THE WALL-MOUNT™ STEP CAPACITY AIR CONDITIONERS

Integrated Part Load Value (IPLV) Efficiency Up To 15.2 BTU/WATT

WA3S1, WA4S1, WA5S1
3 to 5 Ton (35,400 to 56,500 Btuh)
Right Side Control Panel 60Hz

GREEN REFRIGERANT R-410A

The Bard "WAS" Series is the world's most energy efficient wall mounted air conditioner featuring a multi-step capacity compressor with environmentally friendly non-ozone depleting refrigerant.

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

Multi-Capacity Two-Stage:
Simple thermostatic control seamlessly stages the compressor and indoor airflow rate between high and low capacity operations without cycling the compressor. This helps to maximize comfort, humidity control, energy efficiency and overall reduction in compressor cycling for improved system life.

Multi-Step Capacity Compressor:
Copeland step-capacity scroll compressors are designed for increased efficiency, quieter operation and improved reliability for longer life.

R-410A Refrigerant:
Designed with R-410A (HFC) non-ozone depleting refrigerant in compliance with the 2010 Montreal protocol and EPA requirements.

ECM Indoor Blower Motor:
Features a variable speed motor providing super-high efficiency, low sound levels and soft-start capabilities. The motor is self-adjusting to provide the proper airflow rate for the staged capacity, and for higher static pressure in ducted installations without user adjustment or wiring changes.

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 variable speed blower motors providing automatic airflow adjustment for high static or free blow (non-ducted) operation at a very low sound level. Motor overload protection is standard on all models.

Indoor Blower Time Delay:
The unit is shipped with a standard 1-minute blower delay (upon satisfaction of the thermostat) to further maximize operating efficiency. This time delay can be easily defeated by disconnecting a single wire where desired to meet fire damper or other requirements.

Start Kit:
A PTCR compressor start assist (Positive Temperature Coefficient Resistor) is standard on all -A single-phase models to increase system reliability. This helps to insure compressor starts at adverse conditions by increasing the compressor starting torque.

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 & Low Pressure Switches are Auto-Reset
Built-in lock-out circuit resets from the room thermostat. Provides commercial quality protection to the compressor.

Crankcase Heaters:
Factory installed crankcase heaters are standard on all models. This helps to insure ease of start at low temperatures and improves compressor life.

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 exposure.

Galvanized 16 Gauge Zinc Coated Unit Base:
The unit base is treated with the same paint coatings as the cabinet above, insuring years of service without visible corrosion.

Drain Pan:
The evaporator drain pan is constructed of stainless steel material for maximum corrosion resistance.

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 toggle disconnect switch.

Electric Heat Strips:
Features line break automatic limit and dual backup safety controls. Heater packages can be factory or field installed for all models.

Two-Inch, Pleated Disposable Air Filters:
Are standard equipment.

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

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

Slope Top:
Standard feature for water run-off.

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.

Ventilation System Packages

All packages are designed to meet your specific ventilation requirements utilizing one of four 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 - Blank off Plate (BOP)
- Optional - Commercial Room Ventilator (CRVMP)
- Optional - Economizer (EIFM)
- Optional - Energy Recovery Ventilator (WERV)

Capacity and Efficiency Ratings ①②

MODELS	WA3S1	WA4S1	WA5S1
Cooling Capacity BTUH, 2nd Stage Operation①	35,400	46,000	56,500
EER 2nd Stage Operation①	11.3	11.2	10.1
Rated CFM (Wet Coil)	1100	1500	1700
Cooling Capacity BTUH, 1st Stage Operation	24,000	34,000	40,000
EER 1st Stage Operation	11.6	11.7	10.6
Rated CFM (Wet Coil)	800	1100	1300
IPLV①②	15.2	15.2	14.3

① Certified in accordance with ARI Standard 390-2003 for single package vertical units.
② Integrated Part Load Value - BTU/WATT efficiency.

All capacity, efficiency and cost of operation information is based on operation with fresh air cover plate. Cover plate is recommended for use to obtain maximum energy efficiency where ventilation air is not required.

