1.5 to 3 Ton (7.0 to 10.5kw) MULTI-TEC 200V to 415V 50hz Air Conditioner Specifications - For Export Only

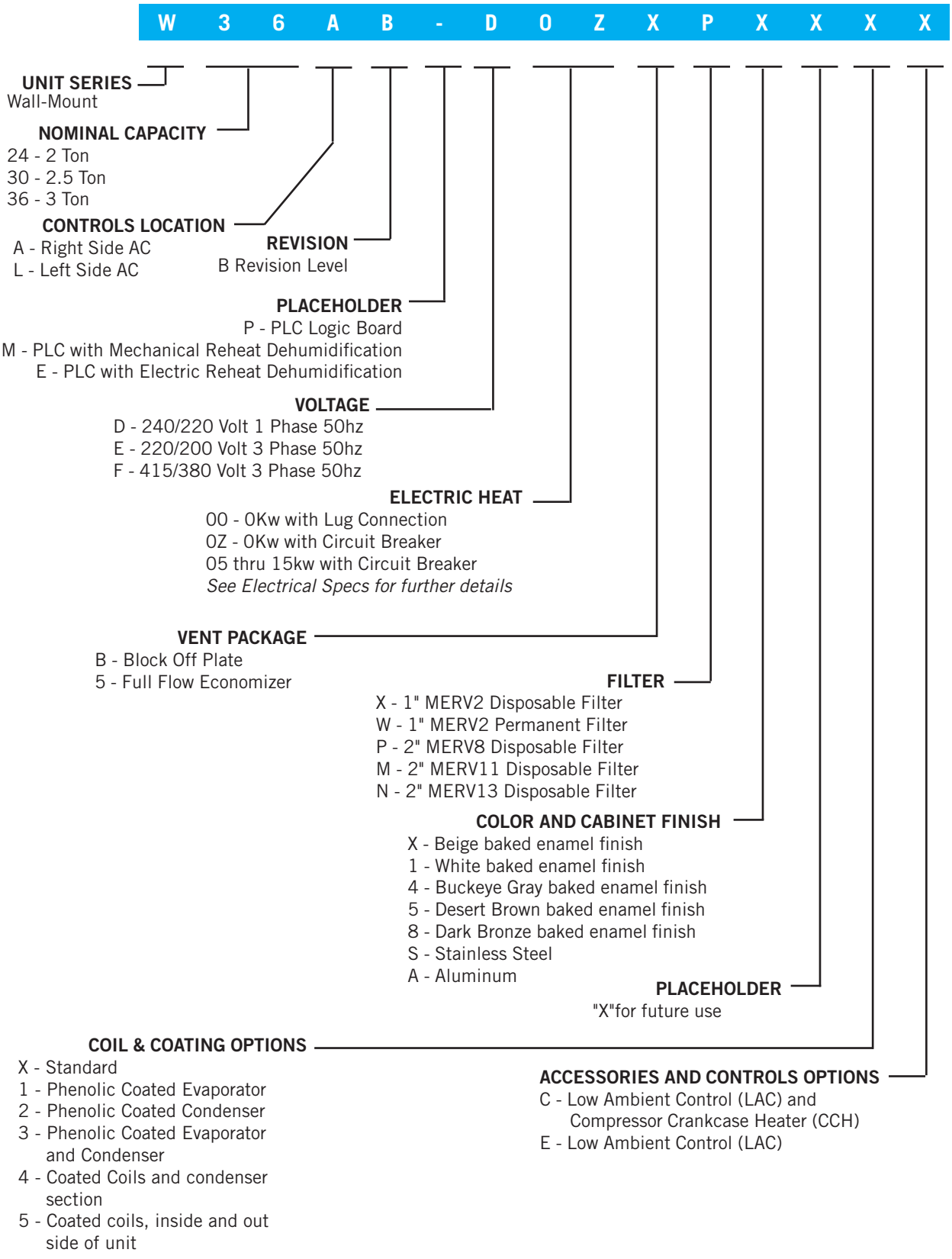
50hz W24ABP-W36ABP MULTI-TEC WALL-MOUNT™
50hz W24LBP-W36LBP MULTI-TEC WALL-MOUNT™

The MULTI-TEC® Wall-Mount™ Air Conditioner utilizes PLC (Programmable Logic Control) technology to allow multiple units to operate connected to a single LC6000 controller. When installed with an optional economizer, the unit will supply full-rated airflow in free cooling mode with the ability to exhaust unconditioned indoor air without the need for additional relief openings in the structure.

- Commercial Product - Not intended for residential application
- Bard is an ISO 9001:2015 Certified Manufacturer

Bard® SINCE 1914

/////// 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 extreme outdoor environments.

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.

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.

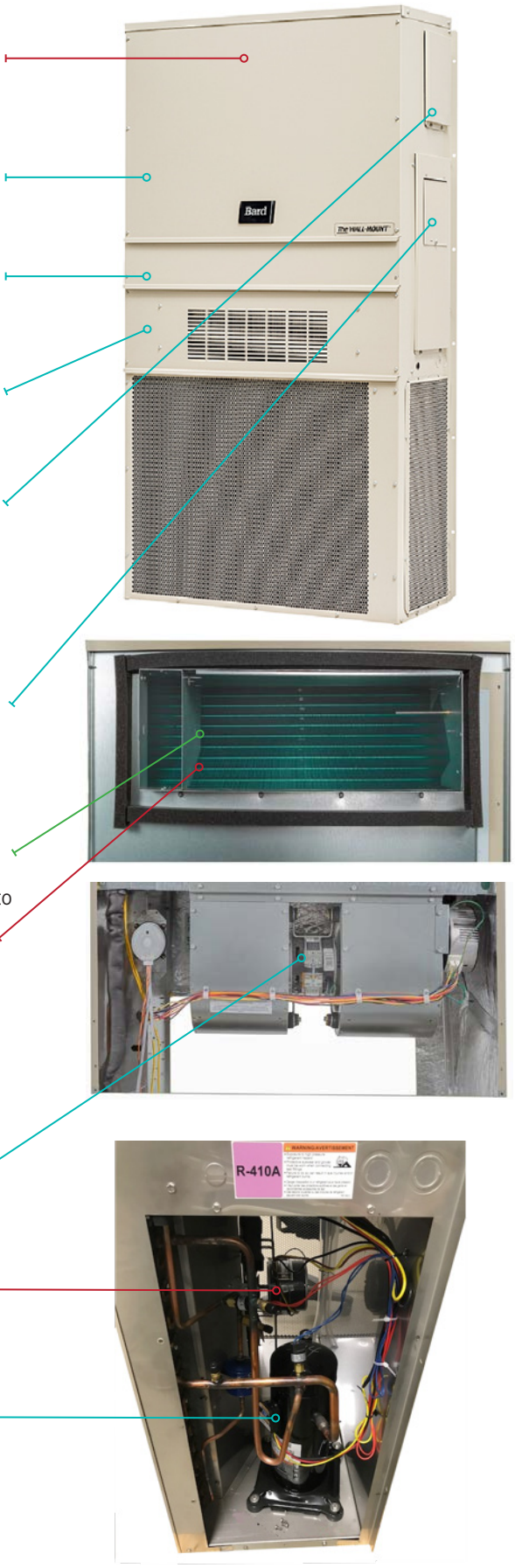
Electric Strip Heat: Reliable, comfortable heater packages feature an automatic limit and thermal cut-off safety control. Heater packages can be factory or field installed.

Built-in Circuit Breakers: Standard on all electric heat versions of single (240/220 volt) and three phase (220/200 volt) equipment. Toggle disconnects are standard on all electric heat versions of three phase (415/380 volt) equipment.

Reliable, Easy-to-Use Controls: Easily accessible through left or right 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.

Green Fin Hydrophilic Evaporator Coil: Green fin stock is used 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 on the market with the use of a 2 stage thermostat or controlling device. Bard Balanced Climate™ innovation comes standard on all models.



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

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

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

/////// UNIT MODES OF OPERATION

Cooling Operation: The Bard MULTI-TEC 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 MULTI-TEC 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 W30 through W36 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 MULTI-TEC 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: The Bard MULTI-TEC Series WALL MOUNT products offer an enhanced latent capacity stage that can be controlled by the humidity setting in the LC6000. During the Balanced Climate cooling stage, the unit will increase the amount of moisture removed during compressor operation. The standard mode of cooling provides balanced cooling when sensible and latent cooling are needed. Hi sensible mode is activated when humidity levels reach a normal to low level.

CAUTION: Balanced Climate is not a replacement for a dehumidification (hot gas reheat) unit for extreme applications, but rather an enhancement feature for reducing humidity while cooling.

