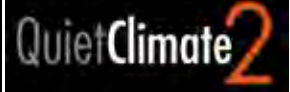




THE WALL-MOUNT™ STEP CAPACITY HEAT PUMPS

Integrated Part Load Value (IPLV) Efficiency Up To 14.5 BTU/WATT



CH3S1, CH4S1, CH5S1
3 to 5 Ton (34,000 to 52,500 Btuh)
Right Side Control Panel 60Hz

GREEN REFRIGERANT
R-410A

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

The Bard CH "S" Series is the world's most energy efficient wall mounted heat pump. It has special sound reduction technology (patent applied for), and built with environmentally friendly non-ozone depleting refrigerant. Built-in sound reducing plenum is standard. Special sound and vibration curbs are also available for various wall construction, along with supply and return air acoustical plenums to further lower and help control sound levels as low as the mid-30's.

The Bard Wall-Mount Heat Pump 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, portable structures or correctional facilities.

A slide-in dehumidifier option is available that fits completely inside the CH-Series heat pump. It can be factory or field installed and employs a completely separate refrigeration circuit from the main heat pump system.

Patented ventilation options are also available, as are additional control options to supplement the standard factory controls. Additional field installed installation options 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.

Step Capacity Compressor:

Copeland step-capacity (2-stage) scroll compressors are designed for increased efficiency, quieter operation and improved reliability for longer life. Mounted on isolation rails with double grommets. Insulated sound cover system is standard.

Current Sensing Relay:

Specially designed relay detects high amps caused by high ambient or low voltage conditions, and drops compressor to 1st stage to keep on-line until voltage condition is corrected.

R-410A Refrigerant:

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

Liquid Line Filter Drier:

Protects system against moisture.

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.

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.

Ventilation Controller:

Standard with CHCRV-5 Commercial Room Ventilator. Automatically adjusts damper position to maintain the desired ventilation airflow rate up to 480 cfm of fresh air during any operation mode. Fully closes during unoccupied modes. Factory set for 480 cfm. Also, CO₂ sensor ready - just add CO₂ sensor for demand ventilation based on CO₂ level in the space.

Solid State Electronic Heat Pump Control:

Provides efficient 30, 60 or 90-minute defrost cycle. A thermistor sensor, speed up terminal for service and 10-minute defrost override are standard on the electronic heat pump control. 5-minute compressor short cycle protection is standard.

Emergency Heat Circuit:

Permits continuous operation of the system.

High & Low Pressure Switches are Auto-Reset

Built-in lockout 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.

Pre-Painted 20 Gauge Zinc Coated Steel Cabinet:

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

Pre-Painted 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/Rotary Disconnect:

Standard on all versions of single (230/208 volt) and three phase (230/208 volt) equipment. Rotary 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.

Top Rain Flashing:

Standard feature on all models.

Certified Capacity and Efficiency Ratings at Full Capacity

MODELS	CH3S1	CH4S1	CH5S1
Cooling BTUH, Stage 2 (Full Capacity) ① 80/67-95	34,000	45,000	52,500
EER ①②	10.3	10.7	9.1
Rated CFM	1100	1500	1700
IPLV (Integrated Stage 1 and Stage 2) ①③ 80/67-80	14.5	14.5	13.6
High Temperature 47° Heating BTUH, Stage 2 (Full Capacity)	32,400	41,000	54,000
COP ①④	3.2	3.2	3.2
Rated CFM	1100	1500	1700
Low Temperature 17° Heating BTUH, Stage 2 (Full Capacity)	17,000	23,000	28,400
COP ①④	2.0	2.1	2.0
Rated CFM	1100	1500	1700

① Certified in accordance with ARI Standard 390-2003 for single package vertical units

② EER = Energy Efficiency Ratio - BTU/WATT efficiency

③ Integrated Part Load Value - BTU/WATT efficiency (combines Stage 1 & 2 performance)

④ COP = Coefficient of Performance - BTU/WATT efficiency

Capacity and Efficiency Ratings at Partial Capacity

MODELS	CH3S1	CH4S1	CH5S1
Cooling BTUH, Stage 1 (Partial Capacity) 80/67-95	25,000	33,000	39,000
EER @ Part Load (80/67-80) Stage 1 Cooling	11.2	11.2	10.0
Operating CFM	800	1100	1300
High Temperature Heating 47° BTUH, Stage 1 (Partial Capacity)	22,350	29,400	38,000
Operating CFM	800	1100	1300

Specifications 3 Ton through 5 Ton

MODELS	CH3S1-A	CH3S1-B	CH3S1-C	CH4S1-A	CH4S1-B	CH4S1-C	CH5S1-A	CH5S1-B	CH5S1-C
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	12.8/15.4	8.4/10.1	4.1	18.0/21.0	11.3/13.2	6.3	21.7/26.8	16.4/20.3	10.4
Branch Circuit Selection Current	16.7	11.2	4.5	21.2	13.5	6.5	26.8	20.3	10.4
Lock Rotor Amps	82/82	58/58	29	96/96	88/88	41	118/118	135/135	62
Compressor Type	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage	Scroll - 2 Stage
Fan Motor & Condenser									
Fan Motor--HP-RPM-SPD	1/3-825-2	1/3-825-2	1/3-825-1	1/3-825-2	1/3-825-2	1/3-825-1	1/3-825-2	1/3-825-2	1/3-825-1
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" - 2850	24" - 2850	24" - 2850	24" - 2850	24" - 2850	24" - 2850
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	3	3	3	5	5	5	5.6	5.6	5.6
CFM w/Filter ①	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.	665	665	665	700	700	700	700	700	700

① Rated CFM for 2nd Stage cooling (wet coil) and 2nd Stage heat pump mode.
See Indoor Blower Performance table on page 9 for complete details.



- Complies with efficiency requirements of ASHRAE/IESNA 90.1-2010.
- Certified to ARI Standard 390-2003 for SPVU (Single Package Vertical Units).
- Intertek ETL Listed to Standard for Safety Heating and Cooling Equipment ANSI/UL 1995/CSA 22.2 No. 236-05, Third Edition.
- Commercial Product - Not intended for Residential application.



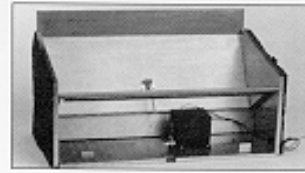
Ventilation System Packages

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.



MODULATING COMMERCIAL ROOM VENTILATOR

MODULATING COMMERCIAL ROOM VENTILATOR - CHCRV-5

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 while on Stage 1, Stage 2 or ventilation modes of operation.

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 ANSI/ASHRAE Standard 62.1 "Ventilation for Acceptable Indoor Air Quality."

CO₂ Sensor Ready

- The CHCRV is designed for CO₂ based ventilation control by simply wiring in a field installed CO₂ sensor if desired.



ECONOMIZER

ECONOMIZER - CHEIFM-5

OPTIONAL

The built-in economizer system is internally mounted behind the service door and allows outdoor air to be introduced through the air inlet openings. The amount of outdoor air varies in response to the system controls and settings defined by the end user. It includes a built-in exhaust air damper. The economizer is designed to provide "free cooling" when outside air conditions are cool and dry enough to satisfy cooling requirements without running the compressor. This in turn provides lower operating costs, while extending the life of the compressor.

Standard Features:

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



ENERGY RECOVERY VENTILATOR

WALL-MOUNT ENERGY RECOVERY VENTILATOR - CHERV

OPTIONAL

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

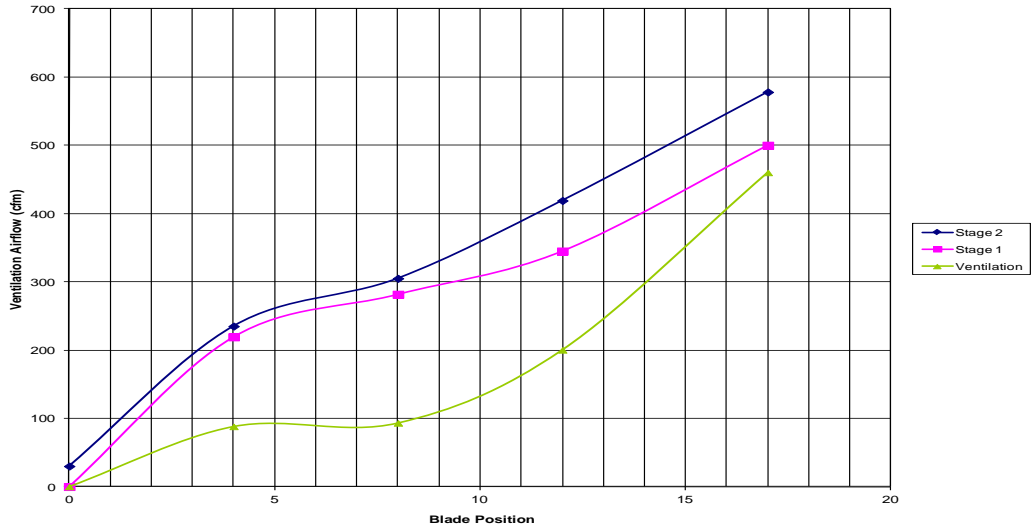
The CHERV consists of a unique "rotary energy recovery cassette" that provides effective sensible and latent heat transfer capabilities during summer and winter conditions. Various control schemes are addressed including limiting ventilation during building occupancy only.

The CHERV is designed to be internally mounted behind the service door in the CHS model Wall Mount units. It can be built-in at the factory or field installed as an option.

