 Security Option A = Lockable Access Plate/Tamper Proof C = Tamper Proof Screws D = Lockable Access Plate w/Tamper Proof + = None \$ = Special																													
25									Cabinet Color																																							
26	Sound Attenuation																		27 Fastener/Drain Pan Option A = Stainless Steel Fasteners C = Stainless Steel Drain Pan D = Stainless Steel Fasteners & Drain Pan + = None \$ = Special																													
27	Security Option																																															
28	Unused																		29 Unused + = None \$ = Special																													
29	Unused																																															
30	Special Variation														30 Special Variation + = None \$ = Special Configuration Not Covered by Model Nomenclature																																	
30																																																
Note: Not all options are available with all configurations. Cont your Eubank sales representative for configuration details and																																																

Note: Not all options are available with all configurations. Contact your Eubank sales representative for configuration details and feature compatibility.

EER Comparison by Model

Nominal Cooling Capacity (BTUH)	Basic Model	EER	Nominal Cooling Capacity (BTUH)	Basic Model	EER
20,000	EAA1020H	11.00	42,000	EAA1042H	11.00
24,000	EAA1024H	11.00	48,000	EAA1048H	11.00
30,000	EAA1030H	11.00	60,000	EAA1060H	11.00
36,000	EAA1036H	11.00			

Eubank EAA Heat Pump Certified Ratings & Performance

Certified Efficiency and Capacity Ratings at ANSI/AHRI Standard 390 - EAA Heat Pumps

Model Number	EAA1020H	EAA1024H			EAA1030H			EAA1036H			EAA1042H			EAA1048H			EAA1060H		
	A	A	C	D	A	C	D	A	C	D	A	C	D	A	C	D	A	C	D
Cooling BTUH¹	20,000	24,000			29,000			35,000			42,000			46,000			57,000		
EER²	11.00	11.00			11.00			11.00			11.00			11.00			11.00		
High Temperature Heating³	20,000	24,000			30,000			35,000			34,000			42,000			51,000		
High Temperature COP⁴	3.30	3.30			3.30			3.30			3.30			3.30			3.30		
Rated Air Flow (CFM⁵)	800	820			1,000			1,200			1,350			1,600			1,750		

¹Cooling is rated at 95°F (35°C) outdoor and 80°F DB/67°F WB (26.5°C DB/19.5°C WB) return air.

²EER = Energy Efficiency Ratio

³High Temperature Heating & COP are rated at 47°F DB/43°WB (8.3°C DB/6.1°C WB) outdoor and 70°F (21.1°C) return air.

⁴COP = Coefficient of Performance

⁵CFM = Cubic Feet per Minute

Ratings are with no outside air. Performance will be affected by altitude. Ratings are at 230 volts for 208/230 volt units ("A" & "C" models) and 460 volts for "D" models.

Operation of units at a different voltage from that of the rating point will affect performance and air flow.

Sensible Total Heat Ratio @ 95°F (35°C) Outside Air DB - EAA Heat Pumps

Model Number	EAA1020H	EAA1024H			EAA1030H			EAA1036H			EAA1042H			EAA1048H			EAA1060H		
	A	A	C	D	A	C	D	A	C	D	A	C	D	A	C	D	A	C	D
Total Capacity	20,000	24,000			29,000			35,000			42,000			46,000			57,000		
Sensible Heat Ratio	0.75	0.78			0.74			0.70			0.70			0.72			0.67		
Sensible Capacity	15,000	18,770			21,385			24,560			29,545			33,060			38,200		
Rated Air Flow (CFM¹)	800	820			1,000			1,200			1,350			1,600			1,750		

¹CFM=Cubic Feet per Minute

Sensible Heat Ratios based upon ANSI/AHRI std. 390 outdoor conditions of 95°F (35°C) outdoor and 80°F DB/67°F WB (26.5°C DB/19.5°C WB) return air.

Cooling Performance (BTUH) at Various Outdoor Temperatures - EAA Heat Pumps

Model Number	Outdoor Temperature								
	75°F/24°C	80°F/26.5°C	85°F/29°C	90°F/32°C	95°F/35°C	100°F/38°C	105°F/40.5°C	110°F/43.3°C	115°F/46°C
EAA1020H	23,200	22,400	21,600	20,800	20,000	19,200	18,400	17,600	17,200
EAA1024H	27,840	26,880	25,920	24,960	24,000	23,040	22,080	21,120	20,640
EAA1030H	33,640	32,480	31,320	30,160	29,000	27,840	26,680	25,520	24,940
EAA1036H	40,600	39,200	37,800	36,400	35,000	33,600	32,200	30,800	30,100
EAA1042H	48,720	47,040	45,360	43,680	42,000	40,320	38,640	36,960	36,120
EAA1048H	53,360	51,520	49,680	47,840	46,000	44,160	42,320	40,480	39,560
EAA1060H	66,120	63,840	61,560	59,280	57,000	54,720	52,440	50,160	49,020

Based upon ANSI/AHRI std. 390 return air conditions of 80°F DB/67°F WB (26.5°C DB/19.5°C WB). Return air at rated air flow.