/////// 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 MULTI-TEC 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	W24AB W24LB	W30AB W30LB	W36AB W36LB
Cooling Capacity BTUH	21,900	26,600	32,100
Cooling Capacity kw	6.41	7.99	9.4
EER	10.5	10.5	10.5

SPECIFICATIONS 1-1/2 TON THROUGH 3 TON

MODELS	W24AB-D	W24AB-F W24LB-F	W30AB-D	W30AB-F W30LB-F	W36AB-D	W36AB-E	W36AB-F W36LB-F
Electrical Rating – 50 Hz	240/220 - 1	415/380 - 3①	240/220 - 1	415/380 - 3①	240/220 - 1	220/200 - 3	415/380 - 3①
Operating Voltage Range	198-254	342-456	198-254	342-456	198-254	180-242	342-456
Compressor--Circuit A							
Voltage	240/220	415/380	240/220	415/380	240/220	220/200	415/380
Rated Load Amps	8.3/9.4	5.0/5.7	9.6/10.9	6.1/6.9	11.4/13.3	7.1/8.3	4.7
Branch Circuit Selection Current	12.9	7.7	14.2	9.0	16.7	10.5	5.8
Lock Rotor Amps	58.3/58.3	55.4/55.4	73/73	58/58	79/79	73/73	38
Compressor Type	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll	Scroll
Fan Motor & Condenser							
Fan Motor--HP--RPM	1/5 - 1090	1/5 - 1090	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075	1/5 - 1075
Fan Motor--Amps	1.1	1.1	1.2	1.2	1.2	1.2	0.6
Fan--DIA/CFM	18" - 1800	18" - 1800	20" - 2400	20" - 2400	20" - 2200	20" - 2200	20" - 2200
Blower Motor & Evap.							
Blower Motor—HP-SPD	1/3-5	1/3-5	1/2-5	1/2-5	1/2-5	1/2-5	1/2-5
Blower Motor—Amps	0.7	0.7	1.4	1.4	2.3	2.3	1.0
Motor Type	ECM	ECM	ECM	ECM	ECM	ECM	ECM
CFM Cooling & E.S.P. w/Filter (Rated-Wet Coil)	800 - .1	800 - .1	950 - .15	950 - .15	1150 - .15	1150 - .15	1150 - .15
Filter Sizes (mm) STD.	405x635x25	405x635x25	405x765x25	405x765x25	405x765x25	405x765x25	405x765x25
Basic Unit Weight-LBS.	335 (151.9)	335 (151.9)	350 (158.7)	350 (158.7)	380 (172.3)	380 (172.3)	380 (172.3)
Barometric Fresh Air Damper (X)	4.0 (1.8)	4.0 (1.8)	5.0 (2.2)	5.0 (2.2)	5.0 (2.2)	5.0 (2.2)	5.0 (2.2)
Barometric Damper w/ Exhaust (A)	8.0 (3.6)	8.0 (3.6)	9.0 (4.08)	9.0 (4.08)	9.0 (4.08)	9.0 (4.08)	9.0 (4.08)
Blank-Off Plate (B)	1.0 (.45)	1.0 (.45)	1.0 (.45)	1.0 (.45)	1.0 (.45)	1.0 (.45)	1.0 (.45)
Commercial Room Ventilator (M, V)	31.0 (14.06)	31.0 (14.06)	35.0 (15.8)	35.0 (15.8)	35.0 (15.8)	35.0 (15.8)	35.0 (15.8)
Economizer (D, S, Z)	37.0 (16.7)	37.0 (16.7)	37.0 (16.7)	37.0 (16.7)	37.0 (16.7)	37.0 (16.7)	37.0 (16.7)
Energy Recovery Ventilator (R)	54.0 (24.4)	54.0 (24.4)	65.0 (29.4)	65.0 (29.4)	65.0 (29.4)	65.0 (29.4)	65.0 (29.4)

①415/380-3 electrical rating are 3-phase wye (star) systems requiring three (3) phase legs plus neutral and ground.

NOTE: The indoor & outdoor motor and 24V transformer primary are connected at 240V derived from one (1) phase leg to neutral. This is internally connected and no field wiring required.

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
8620-263	W24A, W24L	Standard Unit Crate
8620-275	W24A, W24L	Units with "Y and Z" Economizer With Factory Installed 7" Hood
8620-262	W30A, W30L, W36A, W36L	Standard Unit Crate
8620-276	W30A, W30L, W36A, W36L	Units with "Y and Z" Economizer With Factory Installed 7" Hood

COOLING APPLICATION DATA - OUTDOOR TEMPERATURE ①②

MODEL	RETURN AIR (DB/WB)	COOLING CAPACITY	75°F (23.9°C)	85°F (29.4°C)	95°F (35.0°C)	105°F (40.6°C)	115°F (46.1°C)	125°F (51.7°C)
W24	75/62°F (23.9/16.7°C)	Total Cooling	23300 (6.82)	21200 (6.21)	19100 (5.59)	17200 (5.04)	15500 (4.54)	13900 (4.07)
		Sensible Cooling	18000 (5.27)	17100 (5.01)	16200 (4.74)	15400 (4.51)	14700 (4.31)	13900 (4.07)
	80/67°F (26.7/19.4°C)	Total Cooling	24900 (7.29)	23400 (6.85)	21900 (6.41)	20300 (5.95)	18600 (5.45)	16900 (4.95)
		Sensible Cooling	17400 (5.1)	16900 (4.95)	16300 (4.77)	15800 (4.63)	15200 (4.45)	14600 (4.28)
	85/72°F (29.4/22.2°C)	Total Cooling	29700 (8.7)	26900 (7.88)	24300 (7.12)	22000 (6.44)	19600 (5.74)	17400 (5.1)
		Sensible Cooling	17900 (5.24)	17000 (4.98)	16100 (4.72)	15100 (4.42)	14100 (4.13)	13000 (3.81)
W30	75/62°F 23.9/16.7°C)	Total Cooling	28100 (8.23)	25500 (7.47)	23300 (6.82)	21200 (6.21)	19200 (5.62)	17200 (5.04)
		Sensible Cooling	21400 (6.27)	20400 (5.97)	19500 (5.71)	18600 (5.45)	17700 (5.18)	17000 (4.98)
	80/67°F (26.7/19.4°C)	Total Cooling	29900 (8.76)	28400 (8.32)	26600 (7.79)	24900 (7.29)	23000 (6.74)	21000 (6.15)
		Sensible Cooling	20800 (6.09)	20300 (5.95)	19700 (5.77)	19100 (5.59)	18400 (5.39)	17800 (5.21)
	85/72°F (29.4/22.2°C)	Total Cooling	35600 (10.43)	32500 (9.52)	29600 (8.67)	26900 (7.88)	24200 (7.09)	21600 (6.33)
		Sensible Cooling	21300 (6.24)	20300 (5.95)	19300 (5.65)	18200 (5.33)	17000 (4.98)	15800 (4.63)
W36	75/62°F (23.9/16.7°C)	Total Cooling	34000 (9.96)	30900 (9.05)	28000 (8.2)	25300 (7.41)	22900 (6.71)	20600 (6.03)
		Sensible Cooling	26600 (7.79)	25200 (7.38)	23800 (6.97)	22600 (6.62)	21600 (6.33)	20600 (6.03)
	80/67°F (26.7/19.4°C)	Total Cooling	36300 (10.63)	34300 (10.05)	32100 (9.4)	29900 (8.76)	27500 (8.05)	25100 (7.35)
		Sensible Cooling	25800 (7.56)	25000 (7.32)	24200 (7.09)	23300 (6.82)	22500 (6.59)	21700 (6.35)
	85/72°F (29.4/22.2°C)	Total Cooling	43200 (12.65)	39400 (11.54)	35600 (10.43)	32300 (9.46)	29000 (8.49)	25800 (7.56)
		Sensible Cooling	26400 (7.73)	25100 (7.35)	23500 (6.88)	22100 (6.47)	20700 (6.06)	19300 (5.65)

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

UNIT CHARGE RATES

UNIT	STD. UNIT - LBS.
W24AB/LB - Right & Left A/C	4.250
W30AB/LB - Right & Left A/C	4.125
W36AB/LB- Right & Left A/C	4.500

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

MODEL	RETURN AIR (DB/WB)	COOLING CAPACITY	75°F (23.9°C)	85°F (29.4°C)	95°F (35.0°C)	105°F (40.6°C)	115°F (46.1°C)	125°F (51.7°C)
W24	75/62 (23.9/16.7°C)	Total Cooling	24300 (7.12)	22400 (6.56)	20400 (5.97)	18600 (5.45)	16700 (4.89)	14800 (4.33)
		Sensible Cooling	16900 (4.95)	16200 (4.74)	15400 (4.51)	14600 (4.27)	13700 (4.01)	12800 (3.75)
		Latent Cooling	7400 (2.16)	6200 (1.81)	5000 (1.46)	4000 (1.17)	3000 (0.87)	2000 (0.58)
		% Latent Increase	20%	27%	**38%**	50%	70%	100%
		Lbs. H2O per Hr.	6.981	5.849	4.717	3.774	2.83	1.887
	80/67 (26.7/19.4°C)	Total Cooling	25900 (7.59)	24800 (7.26)	23400 (6.85)	21900 (6.41)	20100 (5.89)	18000 (5.27)
		Sensible Cooling	16400 (4.80)	16000 (4.68)	15500 (4.54)	14900 (4.36)	14200 (4.16)	13400 (3.92)
		Latent Cooling	9500 (2.78)	8800 (2.57)	7900 (2.31)	7000 (2.05)	5900 (1.72)	4600 (1.34)
		% Latent Increase	14%	18%	23%	29%	37%	46%
		Lbs. H2O per Hr.	8.962	8.302	7.453	6.604	5.566	4.34
	85/72 (29.4/22.2°C)	Total Cooling	30900 (9.05)	28500 (8.35)	26000 (7.61)	23600 (6.91)	21200 (6.21)	18500 (5.42)
		Sensible Cooling	16800 (4.92)	16100 (4.71)	15200 (4.45)	14200 (4.16)	13100 (3.83)	11900 (3.48)
		Latent Cooling	14100 (4.13)	12400 (3.63)	10800 (3.16)	9400 (2.75)	8100 (2.37)	6600 (1.93)
		% Latent Increase	8%	12%	16%	19%	25%	26%
		Lbs. H2O per Hr.	13.3	11.7	10.19	8.868	7.642	6.226
W30	75/62 (23.9/16.7°C)	Total Cooling	29100 (8.52)	26700 (7.82)	24400 (7.15)	22300 (6.53)	20300 (5.94)	18300 (5.36)
		Sensible Cooling	20700 (6.06)	19500 (5.71)	18600 (5.45)	17600 (5.15)	16700 (4.89)	15800 (4.63)
		Latent Cooling	8400 (2.46)	7200 (2.11)	5800 (1.69)	4700 (1.37)	3600 (1.05)	2500 (0.73)
		% Latent Increase	13%	22%	**29%**	40%	56%	88%
		Lbs. H2O per Hr.	7.925	6.792	5.472	4.434	3.396	2.358
	80/67 (26.7/19.4°C)	Total Cooling	3100 (0.90)	29600 (8.67)	28000 (8.20)	26300 (7.70)	24400 (7.15)	22300 (6.53)
		Sensible Cooling	20000 (5.86)	19300 (5.65)	18700 (5.48)	18000 (5.27)	17300 (5.07)	16600 (4.86)
		Latent Cooling	11000 (3.22)	10300 (3.01)	9300 (2.72)	8300 (2.43)	7100 (2.08)	5700 (1.67)
		% Latent Increase	9%	14%	18%	23%	30%	39%
		Lbs. H2O per Hr.	10.38	9.717	8.774	7.83	6.698	5.377
	85/72 (29.4/22.2°C)	Total Cooling	37000 (10.84)	34000 (9.96)	31100 (9.11)	28400 (8.32)	25700 (7.53)	23000 (6.74)
		Sensible Cooling	20500 (6.00)	19400 (5.68)	18400 (5.39)	17200 (5.04)	16000 (4.68)	14700 (4.30)
		Latent Cooling	16500 (4.83)	14600 (4.27)	12700 (3.72)	11200 (3.28)	9700 (2.84)	8300 (2.43)
		% Latent Increase	5%	8%	11%	14%	19%	23%
		Lbs. H2O per Hr.	15.57	13.77	11.98	10.57	9.151	7.83
W36	75/62 (23.9/16.7°C)	Total Cooling	35200 (10.31)	32000 (9.37)	28900 (8.46)	26300 (7.70)	23800 (6.97)	21400 (6.27)
		Sensible Cooling	24700 (7.23)	23300 (6.82)	21900 (6.41)	20700 (6.06)	19500 (5.71)	18500 (5.42)
		Latent Cooling	10500 (3.07)	8700 (2.54)	7000 (2.05)	5600 (1.64)	4300 (1.26)	2900 (0.84)
		% Latent Increase	23%	28%	**34%**	46%	67%	100%
		Lbs. H2O per Hr.	9.906	8.208	6.604	5.283	4.057	2.736
	80/67 (26.7/19.4°C)	Total Cooling	37600 (11.01)	35500 (10.40)	33200 (9.72)	31000 (9.08)	28600 (8.38)	26100 (7.64)
		Sensible Cooling	23900 (7.00)	23000 (6.74)	22100 (6.47)	21200 (6.21)	20300 (5.94)	19400 (5.68)
		Latent Cooling	13700 (4.01)	12500 (3.66)	11100 (3.25)	9800 (2.87)	8300 (2.43)	6700 (1.96)
		% Latent Increase	16%	18%	20%	24%	33%	45%
		Lbs. H2O per Hr.	12.92	11.79	10.47	9.245	7.83	6.321
	85/72 (29.4/22.2°C)	Total Cooling	44800 (13.12)	40800 (11.95)	36900 (10.81)	33500 (9.81)	30100 (8.82)	26900 (7.88)
		Sensible Cooling	24500 (7.18)	23100 (6.76)	21700 (6.35)	20200 (5.92)	18700 (5.48)	17200 (5.04)
		Latent Cooling	20300 (5.94)	17700 (5.18)	15200 (4.45)	13300 (3.89)	11400 (3.34)	9700 (2.84)
		% Latent Increase	9%	11%	13%	16%	20%	26%
		Lbs. H2O per Hr.	19.15	16.7	14.34	12.55	10.75	9.151

