



# THE WALL-MOUNT™ “QUIET CLIMATE” AIR CONDITIONERS

**WA381, WA491, WA611**  
**3 to 5 Ton (36,500 to 56,500 Btuh)**  
**Right Side Control Panel** **60Hz**  
**Refrigerant 22**

- **High Efficiency**
- **Ultra Low Sound Level**

The Bard Wall-Mount Air Conditioner is a self contained energy efficient 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 or correctional facilities. Factory or field installed accessories are available to meet specific job requirements.

## Engineered Features

**Aluminum Finned Copper Coils:**  
Grooved tubing and enhanced louvered fin for maximum heat transfer and energy efficiency.

**Twin Blowers:**  
Move air quietly. All models feature multispeed blower motors providing airflow adjustment for low static or free blow (non-ducted) operation at a very low sound level. Motor overload protection is standard on all models.

**Air Conditioner Compressor:**  
Copeland scroll compressors are designed for increased efficiency, quieter operation and improved reliability for longer life. Eliminates need for crankcase heater.

**Compressor Control Module:**  
Built-in off-delay timer adjustable from 30 seconds to 5 minutes. 2-minute on-delay if power interrupt. 120-second bypass for low pressure control, and both soft and manual lockouts for high and low pressure controls. Alarm output for alarm relay.

**High Pressure Switch is Auto-Reset**  
Built-in lockout circuit resets from the room thermostat. Provides commercial quality protection to the compressor.

**Phase Rotation Monitor:**  
Standard on all 3 phase scroll compressors. Protects against reverse rotation if power supply is not properly connected.

**Galvanized 20 Gauge Zinc Coated Steel Cabinet:**  
Cleaned, rinsed, sealed and dried before the polyurethane primer is applied. The cabinet is handsomely finished with a baked on textured enamel, which allows it to withstand 1000 hours of salt spray tests per ASTM B117-03.

**Electrical Components:**  
Are easily accessible for routine inspection and maintenance through a right side, service panel opening. Features a lockable, hinged access cover to the circuit breaker or pull disconnect switch.

**Electric Heat Strips:**  
Features an automatic limit and thermal cutoff safety control. Heater packages can be factory or field installed for all models.

**One Inch, Disposable Air Filters:**  
Are standard equipment. Optional one inch washable filters available and filter racks permit the addition of 2" pleated filter. Factory or field installed.

**Condenser Fan and Motor Shroud Assembly:**  
Slides out for easy access.

**Barometric Fresh Air Damper:**  
Standard on all units. Allows up to 25% outside fresh air.

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

**Slope Top:**  
Standard feature for water runoff.

**Full Length Mounting Brackets:**  
Built into cabinet for improved appearance and easy installation. NOTE: Bottom mounting bracket included to assist in installation.

**Top Rain Flashing:**  
Standard feature on all models.



**MEA #357-93-E**

## Ventilation System Packages

All packages are designed to meet your specific ventilation requirements utilizing one of five ventilation options for the product. The ventilation package is mounted within the unit eliminating the need for an exterior mounted hood or damper assembly on the unit. All assemblies can be factory installed, installed in the field at time of installation or as a retrofit system after installation.

- Standard - Barometric Fresh Air Damper
- Optional - Motorized Fresh Air Damper
- Optional - Blank off Plate
- Optional - Commercial Room Ventilator with Exhaust
  - CRV - Spring Return
  - CRVP - Power Return
- Optional - Economizer with Exhaust
- Optional - Energy Recovery Ventilator

- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2007.
- Certified to ARI Standard 390-2003 for SPVU (Single Package Vertical Units).
- Commercial Product - Not intended for Residential application.



## Capacity and Efficiency Ratings

MODELS	WA381	WA491	WA611
Cooling Capacity BTUH ①	36,400	48,000	56,500
EER ②	10.7	10.0	10.2

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

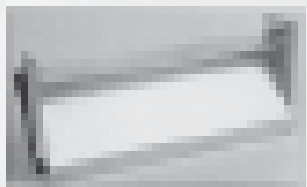
② EER = Energy Efficiency Ratio and is certified in accordance with ARI Standard 390-2003.  
All ratings based on fresh air intake being 100% closed (no outside air introduction).

