

# RETROAIRE™

*The Right Fit for Comfort*

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An ISO 9001-2000 Certified Company



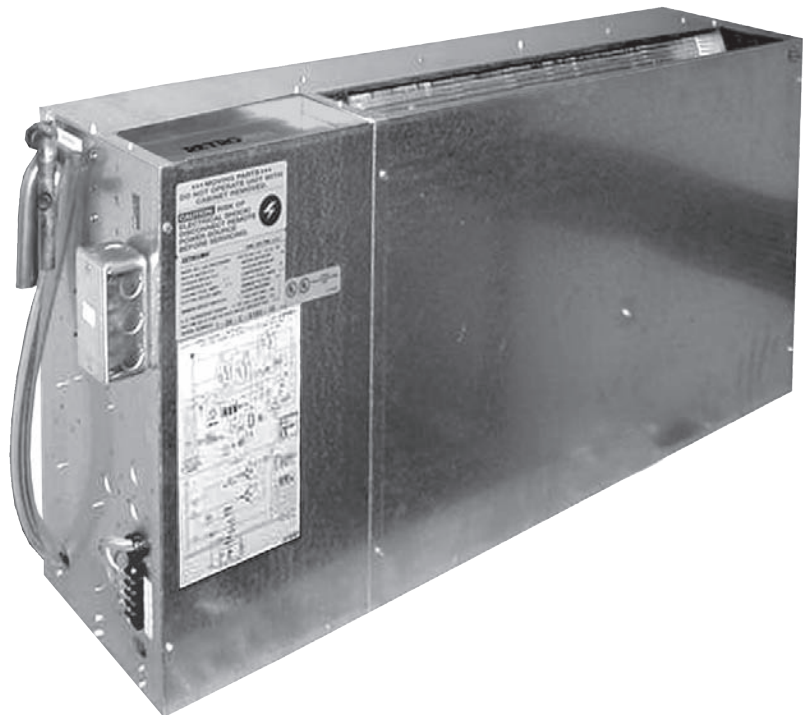
## CW

### R-410A High Efficiency Water Source Heat Pump

MODEL CW - Straight cooling / heat pump nominal capacities

8,000	10,000	13,000	17,000	Btuh
2.6	3.5	4.4	5.3	kW

## Specifications and Performance



### CW

New Construction

Replacement for:

Freidrich and Climate Master CW and  
"800" Series Water Source

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### Contents

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### NOTICE

The RetroAire™ Water Source Console Units are backed by EMI and ECR International and is tested and rated in accordance with:

AHRI Standard 320

UL-484

Due to ongoing product development, product designs and specifications may change without notice.

Please contact the factory for more information.

## General Product Information

### Product description

All RetroAire Water Source Console Units units are available as heat pump systems. Model CW is available as a straight cool unit.

The Retroaire Water Source Console Units:

- Use R-410A refrigerant.
- Include high-efficiency rotary compressors, protected by a 5-year warranty.
- Include enhanced, high-efficiency heat exchangers.
- Offer two fan speeds.
- RetroAire Water Source Console Units ratings:
- CW Series Water Source Console Units units are available in nominal sizes of 8,000 Btuh (2.3kW), 10,000 Btuh (2.9kW), 13,000 Btuh (3.8kW), or 17,000 Btuh (4.9kW).
- Energy Efficiency Rating(EER) in excess of 13.
- Coefficient of performance(COP) in excess of 4 for (heat pump models only)

### Standard controls and components

#### Construction

- 20-gauge galvanized steel Water Source Console Units construction of chassis.
- Powder-coated evaporator drain pan.
- Foam strip seal for supply air duct.

#### Air systems

- Indoor fan motor is are thermally-protected PSC type.
- Air-stream surfaces are insulated with 1/4" fiber-glass or 1/8" (3.2 mm) Volara™.
- The indoor fan is a foward-curved type, directly mounted to the motor shaft.