① Low ambient operation disables Balanced Climate Operation.
② Outdoor temperatures shown are measured at the condenser section air inlet.

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

W24 BLOWER TAPS - DRY/WET COIL CFM					ESP	W30 BLOWER TAPS - DRY/WET COIL CFM				
Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating	In H2O	Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating
890/835	630/625	890/835	1005/980	1025/1035	0"	1050/1020	830/825	1050/1020	1170/1135	1200/1205
825/800	580/565	825/800	960/930	990/980	.1"	1000/975	765/745	1000/975	1120/1105	1170/1155
795/780	550/535	795/780	935/910	975/955	.15"	975/950	730/705	975/950	1095/1085	1150/1130
770/755	525/500	770/755	910/885	955/930	.2"	950/925	700/670	950/925	1070/1060	1130/1105
715/705	Not Used	715/705	870/840	915/885	.3"	890/870	630/605	890/870	1025/1015	1085/1055
670/650	Not Used	670/650	825/805	870/845	.4"	830/815	Not Used	830/815	975/955	1040/1000
630/585	Not Used	630/585	785/765	825/805	.5"	770/755	Not Used	770/755	930/980	985/945

W36 BLOWER TAPS - DRY/WET COIL CFM				
Blower and Vent Only	Balanced Climate	Default LO Cooling and Heating	Optional MED Cooling and Heating	Optional HI Cooling and Heating
1255/1225	925/900	1255/1225	1365/1345	1495/1480
1205/1175	850/825	1205/1175	1320/1300	1445/1425
1180/1150	815/790	1180/1150	1295/1275	1415/1395
1155/1125	780/755	1155/1125	1275/1250	1385/1360
1100/1070	700/685	1100/1070	1225/1195	1313/1280
1050/1015	Not Used	1050/1015	1180/1140	1225/1185
1000/960	Not Used	1000/960	1130/1075	1130/1075

Above data is with 1" standard throwaway filter and 1" washable filter.
For optional 2" pleasted filter - reduce ESP by .15in.
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 De humidification. To use Balanced Climate, remove the jumper between Y1 and Y2 on the low voltage terminal strip. A 2 stage cool ing thermostat is then used to control blower airflow stages. Be sure to follow all guidelines provided in the installation manual. A controls kit that includes a low ambient control (LAC) must be used for Balanced Climate Operation if ventilation options are to be used or cooling operation will occur below a 60° outdoor temperature. Balanced Climate can be used for duct free and ducted applications below 0.20"WC 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 appli- cations 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 selec tion. 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 @ 10 FT.
Unit	Standard Grilles	With WMICF	With WMICF and WAPR-11	Standard Grilles	With WMICF	With WMICF and WAPR-11	Standard Features
W24AB/W24LB	52.4	49.7	46.9	50.4	46.9	44.8	62.3
W30AB/W30LB	53.9	52.8	50.3	52.9	50.4	48.8	67.1
W36AB/W36LB	53.9	52.8	50.3	52.9	50.4	48.8	67.1

DUCTED SUPPLY	INDOOR COOLING OPERATION @ 5 FT.			INDOOR COOLING OPERATION @ 10 FT.			OUTDOOR @ 10 FT.
Unit	Standard Grilles	With WMICF	With WMICF and WAPR-11	Standard Grilles	With WMICF	With WMICF and WAPR-11	Standard Features
W24AB/W24LB	51.9	45.4	44	48.9	42.9	41.4	62.3
W30AB/W30LB	54.5	47.3	45.6	47.3	44.7	43.2	67.1
W36AB/W36LB	54.5	47.3	51.1	47.3	44.7	48.5	67.1

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 45dBa. Results referenced were recorded in the Bard Manufacturing Company, Inc. Sound Lab Facility. Actual Field Application results may vary with classroom design and construction methods.

/////// ELECTRICAL SPECIFICATIONS — W**AB AND W**LB SERIES

MODEL	Rated Volts & Phase	Operating Voltage Range	No. Field Power Circuits	② Minimum Circuit Amps	① Maximum External Fuse or Circuit Breaker
W24AB-D0Z	240/220-1	254-198	1	15	20
D05			1	28	30
D08			1	44	45
W24AB/LB-F0Z	415/380-3 ③	456-342	1	10	15
F05			1	11	15
W30AB-D0Z	240/220-1	254-198	1	15	20
D05			1	28	30
D10			1	54	60
W30AB/LB-F0Z	415/380-3③	456-342	1	10	15
F07			1	16	20
F12			1	26	30
W36AB-D0Z	240/220-1	254-198	1	17	25
D05			1	28	30
D10			1	54	60
W36AB-E0Z	230/200-3	242-180	1	17	25
E06			1	21	25
E12			1	39	40
W36AB/LB-F0Z	415/380-3③	456-342	1	10	15
F07			1	14	15
F12			1	22	25

① Maximum size of the time delay fuse or "D" rated circuit breaker for protection of field wiring conductors.
② These "Minimum Circuit Amp" values are to be used for sizing the field power conductors.
③ 415/380-3 Electrical Ratings are 3-phase wye (star) systems requiring three (3) phase legs plus neutral and ground. NOTE: The indoor and outdoor motors and 24V transformer primary are connected at 240V derived from one (1) phase leg to neutral. This is internally connected and no field wiring required.

NOTE: All wiring must conform to NIC/EIC latest edition.

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

/////// ELECTRIC HEAT TABLE - REFER TO ELECTRICAL SPECIFICATIONS FOR AVAILABILITY BY UNIT MODEL

Model	W24AB-D		W24AB-F W24LB-F		W30AB-D W36AB-D		W36AB-E		W30AB-F W36AB-F W36LB-F	
KW	240V-1 WATTS	220V-1 WATTS	415V-3 WATTS	380V-3 WATTS	240V-1 WATTS	220V-1 WATTS	220V-3 WATTS	200V-3 WATTS	415V-3 WATTS	380V-3 WATTS
5.0	5000	4201	4883	4095	5000	4201				
8.0	8000	6722								
10.0					10000	8403				
6.0							5042	4167		
7.0									6728	5641
12.0							10083	8333	11213	9401

/////// HEATER PACKAGES - FIELD INSTALLED "A" SERIES RIGHT-HAND UNITS

- Designed for adding Electric Heat to 0 KW Units
- Circuit Breaker Standard on 230/208V Models
- ETL US & Canada Listed
- Toggle Disconnect Standard on 460V Models

AIR CONDITIONER MODELS	-D00 MODELS 240/220-1		-E00 MODELS 230/200-3		-F00 MODELS 415/380-3	
	HEATER MODEL #	KW	HEATER MODEL #	KW	HEATER MODEL #	KW
W24AB	WMCB-02A EHW1TAB-A05 EHW24A-A08	0Z 5 8	N/A		WMPD-01C EHWH24B-C06	0Z 5
W30AB	WMCB-03A EHW3TAB-A05 EHW3TA-A10	0Z 5 10	N/A		WMPD-01C EHW3TA-C09 EHW3TA-C15	0Z 7 12
W36AB	WMCB-03A EHW3TA-A05 EHW3TAB-A10	0Z 5 10	WMCB-04B EHW30A-B06 EHWA03-E12C	0Z 6 12	WMPD-01C EHW3TA-C09 EHW3TA-C15	0Z 7 12

① These heater packages approved for use in dehumidification versions with hot gas reheat.