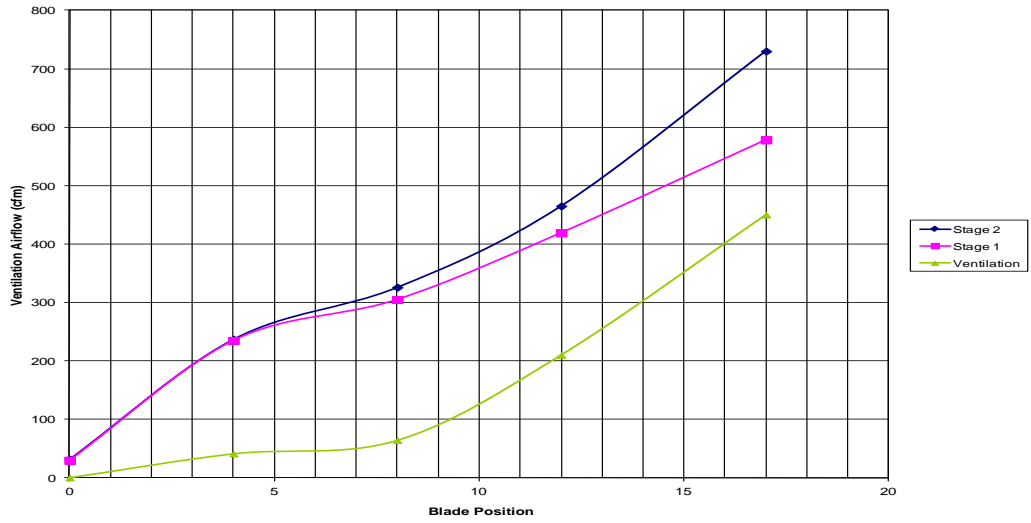
Manufactured under U.S. Patent Nos. 5,485,878; 5,301,744

Other Patents Pending

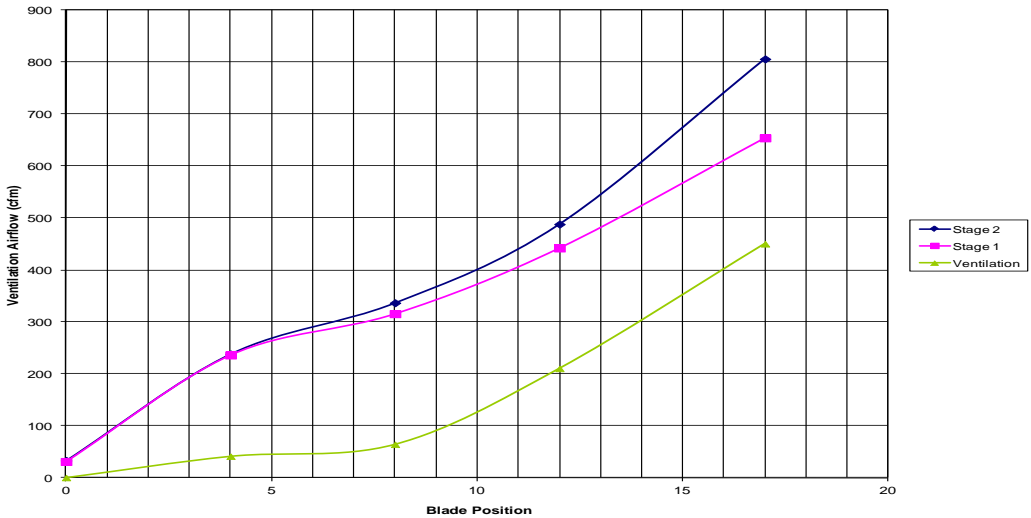
CH3S1 Vent Airflow



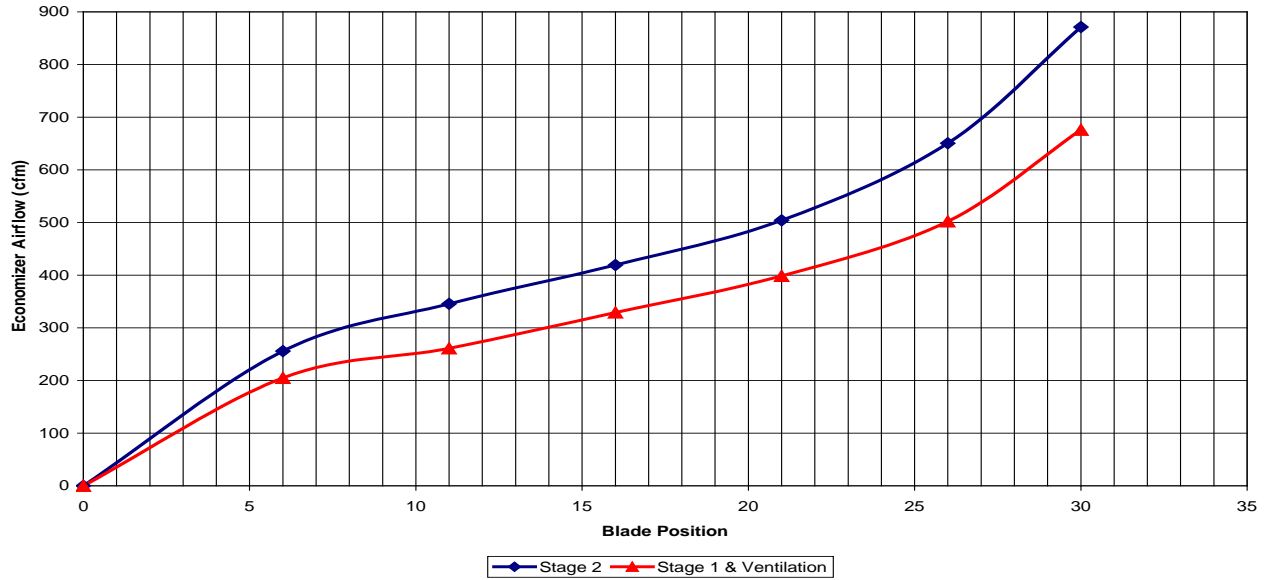
CH4S1 Vent Airflow



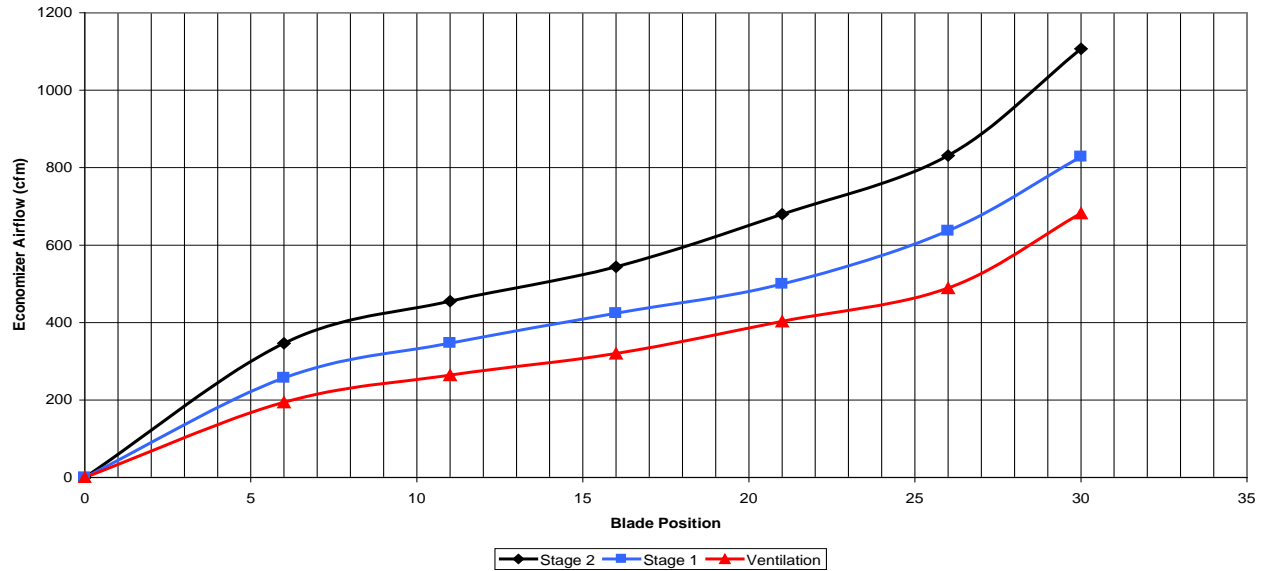
CH5S1 Vent Airflow



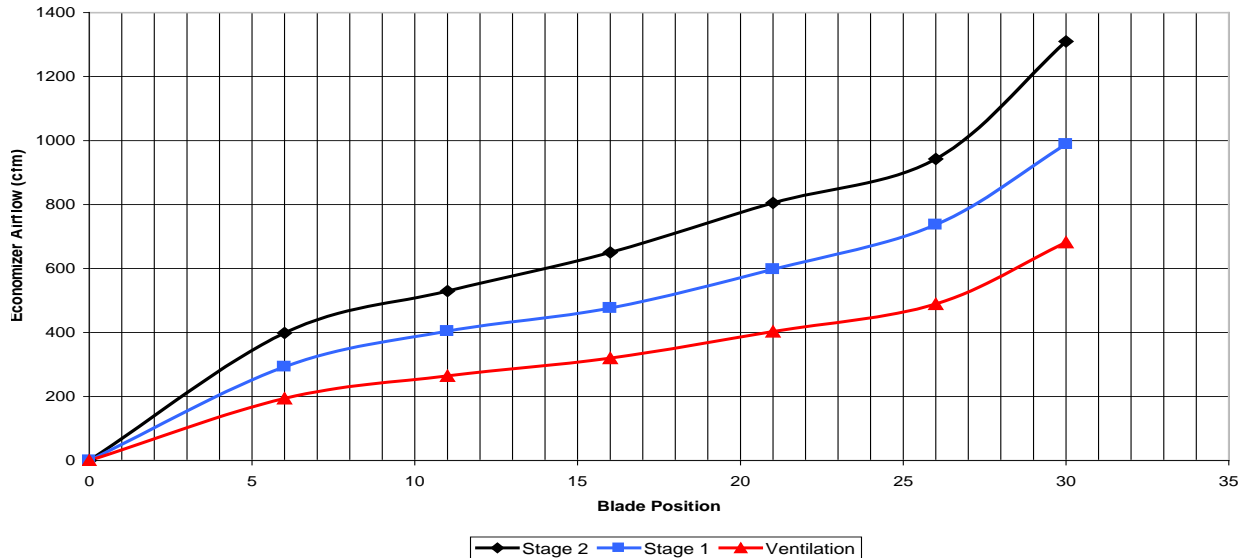
CH3S1 Economizer Airflow



CH4S1 Economizer Airflow



CH5S1 Economizer Airflow



Performance and Application Data- CHERV-*5 (230V & 460V)

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

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

CHERV-* WINTER HEATING PERFORMANCE (INDOOR DESIGN CONDITIONS 70°DB)

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

LEGEND:

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

NOTE: Sensible performance only is shown for winter application.

