RETROAIRE™

The Right Fit for Comfort

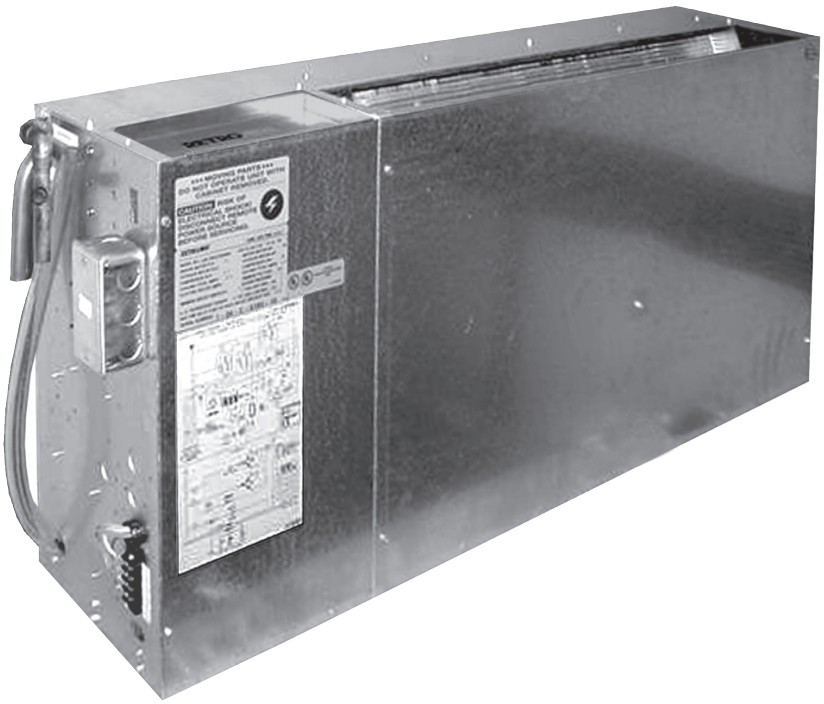
CW

R-410A High Efficiency Water Source Heat Pump

MODEL CW - Straight cooling / heat pump nominal capacities

9,300 (9)	12,200 (10)	13,000 (13)	16,500 (17)	Btuh (Size)
2.7	3.6	3.8	4.8	kW

Specifications and Performance



CW

New Construction

Replacement for:
Freidrich and Climate Master CW and "800" Series Water Source

ECR International, Inc.
2201 Dwyer Avenue
Utica, NY 13501
e-mail: info@RetroAire.com

ecr innovative living™

An ISO 9001-2000 Certified Company

P/N 240009755, Rev. A [9/2012]

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NOTICE

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

AHRI/ ISO 13256-1

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 ¼" fiber-glass or ⅛" (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 (model nomenclature-p7)

- Voltage
- Electric Heat/Hydronic Heat
- Remote Master/Slave
- Disconnect Switches
- Piping
- Cabinet options
- Pipe connection
- Control