Heating Performance (BTUH) at Various Outdoor Temperatures - EAA Heat Pumps

Model Number	Outdoor Temperature								
	10°F/-12.2°C	17°F/-8.3°C	20°F/-6.7°C	30°F/-1.1°C	40°F/4.4°C	47°F/8.3°C	50°F/10°C	60°F/15.6°C	70°F/21.1°C
EAA1020H	10,766	11,333	12,200	15,233	17,833	20,000	20,600	21,500	22,500
EAA1024H	11,560	13,600	14,640	18,280	21,400	24,000	24,720	25,800	27,000
EAA1030H	15,130	17,800	19,020	23,290	26,950	30,000	30,900	32,250	33,750
EAA1036H	15,810	18,600	20,240	25,980	30,900	35,000	36,050	37,625	39,375
EAA1042H	18,700	22,000	23,200	27,400	31,000	34,000	35,020	36,550	38,250
EAA1048H	20,400	24,000	25,800	32,100	37,500	42,000	43,260	45,150	47,250
EAA1060H	23,800	28,000	30,300	38,350	45,250	51,000	52,530	54,825	57,375

Based upon ANSI/AHRI std. 390 return air conditions of 70°F DB (21.1°C DB). Return air at rated air flow.

Air Flow (Cubic Feet per Minute)

Model Number	External Static Pressure (WET COIL)					
	0.10	0.20	0.25	0.30	0.40	0.50
EAA1020H/1024H	860	810	740	670		
EAA1030H	1100	1000	960	920	810	
EAA1036H	1310	1220	1185	1150	1060	
EAA1042H		1650	1585	1520	1450	1360
EAA1048H		1900	1830	1760	1700	1620
EAA1060H		2100	2000	1900	1800	1650

Air flow ratings of 208-230v. Units are at 230v. Air flow ratings of 480 v. units are at 460 volts. Operation of units at a different voltage from the rating point will affect air flow.

Electrical Characteristics - Compressor, Fan, Ventilation & Blower Motors

Model Number	COMPRESSOR			OTHER MOTORS	OUTDOOR FAN MOTOR			INDOOR BLOWER MOTOR		
	VOLTS-HZ-PH	RLA ¹	LRA ²	VOLTS-HZ-PH	RPM ³	FLA ⁴	HP ⁵	RPM ³	FLA ⁴	HP ⁵
EAA1020HA	208/230-60-1	10.9	62.9	208/230-60-1	1200	3.5	1/3	1500	2.8	1/3
EAA1024HA	208/230-60-1	12.8	67.8	208/230-60-1	1200	3.5	1/3	1500	2.8	1/2
EAA1030HA	208/230-60-1	14.1	72.2	208/230-60-1	1200	3.5	1/3	1200	4.3	1/2
EAA1036HA	208/230-60-1	16.7	109.0	208/230-60-1	1200	3.5	1/3	1050	4.3	1/2
EAA1042HA	208/230-60-1	17.0	123.9	208/230-60-1	1200	5.3	1/2	1050	4.3	1/2
EAA1048HA	208/230-60-1	19.5	130.0	208/230-60-1	1200	5.3	1/2	1050	6.8	3/4
EAA1060HA	208/230-60-1	24.3	144.2	208/230-60-1	1200	5.3	1/2	1050	6.8	3/4
EAA1024HC	208/230-60-3	8.3	58.0	208/230-60-1	1200	3.5	1/3	1500	2.8	1/3
EAA1030HC	208/230-60-3	9.0	71.0	208/230-60-1	1200	3.5	1/3	1200	4.3	1/2
EAA1036HC	208/230-60-3	11.2	84.0	208/230-60-1	1200	3.5	1/3	1200	4.3	1/2
EAA1042HC	208/230-60-3	13.6	83.1	208/230-60-1	1200	5.3	1/2	1050	4.3	1/2
EAA1048HC	208/230-60-3	13.7	83.1	208/230-60-1	1200	5.3	1/2	1050	6.8	3/4
EAA1060HC	208/230-60-3	15.9	110.0	208/230-60-1	1200	5.3	1/2	1050	6.8	3/4
EAA1024HD	460-60-3	3.5	28.0	208/230-60-1	1200	3.5	1/3	1500	2.8	1/2
EAA1030HD	460-60-3	5.8	38.0	208/230-60-1	1200	3.5	1/3	1200	4.3	1/2
EAA1036HD	460-60-3	5.6	44.0	208/230-60-1	1200	3.5	1/3	1050	4.3	1/2
EAA1042HD	460-60-3	6.1	41.0	208/230-60-1	1200	5.3	1/2	1050	4.3	1/2
EAA1048HD	460-60-3	6.2	41.0	208/230-60-1	1200	5.3	1/2	1050	6.8	3/4
EAA1060HD	460-60-3	7.7	52.0	208/230-60-1	1200	5.3	1/2	1050	6.8	3/4

¹RLA = Rated Load Amps ²LRA = Locked Rotor Amps ³RPM = Revolutions per Minute ⁴FLA = Full Load Amps ⁵HP = Horsepower

⁶OAM = Outside Air Mover ⁷EXM = Exhaust Air Mover ⁸WD = Wheel Drive Motor

The 460 volt units have a step down transformer for the 230 volt motors.

