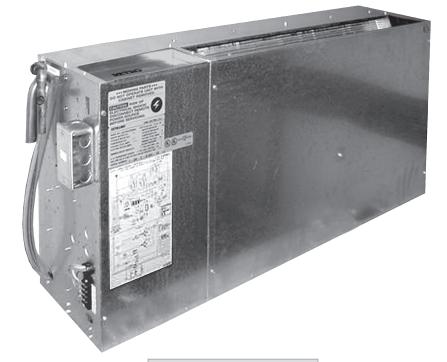
CW R-410A High Efficiency Water Source Heat Pump

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



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

RETROAIRE[™]

The Right Fit for Comfort



CW

New Construction

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



Water Source Console Units Specifications and Performance •

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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 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 (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

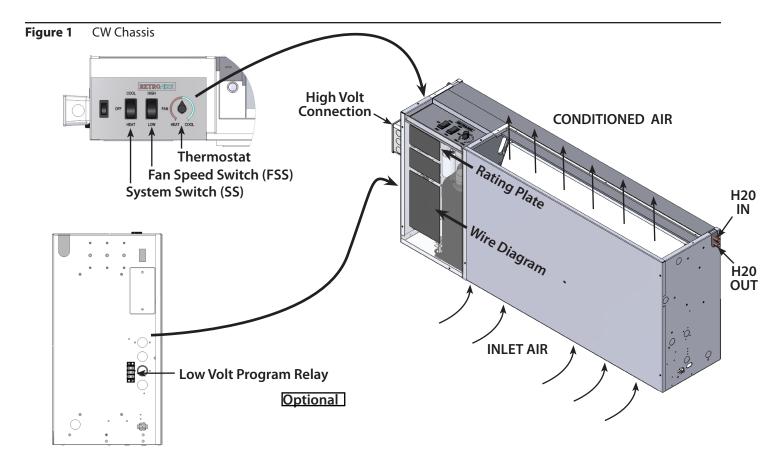
NOTICE

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

Water Source Console Units

Specifications and Performance •

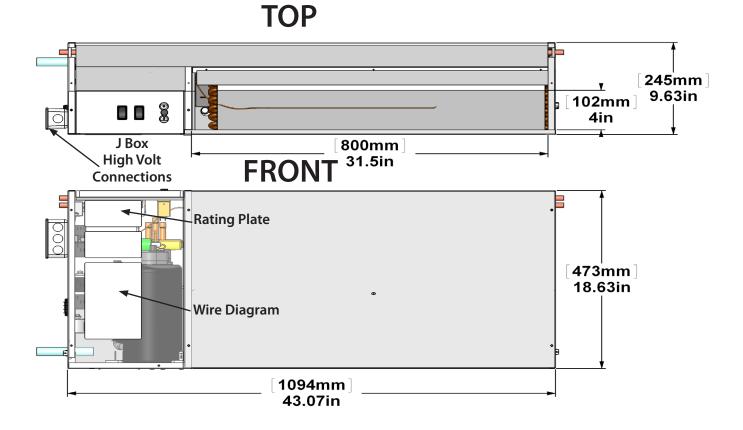
General Product Information

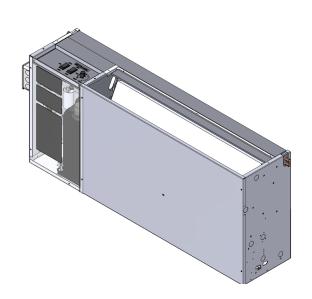


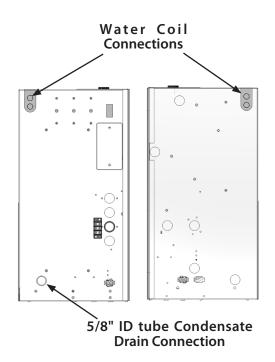
Water Source Console Units Specifications and Performance •

