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## **MHCCW-10-00 Chilled Water Ceiling Concealed Without Electric Heat**

**2-Pipe Heat / Cool Fan Coil 30,000 BTUH**

# HVAC Guide Specifications

Chilled or Hot Water Fan Coil  
2-Pipe

Nominal Size:  
**30,000 BTUH**

MultiAqua Model Number:  
**MHCCW-10-00**

## **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 or hot water fan coil with electric heat.
  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. Coils shall be factory tested to 350 psig.
  4. Coils shall be capable of being field converted from right to left hand connection.
- 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 and right hand primary sloped drain connection as well as a sloped right hand secondary drain connection.
- G. Electric Heat:
  1. Electric Heaters shall be of the rod and disk type.
  2. Shall be protected by safeties.

**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. Electric heat sequencer (s).
  - 4. Optional Thermostats.

**3.02 Safeties**

- A. Fan coil shall be equipped with all necessary components in conjunction with the control system to provide the following protectants.
  - 1. High temperature.
  - 2. Over current protection.

**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- Accessories:****5.01 Enclosures**

- A. Fan coils shall be capable of incorporating field assembled enclosures.
  - 1. Enclosures shall be internally insulated to ensure quiet operation and increase efficiency.
  - 2. Shall include knockouts for ease of piping and electrical in and out of the enclosures.
  - 3. Shall include an optional return air cutout in the enclosure.
  - 4. Shall include a supply air duct flange.
  - 5. Shall incorporate baked polyester powder service access panels with and without a filtered louver

**Part 6- Definitions:****6.01 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.

**6.02 Measurements**

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

# MHCCW-10-00 Product Specifications

Physical Data									
Model Number	Height (in)	Width (in)	Depth (in)	Weight (lbs.)	Coil Rows FPI	Copper Diameter (in)	Water Inlet (in) (OD)	Water Outlet (in) (OD)	Drain (in)
MHCCW-10-00	10.25	43.70	21.65	74.8	4-14	3/8	5/8	5/8	3/4

Electrical Data							
Model Number	Nominal CFM	Volts Phase Hertz	Electric Heat (KW)	Motor HP	Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
						MCA	MOP
MHCCW-10-00	950	208/230-1-50/60	0	1/4	1.43	1.8	4

External Static Pressure Comparative CFM Table							
Model Number	0.00*	0.05*	0.10*	0.15*	0.2*	0.25*	0.30*
MHCCW-04	322	290	252	220	0	0	0
MHCCW-06	715	684	653	622	591	565	538
MHCCW-08	915	879	814	809	774	734	693
<b>MHCCW-10</b>	<b>1007</b>	<b>975</b>	<b>944</b>	<b>898</b>	<b>853</b>	<b>817</b>	<b>780</b>
MHCCW-12	1254	1218	1183	1147	1112	1076	1041
MCCW-16	1435	1394	1354	1313	1272	1231	1191
MCCW-20	1450	1409	1368	1327	1285	1244	1203

\* External static pressure (In W.G.)

# MHCCW-10-00 Chilled Water Performance Data

<b>MHCCW-10-00 COOLING CAPACITIES</b>				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
950	42	5.0	TC	30869
			SC	22329
			WPD	12.8
		5.5	TC	32183
			SC	22954
			WPD	15.3
		6.0	TC	33362
			SC	23469
			WPD	18.0
		6.5	TC	34286
			SC	23911
			WPD	20.9

**\*High Speed**

<b>MHCCW-10-00 COOLING CAPACITIES</b>				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
950	45	5.0	TC	27387
			SC	21009
			WPD	12.7
		5.5	TC	28505
			SC	21471
			WPD	15.2
		6.0	TC	29503
			SC	21939
			WPD	17.9
		6.5	TC	30424
			SC	22351
			WPD	20.8

**\*High Speed**

**Recommended minimum flow rate for this unit at  $\geq 2$  fps is 2.75 gpm**

**Recommended maximum flow rate for this unit at  $\leq 6$  fps is 7.75 gpm**

# MHCCW-10-00 Hot Water Performance Data

## MHCCW-10-00 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	950	5	11.9	28979	36282	43622	50991	58384	65797	73225	80664	88112	95565
		5.5	14.3	29472	36896	44356	51844	59355	66884	74428	81983	89546	97115
		6.0	16.8	29888	37415	44974	52562	60171	67798	75438	83090	90749	98414
		6.5	19.5	30245	37858	45503	53174	60866	68575	76298	84031	91771	99517

