



CFFWA4P-16-1-U Chilled/Hot Water Universal Mount Fan Coil (4-Pipe)

4-Pipe Heat / Cool Fan Coil 48,000 BTUH

HVAC Guide Specifications

Chilled and Hot Water Universal Mount Fan Coil
4-Pipe Nominal Size:

48,000 BTUH

MultiAqua Model Number:

CFFWA4P-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 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.
- 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.
- 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. Coils shall be factory tested to 350 psig.
 - 3. Maximum inlet water temperature 180° 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-16-1-U Product Specifications

Physical Data									
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-16-1-U	11.3	88.5	28.3	156.5	3-14	.875	1/14	.875	1" tube

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

Electrical Data						
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-16-1-U	1157	208/230-1-50/60	(2)182	2.7	3.4	6.0

CFFWA4P-16-1-U Chilled Water Performance Data

CFFWA4P-16-01-U COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1157*	42	5.0	TC	36046
			SC	26491
			WPD	8.7
		6.0	TC	39395
			SC	28129
			WPD	12.2
		7.0	TC	42270
			SC	29402
			WPD	16.3
		8.0	TC	44584
			SC	30449
			WPD	20.8

***High Speed**

CFFWA4P-16-01-U COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1157*	45	5.0	TC	32139
			SC	25004
			WPD	8.7
		6.0	TC	35146
			SC	26454
			WPD	12.1
		7.0	TC	37620
			SC	27548
			WPD	16.2
		8.0	TC	39486
			SC	28372
			WPD	20.7

***High Speed**

Recommended minimum flow rate for the primary coil at ≥ 2 fps is 3.5 gpm

Recommended maximum flow rate for the primary coil at ≤ 6 fps is 9.75 gpm

CFFWA4P-16-1-U Hot Water Performance Data

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

CFFWA4P-16-01-U HOT WATER CAPACITIES (Primary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
50	1157	5.0	8.1	35535	44397	53296	62223	71173	80140	89119	98107	107100	116096
		6.0	11.3	36854	46054	55287	64548	73830	83129	92440	101759	111084	120412
		7.0	15.0	37820	47264	56740	66241	75762	85299	94848	104405	113967	123533
		8.0	19.2	38549	48176	57833	67513	77213	86927	96652	106386	116125	125868

CFFWA4P-16-01-U HOT WATER CAPACITIES (Primary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
60	1157	5.0	8.1	26826	35667	44546	53456	62389	71342	80309	89286	98269	107257
		6.0	11.3	27798	36976	46190	55433	64700	73985	83283	92592	101908	111228
		7.0	15.0	28509	37932	47389	56874	66380	75904	85440	94987	104541	114099
		8.0	19.2	29046	38653	48292	57956	67641	77343	87057	96781	106512	116247

CFFWA4P-16-01-U HOT WATER CAPACITIES (Primary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
70	1157	5.0	8.0	18101	26921	35782	44674	53593	62532	71487	80454	89429	98408
		6.0	11.2	18728	27885	37081	46308	55560	64831	74118	83416	92723	102035
		7.0	15.0	19187	28590	38029	47497	56989	66500	76025	85562	95107	104657
		8.0	19.1	19533	29121	38742	48391	58063	67752	77455	87169	96891	106619

CFFWA4P-16-01-U HOT WATER CAPACITIES (Primary Coil)													
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)									
				90°	100°	110°	120°	130°	140°	150°	160°	170°	180°
80	1157	5.0	8.0	9360	18161	27004	35881	44786	53712	62656	71613	80579	89552
		6.0	11.2	9645	18783	27962	37173	46410	55669	64945	74234	83532	92836
		7.0	14.9	9854	19238	28660	38113	47591	57090	66605	76132	85668	95211
		8.0	19.1	10012	19581	29186	38820	48478	58156	67849	77553	87267	96988

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

CFFWA4P-16-01-U HOT WATER CAPACITY (Primary Coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	5.0	62955
	6.0	65302
	7.0	67009
	8.0	68294

These specifications are subject to change without notice.
Check www.multiaqua.com for the latest information.

