



## **CFFWA4P-04-1-U Chilled/Hot Water Universal Mount Fan Coil (4-Pipe)**

**4-Pipe Heat / Cool Fan Coil 12,000 BTUH**

# HVAC Guide Specifications

Chilled and Hot Water Universal Mount Fan Coil

4-Pipe Nominal Size:

**12,000 BTUH**

MultiAqua Model Number:

**CFFWA4P-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 electrically 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.

## **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.
- B. Unit Cabinet:
  - 1. Composed of galvanized steel with baked polyester powder and high impact polymers.
  - 2. Coil Compartment 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 distribute the discharge air.
- D. Blower Wheels:
  - 1. Blower wheels are double entry and dynamically balanced.
- E. Water Coils:
  - 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
  - 4. Primary coil and Secondary coil connections are opposite ends and are non reversible.
  - 5. Pressure independent flow control required on both coils to not exceed max flow for each coil.
    - i. Consult primary coil and secondary coil data for proper sizing
- 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 insulation 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 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 field supplied 24 VAC thermostat.
- C. Controls shall be capable of incorporating a field supplied three speed fan speed switch and or thermostat.

**3.02 Safeties**

- A. Fan coil shall contain a field renewable fuse on the secondary voltage side of the transformer.
- B. Fan coil shall contain a non renewable thermal protector on the primary voltage side of the transformer.

**Part 4-Operating Characteristics****4.01 Electrical Requirements**

- A. Electrical shall include a terminal block for both high voltage and low voltage.
- 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.

## CFFWA4P-04-1-U Product Specifications

<b>Physical Data</b>									
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Primary Coil Rows FPI	Water Inlet / Outlet OD (in)	Secondary Coil Rows FPI	Water Inlet/ Outlet OD (in)	Drain Connection ID (in)
CFFWA4P-04-1-U	11.3	53.3	28.3	81.6	2-14	.625	1/14	.625	1" tube

**\*All dimensions rounded up to nearest tenth of an inch. All dimensions are as the unit is horizontal/ceiling mounted.**

<b>Electrical Data</b>						
Model Number	High Speed CFM	Volts/ Phase/ Hertz	Fan Motor (Qty) Watts	Fan Motor Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
					MCA	MOP
CFFWA4P-04-1-U	435	208/230-1-50/60	(1)70	0.32	.4	1.0

## CFFWA4P-04-1-U Chilled Water Performance Data

CFFWA4P-04-01-U COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
435*	42	1.5	TC	10927
			SC	8381
			WPD	4.6
		2.0	TC	12535
			SC	9131
			WPD	7.8
		2.5	TC	13778
			SC	9699
			WPD	11.70
		3.5	TC	15540
			SC	10594
			WPD	21.9

**\*High Speed**

CFFWA4P-04-01-U COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
435*	45	1.5	TC	9797
			SC	7955
			WPD	4.5
		2.0	TC	11218
			SC	8601
			WPD	7.7
		2.5	TC	12282
			SC	9086
			WPD	11.7
		3.5	TC	13763
			SC	9866
			WPD	21.8

**\*High Speed**

**Recommended minimum flow rate for the primary coil at  $\geq 2$  fps is 1.5 gpm**

**Recommended maximum flow rate for the primary coil at  $\leq 6$  fps is 3.75 gpm**

## CFFWA4P-04-1-U Hot Water Performance Data

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

<b>CFFWA4P-04-01-U HOT WATER CAPACITIES (Primary Coil)</b>													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
50	435	1.5	4.2	10959	13726	16506	19298	22098	24905	27717	30532	33350	36168
		2.0	7.2	11754	14720	17699	20688	23686	26691	29700	32713	35729	38745
		2.5	10.8	12267	15359	18463	21577	24699	27826	30958	34094	37232	40371
		3.5	20.1	12898	16144	19400	22664	25934	29210	32498	35772	39056	42342