Field-installed accessories

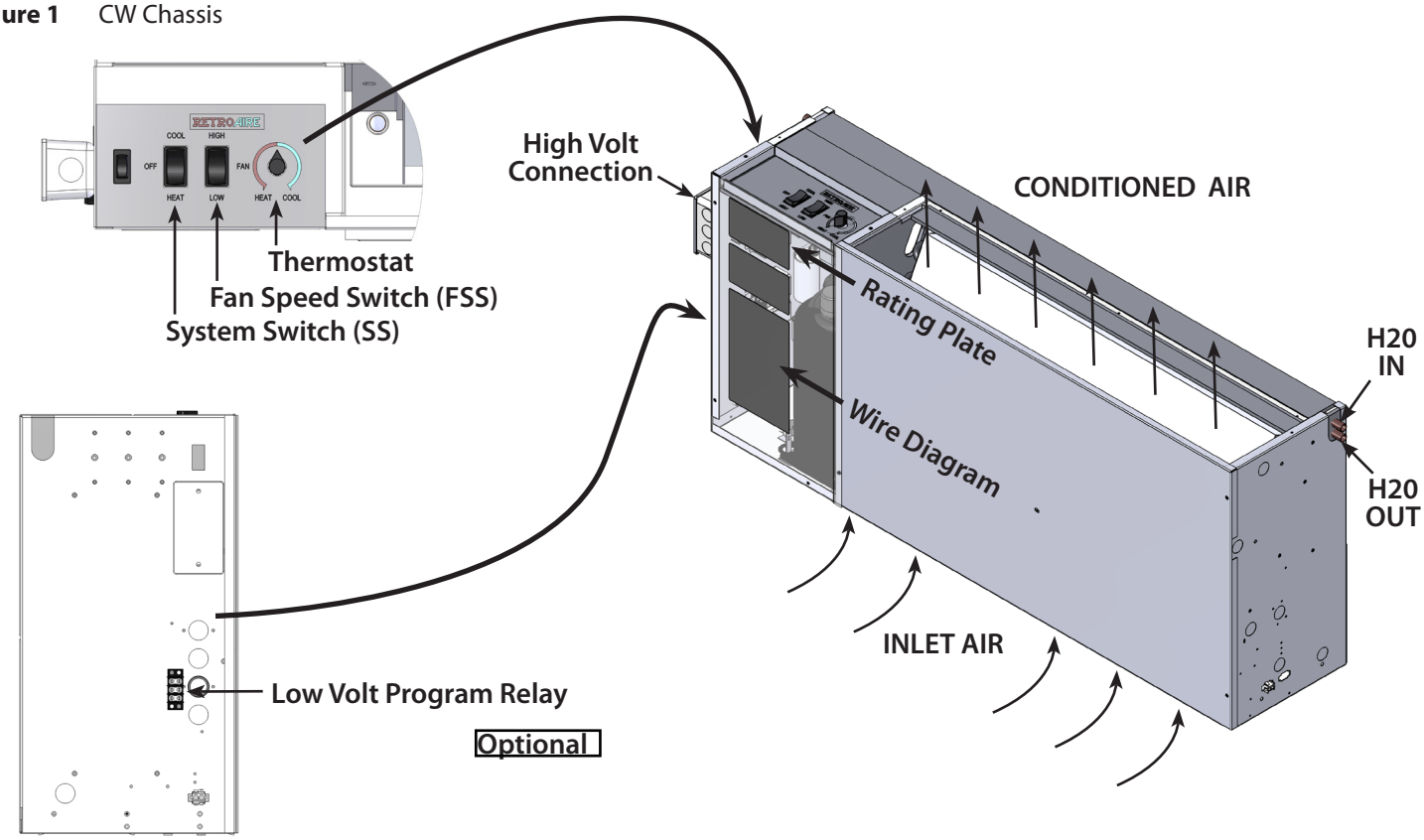
- Remote thermostat
- Hydronic heat valves
- Cabinets