EAA Heat Pumps Summary Electrical Ratings (Wire and HACR Circuit Breaker Sizing) - Ventilation Configuration:

Manual Damper, up to 15% outside air ("N"), Manual Damper, up to 450 cfm of outside air ("Y")

Manual Damper, up to 450 cfm of outside air with pressure relief ("Z")

Motorized 2-Position Damper, up to 450 cfm of outside air w/Pressure Relief ("D")

Economizer, Outside air with Pressure Relief ("C")

ELECTRIC HEAT		000 = None		040 = 4 kw		050 = 5 kw		060 = 6 kw		080 = 8 kw		090 = 9 kw		100 = 10 kw		120 = 12 kw		150 = 15 kw	
BASIC MODEL	VOLTS-HZ-PH	SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³	
		MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²
EEA1020HA	208/230-1-60	19.9	30	40.8	45	46.0	50	46.0	60	61.6	70			72.0	80				
EEA1024HA	208/230-1-60	22.3	35	43.1	45	48.3	50	48.3	60	64.0	70			74.4	80				
EEA1030HA	208/230-1-60	25.4	35	46.3	50	51.5	60	51.5	60	67.1	70			77.5	80	87.9	90	103.6	110
EEA1036HA	208/230-1-60	28.7	45	49.5	50	54.7	60	54.7	70	70.3	80			80.8	90	91.2	100	106.8	110
EEA1042HA	208/230-1-60	30.9	45			56.9	60							82.9	90	93.4	100	109.0	110
EEA1048HA	208/230-1-60	36.5	60			62.5	70							88.6	90	99.0	100	114.6	120
EEA1060HA	208/230-1-60	42.5	60			68.5	70							94.6	100	105.0	110	120.6	130
EEA1024HC	208/230-3-60	16.7	25					34.7	35			43.7	45			52.8	60	61.8	70
EEA1030HC	208/230-3-60	19.1	25					37.1	40			46.1	50			55.1	60	64.2	70
EEA1036HC	208/230-3-60	21.8	30					39.8	40			48.9	50			57.9	60	66.9	70
EEA1042HC	208/230-3-60	26.6	40					44.6	45			53.7	60			62.7	70	71.7	80
EEA1048HC	208/230-3-60	29.2	40					47.3	50			56.3	60			65.3	70	74.3	80
EEA1060HC	208/230-3-60	32.0	45					50.0	60			59.0	60			68.1	70	77.1	80
EEA1024HD	460-3-60	7.5	15					16.5	20			21.1	25			25.6	30	30.1	35
EEA1030HD	460-3-60	11.2	15					20.2	25			24.7	25			29.2	30	33.7	35
EEA1036HD	460-3-60	10.9	15					19.9	25			24.4	25			28.9	30	33.5	35
EEA1042HD	460-3-60	12.4	15					21.4	25			26.0	30			30.5	35	35.0	40
EEA1048HD	460-3-60	13.8	15					22.8	25			27.3	30			31.8	35	36.4	40
EEA1060HD	460-3-60	15.7	20					24.7	25			29.2	30			33.7	35	38.2	40

S-Circuit - The user can move a pin on the board to control whether the electric heat will operate simultaneously with the compressor (S Circuit - NO) or will not run simultaneously with the compressor (S Circuit - Yes).

¹MCA = Minimum Circuit Ampacity (Wiring Size Amps) ²MFS = Maximum Fuse or HACR Breaker Size ³SPPE = Single Point Power Entry

MCA & MFS are calculated at 230 volts on the 208-230v. (HPA & HPC) models. The 460 volt HPD models are calculated at 460 volts. This chart should only be used as a guideline for estimating conductor size and overcurrent protection. For the requirements of specific units, always refer to the data label on the unit.

EAA Heat Pumps Summary Electrical Ratings (Wire and HACR Circuit Breaker Sizing) - EAA Heat Pumps with the "S" Circuit Jumper Set to "Yes" and Ventilation Configuration:

Manual Damper, up to 15% outside air ("N"), Manual Damper, up to 450 cfm of outside air ("Y")

Manual Damper, up to 450 cfm of outside air with pressure relief ("Z")

Motorized 2-Position Damper, up to 450 cfm of outside air w/Pressure Relief ("D")

Economizer, Outside air with Pressure Relief ("C")

