



## 24CWA2-00 Chilled Water Fan Coil With or Without Electric Heat

2-Pipe Heat / Cool Fan Coil 24,000 BTUH

Rev. 1.3

# HVAC Guide Specifications

Chilled or Hot Water with Optional Electric Heat Multi-Position Fan Coil  
2-Pipe

Nominal Size:  
**24,000 BTUH**

MultiAqua Model Number:  
24CWA2-00

## **Part 1-General**

### **1.01 System Description**

MultiAqua Chilled Water Fan Coils are manufactured with heavy gauge galvanized steel to resist corrosion.

### **1.02 Quality Assurance**

- A. Certified in accordance with U.L. Standard 95, latest version (U.S.A.)
- B. Manufactured in a facility registered to ISO 9002, Manufacturing Quality Standard.
- C. Fully load tested at the factory.
- D. Damage resistant packaging.

### **1.03 Delivery, Storage and Handling**

- A. Packaged and readied for shipment from the factory.
- B. Controls shall be capable of withstanding 150°F storage temperatures in the control compartment.
- C. Stored and handled per manufacturer's recommendations.

## **Part 2-Product**

### **2.01 Equipment**

- A. General:
  - 1. Unit shall be a factory assembled and tested multi-position chilled/ hot water with electric heat fan coil.
  - 2. Shall be assembled with high quality.
  - 3. Contained with the unit shall be all factory wiring, piping, associated controls and special accessories required prior to start up.
- B. Unit Cabinet:
  - 1. Composed of heavy gauge galvanized steel casing with baked polyester powder.
  - 2. Shall be internally insulated to ensure quiet operation.
  - 3. Cabinet shall be capable of being installed in a vertical or horizontal position.
- C. Fan Motors:
  - 1. Shall be available in 208/230-1-60 VAC.
  - 2. Fan motors shall be three speed, direct drive, and PSC type.
  - 3. Internal overload protected.
- D. Blower Wheels:
  - 1. Blower wheels are forward curved and dynamically balanced.
- E. Water Coil:
  - 1. Manufactured with water coils containing 3/8" copper tubing mechanically bonded to aluminum fins.
  - 2. Coils shall be factory tested to 350 psig.
  - 3. Coil shall contain manual air bleed port.
- F. Drain Pan:
  - 1. Drain pan shall be molded with high impact polymers.
  - 2. Pan shall contain a primary and secondary drain connection.
  - 3. Pan shall be capable of draining in the vertical and horizontal positions without changing the pan configuration.
- G. Filters:

1. Unit shall contain a filter door for easy access to the filter.
  2. A filter track shall be provided.
  3. Unit shall come supplied with a 1" throwaway filter.
- H. Electric Heaters:
1. Unit shall be capable of incorporating an electric heat package.
  2. Electric heaters shall be of the open wire type.
  3. Electric heat packages shall contain non-fused breakers, sequencers and safeties.

### **Part 3-Controls and Safeties**

#### **3.01 Controls**

- A. Fan coils shall be completely factory wired and tested.
- B. Unit shall include a terminal block that is capable of incorporating a 24 VAC thermostat.

#### **3.02 Safeties**

- A. Fan coil shall contain a non-reusable fuse on the secondary voltage side of the transformer.
- B. Electric heat package shall contain non-fusible breakers and high temperature limits.

### **Part 4-Operating Characteristics**

#### **4.01 Electrical Requirements**

- A. Electrical shall include a terminal block.
- B. Electrical power supply shall be rated to withstand 120°F operating ambient temperatures.

### **Part 5- Definitions**

#### **5.01 Abbreviations**

- A. CFM = Cubic Feet per Minute
- B. DB = Dry Bulb Temperature
- C. EWT = Entering Water Temperature
- D. GPM = US Gallons Per Minute
- E. MBH = BTU X 1000
- F. SC = Sensible Cooling
- G. TC = Total Cooling = Sensible + Latent
- H. WB = Wet Bulb Temperature
- I. WPD = Water Pressure Drop in feet of head
- J. dB = Decibel Level
- K. m = Meter
- L. In = Inches
- M. FPI = Fins per Inch
- N. OD = Outside Diameter
- O. ID = Inside Diameter
- P. MCA = Minimum Circuit Amps
- Q. MOP = Maximum Over current Protection
- R. LBS = Pounds U.S.

#### **5.02 Measurements**

- A. All measurements with regard to length, width, and height shall be in inches.

## 24CWA2-00 Product Specifications

<b>Physical Data</b>									
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs)	Cooling Rows FPI	Copper Diameter (in)	Water Inlet (in)	Water Outlet (in)	Drain (in)
24CWA2-00	39.75	17.50	21.00	118.00	4-14	3/8	1/2	1/2	3/4

<b>Electrical Data</b>						
Model Number	High Speed CFM	Volts/Phase/Hertz	Fan Motor HP	Fan Motor Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
					MCA	MOP
24CWA2-00	912	208/230-1-60	1/3	2.8	3.50	7

Model Number	Nominal CFM	KW Electric Heat		Minimum Ampacity		Maximum Breaker	
		240V	208V	240V	208V	240V	208V
24CWA2-XX	912	0	0	2.1	1.9	15	15
		5	3.8	29	25	30	25
		8	6	44	39	45	40
		10	7.5	55	48	60	50

## 24CWA2-00 Chilled Water Performance Data

24CWA2-00 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
912	42	3.0	TC	25798
			SC	20496
			WPD	2.5
		4.	TC	30092
			SC	22390
			WPD	4.4
		5.0	TC	33510
			SC	23942
			WPD	6.7
		5.75	TC	35586
			SC	24872
			WPD	8.7

