CFFWA-04-1-U Chilled/Hot Water Universal Mount Fan Coil

2-Pipe Heat / Cool Fan Coil 12,000 BTUH

Rev. 1.4

HVAC Guide Specifications

Chilled and Hot Water Universal Mount Fan Coil
2-Pipe

Nominal Size:
12,000 BTUH

Multiaqua Model Number:
CFFWA-04-1-U

Part 1-General

1.01 System Description

Multiaqua Chilled Water Fan Coils are manufactured with galvanized steel and high impact molded polymers.

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 chilled and 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 galvanized steel with baked polyester powder and high impact polymers.
   2. Shall be internally insulated to ensure quiet operation.

C. Fan Motors:
   1. Shall be available in 208/230-1-50/60 VAC.
   2. Fan motors shall be three speed, direct drive, and PSC type.
   3. Totally enclosed.
   4. Internal overload protected.
   5. Unit shall contain a swing motor to modulate the discharge air.

D. Blower Wheels:
   1. Blower wheels are tangential and dynamically balanced.

E. Water Coil:
   1. Manufactured with water coils containing 3/8" copper tubing mechanically bonded to aluminum fins.
   2. Maximum operating pressure is 150 psig.
   3. Maximum inlet water temperature 160° F

F. Drain Pan:
   1. All drain pans shall be coated on both the interior and exterior with baked polyester powder to resist corrosion.
   2. The exterior of all drain pans shall be insulated with closed cell to prevent condensation.
   3. Pans shall contain drain tubing that is accessible from the back, bottom and side of the unit.

G. Filters:
   1. Unit shall contain 65% washable filters.

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.
C. Controls shall be capable of incorporating an optional hard-wired 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.

CFFWA-04-1-U Product Specifications

Physical Data								
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Cooling Rows FPI	Water Inlet (in)	Water Outlet (in)	Drain (in)
CFFWA-04-1-U	25.27	40.31	9.01	79.37	2-13	1/2	1/2	1/2

Electrical Data						
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
CFFWA-04-1-U	436	208/230-1-50/60	1/15	0.56	.70	2

CFFWA-04-1-U Chilled Water Performance Data

CFFWA-04-01-U COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
436*	42	1.5	TC	9755
			SC	8021
			WPD	3.8
		2.25	TC	11795
			SC	8880
			WPD	8.1
		2.75	TC	12787
			SC	9281
			WPD	11.8
		3.5	TC	13942
			SC	9740
			WPD	18.5

***High Speed**

CFFWA-04-01-U COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
436*	45	1.5	TC	8757
			SC	7618
			WPD	3.8
		2.25	TC	10528
			SC	8398
			WPD	8.1
		2.75	TC	11400
			SC	8743
			WPD	11.7
		3.5	TC	12318
			SC	9111
			WPD	18.4

***High Speed**

Recommended minimum flow rate for this unit at ≥ 2fps is 1.5 gpm

Recommended maximum flow rate for this unit at ≤ 6fps is 3.75 gpm

CFFWA-04-1-U Hot Water Performance Data

This heating performance data is at dry bulb temperature indicated / wet bulb temperature not considered

CFFWA-04-01-U 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	436	1.5	3.6	10238	12805	15388	17983	20589	23203	25823	28447	31075	33705
		2.25	7.5	11233	14050	16882	19724	22577	25436	28301	31171	34043	36918
		2.75	10.9	11637	14554	17484	20424	23373	26328	29289	32254	35222	38191
		3.5	17.0	12054	15072	18102	21141	24188	27240	30298	33359	36422	39487

CFFWA-04-01-U 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	436	1.5	3.6	7739	10296	12870	15458	18057	20664	23278	25898	28521	31147
		2.25	7.5	8476	11283	14106	16941	19787	22640	25500	28364	31232	34103
		2.75	10.9	8775	11682	14604	17537	20480	23430	26385	29345	32309	35275
		3.5	17.0	9084	12093	15116	18149	21189	24237	27290	30246	33406	36468

CFFWA-04-01-U 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	436	1.5	3.5	5232	7781	10347	12927	15519	18120	20729	23344	25963	28585
		2.25	7.5	5713	8512	11327	14115	16993	19841	22695	25555	28419	31286
		2.75	10.9	5909	8808	11722	14648	17584	20528	23479	26435	29394	32357
		3.5	17.0	6111	9112	12128	15154	18189	21232	24280	27332	30389	33448

CFFWA-04-01-U 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	436	1.5	3.5	2718	5259	7817	10391	12977	15573	18177	20787	23402	26020
		2.25	7.5	2947	5737	8544	11365	14198	17039	19899	22744	25604	28468
		2.75	10.8	3039	5930	8837	11756	14687	17626	20572	23523	26479	29439
		3.5	16.9	3135	6129	9138	12158	15188	18225	21269	24318	27371	30427