General Product Information

Figure 2 CW chassis







Water Source Console Units Specifications and Performance •

CM, CW, WM Model Nomenclature

ure 3 Model coding	
Position number: 1 2 3 4 5	6 7 8 9 10 11 12 13 14 15
assis coding	
fy with rating plate] Product Series · · · · · · · · · · · · · · · · · · ·	Design Revis
[CM series]	[A = Rev Leve
[CW series]	Standard/Special
[WM series]	[0 = standard]
Straight cool or Heat Pump	[A-Z = special option Compressor Code
[C = straight cooling (CW Series Only)]	[A = Tech]
[H = heat pump unit]	[L =LG]
	[T = Toshiba]
Refrigerant	Pipe Connections
G = 410A	[O = Sweat Connection]
Cooling Capacity (Btuh)— - — - — - — - — - — - — - — - — - — -	[1 = Female Pipe Thread]
[08 = 08,000 Btuh (CM and CW Series Only)]	[2 = Male Pipe Thread]
[09 = 09,000 Btuh (WM Series Only)]	[3 = Ball Valve & Union]
[10 = 10,000 Btuh (CW Series Only)]	[4 = Sweat Connection with
[12 = 12,000 Btuh (CM and WM Series Only)]	Cupronickel Water Coil]
[13 = 13,000 Btuh (CW Series Only)]	[5 = Female Pipe thread with Cupronickel Water Coil]
[15 = 15,000 Btuh (CM and WM Series Only)]	[6 = Male Pipe thread with
[17 = 17,000 Btuh (CW Series Only)]	Cupronickel Water Coil]
Voltage	7 = Ball Valve & Union with
[🗛 = 115 V / 1 / 60] (CW Series Only)	Cupronickel Water Coil
[D = 208/230 V / 1 / 60]	Cabinet Options [A = No Cabinet]
[E = 265/277 V / 1 / 60]	[B = With Cabinet (CW Series Only)]
Heat Options (230 Volts)	[C = Cabinet with Locking Door (CW
[O = No electric heat]	Series Only]
[2 = 2 kW electric heat]	L [D = Front Air Intake (CW Series Only)]
[3 = 3 kW electric heat]	
[4 = 4 kW electric heat]	Piping Options
[5 = 5 kW electric heat]	L = Left Hand Piping
[6 = 1 Row Hydronic Coil N/C Valve (CWC Right Hand Pipe Only]	[R = Right Hand Piping]
[7 = 1 Row Hydronic Coil N/O Valve (CWC Right Hand Pipe Only]	[M = Left Mono Flow Piping]
	[N = Right Mono Flow Piping]
Control Options	Control Options (Con't)
[0 = Unit Mount MCO]	[A = Remote]
1 = Unit Mount MCO Boiler less (Heat pump with Electric Heat Only]	[B = Remote Master / Slave]
[2 = Unit Mount MCO with Disconnect Switch]	[C = Remote with Disconnect Sw.]
[3 = Unit Mount MCO Boilerless (Heatpump with Elect Heat Only)]	[D = Remote Master / Slave with Disconnect Sw.]
[4 = Unit Mount ACO]	[
[5 = Unit Mount ACO Boilerless (Heat Pump with Elect Heat Only)]	[F = Remote Master / Slave Boilerless (Heat Pump with Elect Heat Only)]
[6 = Unit Mount ACO with Disconnect Sw.]	G = Remote with Boilerless (Heat Pump with Elect Heat Only) and Disconnect Sw.]
[7 = Unit Mount ACO Boilerless (Heat Pump with Elect Heat Only and Disconnect Sw.)]	[

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 $60^{\circ}F(16^{\circ}C)$ to $90^{\circ}F(33^{\circ}C)$ and with a maximum indoor air temperature of $80^{\circ}F(27^{\circ}C)$. 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 $45^{\circ}F(7^{\circ}C)$ and $90^{\circ}F(32^{\circ}C)$.
- 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 1Performance Data

	PERFORMANCE DATA CW**												
		Cooling		Heat Pum	р	Indoor	Shipping						
Voltage	Model	Btuh (kW)	EER	Btuh (kW)	СОР	Airflow CFM (L/S)	Weight Lbs (Kg)						
	CWHG08	9,300 (2.7)	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)						
115V	CWHG10	12,200 (3.6)	11.1	13,500 (4.0)	3.6	400 (189)	160 (73)						
1150	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)						
	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)						
208/230V	CWHG10	12,200 (3.6)	11.1	N/A	N/A	400 (189	160 (73)						
200/2300	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)						
	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)						
265/277V	CWCG10	12,200 (3.6)	11.1	N/A	N/A	400 (189	160 (73)						
205/2//V	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

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

Table 2 CW 8,000 BTU electrical specifications

	Supply – 1–60	Comp	ressor	Indoo Mo			Electri	ic Heat			Unit	Electrical	Ratings			
Volt	Min	RLA	LRA	FLA	Нр	Htr#	Volt	w	HA	TCA	THA	MCA	МОСР	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		
						0	N/A	N/A	N/A		N/A	5.6	15	6-15P		
						2	208	1636	7.9]	8.5	10.6	15	6–15P		
						2	230	2000	8.7		9.3	11.6	15	0-15P		
208/	208/					3	208	2454	11.8		12.4	15.5	20	6–20P		
230V 197	7 4	22.2	0.6	0.08		230	3000	13.0	4.6	13.6	17.1	20	0-206			
2500						4	208	3271	15.7		16.3	20.4	25	6-30P		
							230	4000	17.4		18.0	22.5	2.5	0-501		
								5	208	4089	19.7		20.3	25.3	30	6-30P
							230	5000	21.7		22.3	27.9				
						0	N/A	N/A	N/A		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	15	/ 201		
265/						3	265	2454	10.4		11.0	13.8	15	7-20P		
277V	240	3.32	18.8	0.67	0.08		277	3000	10.8	4.0	11.5	14.4		/ 201		
2770						4	265	3661	13.8		14.5	18.1	20	7-20P		
							4	277	4000	14.4		15.1	18.9	20	/ 201	
				5	265 4	4576	17.3		17.9	22.4	20	7-30P				
						5	277	5000	18.1		18.7	23.4	20	7-501		