Electrical Specifications

Model	Rated Volts & Phase	No. Field Power Circuits	Single Circuit				Multiple Circuit													
			① Minimum Circuit Ampacity	② Maximum External Fuse or Ckt. Brkr.	③ Field Power Wire Size	④ Ground Wire	① Minimum Circuit Ampacity			② Maximum External Fuse or Ckt. Brkr.			③ Field Power Wire Size			④ 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		
CH3S1 - A0Z - A05 - A10 - A15 ④	230/208-1	1	29	45	8	10														
		1	55	60	6	10														
		1 or 2	81	90	4	8	29	52		45	60		10	6		10	10			
		1 or 2	89	90	4	8	37	52		45	60		8	6		10	10			
CH3S1 - B0Z - B06 - B09 - B15 ④	230/208-3	1	23	30	10	10														
		1	41	45	8	10														
		1	50	50	8	10														
		1	57	60	6	10														
CH3S1 - C0Z - C06 - C09 - C15 ④	460-3	1	11	15	14	14														
		1	20	20	12	12														
		1	25	25	10	10														
		1	29	30	10	10														
CH4S1 - A0Z - A04 - A05 - A10 - A15 ④ - A20 ④	230/208-1	1	37	50	8	10														
		1	57	60	6	10														
		1 or 2	63	70	6	8	37	26		50	30		8	10		10	10			
		1 or 2	89	90	3	8	37	52		50	60		8	6		10	10			
		1 or 2	92	100	3	8	40	52		50	60		8	6		10	10			
		1 or 3	118	125	2	8	40	52	26	50	60	30	8	6	10	10	10	10	10	
CH4S1 - B0Z - B06 - B09 - B15 ④ - B18 ④	230/208-3	1	27	35	8	10														
		1	45	50	8	10														
		1	54	60	6	10														
		1	54	60	6	10														
		2	NA	NA	NA	NA	41	28		50	30		8	10		10	10			
CH4S1 - C0Z - C06 - C09 - C15 ④ - C18 ④	460-3	1	15	20	12	12														
		1	24	25	10	10														
		1	28	30	10	10														
		1	32	35	10	10														
		1	37	40	8	10														
CH5S1 - A0Z - A04 - A05 - A10 - A15 ④ - A20 ④	230/208-1	1	44	60	6	10														
		1 or 2	65	70	6	8	44	21		60	25		8	10		10	10			
		1 or 2	70	80	4	8	44	26		60	30		8	10		10	10			
		1 or 2	96	110	3	6	44	52		60	60		8	6		10	10			
		1 or 2	96	110	3	6	44	52		60	60		8	6		10	10			
		1 or 3	119	125	2	6	44	52	26	60	60	30	8	6	10	10	10	10	10	
CH5S1 - B0Z - B06 - B09 - B15 ④ - B18 ④	230/208-3	1	36	50	8	10														
		1	54	60	6	10														
		2	NA	NA	NA	NA	36	28		50	30		8	10		10	10			
		2	NA	NA	NA	NA	36	28		50	30		8	10		10	10			
		2	NA	NA	NA	NA	42	28		50	30		8	10		10	10			
CH5S1 - C0Z - C06 - C09 - C15 ④ - C18 ④	460-3	1	19	25	10	10														
		1	28	35	8	10														
		1	32	35	8	10														
		1	32	35	8	10														
		1	37	40	8	10														

① These "Minimum Circuit Ampacity" values are to be used for sizing the field power conductors. Refer to the National Electrical code (latest version), Article 310 for power conductor sizing.

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.

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

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

④ Maximum KW that can operate with the heat pump on is 10KW for 1-phase and 9KW for 3-phase.

* 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.

Cooling Application Data — Outdoor Temperature ①

CH3S1	D.B./W.B. ②	Cooling 2nd Stage	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
	75/62	Total Cooling Sensible Cooling	39600 31300	36600 29800	34100 28500	31700 27200	29600 26200	27900 25300	26400 24500	25100 23700	24000 23200
	80/67	Total Cooling Sensible Cooling	42300 30300	39900 29200	37800 28200	35800 27200	34000 26400	32500 25700	31100 25100	29900 24500	28800 24100
	85/72	Total Cooling Sensible Cooling	50400 31100	46700 29700	43400 28400	40400 27000	37800 25900	35600 24900	33600 23900	31800 23000	30300 22200
	D.B./W.B. ②	Cooling 1st Stage	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
	75/62	Total Cooling Sensible Cooling	25600 22900	24800 21800	23900 20700	22900 19800	21800 19200	20700 18500	19500 18000	18300 17500	17300 17200
	80/67	Total Cooling Sensible Cooling	27300 22200	27000 21300	26500 20500	25800 19800	25000 19300	24100 18800	23000 18400	21800 18100	20500 17900
85/72	Total Cooling Sensible Cooling	32600 22800	31600 21600	30500 20600	29200 19700	27800 19000	26400 18200	24800 17600	23200 17000	21600 16500	

CH4S1	D.B./W.B. ②	Cooling 2nd Stage	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
	75/62	Total Cooling Sensible Cooling	49500 37800	46600 37500	44000 36900	41600 36200	39200 35300	37100 34200	35000 33000	33000 31600	31200 29900
	80/67	Total Cooling Sensible Cooling	52800 36600	50800 36700	48900 36500	47000 36200	45000 35600	43200 34800	41300 33800	39400 32600	37500 31100
	85/72	Total Cooling Sensible Cooling	62900 37500	59400 37300	56200 36700	53100 36000	50000 34900	47300 33700	44500 32200	41900 30600	39400 28700
	D.B./W.B. ②	Cooling 1st Stage	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
	75/62	Total Cooling Sensible Cooling	35000 28600	33400 27800	31900 26900	30400 26100	28800 25400	27100 24600	25500 23800	23800 23100	22000 22300
	80/67	Total Cooling Sensible Cooling	37300 27700	36400 27200	35400 26600	34300 26100	33000 25600	31600 25000	30100 24400	28400 23800	26500 23200
85/72	Total Cooling Sensible Cooling	44500 28400	42600 27600	40700 26700	38700 26000	36700 25100	34600 24200	32500 23300	30200 22300	27900 21400	

CH5S1	D.B./W.B. ②	Cooling 2nd Stage	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
	75/62	Total Cooling Sensible Cooling	59100 45300	55300 43800	51700 42300	48600 40900	45700 39600	43300 38400	41000 37300	39100 36300	37400 35400
	80/67	Total Cooling Sensible Cooling	63100 43900	60200 42900	57400 41900	54900 40900	52500 40000	50400 39100	48400 38300	46600 37500	45000 36800
	85/72	Total Cooling Sensible Cooling	75200 45000	70400 43600	65900 42100	62000 40600	58300 39200	55100 37800	52200 36500	49600 35200	47300 33900
	D.B./W.B. ②	Cooling 1st Stage	75°F	80°F	85°F	90°F	95°F	100°F	105°F	110°F	115°F
	75/62	Total Cooling Sensible Cooling	44000 35200	41300 34100	38800 33000	36600 32000	34300 30900	32400 30000	30500 29000	28900 28000	27300 27000
	80/67	Total Cooling Sensible Cooling	47000 34100	45000 33400	43100 32700	41300 32000	39400 31200	37700 30500	36000 29700	34400 28900	32800 28100
85/72	Total Cooling Sensible Cooling	56000 34900	52600 33900	49500 32900	46600 31800	43800 30600	41300 29500	38800 28300	36600 27100	34500 25900	

① Below 55°F, unit requires a factory of field installed low ambient control.

② Return air temperature °F.

Capacity Multiplier Factors			
% of Rated Airflow	-10	Rated	10
Total BTUH	0.975	1	1.02
Sensible BTUH	0.95	1	1.05

Heating Application Data — Outdoor Temperature ③

CH3S1	Heating 2nd Stage	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F
	BTUH	9800	12200	14700	17100	18600	19500	20400	21300	26000	30700	34000	36400	38800	41200
	Watts	2380	2440	2510	2570	2610	2620	2630	2640	2780	2930	3030	3100	3160	3230
	COP	1.21	1.47	1.72	1.95	2.09	2.19	2.28	2.37	2.75	3.07	3.29	3.45	3.60	3.74
	1st Stage	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F
	BTUH	6000	7700	9500	11200	12500	13400	14300	15200	18200	21200	23400	25200	26900	28700
	Watts	1980	2000	2020	2040	2050	2040	2030	2020	2090	2150	2180	2200	2220	2240
COP	0.89	1.13	1.38	1.61	1.79	1.93	2.07	2.21	2.56	2.89	3.15	3.36	3.56	3.76	
CH4S1	Heating 2nd Stage	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F
	BTUH	12800	15800	18800	21800	23900	25400	26900	28400	33600	38900	42800	45800	48800	51800
	Watts	2940	3030	3130	3220	3290	3330	3380	3430	3590	3750	3870	3970	4060	4150
	COP	1.28	1.53	1.76	1.99	2.13	2.24	2.34	2.43	2.75	3.04	3.25	3.39	3.53	3.66
	1st Stage	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F
	BTUH	8500	10700	12900	15200	16900	18200	19500	20900	24400	28000	30800	33000	35300	37500
	Watts	2430	2480	2520	2560	2590	2620	2640	2660	2740	2810	2870	2910	2960	3000
COP	1.03	1.27	1.50	1.74	1.92	2.04	2.17	2.31	2.61	2.92	3.15	3.33	3.50	3.67	
CH5S1	Heating 2nd Stage	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F
	BTUH	14300	18500	22700	27000	30600	33800	37000	40300	46000	51800	56600	60800	65100	69300
	Watts	3610	3760	3910	4060	4190	4310	4430	4550	4750	4950	5120	5270	5420	5570
	COP	1.17	1.45	1.71	1.95	2.14	2.30	2.45	2.60	2.84	3.07	3.24	3.39	3.52	3.65
	1st Stage	0°F	5°F	10°F	15°F	20°F	25°F	30°F	35°F	40°F	45°F	50°F	55°F	60°F	65°F
	BTUH	13000	15600	18300	21000	23300	25400	27500	29600	33100	36600	39600	42300	45000	47600
	Watts	3080	3140	3190	3250	3300	3340	3390	3440	3510	3580	3640	3700	3750	3810
COP	1.24	1.46	1.69	1.90	2.07	2.23	2.38	2.53	2.77	3.00	3.19	3.35	3.52	3.67	

③ 70°F DB indoor return air at rated CFM includes defrost operation below 45°.

