MHCFC4W-16-1 Chilled/Hot Water Cassette Fan Coil

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

These specifications are subject to change without notice.
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HVAC Guide Specifications

Chilled and Hot Water Cassette Fan Coil
4-Pipe

Nominal Size:
48,000 BTUH

Multiaqua Model Number:
MHCFC4W-16-1

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. ETL 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.

Part 2 - Product
2.01 Equipment:

A. General:
1. Unit shall be a factory assembled and tested water fan coil.
2. Unit shall be assembled with high quality.
3. Contained within the unit shall be all factory wiring, piping, and associated controls.

B. Unit Cabinet and Cover:
1. Cabinet is constructed of galvanized sheet metal.
2. Cover composed of high impact polymers.
3. Internally and externally insulated to ensure quiet operation.

C. Fan Motor and Blower Wheels:
1. Available in 208/230-1-50/60 VAC.
2. Fan motor shall be three speed, direct drive, and PSC type.
3. Fan motor shall be totally enclosed.
4. Fan motor shall be internal overload protected.
5. Radial blower wheel is dynamically balanced.

D. Air Distribution:
1. Unit contains four manually adjustable discharge air louvers.

E. Water Coil:
1. Manufactured with water coils containing copper tubing mechanically bonded to aluminum fins.
2. Maximum operating pressure is 150 psig.
3. Coils are designed to accept an entering water temperature not to exceed 160°F
4. 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

F. Drain Pan:
1. Constructed of injected molded polystyrene.

G. Filters:
   1. Unit shall contain a woven panel washable filter.

H. Fresh Air:
   1. Unit shall be able to receive up to 50% filtered fresh air.
   2. Fresh air introduced shall be externally fan forced and externally controlled.

Part 3 - Controls and Safeties

3.01 Controls:

A. Fan coils are factory wired and tested.

B. Unit includes a terminal block that is capable of incorporating a 24 vac, field supplied, hard wired thermostat.

3.02 Safeties:

A. Fan coil contains a renewable fuse on the low voltage side of the transformer.

B. Coils shall be designed to accept an entering water temperature not to exceed 160°F

Part 4 - Operating Characteristics

4.01 Electrical Requirements

A. Electrical line voltage connections shall be made at the factory supplied terminal block.

B. Factory wiring shall be rated according to UL listing at the time of manufacturing.

4.02 Installation in high ambient/high humidity environments

A. Cabinets are internally insulated from the factory. However, when these units are installed in high ambient/high humidity environments, additional external cabinet insulation may be required.

Part 5- Definitions

5.01 Abbreviations:

CFM = Cubic Feet per Minute
DB = Dry Bulb Temperature
EWT = Entering Water Temperature
GPM = US Gallons Per Minute
MBH = BTU X 1000
SC = Sensible Cooling
TC = Total Cooling = Sensible + Latent
WB = Wet Bulb Temperature
WPD = Water Pressure Drop in feet of head
dB = Decibel Level
m = Meter
In = Inches
FP I= Fins per Inch
OD = Outside Diameter
ID = Inside Diameter
MCA = Minimum Circuit Amps
MOP = Maximum Over current Protection
LBS = Pounds U.S.

5.02 Measurements

A. All measurements with regard to length, width, and height shall be in inches.

MHCFC4W-16-1
Product Specifications

Physical Data								
Model Number	Overall Height (in)	Overall Width* (in)	Width** (in)	Weight (lbs.)	Cooling Rows FPI	Heating Rows FPI	Water Inlet/Outlet (in)	Drain (in)
MHCFC4W-16-1	18.1	44.9	38.5	125.7	3/14	1/14	¾" FPT	1" barb

*Units are Square. Overall width is the cover dimension. See IOM for drawing details.
*Units are Square. Width is the cabinet dimension. See IOM for drawing details.

