



## **11EER W42AC-W60AC Series WALL-MOUNT™ 10EER W72AC Series WALL-MOUNT™**

The Bard Wall-Mount Air Conditioner 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 ASHRAE/IESNA 90.1-2016
- Certified to ASNI/ARI Standard 390-2003 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 application
- 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](http://www.ahridirectory.org).



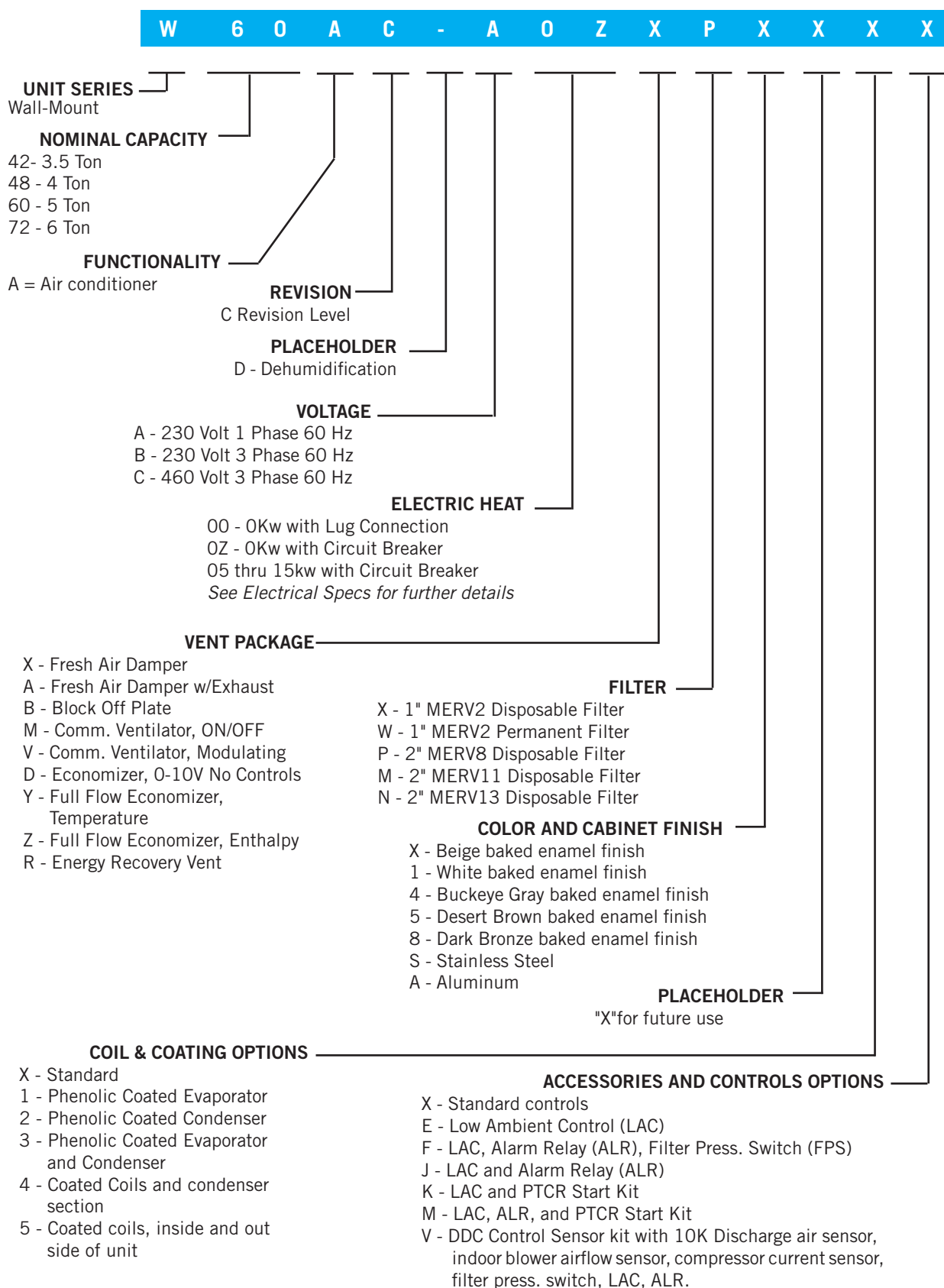
**BARDHVAC.COM**

FORM NO. S3583-0221



**Climate Control Solutions**

# WALL-MOUNT NOMENCLATURE



## ENGINEERED FEATURES

**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 corrosive outdoor environments. Front access control panel location.

**Green Fin Hydrophilic Evaporator Coil:** Green fin stock enhances coil wettability to help prevent mold growth, aid with condensate drainage, and provide 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 wall mount 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.

**Field or Factory Installed Vents:** Multiple ventilation options are available as easily installed kits with electrical plugs, or Factory installed options that can be removed for service. Economizer operation includes improved airpath for minimized recirculation and does not require an intake hood.

**Reliable, Easy-to-Use Controls:** Easily accessible through front control panel locations. A lockable hinged access cover to circuit protection is provided. Phase rotation monitor is standard on all 3 phase models. Adjustable compressor on/off delay timer (CCM) with diagnostic lights is standard on all 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.

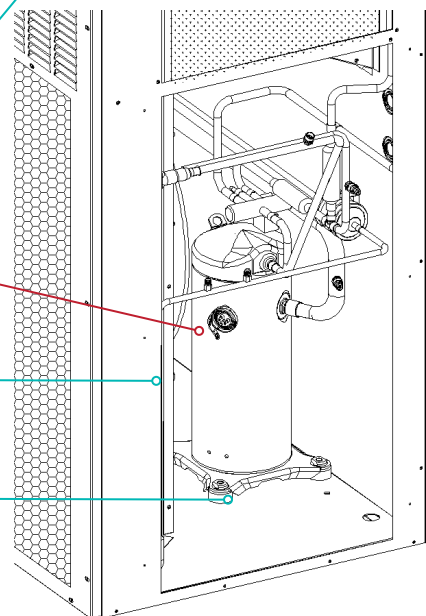
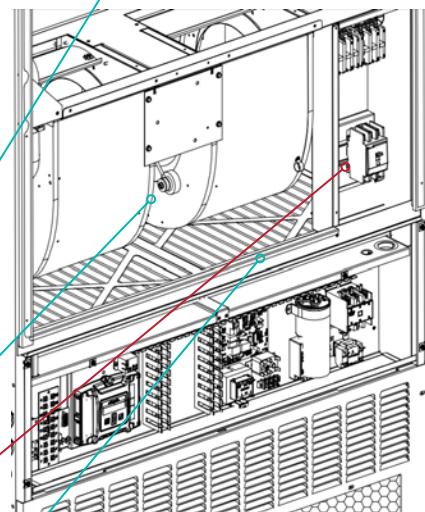
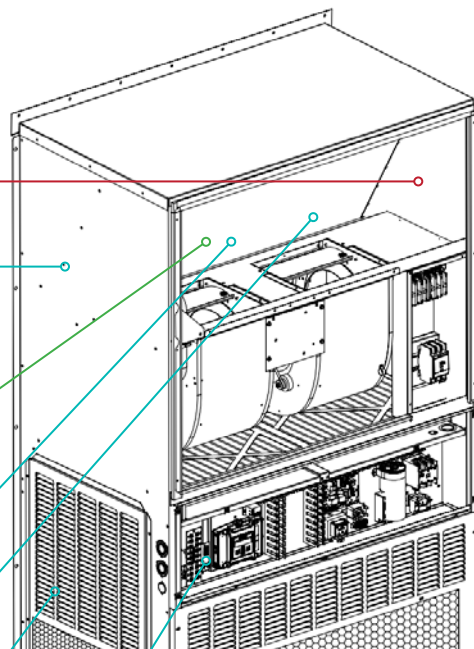
**Electric Strip Heat:** Reliable, comfortable heater packages feature an automatic limit and thermal cut-off safety control. Heater packages can be factory or field installed.

**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.

**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.

**Improved Condenser Coil Cleaning:** Removable fan shroud side panels allow for easy condenser coil intake surface cleaning.

**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 to protect the system from moisture is standard on all units.



## UNIT MODES OF OPERATION

**Cooling Operation:** The Bard WA Series WALL MOUNT products offer single stage 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.



**Heating Operation:** The Bard WA Series WALL MOUNT products offer 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 Operation:** The Bard W42AC and W72AC Series WALL MOUNT 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. Airflow is reduced resulting in quiet and comfortable soft shift to dehum mode.



**Ventilation Operation:** The Bard WA Series WALL MOUNT products offer optional ventilation operation that brings outdoor air into the structure. Vent options can be factory or field installed, and 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 which condition the air being brought in to save energy when ventilation is necessary regardless of outdoor temperature.



**Balanced Climate™ Operation:** Balanced Climate™ is a great comfort feature that can easily be applied under any normal circumstances. If you are setting up your Bard system to air condition in a typical environment where 72 degrees is your lowest cooling set-point, then remove the Y1/Y2 jumper, and install a two stage cooling thermostat. You will increase your humidity removal up to 35% and provide a much more comfortable environment.



If you intend air conditioning below 60° outdoor conditions, then just like any other system, a LAC kit must be installed.

If you are installing the unit with any ventilation package, a Bard LAC Kit must be installed. Failure to utilize a LAC with any air conditioner can cause coil freeze up.

Balanced Climate can readily be applied to Duct-Free (supply & return air grille) applications. It may also be applied to ducted applications with limited static of 0.20" ESP (total including both supply & return statics). Consult Bard Application Engineering for details prior to implementation.

**CAUTION: Balanced Climate is not a replacement for a dehumidification (hot gas reheat) unit for extreme applications, but rather an enhancement feature for limited climates and applications.**

## ////// ADVANCED FEATURE DESCRIPTIONS

**ECM Indoor Blower Motor:** Energy efficient indoor blower motors use EC constant torque technology with 5 pre-programmed speeds. By selecting the needed speed, the WALL MOUNT product can reduce or increase airflow. A NEMA48® frame enclosure is used. A medium and high speed tap can be user selected to offer the maximum CFM possible with the blower assembly.

- Efficient 5 speed ECM constant torque motor. 24VAC power used for speed selection.
- Fully potted electronic control module for moisture protection.
- 6000V surge protection.
- Dual shaft design with open air over (OAO) enclosure.



**Outdoor Fan Motor:** Outdoor fan motors use ball bearing construction and are fully enclosed for increased life expectancy.

- Single speed PSC motor.
- Totally enclosed motor housing protects motor windings and internal components from corrosion.
- Ball bearing design reduces motor wear from “windmill” affect when not in operation.



**Non Fiberglass Cabinet Insulation:** The WALL MOUNT products use advanced non-fiberglass insulation that is made with recycled denim materials. High "R" value, enhanced sound absorption, and reduced delamination are some of the features of this revolutionary product.

- Easy to clean and ramage resistant Foil FSK Facing.
- Fiberglass and Formaldehyde free.
- Meets ASTM E84, UL 723, NFPA 90A and 90B Standards.
- Thermal performance ASTM C518 k=.27@1" & 900gsm







## CAPACITY AND EFFICIENCY RATINGS

MODELS	W42AC	W48AC	W60AC	W72AC
Cooling Capacity BTUH ①	42,000	48,000	57,000	71,000
EER ②	11.0	11.0	11.0	10.0

① Capacity is certified in accordance with ANSI/ARI Standard 390-2003.