ELECTRIC HEAT		000 = None		040 = 4 kw		050 = 5 kw		060 = 6 kw		080 = 8 kw		090 = 9 kw		100 = 10 kw		120 = 12 kw		150 = 15 kw	
BASIC MODEL	VOLTS-HZ-PH	SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³		SPPE ³	
		MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²	MCA ¹	MFS ²
EEA1020HA	208/230-1-60	19.9	30	23.6	30	28.8	30	34.1	35	44.5	45			54.9	60				
EEA1024HA	208/230-1-60	22.3	35	23.6	35	28.8	35	34.1	35	44.5	45.0			54.9	60				
EEA1030HA	208/230-1-60	25.4	35	25.1	35	30.3	35	35.6	40	46.0	50			56.4	60	66.8	70	82.4	90
EEA1036HA	208/230-1-60	28.7	45	25.1	45	30.3	45	35.6	40	46.0	50			56.4	60	66.8	70	82.4	90
EEA1042HA	208/230-1-60	30.9	45			30.3	45							56.4	60	66.8	70	82.4	90
EEA1048HA	208/230-1-60	36.5	60			32.8	60							58.9	60	69.3	70	84.9	90
EEA1060HA	208/230-1-60	42.5	60			32.8	60							58.9	60	69.3	70	84.9	90
EEA1024HC	208/230-3-60	16.7	25					20.8	25			29.9	30			38.9	40	47.9	50
EEA1030HC	208/230-3-60	19.1	25					22.3	25			31.4	35			40.4	45	49.4	50
EEA1036HC	208/230-3-60	21.8	30					22.3	30			31.4	35			40.4	45	49.4	50
EEA1042HC	208/230-3-60	26.6	40					22.3	40			31.4	40			40.4	45	49.4	50
EEA1048HC	208/230-3-60	29.2	40					24.8	40			33.9	40			42.9	45	51.9	60
EEA1060HC	208/230-3-60	32.0	45					24.8	45			33.9	45			42.9	45	51.9	60
EEA1024HD	460-3-60	7.5	15					10.4	15			14.9	25			19.4	20	24.0	25
EEA1030HD	460-3-60	11.2	15					11.2	15			15.7	20			20.2	25	24.7	25
EEA1036HD	460-3-60	10.9	15					11.2	15			15.7	20			20.2	25	24.7	25
EEA1042HD	460-3-60	12.4	15					11.2	15			15.7	20			20.2	25	24.7	25.0
EEA1048HD	460-3-60	13.8	15					12.4	15			16.9	20			21.4	25	26.0	30
EEA1060HD	460-3-60	15.7	20					12.4	20			16.9	20			21.4	25	26	30

S-Circuit - The user can move a pin on the board to control whether the electric heat will operate simultaneously with the compressor (S Circuit - NO) or will not run simultaneously with the compressor (S Circuit - Yes).

¹MCA = Minimum Circuit Ampacity (Wiring Size Amps) ²MFS = Maximum Fuse or HACR Breaker Size ³SPPE = Single Point Power Entry

MCA & MFS are calculated at 230 volts on the 208-230v. (HPA & HPC) models. The 460 volt HPD models are calculated at 460 volts. This chart should only be used as a guideline for estimating conductor size and overcurrent protection. For the requirements of specific units, always refer to the data label on the unit.

Unit Load Amps (Heating) -

EAA Heat Pumps with Ventilation Configurations:

Manual Damper, up to 15% outside air ("N"), Manual Damper, up to 450 cfm of outside air ("Y")

Manual Damper, up to 450 cfm of outside air with pressure relief ("Z")

Motorized 2-Position Damper, up to 450 cfm of outside air w/Pressure Relief ("D")

Economizer, Outside air with Pressure Relief ("C")

MODEL NUMBER	VOLTAGE PHASE HERTZ	CURRENT (AMPS)		LOAD OF RESISTIVE HEATING - ELEMENTS ONLY (AMPS) (1) ALL HEATING ELEMENTS ARE ON A SEPARATE CIRCUIT (2) SHADED VALUES (12 & 15 kW) UTILIZE TWO CIRCUITS								TOTAL MAXIMUM HEATING AMPS INCLUDES AMPS FROM MOTOR(S) THAT ARE LOCATED ON AN ELECTRICAL CIRCUIT THAT DOES NOT HAVE HEATERS							
		HP ¹	IBM ²	04 kW	05 kW	06 kW	08 kW	09 kW	10 kW	12 kW	15 kW	04 Kw	05 Kw	06 Kw	08 Kw	09 Kw	10 Kw	12 Kw	15 Kw
EEA1020HA	208-230/1/60	17.2	2.8	16.7	20.8	25.0	33.3		41.7			19.5	23.6	27.8	36.1		44.5		
EEA1024HA	208-230/1/60	19.1	2.8	16.7	20.8	25.0	33.3		41.7			19.5	23.6	27.8	36.1		44.5		
EEA1030HA	208-230/1/60	21.9	4.3	16.7	20.8	25.0	33.3		41.7	50.0	62.5	21.0	25.1	29.3	37.6		46.0	54.3	66.8
EEA1036HA	208-230/1/60	24.5	4.3	16.7	20.8	25.0	33.3		41.7	50.0	62.5	21.0	25.1	29.3	37.6		46.0	54.3	66.8
EEA1042HA	208-230/1/60	26.6	4.3		20.8				41.7	50.0	62.5		25.1				46.0	54.3	66.8
EEA1048HA	208-230/1/60	31.6	4.3		20.8				41.7	50.0	62.5		25.1				46.0	54.3	66.8
EEA1060HA	208-230/1/60	36.4	6.8		20.8				41.7	50.0	62.5		27.6				48.5	56.8	69.3
EEA1024HC	208-230/3/60	14.6	2.8			14.4		21.7		28.9	36.1			17.2		24.5		31.7	38.9
EEA1030HC	208-230/3/60	16.8	4.3			14.4		21.7		28.9	36.1			18.7		26.0		33.2	40.4
EEA1036HC	208-230/3/60	19.0	4.3			14.4		21.7		28.9	36.1			18.7		26.0		33.2	40.4
EEA1042HC	208-230/3/60	23.2	4.3			14.4		21.7		28.9	36.1			18.7		26.0		33.2	40.4
EEA1048HC	208-230/3/60	25.8	4.3			14.4		21.7		28.9	36.1			18.7		26.0		33.2	40.4
EEA1060HC	208-230/3/60	28.0	6.8			14.4		21.7		28.9	36.1			21.2		28.5		35.7	42.9
EEA1024HD	460/3/60	6.7	1.4			7.2		10.8		14.4	18.0			8.6		12.2		15.8	19.4
EEA1030HD	460/3/60	9.7	2.2			7.2		10.8		14.4	18.0			9.4		13.0		16.6	20.2
EEA1036HD	460/3/60	9.5	2.2			7.2		10.8		14.4	18.0			9.4		13.0		16.6	20.2
EEA1042HD	460/3/60	10.9	2.2			7.2		10.8		14.4	18.0			9.4		13.0		16.6	20.2
EEA1048HD	460/3/60	12.3	2.2			7.2		10.8		14.4	18.0			9.4		13.0		16.6	20.2
EEA1060HD	460/3/60	13.8	3.4			7.2		10.8		14.4	18.0			10.6		14.2		17.8	21.4

