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## **MCCW-16-H-1 Chilled Water Ceiling Concealed Without Electric Heat**

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

# HVAC Guide Specifications

Chilled and Hot Water Fan Coil  
2-Pipe

Nominal Size:  
**48,000 BTUH**

MultiAqua Model Number:  
**MCCW-16-H-1**

## **Part 1-General**

### **1.01 System Description**

MultiAqua Chilled Water Fan Coils are manufactured with heavy gauge galvanized steel to resist corrosion.

### **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 heavy gauge galvanized steel.
  - 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 heavy gauge galvanized steel casing with a baked polyester powder.
  - 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.
- D. Blower Wheels:
  - 1. Blower wheels are forward curved and dynamically balanced.
- E. Water Coil:
  - 1. Manufactured with water coils containing 3/8" copper tubing mechanically bonded to aluminum fins.
  - 2. Contain both a manual water drain and manual air bleed port per coil.
  - 3. Maximum operating pressure is 150 psig.
- 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 a left hand (looking in the direction of air flow) primary and secondary sloped drain connection.

**Part 3-Controls and Safeties**

**3.01 Controls**

- A. Fan coils shall be completely factory wired and tested.
- B. All components shall be wired to an internal terminal block to allow for a field installed thermostat and or fan speed control.
- C. Controls shall include the following components.
  - 1. 24vac transformer
  - 2. Fan relays
  - 3. Optional thermostats

**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. Primary electrical power supply shall enter the unit at a single location.
- B. Electrical power supply shall be rated to withstand 120°F operating ambient temperatures.
- C. Control and high voltage points shall be accessed through terminal block.

**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.

## MCCW-16-H-1 Product Specifications

Physical Data									
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs)	Cooling Rows FPI	Copper Diameter (in)	Water Inlet (in)	Water Outlet (in)	Drain (in)
MCCW-16-H-1	13.78	56.38	20.00	68.34	3-14	3/8	3/4	3/4	1/2

Electrical Data						
Model Number	Nominal CFM	Volts/ Phase/ Hertz	Motor HP	Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
					MCA	MOP
MCCW-16-H-1	1435	208/230-1-50/60	1/2	2.72	3.40	8

# MCCW-16-H-1 Chilled Water Performance Data

MCCW-16 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1435	42	8.0	TC	44215
			SC	32917
			WPD	12.2
		9.0	TC	46438
			SC	33868
			WPD	15.2
		10.0	TC	48207
			SC	34602
			WPD	18.6
		11.0	TC	49703
			SC	35234
			WPD	22.2

**\*High Speed**

MCCW-16 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
1435	45	8.0	TC	39571
			SC	31063
			WPD	12.2
		9.0	TC	41475
			SC	31883
			WPD	15.2
		10.0	TC	42924
			SC	32484
			WPD	18.5
		11.0	TC	44160
			SC	33025
			WPD	22.0

**\*High Speed**

Recommended minimum flow rate for this unit at  $\geq 2$  fps is 4.0 gpm

Recommended maximum flow rate for this unit at  $\leq 6$  fps is 11.75 gpm



# MCCW-16-H-1 Hot Water Performance Data

## MCCW-16 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	1435	8.0	11.4	41787	52213	62682	73187	83719	94273	104844	115426	126017	136612
		9.0	14.1	42663	53309	63997	74719	85467	96236	107021	117817	128621	139430
		10.0	17.2	43380	54205	65071	75968	86891	97834	108792	119761	130739	141721
		11.0	20.5	43979	54952	65964	77007	88074	99160	110261	121372	132491	143615

## MCCW-16 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	1435	8.0	11.3	31544	41941	52384	62865	73376	83912	94465	105033	115610	126194
		9.0	14.1	32191	42808	53471	64169	74897	85648	96416	107198	117989	128787
		10.0	17.1	32720	43517	54358	65233	76136	87061	98004	108959	119924	130895
		11.0	20.4	33161	44108	55096	66118	77165	88234	99320	110418	121525	132638

## MCCW-16 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	1435	8.0	11.3	21288	31657	42076	52535	63027	73545	84083	94637	105203	115776
		9.0	14.1	21707	32298	42936	53614	64322	75056	85809	96578	107358	118146
		10.0	17.1	22049	32821	43638	54493	65378	76286	87214	98157	109110	120072
		11.0	20.4	22336	33257	44223	55224	66254	77308	88379	99465	110561	121665