## Specifications 3 Ton through 5 Ton

MODELS	WA381-A	WA381-B	WA381-C	WA491-A	WA491-B	WA491-C	WA611-A	WA611-B	WA611-C
Cooling Capacity	36,400	36,400	36,400	48,000	48,000	48,000	56,500	56,500	56,500
Heating Capacity	See Electric Heat Table								
<b>Electrical Rating--60 Hz</b>	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	197-253	414-506	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	230/208	230/208	460
Rated Load Amps	14.0/14.3	10.2/10.4	5.1	18.6/20.6	14.3/15.8	6.9	21.7/24.2	14.1/15.7	7.6
Branch Circuit Selection Current	14.3	10.4	5.2	20.6	15.8	7.1	28.9	17.4	9.0
Lock Rotor Amps	93/93	77/77	39	137/137	91/91	50	148/148	123/123	62
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
<b>Fan Motor &amp; Condenser</b>									
Fan Motor--HP-RPM-SPD	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2	1/3-850-2
Fan Motor--Amps	2.5	2.5	1.3	2.5	2.5	1.3	2.5	2.5	1.3
Fan--DIA/CFM	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600	24" - 2600
<b>Blower Motor &amp; Evap.</b>									
Blower Motor--HP-RPM-SPD	1/4-800-2	1/4-800-2	1/4-800-2	1/4-800-2	1/4-800-2	1/4-800-2	1/4-800-2	1/4-800-2	1/4-800-2
Blower Motor--Amps	1.9	1.9	1.1	1.9	1.9	1.1	1.9	1.9	1.1
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	1100 - .15	1100 - .15	1100 - .15	1250 - .20	1250 - .20	1250 - .20	1350 - .20	1350 - .20	1350 - .20
Filter Sizes (inches) STD.	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1	20x30x1
<b>Shipping Weight --LBS.</b>	500	500	500	500	500	500	500	500	500

## Ventilation System Packages

Bard Wall-Mounts are designed to provide optional ventilation packages to meet all of your ventilation and indoor air quality requirements. All units are equipped with a barometric fresh air damper as the standard ventilation package. All ventilation packages can be built-in at the factory, or field-installed at a later date.



BAROMETRIC FRESH AIR DAMPER

### BAROMETRIC FRESH AIR DAMPER - BFAD

**STANDARD**

The barometric fresh air damper is a standard feature on all models. It is installed on the inside of the service door 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.

### BLANK OFF PLATE - BOP

**OPTIONAL**

A blank off plate is installed on the inside of the service door. It covers the air inlet openings which restricts any outside air from entering the unit. The blank off plate should be utilized in applications where outside air is not required to be mixed with the conditioned air.



MOTORIZED FRESH AIR DAMPER

### MOTORIZED FRESH AIR DAMPER - MFAD

**OPTIONAL**

The motorized fresh air damper is internally mounted behind the service door 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 two position damper can be fully open or closed. The damper blade is powered open by a 24VAC motor with spring return on power loss. The damper can be controlled by indoor blower operation or can be field connected to be managed based on building occupancy.

**NOTE:** The above vent systems are intake only without built-in exhaust capability. Building will likely require separate field installed barometric relief or mechanical exhaust elsewhere within the conditioned space. Balancing dampers in the return air grille may be required to achieve specified amount of outdoor air intake.

### COMMERCIAL ROOM VENTILATOR - CRV

**OPTIONAL**

The built-in commercial room ventilator is internally mounted behind the service door and allows outside ventilation air, up to 50% of the total airflow rating of the unit, to be introduced through the air inlet openings. It includes a built-in exhaust air damper.



COMMERCIAL ROOM VENTILATOR

The commercial room ventilator (CRV) is a simple and innovative approach to improving the indoor air quality by providing fresh air intake and exhaust capability through the CRV. The damper can be easily adjusted to control the amount of fresh air supplied into the building. The CRV can be controlled by indoor blower operation or field controlled based on room occupancy. Two versions are available: the CRVS is power open - spring return on power loss and the CRVP is power open and power close. Complies with ANSI/ASHRAE Standard 62.1 "Ventilation for Acceptable Indoor Air Quality."

### ECONOMIZER - EIFM

**OPTIONAL**

The built-in economizer system is internally mounted behind the service door and allows outdoor air to be introduced through the air inlet openings. The amount of outdoor air varies in response to the system controls and settings defined by the end user. It includes a built-in exhaust air damper. 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 in turn provides lower operating costs, while extending the life of the compressor.