## MHCCW-10-00 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	950	5	11.9	21829	29109	36427	43777	51153	58551	65964	73391	80828	88271
		5.5	14.2	22193	29595	37034	44503	51997	59512	67042	74585	82137	89697
		6.0	16.7	22501	30005	37545	45114	52707	60319	67947	75587	83235	90891
		6.5	19.4	22765	30356	37982	45635	53312	61007	68717	76438	84169	91906

## MHCCW-10-00 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	950	5	11.9	14666	21924	29222	36554	43914	51297	58697	66112	73539	80973
		5.5	14.2	14904	22283	29703	37155	44633	52133	59651	67182	74724	82275
		6.0	16.7	15104	22587	30108	37660	45237	52836	60451	68080	75719	83366
		6.5	19.4	15276	22847	30454	38091	45753	53434	61132	68843	76564	84292

## MHCCW-10-00 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	950	5	11.8	7490	14726	22006	29321	36665	44033	51421	58825	66241	73666
		5.5	14.2	7602	14961	22361	29796	37259	44745	52250	59771	67303	74845
		6.0	16.7	7697	15159	22661	30197	37759	45344	52947	60565	68194	75833
		6.5	19.4	7778	15328	22917	30538	38185	45854	53540	61240	68952	76672

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	5	51653
	5.5	52507
	6.0	53226
	6.5	53838

## MHCCW-10-00 Electric Heat Performance Data

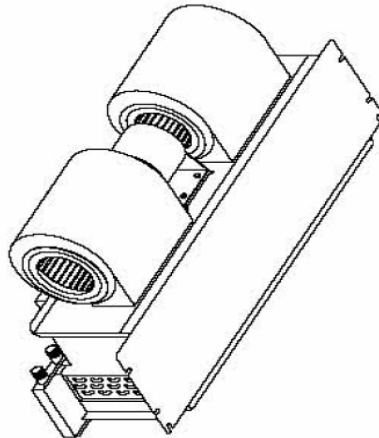
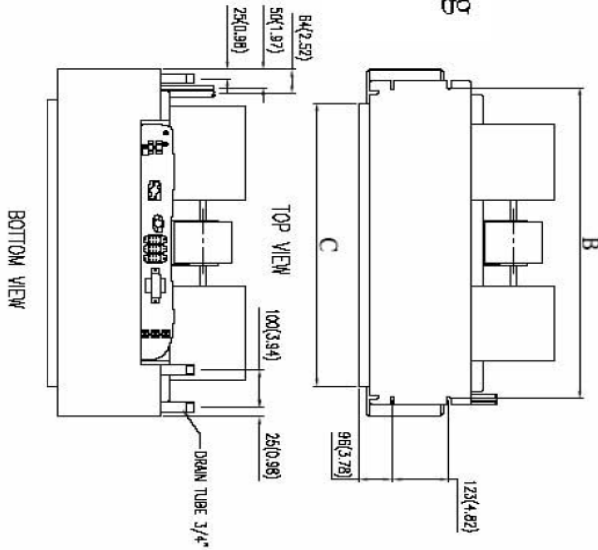
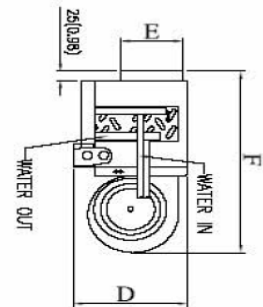
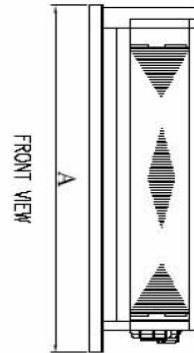
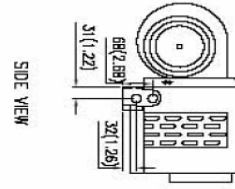
Model Number	Nominal CFM	Electric Heat BTUH
MHCCW-10-00	950	0

## MHCCW-10-00 Sound Data

MODEL #	MHCCW-10-00
Fan Speed	dB @ 1 m
H	48

# MHCCW-10-00 Dimensional Drawing

MHCCW Certified Drawing  
 Drawing # 0907400070



Model MHCCW						
MODEL	A	B	C	D	E	F
04	958(37.72)	878(34.57)	798(31.42)	260(10.24)	140(5.51)	550(21.65)
06	958(37.72)	878(34.57)	798(31.42)	260(10.24)	140(5.51)	550(21.65)
08	958(37.72)	878(34.57)	798(31.42)	260(10.24)	140(5.51)	550(21.65)
10	1110(43.70)	1030(40.55)	950(37.40)	260(10.24)	140(5.51)	550(21.65)
12	1262(49.69)	1182(46.54)	1102(43.38)	260(10.24)	140(5.51)	550(21.65)