/////// HEATER PACKAGES - FIELD INSTALLED "L" SERIES LEFT-HAND UNITS

AIR CONDITIONER MODELS	-D00 MODELS 240/230-1		-E00 MODELS 230/200-3		-C00 MODELS 415/380-3	
	HEATER MODEL #	KW	HEATER MODEL #	KW	HEATER MODEL #	KW
W24LB	N/A	N/A	N/A	N/A	WMPD-01CL EHWH24B-C06L	0Z 05
W36LB	N/A	N/A	N/A	N/A	WMPD-01CL EHW3TA-C09L EHW3TA-C15L	0Z 7 12

/////// W18ABP-W36ABP SERIES WALL MOUNT™ VENTILATION OPTION SELECTION CHART

VENT CODE	DESCRIPTION	UNIT	OPERATION	DESCRIPTION
B	**Blank Off Plate**	W24ABP-W36ABP	No Ventilation	Insulated plates used to seal vent intake and exhaust openings.
5	**Economizer**	W24ABP-W36ABP	Free Cooling	Full flow Economizer that uses the logic board and included sensors to operate free cooling. Enthalpy, Dew Point, or Dry Bulb operation is user selectable. A field installed 7" hood is required on the front of the unit.

/////// WALL MOUNT™ VENTILATION OPTIONS SPECIFICATIONS

"B" Vent Code Option – Blank 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.

"5" Vent Code Option – Free Cooling Economizer

The free cooling economizer uses multiple 2-10V high torque actuators to independently control each intake and exhaust damper. Outdoor intake air enters the left and right sides of the unit through louvers. Intake air is pre-filtered before entering the unit. Room air is exhausted using one or more separate dampers into the condenser section partition of the unit. A large exhaust air path is provided to reduce room pressure to slight positive pressurization during economizer operation. All dampers include rubber seals for positive shutoff when the economizer is not being operated.

All operation is controlled by the unit PLC logic board. Magnetic proximity sensors attached to each economizer blade indicate a damper failure. Outdoor conditions are monitored through a temperature/humidity sensor located in the condenser section of the unit.

Unit Software Economizer Features:

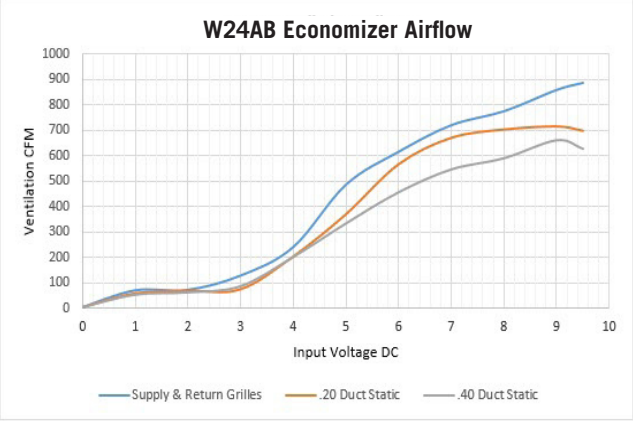
- Standard dry bulb outdoor temperature control of economizer operation.
- Optional wet bulb outdoor enthalpy control of economizer operation. Enthalpy measured in either %RH or Dewpoint.
- Passive Dehum: Economizer operation can be disabled if humidity levels measured by the LC6000 reach the indoor maximum humidity setpoint. The default passive indoor humidity setpoint is 70%RH*.
- Emergency Vent: When NO/NC* contacts are energized in the LC6000, the economizer blades are fully opened and the evaporator Fan is activated.
- Emergency Off: When NO/NC* contacts are energized in the LC6000, the economizer blades are closed, and unit operation is disabled.
- Emergency Cool: When high temp alarm 2 is active in the LC6000 due to a high temperature event in a zone, all units will try to cool the structure through compressor cooling activation and economizer use.

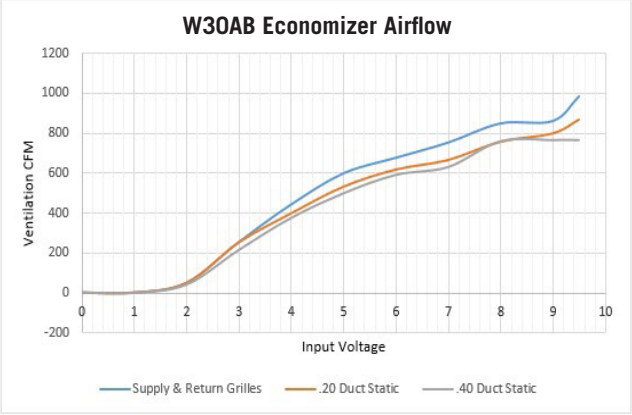
*Default setting.

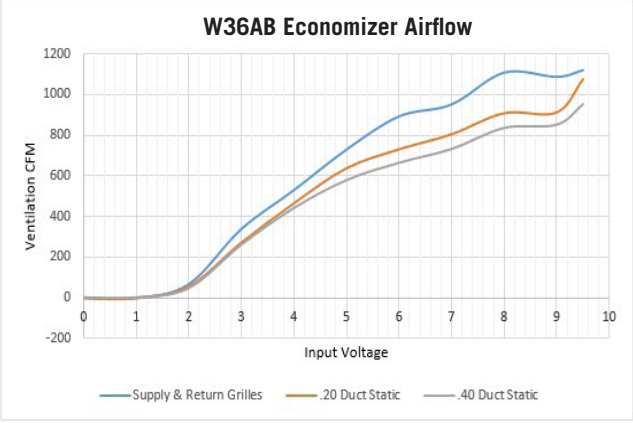
Note: Fire suppression systems that use gases to flood an area normally require economizer shutdown within 30 seconds of a smoke/fire event. A signal from the LC6000 controller to close all dampers and disable unit operation can take over a minute (time will vary based on daisy chain connections). A relay must be installed to break the 24VAC power supply output from the low voltage transformer in each unit in order to shorten the blade closure time and disable unit operation.

/////// WALL MOUNT™ VENTILATION AIRFLOW CHARTS

"5" Economizer Vent Code Options







/////// CABINET AND COIL OPTIONS

Cabinet Finish Options

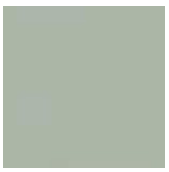
Unit models are available in Beige, White, Buckeye Gray, Desert Brown, Dark Bronze, stainless steel, and aluminum. Painted cabinet construction is comprised of 20 gauge Zinc coated steel. Parts are cleaned, rinsed, sealed, and dried before a polyurethane primer is applied. The cabinet coating is completed 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.

X—Beige

1—White



4—Gray

5—Desert

8—Bronze

S—Stainless

A—Aluminum

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

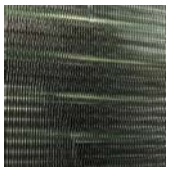
Bard WALL MOUNT products include a green protective coating applied to the aluminum fin stock used for the evaporator coil. The evaporator coil coating is hydrophilic (attracts water) and allows for proper condensate drainage along with mild corrosion protection. Resistance to corrosive agents include ammonia, sodium hydroxide, sodium chloride, acidic solutions and solvents.

Note: The green fin hydrophilic evaporator coil is not a replacement for technicoat coil coating. Green fin stock does provide additional coil protection, but technicoat is recommended for harsh indoor environments where strong acidic or alkali chemicals are being used.

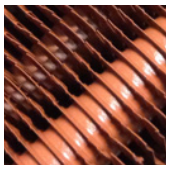
/////// CABINET AND COIL OPTIONS

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."



Hydrophilic Green Coil (standard)



AeroMarine (optional)

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.

/////// 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
C	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, **Low Ambient Control, Compressor Crankcase Heater**
E	Hi Pressure Switch, Low Pressure Switch, Compressor Control Module, **Low Ambient Control**

/////// ADVANCED LOGIC BOARD SPECIFICATIONS

Programmable Logic Board: Each unit uses a programmable logic board located in the unit control panel to communicate with the LC controller. By using a 2-wire connection, alarm functionality and unit operational commands are communicated. If communication is lost, the unit is able to run by using the logic in the unit controller in orphan mode.

Power Supply Specifications:
24Vac/Vdc +10%/-15% 50/60 Hz
Max power input: 28 VA
Insulation between power supply and instrument:
• Mod. 24Vac: reinforced ensured by the use of external safety (class 2) transformer (mandatory)
External fuse: 3.15 AT (mandatory)
Minimum section of wires of all other connectors: 0.5mm2

Product Specifications:
Program memory (FLASH): 128MB
Data memory: 16MB/8MB
Internal clock precision: 100 ppm
Battery type: Lithium button battery (removable), BR2032, 3 Vdc
Battery lifetime characteristics of removable battery: Min. 8 years in normal operating conditions.

User Interface:
Type: all the pGD terminals with telephone connector J10.