#### Standard Features:

- One Piece Construction - Easy to install with no mechanical linkage adjustment required.
- Exhaust Air Damper - Built in with positive closed position. Provides exhaust air capability to prevent pressurization of tight buildings.
- Actuator Motor - 24 volt, power open, spring return with built in torque limiting switch.
- Proportioning Type Control - for maximum "free cooling" economy and comfort.
- Moisture Eliminator & Prefilter - permanent, washable aluminum construction.
- Enthalpy Control - adjustable to monitor outdoor temperature and humidity.
- Minimum Position Potentiometer - adjustable to control minimum damper blade position for ventilation purposes.
- Mixed Air Sensor - to monitor outside and return air to automatically modulate damper position.



ECONOMIZER

### WALL-MOUNT ENERGY RECOVERY VENTILATOR - WERV

**OPTIONAL**

The wall-mount energy recovery ventilator (WERV) is a highly innovative approach to meeting indoor air quality ventilation requirements as established by ANSI/ASHRAE Standard 62.1. The WERV allows from 200 to 450 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 WERV 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.

The WERV is designed to be internally mounted behind the service door in the WA, WH or WL model wall-mount units. It can be built-in at the factory or field installed as an option. WERV-\*5C can be independently adjusted for intake and exhaust rates.



ENERGY RECOVERY VENTILATOR

## Electrical Specifications

Model	Rated Volts and Phase	No. Field Power Circuits	Single Circuit			
			③ Minimum Circuit Ampacity	① Maximum External Fuse or Ckt. Brkr.	② Field Power Wire Size	④ Ground Wire
WA381 - A00, A0Z - A05 - A08 - A10	230/208-1	1 1 1 1	25 32 47 58	35 35 50 60	8 8 8 6	10 10 10 10
WA381 - B00, B0Z - B06 - B09	230/208-3	1 1 1	20 24 33	30 30 35	10 10 8	10 10 10
WA381 - C00, C0Z - C06 - C09	460-3	1 1 1	11 13 17	15 15 20	14 14 12	14 14 12
WA491 - A00, A0Z - A05 - A08 - A10	230/208-1	1 1 1 1	33 33 47 58	50 50 50 60	8 8 8 6	10 10 10 10
WA491 - B00, B0Z - B06 - B09	230/208-3	1 1 1	27 27 33	40 40 40	8 8 8	10 10 10
WA491 - C00, C0Z - C06 - C09	460-3	1 1 1	13 13 17	15 15 20	14 14 12	14 14 12
WA611 - A00, A0Z - A05 - A08 - A10	230/208-1	1 1 1 1	43 43 47 58	60 60 60 60	8 8 8 6	10 10 10 10
WA611 - B00, B0Z - B09	230/208-3	1 1	29 33	45 45	8 8	10 10
WA611 - C00, C0Z - C09	460-3	1 1	15 17	20 20	12 12	12 12

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

② Based on 75C 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.

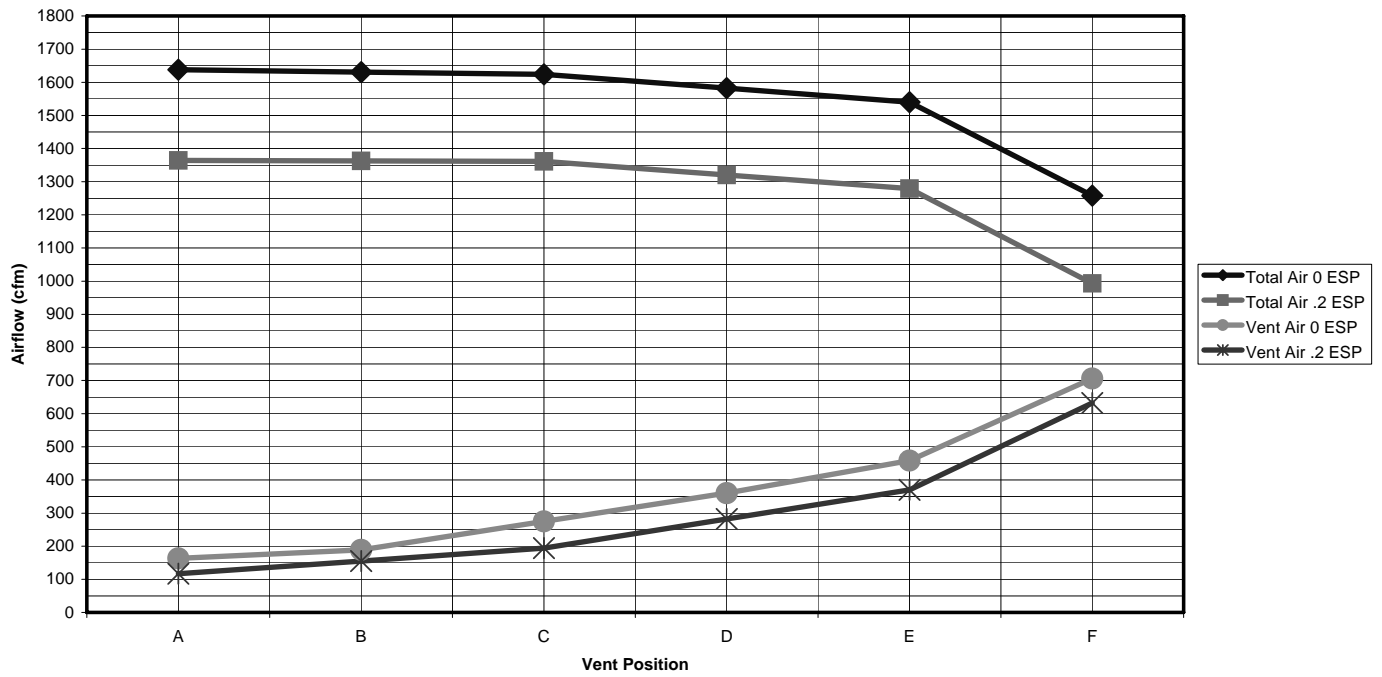
**Caution:** When more than one field power circuit is run through one conduit, the conductors must be derated. Pay special attention to note 8 of Table 310 regarding Ampacity Adjustment Factors when more than three (3) current carrying conductors are in a raceway.