### Controls

- Unit-mounted operating controls include thermostat, fan speed control and heat/cool switch.
- Remote mount controls include fan speed control.
- High pressure switch.
- Low Temperature/Low water flow cut out switch compressor lock out relay
- 4-Way reversing valve with solenoid activated by line voltage. Solenoid is energized for cooling mode. (Heat pump models only)

### Factory-installed options (see model nomenclature p.7)

- Voltage
- Electric Heat/Hydronic Heat
- Piping
- Cabinet options
- Pipe connection
- Control

### Field-installed accessories

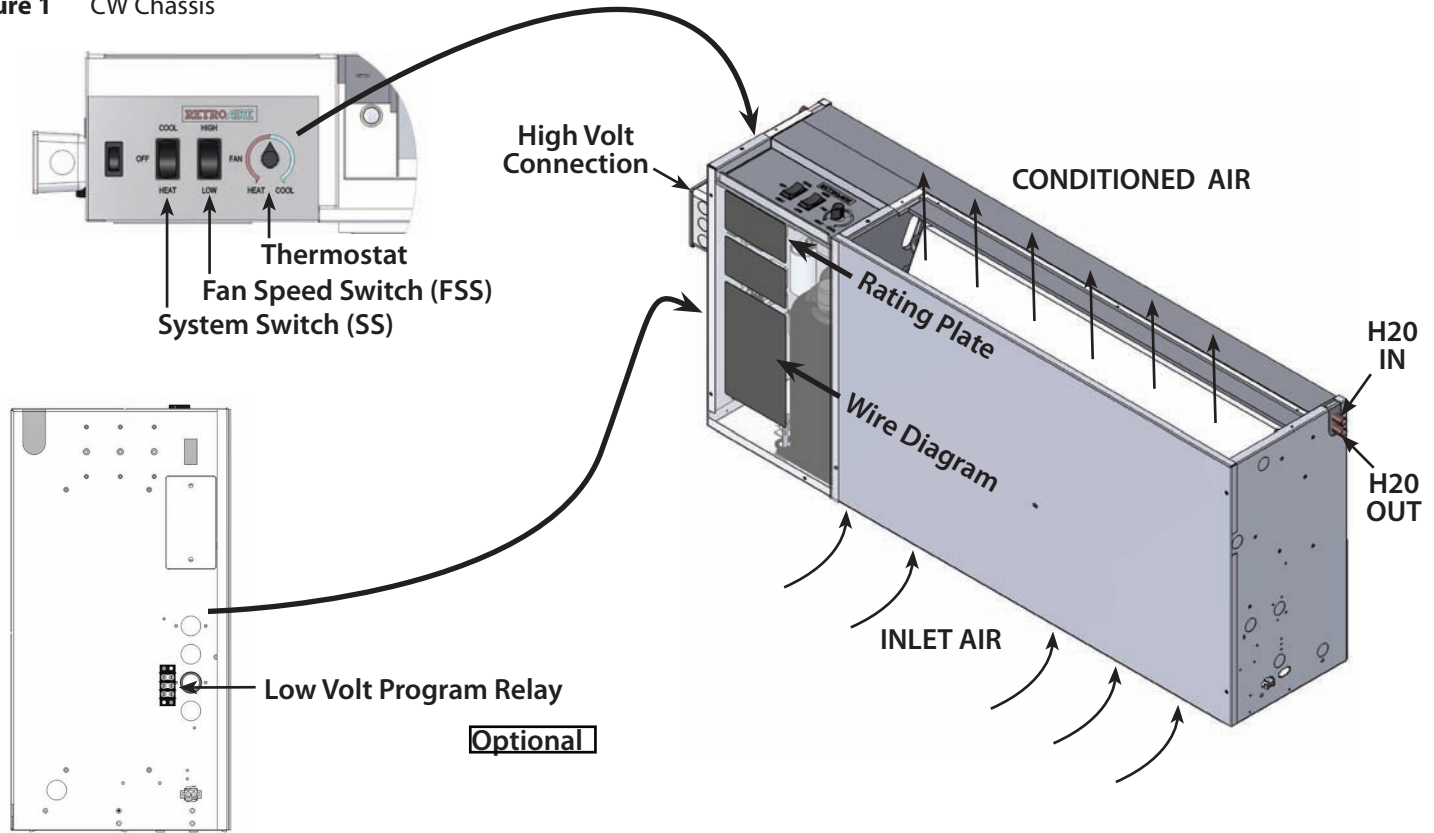
- Remote thermostat
- Hydronic heat valves
- Cabinets

### NOTICE

RetroAire units can be equipped with either unit-mounted or remote controlled thermostats. Specify when ordering.