② EER = Energy Efficiency Ratio and is certified in accordance with ANSI/ARI Standard 390-2003.  
All ratings based on fresh air intake being 100% closed (no outside air introduction).



## SPECIFICATIONS 3-1/2 TON THROUGH 6 TON

MODELS	W42AC-A	W42AC-B	W42AC-C	W48AC-A	W48AC-B	W48AC-C
<b>Electrical Rating – 60 Hz</b>	230/208 - 1	230/208-3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253	197-253	414-506	197-253	197-253	414-506
<b>Compressor--Circuit A</b>						
Voltage	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	14.9/16.5	10.2/11.3	5.1	16.3/18.9	10.3/11.9	5.4
Branch Circuit	19.9	13.6	6.1	21.8	13.8	6.3
Selection Current						
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
<b>Fan Motor &amp; Condenser</b>						
Fan Motor--HP--RPM	1/3	1/3	1/3	1/3	1/3	1/3
Fan Motor--Amps	2.4	2.4	1.0	2.4	2.4	1.0
Fan--DIA/CFM	24" - 2900	24" - 2900	24" - 2900	24" - 3000	24" - 3000	24" - 3000
<b>Blower Motor &amp; Evap.</b>						
Blower Motor--HP-SPD	1/2 Variable	1/2 Variable	1/2 Variable	3/4 Variable	3/4 Variable	3/4 Variable
Blower Motor--Amps	1.7	1.7	1.2	3.2	3.2	1.7
Motor Type	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	1350-.15	1350-.15	1350-.15	1550-.20	1550-.20	1550-.20
Filter Sizes (inches) STD., 2 required	20x20x1	20x20x1	20x20x1	20x20x1	20x20x1	20x20x1
<b>Basic Unit Weight-LBS.</b>	490	490	490	495	495	495
Barometric Fresh Air Damper (X)	13	13	13	13	13	13
Barometric Damper w/ Exhaust (A)	16	16	16	16	16	16
Blank-Off Plate (B)	14	14	14	14	14	14
Commercial Room Ventilator (M, V)	42	42	42	42	42	42
Economizer (D, Z)	44	44	44	44	44	44
Energy Recovery Ventilator (R)	87	87	87	87	87	87

MODELS	W60AC-A	W60AC-B	W60AC-C	W72AC-A	W72AC-B	W72AC-C
<b>Electrical Rating – 60 Hz</b>	230/208 - 1	230/208 - 3	460 - 3	230/208 - 1	230/208 - 3	460 - 3
Operating Voltage Range	197-253	197-253	414-506	197-253	197-253	414-506
<b>Compressor--Circuit A</b>						
Voltage	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	20.6/23.6	12.5/14.4	7.0	27.6/30.6	16.8/18.6	8.8
Branch Circuit	26.5	16	7.8	37	22.5	10.6
Selection Current						
Lock Rotor Amps	134/134	110/110	52	185/185	149/149	75
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
<b>Fan Motor &amp; Condenser</b>						
Fan Motor--HP--RPM	1/3	1/3	1/3	1/2	1/2	1/2
Fan Motor--Amps	2.4	2.4	1.0	4.3	4.3	1.6
Fan--DIA/CFM	24" - 3100	24" - 3100	24" - 3100	24" - 4000	24" - 4000	24" - 4000
<b>Blower Motor &amp; Evap.</b>						
Blower Motor--HP-SPD	3/4 Variable	3/4 Variable	3/4 Variable	3/4 Variable	3/4 Variable	3/4 Variable
Blower Motor--Amps	3.2	3.2	1.7	4.2	4.2	1.7
Motor Type	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM	Constant Torque ECM
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	1750-.20	1750-.20	1750-.20	1900-.25	1900-.25	1900-.25
Filter Sizes (inches) STD., 2 required	20x20x1	20x20x1	20x20x1	20x20x1	20x20x1	20x20x1
<b>Basic Unit Weight-LBS.</b>	505	505	505	555	555	555
Barometric Fresh Air Damper (X)	13	13	13	13	13	13
Barometric Damper w/ Exhaust (A)	16	16	16	16	16	16
Blank-Off Plate (B)	14	14	14	14	14	14
Commercial Room Ventilator (M, V)	42	42	42	42	42	42
Economizer (D, Z)	44	44	44	44	44	44
Energy Recovery Ventilator (R)	87	87	87	87	87	87

## 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.	UNITS USING CRATE	DESCRIPTION
8620-304	W42A, W48A	Standard Unit Crate
8620-305	W60A, W72A	Standard Unit Crate

## COOLING APPLICATION DATA - OUTDOOR TEMPERATURE ① ②

MODEL	RETURN AIR (DB/WB)	COOLING CAPACITY	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F	125°F	131°F
W42	75/62	Total Cooling	44400	42400	40500	38500	36600	34800	33100	31300	29600	27900	26200	24100
		Sensible Cooling	33900	33200	32300	31600	30800	30100	29300	28500	27700	27000	26100	24100
	80/67	Total Cooling	47400	46200	44900	43500	42000	40500	39000	37300	35600	33800	31900	29500
		Sensible Cooling	32900	32500	32000	31600	31100	30600	30000	29400	28800	28200	27500	26700
	85/72	Total Cooling	56500	54000	51600	49100	46700	44300	42100	39700	37400	35100	32800	30000
		Sensible Cooling	33700	33000	32200	31400	30500	29600	28600	27600	26500	25500	24400	23000
W48	75/62	Total Cooling	51300	48800	46500	44100	41800	39700	37500	35300	33300	31200	29200	26700
		Sensible Cooling	40300	39300	38200	37200	36200	35200	34200	33300	32400	31200	29200	26700
	80/67	Total Cooling	54700	53200	51600	49800	48000	46200	44200	42100	40000	37800	35500	32600
		Sensible Cooling	39100	38500	37800	37200	36500	35800	35100	34400	33700	33000	32300	31400
	85/72	Total Cooling	65200	62200	59300	56200	53300	50600	47700	44800	42000	39300	36500	33200
		Sensible Cooling	40100	39100	38000	37000	35800	34700	33500	32300	31100	29800	28600	27100
W60	75/62	Total Cooling	61600	58500	55600	52700	50100	47600	45300	43000	40900	38900	36900	35000
		Sensible Cooling	47200	45800	44400	43100	41900	40900	39800	38900	38000	37200	36500	35000
	80/67	Total Cooling	65700	63700	61700	59600	57500	55500	53400	51300	49200	47100	45000	42800
		Sensible Cooling	45800	44900	44000	43100	42300	41600	40800	40200	39500	38900	38400	37800
	85/72	Total Cooling	78300	74500	70900	67300	63900	60700	57600	54600	51700	48900	46300	43600
		Sensible Cooling	46900	45600	44200	42800	41500	40300	38900	37700	36400	35200	34000	32600
W72	75/62	Total Cooling	76200	72100	68500	65000	61800	58900	56100	53600	51300	49000	47000	44700
		Sensible Cooling	55800	54100	52400	50900	49500	48000	46800	45700	44600	43600	42700	41700
	80/67	Total Cooling	81300	78600	76100	73500	71000	68600	66200	63900	61700	59400	57300	54700
		Sensible Cooling	54100	53000	51900	50900	49900	48900	48000	47200	46400	45600	44900	44100
	85/72	Total Cooling	96800	91900	87400	83000	78600	75000	71400	68000	64800	61700	58900	55700
		Sensible Cooling	55400	53800	52100	50600	49000	47300	48500	44300	42700	41200	39700	38000

- ① Low ambient control allows for compressor operation down to 0°F.  
 ② Outdoor temperatures shown are measured at the condenser section air inlet.  
 ③ Return air temperature °F.

CAPACITY MULTIPLIER FACTORS			
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05

## R410A UNIT CHARGE RATES

UNIT	STD. UNIT - LBS.	DEHUM. UNITS - LBS.
W42AC	7.25	7.25
W48AC	7.38	7.38
W60AC	9.25	9.50
W72AC	9.50	9.75

////// BALANCED CLIMATE APPLICATION DATA (OPTIONAL, REQUIRES 2 STAGE COOLING THERMOSTAT)