\* Top outlet supply option is available only factory installed and only on the selected models.

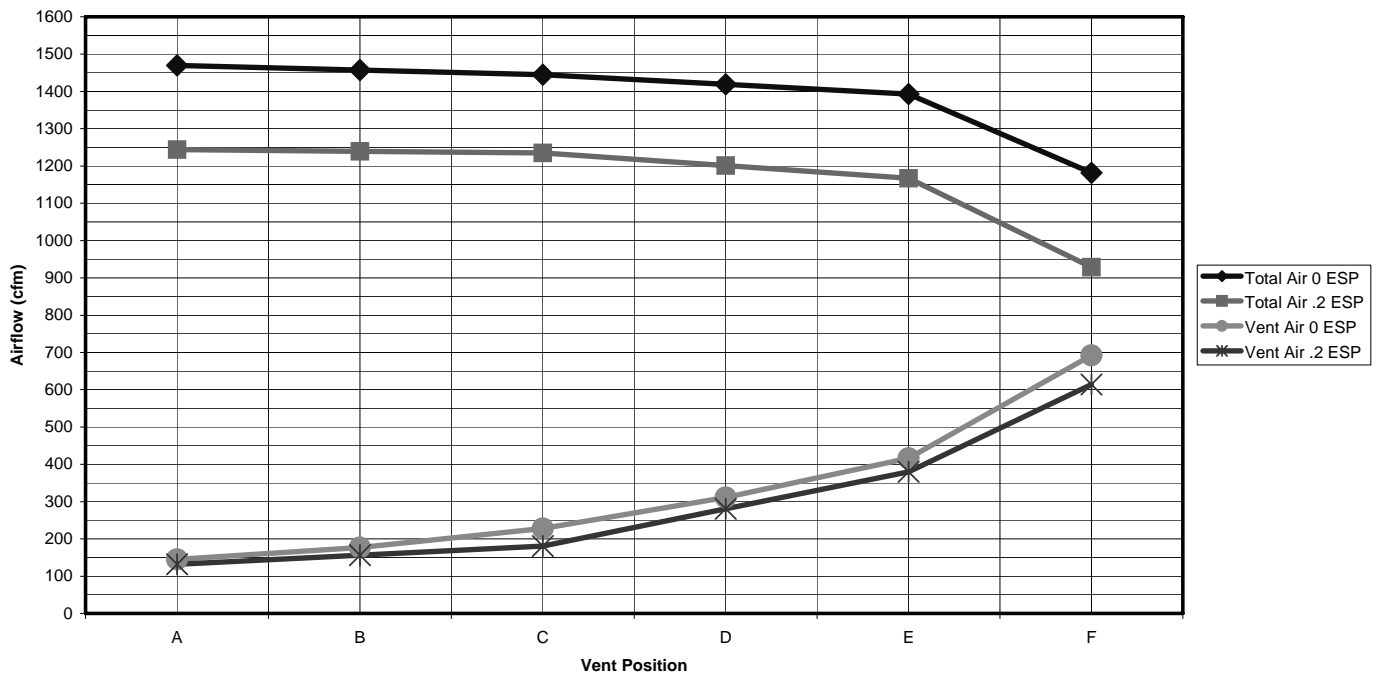
**IMPORTANT:** While this electrical data is presented as a guide, it is important to electrically connect properly sized fuses and conductor wires in accordance with the National Electrical Code and all local codes.