<b>CFFWA4P-04-01-U HOT WATER CAPACITIES (Primary Coil)</b>													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
60	435	1.5	4.2	8255	11013	13786	16570	19364	22166	24973	27784	30598	33413
		2.0	7.2	8846	11803	14774	17757	20748	23747	26752	29760	32772	35785
		2.5	10.8	9227	12311	15407	18515	21630	24753	27880	31012	34146	37282
		3.5	20.1	9696	12934	16184	19442	22707	25978	29254	32533	35814	39097

<b>CFFWA4P-04-01-U HOT WATER CAPACITIES (Primary Coil)</b>													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
70	435	1.5	4.2	5543	8294	11059	13838	16626	19423	22225	25032	27843	30655
		2.0	7.1	5932	8881	11845	14821	17807	20801	23801	26805	29813	32824
		2.5	10.8	6183	9259	12349	15450	18560	21677	24800	27928	31059	34192
		3.5	20.0	6492	9723	12966	16219	19479	22746	26017	29293	32571	35851

<b>CFFWA4P-04-01-U HOT WATER CAPACITIES (Primary Coil)</b>													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
80	435	1.5	4.2	2825	5568	8327	11100	13883	16674	19473	22276	25083	27892
		2.0	7.1	3013	5955	8912	11882	14862	17851	20846	23847	26851	29858
		2.5	10.7	3135	6204	9287	12382	15486	18599	21718	24841	27969	31099
		3.5	20.0	3285	6509	9746	12993	16249	19511	22779	26051	29326	32604

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

<b>CFFWA4P-04-01-U HOT WATER CAPACITY (Primary Coil)</b>		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	1.5	19534
	2.0	20935
	2.5	21826
	3.5	22914

*These specifications are subject to change without notice.  
Check [www.multiaqua.com](http://www.multiaqua.com) for the latest information.*

# CFFWA4P-04-1-U Chilled Water Performance Data

CFFWA4P-04-01-U COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
435*	42	3.5	TC	7563
			SC	6204
			WPD	2.5
		4.5	TC	8484
			SC	6601
			WPD	4.0
		5.5	TC	9178
			SC	6899
			WPD	5.9
		6.5	TC	9717
			SC	7133
			WPD	8.2

**\*High Speed**

CFFWA4P-04-01-U COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
435*	45	3.5	TC	6700
			SC	5884
			WPD	2.5
		4.5	TC	7522
			SC	6237
			WPD	4.0
		5.5	TC	8141
			SC	6500
			WPD	2.9
		6.5	TC	8622
			SC	6705
			WPD	8.2

**\*High Speed**

Recommended minimum flow rate for the secondary coil at  $\geq 2$  fps is 3.5 gpm

Recommended maximum flow rate for the secondary coil at  $\leq 6$  fps is 9.75 gpm

# CFFWA4P-04-1-U Hot Water Performance Data

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

CFFWA4P-04-01-U HOT WATER CAPACITIES (Secondary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
50	435	3.5	2.4	8044	10097	12172	14265	16373	18493	20623	22761	24906	27057
		4.5	3.9	8371	10500	12647	14810	16986	19172	21367	23570	25778	27991
		5.5	5.7	8600	10780	12976	15187	17409	19640	21879	24124	26375	28630
		6.5	8.0	8770	10987	13219	15464	17719	19983	22254	24530	26811	29096

CFFWA4P-04-01-U HOT WATER CAPACITIES (Secondary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
60	435	3.5	2.4	6073	8112	10174	12255	14352	16462	18583	20714	22852	24996
		4.5	3.9	6316	8432	10567	12719	14885	17063	19250	21446	23648	25855
		5.5	5.7	6486	8654	10840	13040	15254	17477	19709	21948	24193	26443
		6.5	8.0	6612	8818	11041	13277	15524	17781	20045	22316	24592	26872

CFFWA4P-04-01-U HOT WATER CAPACITIES (Secondary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
70	435	3.5	2.4	4098	6124	8173	10242	12329	14429	16542	18664	20795	22933
		4.5	3.9	4258	6361	8485	10626	12783	14952	17132	19321	21516	23718
		5.5	5.7	4370	6526	8701	10893	13097	15313	17538	19771	22010	24255
		6.5	8.0	4453	6648	8861	11089	13328	15578	17836	20101	22372	24647