MODEL	RETURN AIR (DB/WB)	COOLING CAPACITY	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F	125°F
W42	75/62	Total Cooling	40900	39400	37900	36500	34800	33300	31700	30100	28500	26800	25100
		Sensible Cooling	28800	28200	27500	26800	26100	25400	24700	23900	23200	22500	21700
		Latent Cooling	12100	11200	10400	9700	8700	7900	7000	6200	5300	4300	3400
		% Latent Increase	13%	18%	21%	29%	<b>33%</b>	<b>41%</b>	46%	55%	64%	79%	97%
	80/67	Lbs. H2O per Hr.	11.42	10.57	9.811	9.151	8.208	7.453	6.604	5.849	5	4.057	3.208
		Total Cooling	43600	42900	42100	41200	40000	38800	37400	35900	34300	32500	30600
		Sensible Cooling	27900	27600	27200	26800	26300	25800	25300	24700	24100	23500	22800
		Latent Cooling	15700	15300	14900	14400	13700	13000	12100	11200	10200	9000	7800
		% Latent Increase	8%	10%	13%	17%	20%	24%	26%	29%	33%	38%	44%
W48	75/62	Lbs. H2O per Hr.	14.81	14.43	14.06	13.58	12.92	12.26	11.42	10.57	9.623	8.491	7.358
		Total Cooling	52000	50200	48400	46500	44500	42500	40300	38200	36100	33800	31500
		Sensible Cooling	28600	28000	27400	26600	25800	25000	24100	23200	22200	21300	20200
		Latent Cooling	23400	22200	21000	19900	18700	17500	16200	15000	13900	12500	11300
	80/67	% Latent Increase	3%	5%	8%	11%	13%	16%	17%	19%	22%	23%	26%
		Lbs. H2O per Hr.	22.08	20.94	19.81	18.77	17.64	16.51	15.28	14.15	13.11	11.79	10.66
		Total Cooling	49900	47000	44400	42000	39600	37500	35600	33800	32100	30500	29000
		Sensible Cooling	35200	33900	32700	31500	30400	29500	28600	27700	26900	26200	25500
		Latent Cooling	14700	13100	11700	10500	9200	8000	7000	6100	5200	4300	3500
W60	75/62	% Latent Increase	25%	27%	29%	34%	39%	44%	53%	67%	83%	100%	100%
		Lbs. H2O per Hr.	13.87	12.36	11.04	9.906	8.679	7.547	6.604	5.755	4.906	4.057	3.302
	80/67	Total Cooling	53200	51200	49300	47400	45500	43700	42000	40300	38600	36900	35300
		Sensible Cooling	34100	33200	32400	31500	30700	30000	29300	28600	28000	27400	26800
		Latent Cooling	19100	18000	16900	15900	14800	13700	12700	11700	10600	9500	8500
		% Latent Increase	18%	18%	18%	21%	22%	24%	28%	34%	41%	49%	62%
	85/72	Lbs. H2O per Hr.	18.02	16.98	15.94	15	13.96	12.92	11.98	11.04	10	8.962	8.019
		Total Cooling	63400	59900	56600	53500	50600	47800	45300	42900	40600	38400	36300
		Sensible Cooling	34900	33700	32600	31300	30100	29000	27900	26800	25800	24800	23700
W72	75/62	Latent Cooling	28500	26200	24000	22200	20500	18800	17400	16100	14800	13600	12600
		% Latent Increase	12%	12%	11%	14%	15%	15%	18%	22%	26%	30%	37%
		Lbs. H2O per Hr.	26.89	24.72	22.64	20.94	19.34	17.74	16.42	15.19	13.96	12.83	11.89
	80/67	Total Cooling	58100	55200	52400	49900	47500	45300	43300	41400	39600	38000	36500
		Sensible Cooling	40700	39300	38000	36800	35700	34700	33700	32900	32100	31300	30800
		Latent Cooling	17400	15900	14400	13100	11800	10600	9600	8500	7500	6700	5700
		% Latent Increase	17%	20%	22%	27%	<b>31%</b>	<b>37%</b>	43%	52%	61%	75%	93%
	85/72	Lbs. H2O per Hr.	16.42	15	13.58	12.36	11.13	10	9.057	8.019	7.075	6.321	5.377
		Total Cooling	62000	60100	58200	56400	54500	52800	51100	49400	47700	46100	44500
W72	75/62	Sensible Cooling	39500	38500	37600	36800	36000	35300	346	34000	33400	32800	32400
		Latent Cooling	22500	21600	20600	19600	18500	17500	16500	15400	14300	13300	12100
		% Latent Increase	12%	13%	14%	16%	18%	21%	24%	28%	32%	38%	45%
		Lbs. H2O per Hr.	21.23	20.38	19.43	18.49	17.45	16.51	15.57	14.53	13.49	12.55	11.42
	80/67	Total Cooling	73900	70300	66800	63700	60500	57800	55100	52600	50100	47900	45800
		Sensible Cooling	40500	39100	37800	36600	35300	34200	33000	31900	30800	29600	28700
		Latent Cooling	33400	31200	29000	27100	25200	23600	22100	20700	19300	18300	17100
		% Latent Increase	6%	7%	8%	10%	11%	14%	15%	18%	21%	25%	28%
	85/72	Lbs. H2O per Hr.	31.51	29.43	27.36	25.57	23.77	22.26	20.85	19.53	18.21	17.26	16.13
W72	75/62	Total Cooling	70500	67400	64400	61600	58800	56200	53600	51200	48900	46700	44500
		Sensible Cooling	46700	45700	44600	43500	42400	41300	40100	38900	37800	36600	35300
		Latent Cooling	23800	21700	19800	18100	16400	14900	13500	12300	11100	10100	9200
		% Latent Increase	14%	17%	19%	22%	<b>25%</b>	<b>27%</b>	31%	36%	40%	47%	53%
	80/67	Lbs. H2O per Hr.	22.45	20.47	18.68	17.08	15.47	14.06	12.74	11.6	10.47	9.528	8.679
		Total Cooling	75300	73400	71500	69600	67500	65500	63300	61100	58900	56600	54200
		Sensible Cooling	45300	44800	44200	43500	42800	42000	41100	40200	39300	38300	37200
		Latent Cooling	30000	28600	27300	26100	24700	23500	22200	20900	19600	18300	17000
	85/72	% Latent Increase	9%	10%	11%	13%	15%	16%	18%	20%	22%	25%	27%
		Lbs. H2O per Hr.	28.3	26.98	25.75	24.62	23.3	22.17	20.94	19.72	18.49	17.26	16.04
		Total Cooling	89700	85800	82100	78600	75000	71600	68300	65000	61900	58800	55800
		Sensible Cooling	46400	45500	44400	43200	42000	40600	39200	37700	36200	34600	32900
		Latent Cooling	43300	40300	37700	35400	33000	31000	29100	27300	25700	24200	22900
		% Latent Increase	4%	5%	6%	8%	9%	11%	12%	13%	14%	15%	16%
		Lbs. H2O per Hr.	40.85	38.02	35.57	33.4	31.13	29.25	27.45	25.75	24.25	22.83	21.6

- ① Low ambient operation disables Balanced Climate Operation.  
 ② Outdoor temperatures shown are measured at the condenser section air inlet.  
 ③ Return air temperature °F.  
 ④ % Latent increase is a comparison to non-Balanced Climate unit operation.

CAPACITY MULTIPLIER FACTORS			
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05



///// INDOOR AIRFLOW CFM @ STATIC PRESSURES - EC BLOWER CONSTANT TORQUE MOTOR WITH ADJUSTMENT SPEEDS

ESP	W42 BLOWER TAPS - DRY/WET COIL CFM					W48 BLOWER TAPS - DRY/WET COIL CFM				
In H2O	Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating	Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating
0"	1510/1495	1345/1190	1510/1495	1740/1650	1815/1750	1795/1685	1370/1305	1795/1685	1895/1850	2000/1920
.1"	1445/1415	1120/1025	1445/1415	1660/1600	1740/1675	1730/1625	1270/1200	1730/1625	1845/1765	1940/1850
.15"	1410/1375	1020/950	1410/1375	1620/1565	1700/1635	1690/1590	1220/1145	1690/1590	1815/1725	1905/1815
.2"	1370/1325	930/875	1370/1325	1580/1530	1660/1600	1655/1555	1165/1095	1655/1555	1785/1685	1870/1780
.3"	1280/1230	775/745	1280/1230	1490/1440	1575/1515	1575/1485	1065/995	1575/1485	1715/1610	1800/1710
.4"	1175/1120	650/625	1175/1120	1400/1330	1490/1430	1485/1405	965/900	1485/1405	1635/1540	1730/1635
.5"	1055/1000	560/525	1055/1000	1310/1205	1400/1345	1390/1325	865/810	1390/1325	1550/1475	1655/1560

ESP	W60 BLOWER TAPS - DRY/WET COIL CFM					W72 BLOWER TAPS - DRY/WET COIL CFM				
In H2O	Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating	Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating
0"	1930/1880	1420/1355	1930/1880	2110/2070	2265/2245	2150/2070	1645/1565	2150/2070	2205/2130	2265/2195
.1"	1875/1815	1355/1290	1875/1815	2055/2010	2210/2195	2085/2000	1610/1525	2085/2000	2145/2080	2205/2140
.15"	1845/1785	1320/1255	1845/1785	2025/1975	2185/2170	2055/1965	1585/1495	2055/1965	2120/2055	2180/2110
.2"	1815/1750	1285/1225	1815/1750	1995/1945	2160/2145	2025/1930	1550/1460	2025/1930	2090/2025	2150/2080
.3"	1750/1680	1215/1155	1750/1680	1940/1880	2105/2085	1960/1870	1465/1375	1960/1870	2035/1970	2095/2025
.4"	1685/1610	1140/1080	1685/1610	1880/1815	2050/2025	1905/1810	1355/1265	1905/1810	1980/1910	2045/1965
.5"	1620/1535	1060/1005	1620/1535	1815/1750	1990/1965	1845/1760	1220/1135	1845/1760	1925/1845	1990/1910

Above data is with 1" standard throwaway filter and 1" washable filter.

For Optional 2" pleated filter - reduce ESP by .15 in.

See installation instructions for maximum ESP information on various KW application.

Five factory programmed speed taps (torque settings) are available for the indoor blower motor, and are selected through different unit modes of operation. These modes are energized by 24VAC signals from the low voltage terminal block located inside the control panel by a thermostat or other controlling device.

1. Blower and Ventilation Only Speed is the CFM amount for continuous fan and ventilation without a call for cooling.
2. Balanced Climate Speed is the indoor CFM amount for user selectable Balanced Climate operation and optional Mechanical Dehumidification. 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, and a controls kit that includes a low ambient control (LAC) must be used for Balanced Climate Operation. Balanced Climate can be used for duct free and ducted applications below 0.20"W/C ESP total static. 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.
3. Default LO Cooling and Heating Speed is the indoor CFM amount for cooling operation using the default blower speed tap selection. 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.
4. Optional MED Cooling and Heating Speed is selected manually during unit setup and provides a higher indoor CFM for hi static duct applications and increased airflow. This speed is labeled as MED on the speed selection terminal strip inside the unit control panel.
5. Optional HI Cooling and Heating Speed is selected manually during unit setup and provides the highest allowable indoor CFM amount. Not recommended for standard unit operation. This speed is labeled as HI on the speed selection terminal strip inside the unit control panel.

# //////// SOUND DATA - DBA @ 5 FT. AND 10 FT.\*

DUCT FREE	INDOOR COOLING OPERATION @ 5 FT.				INDOOR COOLING OPERATION @ 10 FT.				OUTDOOR @ 5 FT.
Unit	STD Grilles	With WMSC5	With WMSC5 and WARP-11	WMSC5, WARP-11, WAPFB51	STD Grilles	With WMSC5	With WMSC5 and WARP-11	WMSC5, WARP-11, WAPFB51	STD Features
W42AC	56.1	53.1	51.1	50.3	51.7	50.7	51	49.6	73.7
W48AC	57	49.1	48.6	45.6	52.7	48.7	47.5	47.4	73.6
W60AC	56.5	52	48.4	47.4	53.3	49.7	47.4	46.5	71.4
W72AC	61.2	54	50.8	50.1	56.6	50.2	48	46.2	78.9

DUCTED SUPPLY	INDOOR COOLING OPERATION @ 5 FT.				INDOOR COOLING OPERATION @ 10 FT.				OUTDOOR @ 10 FT.
Unit	STD Grilles	With WMSC5	With WMSC5 and WARP-11	WMSC5, WARP-11, WAPFB51	STD Grilles	With WMSC5	With WMSC5 and WARP-11	WMSC5, WARP-11, WAPFB51	STD Features
W42AC	56.3	53.2	50.4	N/A	51.1	51.4	50.7	N/A	68.6
W48AC	57.8	49.8	46.4	N/A	52.8	49.8	44.7	N/A	69
W60AC	56	47.1	46.6	N/A	52.7	47.1	44.8	N/A	66.8
W72AC	60.8	54.7	49.1	N/A	57.1	48.7	45.1	N/A	77.1

Integrated values calculated per ANSI/ASA S12.60-2009/Part 2, Section 5.2.2.1, Integrated Sound Values are also applicable for use in learning spaces for LEED schools; EQ Prerequisite 3 - Minimum Acoustical Performance, OPTION 1. Using methods prescribed in ANSI S12.60, classroom must achieve a maximum background noise level of 45 dBA. Results referenced were recorded in The Bard Manufacturing Company, Inc. Sound Lab Facility. Actual field application results may vary with the classroom design and construction methods.