¹HP = Heat Pump Unit Amps (includes Indoor Motor amps) ²IBM = Indoor Blower Motor

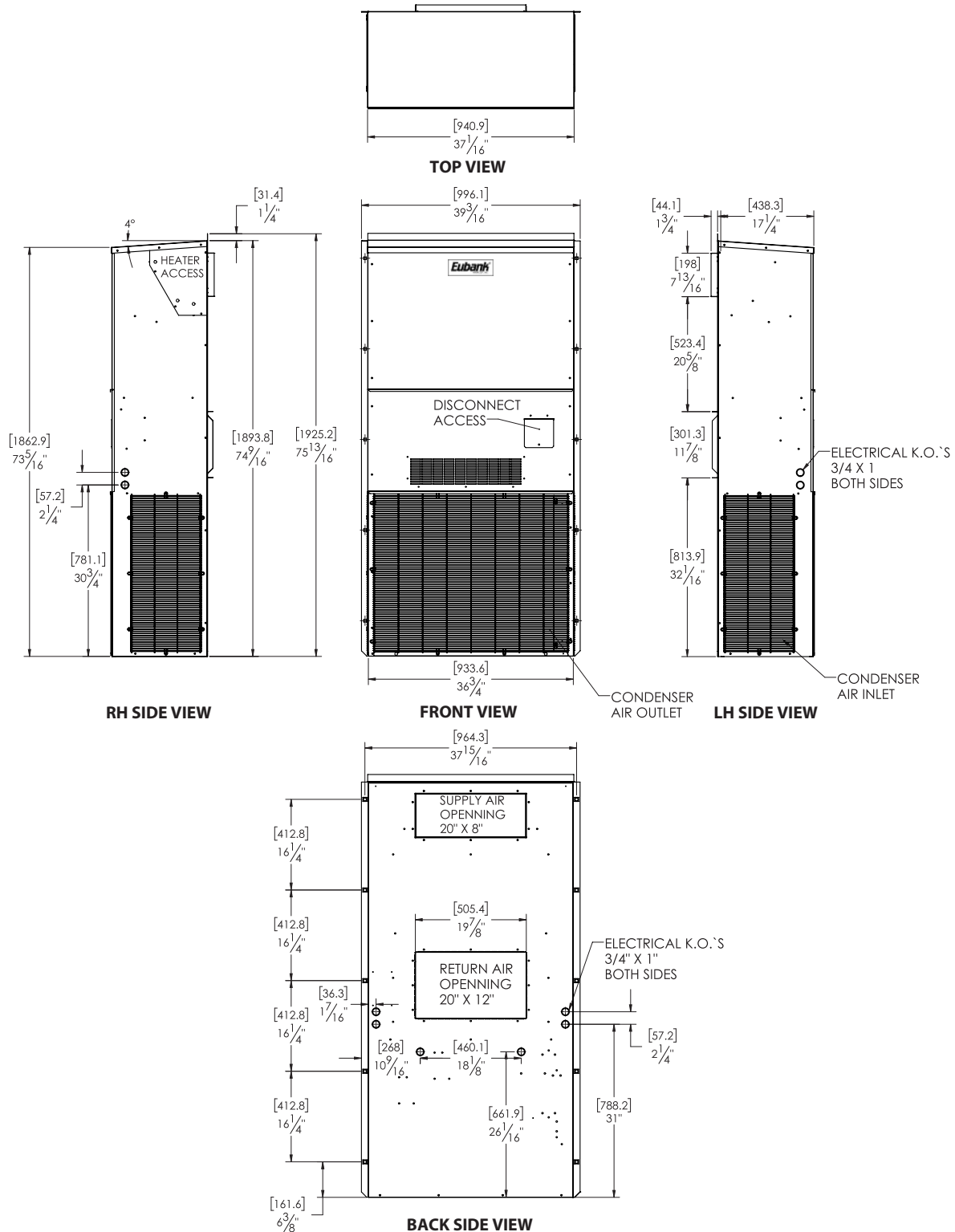
Heating kW is rated at 240 volts on the 208-230v. (HPA & HPC) models. Derate heater output by 25% for operation at 208 volts. Heating kW is rated at 480 volts on the HPD models.