CFFWA4P-16-1-U Chilled Water Performance Data

CFFWA4P-16-01-U COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1157*	42	5.0	TC	16353
			SC	13574
			WPD	4.5
		6.0	TC	18136
			SC	14406
			WPD	6.3
		7.0	TC	19580
			SC	15072
			WPD	8.5
		8.0	TC	20769
			SC	15617
			WPD	10.9

***High Speed**

CFFWA4P-16-01-U COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1157*	45	5.0	TC	14419
			SC	12860
			WPD	4.5
		6.0	TC	15953
			SC	13589
			WPD	6.3
		7.0	TC	17234
			SC	14183
			WPD	8.4
		8.0	TC	18256
			SC	14655
			WPD	10.9

***High Speed**

Recommended minimum flow rate for the secondary coil at ≥ 2 fps is 3.5 gpm

Recommended maximum flow rate for the secondary coil at ≤ 6 fps is 9.75 gpm

CFFWA4P-16-1-U Hot Water Performance Data

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

CFFWA4P-16-01-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	1157	5.0	4.2	19811	24595	29419	34278	39164	44074	49002	53946	58901	63866
		6.0	6.0	20437	25375	30350	35357	40390	45443	50514	55599	60694	65799
		7.0	8.0	20917	25971	31061	36179	41321	46483	51660	56851	62051	67259
		8.0	10.3	21297	26443	31622	36827	42055	47300	52561	57833	63115	68404

CFFWA4P-16-01-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	1157	5.0	4.2	15185	19943	24743	29580	34447	39338	44250	49179	54121	59074
		6.0	6.0	15646	20558	25511	30497	35511	40548	45603	50674	55757	60851
		7.0	8.0	15999	21029	26097	31196	36321	41466	46630	51807	56996	62194
		8.0	10.3	16279	21402	26560	31747	36958	42189	47436	52696	57967	63246

CFFWA4P-16-01-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	1157	5.0	4.2	10549	15281	20059	24874	29722	34596	39492	44407	49336	54277
		6.0	5.9	10846	15734	20665	25631	30627	35647	40688	45745	50816	55899
		7.0	8.0	11074	16081	21127	26207	31315	36445	41595	46759	51937	57125
		8.0	10.3	11254	16355	21493	26662	31857	37073	42307	47556	52816	58086

CFFWA4P-16-01-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	1157	5.0	4.2	5903	10610	15365	20161	24990	29847	34728	39629	44545	49475
		6.0	5.9	6038	10902	15812	20758	25737	30741	35767	40812	45871	50943
		7.0	8.0	6142	11126	16152	21214	26305	31420	36556	41708	46875	52053
		8.0	10.3	6224	11303	16421	21573	26752	31955	37176	42413	47662	52923

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

CFFWA4P-16-01-U HOT WATER CAPACITY (Secondary Coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	5.0	34708
	6.0	35767
	7.0	36572
	8.0	37205

CFFWA4P-16-1-U Chilled Water Performance Data

CFFWA4P-16-01-U COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
			80° D.B. / 67° W.B.	
1157*	42	10.0	TC	49427
			SC	33542
			WPD	7.9
		12.0	TC	53053
			SC	35180
			WPD	11.1
		14.0	TC	55980
			SC	36540
			WPD	14.9
		16.0	TC	57861
			SC	37400
			WPD	19.2

***High Speed**

CFFWA4P-16-01-U COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
			80° D.B. / 67° W.B.	
1157*	45	10.0	TC	44362
			SC	31423
			WPD	7.9
		12.0	TC	47149
			SC	32663
			WPD	11.1
		14.0	TC	49737
			SC	33771
			WPD	14.9
		16.0	TC	51690
			SC	34678
			WPD	19.1

***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 6.75 gpm

Recommended minimum flow rate for both coils piped in parallel at \leq 6fps is 19.5 gpm

CFFWA4P-16-1-U Hot Water Performance Data

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

CFFWA4P-16-01-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	1157	10.0	7.4	43041	53878	64757	75670	86610	97573	108554	119549	130555	141569
		12.0	10.4	43766	54773	65817	76890	87987	99103	110235	121379	132533	143695
		14.0	14.0	44271	55394	66550	77731	88934	100153	111386	122630	133882	145141
		16.0	18.0	44641	55848	67084	78343	89621	100914	112220	123534	134857	146185

CFFWA4P-16-01-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	1157	10.0	7.4	32372	43181	54035	64925	75845	86790	97754	108735	119727	130730
		12.0	10.4	32905	43887	54908	65961	77040	88140	99258	110389	121532	132683
		14.0	13.9	33275	44377	55512	66676	77862	89067	100288	111520	122762	134012
		16.0	18.0	33547	44734	55953	67196	78459	89740	101034	112338	123652	134972