Electrical Data***						
Model Number	CFM	Volts/ Phase/ Hertz	Motor Watts	Full Load Amps	Fuse or HACR Circuit Breaker or Glass Fuse Per Circuit	
					MCA	MOP
MHCFC4W-16-1	1200	208/230-1-50/60	430	2.25	3	5

*All Electric Data Shown is at 60 hz

MHCFC4W-16-1 Chilled Water Performance Data

MHCFC4W-16-1 COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200*	42	6.0	TC	43569
			SC	31224
			WPD	13.9
		7.0	TC	46682
			SC	32541
			WPD	18.4
		8.0	TC	49063
			SC	33596
			WPD	23.6
		9.5	TC	51765
			SC	34760
			WPD	32.3

***High Speed**

MHCFC4W-16-1 COOLING CAPACITIES (Primary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200*	45	6.0	TC	39100
			SC	29383
			WPD	13.8
		7.0	TC	41756
			SC	30511
			WPD	18.3
		8.0	TC	43781
			SC	31335
			WPD	23.4
		9.5	TC	46158
			SC	32393
			WPD	32.1

***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

MHCFC4W-16-1 Hot Water Performance Data

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

MHCFC4W-16-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
50	1200	6.0	12.8	38901	48613	58346	68095	77855	87622	97393	107165
		7.0	16.9	40066	50076	60105	70150	80205	90269	100336	110406
		8.0	21.6	40953	51188	61441	71710	81990	92277	102570	112864
		9.5	29.5	41928	52407	62904	73415	83936	94464	104997	115533

MHCFC4W-16-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
60	1200	6.0	12.7	29287	38985	48706	58444	68195	77954	87718	97485
		7.0	16.9	30150	40146	50163	60197	70243	80298	90359	100424
		8.0	21.5	30807	41028	51269	61528	71798	82077	92363	102652
		9.5	29.4	31529	41995	52481	62981	73494	84014	94541	105071

MHCFC4W-16-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
70	1200	6.0	12.7	19663	29349	39058	48787	58529	68281	78040	87802
		7.0	16.8	20226	30208	40214	50238	60276	70325	80380	90439
		8.0	21.4	20654	30862	41093	51341	61603	71875	82155	92439
		9.5	29.3	21125	31579	42054	52545	63050	73564	84084	94610

MHCFC4W-16-1 HOT WATER CAPACITIES (Primary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
80	1200	6.0	12.6	10028	19702	29401	39119	48854	58599	68352	78109
		7.0	16.7	10292	20262	30257	40272	50301	60342	70391	80445
		8.0	21.4	10493	20689	30908	41147	51400	61665	71939	82217
		9.5	29.2	10714	21156	31620	42103	52599	63106	73621	84141

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

MHCFC4W-16-1 HOT WATER CAPACITY (Primary Coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	6.0	68838
	7.0	70928
	8.0	72519
	9.5	74251

MHCFC4W-16-1 Chilled Water Performance Data

MHCFC4W-16-1 COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200*	42	6.0	TC	23202
			SC	16899
			WPD	6.6
		7.0	TC	24978
			SC	17639
			WPD	8.8
		8.0	TC	26429
			SC	18247
			WPD	11.3
		9.0	TC	27416
			SC	18669
			WPD	14.0

***High Speed**

MHCFC4W-16-1 COOLING CAPACITIES (Secondary Coil)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200*	45	6.0	TC	20560
			SC	15937
			WPD	6.5
		7.0	TC	22139
			SC	16590
			WPD	8.7
		8.0	TC	23349
			SC	17094
			WPD	11.2
		9.0	TC	24191
			SC	17452
			WPD	14.0

***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

MHCFC4W-16-1 Hot Water Performance Data

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

MHCFC4W-16-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
50	1200	6.0	6.1	23334	29079	34857	40662	46489	52333	58192	64061
		7.0	8.1	23886	29766	35677	41612	47568	53540	59525	65520
		8.0	10.4	24322	30307	36321	42358	48414	54485	60568	66661
		9.0	13.0	24674	30744	36840	42959	49095	55246	61407	67578

MHCFC4W-16-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
60	1200	6.0	6.1	17721	23444	29202	34989	40799	46629	52474	58332
		7.0	8.1	18129	23988	29879	35798	41738	47696	52669	59653
		8.0	10.4	18451	24416	30412	36433	42474	48532	54604	60686
		9.0	13.0	18711	24762	30842	36945	43067	49206	55356	61517