Indoor Blower Performance - CFM (0.00" through 0.50" H₂O) ①

Model	Rated ESP	① Max ESP	② 2nd Stage Cooling 2nd Stage Heating	③ 1st Stage Cooling 1st Stage Heating	④ Blower Only or Vent Mode	Electric Heat
CH3S1	0.15	0.5	1100	800	800	1100
CH4S1	0.2	0.5	1500	1100	850	1700
CH5S1	0.2	0.5	1700	1300	850	1700

NOTE: These units are equipped with a variable speed (ECM) indoor motor that automatically adjusts itself to maintain approximately the same rate of indoor airflow in both heating and cooling, dry and wet coil conditions and at both 230/208 or 460 volts.

- ① Maximum ESP (inches WC) shown is with 2" thick disposable filter.
- ② Rated CFM for 2nd Stage Operation – required for maximum performance rating.
- ③ 1st Stage – the CFM output on 1st Stage Heating or Cooling.
- ④ Blower only CFM is the total air being circulated during continuous fan mode.

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

Nominal	At 240V (1)				At 208V (1)				At 480V (2)			At 460V (2)		
	KW	1-Ph Amps	3-Ph Amps	Btuh	KW	1-Ph Amps	3-Ph Amps	Btuh	KW	3-Ph Amps	Btuh	KW	3-Ph Amps	Btuh
4.0	4.0	16.7		13,562	3.00	14.4		10,239						
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
9.0	9.0		21.7	30,717	6.75		18.7	23,038	9.0	10.8	30,717	8.28	10.4	28,260
10.0	10.0	41.7		34,130	7.50	36.1		25,598						
15.0	15.0	62.5	36.1	51,195	11.25	54.1	31.2	38,396	15.0	18.0	51,195	13.80	17.3	47,099
18.0	18.0		43.3	61,434	13.50		37.5	46,076	18.0	21.7	61,434	16.56	20.8	56,519
20.0	20.0	83.3		68,260	15.00	72.1		51,195						

- (1) These electric heaters are available in 230/208V units only.
- (2) These electric heaters are available in 480V units only.

Heater Packages - Field Installed

- Circuit breaker standard on 230/208V Models
- Toggle disconnect standard on 460V-3 Models

• ETL Listed
US & Canada

Heat Pump Models	-A Models 230/208-1			-B Models ① 230/208-3		-C Models ① 460-3	
	Front Outlet Heater Model #	Top Outlet Heater Model #	KW	Heater Model #	KW	Heater Model #	KW
CH3S1	EHCH3S-A05	EHCH3S-A05	5	EHCH3S-B06	6	EHCH5S-C06	6
	EHCH3S-A10	EHCH3S-A10	10	EHCH3S-B09	9	EHCH5S-C09	9
	EHCH3S-A15	EHCH3S-A15	15	EHCH3S-B15	15	EHCH5S-C15	15
CH4S1	EHCH4S-A04	EHCH4S-A04	4	EHCH4S-B06	6	EHCH5S-C06	6
	EHCH4S-A05	EHCH4S-A05	5	EHCH4S-B09	9	EHCH5S-C09	9
	EHCH4S-A10	EHCH4STA10	10	EHCH4S-B15	15	EHCH5S-C15	15
	EHCH4S-A15	EHCH4STA15	15	EHCH5S-B18	18	EHCH5S-C18	18
	EHCH4S-A20	EHCH4STA20	20				
CH5S1	EHCH5S-A04	EHCH5S-A04	4	EHCH5S-B06	6	EHCH5S-C06	6
	EHCH5S-A05	EHCH5S-A05	5	EHCH5S-B09	9	EHCH5S-C09	9
	EHCH5S-A10	EHCH5STA10	10	EHCH5S-B15	15	EHCH5S-C15	15
	EHCH5S-A15	EHCH5STA15	15	EHCH5S-B18	18	EHCH5S-C18	18
	EHCH5S-A20	EHCH5STA20	20				

① -B and -C Models use same heater packages for front and top outlet.

Clearances Required for Service Access and Adequate Condenser Airflow

MODELS	LEFT SIDE	RIGHT SIDE
CH3S1, CH4S1, CH5S1	20"	41"

Minimum Clearances Required to Combustible Materials

MODELS ①	SUPPLY AIR DUCT FIRST THREE FEET	CABINET
CH3S1, CH4S1, CH5S1	0"	0"

① Refer to Installation Instructions for detailed information.

CHDM Slide-In Dehumidifier Option

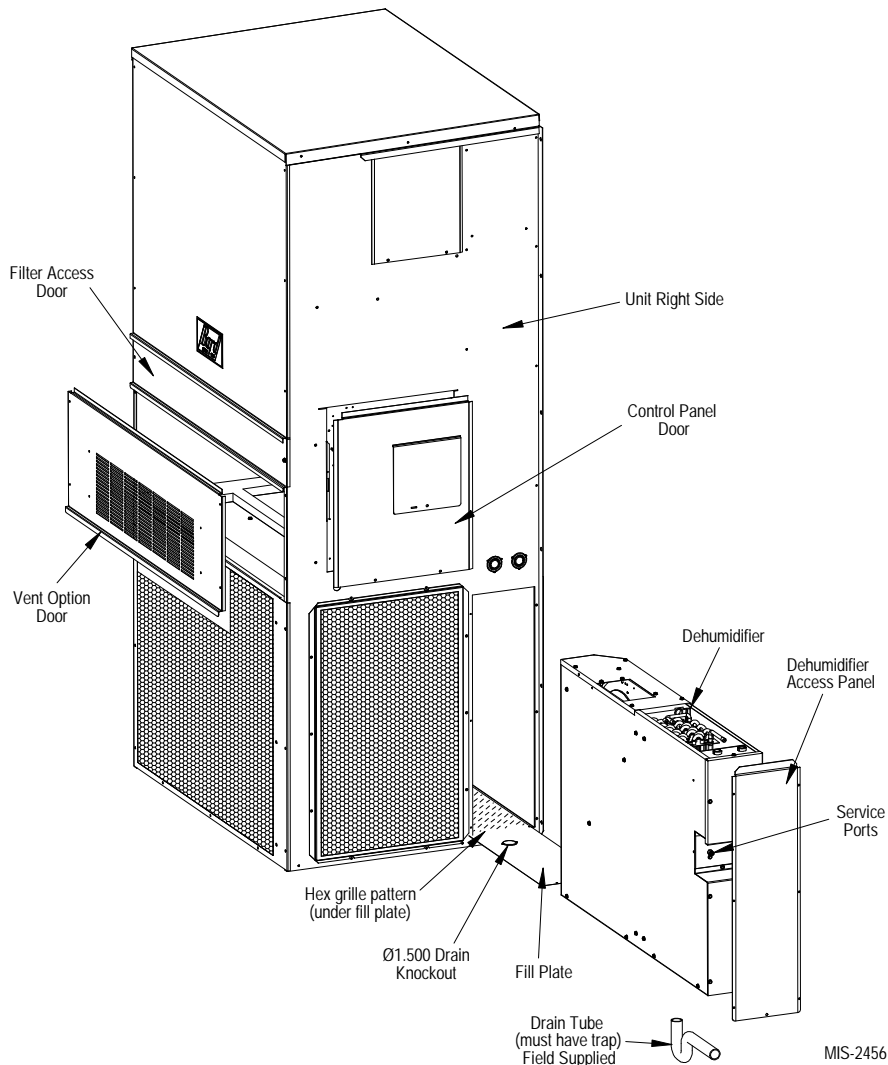
The CHDM Dehumidifier is a unique dehumidifier concept employing a completely separate refrigeration circuit from the main heat pump system, yet fits completely inside the basic heat pump cabinet.

Standard Features:

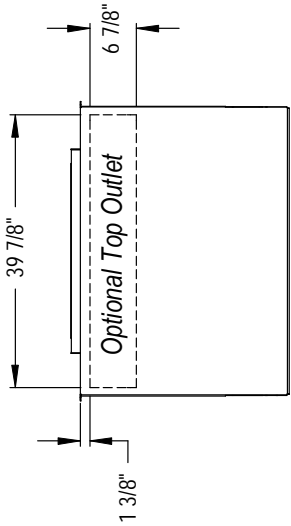
- Independent refrigerant circuit
- Completely self-contained, designed to slide into CH Series Heat Pumps
- Factory installed or field installed in minutes
- 230/208-60-1, wires into main unit control panel (also used in 460V models). Does not increase unit wire size.
- R-410A Green Refrigerant, same as base CH Heat Pump
- Controls humidity during occupied or unoccupied periods
- Operates in conjunction with main heat pump in Stage 1 cooling or heating modes (inhibited during 2nd stage compressor operation).
- Uses independent humidistat, and dehumidifies return air from the room and therefore is a true humidity control system.
- CHDM weight - 96 lbs.