CFFWA4P-04-01-U HOT WATER CAPACITIES Secondary Coil													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
80	435	3.5	2.4	2120	4161	6168	8226	10302	12394	14498	16613	18737	20868
		4.5	3.9	2197	4287	6400	8531	10679	12840	15012	17194	19383	21579
		5.5	5.7	2251	4396	6561	8743	10939	13147	15366	17592	19826	22065
		6.5	7.9	2291	4476	6680	8899	11131	13373	15625	17884	20150	22421

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

CFFWA4P-04-01-U HOT WATER CAPACITY (Secondary Coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	3.5	14488
	4.5	15016
	5.5	15380
	6.5	15647



# CFFWA4P-04-1-U Chilled Water Performance Data

CFFWA4P-04-01-U COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
435*	42	5.0	TC	17707
			SC	12120
			WPD	4.7
		6.5	TC	19355
			SC	12851
			WPD	7.8
		8.0	TC	20516
			SC	13390
			WPD	11.6
		10.0	TC	21606
			SC	13885
			WPD	17.9

**\*High Speed**

CFFWA4P-04-01-U COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
435*	45	5.0	TC	15740
			SC	11282
			WPD	4.7
		6.5	TC	17272
			SC	11974
			WPD	7.7
		8.0	TC	18352
			SC	12443
			WPD	11.6
		10.0	TC	19334
			SC	12877
			WPD	17.9

**\*High Speed**

**Pressure independent flow control required on both coils to not exceed max flow for each coil  
Consult primary coil and secondary coil data for proper sizing**

**Recommended minimum flow rate for both coils piped in parallel at  $\geq$  2fps is 4.75 gpm**

**Recommended minimum flow rate for both coils piped in parallel at  $\leq$  6fps is 13.75 gpm**

# CFFWA4P-04-1-U Hot Water Performance Data

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

CFFWA4P-04-01-U HOT WATER CAPACITIES (Both Coils)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
50	435	5.0	4.5	15137	18983	22848	26730	30624	34529	38443	42363	46289	50219
		6.5	7.5	15538	19473	23425	27389	31365	35349	39339	43336	47337	51641
		8.0	11.2	15793	19785	23790	27807	31832	35865	39904	43947	47994	52044
		10.0	17.2	16018	20059	24110	28171	32240	36315	40395	44478	48565	52654

CFFWA4P-04-01-U HOT WATER CAPACITIES (Both Coils)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
60	435	5.0	4.5	11371	15203	19056	22926	26811	30707	34612	38526	42445	46370
		6.5	7.5	11668	15592	19533	23488	27455	31432	35416	39406	43402	47402
		8.0	11.2	11858	15839	19835	23844	27862	31889	35921	39960	44002	48048
		10.0	17.2	12025	16056	20101	24155	28218	32287	36362	40441	44524	48610

CFFWA4P-04-01-U HOT WATER CAPACITIES (Both Coils)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
70	435	5.0	4.5	7600	11419	15260	19120	22995	26883	30781	34687	38600	42519
		6.5	7.5	7795	11708	15639	19585	23544	27514	31491	35476	39467	43462
		8.0	11.2	7920	11892	15879	19880	23891	27912	31939	35973	40011	44053
		10.0	17.2	8030	12053	16090	20138	24195	28259	32329	36404	40484	44566

CFFWA4P-04-01-U HOT WATER CAPACITIES (Both Coils)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
80	435	5.0	4.5	3825	7632	11461	15310	19176	23055	26945	30845	34752	38665
		6.5	7.5	3920	7821	11742	15680	19631	23593	27564	31543	35528	39519
		8.0	11.2	3980	7942	11921	15914	19918	23932	27954	31983	36016	40054
		10.0	17.2	4034	8049	12078	16119	20170	24229	28294	32365	36441	40520