# //////// ELECTRICAL SPECIFICATIONS — W\*\*AC SERIES

MODEL	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Multiple Circuit							
			③ Minimum Circuit Ampacity	① Maximum External Fuse or Ckt. Brkr.	② Field Power Wire Size	④ Ground Wire	③ Minimum Circuit Ampacity		① Maximum External Fuse or Ckt. Breaker		② Field Power Wire Size		② Ground Wire Size	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B
W42AC-A00, A0Z A05 A10 A15 A20	230/208-1	1	31	50	8	10								
		1	31	50	8	10								
		1	57	60	6	10								
		1 or 2	83	90	4	8	57	26	60	30	6	10	10	10
		1 or 2	109	125	2	6	57	52	60	60	6	6	10	10
W42AC-B00, B0Z B06 B09 B15 B18	230/208-3	1	23	35	8	10								
		1	23	35	8	10								
		1	32	35	8	10								
		1	51	60	6	10								
		1	60	60	6	10								
W42AC-C00, C0Z C09 C15	460-3	1	12	15	14	14								
		1	17	20	12	12								
		1	26	30	10	10								
W48AC-A00, A0Z A05 A10 A15 A20	230/208-1	1	35	50	8	10								
		1	35	50	8	10								
		1	59	60	6	10								
		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
		1 or 2	111	125	2	6	59	52	60	60	6	6	10	10
W48AC-B00, B0Z B06 B09 B15 B18	230/208-3	1	26	35	8	10								
		1	26	35	8	10								
		1	33	35	8	10								
		1	51	60	6	10								
		2	N/A	N/A	N/A	N/A	34	28	40	30	8	10	10	10
W48AC-C00, C0Z C09 C15	460-3	1	12	15	14	14								
		1	17	20	12	12								
		1	26	30	10	10								
W60AC-A00, A0Z A05 A10 A15 A20	230/208-1	1	38	50	8	10								
		1	38	50	8	10								
		1	59	60	6	10								
		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
		1 or 2	111	125	2	6	59	52	60	60	6	6	10	10
W60AC-B00, B0Z B06 B09 B15 B18	230/208-3	1	28	40	8	10								
		1	28	40	8	10								
		1	34	40	8	10								
		1	52	60	6	10								
		2	N/A	N/A	N/A	N/A	34	28	40	30	8	10	10	10
W60AC-C00, C0Z C09 C15	460-3	1	14	20	12	12								
		1	18	20	12	12								
		1	26	30	10	10								
W72AC-A00, A0Z A05 A10 A15 A20	230/208-1	1	56	60	6	10								
		1	56	60	6	10								
		1 or 2	61	90	6	8	56	26	60	30	6	10	10	10
		1 or 2	86	90	3	8	56	52	60	60	6	6	10	10
		1 or 2	112	125	2	6	56	52	60	60	6	6	10	10
W72AC-B00, B0Z B06 B09 B15 B18	230/208-3	1	38	50	8	10								
		1	38	50	8	10								
		1	38	50	8	10								
		1	54	60	6	10								
		2	N/A	N/A	N/A	N/A	38	28	40	30	8	10	10	10
W72AC-C00, C0Z C09 C15	460-3	1	18	25	10	10								
		1	18	25	10	10								
		1	27	30	10	10								

① Maximum size of the time delay fuse or circuit breaker for protection of field wiring conductors.

② Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.

③ These "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 current carrying conductors are in a raceway.

**IMPORTANT:** While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and 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.

# ////// ELECTRICAL SPECIFICATIONS — W\*\*AC SERIES

Model	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Dual Circuit							
			① Minimum Circuit Ampacity	② Maximum External Fuse or Ckt. Brkr.	③ Field Power Wire Size	④ Ground Wire	① Minimum Circuit Ampacity		② Maximum External Fuse or Ckt. Breaker		③ Field Power Wire Size		④ Ground Wire Size	
							Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B	Ckt. A	Ckt. B
W42ACDA00,A0Z A05 A10 A15	230/208-1	1	31	50	8	10								
		1	31	50	8	10								
		1	57	60	6	10								
		1 or 2	83	90	4	8	57	26	60	30	6	10	10	10
W42ACDB00,B0Z B05 B09 B18	230/208-3	1	23	35	8	10								
		1	23	35	8	10								
		1	33	35	8	10								
		1	60	60	6	10								
W42ACDC00,C0Z C05 C09	460-3	1	13	15	14	14								
		1	13	15	14	14								
		1	18	20	12	12								
		1	18	20	12	12								
W48ACDA00,A0Z A05 A10 A15	230/208-1	1	34	50	8	10								
		1	34	50	8	10								
		1	59	60	6	10								
		1 or 2	85	90	4	8	59	26	60	30	6	10	10	10
W48ACDB00,B0Z B05 B09 B18	230/208-3	1	25	35	8	10								
		1	25	35	8	10								
		1	34	35	8	10								
		1	60	60	6	10								
W48ACDC00,C0Z C05 C09	460-3	1	12	15	14	14								
		1	12	15	14	14								
		1	17	20	12	12								
		1	17	20	12	12								
W60ACDA00,A0Z A05 A10	230/208-1	1	41	50	8	10								
		1	41	50	8	10								
		1	59	60	6	10								
		1	59	60	6	10								
W60ACDB00,B0Z B09 B15	230/208-3	1	28	40	8	10								
		1	35	40	8	10								
		1	53	60	6	10								
		1	53	60	6	10								
W60ACDC00,C0Z C09 C15	460-3	1	15	20	12	12								
		1	18	20	12	12								
		1	27	30	10	10								
		1	27	30	10	10								
W72ACDA00,A0Z A05 A10 A15	230/208-1	1	56	60	6	10								
		1	56	60	6	10								
		1	60	70	6	8	59	26	60	30	6	10	10	10
		1 or 2	86	90	3	8	59	52	60	60	6	6	10	10
W72ACDB00,B0Z B06 B09 B15	230/208-3	1	38	50	8	10								
		1	38	50	8	10								
		1	38	50	8	10								
		1	54	60	6	10								
W72ACDC00,C0Z C09 C15	460-3	1	19	25	10	10								
		1	19	25	10	10								
		1	27	30	10	10								
		1	27	30	10	10								

① These “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.

② Maximum size of the time delay fuse or circuit breaker for protection of field wiring conductors.

③ Based on 75°C copper wire. All wiring must conform to the National Electrical Code and all local codes.

**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) current carrying conductors are in a raceway.

**IMPORTANT:** While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and 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.

# HEATER PACKAGES - FIELD INSTALLED "C" SERIES 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
W42AC	WMCBC-08A	OZ	WMCBC-05B	OZ	WMCBC-06C	OZ
	EHWA48C-A05	5	EHWA42C-B06	6		
	EHWA42C-A10	10	EHWA42C-B09	9	EHWA42C-C09	9
	EHWA42C-A15	15	EHWA42C-B15	15	EHWA42C-C15	15
	EHWA42C-A20	20	EHWA42C-B18	18		
W48AC	WMCBC-08A	OZ	WMCBC-05B	OZ	WMCBC-06C	OZ
	EHWA48C-A05	5	EHWA42C-B06	6		
	EHWA42C-A10	10	EHWA42CD-B09	9	EHWA48C-C09	9
	EHWA42C-A15	15	EHWA48C-B15	15	EHWA42C-C15	15
	EHWA42C-A20	20	EHWA48C-B18	18		
W60AC	WMCBC-08A	OZ	WMCBC-06B	OZ	WMCBC-06C	OZ
	EHWA42C-A05	05	EHWA60C-B06	6		
	EHWA60C-A10	10	EHWA60C-B09	9	EHWA60C-C09	9
	EHWA60C-A15	15	EHWA60C-B15	15	EHWA60C-C15	15
	EHWA60C-A20	20	EHWA60C-B18	18		
W72AC	WMCBC-09A	OZ	WMCBC-08B	OZ	WMCBC-06C	OZ
	EHWA72C-A05	5	EHWA72C-B06	6		
	EHWA72C-A10	10	EHWA72C-B09	9	EHWA60C-C09	9
	EHWA72C-A15	15	EHWA60C-B15	15	EHWA60C-C15	15
	EHWA42C-A20	20	EHWA48C-B18	18		

//////// **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) These electric heaters are available in 230/208V units only.

(2) These electric heaters are available in 480V units only.

//////// **C SERIES WALL MOUNT™ VENTILATION OPTION SELECTION CHART**

VENT CODE	FIELD INSTALL KIT	UNIT	OPERATION	DESCRIPTION
<b>X</b>	<b>FAD-NE5</b>	W42A, W48A, W60A, W72A	Barometric	Air damper provides slight positive room pressure during blower operation, No room air exhaust.
<b>A</b>	<b>FAD-BE5</b>	W42A, W48A, W60A, W72A	Barometric	Air damper provides slight positive room pressure during blower operation, barometric room air exhaust.
<b>B</b>	<b>BOP5</b>	W42A, W48A, W60A, W72A	No Ventilation	Insulated plates used to seal vent intake and exhaust openings.
<b>M</b>	<b>CRV-F5</b>	W42A, W48A, W60A, W72A	24V On/Off	Vent Provides motorized spring return on/off operation to bring in outdoor air and exhaust room air. No intake hood required.
<b>V</b>	<b>CRV-V5</b>	W42A, W48A, W60A, W72A	24V On/Off, 2-10V	Vent provides motorized spring return modulating or on/off operation to bring in outdoor air and exhaust room air. Minimum and occupied vent blade positions. No intake hood required.
<b>D</b>	<b>ECON-NC5</b>	W42A, W48A, W60A, W72A	2-10V only	Full flow Economizer that uses 2 to 10V signal from a DDC control system or thermostat. No intake hood required.
<b>Y</b>	<b>ECON-DB5</b>	W42A, W48A, W60A, W72A	JADE Controller	Full flow economizer that uses the JADE controller and included sensors to operate free cooling. Temperature only operation. No intake hood required.
<b>Z</b>	<b>ECON-WD5</b>	W42A, W48A, W60A, W72A	JADE Controller	Full flow Economizer that uses the JADE controller and included sensors to operate free cooling. Enthalpy operation. No intake hood required.
<b>R</b>	<b>ERV-FA5</b>	W42A, W48A, W60A, W72A	24V On/Off, 3 blower speeds	208/230V Energy Recovery ventilator with energy wheel media. 3 independently selected intake and exhaust blower speeds. No intake hood required.
	<b>ERV-FC5</b>	W42A, W48A, W60A, W72A	24V On/Off, 3 blower speeds	460V Energy recovery ventilator with energy wheel media. 3 independently selected intake and exhaust blower speeds. No intake hood required.

## WALL MOUNT™ VENTILATION OPTIONS SPECIFICATIONS

### “X” Vent Code Option – Standard Fresh Air Damper No Exhaust (FAD-NE)

The barometric fresh air damper without exhaust is a standard feature on all models. It is installed on the right side above the condenser intake and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The damper opens during blower operation and closes when the blower is off. Adjustable blade stops allow different amounts of outside air to be introduced into the building and can be easily locked closed if required. The room exhaust air path is sealed with an insulated block-off plate.



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

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

The barometric fresh air damper with exhaust is an optional feature on all models. It is installed on the right unit side above the condenser intake and allows outside ventilation air, up to 25% of the total airflow rating of the unit, to be introduced through the air inlet openings and to be mixed with the conditioned air. The damper opens during blower operation and closes when the blower is off. Adjustable blade stops allow different amounts of outside air to be introduced into the building and can be easily locked closed if required. The room exhaust air path uses a barometric damper design that relieves room pressurization during outdoor air intake. The damper is located in the front of the unit below the control panel. Adjustable blade stops allow room pressure adjustment by controlling the amount of exhaust air leaving the building.



Fresh Air Damper Exhaust (FAD-BE only)

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

Blank off plates are installed on the inside of the service door and over the exhaust opening in the condenser partition. The plates cover the air inlet and room exhaust openings, which restricts any outside air from entering the unit or room air from leaving the conditioned space. The blank off plate option may be utilized in applications where outside air intake is not required by state or local codes.