CHDM Dehumidifier Performance---Water Removal Lbs/Hour (Lbs/Day)							
Dry Bulb Temp F	Relative Humidity % RH						
	50	55	60	65	70	75	80
65	1.0 (24.0)	1.3 (31.2)	1.5 (36.0)	1.7 (40.8)	2.0 (48.0)	2.2 (52.8)	2.4 (57.6)
70	1.2 (28.8)	1.5 (36.0)	1.8 (43.2)	2.0 (48.0)	2.3 (55.2)	2.6 (62.4)	2.8 (67.2)
75	1.4 (33.6)	1.7 (40.8)	2.0 (48.0)	2.4 (57.6)	2.7 (64.8)	3.0 (72.0)	3.3 (79.2)
80	1.7 (40.8)	2.0 (46.0)	2.4 (57.6)	2.7 (64.8)	2.8 (67.2)	3.4 (81.6)	3.7 (88.8)
85	2.0 (48.0)	2.3 (55.2)	2.8 (67.2)	3.1 (74.4)	3.5 (84.0)	3.9 (93.6)	4.3 (103.2)
90	2.2 (52.8)	2.7 (64.8)	3.1 (74.4)	3.6 (86.4)	4.0 (96.0)	4.4 (105.6)	4.8 (115.2)

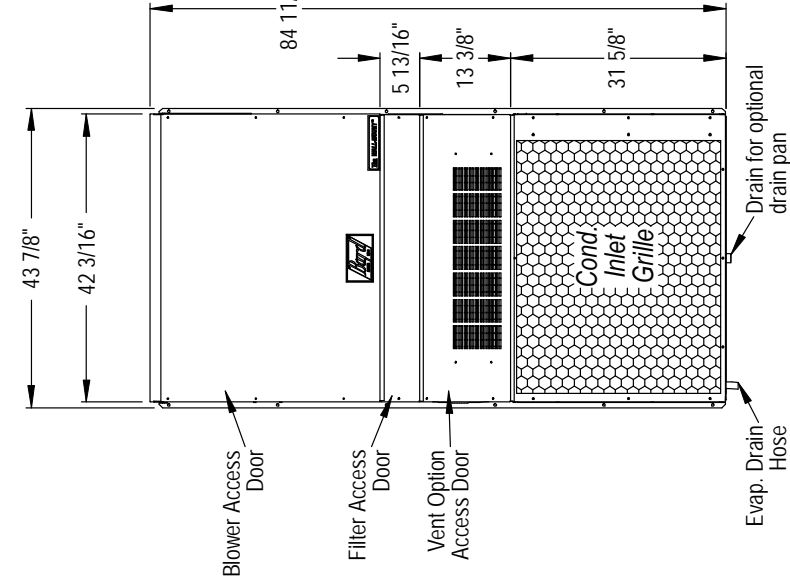
Notes: Dry Bulb Temperature F and % are the return air conditions to the CH unit.
One pint of water equals 1.04 lb.



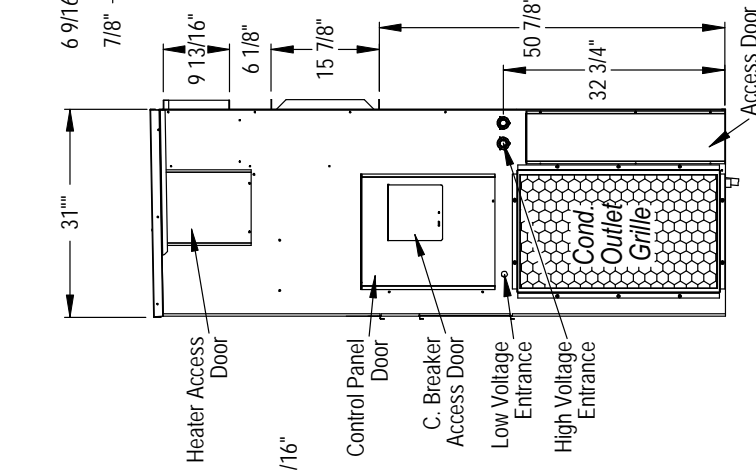
"CH3S1" Unit Dimensions



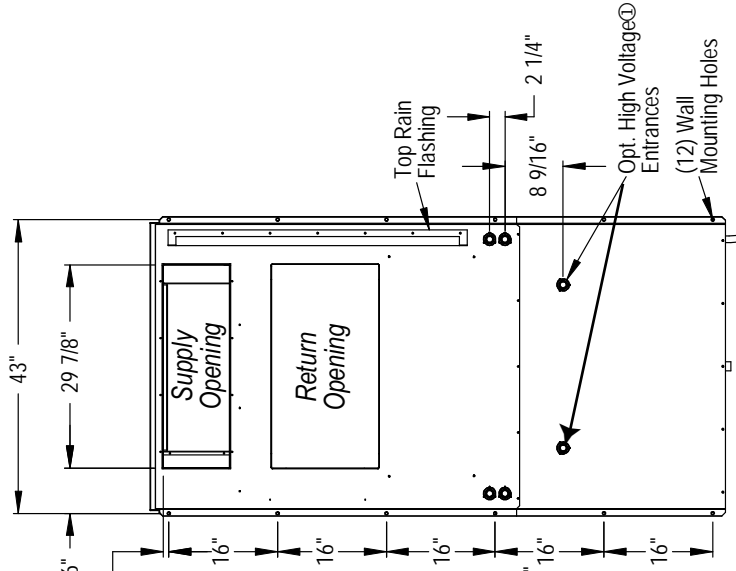
Top View



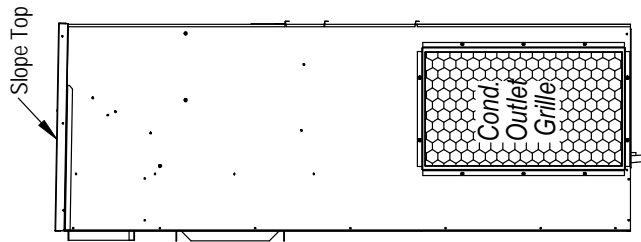
Front View



Right Side View



Back View

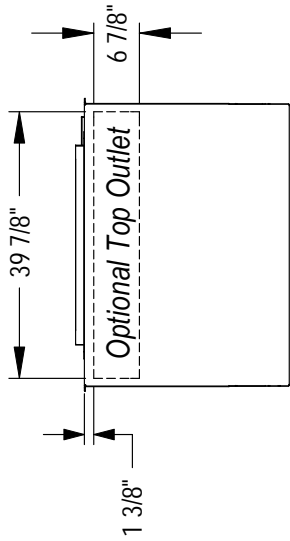


Left Side View

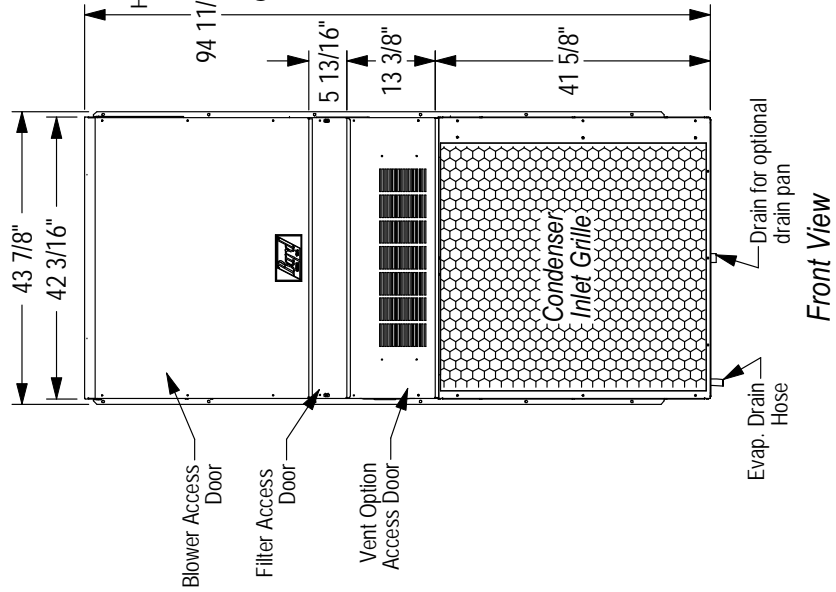
MIS-2146 A

① Do not use if optional CHDM dehumidifier is installed.