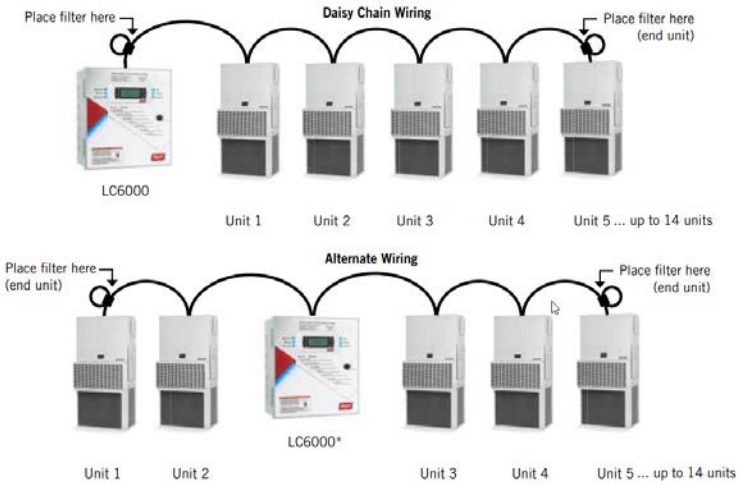
Operating Conditions:
Storage: -40T70 °C, 90% rH non-condensing
Operating: -40T60 °C, 90% rH non-condensing

Other Specifications:
Environmental pollution degree: 3
Index of protection: IP00
Class according to protection against electric shock: to be incorporated into Class 1 and/or Class 11 appliances
PTI of the insulating materials PCB: PTI 250'
Insulation material: PTI 175
Period of stress across the insulating parts: long
Type of action: 1C; 1Y for SSR versions
Type of disconnection or micro interruption: micro interruption
category of resistance to heat and fire: Category D (UL94 - VO)
Immunity against voltage surges: Category III
Rated impulse voltage: 4000V;
Temperature for Ball Pressure Test: 125 °C
Communication Lines Available: 1 shielded RJ45 Ethernet line.
Maximum Ethernet port connection cable length: 100M CAT-5 STP

/////// DAISY CHAIN LC6000 AND MULTI-TEC CONNECTION

The MULTI-TEC uses modbus control to communicate between the logic board in the units and the logic board in the LC6000. Units and controller are connected using a 2-wire daisy chain connection with a drain. Wires are polarity sensitive. The drain is connected to the LC6000 terminal block.

The LC6000 can be connected anywhere in the daisy chain. EMI line filters are used on the ends of the daisy chain. Only (2) EMI filters are required for the daisy chain, and are supplied with the LC6000 controller.



/////// ELECTRONIC EXPANSION VALVE (EEV) SPECIFICATIONS

The valves are certified in accordance with the main national and international standards. Accurate control is achieved with communication between the valve and the unit logic control board. The valve is designed especially to optimize management of air conditioning and refrigeration systems, with special focus on energy savings. In addition, highly precise control is assured by the special shape of the movable elements, the stroke length, stainless steel ball bearings, and high precision mechanical components. EEV vaves are used in mechanical dehumidification units only.

SPECIFICATION	DESCRIPTION
EEV VALVES USED	1
POWER SUPPLY VOLT.	12V
DRIVE FREQUENCY	50HZ
PHASE RESISTANCE	(25°C/77°F) 40 OHM
INDEX OF RESISTANCE	IP67
STEP ANGLE	7.5°
LINEAR ADVANCE/STEP	.02MM (.001IN)
CLOSING STEPS	500
CONTROL STEPS	480

/////// 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 alarm is reset.

Low Pressure Control (LPC) - The low pressure control provides a means of protecting the refrigeration circuit when extremely low system pressures occur.

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 monitor feature is adjustable using timer switches. An adjustable delay on break timer is provided. Delay on make is 2 mins. plus 10% of delay on break setting.

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.

/////// CABINET AND CLEARANCE DIMENSIONS - WA RIGHT SIDE CONTROL PANEL UNITS

CLEARANCES REQUIRED FOR SERVICE ACCESS AND ADEQUATE CONDENSER INLET AIRFLOW

MODELS	LEFT SIDE	RIGHT SIDE
W24AB, W30AB, W36AB	15" (38.1cm)	20" (50.8cm)

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

1.) 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 drain age during heat pump operation.

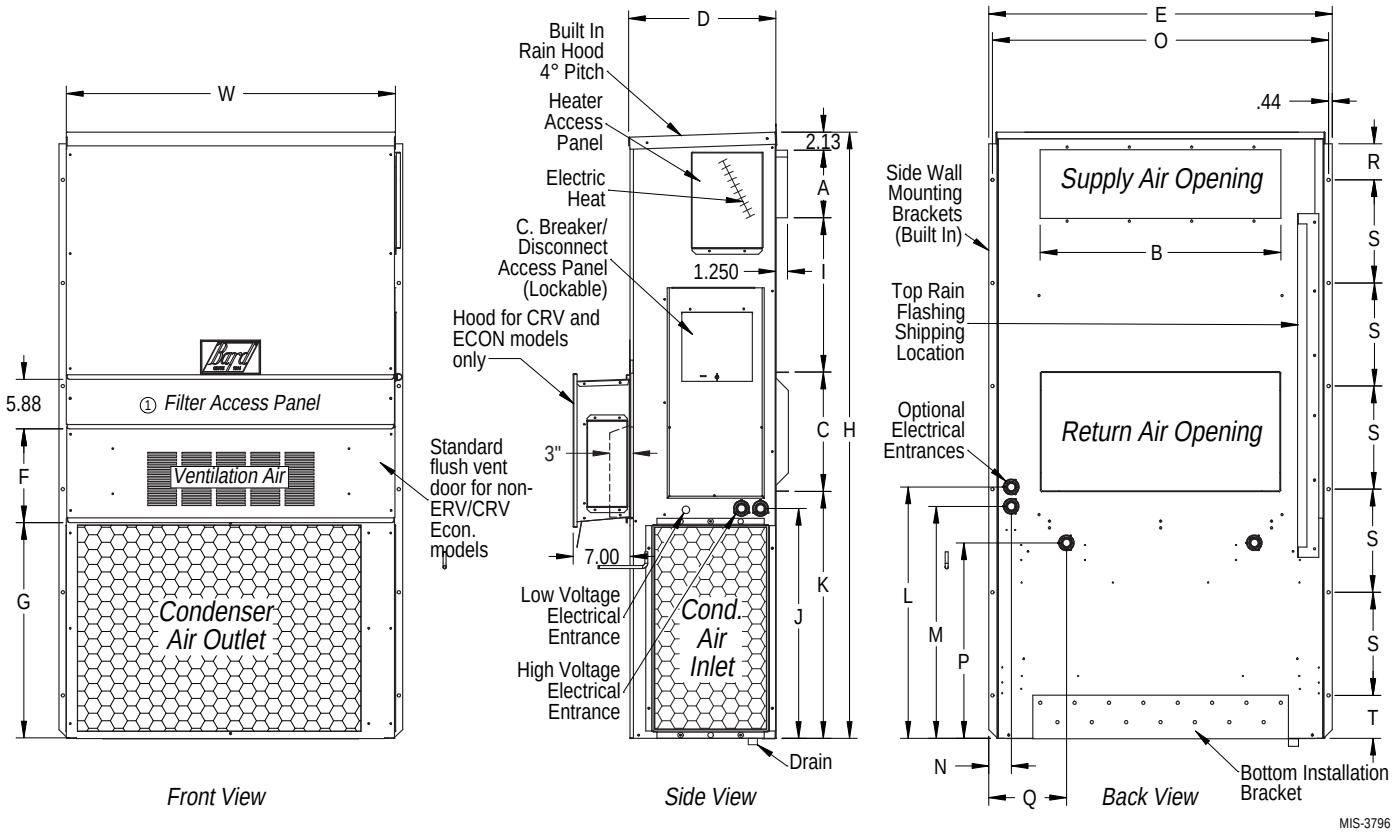
MINIMUM CLEARANCES REQUIRED TO COMBUSTIBLE MATERIALS

MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
W24AB	0"	0"
W30AB, W36AB	1/4" (.64cm)	0"

① Refer to the Installation Manual for more detailed information.

DIMENSIONS OF W24AB-W36AB BASIC UNIT FOR ARCHITECTURAL & INSTALLATION REQUIREMENTS - INCHES (CM)

MODEL	WIDTH (W)	DEPTH (D)	HEIGHT (H)	SUPPLY		RETURN		E	F	G	I	J	K	L	M	N	O	P	Q	R	S	T
				A	B	C	B															
W24AB	33.300 (84.58)	17.125 (43.49)	74.563 (189.39)	7.88 (20.01)	19.88 (50.49)	11.88 (30.17)	19.88 (50.49)	35.00 (88.9)	10.88 (27.63)	29.75 (75.5)	20.56 (52.22)	30.75 (78.10)	32.06 (81.43)	33.25 (84.45)	31.00 (78.74)	2.63 (6.68)	34.13 (86.69)	26.06 (66.19)	10.55 (26.79)	4.19 (10.64)	12.00 (30.48)	9.00 (22.86)
W30AB W36AB	38.200 (97.02)	17.125 (43.49)	74.563 (189.39)	7.88 (20.01)	27.88 (70.81)	13.88 (35.25)	27.88 (70.81)	40.00 (101.6)	10.88 (27.63)	29.75 (75.5)	17.93 (45.54)	30.75 (78.10)	32.75 (83.18)	33.25 (84.45)	31.00 (78.74)	2.75 (6.98)	39.13 (99.39)	26.75 (67.94)	9.14 (23.21)	4.19 (10.64)	12.00 (30.48)	9.00 (22.86)



/////// CABINET AND CLEARANCE DIMENSIONS - WL LEFT SIDE CONTROL PANEL UNITS

CLEARANCES REQUIRED FOR SERVICE ACCESS AND ADEQUATE CONDENSER INLET AIRFLOW

MODELS	LEFT SIDE	RIGHT SIDE
W24LB, W30LB, W36LB	20" (50.8cm)	15" (38.1cm)

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

1.) 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 drain age during heat pump operation.