### “M” Vent Code Option – Commercial Room Ventilator with fixed blade position (CRV-F)

The built-in commercial room ventilator with fixed blade position is internally mounted behind the service door and allows outside ventilation air, up to 50% of the total airflow rating of the unit. It includes a built-in exhaust air damper for room pressurization relief. Blade stops are easily adjustable to set intake airflow. The commercial room ventilator with fixed blade position (CRV-F) is a simple and innovative approach to improving the indoor air quality by providing fresh air intake and exhaust capability. The CRV-F can be activated by indoor blower operation or independently controlled by a thermostat or controller using a 24VAC occupancy or schedule signal. Blade operation is controlled by a on/off spring return motor that closes rapidly when de-energized. Blade seals provide minimal blade leakage.



Commercial Room Ventilator-Fixed

### “V” Vent Code Option – Commercial Room Ventilator with Modulating Blade position (CRV-V)

The built-in commercial room ventilator with modulating blade position is internally mounted behind the service door and allows outside ventilation air, up to 50% of the total airflow rating of the unit. It includes a built-in exhaust air damper for room pressurization relief. Blade seals allow for minimal blade leakage. A ventilation control board allows multiple blade settings to adjust intake airflow. By setting multiple blade positions, pre-purge, occupied, and unoccupied airflow amounts are possible with capable thermostats and controllers. The CRV-V also allows for 0-10V input for modulating ventilation control based on CO2 levels. Complies with ANSI/ASHRAE Standard 62.1 “Ventilation for Acceptable Indoor Air Quality” and other state and local ventilation codes that require outdoor air intake but not economizer operation.



Commercial Room Ventilator- Modulating



“V” Vent Control Board



## ////// WALL MOUNT™ VENTILATION OPTIONS SPECIFICATIONS (continued)

### **“D” Vent Code Option – Economizer without controls installed (ECON-NC)**

The built-in economizer is internally mounted behind the service door and allows outside ventilation air, up to 100% of the total airflow rating of the unit. It includes a built-in exhaust air damper for room pressurization relief. The economizer is designed to provide “free cooling” when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This provides lower operating costs, extended equipment life, and cooling operation at cold (-40°F) outdoor temperatures. The ECON-NC does not contain unit ventilation controls, and provides a 0-10V Belimo actuator motor with spring return. Blade seals are used to minimize blade leakage. Controls are provided by using a field supplied DDC system, or a thermostat capable of 0-10V economizer operation. Indoor and outdoor temperature sensors are not provided with the ventilation option, and must be ordered separately.



Economizer, No Controls

### **“Y and Z” Vent Code Option – Economizers with JADE® Controller (ECON-WD5 and ECON-DB5)**

The JADE controlled economizer is internally mounted behind the service door and allows outside ventilation air. The ECON-WD and ECON-WB allows up to 100% of the total airflow rating of the unit. It includes a built-in exhaust air damper for room pressurization relief. The economizer is designed to provide “free cooling” when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This provides lower operating costs, extended equipment life, and cooling operation down to -40°F outdoor temperatures.



Economizer, Jade Control

### **“Y and Z” Vent Code Option – (ECON-WD and ECON-WB) JADE® Controller Information**

JADE Economizer controls provide Demand Ventilation Control, operational checkout, an easy to read LCD screen, configurable freeze protection, and LCD displayed economizer component failure alarms. Minimum vent position, occupancy ventilation, and 0-10V CO2 input is available for use with select CO2 room sensors. Economizer operation can be controlled by outdoor dry bulb or outdoor enthalpy measurement. When used with a Bard economizer assembly, the JADE controller is able to meet most state and local codes for economizer use.

#### **JADE Controller Specifications:**

- Operating Humidity Range (% RH) 5 to 95% RH, non-condensing
- Contact Ratings 30 VAC-- 1.5 A Run, 3.5 A Inrush
- 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

### “R” Vent Code Option – Energy Recovery Ventilator (ERV-F)

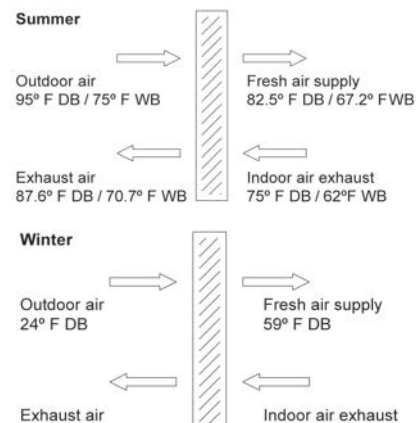
The wall-mount energy recovery ventilator (ERV) is a highly innovative approach to meeting indoor air quality ventilation requirements as established by ANSI/ASHRAE Standard 62.1. The ERV allows up to 400 CFM (depending upon model) of fresh air and exhaust through the unit while maintaining superior indoor comfort and humidity levels. In most cases this can be accomplished without increasing equipment sizing or operating costs. Heat transfer efficiency is up to 67% during summer and 75% during winter conditions.

The ERV consists of a unique “rotary energy recovery cassette” that provides effective sensible and latent heat transfer capabilities during summer and winter conditions. Various control schemes are addressed including limiting ventilation during building occupancy only. Outdoor air enters the front of the unit below the control panel. Room air is exhausted through the condenser partition into the condenser area. Intake and exhaust use independent blowers for intake air and exhaust air balancing. Each blower assembly has 3 speed taps for blower CFM adjustment. It can be built-in at the factory or field installed as an option. Wiring includes plug-in harnesses for easy vent installation and removal.



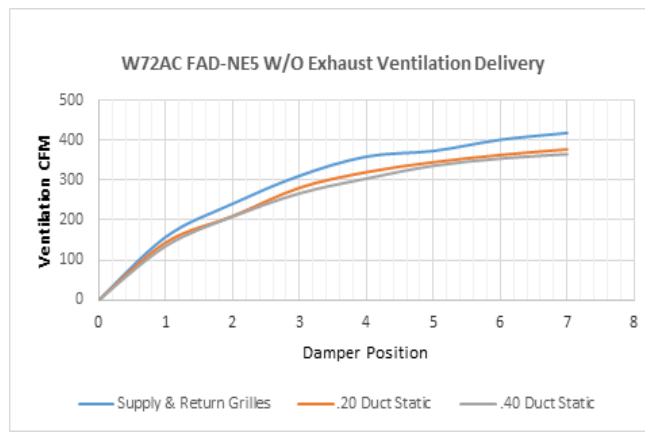
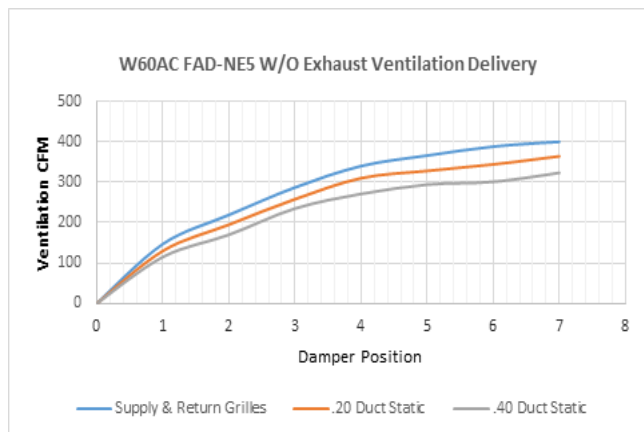
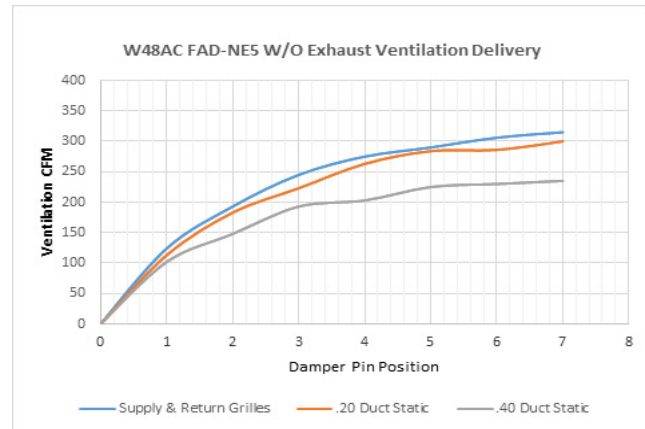
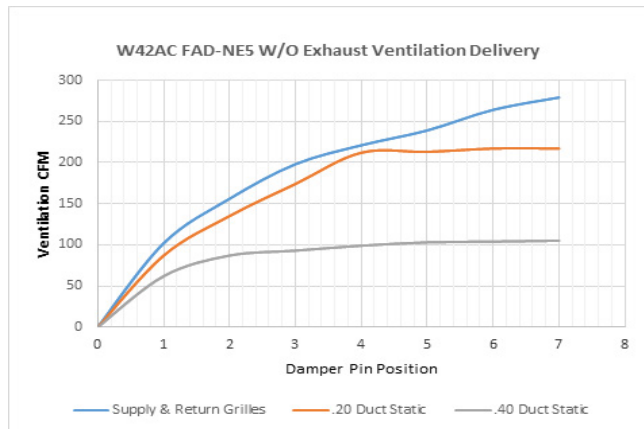
Energy Recovery Ventilator

#### Typical load reductions for ERV-F3

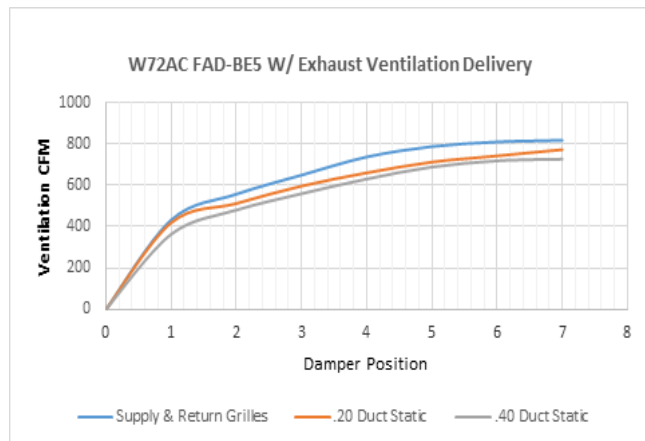
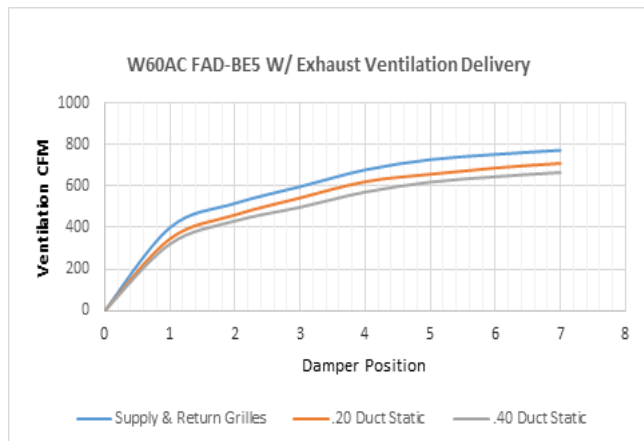
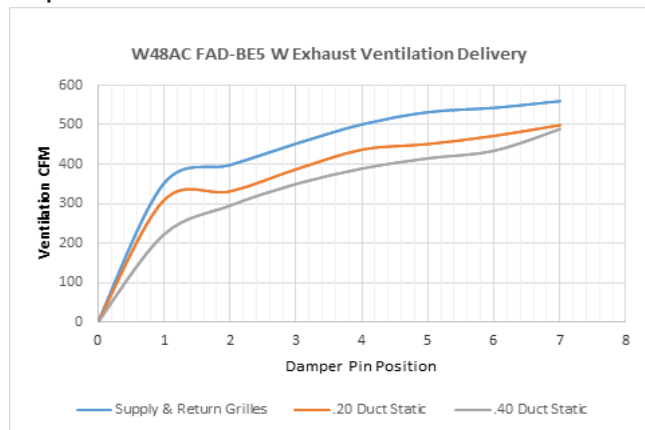
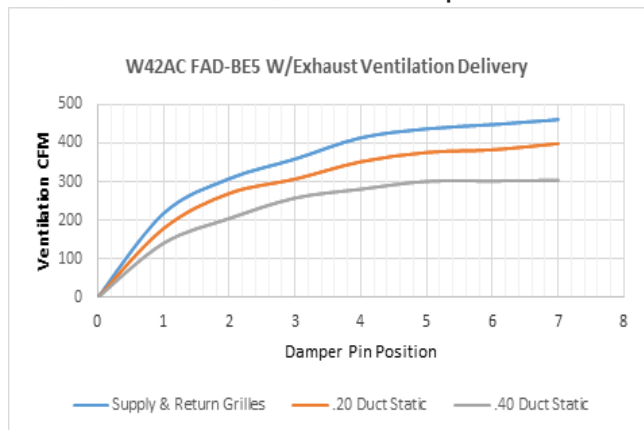