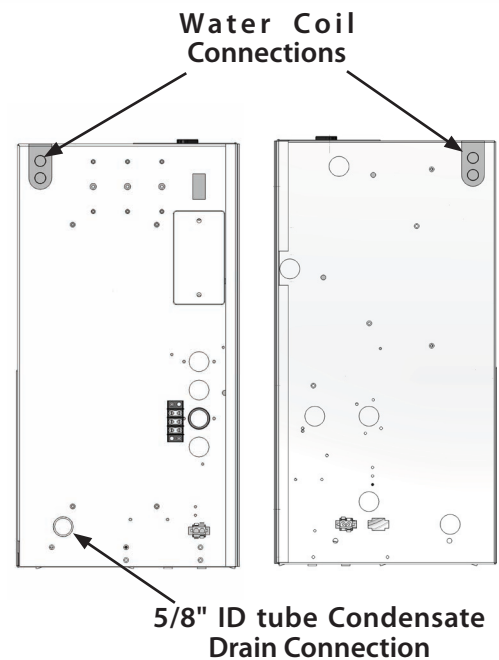
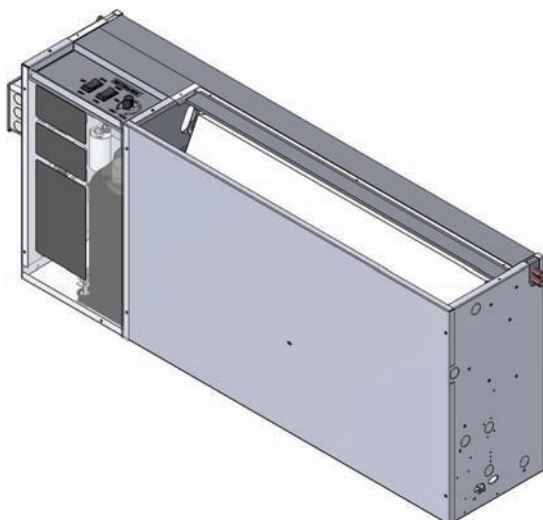
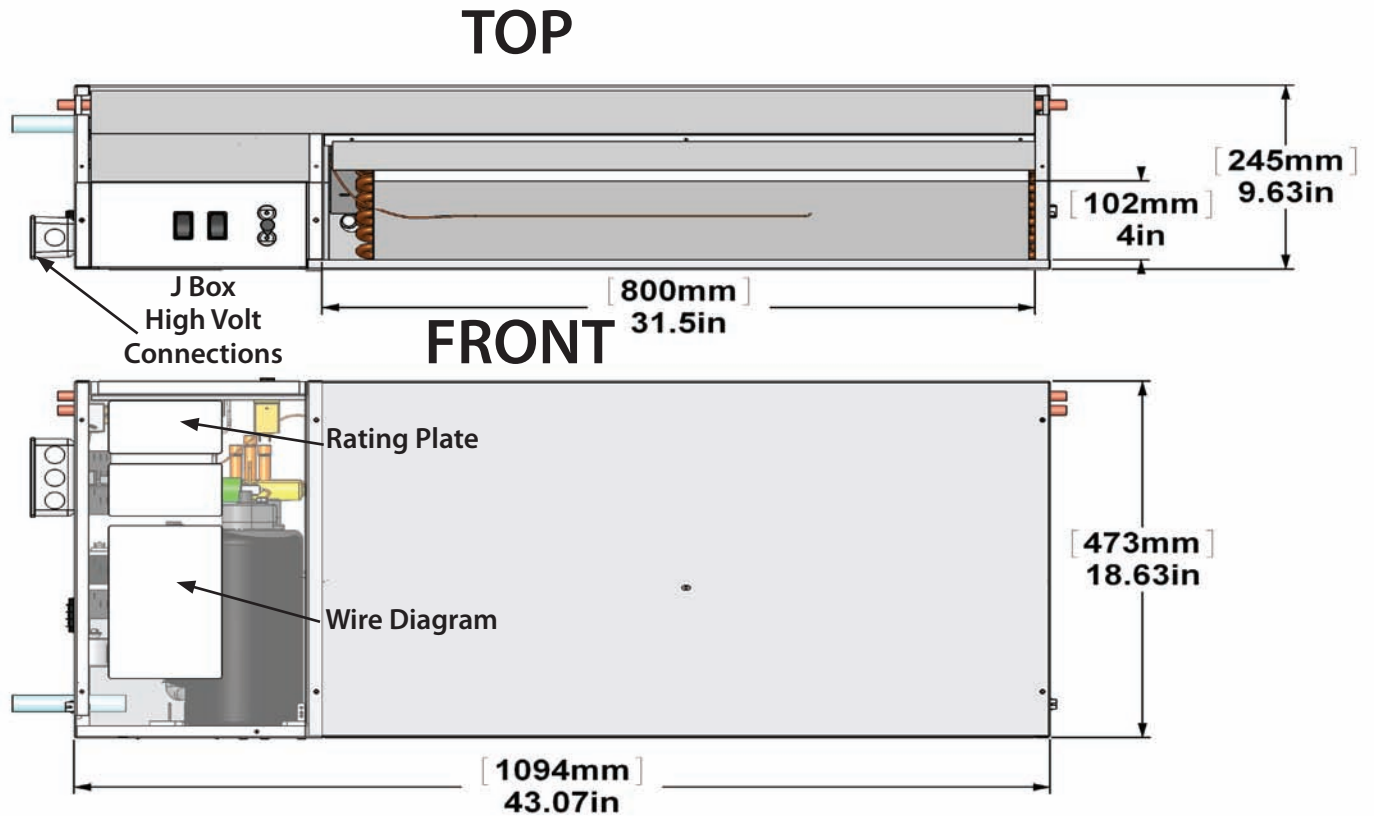
## General Product Information