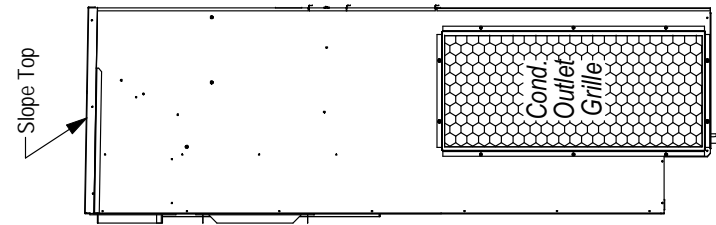
"CH4S1 and CH5S1" Unit Dimensions



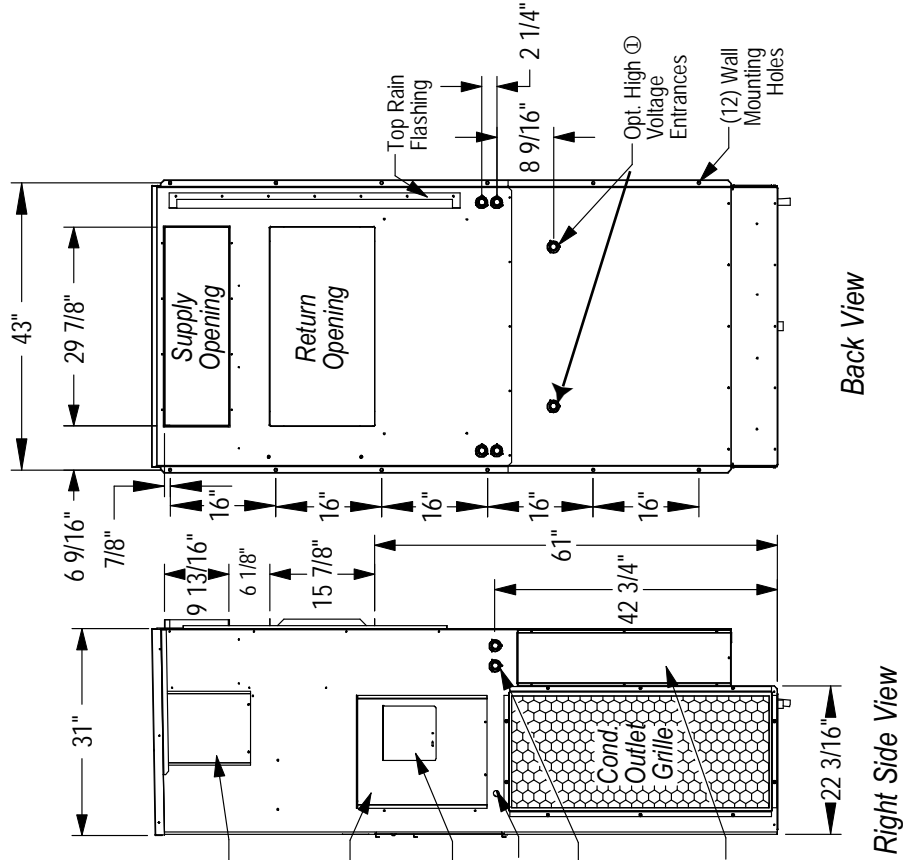
Top View



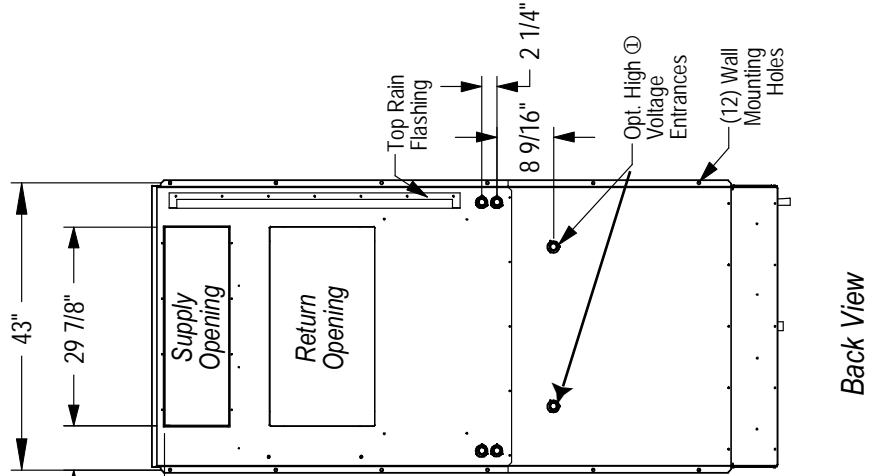
Front View



Left Side View



Right Side View

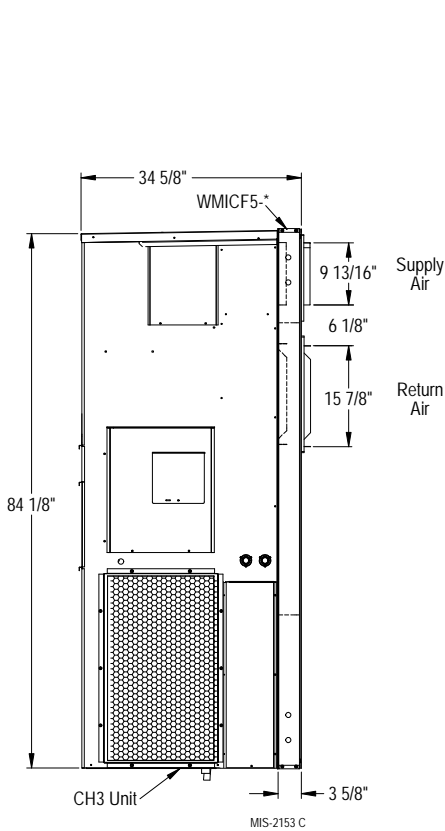


Back View

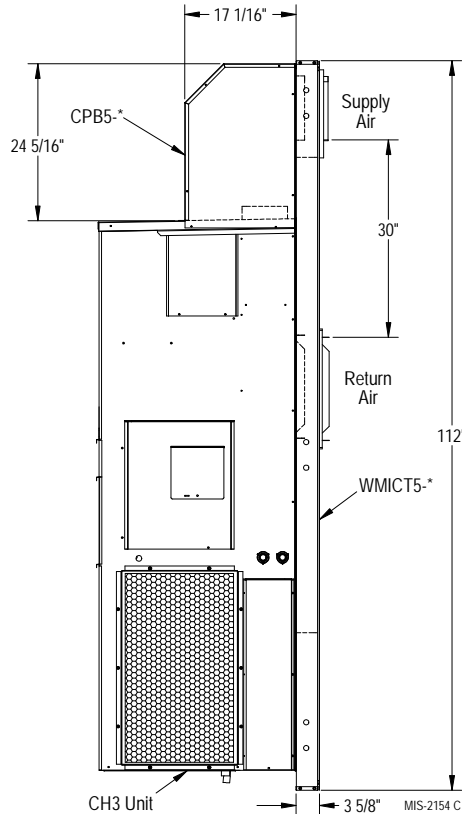
① Do not use if optional CHDM dehumidifier is installed.

CH3S Installation Options

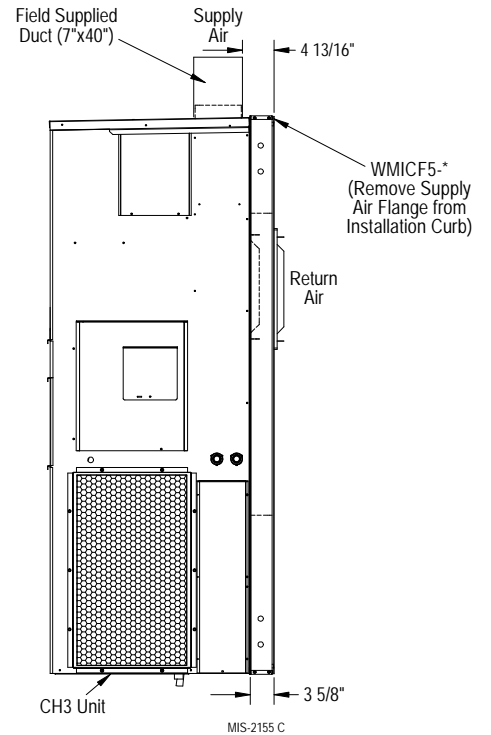
Installation with Standard Front Outlet and Front Installation & Isolation Curb



Installation with Optional Top Outlet, Top Outlet Plenum Box and Top Outlet Installation & Isolation Curb

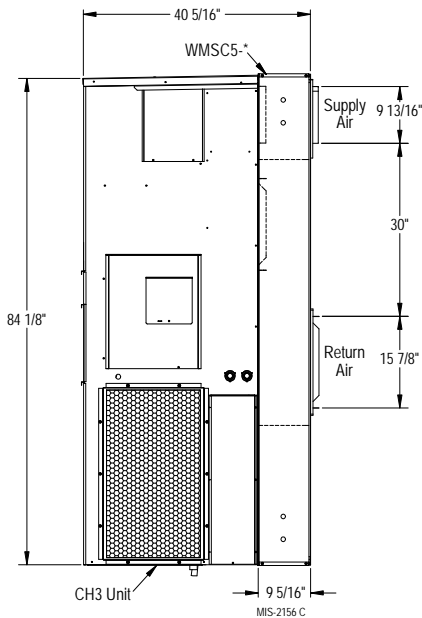


Installation with Optional Top Outlet, Field Supplied Duct and Front Outlet Installation & Isolation Curb



Installation with Standard Front Outlet and Front Installation & Sound Curb

Required only to replace older Model 42-60 Series Units with 30" spacing SA to RA



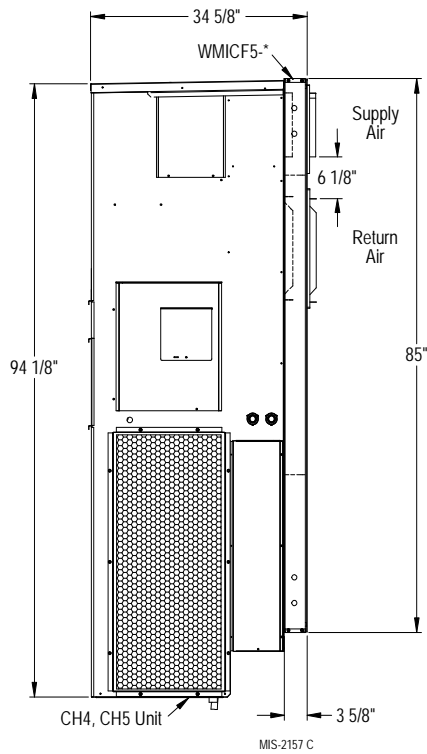
Optional Installation Accessories

Description	Model	Color	Shipping Weight (Lbs)
Isolation Curb Front Supply Air Outlet	WMICF5-X	Beige	125
	WMICF5-4	Buckeye Gray	125
	WMICF5-5	Desert Brown	125
	WMICF5-8	Dark Bronze	125
Isolation Curb Top Supply Air Outlet	WMICT5-X	Beige	140
	WMICT5-4	Buckeye Gray	140
	WMICT5-5	Desert Brown	140
	WMICT5-8	Dark Bronze	140
Sound Curb Front Supply Air Outlet	WMSC5-X	Beige	180
	WMSC5-4	Buckeye Gray	180
	WMSC5-5	Desert Brown	180
	WMSC5-8	Dark Bronze	180
Top Outlet Plenum Box	CPB5A-X	Beige	35
	CPB5A-4	Buckeye Gray	35
	CPB5A-5	Desert Brown	35
	CPB5A-8	Dark Bronze	35

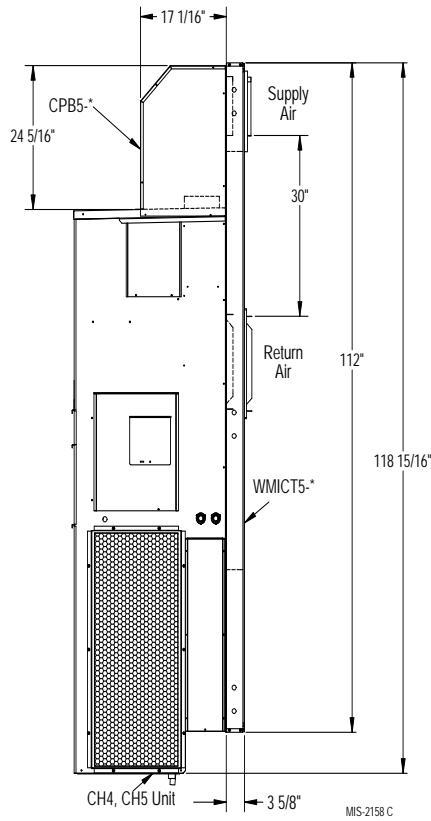
NOTE: See Page 18 for WMRSC3-* curb option to use CH3 units to replace older 3-ton units with 18" between 8 x 28 supply and 14 x 28 return openings.