# WALL MOUNT™ BAROMETRIC DAMPER (FAD) PERFORMANCE

## “X” (FAD-NE5 and FAD-NE5) Barometric Damper Without Exhaust Vent Code Options

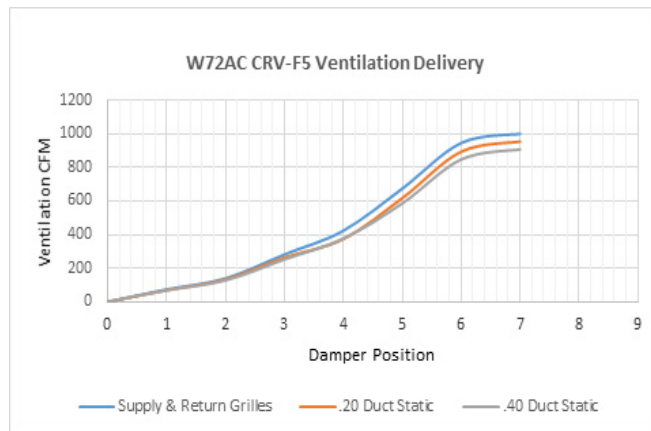
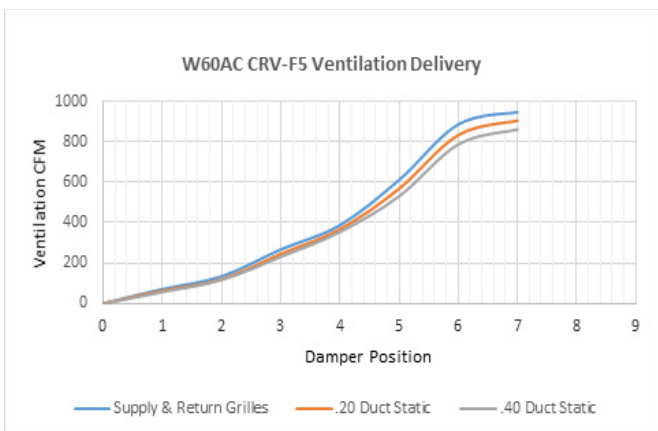
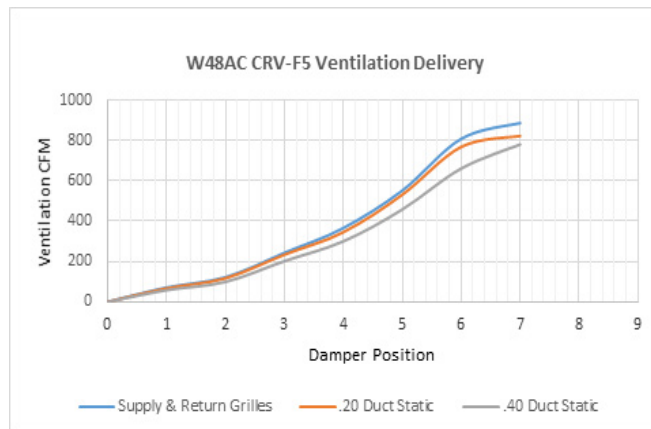
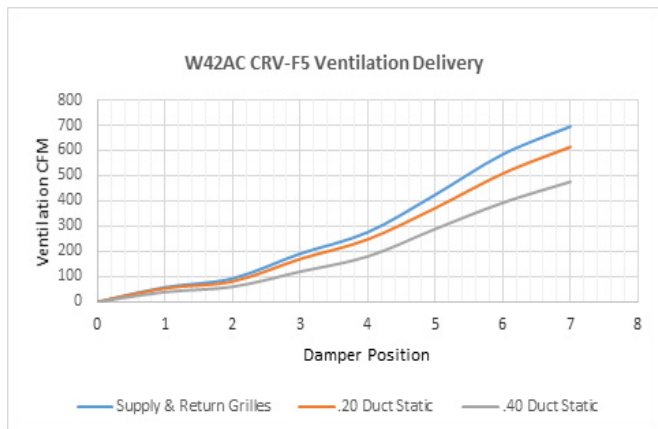


## “A” (FAD-BE5 and FAD-BE5) Barometric Damper With Exhaust Vent Code Options

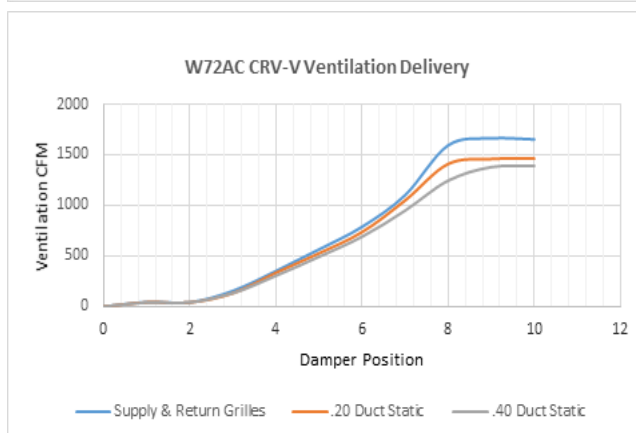
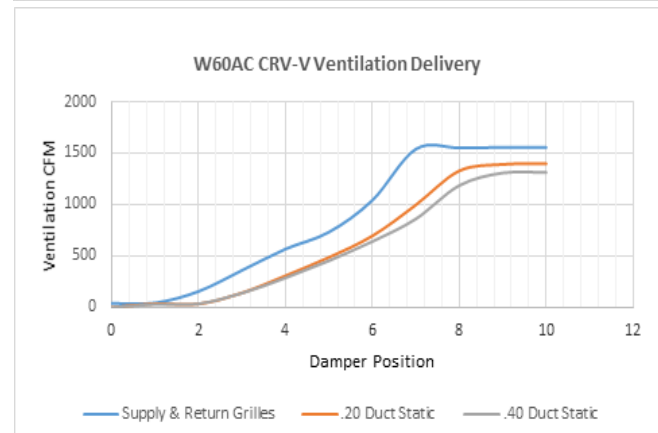
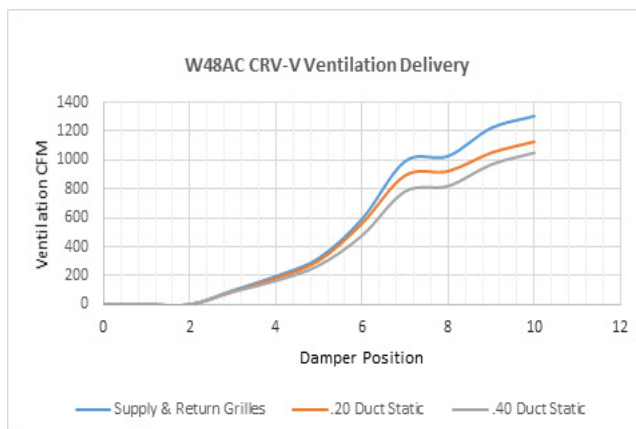
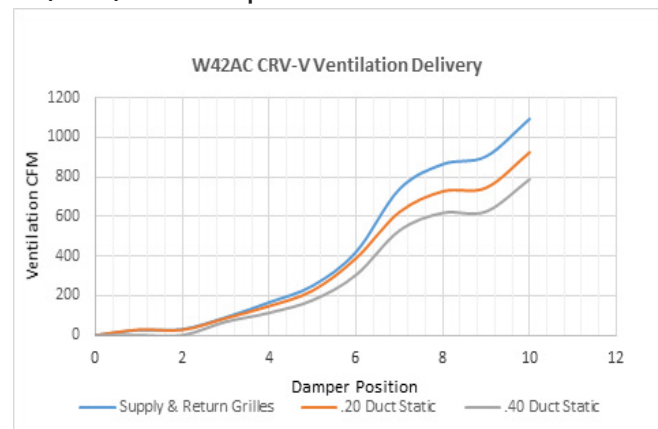


# WALL MOUNT™ VENTILATION AIRFLOW CHARTS

## “M” (CRV-F) Vent Code Options

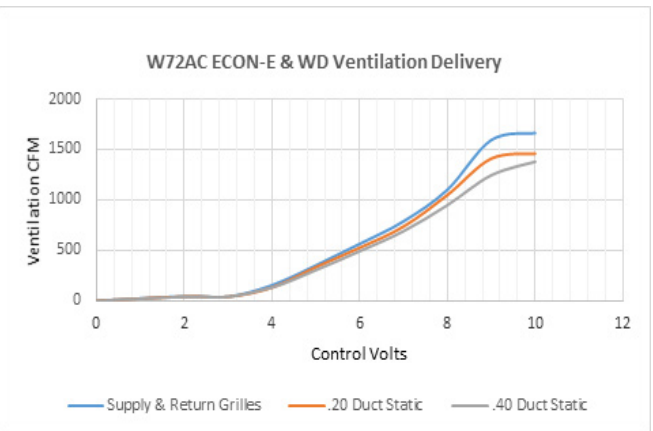
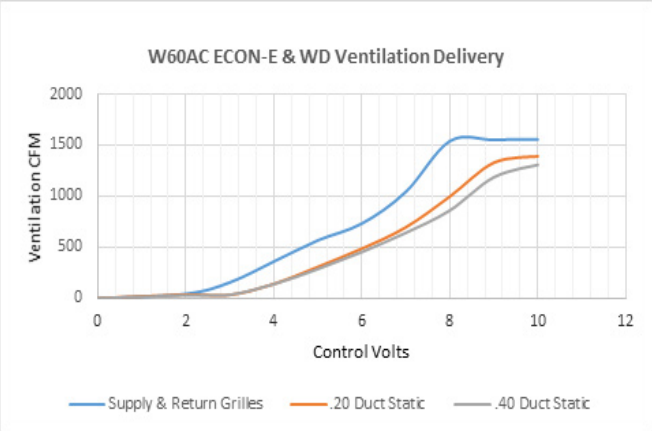
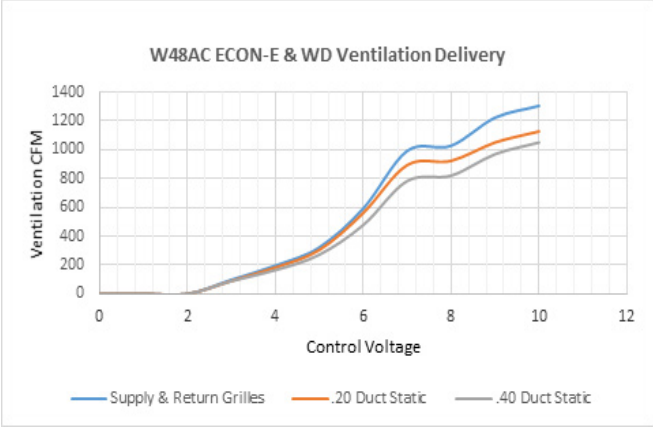
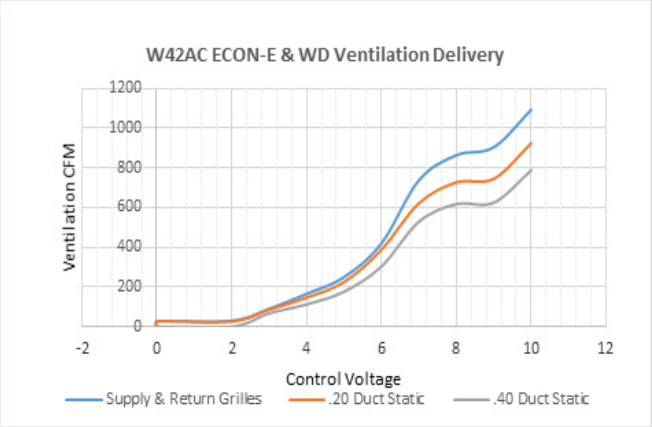