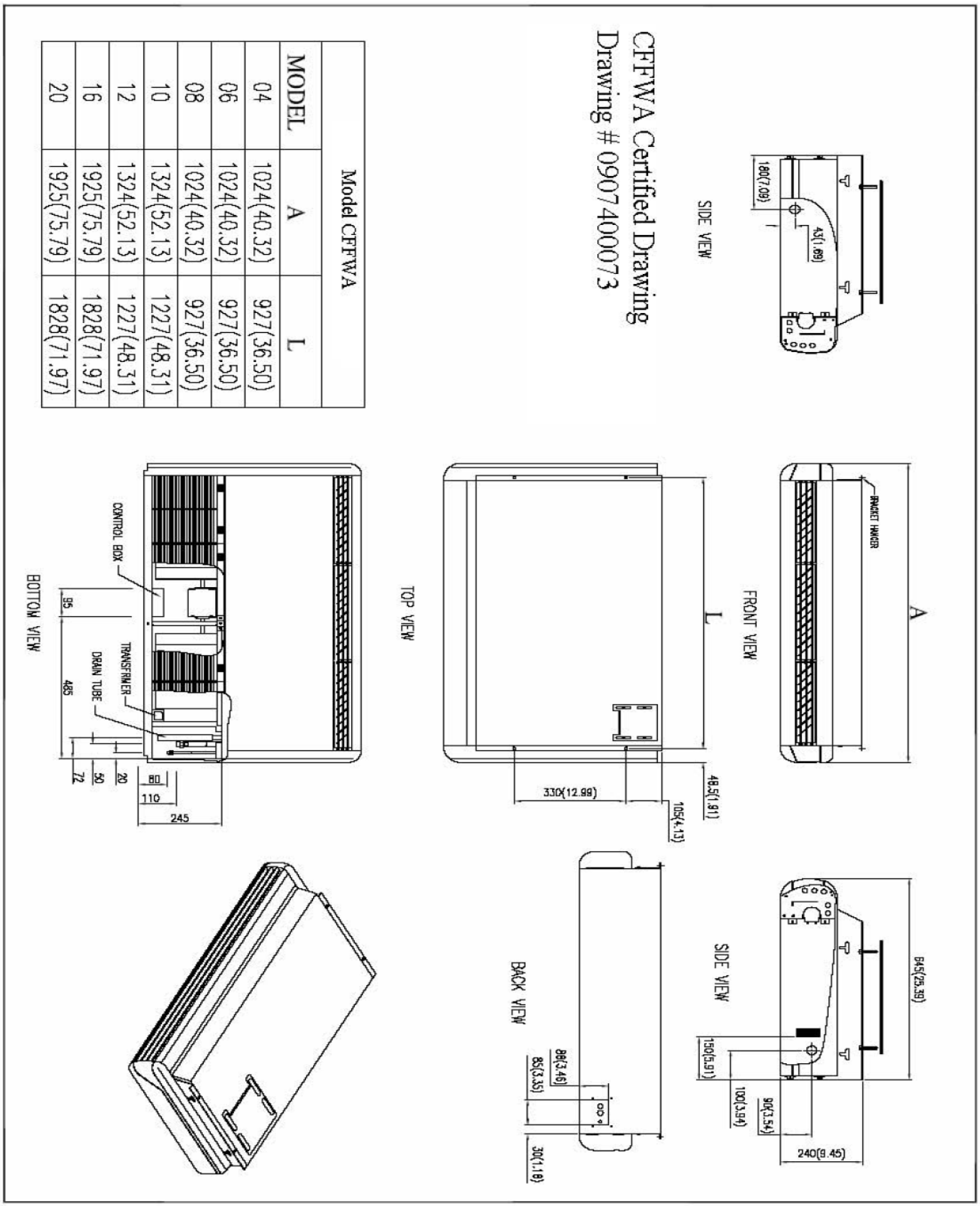
Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows

ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140°F
70°F DB / 60F° WB	1.5	18215
	2.25	19959
	2.75	20657
	3.5	21372

CFFWA-04-01-U Sound Data

MODEL #	CFFWA-041-U
Fan Speed	dB @ 1 m
H	42

CFFWA-04-1-U Dimensional Drawing



Model CFFWA		
MODEL	A	L
04	1024(40.32)	927(36.50)
06	1024(40.32)	927(36.50)
08	1024(40.32)	927(36.50)
10	1324(52.13)	1227(48.31)
12	1324(52.13)	1227(48.31)
16	1925(75.79)	1828(71.97)
20	1925(75.79)	1828(71.97)