Total heating amps for single phase units with two circuits (#1 and #2) includes both circuits. Total heating and cooling amps includes all motors. Three phase models contain single phase motor loads. Values shown are maximum phase loads. Loads are not equally balanced on each phase.

Eubank EAA Heat Pump Model & Cabinet Designation

MODEL	CABINET DESIGNATION			
	A	B	C	D
EEA1020H/1024H	✓			
EEA1030H/1036H		✓		
EEA1042H/1048H			✓	
EEA1060H				✓

Dimensional Data for Cabinet A (inches and mm)



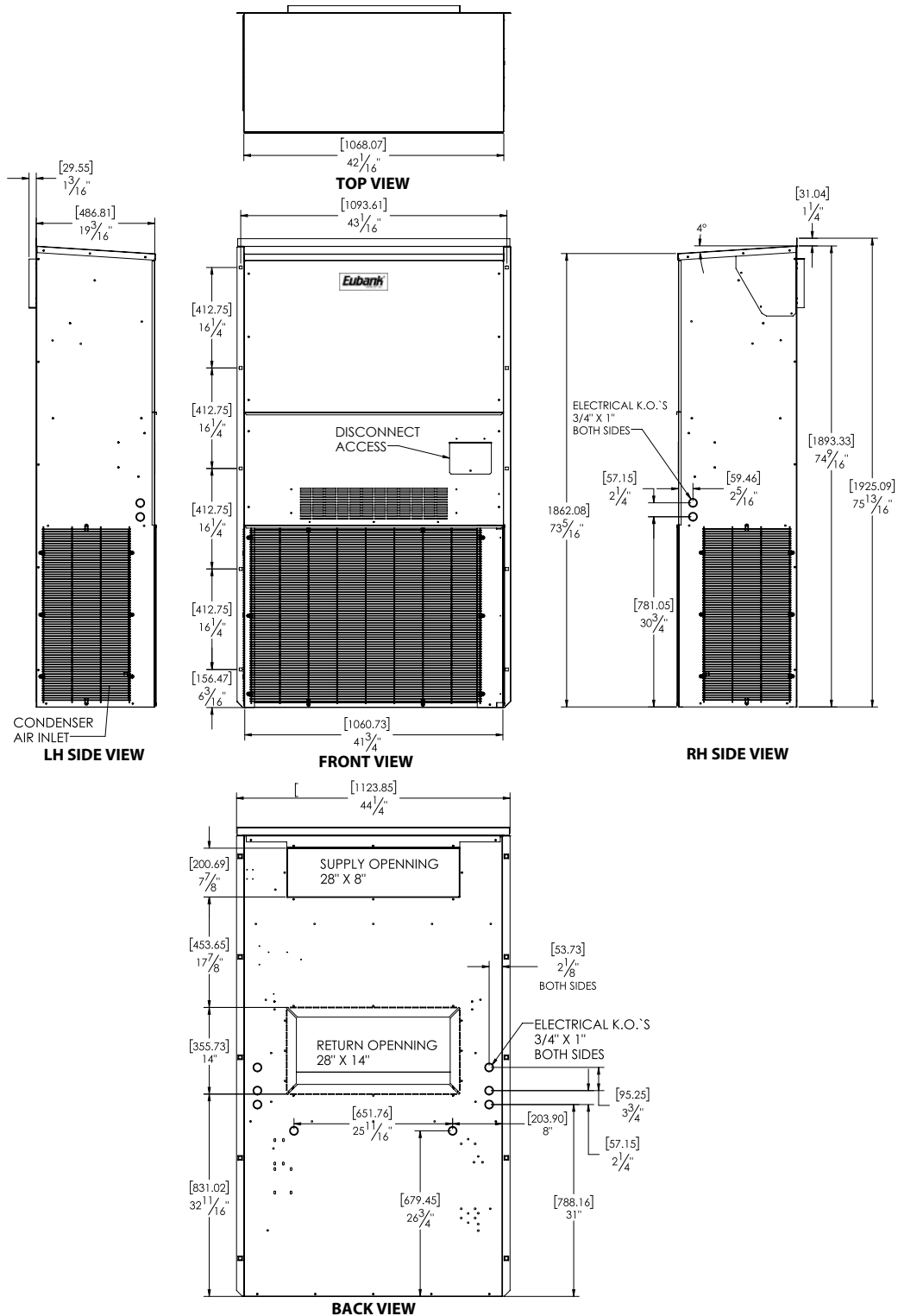
Installation Weight

EAA1020H/1024H	Base	w/Economizer	w/3 Phase	w/Economizer & 3 Phase
Pounds	337	357	356	376
Kilograms	153	162	161	171