Commercial Room Ventilator Performance Data : CRVS-5 and CRVP-5

WA381, WA491, WA611 High Speed Total and Ventilation Airflow



WA381, WA491, WA611 Medium Speed Total and Ventilation Airflow



## Performance and Application Data - WERV-\*5C (WA381, WA491 & WA611)

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

Ambient O.D.	VENTILATION RATE -- 450 CFM 65% EFFICIENCY						VENTILATION RATE -- 375 CFM 66% EFFICIENCY						VENTILATION RATE -- 300 CFM 67% 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	17887	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	6075	6075	0	4009	4009	0	4860	4860	0	3256	3256	0
	60		7290	7290	0	4738	4738	0	6075	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	1579	12372	17887	2025	15862	11805	1336	10469	14310	1620	12690	9587	1085	8502
	70		12352	2430	9922	8029	1579	6449	10293	2025	8268	6793	1336	5457	8235	1620	6615	5517	1085	4432
	65		4252	2430	1822	2764	1579	1184	3543	2025	1518	2338	1336	1002	2835	1620	1215	1899	1085	814
	60		2430	2430	0	1579	1579	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

### WERV-\*5C WINTER HEATING PERFORMANCE (INDOOR DESIGN CONDITIONS 70°F DB)

Ambient O.D.	VENTILATION RATE						
	450 CFM 80% EFFICIENCY		375 CFM 81% EFFICIENCY		300 CFM 82% EFFICIENCY		
	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

## Indoor Blower Performance - CFM at Rated Volts

E.S.P. In H <sub>2</sub> O	WA381						WA491 <sup>Ⓞ</sup>				WA611 <sup>Ⓞ</sup>			
	High Speed		Medium Speed <sup>Ⓞ</sup>		Low Speed		High Speed <sup>Ⓞ</sup>		Medium Speed		High Speed <sup>Ⓞ</sup>		Medium Speed	
	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil	Dry Coil	Wet Coil
.0	1625	1475	1425	1325	1125	1100	1700	1550	1475	1375	1700	1600	1475	1425
.1	1475	1350	1325	1200	1100	1000	1550	1400	1375	1250	1550	1500	1375	1350
.2	1350	1150	1200	1025	1000	850	1400	1250	1250	1100	1400	1350	1250	1200
.3	1150		1025	875			1250	1100	1100		1250	1150		

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.

Ⓞ Factory connected motor speed.

Ⓞ Low speed is not suitable for operation on these models.

## 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
5.0	5.0	20.8		17,065	3.75	18.0		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						

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

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

## Heater Packages - Field Installed

• Designed for adding Electric Heat to 0 KW Units

• Circuit Breaker Standard on 230/208V Models

• Pull Disconnect Standard on 460V Models

• UL Listed

• CUL Listed

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
WA381	EHWA38-A05	5	EHWA38-B06	6	EHWA38-C06	6
	EHWA38-A08	8	EHWA38-B09	9	EHWA05A-C09	9
	EHWA38-A10	10				
WA491	EHWA49-A05	5	EHWA49-B06	6	EHWA38-C06	6
	EHWA38-A08	8	EHWA38-B09	9	EHWA05A-C09	9
	EHWA38-A10	10				
WA611	EHWA61-A05	5	EHWA61-B09	9	EHWA05A-C09	9
	EHWA61-A08	8				
	EHWA61-A10	10				