## MCCW-16 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	1435	8.0	11.3	11016	21359	31754	42193	52665	63166	73690	84230	94784	105348
		9.0	14.0	11209	21774	32390	43046	53737	64454	75192	85948	96716	107494
		10.0	17.0	11367	22114	32908	43743	54609	65502	76415	87345	98288	109239
		11.0	20.3	11499	22397	33340	44322	55334	66372	77429	88503	99588	110683

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

ENTERING AIR TEMPERATURE	GPM	ENTERING WATER TEMPERATURE 140F
70F DB / 60F WB	8.0	74047
	9.0	75585
	10.0	76841
	11.0	77881

## MCCW-16-H-1 CFM Adjustments

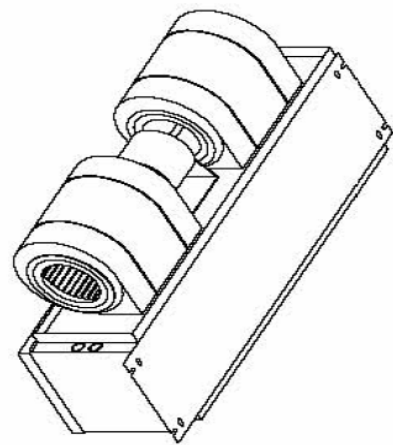
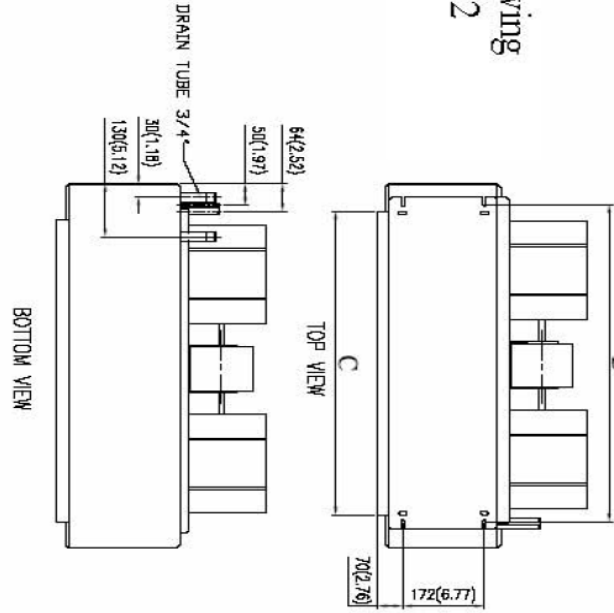
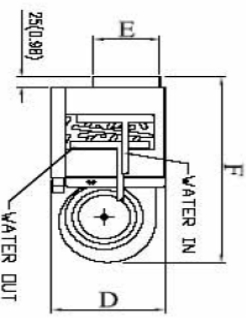
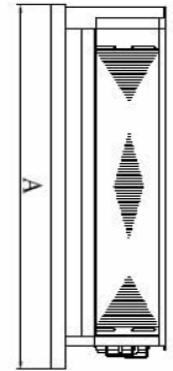
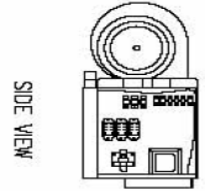
Nominal CFM vs. External Static Pressure Table						
Model Number	Hi Speed					
	0.05	0.10	0.15	0.20	0.25	0.30
MCCW-16-H-1	1435	1420	1390	1355	1316	1281

## MCCW-16-H-1 Sound Data

MODEL #	MCCW-16-H-1
Fan Speed	dB @ 1 m
H	46

# MCCW-16-H-1 Dimensional Drawing

MCCW Certified Drawing  
 Drawing # 0907400072



Model MCCW

MODEL	A	B	C	D	E	F
04	958(37.72)	843(33.19)	801(31.54)	247(9.72)	139(5.47)	455(17.91)
06	958(37.72)	843(33.19)	801(31.54)	247(9.72)	139(5.47)	455(17.91)
08	958(37.72)	843(33.19)	801(31.54)	247(9.72)	139(5.47)	455(17.91)
10	1238(48.74)	1123(44.21)	1081(42.56)	298(11.73)	189(7.44)	455(17.91)
12	1238(48.74)	1123(44.21)	1081(42.56)	298(11.73)	189(7.44)	503(19.80)
16	1432(56.38)	1317(51.85)	1275(50.20)	349(13.74)	241(9.49)	503(19.80)
20	1432(56.38)	1317(51.85)	1275(50.20)	349(13.74)	241(9.49)	503(19.80)