Filter Size

EAA1020H/1024H	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
RETURN AIR FILTER	30 x 16 x 2	762 x 406 x 51	80138	1	8

Dimensional Data for Cabinet B (inches and mm)



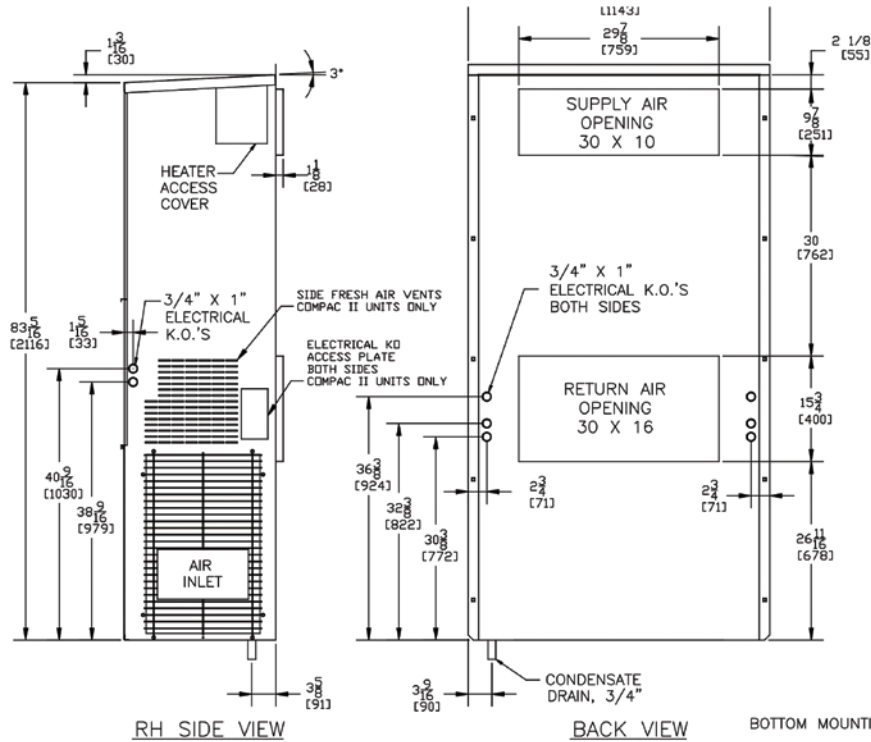
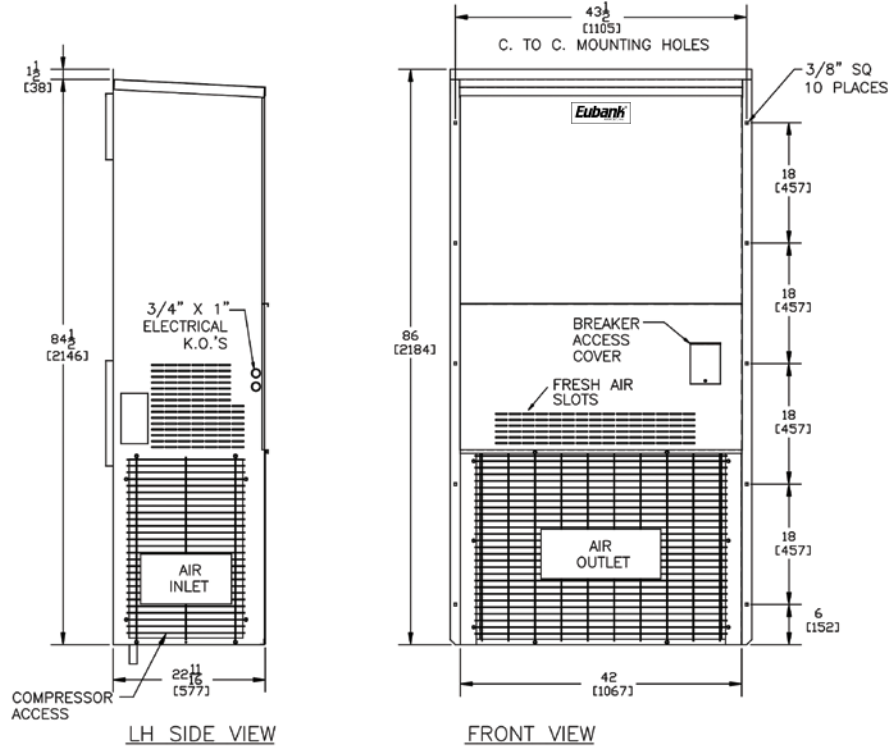
Installation Weight

EAA1030H & EAA1036H	Base	w/Economizer	w/3 Phase	w/Economizer & 3 Phase
Pounds	397	419	416	438
Kilograms	180	190	189	199

Filter Size

EAA1030H & EAA1036H	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
RETURN AIR FILTER	36 1/2 x 22 x 2	927 x 559 x 51	80162	1	8

Dimensional Data for Cabinet C (inches and mm)