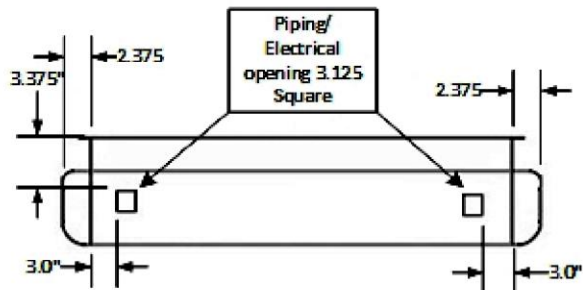
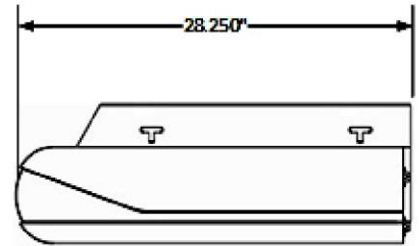
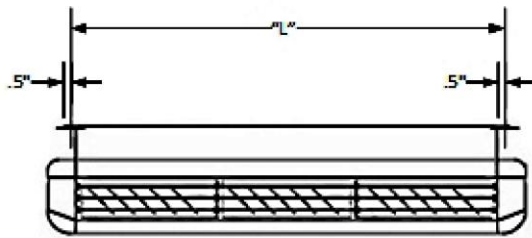
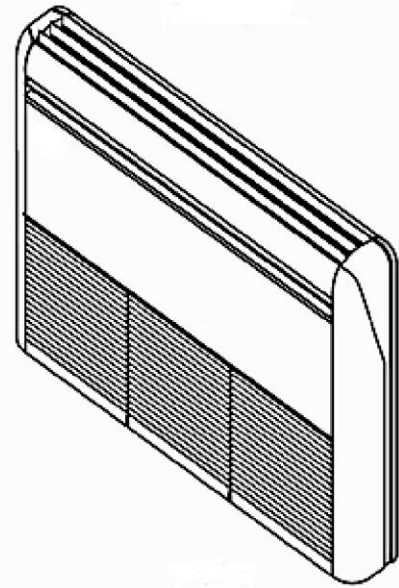
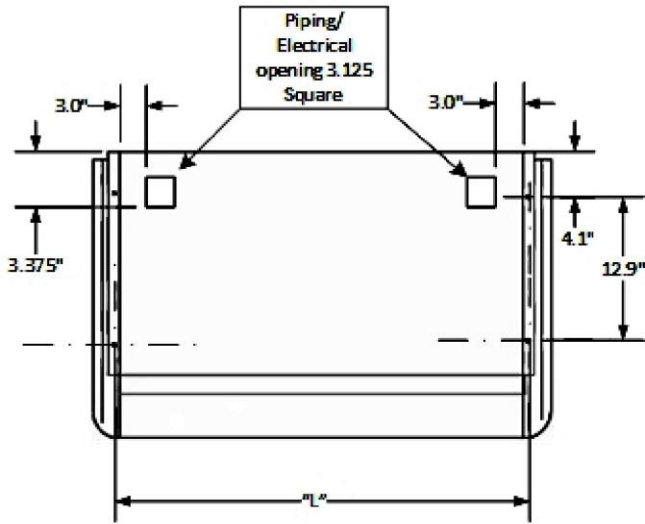
Heating at ANSI/AHRI 440 with addendum 1, 6.3.2 Table 1 as follows:

CFFWA4P-04-01-U HOT WATER CAPACITY (Both Coils)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	5.0	27136
	6.5	27786
	8.0	28196
	10.0	28555

## CFFWA4P-04-01-U CFM Data

MODEL #	CFFWA4P-04-01-U
Fan Speed	CFM
L	275
M	300
H	435
Wattage @ High Speed	70

# CFFWA4P-04-01-U Dimensional Drawing



Model	"L" Dimension
CFFWA4P-04	48.3
CFFWA4P-06	48.3
CFFWA4P-08	60.1
CFFWA4P-12	71.9
CFFWA4P-16	83.7
CFFWA4P-20	83.7

These specifications are subject to change without notice.  
Check [www.multiaqua.com](http://www.multiaqua.com) for the latest information.