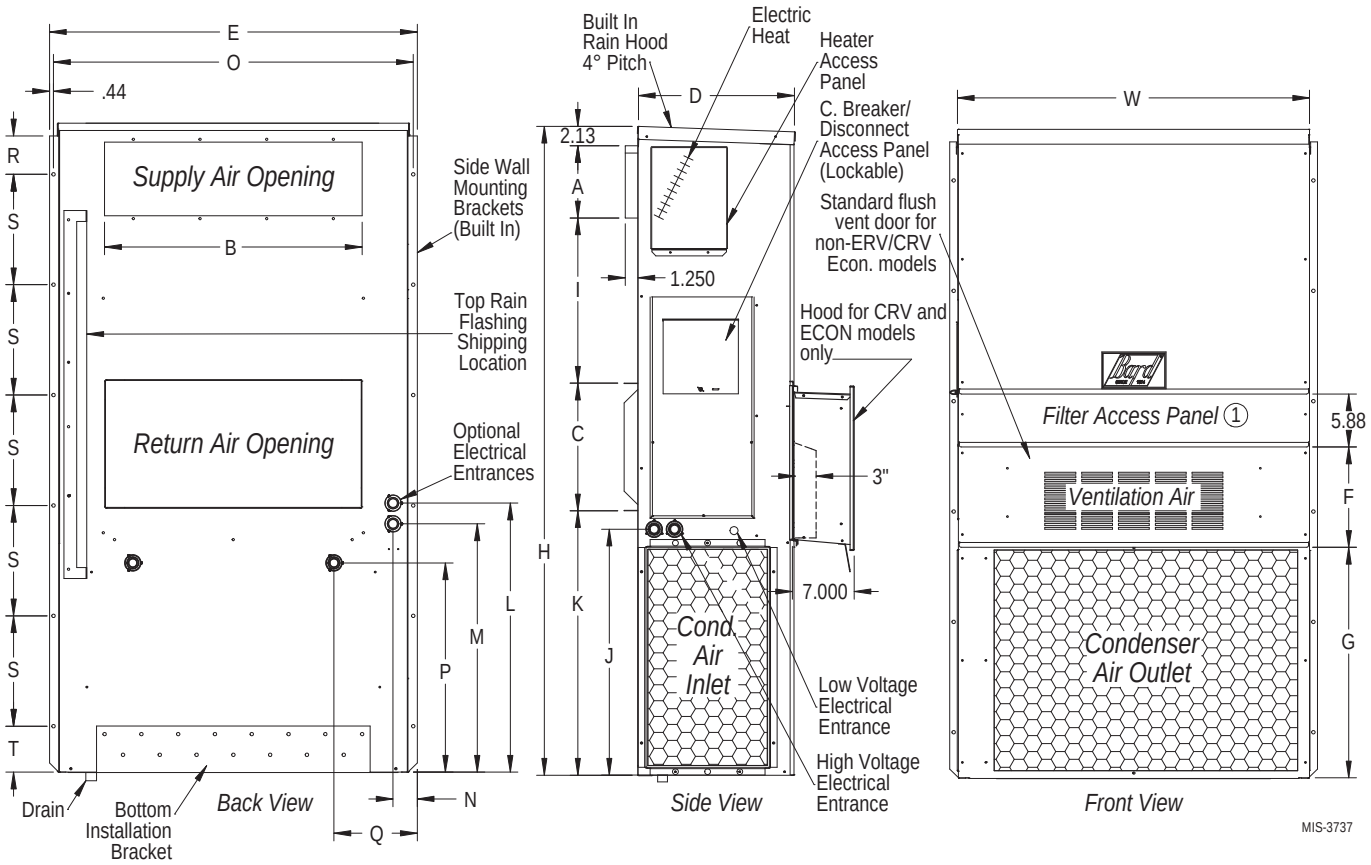
MINIMUM CLEARANCES REQUIRED TO COMBUSTIBLE MATERIALS

MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
W24LB	0"	0"
W30LB, W36LB	1/4" (.64cm)	0"

① Refer to the Installation Manual for more detailed information.

DIMENSIONS OF W24LB-W36LB BASIC UNIT FOR ARCHITECTURAL & INSTALLATION REQUIREMENTS - INCHES (CM)

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
W24LB	33.300 (84.58)	17.125 (43.49)	74.563 (189.39)	7.88 (20.01)	19.88 (50.49)	11.88 (30.17)	19.88 (50.49)	35.00 (88.9)	10.88 (27.63)	29.75 (75.5)	20.56 (52.22)	30.75 (78.10)	32.06 (81.43)	33.25 (84.45)	31.00 (78.74)	2.63 (6.68)	34.13 (86.69)	26.06 (66.19)	10.55 (26.79)	4.19 (10.64)	12.00 (30.48)	9.00 (22.86)
W30LB W36LB	38.200 (97.02)	17.125 (43.49)	74.563 (189.39)	7.88 (20.01)	27.88 (70.81)	13.88 (35.25)	27.88 (70.81)	40.00 (101.6)	10.88 (27.63)	29.75 (75.5)	17.93 (45.54)	30.75 (78.10)	32.75 (83.18)	33.25 (84.45)	31.00 (78.74)	2.75 (6.98)	39.13 (99.39)	26.75 (67.94)	9.14 (23.21)	4.19 (10.64)	12.00 (30.48)	9.00 (22.86)



/////// MULTI-TEC PLC UNIT SOFTWARE FEATURES

FEATURE	DESCRIPTION
Standard Cooling Mode	Standard Cooling mode provides sensible cooling capacity to lower the room temperature, and also provides latent capacity to reduce moisture content in the air. Standard Cooling mode is enabled by the LC6000 when humidity levels are normal in the area being conditioned, and provides a balance of sensible cooling operation and humidity control. Default standard cooling mode is 70%RH zone humidity and below. Default LC6000 cooling setpoint is 77°F.
Hi Sensible Cooing Mode	Hi Sensible Cooling mode offers a way to increase sensible capacity when moisture control does not require additional latent capacity. During High Sensible Cooling mode, the indoor blower CFM is increased to provide additional sensible cooling capacity inside the structure. Hi Sensible Cooling mode is enabled by the LC6000 when humidity levels are low in the area being conditioned. High sensible mode is selectable for each zone of operation. **High sensible mode is not enabled by default, and is enabled through the LC6000 controller.** Default hi sensible cooling mode (humidity control off) setting is 60%RH zone humidity and below.
Balanced Climate Cooling Mode	Balanced Climate mode offers a way to help control humidity in an area and reduce the need for mechanical or electric reheat dehumidification which saves energy costs. During Balanced Climate mode, the indoor blower CFM is reduced to remove moisture inside the structure. Balanced climate operation is operated by the LC6000 when humidity levels are high in the area being conditioned. Balanced Climate is enabled by removing a jumper wire in the unit control panel, and operates during active dehumidification mode. Default LC6000 Balanced Climate (active dehumidification) setpoint is 70%RH zone humidity and above. Balanced Climate is not recommended for use in duct static applications of .2"WC or above. A jumper must be removed inside the unit control panel to enable Balanced Climate. See instructions for more information.
Free Cooling Mode (Optional)	Free Cooling mode uses an optional economizer of take advantage of cooler temperature outdoor conditions to provide cooling in the zone. When the economizer is operational, total energy use of the unit during cooling is reduced significantly. Settings are provided to limit economizer use to outdoor conditions the user feels are acceptable for bringing in outdoor air. Sensors for outdoor temperature, humidity, and dust are provided for monitoring outdoor conditions. Economizer use also provides emergency ventilation options (see economizer section on page 12). Default LC6000 economizer operation is temp/humidity settings of 70°F, 80%RH. Default dewpoint setting is 55°F if used instead of %RH.
Heating Mode (Optional)	Heating mode uses optional 2 stage electric heat to warm the zone being conditioned when needed. By installing properly sized electric heat options, a zone can be heated when equipment or other heat sources inside the area are not producing enough heating capacity to overcome cold outdoor conditions. Default LC6000 heating setpoint is 60°F.
Electric Reheat Dehumidification Mode (Optional)	Optional Electric Reheat Dehumidification mode offers an additional way to help control humidity in an area by allowing concurrent compressor and electric heat operation. By warming the supply air during compressor cooling mode, the unit can run for an extended period of time reducing humidity in the area. Electric Reheat operation is enabled by the LC6000 when humidity levels are high in the area being conditioned. Power requirements are increased in order to use Electric Reheat Dehumidification. Be sure to follow all electrical guidelines in the installation instructions and provide incoming power for concurrent heating and cooling operation. Default LC6000 electric reheat dehumidification setpoint is 80%RH zone humidity and above.
Mechanical Hot Gas Reheat Dehumidification Mode (Optional)	Optional Electric Reheat Dehumidification mode offers an economical energy efficient way to help control humidity in an area by bypassing hot gas from the condenser coil, and re-routing it to a reheat coil installed avter the evaporator coil in the evaporator area. By warming the supply air during compressor cooling mode, the unit can run for an extended period of time reducing humidity in the area. Mechanical Hot Gas Reheat operation is enabled by the LC6000 when humidity levels are high in the area being conditioned. Default LC6000 mechanical hot gas reheat dehumidification setpoint is 80%RH zone humidity and above.
Emergency Cooling Mode	Emergency cooling provides a way to use economizer ventilation air for cooling, along with all available units on in compressor cooling mode when excessive heat is present in the zone. Optional economizers must be present in at least one of the units for outdoor air to be used for emergency cooling. Emergency cooling mode operates when the hi temperature 2 alarm is present in the LC6000 controller. The default LC6000 hi temperature 2 alarm setting is 90°F.
Stand Alone Mode	Stand Alone mode allows a single MULTI-TEC unit to cool the structure with the use of the th-Tune. Setpoints are adjustable in the unit PLC for stand alone mode through the use of the TEC-EYE or using the th-Tune interface. All alarms are viewed at the unit using the th-Tune. Hard wired alarm NO/NC contacts are not available in stand alone mode using the th-Tune.
Orphan Mode	Orphan mode allows the MULTI-TEC unit to continue to cool the structure if communication with the LC6000 is not available. Setpoints are adjustable in the unit PLC for orphan mode through the use of the TEC-EYE. The unit will use the return air temperature sensor to monitor indoor temperature conditions. The Evaporator Fan will run in continuous fan mode to provide room air circulation and allow the return air temperature sensor to monitor indoor room temperature. Room humidity is not monitored during orphan mode operation, and balanced climate mode or optional electric reheat operation will not occur until communication with the LC6000 controller is restored.
Alarm Logging	The MULTI-TEC logs alarms that occur in the unit for diagnostic and maintenance purposes. Alarm logs can be displayed by connecting the TEC-EYE to the unit PLC board, or can be downloaded to a computer using a MicroUSB cable.
Software Updates	The MULTI-TEC unit software can be upgraded by using a computer and connecting to the unit PLC board with a MicroUSB cable. Software updates are accessible from the Bard website: www.bardhvac.com.
Self Test Operation	MULTI-TEC startup commissioning and diagnostic troubleshooting features include a self test that is available through the unit PLC menu. During the self test, staged cooling operation can be energized for an adjustable time period. Economizer damper operation can be observed and verified, along with electric heat operation. Indoor and outdoor fan operation can also be verified.
Model and Serial Number	The MULTI-TEC unit software saves the unit model and serial number for display inside the LC6000 controller software. Model number nomenclature of the unit is used by the LC6000 to identify the features available in the unit.

