Multiaqua™

24CWA4-HW 4-Pipe Chilled & Hot Water Air Handler (120V)

4-Pipe Heat & Cool Fan Coil 24,000 BTUH

Rev. 1.3

HVAC Guide Specifications

Chilled & Hot Water Multi-Position Fan Coil
4-Pipe

Nominal Size:
24,000 BTUH

Multiaqua Model Number:
24CWA4-HW

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 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 120-1-60 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 a chilled water coil containing 3/8" copper tubing mechanically bonded to aluminum fins.
   2. Manufactured with a hot water coil containing 3/8" copper tubing mechanically bonded to aluminum fins.
   3. Maximum operating pressure is 125 psi.
   4. Maximum coil inlet water temperature is 180F.
   5. 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. Hot Water Pump
1. Unit shall contain an internal hot water circulating pump.

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.

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.

24CWA4-HW Product Specifications

Physical Data												
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Cooling Rows FPI	Heating Rows FPI	Copper Diameter (in)	Chilled Water Inlet (in)	Chilled Water Outlet (in)	Hot Water Inlet (in)	Hot Water Outlet (in)	Drain (in)
24CWA4-HW	39.75	17.5	21	140	4-14	3-12	3/8	1/2	1/2	1/2	1/2	3/4

Electrical Data								
Model Number	Nominal CFM	Volts/ Phase/ Hertz	Fan Motor HP	Fan Motor Full Load Ampacity	Pump Motor HP	Hot Water Pump Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
							MCA	MOP
24CWA4-HW	816	120-1-60	1/4	3.2	1/40	0.52	3.77	9

24CWA4-HW Chilled Water Performance Data

24CWA4-HW COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
816	42	3.5	TC	26280
			SC	19748
			WPD	3.5
		4.25	TC	29060
			SC	20980
			WPD	5.0
		5	TC	31328
			SC	22036
			WPD	6.7
		5.75	TC	33228
			SC	22886
			WPD	8.7

***High Speed**

24CWA4-HW COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
816	45	3.5	TC	23490
			SC	18670
			WPD	3.4
		4.25	TC	25822
			SC	19692
			WPD	4.9
		5	TC	27800
			SC	20586
			WPD	6.7
		5.75	TC	29478
			SC	21362
			WPD	8.6

***High Speed**

Recommended minimum flow rate for this unit at ≥ 2 fps is 2.75 gpm

Recommended maximum flow rate for this unit at ≤ 6 fps is 7.75 gpm

24CWA4-HW Hot Water Performance Data

24CWA4-HW 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	816	3	3.6	17658	21876	26154	30483	34855	39264	43702	48166	52651	57153
		4	6.2	18935	23492	28106	32767	37468	42203	46966	51752	56557	61377
		5	9.4	19814	24600	29438	34320	39239	44189	49164	54159	59172	64199
		6	13.3	20457	25407	30405	35444	40517	45618	50741	55885	61043	66215

24CWA4-HW 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	816	3	3.6	13661	17846	22094	26395	30741	35126	39542	43986	48452	52936
		4	6.2	14584	19108	23691	28325	33000	37712	42453	47219	52005	56809
		5	9.4	15220	19973	24782	29637	34532	39459	44413	49390	54386	59398
		6	13.3	15684	20603	25574	30587	35637	40716	45821	50946	56086	61246

24CWA4-HW 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	816	3	3.6	9640	13794	18014	22288	26609	30971	35367	39791	44239	48707
		4	6.2	10214	14707	19262	23868	28519	33208	37928	42675	47445	52232
		5	9.4	10610	15333	20114	24943	29814	34719	39654	44613	49593	54589
		6	13.3	10900	15789	20732	25721	30748	35808	40894	46003	51130	56273

24CWA4-HW 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	816	3	3.6	5596	9721	13913	18162	22460	26800	31175	35581	40012	44464
		4	6.2	5827	10290	14817	19398	24025	28692	33392	38121	42873	47646
		5	9.4	5987	10680	15433	20238	25086	29970	34886	39827	44791	49773
		6	13.3	6103	10964	15881	20846	25852	30891	35959	41051	46164	51293

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	30824
	4	33037
	5	34532
	6	35608

24CWA4-HW CFM Adjustments

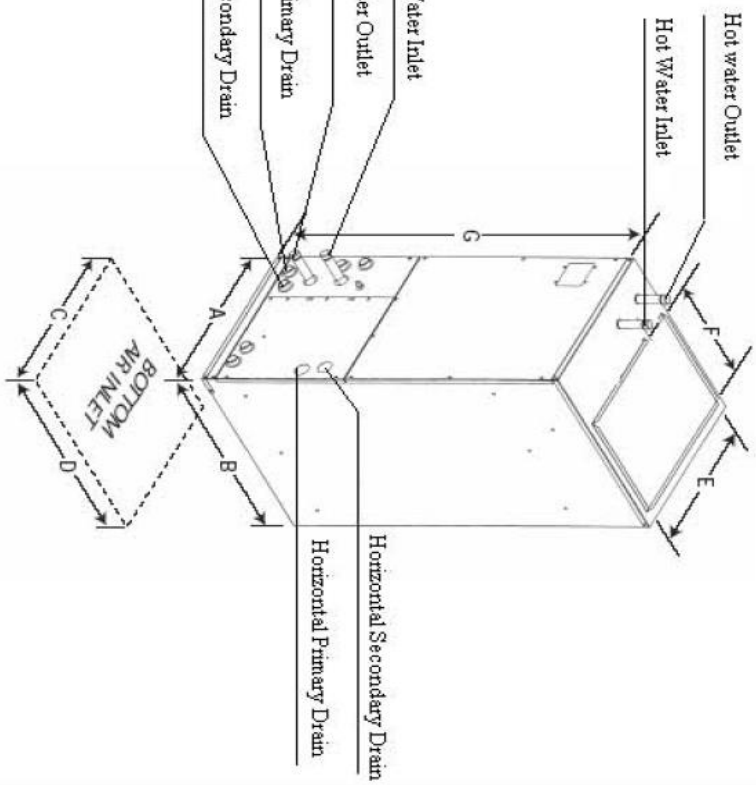
Model Number	Motor Speed	CFM vs. ESP				
		0.1	0.2	0.3	0.4	0.5
24CWA4-HW	High	816	768	730	691	653
	Medium	792	744	686	662	643
	Low	749	686	629	605	NA

24CWA4-HW Sound Data

MODEL #	24CWA4-HW
Fan Speed	dB @ 1 m
H	40

24CWA4-HW Dimensional Drawing

CWA4 Certified Drawing
Drawing # 0907400079



Model No.	A	B	C	D	E	F	G
24CWA4-XX	17½	21	15	17½	16	12⅝	39¼
36CWA4-XX 48CWA4-XX 60CWA4-XX	21½	25	19¼	22¼	19⅝	17¼	49¼

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