Table 3CW 10,000 BTU electrical specifications

	Supply – 1–60	Comp	ressor	Indoo Mo	or Fan Itor		Electr	ic Heat			Unit	Electrical	Ratings																	
Volt	Min	RLA	LRA	FLA	Нр	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																
						0	N/A	N/A	N/A		N/A	7.6	15	6–15P																
						2	208	1636	7.9]	8.5	10.6	15	6 1ED																
						2	230	2000	8.7]	9.3	11.6	15	6–15P																
208/						3	208	2454	11.8]	12.4	15.5	20	6-20P																
208/ 230V 197	7 5.6	32.5	0.6	0.08	3	230	3000	13.0	6.2	13.6	17.1	20	0-20P																	
2300	2500						4	208	3271	15.7		16.3	20.4	25	6-30P															
							230	4000	17.4		18.0	22.5	23	0-30P																
																						5	208	4089	19.7		20.3	25.3	30	6-30P
							230	5000	21.7		22.3	27.9		0-30F																
						0	N/A	N/A	N/A		N/A	5.9	15	7-20P																
						2	265	1830	6.9		7.6	9.5	15	7-20P																
						2	277	2000	7.2		7.9	9.9	15	7-206																
265/						3	265	2454	10.4		11.0	13.8	15	7-20P																
	240	4.2	31.5	0.67	0.08	3	277	3000	10.8	4.9	11.5	14.4	15	7-20P																
2770	277V 240					4	265	3661	13.8		14.5	18.1	20	7-20P																
					4	277	4000	14.4		15.1	18.9	20	7-20P																	
						5	265	4576	17.3		17.9	22.4	20	7-30P																
				5	277	5000	18.1		18.7	23.4	20	7-30P																		

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 4 CW 13,000 BTU electrical specifications

	Supply – 1–60	Comp	ressor	Indoo Mo		Electric Heat				Unit Electrical Ratings																			
Volt	Min	RLA	LRA	FLA	Нр	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															
						0	N/A	N/A	N/A		N/A	7.6	15	6-15P															
						2	208	1636	7.9]	9.3	10.6	15	6–15P															
		5.6				2	230	2000	8.7		10.1	11.6	15	0-136															
						3	208	2454	11.8		13.2	15.5	20	6–20P															
208/	197		29	0.6	0.08	3	230	3000	13.0	6.2	14.4	17.1	20	0-206															
230V								4	208	3271	15.7		17.1	20.4	25	6-30P													
2500							230	4000	17.4		18.8	22.5	25	0-30F															
																					5	208	4089	19.7		21.1	25.3	30	6-30P
						<u> </u>	230	5000	21.7		23.1	27.9		0-501															
						0	N/A	N/A	N/A		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	15	/ 201															
265/						3	265	2746	10.4		11.0	13.8	15	7-20P															
277V	240	4.6	20	0.67	0.08		277	3000	10.8	5.3	11.5	14.4	15	7-201															
2770						4	265	3661	13.8		14.5	18.1	20	7-20P															
					_	4	277	4000	14.4		15.1	18.9	20	7-20P															
						5	265	4576	17.3		17.9	22.4	25	7-30P															
						5	277	5000	18.1		18.7	23.4	25	, 301															

Table 5 CW 17,000 BTU electrical specifications

	Supply – 1–60	Comp	ressor	Indoo Mo		Electric Heat				Unit Electrical Ratings				
Volt	Min	RLA	LRA	FLA	Нр	Htr#	Volt	W	HA	TCA	THA	MCA	МОСР	Plug
						0	N/A	N/A	N/A		N/A	9.9	15	6-15P
						2	208	1636	7.9		8.5	10.6	15	6–15P
						2	230	2000	8.7		9.3	11.6	15	0-15P
						3	208	2454	11.8		12.4	15.5	20	6–20P
208/ 197	7 7.4	33	0.6	0.08	3	230	3000	13.0	8.0	13.6	17.1	20	0-20P	
230V						4	208	3271	15.7		16.3	20.4	25	6-30P
2500							230	4000	17.4		18.0	22.5		0-30F
						5	208	4089	19.7		20.3	25.3	30	6-30P
						5	230	5000	21.7		22.3	27.9	50	0-30F
						0	N/A	N/A	N/A		N/A	8.2	15	7-20P
						2	265	1830	6.9		7.6	9.5	15	7-20P
						2	277	2000	7.2		7.9	9.9	15	7-206
265/						3	265	2746	10.4		11.0	13.8	15	7-20P
203/ 277V	240	6.0	28	0.67	0.08		277	3000	10.8	6.7	11.5	14.4	15	7-206
2// 1						4	265	3661	13.8		14.5	18.1	20	7-20P
						4	277	4000	14.4		15.1	18.9	20	7-20F
						5	265	4576	17.3		17.9	22.4	25	7-30P
						5	277	5000	18.1		18.7	23.4	25	J-JUF

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

	LINE		15 AM	PERE		20 AMF	PERE		30 AMPERE			
VOLTAGE	NO.	RECEPTACLE		PLUG	REC	EPTACLE		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	(S)	7-15P	7-20R		7-20P	GU	7-30R	7-30P		

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