**Figure 1** CW Chassis



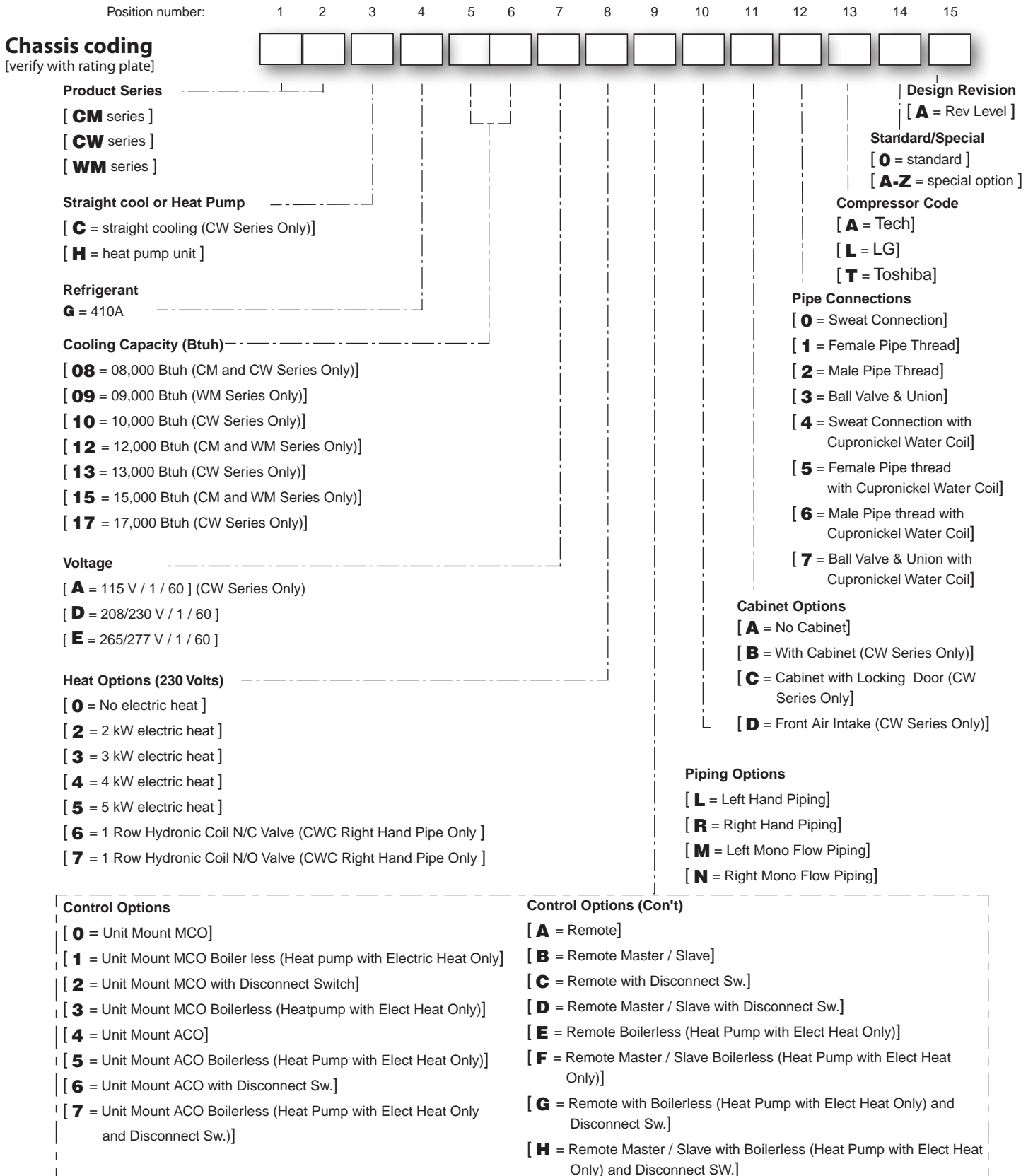
## General Product Information

Figure 2 CW chassis



## CM, CW, WM Model Nomenclature

Figure 3 Model coding



## Features

### Indoor coil freeze protection *(standard)*

This feature will prevent the indoor coil from freeze up in the cooling mode.

- Indoor coil freeze up can occur due to a dirty air filter, restricted or poor air flow, low refrigerant charge or low room or coil water temperatures.
- Low temperature water flow cut-out switch.
- High pressure control.
- Should a freeze condition be detected, the compressor will be switched off until the freeze condition is satisfied.
- During this time the indoor fan will continue to run to aid in the defrost process.

### Power cord with integral safety protection *(optional)*

Water Source Console Units have the option of a power cord with internal safety protection.

- Provides personal shock protection as well as arcing and fire prevention, The device is designed to sense any damage in the line cord and disconnect power before a fire can occur.
- Tested in accordance with Underwriters Laboratories, the cord set also offers a unique “passive” operation, meaning the unit does not require resetting if main power is interrupted.

### Heat pump *(optional)*

Heat pumps are designed to operate when entering water temperature is between 60°F (16°C) to 90°F (33°C) and with a maximum indoor air temperature of 80°F (27°C). The unit is equipped with a reversing valve that is energized for cooling and de-energized in heating mode.

### Hydronic heating *(optional)*

An optional hydronic heat package may be selected in lieu of electric heat. Heating operation is essentially the same as that of units with electric heat.

## Optional wall-mounted thermostats

### Thermostats available from EMI

EMI offers a thermostat that is compatible with your Water Source Console Unit.

- Select EMI part number 240008208 for the latest RetroAire price list for this option. This is a single stage, cool/heat, thermostat that can be used in all RetroAire cooling, heating or heat pump applications.
- The thermostat has an adjustable setpoint range of between 45°F (7°C) and 90°F (32°C).
- For heat pumps another option is EMI part number 240008209. This is a 2 stage heat/cool thermostat which allows for emergency heat.

### Selecting a thermostat *(by others)*

When selecting a thermostat other than one offered by EMI, choose a single stage heat/cool, 24v thermostat.

### Straight cooling with electric heat or hydronic heat

Select a thermostat that is compatible with a cooling/electric heat system. The thermostat should have “R”, “Y”, “W” and “G” terminals.

### Heat pump

Select a thermostat that is compatible with a cooling/single-stage heat/heat pump system. The thermostat should have “R”, “Y”, “O” and “G” terminals. RetroAire units are single stage heating only.