/////// MULTI-TEC LC6000 SOFTWARE FEATURES

FEATURE	DESCRIPTION
1 to 14 Unit Operation	A single LC6000 controller can operate 1 to 14 PLC controlled units. Units connected to the LC6000 can include the MEGA-TEC, MULTI-TEC, and FUSION-TEC products in individual zones. Connection between the LC6000 and units is made with a 2-wire shielded cable with drain in a Daisy Chain configuration.
3 Zones of Operation	A single LC6000 controller can operate 1 to 3 zones with individual climate setpoints. Each zone can contain 1 to 14 units (cannot exceed a total of 14 units). **MEGA-TEC, MULTI-TEC, and FUSION-TEC products can be used in individual zones, but cannot be combined in one zone.** Applications for zoning include separate battery rooms, offices for occupants, switch rooms, pump house equipment rooms, VFD areas, and large open floor plan structures.
Temperature and Humidity Measurement	Zone temperature measurement can be done using the return air sensors in the units and the remote sensors connected to the LC6000, or can be measured just using the remote LC sensors. An average temperature of the all the unit and remote LC sensors (default), only the units in continuous fan mode and the remote LC sensors, or the remote LC sensors only can be used to control cooling and heating functionality. Zone 1 can contain (1) remote temperature/humidity sensor and (1) remote temperature sensor for a total of (2) remote sensors. Zone 2 and Zone 3 can contain (1) remote temperature/humidity sensor in each zone. The LC6000 controller ships with 1 temperature and humidity remote sensor. Additional zone temperature and humidity sensors must be purchased separately. Remote temperature/humidity sensors require 5-wire with drain shielded cable. Remote temperature sensors require 2-wire with drain shielded cable.
Lead/Lag Staging Operation	Lead/Lag allows for staged unit operation to help control heating and cooling capacity inside a zone. Staging is necessary to help save energy and reduce unit short cycling. Three staging strategies are available. First In First Out (FIFO) allows the first unit activated in cooling or heating to be the first one de-activated as conditions reach set point. First In Last Out (FILO) allows the first unit activated in cooling or heating to be the last one de-activated as conditions reach set point. Demand Staging (DS) allows the unit sensing the highest return air temperature to operate first in cooling mode or the lowest return air temperature unit to operate in heat mode. Default setting is FIFO.
Lead/Lag Unit Rotation	Units in each zone of operation can use a rotational schedule to change the lead and lag unit priority. This feature, when used, will allow run time for all of the units to be similar in the zone. A time period of 0 to 30 days can be selected in the LC6000 controller to adjust the lead/lag unit priority. When set to 0, lead/lag priority will stay the same and the unit rotation schedule will be disabled. Default setting is 7 days.
Maximum Units Running	The maximum units running setting allows for a limitation of the number of units that run in free cooling, cooling, or heating operation. By using this feature, cooling and heating capacity can be limited by not allowing all units installed to operate in heating and cooling. Typical applications do not require the use of this feature, as units will normally stage up and down to meet heat load capacity needs. Default setting is 14 units.
Comfort Mode Operation	Comfort Mode is used to change room conditions inside a zone to comfortable temperature temporarily while technicians, contractors, or other occupants are in the area. Comfort mode is easily activated from the LC6000. Once activated, a user selectable time period limits the amount of time the zone is conditioned to the user selected set point. The default setpoint is 72°F for 30 mins.
Humidifier Operation (Optional)	A field supplied humidifier can be connected to the LC6000 and used in each zone for a total of (3) humidifiers. A humidification setpoint can be used to increase humidity levels in each zone of operation when moisture levels are too low. ON/OFF relay connections are provided, or a communicating Carel Humidifier can be used. The default humidification setpoint is 45%RH.
Continuous Blower Operation	Continuous fan operation can be set for individual units in a zone. The available settings are None, Lead unit only, All units, or Custom. The custom command allows for fan selection of each individual unit. Default is None.
Remote Unit and Zone Monitoring	It is very important to monitor site conditions remotely when critical electronics, batteries, and other important equipment requires specific indoor conditions. The LC6000 contains many remote monitoring features that allow a technician or call center to remotely view the status of all zones and equipment being used. Wired alarm inputs allow for connecting generators and other equipment for remote monitoring. Wired alarm outputs allow for direct connection to a Network Operations Center (NOC). Modbus control and webpages are also provided via ethernet connection. See Remote monitoring features section.
Alarm Logging	The LC6000 logs alarms that occur in the unit and events including generator and emergency off alarms for diagnostic, maintenance, and remote monitoring purposes. Alarm logs can be displayed through remote monitoring, on the LC6000 display, or exported using a computer and MicroUSB cable.
Password Protection	User, Technician, and Factory passwords can be set and used in the controller. The user password allows viewing of controller operation. The technician password allows viewing and setpoint adjustment. The factory password allows access to all functionality.
Software Updates	The LC6000 software can be upgraded by using a computer and connecting to the controller PLC board with a MicroUSB cable. Software updates are accessible from the Bard website: www.bardhvac.com.

/////// MULTI-TEC LC6000 ETHERNET FEATURES FOR REMOTE SITE MONITORING

FEATURE	DESCRIPTION
Ethernet Connection	Ethernet access to all connected equipment is available through the LC6000 controller. A integrated ethernet port is located on the programmable logic board located inside the LC6000. When connected to a network, the connection allows for remote monitoring using software from a remote location. The ethernet connection uses Internet Protocol Version 4 (IPV4). When using the ethernet connection, it is important for the user to provide appropriate ethernet network security measures.
Modbus Remote Access	By using the ethernet connection, the controller will respond to Modbus commands allowing access to setpoints, alarms, temperature measurements and humidity measurements for each zone. The measurement units (English/Metric) retrieved during communication are determined by the controller unit of measure setting. This is configured on-site and cannot be changed remotely. For more information about setting measurement units, please refer to the latest version of the 2100-669 LC6000 Service Instructions manual. Modbus addressing instructions and register points are available in the latest version of the Modbus Supplemental Manual 7960-791.
Webpage Remote Access	Webpages allow controller access with a computer using a standard web browser. The web browser graphical interface provides a visual look at unit operation, viewing and adjustment of zone indoor conditions, alarm events, data trending, and a virtual interface of the display/buttons used on the LC6000 controller. By using the ethernet connection, the controller can be accessed through webpages.

/////// MULTI-TEC LC6000 WIRED INPUTS FOR SITE EQUIPMENT

FEATURE	DESCRIPTION
Emergency Off Input	Wired NO/NC* contact inputs are provided for connection to field supplied equipment. During an emergency off input event, a modbus command to shut off unit operation is sent to units connected and communicating through the daisy chain. A emergency off event can be monitored remotely through a wired output and ethernet connection. **It is important to follow all guidelines, codes, and requirements of smoke/fire suppression systems including the need to break power to the unit and close economizer dampers within a certain time period.** Additional relays, wiring, or field supplied accessories may need to be added to the units and equipment to achieve all requirements for the use of a smoke/fire suppression system.
Emergency Vent Input	Wired NO/NC* contact inputs are provided for connection to field supplied equipment. During an emergency vent input event, a modbus command to open all unit economizer dampers is sent to units connected and communicating through the daisy chain. A emergency vent event can be monitored remotely through a wired output and ethernet connection. **It is important to follow all guidelines, codes, and requirements of hydrogen monitoring systems including the use of a separate ventilation fan system when necessary.**
Generator Run Input	Wired NO/NC* contact inputs are provided for connection to a field supplied generator. The number of units allowed to run during a generator event is set in the LC6000 software. A generator event can be monitored remotely through a wired output and ethernet connection. **It is important to set the limitation of how many units can run during a generator event when using the generator run input (defaults to 0 units).** Individual unit operation is selectable for a generator event.
Bard Guard Input	Wired contact inputs are provided for connection to a Bard Guard anti-theft security option. During an Bard Guard input event, an audible alarm is activated. A Bard Guard vent can be monitored remotely through a wired output and ethernet connection. The Bard Guard security option is not currently available for the MULTI-TEC product. *Currently available for Fusion-Tec products ONLY.
Indoor Space Pressure	For future use only.
Outdoor Thermostat Input	For future use only.
Outdoor Humidistat Input	For future use only.