## “V” (CRV-V) Vent Code Options



# WALL MOUNT™ VENTILATION AIRFLOW CHARTS

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



# WALL MOUNT™ ENERGY RECOVERY VENTILATION (ERV) PERFORMANCE

"R" (ERV-FA5 and ERV-FC5) Vent Code Options for W42, W48, W60, and W72  
SUMMER COOLING PERFORMANCE (INDOOR DESIGN CONDITIONS 75°DB/62°WB)

AMBIENT O.D.		VENTILATION RATE -- 400 CFM 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	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	WVL	WVL	WVL	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



### Cabinet Finish Options

Unit models are available in Beige, White, Buckeye Gray, Desert Brown, Dark Bronze, stainless steel, and aluminum. Painted cabinet construction is comprised of 20 gauge Zinc coated steel. Parts are cleaned, rinsed, sealed, and dried before a polyurethane primer is applied. The cabinet coating is completed with a baked on textured enamel. The resulting finish is designed to withstand 1000 hours of salt spray tests per ASTM B117-03.

Stainless steel external cabinet construction is comprised of 316 grade materials. Stainless steel screws and fasteners are used in all externally exposed areas. A corrosion resistant coated fan blade and stainless steel condenser motor mount is provided.

Aluminum external cabinet construction is ASTM B 209 grade .06" thickness with a stucco appearance.

### Stainless Steel Cabinet Construction

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 environments. Units may not only be exposed to wind - blown dust, dirt, lint, and fibers but also may be exposed to corrosive agents. The Bard stainless steel unit offers a high quality stainless steel grade enclosure and fasteners for years of operation in these conditions.

#### Features:

- 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.

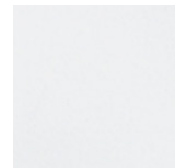
Bard highly suggests units exposed to extremely harsh environments, high quantities, of airborne dirt and dust, or sprayed with water hose and splashing water be ordered with the Blank Off Plate (BOP) ventilation option unless codes require fresh air intake. The BOP ventilation option installs plates over the fresh air intake and exhaust openings.

### Green Fin Hydrophilic Evaporator Coils Standard On All Units

Bard WALL MOUNT 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.



X—Beige



1—White



4—Gray



5—Desert



8—Bronze



S—Stainless



A—Aluminum

#### Evaporator and Condenser Coil Technicoat Coating Options

All models utilize a copper/aluminum evaporator and condenser coil. An additional corrosion resistant TechniCoat 10-2™ coating may be ordered for the condenser coil (option 1), evaporator coil (option 2) or both evaporator and condenser coils (option 3). TechniCoat is a proprietary epoxy-modified phenolic dip coating. Total Immersion ensures complete coverage with no significant loss of thermal efficiency. The 4-step coating system consist of (1) a multi-step cleaning process, (2) chemical etch primer, (3) epoxy-modified phenolic, and (4) phenolic sealer. The result is a corrosion resistant coil that outperforms a copper finned coil, is less expensive, and is also nearly 3 times lighter. ASTM B117 salt spray tests conducted show over 4500 hours with “no fin corrosion or degradation.”

#### Cabinet Coating Options

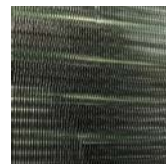
Bard recommends unit coatings be used in applications that may be exposed to corrosive particulates in the airstream. These applications include wastewater treatment plants, gas and oil refinery operations, battery manufacturers, areas with Sulfur water, wineries, chemical plants, pulp and paper mills, and seacoast installations. Contact your Bard distributor for additional information regarding cabinet coating options.

#### 4= Exterior Unit Cabinet & Condenser Section

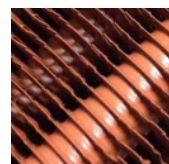
The 4 option unit contains our corrosion resistance phenolic coated coils and a coated unit condenser section. By coating the condenser section, the copper tubing, motor mount, sheet metal parts, filter/drier and compressor housing in the condenser area are protected with a epoxy semi-gloss coating.

#### 5= Exterior & Interior

The 5 option unit contains our corrosion resistance phenolic coated coils and is both internally and externally coated. By coating the interior and exterior of the unit, the copper tubing, motor mount, sheet metal parts, filter/drier, compressor housing, blower assembly, and any optional ventilation features are protected with a epoxy semi-gloss coating. This is the highest level of protection available. It is required for applications where the internal and external features of the unit are exposed to a high level of salt or corrosive chemicals.



Hydrophilic  
Green Coil  
(standard)



AeroMarine  
(optional)

## OPTIONAL DIP COATED EVAPORATOR AND CONDENSER COIL

Bard now offers TECHNICOAT AA, a robust dipped coating option for the evaporator and condenser coil. TECHNICOAT AA has passed all HVAC accelerated tests like salt spray, flexibility and SWAAT 3,000+ hours. It has been tested in the field in the most severe industrial exposure conditions, such as a coastal refinery in Saudi Arabia, mining facilities in central Africa, and various Pacific islands. TECHNICOAT AA did not show any deterioration after multiple years of function with coils directly exposed to such harsh environmental conditions. The TECHNICOAT AA coating system is based on modified acrylic waterborne binders with high elongation properties. Aluminum pigmentation has been added to establish exceptional heat transfer, chemical resistance, and UV blocking properties. Corrosion resistance reaches >10,000+ hours in ASTM B-117 and >3,120 hours in SWAAT testing. Coating is gray in color.

### TEMPERATURE RESISTANCE:

- Maximum up to 248°F (120°C), 480°F (250°C) peak exposure
- Minimum -40°F (-40°C)

### CHEMICAL RESISTANCE:

- 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 Enthrific 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.

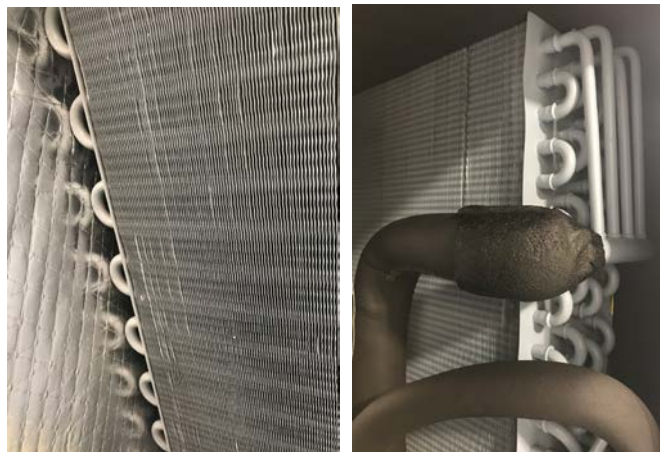
Contact your local Bard distributor or representative for a list of all chemicals and chemical resistance information.

### 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.



## ///// WALL MOUNT™ FACTORY INSTALLED CONTROLS OPTIONS

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 compressor control module with adjustable voltage protection, delay on make and break, and high/low pressure diagnostics is also standard

CONTROL CODE	DESCRIPTION OF FACTORY INSTALLED COMPONENTS
<b>X</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module.
<b>E</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control</b>
<b>F</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control, Dirty Filter Press. Switch</b>
<b>J</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control, Alarm Relay</b>
<b>K</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control, PTCR Start Kit</b>
<b>M</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control, Alarm Relay, PTCR Start Kit</b>
<b>V</b>	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, <b>Low Ambient Control, Alarm Relay, Discharge temperature sensor, Indoor Blower Airflow Press. Switch, Compressor Current Sensor, Dirty Filter Pressure Switch</b>

## ///// WALL MOUNT™ FIELD INSTALLED 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
<b>NA</b>	<b>CMC-32</b>	W42A, W48A, W60A, W72A	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
<b>NA</b>	<b>CMC-33</b>	W42A, W48A, W60A, W72A	Dirty Filter Kit
<b>E</b>	<b>CMA-39</b>	W42A, W48A, W60A, W72A	Low Ambient Control allows compressor cooling between 0°F and 50°F outdoor temp. - fan cycling
<b>NA</b>	<b>CMC-35</b>	W42A, W48A, W60A, W72A	Alarm Relay Kit
<b>NA</b>	<b>CMA-43</b>	W42A, W48A, W60A, W72A	Outdoor Thermostat Kit used to disable compressor cooling below 50°F outdoor temp. Adjustable between 50° and 0°F
<b>V</b>	<b>CMA-44</b>	W42A, W48A, W60A, W72A	Kit Includes Discharge temperature sensor, Indoor Blower Airflow Press. Switch, Compressor Current Sensor, Dirty Filter Pressure Switch
<b>NA</b>	<b>CMC-38</b>	W42A, W48A, W60A, W72A	Crank case heater kit. 230V units only.
<b>NA</b>	<b>CMC-39</b>	W42A, W48A, W60A, W72A	Crank case heater kit. 460V units only.

## ////// 24VAC LOW VOLTAGE TERMINAL DESIGNATIONS

Bard WALL MOUNT products provide 24VAC power to controllers and thermostats. They also are able to receive 24VAC signals from a controlling device. The V controls option provides additional sensors for use with a field supplied DDC controls systems. The information below provides terminal designations and how they are used in the WALL MOUNT unit. More information on low voltage connections and operational sequences is provided in the unit installation manual.