NOTICE

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

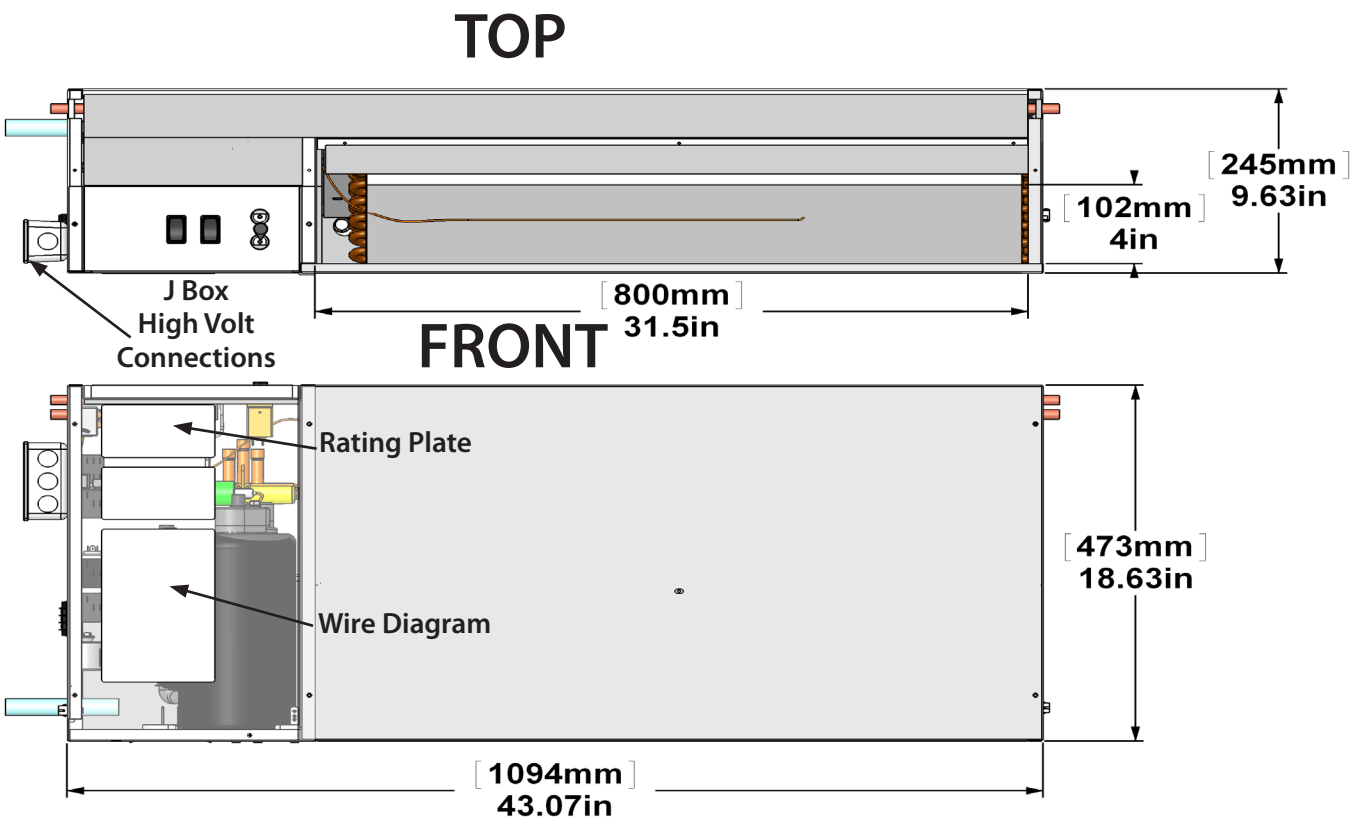
General Product Information

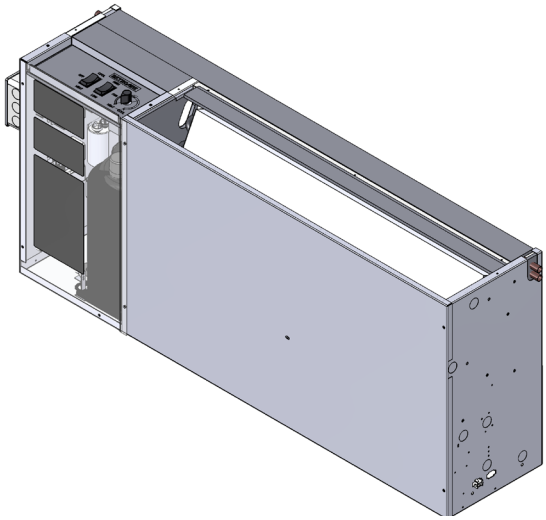
Figure 1 CW Chassis