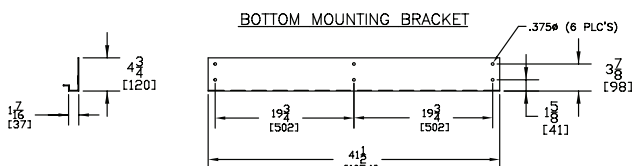
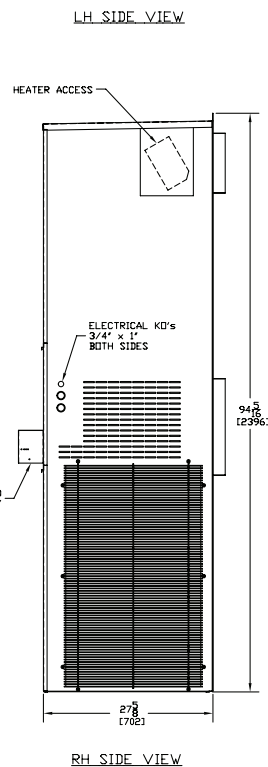
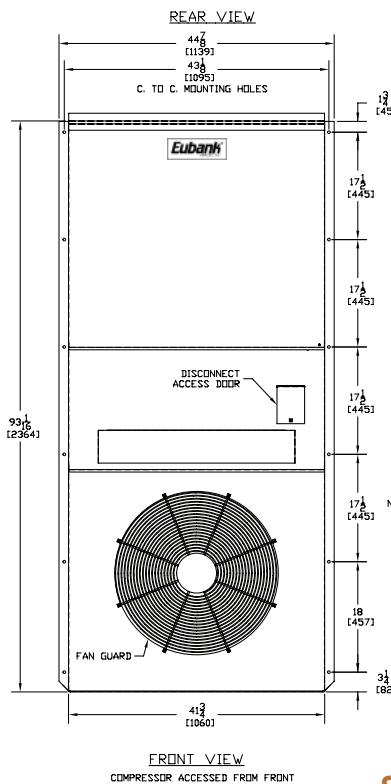
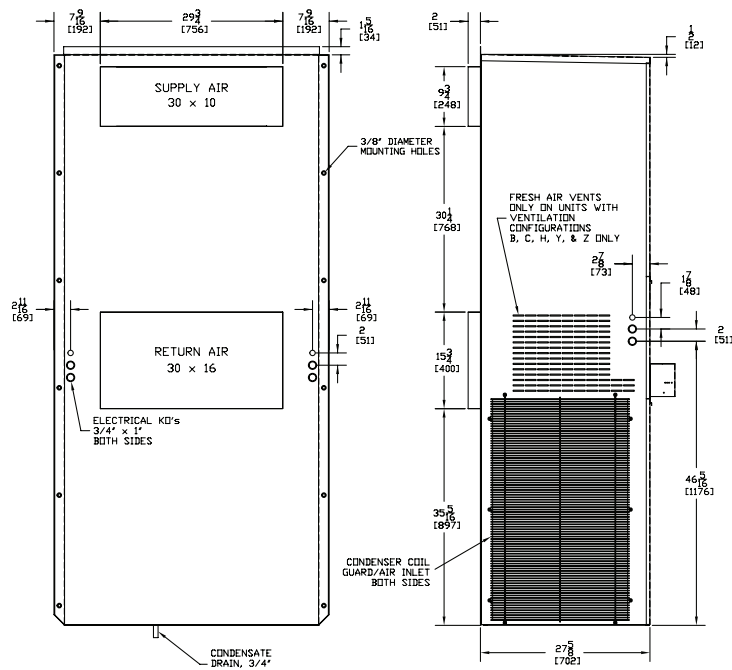
Installation Weight

EAA1042H & EAA1048H	Base	w/Economizer	w/3 Phase	w/Economizer & 3 Phase
Pounds	453	476	491	514
Kilograms	205	216	223	233

Filter Size

EAA1042H & EAA1048H	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
RETURN AIR FILTER	36 1/2 x 22 x 2	927 x 559 x 51	80162	1	8

Dimensional Data for Cabinet D (inches and mm)



Shipping Weight (pounds/kilograms)

EAA1060H	LBS/KGS
WITH VENTILATION CONFIGURATION "N"	680/309
WITH VENTILATION CONFIGURATION "C", "D", "Y", & "Z"	659/298.9

Filter Size

EAA1060H	INCHES	MILLIMETERS	PART NUMBER	FILTERS PER UNIT	MERV RATING
RETURN AIR FILTER	18 x 24 x 1	457 x 610 x 25	81199	2	8
INTAKE AIR FILTER*	14 x 14 x 1	356 x 356 x 25	80192	1	N/A

Notes

Please consult the Eubank® website at www.EubankWallmount.com for the latest product literature. Detailed dimensional data is available upon request. A complete warranty statement can be found in each product's Installation/Operation Manual, on our website or by contacting Eubank at 229-273-3636. As part of the Eubank continuous improvement program, specifications are subject to change without notice.



P.O. Box 400 • Cordele, GA 31010
156 Seedling Drive • Cordele, GA 31015
Ph: 229-273-3636 • Fax: 229-273-5154
Email: EubankOrders@airxcel.com • Internet: www.EubankWallmount.com