/////// MULTI-TEC LC6000 WIRED ALARM OUTPUTS FOR REMOTE SITE MONITORING

FEATURE	DESCRIPTION
Emergency Off Alarm	Wired NO*/NC contact outputs are provided. During an emergency off input event, an alarm is sent to the contact output.
Emergency Vent Alarm	Wired NO*/NC contact outputs are provided. During an emergency vent input event, an alarm is sent to the contact output.
Generator Run Alarm	Wired NO*/NC contact outputs are provided. During an generator run input event, an alarm is sent to the contact output.
Indoor Humidity Alarm	Wired NO*/NC contact outputs are provided. During a high humidity event where humidity levels have exceeded the maximum humidity alarm setting in any zone of operation, an alarm is sent to the contact output. The default low humidity alarm setting is 20%. The default high humidity alarm setting is 85%.
High Indoor Temperature Alarm	Wired NO*/NC contact outputs are provided. During a high temperature event where indoor temperature has exceeded the high temperature alarm setting in any zone of operation, an alarm is sent to the contact output. The high temperature 2 alarm is set to 90°F by default.
Low Indoor Temperature Alarm	Wired NO*/NC contact outputs are provided. During a low temperature event where indoor temperature is below the low temperature alarm setting in any zone of operation, an alarm is sent to the contact output. The low temperature alarm is set to 45°F by default.
Zone 1 Unit Alarm	Wired NO*/NC contact outputs are provided. This feature allows the user to configure what unit alarm conditions are going to be sent to the alarm contacts for Zone 1. A zone unit alarm can contain any of the following unit alarms: Blower Failure, Dirty Condenser Coil, Economizer Dust Alarm, Economizer Fail, EEV Failure, Dirty Filter Alarm, Freezestat Active, Hi Refrigerant Pressure, Low Refrigerant Pressure, Return Air Hi/Low Alarm, Sensor Fail Alarm, Supply Air Hi/Low Alarm, and Unit Power Loss Alarm. The default configuration is to alarm on a unit hi or low pressure event.
Zone 2 Unit Alarm	Wired NO*/NC contact outputs are provided. This feature allows the user to configure what unit alarm conditions are going to be sent to the alarm contacts for Zone 2. A zone unit alarm can contain any of the following unit alarms: Blower Failure, Dirty Condenser Coil, Economizer Dust Alarm, Economizer Fail, EEV Failure, Dirty Filter Alarm, Freezestat Active, Hi Refrigerant Pressure, Low Refrigerant Pressure, Return Air Hi/Low Alarm, Sensor Fail Alarm, Supply Air Hi/Low Alarm, and Unit Power Loss Alarm. The default configuration is to alarm on a unit hi or low pressure event.
Zone 3 Unit Alarm	Wired NO*/NC contact outputs are provided. This feature allows the user to configure what unit alarm conditions are going to be sent to the alarm contacts for Zone 3. A zone unit alarm can contain any of the following unit alarms: Blower Failure, Dirty Condenser Coil, Economizer Dust Alarm, Economizer Fail, EEV Failure, Dirty Filter Alarm, Freezestat Active, Hi Refrigerant Pressure, Low Refrigerant Pressure, Return Air Hi/Low Alarm, Sensor Fail Alarm, Supply Air Hi/Low Alarm, and Unit Power Loss Alarm. The default configuration is to alarm on a unit hi or low pressure event.

/////// 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
WMICF3-*	W30ABP-W36ABP	Provides vibration isolation for reduced sound transmission through wall
WWC3-*	W30ABP-W36ABP	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
WAPR11-*	W24ABP-W36ABP	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
SG-2W	W24ABP, W24LBP	8" x 20" with 2" Flange 4 way deflection supply grille. **Use for standard installation**s
SG-3W	W30ABP, W30LBP, W36ABP, W36LBP	8" x 28" with 2" Flange 4 way deflection supply grille. **Use for standard installations**
RG-2W	W24ABP, W24LBP	12" x 20" with 2" Flange return grille. **Use for standard installations.**
RG-3W	W30ABP, W30LBP, W36ABP, W36LBP	12" x 28" with 2" Flange return grille. **Use for standard installations.**
RFG-2W	W24ABP, W24LBP	12" x 20" with 2" Flange return grille with filter bracket.
RFG-3W	W30ABP, W30LBP, W36ABP, W36LBP	12" x 28" with 2" Flange return grille with filter bracket.
RGD-3	W30ABP, W30LBP, W36ABP, W36LBP	14" x 28" with 1" Flange return filter 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-2W	800 CFM	0°	1053	.076" WC	37-52 ft.
		22.5°	1143	.1" WC	28-40 ft.
		45°	1428	.162" WC	20-29 ft.
	865 CFM	0°	1138	.054" WC	40-55 ft.
		22.5°	1236	.075" WC	31-42 ft.
		45°	1544	.113" WC	21-30 ft.
SG-3W	885 CFM	0°	852	.054" WC	37-54 ft.
		22.5°	1075	.075" WC	35-49 ft.
		45°	1162	.113" WC	21-30 ft.
	1285 CFM	0°	1237	.108" WC	42-66 ft.
		22.5°	1359	.147" WC	35-50 ft.
		45°	1687	.249" WC	25-37 ft.

/////// BARD OPTIONAL EQUIPMENT - SOLD SEPARATELY

The MULTI-TEC product is designed to operate with the LC6000 controller to provide all features and functionality available. Multiple zone operation will require purchase of a remote sensor for each zone that will be connected to the LC6000. Additional parts can be ordered as service items, and service tools are also available. The following list is provided for reference and ordering information.

BARD PART NO.	PART NAME	DESCRIPTION
LC6000-***	Multi Unit Controller	The LC6000 controller is able to control 1 to 14 units in 1 to 3 zones. See LC6000 features list for additional feature and functionality descriptions. Requires a separate 115/208/230VAC power source. The last (3) part number digits indicate the controller revision level. Controller includes (2) EMI filters part #8301-055, (1) remote temperature and humidity sensor part #8403-079 with 35' of 18ga. 5-wire shielded cable with drain, and (1) TEC-EYE service tool with 5ft communication cable part #8301-059. The LC6000 has a total shipping weight of 28lbs.
8403-088	th-Tune	The th-Tune is a single unit controller that is able to control 1 unit in 1 zone. The th-Tune is a display that allows heating setpoint, cooling setpoint, continuous fan, and visual indication of unit operation. It also contains a temperature and humidity sensor. Using the th-Tune requires the use of the TEC-EYE to make system adjustments and view alarms in the MULTI-TEC unit.
8403-079	Zone Temperature / Humidity Sensor	A temperature/humidity sensor is required for each zone of operation. (1) temperature/humidity sensor is included with the LC6000. The remote temperature/humidity sensor requires 18ga. 5-wire shielded cable with drain.
8301-058	Zone Temperature Sensor	A an additional temperature sensor is optional for zone 1 temperature monitoring. Remote temperature sensors may be used in zones 2 and 3 instead of remote temperature/humidity sensors if humidity monitoring is not required in the zone. The remote temperature sensor is sold separately and requires 18ga. 2-wire shielded cable with drain.
8301-059	TEC-EYE Service Tool	The TEC-EYE service tool with 5 ft. communication cable is used to access software functions in the unit PLC board. The TEC-EYE is required for unit setup. (1) TEC-EYE service tool with 5 ft. communication cable is included with the LC6000 controller.
8301-053	Large Backlit Service Tool	The large backlit service tool is used to access software functions in the unit PLC board. Operation of the service tool is identical to the TEC-EYE, but provides a large display area (2.8"x1.4") and mechanical entry keys. The large backlit service tool is sold separately.
8301-055	EMI Ferrite Filter	(1) EMI Ferrite filter is required on each end of the daisy chain connection between the units and the LC6000 controller. (2) EMI Ferrite filters are included with the LC6000 controller.
2151-021	EEV Manual Adjustment tool	The EEV manual adjustment tool allows for adjustment of the EEV (Electronic Expansion Valve) without the use of the unit logic board. The service technician can use this tool by removing the electronic head of the valve and attaching the adjustment tool. The tool houses magnets that interact with the valve to open or close the EEV for charging or evacuating the system without system power. The EEV manual adjustment tool is sold separately. EEV is only used with mechanical dehumidification units.

/////// NECESSARY FIELD SUPPLIED COMMUNICATION WIRING - SOLD SEPARATELY

When installing the MULTI-TEC in a building, various supplies are required for proper installation. Wiring the units and the LC6000 controller are a critical part of the installation process. Specifications are provided for wiring, and maximum recommended wire lengths are given to help with component placement and shelter layout.

WIRE USE	MAXIMUM LENGTH	DESCRIPTION
Communication wiring between Units and LC6000 Controller	1640ft (500m)	18ga. 2-Wire Shielded Cable with Drain. This is required to communicate between each MULTI-TEC unit and the LC controller in the daisy chain. When calculating wire length that is needed, be sure to include routing distance to each unit, conduit requirements and a loop for an EMI ferrite filter inside each unit control panel.
Communication wiring between remote temp/humidity sensor and LC6000 Controller	100ft (30m)	18ga. 5-Wire Shielded Cable with Drain. This is required to communicate between each zone temperature/humidity sensor and the LC6000 controller. Color or numbered wiring is recommended. 6-Wire may be used if 5-Wire is unavailable.
Communication wiring between remote temperature sensor and LC6000 Controller	100ft (30m)	18ga. 2-Wire Shielded Cable with Drain. This is required to communicate between each zone temperature/humidity sensor and the LC6000 controller. Color or numbered wiring is recommended.

/////// UNIT SETUP VERIFICATION AND COMMISSIONING CHECKLIST

Job Information: **Contact information may be used to review unit installation and setup parameters. This form is found at www.bardhvac.com. Please fill out all data that is applicable.**	
Job Visit Date:	Customer Name:
Job Name:	HVAC Installer:
Job Address:	Site Technician:
Job City/State:	Rep/Distributor:

Unit Information: **Record the following information located on serial plate, TEC-EYE information, and blueprints:**

Unit Address	Unit Model #	Unit Serial #	Unit Software Version	Zone #

Unit Data: **Record the following TEC-EYE information and Amp Clamp/Meter readings:**

Unit Address	Unit Voltage	24VAC on 208V tap?	Phasing Correct?	Sensors Accurate?	Blower Amps	Comp. Amps	Cond. Fan Amps	Hi/Lo Pressures (transducer only)

Zone Information: **Record the following information based on the setup blueprints/job specifications:**									
Zone:	**# of total units**	**Max # of units running**	**Zone Cooling Setpoint**	**Zone Heating Setpoint**	**Zone Dehum. Setpoint**	**Zone Humidify Setpoint**	**Zone Free cooling Temp.**	**Zone Free cooling Hum. RH%**	**Zone free cooling Dew point**
Zone 1									
Zone 2									
Zone 3									

Zone:	**Staging type**	**Rotation sched. days**	**Continuous Blower**	**Hi Temp 1 setpoint**	**Hi temp 2 setpoint**	**Low temp alarm**	**Hi humidity alarm**	**Low humidity alarm**	**Dehum Config.**	**Hi sensible config.**
Zone 1										
Zone 2										
Zone 3										

/////// NOTES:

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