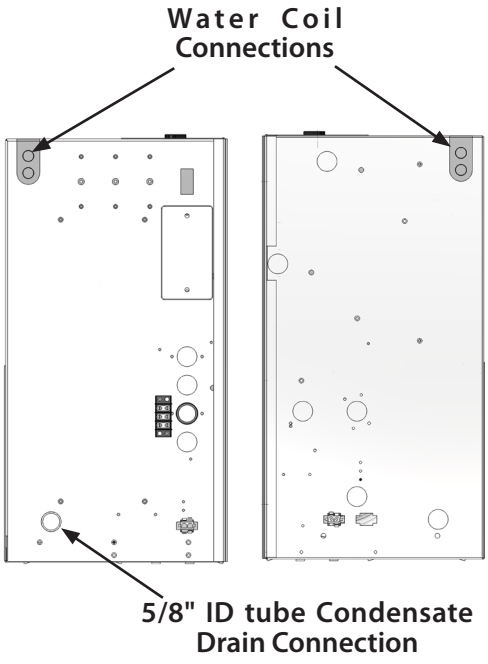


General Product Information

Figure 2 CW chassis

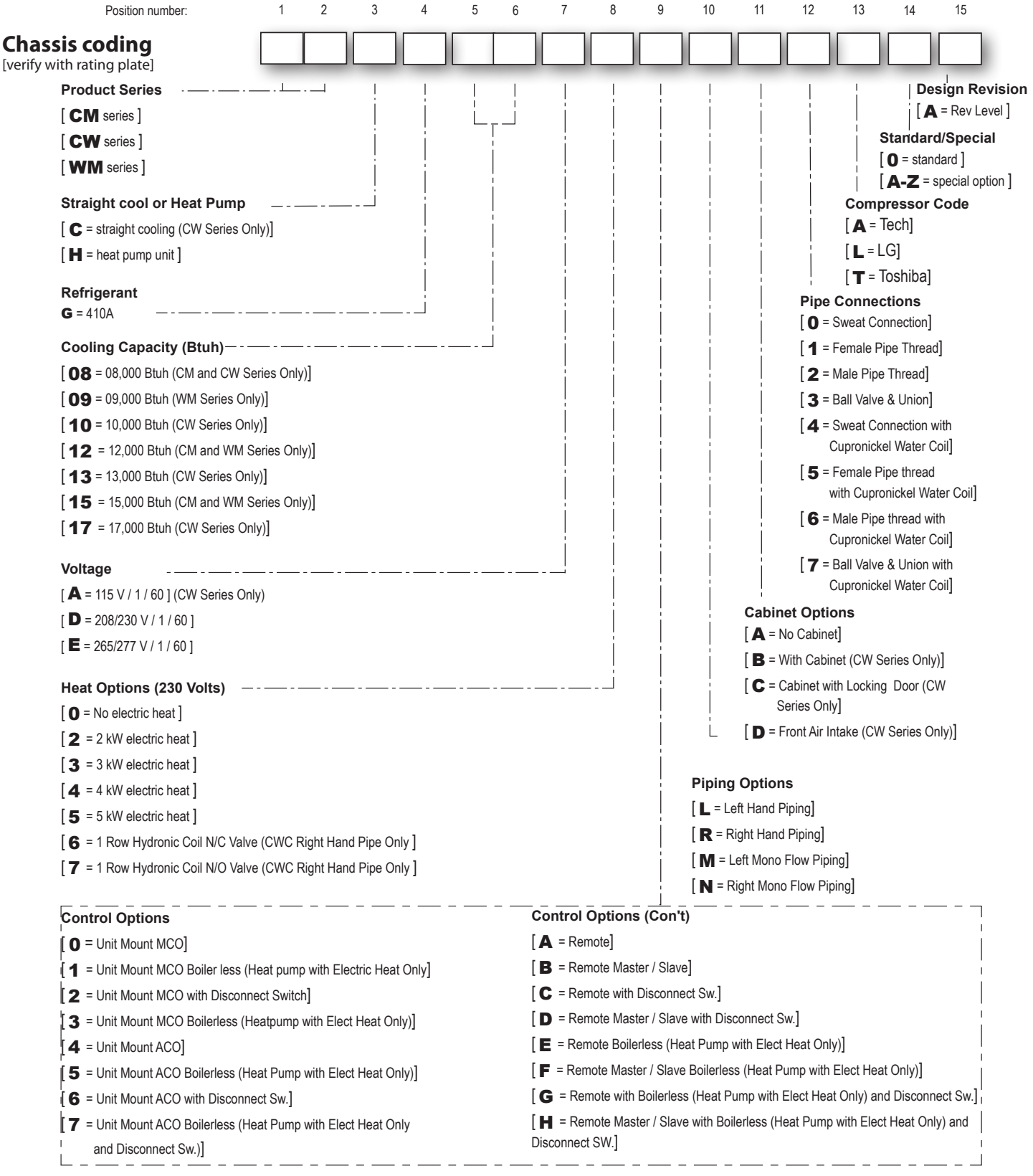






CM, CW, WM Model Nomenclature

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.