### Cooling Application Data - Outdoor Temperature ①

Model	D.B./W.B. ②	Cooling Capacity	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F	120°F	125°F
WA381	75/ 62	Total Cooling	37,900	36,200	34,700	33,200	31,800	30,600	29,300	28,200	27,100	26,100	25,100
		Sensible Cooling	29,700	28,900	28,200	27,500	26,800	26,200	25,500	24,900	24,200	23,700	23,100
	80/ 67	Total Cooling	40,400	39,400	38,500	37,500	36,400	35,600	34,600	33,600	32,600	31,600	30,600
		Sensible Cooling	28,800	28,300	27,900	27,500	27,000	26,600	26,100	25,700	25,200	24,800	24,300
	85/ 72	Total Cooling	48,100	46,100	44,200	42,400	40,600	39,000	37,300	35,800	34,300	32,900	31,500
		Sensible Cooling	29,500	28,700	28,100	27,300	26,500	25,800	24,900	24,100	23,200	22,400	21,500
WA491	75/ 62	Total Cooling	50,700	48,200	45,800	43,800	41,800	40,100	38,500	37,200	35,800	34,700	33,700
		Sensible Cooling	36,100	35,300	34,500	33,600	32,800	31,900	31,100	30,300	29,500	28,700	27,900
	80/ 67	Total Cooling	54,100	52,500	50,900	49,500	48,000	46,700	45,400	44,300	43,100	42,100	41,100
		Sensible Cooling	35,000	34,600	34,100	33,600	33,100	32,500	31,900	31,300	30,700	30,000	29,300
	85/ 72	Total Cooling	64,500	61,400	58,500	55,900	53,300	51,100	49,000	47,100	45,300	43,800	42,300
		Sensible Cooling	35,900	35,100	34,300	33,400	32,500	31,500	30,400	29,400	28,300	27,100	25,900
WA611	75/ 62	Total Cooling	57,200	55,400	53,500	51,400	49,200	46,900	44,400	41,800	39,100	36,100	33,100
		Sensible Cooling	40,600	39,800	38,900	37,900	36,900	35,800	34,700	33,600	32,300	31,100	29,700
	80/ 67	Total Cooling	61,100	60,400	59,400	58,100	56,500	54,600	52,400	49,900	47,000	43,800	40,300
		Sensible Cooling	39,400	39,000	38,500	37,900	37,200	36,400	35,600	34,700	33,600	32,500	31,300
	85/ 72	Total Cooling	72,800	70,600	68,200	65,600	62,800	59,700	56,500	53,100	49,400	45,500	41,500
		Sensible Cooling	40,400	39,600	38,700	37,700	36,500	35,200	33,900	32,500	31,000	29,400	27,700

① Below 65°F, unit requires a factory or field installed low ambient control.

② Return air temperature °F.

#### Capacity Multiplier Factors

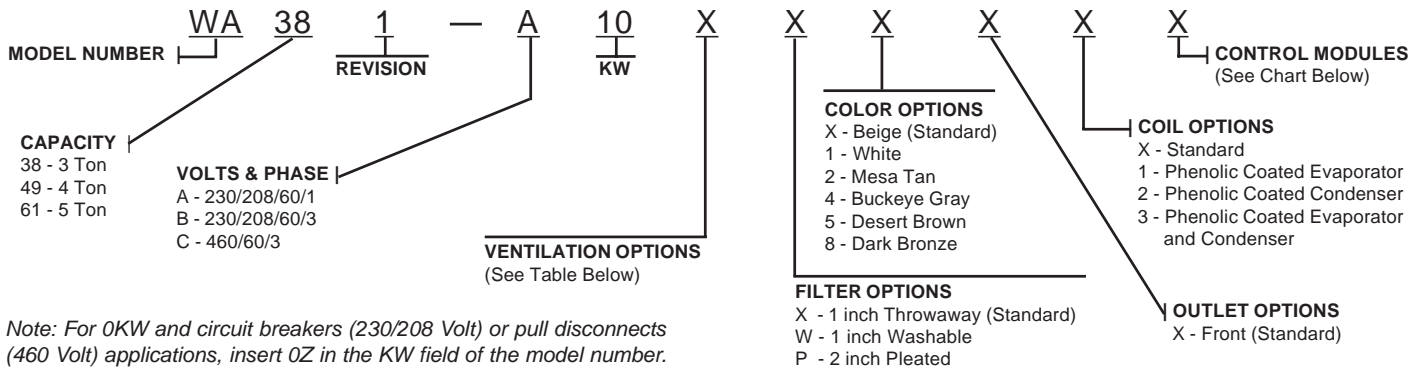
% of Rated Airflow	-10	Rated	+10
Total BTUH	0.975	1.0	1.02
Sensible BTUH	0.950	1.0	1.05



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## Air Conditioning Wall-Mount Model Nomenclature



Note: For 0KW and circuit breakers (230/208 Volt) or pull disconnects (460 Volt) applications, insert 0Z in the KW field of the model number.