Specifications 3 Ton through 5 Ton

MODELS	WA3S1-A	WA3S1-B	WA3S1-C	WA4S1-A	WA4S1-B	WA4S1-C	WA5S1-A	WA5S1-B	WA5S1-C
Cooling Capacity	35,400	35,400	35,400	46,000	46,000	46,000	56,500	56,500	56,500
Heating Capacity	See Electric Heat Table								
Electrical Rating--60 Hz	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
Compressor--Circuit A									
Voltage	230/208	230/208	460	230/208	230/208	460	230/208	230/208	460
Rated Load Amps	12.3/14.6	8.1/9.6	3.9	16.1/19.0	10.1/12	4.8	23.0/24.6	17.5/18.6	8.9
Branch Circuit Selection Current	16.7	11.2	4.5	21.2	13.5	6.5	25.7	18.6	9.5
Lock Rotor Amps	82	58	29	96	88	41	118	123	62
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser									
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" - 2700	24" - 2700	24" - 2700	24" - 2800	24" - 2800	24" - 2800	24" - 2800	24" - 2800	24" - 2800
Blower Motor & Evap.									
Blower Motor--HP-RPM-SPD	1/2- Variable	1/2- Variable	1/2- Variable	3/4-Variable	3/4-Variable	3/4-Variable	3/4-Variable	3/4-Variable	3/4-Variable
Blower Motor--Amps	4.9	4.9	4.9	6.4	6.4	6.4	6.4	6.4	6.4
CFM Cooling w/Filter (Wet Coil)	1100	1100	1100	1500	1500	1500	1700	1700	1700
Filter Sizes (inches) STD.	20x30x2	20x30x2	20x30x2	20x30x2	20x30x2	20x30x2	20x30x2	20x30x2	20x30x2
Shipping Weight --LBS.	530	530	530	530	530	530	530	530	530

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 blank off plate as the standard ventilation package. All ventilation packages can be built-in at the factory, or field-installed at a later date.

BLANK OFF PLATE - BOP **STANDARD**

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.

COMMERCIAL ROOM VENTILATOR

COMMERCIAL ROOM VENTILATOR - CRVMP **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 with integral bug screen. Automatic control is integrated to maintain desired ventilation air at the various supply airflows.

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. The CRV is power open - spring return on power loss. Complies with ASHRAE Standard 62.1-2004 “Ventilation for Acceptable Indoor Air Quality.”

ECONOMIZER

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 with integral bug screen. 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.

Unit shown with optional 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 ASHRAE Standard 62.1-2004. 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 WAS model wall-mount units. It can be built-in at the factory or field installed as an option. (See Form F1403 for complete performance and application details.

ENERGY RECOVERY VENTILATOR

Manufactured under U.S. Patent Nos. 5,485,878; 5,301,744; 5,002,116; 4,924,934; 4,875,520; 4,825,936.

Electrical Specifications

Model	Rated Volts and 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	② Ground Wire	③ Minimum Circuit Ampacity			① Maximum External Fuse or Ckt. Brkr.			② Field Power Wire Size			② Ground Wire		
							Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C	Ckt. A	Ckt. B	Ckt. C
WA3S1 - A0Z	230/208-1	1	30	45	10	10												
- A05		1	35	45	8	10												
- A08		1	51	60	6	10												
- A10		1 or 2	61	70	4	8	35	26		45	30		10	10		10	10	
- A15		1 or 2	87	90	3	8	35	52		45	60		10	6		10	10	
- A20		1 or 3	113	115	2	6	35	52	26	45	60	30	10	6	10	10	10	10
WA3S1 - B0Z	230/208-3	1	23	30	10	10												
- B06		1	27	30	10	10												
- B09		1	36	40	8	10												
- B15		1	55	60	6	10												
WA3S1 - C0Z	460-3	1	12	15	14	14												
- C06		1	15	15	14	14												
- C09		1	19	20	12	12												
- C15		1	28	30	10	10												
WA4S1 - A0Z	230/208-1	1	37	45	8	10												
- A05		1	37	45	8	10												
- A08		1	53	60	6	10												
- A10		1 or 2	63	70	6	8	37	26		45	30		8	10		10	10	
- A15		1 or 2	89	90	3	8	37	52		45	60		8	6		10	10	
- A20		1 or 3	115	120	2	6	37	52	26	45	60	30	8	6	10	10	10	10
WA4S1 - B0Z	230/208-3	1	28	40	10	10												
- B06		1	29	40	10	10												
- B09		1	38	40	8	10												
- B15		1	56	60	8	10												
WA4S1 - C0Z	460-3	1	15	20	12	12												
- C06		1	16	20	12	12												
- C09		1	21	25	10	10												
- C15		1	30	30	10	10												
WA5S1 - A0Z	230/208-1	1	43	50	8	10												
- A05		1	43	50	8	10												
- A08		1	53	60	6	10												
- A10		1 or 2	63	70	6	8	43	26		50	30		8	10		10	10	
- A15		1 or 2	89	90	3	8	43	52		50	60		8	6		10	10	
- A20		1 or 3	115	120	2	6	43	52	26	50	60	30	8	6	10	10	10	10
WA5S1 - B0Z	230/208-3	1	34	40	8	10												
- B06		1	34	40	8	10												
- B09		1	38	40	8	10												
- B15		1	56	60	6	10												
WA5S1 - C0Z	460-3	1	19	25	10	10												
- C06		1	19	25	10	10												
- C09		1	21	25	10	10												
- C15		1	30	30	10	10												