IMPORTANT

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

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	9,300 (2.7)	11.3	11,200 (3.3)	4.0	350 (165)	150 (68)
	CWCG08	9,300 (2.7)	11.3	N/A	N/A	350 (165)	150 (68)
	CWHG10	12,200 (3.6)	11.1	13,500 (4.0)	3.6	400 (189)	160 (73)
	CWCG10	12,200 (3.6)	11.1	N/A	N/A	400 (189)	160 (73)
	CWHG13	13,000 (3.8)	11.5	15,600 (4.6)	3.9	450 (212)	165 (75)
	CWCG13	13,000 (3.8)	11.5	N/A	N/A	450 (212)	165 (75)
208/230V	CWHG08	9,300 (2.7)	11.3	11,200 (3.3)	4.0	350 (165)	150 (68)
	CWCG08	9,300 (2.7)	11.3	N/A	N/A	350 (165)	150 (68)
	CWHG10	12,200 (3.6)	11.1	13,500 (4.0)	3.6	400 (189)	160 (73)
	CWHG10	12,200 (3.6)	11.1	N/A	N/A	400 (189	160 (73)
	CWHG13	13,000 (3.8)	11.5	15,600 (4.6)	3.9	450 (212)	165 (75)
	CWCG13	13,000 (3.8)	11.5	N/A	N/A	450 (212)	165 (75)
	CWHG17	16,500 (4.8)	12.2	20,800 (6.1)	3.8	500 (236)	170 (77)
	CWCG17	16,500 (4.8)	12.2	N/A	N/A	500 (236)	170 (77)
265/277V	CWHG08	9,300 (2.7)	11.3	11,200 (3.3)	4.0	350 (165)	150 (68)
	CWCG08	9,300 (2.7)	11.3	N/A	N/A	350 (165)	150 (68)
	CWHG10	12,200 (3.6)	11.1	13,500 (4.0)	3.6	400 (189)	160 (73)
	CWCG10	12,200 (3.6)	11.1	N/A	N/A	400 (189	160 (73)
	CWHG13	13,000 (3.8)	11.5	15,600 (4.6)	3.9	450 (212)	165 (75)
	CWCG13	13,000 (3.8)	11.5	N/A	N/A	450 (212)	165 (75)
	CWHG17	16,500 (4.8)	12.2	20,800 (6.1)	3.8	500 (236)	170 (77)
	CWCG17	16,500 (4.8)	12.2	N/A	N/A	500 (236)	170 (77)

****Cooling – E.A.T. D.B. 80.6°F (27°C)**
E.A.T. W.B. 66.2°F (19°C)
E.W.T. 86°F (30°C)

****Heating - E.A.T. D.B. 68°F (20°C)**
E.A.T. W.B. 59°F (15°C)
E.W.T. 68°F (20°C)

Electrical Specifications

IMPORTANT

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Table 2 **CW 8,000 BTU** 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	8	45.6	1.4	0.09	N/A	N/A	N/A	N/A	9.4	N/A	11.4	15	5-15P
208/230V	197	4	22.2	0.6	0.08	0	N/A	N/A	N/A	4.6	N/A	5.6	15	6–15P
						2	208	1636	7.9		8.5	10.6	15	6–15P
							230	2000	8.7		9.3	11.6		
						3	208	2454	11.8		12.4	15.5	20	6–20P
							230	3000	13.0		13.6	17.1		
						4	208	3271	15.7		16.3	20.4	25	6-30P
							230	4000	17.4		18.0	22.5		
						5	208	4089	19.7		20.3	25.3	30	6-30P
							230	5000	21.7		22.3	27.9		
265/277V	240	3.32	18.8	0.67	0.08	0	N/A	N/A	N/A	4.0	N/A	4.8	15	7-20P
						2	265	1830	6.9		7.6	9.5	15	7-20P
							277	2000	7.2		7.9	9.9		
						3	265	2454	10.4		11.0	13.8	15	7-20P
							277	3000	10.8		11.5	14.4		
						4	265	3661	13.8		14.5	18.1	20	7-20P
							277	4000	14.4		15.1	18.9		
						5	265	4576	17.3		17.9	22.4	20	7-30P
							277	5000	18.1		18.7	23.4		