**Table 1 Performance Data**

PERFORMANCE DATA CW**							
Voltage	Model	Cooling		Heat Pump		Indoor Airflow CFM (L/S)	Shipping Weight Lbs (Kg)
		Btuh (kW)	EER	Btuh (kW)	COP		
115V	CWHG08	9,400 (2.7)	13.2	10,200 (3.0)	3.9	350 (165)	150 (68)
	CWCG08	9,400 (2.7)	13.2	N/A	N/A	350 (165)	150 (68)
	CWHG10	13,000 (3.8)	12.9	13,100 (3.8)	4.2	400 (189)	160 (73)
	CWCG10	13,000 (3.8)	12.9	N/A	N/A	400 (189)	160 (73)
	CWHG13	17,500 (5.1)	11.9	19,500 (5.7)	3.7	450 (212)	165 (75)
	CWCG13	17,500 (5.1)	11.9	N/A	N/A	450 (212)	165 (75)
208/230V	CWHG08	9,400 (2.7)	13.2	10,200 (3.0)	3.9	350 (165)	150 (68)
	CWCG08	9,400 (2.7)	13.2	N/A	N/A	350 (165)	150 (68)
	CWHG10	13,000 (3.8)	12.9	13,100 (3.8)	4.2	400 (189)	160 (73)
	CWHG10	13,000 (3.8)	12.9	N/A	N/A	400 (189)	160 (73)
	CWHG13	17,500 (5.1)	11.9	19,500 (5.7)	3.7	450 (212)	165 (75)
	CWCG13	17,500 (5.1)	11.9	N/A	N/A	450 (212)	165 (75)
	CWHG17	19,300 (5.6)	13.6	19,400 (5.7)	3.8	500 (236)	170 (77)
	CWCG17	19,300 (5.6)	13.6	N/A	N/A	500 (236)	170 (77)
265V	CWHG08	N/A	N/A	N/A	N/A	N/A	N/A
	CWCG08	N/A	N/A	N/A	N/A	N/A	N/A
	CWHG10	13,000 (3.8)	12.9	13,100 (3.8)	4.2	400 (189)	160 (73)
	CWCG10	13,000 (3.8)	12.9	N/A	N/A	400 (189)	160 (73)
	CWHG13	17,500 (5.1)	11.9	19,500 (5.7)	3.7	450 (212)	165 (75)
	CWCG13	17,500 (5.1)	11.9	N/A	N/A	450 (212)	165 (75)
	CWHG17	N/A	N/A	N/A	N/A	N/A	N/A
	CWCG17	N/A	N/A	N/A	N/A	N/A	N/A

**\*\*Cooling -**  
ID EAT 80°F (26.7°C) DB/67°F (19.4°C)WB  
EWT 85°F (29.4°C)

**\*\*Heating -**  
ID EAT 70°F (21.1°C) DB  
EWT 70° (21.1°C)



## Electrical Specifications

### IMPORTANT

Due to ongoing product development, designs, specifications, and performance are subject to change without notice. Please consult the factory for further information.

**Table 2 CWHG/CWCG 08 electrical specifications**

Power Supply Volt — 1-60		Compressor		Indoor Fan Motor		Electric Heat				Unit Electrical Ratings				
Volt	Min	RLA	LRA	FLA	Hp	Htr #	Volt	W	HA	TCA	THA	MCA	MOCPS	Plug
115V	104	7.5	47	1.4	0.09	N/A	N/A	N/A	N/A	8.9	N/A	10.8	15	5-15P
208/ 230V	197	3.9	20	0.6	0.08	0	N/A	N/A	N/A	4.5	N/A	5.5	15	6-15P
						2	208	1636	7.9		8.5	10.4	15	6-15P
							230	2000	8.7		9.3	11.5		
						3	208	2454	11.8		12.4	15.3	20	6-20P
							230	3000	13.0		13.6	16.9		
						4	208	3271	15.7		16.3	20.3	25	6-30P
							230	4000	17.4		18	22.3		
						5	208	4089	19.7		20.3	25.2	30	6-30P
							230	5000	21.7		22.3	27.8		
						265V	240	N/A	N/A		0.67	0.08	0	N/A
2	265	2655	10	10.7	13.2					15			7-20P	
3	265	3983	15	15.7	19.5					20				
4	265	5310	20	20.7	25.7					30			7-30P	
5	N/A	N/A	N/A	N/A	N/A					N/A			N/A	