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.

Indoor Blower Performance - CFM (0.00" through 0.80" H_2O) ①

	Blower Only	1st Stage Cooling	2nd Stage Cooling	5-10 KW Electric Heat	15-20 KW Electric Heat
WA3S1	800	800	1100	1100	1400
WA4S1	825	1100	1500	1100	1500
WA5S1	850	1300	1700	1100	1500

① These systems contain Variable Speed ECM Motor, which maintains airflow across static range at dry and wet coil conditions.

Electric Heat Table

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						
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
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.

Heater Packages - Field Installed

- Designed for adding Electric Heat to 0 KW Units
- Circuit Breaker Standard on 230/208V Models
- 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
WA3S1	EHWA4S-A05	5				
	EHWA5S-A08	8	EHWA3S-B06	6	EHWA5S-C06	6
	EHWA4S-A10	10	EHWA5S-B09	9	EHWA5S-C09	9
	EHWA4S-A15	15	EHWA5S-B15	15	EHWA5S-C15	15
	EHWA4S-A20	20				
WA4S1	EHWA4S-A05	5				
	EHWA5S-A08	8	EHWA5S-B06	6	EHWA5S-C06	6
	EHWA4S-A10	10	EHWA5S-B09	9	EHWA5S-C09	9
	EHWA4S-A15	15	EHWA5S-B15	15	EHWA5S-C15	15
	EHWA4S-A20	20				
WA5S1	EHWA5S-A05	5				
	EHWA5S-A08	8	EHWA5S-B06	6	EHWA5S-C06	6
	EHWA5S-A10	10	EHWA5S-B09	9	EHWA5S-C09	9
	EHWA5S-A15	15	EHWA5S-B15	15	EHWA5S-C15	15
	EHWA5S-A20	20				