Table 3 **CW 10,000 BTU** 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	8	45.6	1.4	0.09	N/A	N/A	N/A	N/A	13.2	N/A	16.2	25	5-20P
208/230V	197	5.6	32.5	0.6	0.08	0	N/A	N/A	N/A	6.2	N/A	7.6	15	6–15P
						2	208	1636	7.9		8.5	10.6	15	6–15P
							230	2000	8.7		9.3	11.6		
						3	208	2454	11.8		12.4	15.5	20	6–20P
							230	3000	13.0		13.6	17.1		
						4	208	3271	15.7		16.3	20.4	25	6-30P
							230	4000	17.4		18.0	22.5		
						5	208	4089	19.7		20.3	25.3	30	6-30P
							230	5000	21.7		22.3	27.9		
265/277V	240	4.2	31.5	0.67	0.08	0	N/A	N/A	N/A	4.9	N/A	5.9	15	7-20P
						2	265	1830	6.9		7.6	9.5	15	7-20P
							277	2000	7.2		7.9	9.9		
						3	265	2454	10.4		11.0	13.8	15	7-20P
							277	3000	10.8		11.5	14.4		
						4	265	3661	13.8		14.5	18.1	20	7-20P
							277	4000	14.4		15.1	18.9		
						5	265	4576	17.3		17.9	22.4	20	7-30P
							277	5000	18.1		18.7	23.4		

Electrical Specifications

IMPORTANT

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Table 4 **CW 13,000 BTU** 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	12.7	63	1.4	0.09	N/A	N/A	N/A	N/A	14.1	N/A	17.3	25	5-20P
208/230V	197	5.6	29	0.6	0.08	0	N/A	N/A	N/A	6.2	N/A	7.6	15	6–15P
						2	208	1636	7.9		9.3	10.6	15	6–15P
							230	2000	8.7		10.1	11.6		
						3	208	2454	11.8		13.2	15.5	20	6–20P
							230	3000	13.0		14.4	17.1		
						4	208	3271	15.7		17.1	20.4	25	6-30P
							230	4000	17.4		18.8	22.5		
						5	208	4089	19.7		21.1	25.3	30	6-30P
							230	5000	21.7		23.1	27.9		
265/277V	240	4.6	20	0.67	0.08	0	N/A	N/A	N/A	5.3	N/A	6.4	15	7-20P
						2	265	1830	6.9		7.6	9.5	15	7-20P
							277	2000	7.2		7.9	9.9		
						3	265	2746	10.4		11.0	13.8	15	7-20P
							277	3000	10.8		11.5	14.4		
						4	265	3661	13.8		14.5	18.1	20	7-20P
							277	4000	14.4		15.1	18.9		
						5	265	4576	17.3		17.9	22.4	25	7-30P
							277	5000	18.1		18.7	23.4		

Table 5 **CW 17,000 BTU** 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	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	10.6	15	6–15P
							230	2000	8.7		9.3	11.6		
						3	208	2454	11.8		12.4	15.5	20	6–20P
							230	3000	13.0		13.6	17.1		
						4	208	3271	15.7		16.3	20.4	25	6-30P
							230	4000	17.4		18.0	22.5		
						5	208	4089	19.7		20.3	25.3	30	6-30P
							230	5000	21.7		22.3	27.9		
265/277V	240	6.0	28	0.67	0.08	0	N/A	N/A	N/A	6.7	N/A	8.2	15	7-20P
						2	265	1830	6.9		7.6	9.5	15	7-20P
							277	2000	7.2		7.9	9.9		
						3	265	2746	10.4		11.0	13.8	15	7-20P
							277	3000	10.8		11.5	14.4		
						4	265	3661	13.8		14.5	18.1	20	7-20P
							277	4000	14.4		15.1	18.9		
						5	265	4576	17.3		17.9	22.4	25	7-30P
							277	5000	18.1		18.7	23.4		

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.

Figure 4 NEMA Specifications for Non-Locking Plugs / Receptacles

VOLTAGE	LINE NO.	15 AMPERE		20 AMPERE		30 AMPERE	
		RECEPTACLE	PLUG	RECEPTACLE	PLUG	RECEPTACLE	PLUG
125V	5	5-15R 	5-15P 	5-20R 	5-20P 	5-20R 	5-30P 
250V	6	6-15R 	6-15P 	6-20R 	6-20P 	6-30R 	6-30P 
277V	7	7-15R 	7-15P 	7-20R 	7-20P 	7-30R 	7-30P 

ECR International, Inc.
2201 Dwyer Avenue
Utica, NY 13501
e-mail: info@RetroAire.com

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