MHCFC4W-16-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
70	1200	6.0	6.1	12100	17801	23540	29309	35104	40920	46753	52599
		7.0	8.1	12365	18203	24077	29979	35904	41849	47810	53784
		8.0	10.4	12575	18520	24498	30504	36531	42577	48638	54710
		9.0	13.0	12744	18776	24839	30928	37037	43163	49304	55455

MHCFC4W-16-1 HOT WATER CAPACITIES (Secondary Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
80	1200	6.0	6.1	6470	12151	17871	23624	29404	35206	41026	46862
		7.0	8.1	6595	12413	18268	24154	30065	35997	41947	47910
		8.0	10.4	6693	12619	18580	24570	30584	36618	42667	48730
		9.0	12.9	6772	12786	18833	24907	31003	37117	43247	49389

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

MHCFC4W-16-1 HOT WATER CAPACITY (Secondary Coil)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	6.0	41085
	7.0	42022
	8.0	42757
	9.0	43349

MHCFC4W-16-1 Chilled Water Performance Data

MHCFC4W-16-1 COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200*	42	10.0	TC	54051
			SC	36349
			WPD	9.2
		12.5	TC	58502
			SC	38327
			WPD	14.0
		15.0	TC	61739
			SC	39754
			WPD	19.8
		17.5	TC	63999
			SC	40773
			WPD	26.4

***High Speed**

MHCFC4W-16-1 COOLING CAPACITIES (Both Coils)				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1200*	45	10.0	TC	48506
			SC	34008
			WPD	9.2
		12.5	TC	52515
			SC	35717
			WPD	14.0
		15.0	TC	55366
			SC	36963
			WPD	19.7
		17.5	TC	57181
			SC	37740
			WPD	26.3

***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 ≥ 2fps is 6.75 gpm

Recommended maximum flow rate for both coils piped in parallel at ≤ 6fps is 19.5 gpm

MHCFC4W-16-1 Hot Water Performance Data

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

MHCFC4W-16-1 HOT WATER CAPACITIES (Both Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
50	1200	10.0	8.6	44767	55997	67250	78521	89806	101101	112403	123710
		12.5	13.1	45881	57384	68908	80448	92000	103561	115128	126700
		15.0	18.4	46610	58291	69990	81702	93425	105156	116893	128633
		17.5	24.5	47123	58928	70749	82581	94423	106273	118127	129985

MHCFC4W-16-1 HOT WATER CAPACITIES (Both Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
60	1200	10.0	8.6	33640	44853	56092	67350	78623	89909	101202	112502
		12.5	13.0	64464	45953	57464	68993	80534	92087	103646	115211
		15.0	18.3	65004	46672	58359	70062	81776	93499	105229	116964
		17.5	24.5	65384	47177	58988	70812	82646	94488	106337	118190

MHCFC4W-16-1 HOT WATER CAPACITIES (Both Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
70	1200	10.0	8.6	22507	33704	44929	56175	67438	78715	90000	101293
		12.5	13.0	23044	34519	46018	57535	69068	80612	92165	103724
		15.0	18.3	23395	35051	46728	58421	70127	81843	93567	105297
		17.5	24.4	23643	35425	47226	59042	70869	82705	94549	106397

MHCFC4W-16-1 HOT WATER CAPACITIES (Both Coil)											
ENTERING AIR (°F)	NOMINAL CFM	GPM	WPD	ENTERING WATER TEMPERATURE (°F)							
				90°	**100°**	**110°**	**120°**	**130°**	**140°**	**150°**	**160°**
80	1200	10.0	8.5	11365	22547	33758	44992	56245	67512	78790	90075
		12.5	13.0	11616	23077	34564	46071	57594	69130	80676	92229
		15.0	18.3	11781	23424	35090	46774	58471	70180	81898	93622
		17.5	24.4	11897	23668	35460	47267	59086	70916	82753	94596

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

MHCFC4W-16-1 HOT WATER CAPACITY (Both Coils)		
ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	10.0	79544
	12.5	81508
	15.0	82782
	17.5	83676