**\*High Speed**

24CWA2-00 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
912	45	3.0	TC	23268
			SC	19528
			WPD	2.5
		4.	TC	26856
			SC	21088
			WPD	4.4
		5.0	TC	29756
			SC	22392
			WPD	6.7
		5.75	TC	31570
			SC	23256
			WPD	8.6

**\*High Speed**

Recommended minimum flow rate for this unit at  $\geq 2$  fps is 2.75 gpm

Recommended maximum flow rate for this unit at  $\leq 6$  fps is 7.75 gpm

## 24CWA2-00 Hot Water Performance Data

### 24CWA2-00 HOT WATER CAPACITIES

ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
50	912	3.0	2.4	27320	34324	41284	48276	55296	62340	69400	76476	83558	90646
		4.0	4.1	29738	37244	44792	52378	59992	67628	75284	82954	90632	98318
		5.0	6.2	31208	39084	47000	54950	62926	70924	78938	86966	95002	103046
		5.75	8.0	31990	40058	48166	56304	64466	72650	80848	89060	97280	105506

### 24CWA2-00 HOT WATER CAPACITIES

ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
60	912	3.0	2.4	20656	27598	34528	41500	48502	55528	62574	69636	76706	83784
		4.0	4.1	22420	29898	37424	44988	52582	60202	67842	75496	83162	90836
		5.0	6.2	23502	31352	39246	47174	55130	63112	71110	79124	87148	95182
		5.75	8.0	24078	32122	40206	48324	56470	64636	72820	81018	89226	97442

### 24CWA2-00 HOT WATER CAPACITIES

ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
70	912	3.0	2.4	13952	20838	27750	34702	41688	48700	55732	62780	69842	76910
		4.0	4.1	15080	22536	30040	37584	45160	52764	60388	68030	75684	83348
		5.0	6.2	15782	23608	31480	39388	47328	55292	63278	71278	79292	87314
		5.75	8.0	16154	24176	32238	40338	48466	56618	64788	72974	81170	89376

### 24CWA2-00 HOT WATER CAPACITIES

ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
80	912	3.0	2.4	7206	14054	20948	27882	34852	41850	48870	55908	62958	70018
		4.0	4.1	7720	15154	22638	30162	37722	45310	52920	60550	68192	75846
		5.0	6.1	8044	15848	23698	31588	39512	47462	55432	63420	71422	79436
		5.75	8.0	8216	16214	24258	32340	40452	48588	56746	64918	73106	81302

**Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows:**

ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	3.0	49006
	4.0	53156
	5.0	55746
	5.75	57108

## 24CWA2-00 CFM Adjustments

Model Number	Motor Speed	CFM vs. External Static Pressure				
		0.1	0.2	0.3	0.4	0.5
24CWA-XX	High	950	900	850	790	720
	Medium	850	800	740	680	610
	Low	700	660	610	550	480

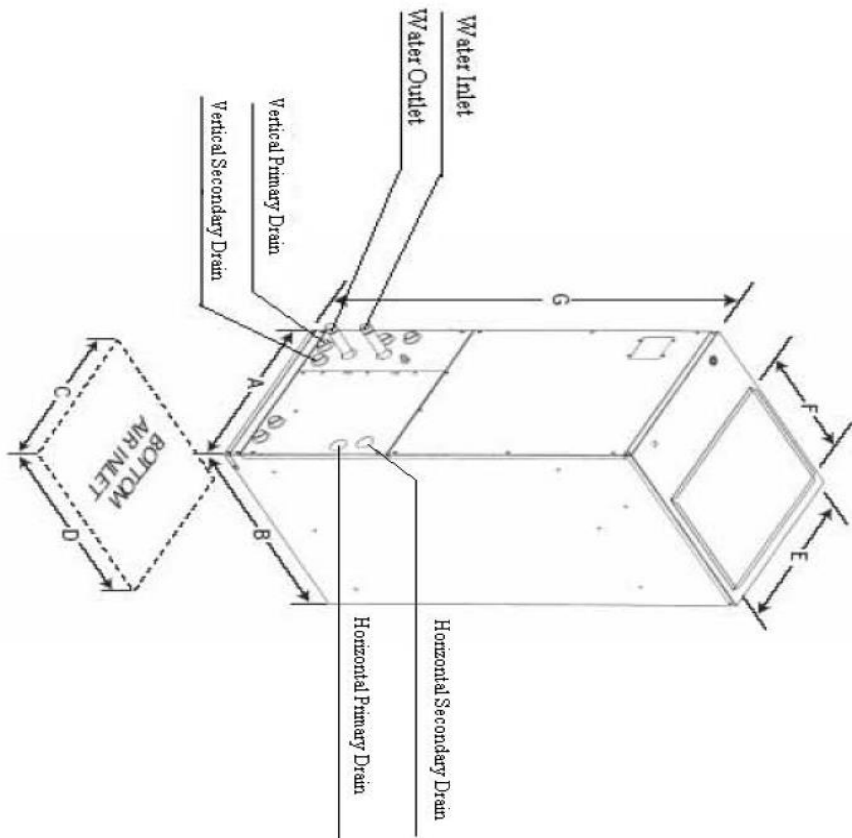
## 24CWA2-00 Sound Data

MODEL #	24CWA2-00
Fan Speed	dB @ 1 m
H	42



# 24CWA2-00 Dimensional Drawing

**CWA2 Certified Drawing**  
**Drawing # 0907400078**



Model No.	A	B	C	D	E	F	G
18 & 24CWA2-XX	17½	21	15	17½	16	12¾	39¼
36CWA2-XX	17½	21	15	17½	16	12¾	39¼
48 & 60CWA2-XX	21½	25	19¼	22¼	19¾	17¼	49¼

Note: "-XX" indicates electric heat (KW) size.