CH4S & CH5S Installation Options

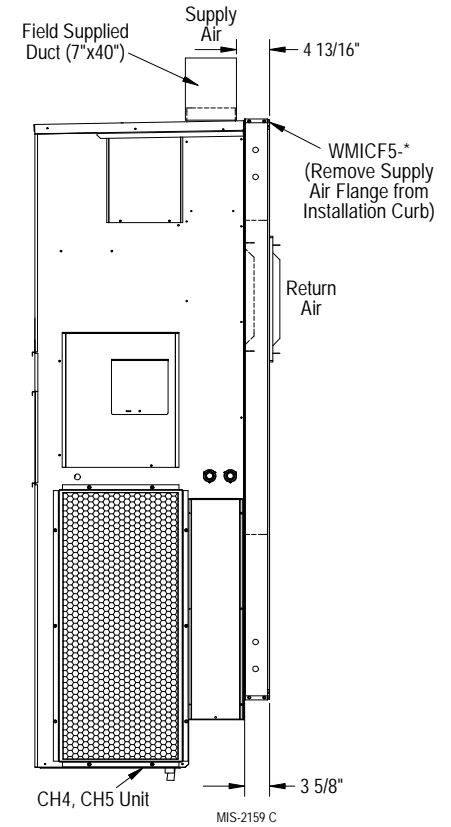
Installation with Standard Front Outlet and Front Installation & Isolation Curb



Installation with Optional Top Outlet, Top Outlet Plenum Box and Top Outlet Installation & Isolation Curb

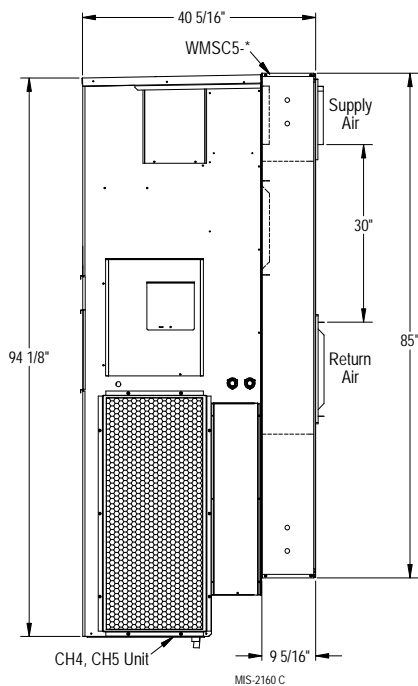


Installation with Optional Top Outlet, Field Supplied Duct and Front Outlet Installation & Isolation Curb



Installation with Standard Front Outlet and Front Installation & Sound Curb

Required only to replace older units with 30" spacing SA to RA

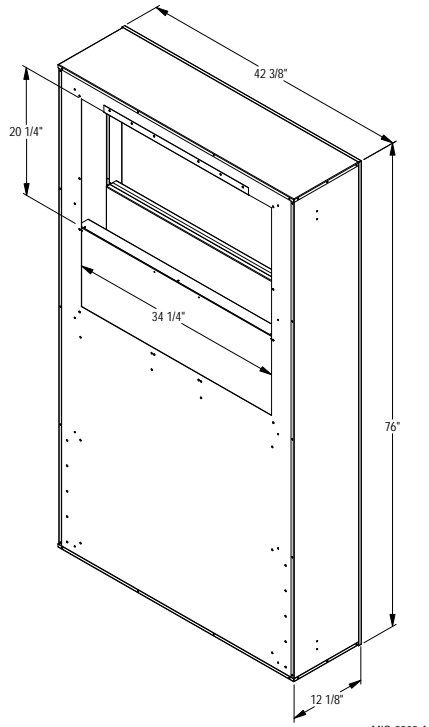


Optional Installation Accessories

Description	Model	Color	Shipping Weight (Lbs)
Isolation Curb Front Supply Air Outlet	WMICF5-X	Beige	125
	WMICF5-4	Buckeye Gray	125
	WMICF5-5	Desert Brown	125
	WMICF5-8	Dark Bronze	125
Isolation Curb Top Supply Air Outlet	WMICT5-X	Beige	140
	WMICT5-4	Buckeye Gray	140
	WMICT5-5	Desert Brown	140
	WMICT5-8	Dark Bronze	140
Sound Curb Front Supply Air Outlet	WMSC5-X	Beige	180
	WMSC5-4	Buckeye Gray	180
	WMSC5-5	Desert Brown	180
	WMSC5-8	Dark Bronze	180
Top Outlet Plenum Box	CPB5A-X	Beige	35
	CPB5A-4	Buckeye Gray	35
	CPB5A-5	Desert Brown	35
	CPB5A-8	Dark Bronze	35

Return Air Acoustical Plenum

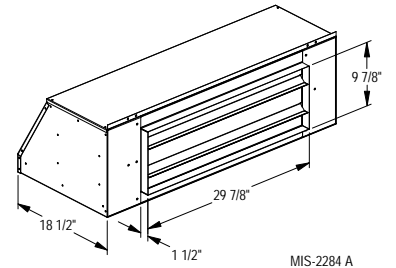
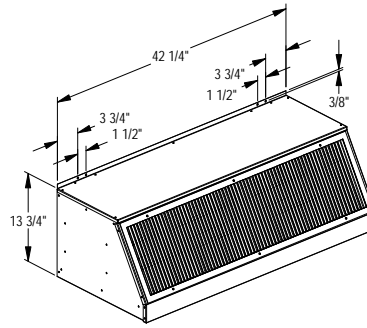
WAPR11



MIS-2208 A

Free Blow Acoustical Plenum

WAPFB51



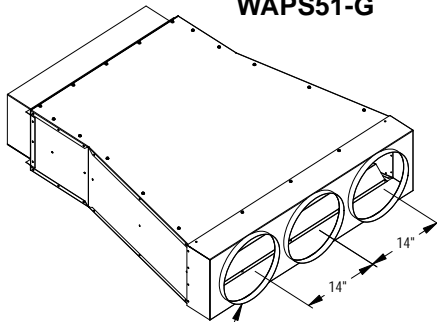
MIS-2284 A

Optional Installation Accessories

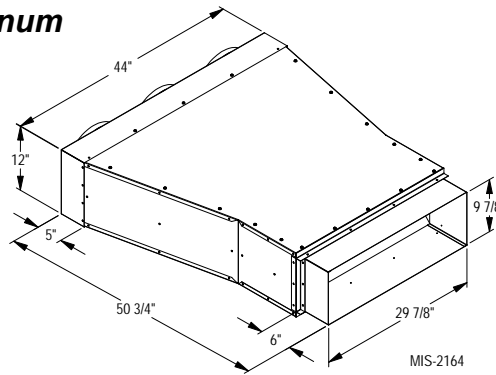
Description	Model	Color	Shipping Weight (Lbs)
Return Air Acoustical Plenum	WAPR11-X WAPR11-4	Beige Buckeye Gray	190
Ducted Supply Air Acoustical Plenum	WAPS51-G	Galvanized	132
Free Blow Supply Air Acoustical Plenum	WAPFB51-X WAPFB51-4	Beige Buckeye Gray	66

Supply Air Acoustical Plenum

WAPS51-G

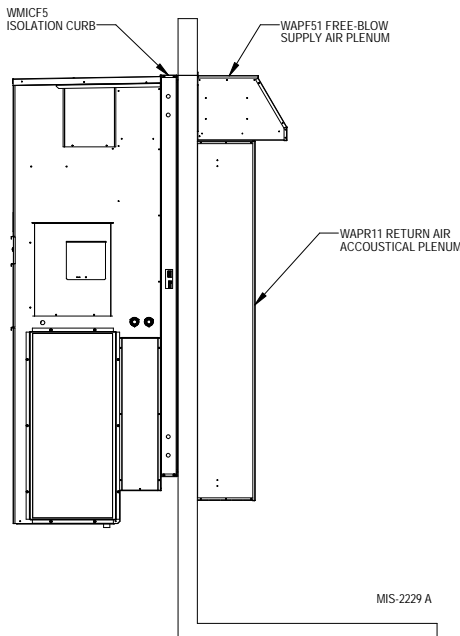


12" DIA. HOLES FOR DUCT COLLARS.
DUCT COLLARS FIELD SUPPLIED.



MIS-2164

Typical installation with isolation curb, free blow, supply air acoustical plenum & return air acoustical plenum.



Patent Pending

Typical Sound Performance with Installation/Isolation Curbs & Acoustical Plenums

CH3S1 Sound Data Matrix (dBA @ 10 feet)

Unit Mounting	Free Blow Configuration				Top Outlet Ducted Configuration ①			
	Direct	WMICF5 Isolation Curb	WMICF5 Isolation Curb	WMICF5 Isolation Curb	Direct	Direct	WMICT5 Isolation Curb	WMICT5 Isolation Curb
Supply Air Treatment	Grille	Grille	WAPFB51 Free Blow Supply Air Plenum	WAPFB51 Free Blow Supply Air Plenum	Standard Supply Duct	Standard Supply Duct	Standard Supply Duct	WAPS51-G Supply Air Silencer
Return Air Treatment	Grille	Grille	Grille	WAPR11-X Return Air Silencer	Grille	WAPR11-X Return Air Silencer	Grille	WAPR11-X Return Air Silencer
Blower Only Operation with CRV	37.6	37.2	34.8	34.3	31.8	31.4	30.6	29.9
Compressor Stage 1 Operation with CRV	45.1	44.0	43.0	40.5	43.8	41.6	41.8	38.7
Compressor Stage 2 Operation	47.5	46.3	42.9	41.5	44.6	41.3	40.8	39.2
Compressor Stage 2 with ERV High Speed Operation				42.8				41.9
Indoor Integrated dBA	43.2	42.2	40.0	38.3	40.7	38.3	38.1	35.8
Compressor Stage 2 Outdoor Sound Level	65.7	65.7	65.7	65.7	65.7	65.7	65.7	65.7

Note 1: dBA is sound pressure measured 10 feet in front of unit and 5 feet above floor.

Note 2: Unit or isolation curb is mounted to frame construction.

Note 3: Results may vary depending upon other factors such as room size, type of construction and acoustical variances.

