



## **CFFWA-16-1-U Chilled/Hot Water Universal Mount Fan Coil**

**2-Pipe Heat / Cool Fan Coil 48,000 BTUH**

# HVAC Guide Specifications

Chilled and Hot Water Universal Mount Fan Coil  
2-Pipe

Nominal Size:  
**48,000 BTUH**

MultiAqua Model Number:  
**CFFWA-16-1-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-16-1-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-16-1-U	25.27	75.78	9.01	158.73	3-14	3/4	3/4	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-16-1-U	1360	208/230-1-50/60	1/8 & 1/8	3.18	3.59	5

# CFFWA-16-1-U Chilled Water Performance Data

<b>CFFWA-16-1-U COOLING CAPACITIES</b>				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1360	42	8.0	TC	45905
			SC	33149
			WPD	18.7
		8.5	TC	46860
			SC	33567
			WPD	20.9
		9.0	TC	47734
			SC	33917
			WPD	23.2
		9.5	TC	48599
			SC	34280
			WPD	25.6

**\*High Speed**

<b>CFFWA-16-1-U COOLING CAPACITIES</b>				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1360	45	8.0	TC	40923
			SC	31144
			WPD	18.6
		8.5	TC	41746
			SC	31507
			WPD	20.7
		9.0	TC	42516
			SC	31811
			WPD	23.1
		9.5	TC	43291
			SC	32134
			WPD	25.5

**\*High Speed**

**Recommended minimum flow rate for this unit at  $\geq$  2fps is 3.5 gpm**

**Recommended maximum flow rate for this unit at  $\leq$  6fps is 9.75 gpm**

# CFFWA-16-1-U Hot Water Performance Data

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

CFFWA-16-01-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	1360	8.0	17.2	41025	51312	61633	71980	82347	92730	103125	113527	123935	134344
		8.5	19.2	41453	51847	62273	72725	83197	93685	104184	114690	125202	135715
		9.0	21.3	41837	52236	62847	73394	83960	94542	105134	115735	126339	136946
		9.5	23.6	42181	52755	63361	73991	84640	95305	105980	116663	127351	138041

CFFWA-16-01-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	1360	8.0	17.1	30885	41149	51450	61779	72131	82500	92883	103275	113673	124074
		8.5	19.2	31202	41574	51980	62415	72872	83346	93833	104329	114831	125337
		9.0	21.3	31487	41954	52456	62985	73536	84104	94685	105275	115871	126470
		9.5	23.5	31742	42295	52881	63494	74129	84780	95444	106117	116796	127479

CFFWA-16-01-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	1360	8.0	17.1	20731	30974	41255	51566	61903	72259	82629	93010	103399	113792
		8.5	19.1	20939	31289	41676	52093	62535	72995	83470	93956	104449	114947
		9.0	21.2	21125	31571	42054	52566	63102	73657	84226	94805	105392	115984
		9.5	23.4	21292	31824	42391	52988	63607	74245	84898	95560	106230	116906

CFFWA-16-01-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	1360	8.0	17.0	10566	20788	31051	41346	51668	62010	72369	82740	93120	103506
		8.5	19.1	10665	20994	31363	41764	52191	62639	73102	83578	94063	104553
		9.0	21.2	10754	21179	31644	42140	52661	63203	73761	84331	94909	105493
		9.5	23.4	10833	21345	31894	42475	53080	63706	74347	84999	95661	106329

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 / 60°F WB	8.0	72798
	8.5	73549
	9.0	74224
	9.5	74826

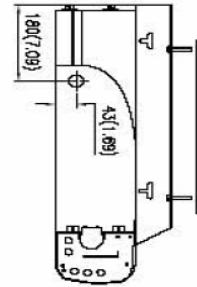
## CFFWA-16-1-U Sound Data

MODEL #	CFFWA-16-1-U
Fan Speed	dB @ 1 m
H	50

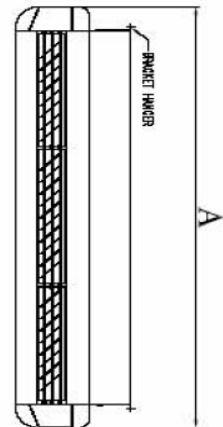
# CFFWA-16-1-U Dimensional Drawing

CFFWA Certified Drawing  
 Drawing # 0907 400073

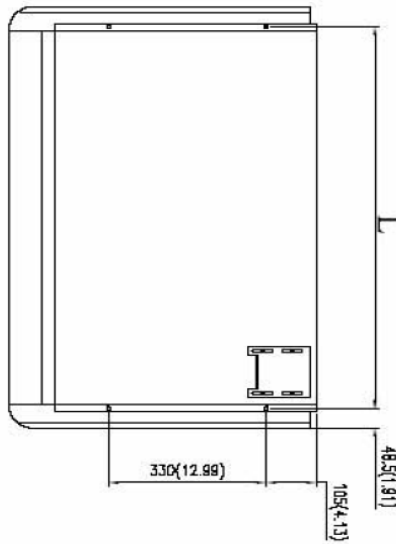
Model CFFWA			
MODEL	A	L	
04	1024(40.32)	927(36.50)	
06	1024(40.32)	927(36.50)	
08	1024(40.32)	927(36.50)	
10	1324(52.13)	1227(48.31)	
12	1324(52.13)	1227(48.31)	
16	1925(75.79)	1828(71.97)	
20	1925(75.79)	1828(71.97)	



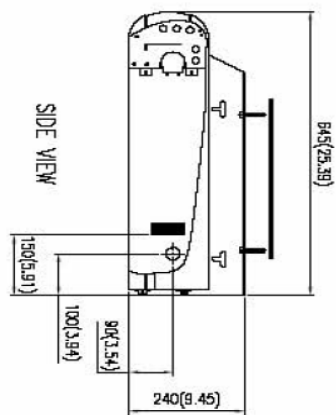
SIDE VIEW



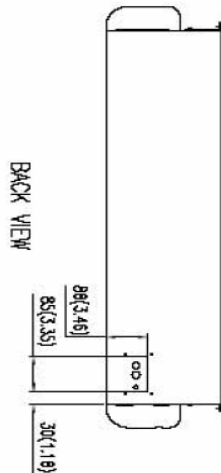
FRONT VIEW



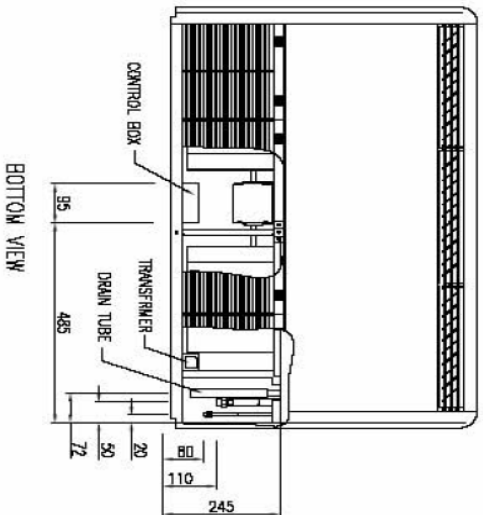
TOP VIEW



SIDE VIEW



BACK VIEW



BOTTOM VIEW