2nd Stage Cooling Application Data - Outdoor Temperature ①

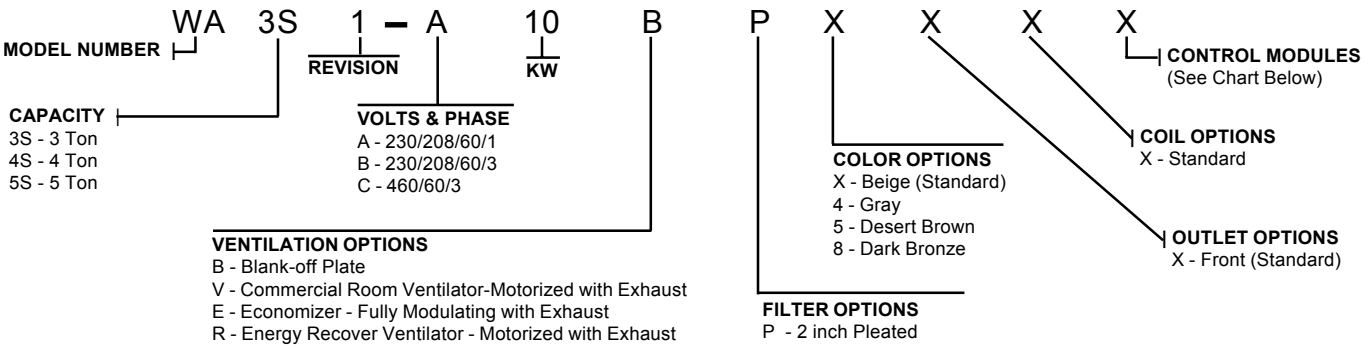
Model	D.B./W.B. ②	Cooling Capacity BTU/HR	50°F	55°F	60°F	65°F	70°F	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
WA3S1	75/62	Total Cooling	44,125	42,850	41,600	40,325	39,050	37,800	36,550	35,300	34,050	32,800	31,475	30,150	28,825	27,500
		Sensible Cooling	32,375	31,850	31,300	30,775	30,225	29,700	29,200	28,700	28,200	27,700	27,025	26,350	25,675	25,000
	80/67	Total Cooling	49,150	47,675	46,175	44,675	43,200	41,700	40,125	38,550	36,975	35,400	34,225	33,075	31,900	30,750
		Sensible Cooling	32,375	31,800	31,225	30,650	30,075	29,500	28,894	28,300	27,675	27,075	26,625	26,175	25,750	25,300
	85/72	Total Cooling	53,150	51,700	50,250	48,800	47,350	45,900	44,475	43,050	41,625	40,200	38,650	37,100	35,550	34,000
		Sensible Cooling	32,075	31,550	31,050	30,525	30,025	29,500	29,000	28,500	28,000	27,500	26,925	26,350	25,775	25,200
WA4S1	75/62	Total Cooling	56,025	53,100	51,575	50,050	48,525	48,400	46,950	45,500	44,050	42,600	40,775	38,950	37,125	35,300
		Sensible Cooling	40,600	40,100	39,450	38,775	38,125	37,300	36,725	36,150	35,575	35,000	34,000	33,000	32,000	31,000
	80/67	Total Cooling	62,725	58,800	56,975	55,150	53,325	53,600	51,700	49,800	47,900	46,000	44,475	42,950	41,425	39,900
		Sensible Cooling	41,750	41,300	41,475	39,650	38,800	37,600	36,700	35,800	34,900	34,000	33,450	32,900	32,350	31,800
	85/72	Total Cooling	69,425	66,700	64,800	62,900	61,000	59,900	57,975	56,050	54,125	52,200	50,375	48,550	46,725	44,900
		Sensible Cooling	41,825	41,500	40,725	39,925	39,150	37,900	37,100	36,300	35,500	34,700	33,975	33,250	32,525	31,800
WA5S1	75/62	Total Cooling	69,350	67,525	65,700	63,900	62,075	60,250	58,425	56,625	54,825	53,000	51,150	49,300	47,450	45,600
		Sensible Cooling	49,650	48,875	48,100	47,325	46,575	45,800	45,075	44,325	43,600	42,850	41,975	41,075	40,200	39,300
	80/67	Total Cooling	74,750	72,775	70,800	68,800	66,825	64,850	62,775	60,675	58,600	56,500	54,950	53,400	51,850	50,300
		Sensible Cooling	48,325	47,550	46,750	45,975	45,175	44,400	43,500	42,600	41,700	40,800	40,475	40,150	39,825	39,500
	85/72	Total Cooling	79,375	77,650	75,950	74,225	72,525	70,800	69,275	67,750	66,225	64,700	62,250	59,775	57,325	54,850
		Sensible Cooling	46,425	45,875	45,350	44,825	44,275	43,750	43,275	42,800	42,325	41,850	41,100	40,325	39,575	38,800