CH4S1 Sound Data Matrix (dBA @ 10 feet)

Unit Mounting	Free Blow Configuration				Top Outlet Ducted Configuration ①			
	Direct	WMICF5 Isolation Curb	WMICF5 Isolation Curb	WMICF5 Isolation Curb	Direct	Direct	WMICT5 Isolation Curb	WMICT5 Isolation Curb
Supply Air Treatment	Grille	Grille	WAPFB51 Free Blow Supply Air Plenum	WAPFB51 Free Blow Supply Air Plenum	Standard Supply Duct	Standard Supply Duct	Standard Supply Duct	WAPS51-G Supply Air Silencer
Return Air Treatment	Grille	Grille	Grille	WAPR11-X Return Air Silencer	Grille	WAPR11-X Return Air Silencer	Grille	WAPR11-X Return Air Silencer
Blower Only Operation	38.5	37.2	34.4	34.0	34.7	33.4	33.1	29.7
Compressor Stage 1 Operation	44.8	42.9	39.8	39.2	40.7	38.5	39.1	37.5
Compressor Stage 2 Operation	46.6	46.2	42.4	41.9	43.8	40.5	40.9	39.5
Compressor Stage 2 with ERV High Speed Operation				43.5				41.4
Indoor Integrated dBA	42.9	41.8	38.4	37.9	39.4	36.9	37.2	35.4
Compressor Stage 2 Outdoor Sound Level	64.8	64.8	64.8	64.8	64.8	64.8	64.8	64.8

Note 1: dBA is sound pressure measured 10 feet in front of unit and 5 feet above floor.

Note 2: Unit or isolation curb is mounted to frame construction.

Note 3: Results may vary depending upon other factors such as room size, type of construction and acoustical variances.

CH5S1 Sound Data Matrix (dBA @ 10 feet)

Unit Mounting	Free Blow Configuration				Top Outlet Ducted Configuration			
	Direct	WMICF5 Isolation Curb	WMICF5 Isolation Curb	WMICF5 Isolation Curb	Direct	Direct	WMICT5 Isolation Curb	WMICT5 Isolation Curb
Supply Air Treatment	Grille	Grille	WAPFB51 Free Blow Supply Air Plenum	WAPFB51 Free Blow Supply Air Plenum	Standard Supply Duct	Standard Supply Duct	Standard Supply Duct	WAPS51-G Supply Air Silencer
Return Air Treatment	Grille	Grille	Grille	WAPR11-X Return Air Silencer	Grille	WAPR11-X Return Air Silencer	Grille	WAPR11-X Return Air Silencer
Blower Only Operation	38.6	36.8	35.1	33.1	31.6	30.9	29.5	29.1
Compressor Stage 1 Operation	49.7	48.1	43.4	43.1	45.6	41.2	43.1	43.9
Compressor Stage 2 Operation	52.8	52.2	47.0	46.6	47.1	43.9	45.8	43.7
Compressor Stage 2 with ERV High Speed Operation				47.0				45.5
Indoor Integrated dBA	47.8	46.7	39.2	41.5	42.7	40.2	40.8	39.9
Compressor Stage 2 Outdoor Sound Level	63.6	63.6	63.6	63.6	63.6	63.6	63.6	63.6

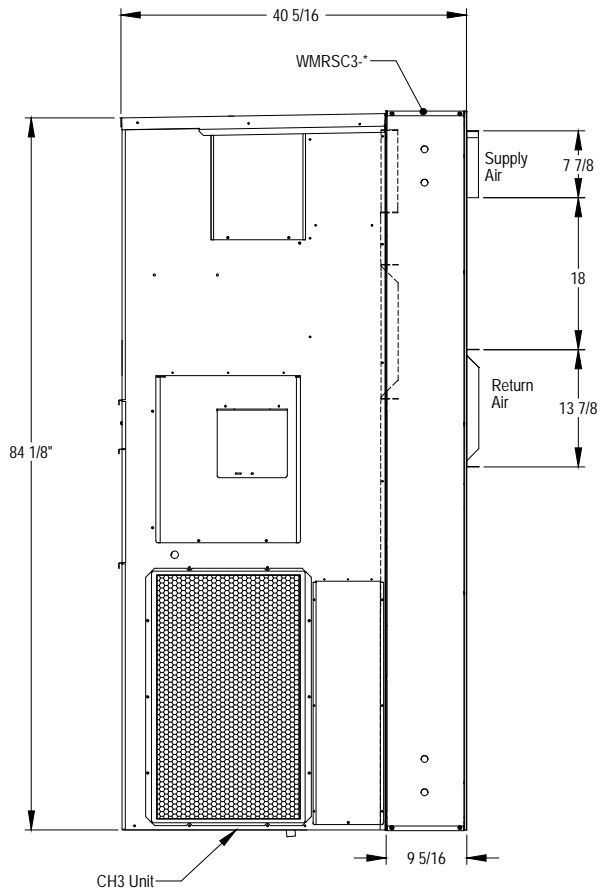
Note 1: dBA is sound pressure measured 10 feet in front of unit and 5 feet above floor.

Note 2: Unit or isolation curb is mounted to frame construction.

Note 3: Results may vary depending upon other factors such as room size, type of construction and acoustical variances.

① Top Outlet Plenum Box CPB5A used on all top outlets.

CH3S Installation with WMRSC3-* Curb to Retrofit CH3S to Standard 3-Ton Wall Mount Openings (WA30/36, WH30/36, SH26/31)



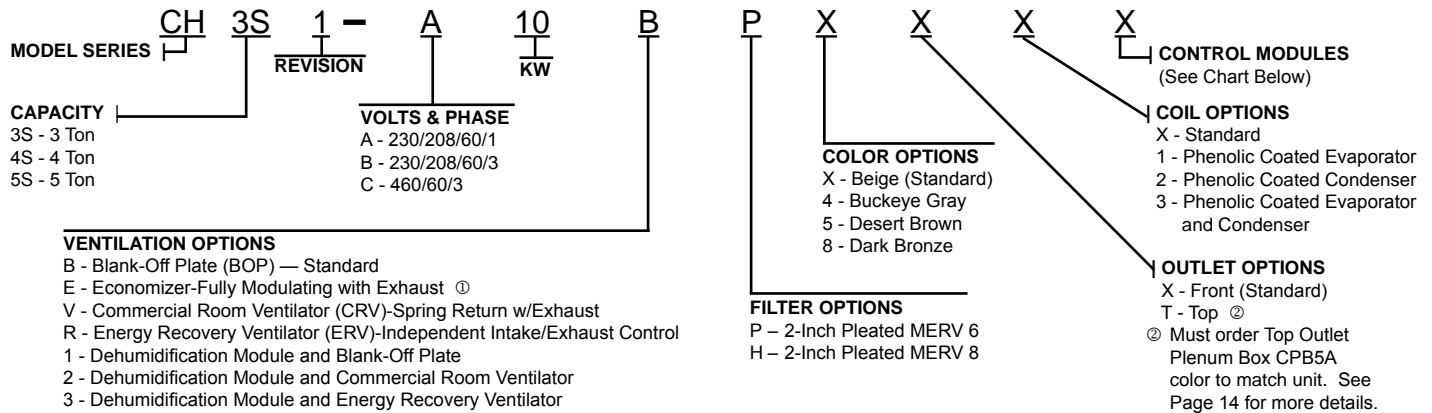
MIS-2810

Optional Installation Accessories

Description	Model	Color	Shipping Weight (Lbs)
Sound Curb Front Supply Air Outlet	WMRSC3-X	Beige	180
	WMRSC3-4	Buckeye Gray	180
	WMRSC3-5	Desert Brown	180
	WMRSC3-8	Dark Bronze	180

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Heat Pump Wall-Mount Model Nomenclature



Note: Circuit breakers standard on 230/208 Volt; rotary disconnect standard on 460 Volt models.

① Not suitable for use with dehumidification module.

Ventilation and Dehumidifier Options

MODELS	CH3S1, CH4S1, CH5S1	
	Factory Installed Code No.	Field Installed Part No.
Blank-Off Plate	B	BOP-5
Commercial Ventilator - Motorized	V	CHCRV-5
Economizer - Fully Modulating	E	CHEIFM-5*
Energy Recovery Ventilator-Independent Intake/Exhaust Control - 230 Volt	R	CHERV-A5*
Energy Recovery Ventilator-Independent Intake/Exhaust Control - 460 Volt	R	CHERV-C5*
Dehumidifier and Blank-Off Plate	1	CHDM & BOP-5
Dehumidifier and Commercial Ventilator	2	CHDM & CHCRV-5*
Dehumidifier and Energy Recovery Ventilator	3	CHDM & CHERV-A5* or -C5* ①

* Color Option must be specified to match unit ("X" = Beige; "4" = Buckeye Gray; etc.)

① Match voltage to basic unit.

Heat Pump Control Modules

AVAILABLE CONTROL OPTIONS				CH3S1, CH4S1, CH5 Models with Scroll Compressors	
HPC ①	LPC ②	LAC ③	ODT	Factory Installed Code	Field Installed Part
STD	STD			X	N/A
STD	STD	● 230V	④	E	CMH-17
STD	STD	● 460V	④	E	CMH-18

STD = Standard equipment for these specified models.

① HPC. High pressure control is auto reset.

② LPC. Low pressure control is auto reset.

③ LAC. Modulating low ambient control permits cooling operation down to 0°F.

④ ODT. Outdoor thermostat. Field-installed only. Bard Part #8403-061.

Comes with weatherproof enclosure. Works in conjunction with multi-stage thermostats offered by Bard and can be configured for any or all of compressor cut-off in heat pump mode, minimum cooling mode and maximum electric heat operation based on outdoor temperature.

Thermostat Options:

8403-060 Temperature/Humidity Controller, 3C/3H Programmable or Non-Programmable

8403-052 Thermostat, 2C/3H Programmable

8403-053 Thermostat, 2C/3H Programmable with LonTalk board

8403-055 Thermostat, 2C/3H Programmable with BACnet board

Accessory Options — Field-Installed

MODELS	CH3S1, CH4S1, CH5S1	
Description	Field-Installed Part Number	Shipping Weight
Outdoor Coil Drain Pan (Stainless Steel)	DPCH	10



Bard Manufacturing Company, Inc.
 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.
S3381
 January, 2012

Supersedes: S3381-611