## Ventilation Options

Models	WA381, WA491, WA611	
Description	Factory Installed Code No.	Field Installed Part No.
Barometric Fresh Air Damper - Standard	X	BFAD-5
Blank-Off Plate	B	BOP-5
Motorized Fresh Air Damper	M	MFAD-5
Commercial Ventilator - Spring Return w/Exhaust	V	CRVS-5
Commercial Ventilator - Power Return w/Exhaust	P	CRVP-5
Economizer - Fully Modulating ①	E	EIFM-5C
Economizer - Fully Modulating ①②	D	N/A
Energy Recovery Ventilator - 230 Volt	R	WERV-A5C-* ③
Energy Recovery Ventilator - 460 Volt	R	WERV-C5C-* ③

- ① Low ambient control is required with economizer for low temperature compressor operation.
- ② For use only with "V" Control Module and TCS23 Controller.
- ③ Intake and exhaust can be independently adjusted.

\* Color option must be specified to match unit.

## Air Conditioning Control Modules

AVAILABLE CONTROL OPTIONS								WA381, WA491, WA611 Models with Scroll Compressors	
HPC ①	LPC ②	CCM ③	LAC ④	ALR ⑤	SK ⑥	ODT ⑦	DDC ⑧	Factory Installed Code	Field Installed Part
STD	●	STD						G	CMA-16A
STD	●	STD	●					H	CMA-18A
STD		STD	●					I	CMA-6
STD	●	STD	●	●				J	Factory Only
STD	●	STD	●		●			K	CMA-13A & CMC-15
STD	●	STD	●	●	●			M	Factory Only
STD		STD			●			Field Installed Only	CMC-15 ⑩
STD		STD			●			Field Installed Only	SK111 ⑧ WA381-A, WA491-A
STD		STD			●			Field Installed Only	SK113 ⑧ WA611-A
STD		STD				●		Field Installed Only	CMA-14
STD	●	STD	●	●			●	V ⑪	Factory Only
STD		STD					●	Field Installed Only	CMA-24

STD = Standard equipment for these specified models.

- ① HPC. High pressure control is auto reset. Always used with compressor control module (CCM) which is included. See note ③.
- ② LPC. Low pressure control is auto reset. Always used with compressor control module (CCM) which is included. See note ③.
- ③ CCM. Compressor control module has adjustable 30-second to 5-minute delay-on-break timer. On initial power-up, or any time the power is interrupted, the delay-on-make will be 2 minutes plus 10% of the delay-on-break setting. There is no delay-on-make during routine operation of the unit. The module also provides the lockout feature (with 1 retry) for high and/or low-pressure controls, and a 2-minute timed bypass for low-pressure control.
- ④ LAC. Low ambient control permits cooling operation down to 0°F.
- ⑤ ALR. The alarm relay has a set of normally open and normally closed dry contacts to provide the ability to signal a condition of shutdown on either high or low pressure controls.
- ⑥ SK. Start kit can be used with all -A single phase models only. Is not used or available for -B or -C three phase models.
- ⑦ PTCR start kit can be used with all -A single phase models. Increases starting torque 2-3x. Not used for -B or -C three phase models. Do not use if SK111 or SK113 is used.
- ⑧ Start capacitor and potential relay start kit can be used with all -A single phase models. Increases starting torque 9x. Not used for -B or -C three phase models. Do not use if CMC-15 is used. Use SK111 for WA611-A only. Use SK113 for WA381-A and WA491-A only.
- ⑨ ODT. Outdoor thermostat is adjustable from 0 to 50°F. It is suitable for use as a compressor cutoff thermostat.
- ⑩ DDC. Incorporates 4 additional sensors: discharge air temperature, indoor blower airflow, compressor current, and dirty filter. These sensing devices function to input analog data such as temperature, as well as digital data such as air flow, compressor status or filter status.
- ⑪ "V" control module should be ordered in conjunction w/direct digital controller (DDC) model TCS23. Refer to DDC specification sheet S3280 for more information.