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

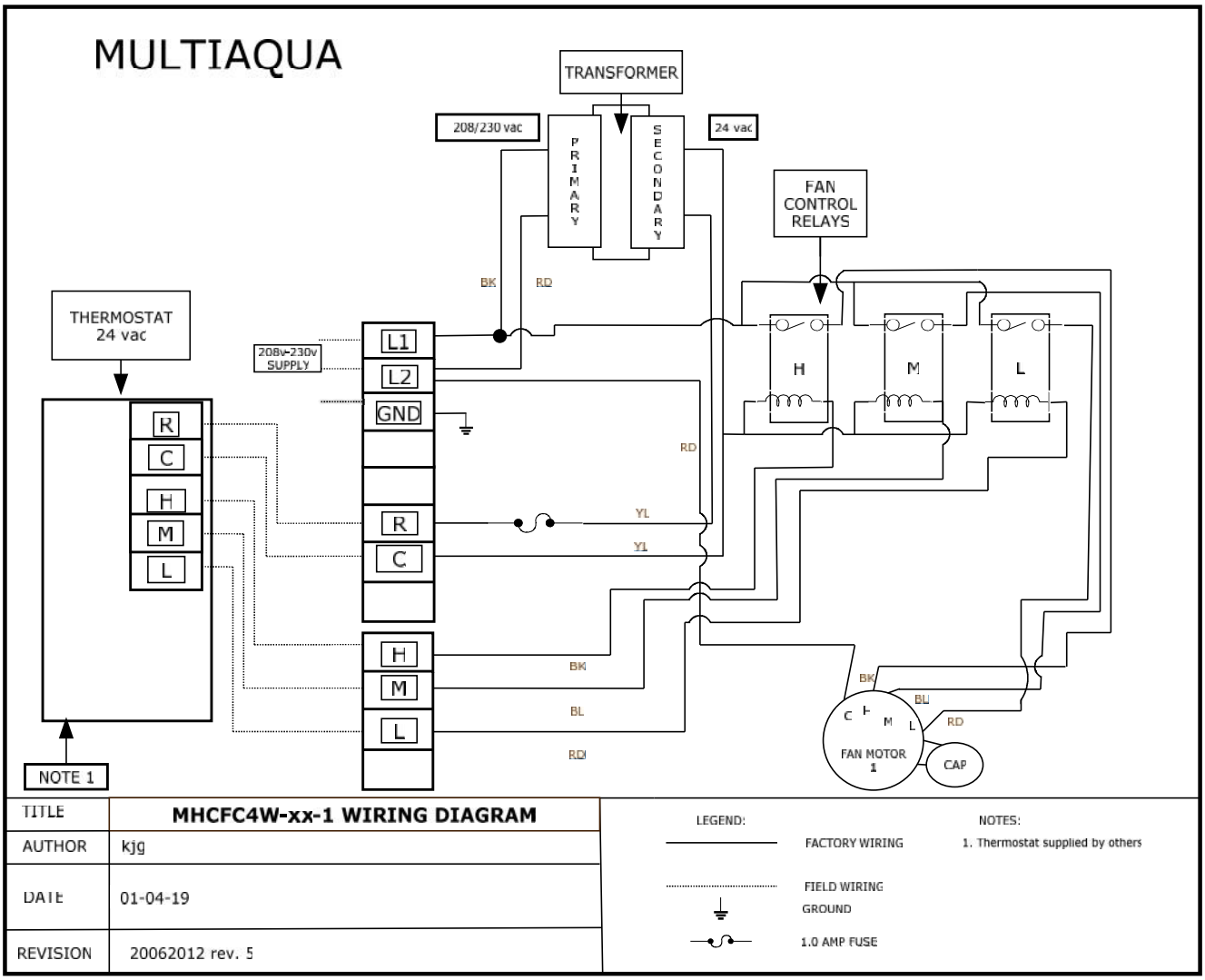
MHCFC4W-16-1 CFM Data

MODEL #	MHCFC4W-16-1
Fan Speed	CFM
L	775
M	860
H	1200
Wattage @ High Speed	430

MHCFC4W-16-1 Sound Data

MODEL #	MHCFC4W-16-1
Fan Speed	dB @ 1 m
H	60.6
M	57.8
L	54.7

MHCFC4W-16-1
Wiring Diagram



See Installation and Operation Manual for Dimensional Drawings