1st Stage Cooling Application Data - Outdoor Temperature ①

Model	D.B./W.B. ②	Cooling Capacity BTU/HR	50°F	55°F	60°F	65°F	70°F	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
WA3S1	75/62	Total Cooling	30,250	29,275	28,300	27,350	26,375	25,400	24,450	23,500	22,550	21,600	20,550	19,500	18,450	17,400
		Sensible Cooling	22,775	22,300	21,825	21,350	20,875	20,400	19,950	19,500	19,050	18,600	18,025	17,450	16,875	16,300
	80/67	Total Cooling	34,300	33,150	32,025	30,875	29,750	28,600	27,450	26,300	25,150	24,000	22,900	21,800	20,700	19,600
		Sensible Cooling	23,075	22,575	22,050	21,525	21,025	20,500	19,975	19,425	18,900	18,350	17,925	17,475	17,050	16,600
	85/72	Total Cooling	37,900	36,700	35,525	34,350	33,175	32,000	30,825	29,650	28,475	27,300	26,125	24,925	23,750	22,550
		Sensible Cooling	22,400	22,000	21,600	21,200	20,800	20,400	20,025	19,650	19,275	18,900	18,425	17,925	17,450	16,950
WA4S1	75/62	Total Cooling	41,000	39,800	38,660	37,525	36,375	35,300	34,200	33,100	32,000	30,900	29,600	28,300	27,000	25,700
		Sensible Cooling	29,675	30,000	29,475	28,925	28,400	27,000	26,475	25,950	25,425	24,900	24,325	23,750	23,175	22,600
	80/67	Total Cooling	45,375	43,500	42,225	40,950	39,675	39,000	37,750	36,500	35,250	34,000	32,625	31,250	29,875	28,500
		Sensible Cooling	29,875	30,100	29,550	29,000	28,450	27,100	26,550	26,000	25,450	24,900	24,350	23,775	23,225	22,650
	85/72	Total Cooling	51,200	48,100	46,650	45,175	43,725	43,900	42,400	40,900	39,400	37,900	36,600	35,300	34,000	32,700
		Sensible Cooling	30,625	29,600	29,000	28,300	27,675	27,400	26,725	26,025	25,350	24,650	24,175	23,700	23,225	22,750
WA5S1	75/62	Total Cooling	50,375	49,050	47,725	46,400	45,075	43,750	42,550	41,350	40,150	38,950	37,150	35,325	33,525	31,700
		Sensible Cooling	37,125	36,575	36,050	35,525	35,000	34,450	33,975	33,500	33,025	32,550	31,775	31,025	30,275	29,500
	80/67	Total Cooling	58,925	56,900	54,900	52,900	50,875	48,850	46,650	44,425	42,225	40,000	38,775	37,550	36,325	35,100
		Sensible Cooling	36,900	36,400	35,875	35,375	34,850	34,350	33,450	32,525	31,625	30,700	31,825	32,925	34,050	35,150
	85/72	Total Cooling	62,550	60,800	59,050	57,300	55,550	53,800	52,050	50,275	48,525	46,750	45,050	43,350	41,650	39,950
		Sensible Cooling	36,250	35,775	35,300	34,825	34,375	33,900	33,475	33,025	32,600	32,150	31,600	30,975	30,400	29,800

① Below 50°F, unit requires a factory or field-installed low ambient control.
② Return air temperature °F.

Air Conditioning Wall-Mount Model Nomenclature



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

Ventilation Options

Models	WA3S1, WA4S1, WA5S1	
Description	Factory Installed Code No.	Field Installed Part No.
Blank-Off Plate	B	BOP-5
Commercial Ventilator - Motorized	V	CRVMP-5
Economizer - Fully Modulating ①	E	EIFM-5C
Energy Recovery Ventilator - 230 Volt	R	WERV-A5B
Energy Recovery Ventilator - 460 Volt	R	WERV-C5B

① Low ambient control is required with economizer for low temperature compressor operation.

Air Conditioning Control Modules

AVAILABLE CONTROL OPTIONS							WA3S1, WA4S1, WA5S1 Models with Scroll Compressors	
HPC①	LPC ②	CCM ③	LAC ④	ALR ⑤	SK ⑥	DDC ⑦	Factory Installed Code	Field Installed Part
STD	STD	STD	●		STD		H	CMA-28
STD	STD	STD	●	●	STD		J	Factory Only

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 standard on all -A single phase models only. Is not used or available for -B or -C three phase models.

⑦ 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.