### Clearances Required for Service Access and Adequate Condenser Airflow

MODELS	LEFT SIDE	RIGHT SIDE
WA381, WA491, WA611	20"	20"

### Minimum Clearances Required to Combustible Materials

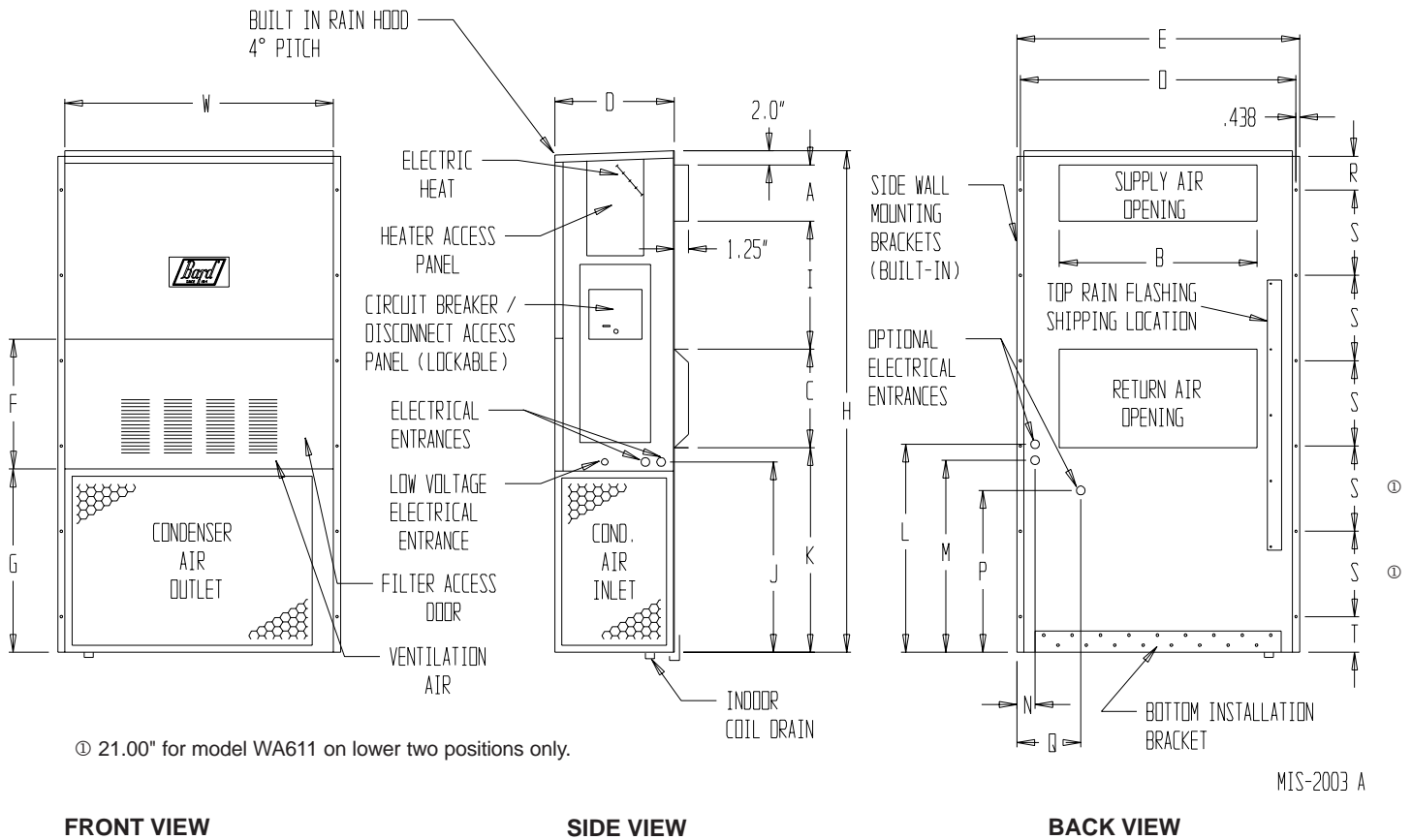
MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
WA381, WA491, WA611	1/4"	0"

① Refer to Installation Instructions for detailed information

### Dimensions of Basic Unit for Architectural and 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	P	Q	R	S	T
WA381 WA491	42.075	22.432	84.875	9.88	29.88	15.88	29.88	43.88	19.10	31.66	30.00	32.68	26.94	34.69	32.43	3.37	42.88	23.88	10.00	1.44	16.00	1.88
WA611	42.075	22.432	94.875	9.88	29.88	15.88	29.88	43.88	19.10	41.66	30.00	42.68	36.94	44.69	42.43	3.37	42.88	33.88	10.00	2.00	16.00	1.88

All dimensions are in inches. Dimensional drawings are not to scale.



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<p>Form No.  <b>S3348</b>                  February, 2009</p>
<p>Supersedes S3348-1008</p>