CFFWA4P-16-01-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	1157	10.0	7.4	21691	32473	43302	54171	65071	75998	86947	97912	108892	119883
		12.0	10.4	22034	32992	43991	55025	66086	77171	88274	99393	110524	121665
		14.0	13.9	22273	33352	44468	55614	66785	77976	89183	100405	111637	122878
		16.0	17.9	22448	33615	44815	56043	67292	78560	89842	101137	112441	123754

CFFWA4P-16-01-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	1157	10.0	7.4	11000	21756	32562	43409	54290	65200	76133	87085	98052	109032
		12.0	10.4	11156	22090	33068	44083	55127	66196	77286	88393	99513	110644
		14.0	13.9	11264	22322	33419	44548	55703	66881	78076	89287	100509	111741
		16.0	17.9	11344	22492	33675	44887	56122	67378	78649	89934	101229	112534

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

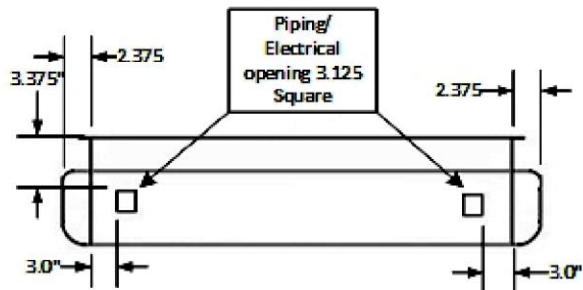
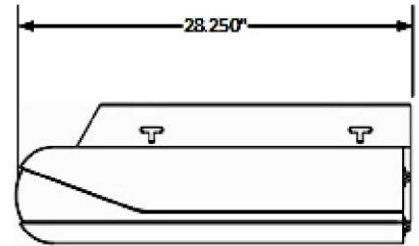
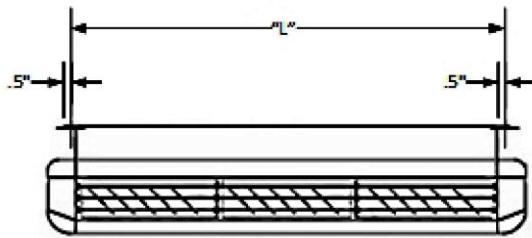
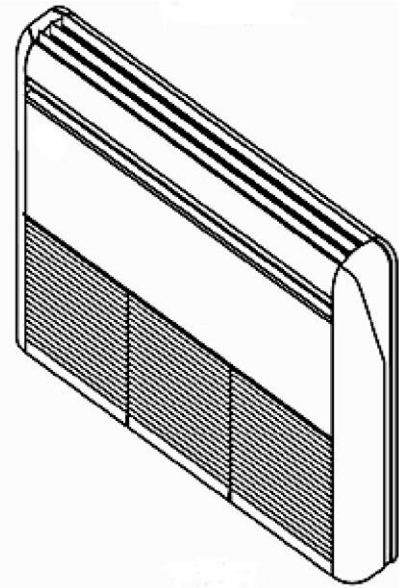
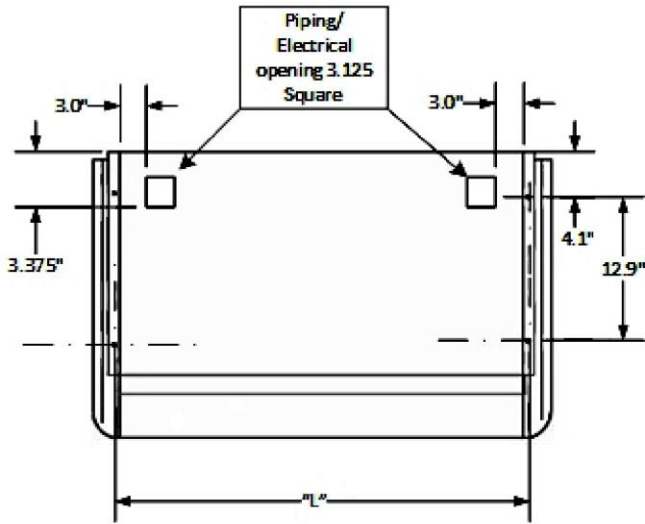
CFFWA4P-16-01-U HOT WATER CAPACITY (Both Coils)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	10.0	76720
	12.0	77939
	14.0	78776
	16.0	79385

*These specifications are subject to change without notice.
Check www.multiaqua.com for the latest information.*

CFFWA4P-16-01-U CFM Data

MODEL #	CFFWA4P-16-01-U
Fan Speed	CFM
L	875
M	975
H	1157
Wattage @ High Speed	580

CFFWA4P-16-01-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

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