Clearances Required for Service Access and Adequate Condenser Air Flow

MODELS	LEFT SIDE	RIGHT SIDE
WA3S1, WA4S1, WA5S1	20"	20"

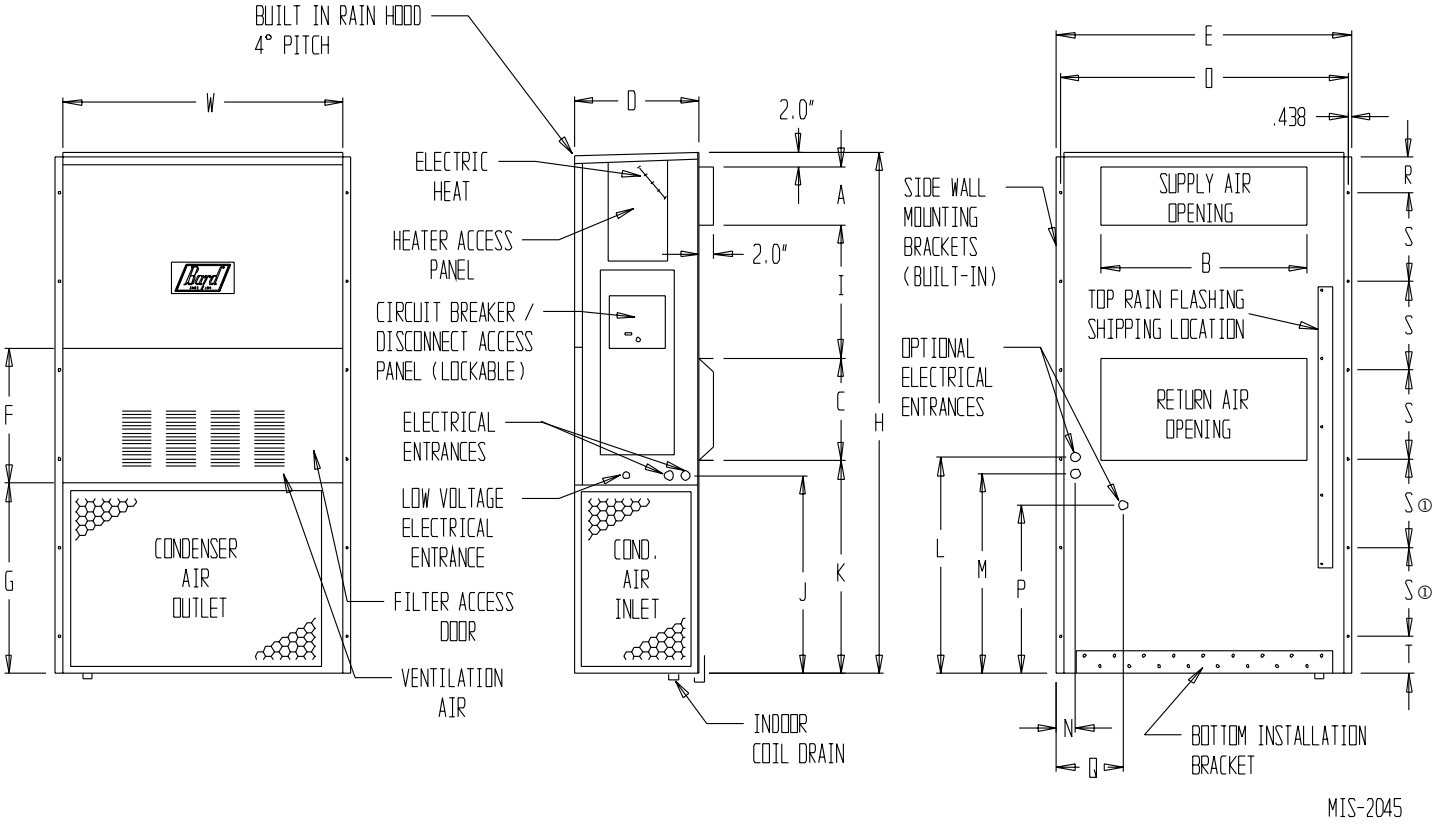
Minimum Clearances Required to Combustible Materials

MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
WA3S1, WA4S1, WA5S1	1/4"	0"

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
WA3S1	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
WA4S1 WA5S1	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.



① 21.00 for model WA5S1 on lower two positions only.

FRONT VIEW **SIDE VIEW** **BACK VIEW**

BARD MANUFACTURING CO.
BRYAN, OHIO 43506
www.bardhvac.com

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

Before purchasing this appliance, read important energy cost and efficiency information available from your retailer.

Form No. S3378 June, 2005

Supersedes: S3378-305