265V Not Available at this time

**Table 3 CWHG/CWCG 10 electrical specifications**

Power Supply Volt — 1-60		Compressor		Indoor Fan Motor		Electric Heat				Unit Electrical Ratings				
Volt	Min	RLA	LRA	FLA	Hp	Htr #	Volt	W	HA	TCA	THA	MCA	MOCPS	Plug
115V	104	9.9	53	1.4	0.09	N/A	N/A	N/A	N/A	11.3	N/A	13.8	20	5-15P
208/ 230V	197	5.2	27	0.60	0.08	0	N/A	N/A	N/A	5.8	N/A	7.1	15	6-15P
						2	208	1636	7.9		8.5	10.4	15	6-15P
							230	2000	8.7		9.3	11.5		
						3	208	2454	11.8		12.4	15.3	20	6-20P
							230	3000	13		13.6	16.9		
						4	208	3271	15.7		16.3	20.3	25	6-30P
							230	4000	17.4		18.0	22.3		
						5	208	4089	19.7		20.3	25.2	30	6-30P
							230	5000	21.7		22.3	27.8		
						265V	240	N/A	N/A		0.67	0.08	0	N/A
2	265	2655	10	10.7	13.2									
3	265	3983	15	15.7	19.5					20				
4	265	5310	20	20.7	25.7					30			7-30P	

## Electrical Specifications

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**Table 4** CWHG / CWCG 13 electrical specifications

Power Supply Volt — 1-60		Compressor		Indoor Fan Motor		Electric Heat				Unit Electrical Ratings				
Volt	Min	RLA	LRA	FLA	Hp	Htr #	Volt	W	HA	TCA	THA	MCA	MOCP	Plug
115V	104	10.8	53	1.4	0.09	N/A	N/A	N/A	N/A	13.8	N/A	16.5	25	5-20P
208/ 230V	197	7.4	33	0.6	0.08	0	N/A	N/A	N/A	8.0	N/A	9.9	15	6-15P
						2	208	1636	7.9		8.5	10.4	15	6-15P
							230	2000	8.7		9.3	11.5		
						3	208	2454	11.8		12.4	15.3	20	6-20P
							230	3000	13		13.6	16.9		
						4	208	3271	15.7		16.3	20.3	25	6-30P
							230	4000	17.4		18.0	22.3		
						5	208	4089	19.7		20.3	25.2	30	6-30P
							230	5000	21.7		22.3	27.8		
						265V	240	6.0	28		0.67	0.08	0	N/A
2	265	2655	10	10.7	13.2									
3	265	3983	15	15.7	19.5					20				
4	265	5310	20	20.7	25.7					30			7-30P	



## Electrical Specifications

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**Table 5 CWHG / CWCG 17 electrical specifications**

Power Supply Volt — 1-60		Compressor		Indoor Fan Motor		Electric Heat				Unit Electrical Ratings											
Volt	Min	RLA	LRA	FLA	Hp	Htr #	Volt	W	HA	TCA	THA	MCA	MOCP	Plug							
208/ 230V	197	8.3	44	0.6	0.08	0	N/A	N/A	N/A	8.9	N/A	11.0	15	6-15P							
						2	208	1636	7.9		8.5	10.4	15	6-15P							
							230	2000	8.7		9.3	11.5									
						3	208	2454	11.8		12.4	15.3	20	6-20P							
							230	3000	13.0		13.6	16.9									
						4	208	3271	15.7		16.3	20.3	25	6-30P							
							230	4000	17.4		18.0	22.3									
						5	208	4089	19.7		20.3	25.2	30	6-30P							
							230	5000	21.7		22.3	27.8									
						265V	240	N/A	N/A		0.67	0.08	0	N/A	N/A	N/A	7.4	N/A	8.9	15	7-20P
													2	265	2655	10		10.7	13.2		
													3	265	3983	15		15.7	19.5	20	
4	265	5310	20	20.7	25.7					30			7-30P								



265V Not Available at this time

**Figure 4 NEMA Specifications Non / Locking / Receptacles**

VOLTAGE	125V		250V			265V		
	15(A)	20(A)	15(A)	20(A)	30(A)	15(A)	20(A)	30(A)
PLUG								
RECEPTACLE								

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