Terminal	Unit	Description
<b>R</b>	All Units	24VAC low voltage output (HOT Terminal)
<b>RT</b>	All Units	RT terminal has jumper to R terminal. When jumper is removed, R and RT can be used with normally closed contacts for fire/smoke detector for unit shutdown.
<b>C</b>	All Units	Ground Terminal
<b>G</b>	All Units	Indoor fan input
<b>Y1</b>	All Units	1st Stage cooling input. Economizer stage when used. Balanced Climate stage when used. Remove jumper between Y1 and Y2 for 2 stage blower operation.
<b>Y2</b>	All Units	2nd Stage cooling input. Compressor cooling stage when Econ or Balanced Climate is used.
<b>B/W1</b>	All Units	1st Stage electric heat
<b>W2</b>	All Units	2nd State electric heat. Jumper between W1 and W2 must be removed for staged heat
<b>A</b>	Vent option units only	Ventilation option input. Calls for occupied vent air intake for CRV, ERV, ECON
<b>D</b>	Dehum. units only	Dehumidification input on units equipped with mechanical reheat dehumidification
<b>L</b>	All Units	24VAC Alarm active output
<b>1</b>	C, J, M, V Control Opt.	Alarm relay Normally Closed Contract
<b>2</b>	C, J, M, V Control Opt.	Alarm relay Normally Open Contact
<b>3</b>	C, J, M, V Control Opt.	Alarm Relay Common Contact
<b>9</b>	V Controls Option Only	Discharge Air Sensor, 10K ohm
<b>10</b>	V Controls Option Only	Discharge Air Sensor, 10K ohm
<b>11</b>	G, V Control Options	Filter Switch, Normally Open Contacts
<b>12</b>	G, V Control Options	Filter Switch, Normally Open Contacts
<b>13</b>	V Controls Option Only	Blower Airflow Switch, Normally Open Contacts
<b>14</b>	V Controls Option Only	Blower Airflow Switch, Normally Open Contacts
<b>15</b>	V Controls Option Only	Compressor Current Sensor, Normally Open Contacts
<b>16</b>	V Controls Option Only	Compressor Current Sensor, Normally Open Contacts

## OPTIONAL CONTROLS AND KIT COMPONENT DEFINITIONS

**Hi Pressure Control (HPC)** - The high pressure control provides a means of protecting the refrigeration circuit when high system pressures occur. It is a auto-reset device that is connected to the Compressor Control Module. When activated, the compressor is disabled until pressures reach an acceptable level. If activated twice in the same cooling call, compressor operation is locked out until the cooling call is interrupted.

**Low Pressure Control (LPC)** - The low pressure control provides a means of protecting the refrigeration circuit when extremely low system pressures occur. It is a auto-reset device that is connected to the Compressor Control Module. When activated, the compressor is disabled until pressures reach an acceptable level.

**Compressor Control Module (CCM)** - The compressor control module locks out compressor operation to protect the refrigeration system based on signals from the hi and low pressure switches. It provides diagnostics to indicate when a refrigerant pressure event occurs, and also sends a signal to the alarm relay. Low incoming unit power protection suspends compressor operation when incoming voltage is too low. Suspending compressor operation avoids reverse scroll operation. The low voltage feature is adjustable or can be disabled. An adjustable delay on break timer is provided. Delay on make is 2 mins. plus 10% of delay on break setting.

**Alarm Relay (ALR)** - The alarm relay provides a set of NO and NC pilot duty contacts that operate when the compressor control module locks out compressor operation because of a high or low system refrigerant pressure event.

**Low Ambient Control (LAC)** - The low ambient control pressure sensor is attached to the suction line of the system, and monitors low side system pressure. Operation of the LAC occurs as outdoor temperatures drop below the 65°F. On/Off and modulating controls are used. On/Off LAC operation cycles the condenser fan operation based on outdoor temperature. Modulating LAC operation is factory adjusted and slows the condenser fan speed RPM based on outdoor temperature.

**Crankcase Heater (CCH)** - The heater is a belly band that is installed around the base of the compressor that applies heat when the refrigeration system is not operational. This heat is meant to prevent refrigerant oil migration when the unit is not running. Normal scroll compressor use does not require the use of the CCH, and this option is only recommended for northern areas of the US and Canada with extreme cold operation. Field Install Option Only.

**Outdoor Thermostat (ODT)** - The outdoor thermostat measures outdoor temperatures and includes relay contacts (NO). The relay is located on the outer control panel and the sensor bulb is mounted to the fan shroud in the outdoor condenser section. When wired into the cooling signal inside the control panel, compressor operation can be disabled when temperatures are below the adjustable setting. Adjustment range is 0°F to 50°F.

**PTCR Start Kit** - 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** - 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.

**Dirty Filter Switch Indicator (DFS)** - The switch is adjustable and measures pressure drop across the unit filter surface. When pressure drop is higher than the switch setting NO and NC contacts are provided to indicate the filter needs to be serviced.

**Discharge Air Sensor** - The discharge air sensor provides a temperature reading of the supply air leaving the unit. The sensor is a 10K OHM @ 77°F measuring device. It is installed in the supply airstream in the heater bracket.

**Airflow Switch** - The airflow switch measures the pressure differential between the blower inlet and outlet. It is located directly above the blower partition. Relay contacts (NO) are provided for V controls option that indicates the indoor blower assembly needs to be serviced. The F controls option has indicator light only.

**Compressor Current Sensor** - The compressor current sensor indicates when the compressor is operational by measuring Amp draw. It is located inside the unit control panel. Relay contacts (NO) are provided to indicate the compressor is not operating.



# ////// CABINET AND CLEARANCE DIMENSIONS - W\*\*AC SERIES UNITS

## CLEARANCES REQUIRED FOR SERVICE ACCESS AND ADEQUATE CONDENSER INLET AIRFLOW

MODELS	LEFT SIDE	RIGHT SIDE
W42AC, W48AC, W60AC, W72AC	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

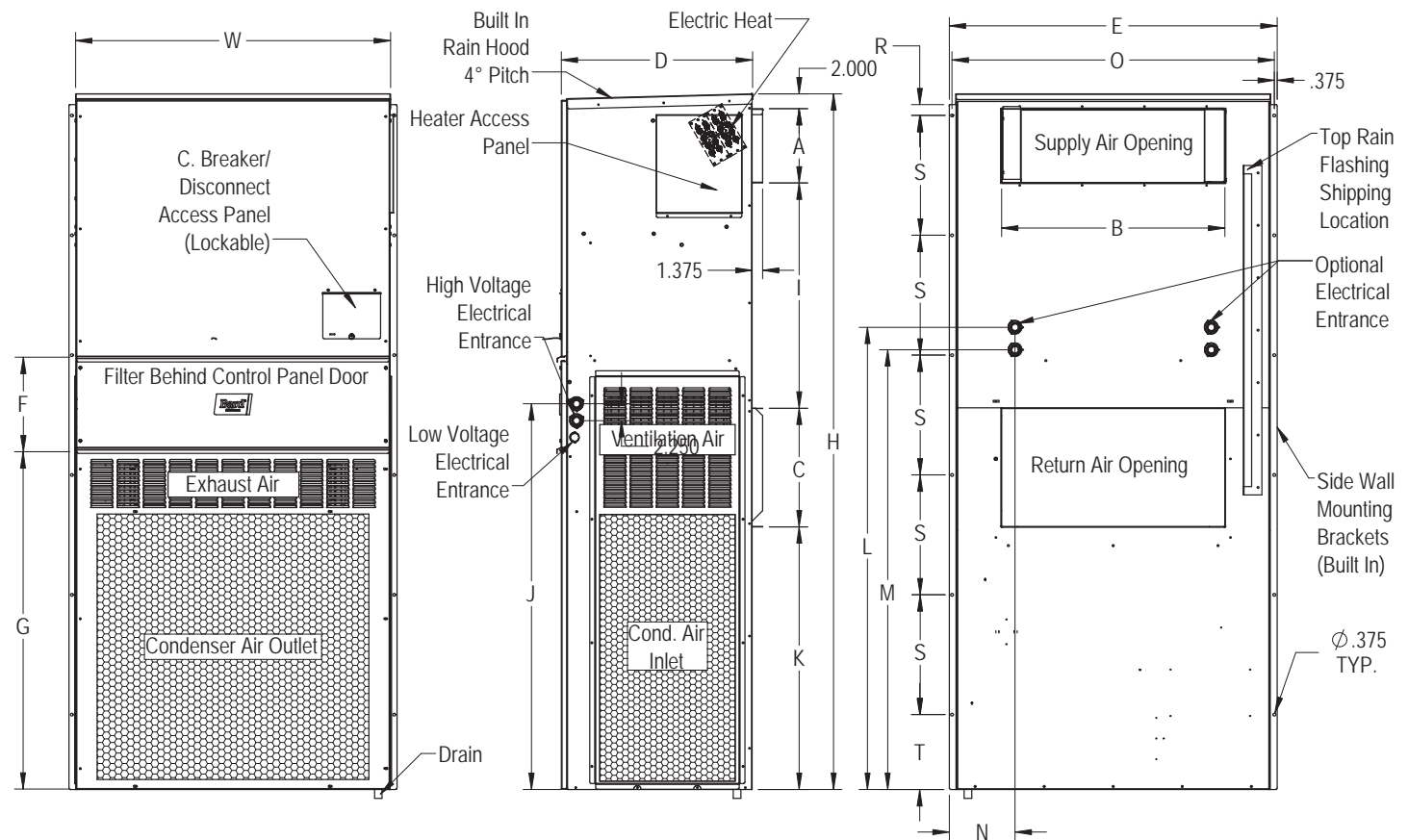
MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
W42AC, W48AC, W60AC, W72AC	1/4"	0"

① Refer to the Installation Manual for more detailed information.

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

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN		E	F	G	I	J	K	L	M	N	O	R	S	T
				A	B	C	B													
W42AC W48AC	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
W60AC W72AC	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.



MIS-3978

## 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
<b>WMICF5-*</b>	W42A, W48A, W60A, W72A	Provides vibration isolation for reduced sound transmission through wall
<b>WWC5-*</b>	W42A, W48A, W60A, W72A	Install to use with existing wall openings. Wall openings must provide sufficient airflow

\* 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 ACCESS.	DESCRIPTION
<b>WAPR11-*</b>	W42A, W48A, W60A, W72A	Acoustical return air plenum that offsets the return air path. Air intake at 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 and W72 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
<b>SG-5W</b>	W42A, W48A, W60A, W72A	10" x 30" with 2" Flange 4 way deflection supply grille. <b>Use for standard installations</b>
<b>RG-5W</b>	W42A, W48A, W60A, W72A	16" x 30" with 2" Flange return grille. <b>Use for standard installations.</b>
<b>RFG-5W</b>	W42A, W48A, W60A, W72A	16" x 30" with 2" Flange return filter grille. <b>Not recommended for use as primary filter for units with vent options</b>
<b>RGD-5</b>	W42A, W48A, W60A, W72A	16" x 30" with 1" Flange return grille. Manual damper used to restrict return 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-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.

## ////// 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
<b>MC-4002</b>	2 Unit Lead/Lag Controller	Standard Lead/Lag Controller with remote alarming capability.

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

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

CO2 CONTROL	OPERATION	DESCRIPTION
<b>S8403-067</b>	CO2 PPM	CO2 ventilation control with digital display. On/Off or modulating ventilation operation

THERMOSTAT COVER*	SIZE	DESCRIPTION
<b>8405-003</b>	(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
<b>8405-005</b>	(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.
<b>8405-006</b>	(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
<b>8405-007</b>	(Inside) 5-7/8" H x 8-3/8" W (Outside) 7-1/8" H x 9-5/8" W x 3-1/4" D	Beige painted steel cover with ventilation. Fits all thermostats.

\* 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.



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