



## **MHNCCW-04-03 (4-Pipe) Chilled/Hot Water Ceiling Concealed 115V**

**4-Pipe Heating & Cooling Fan Coil 12,000 BTUH**

# HVAC Guide Specifications

Chilled and Hot Water Fan Coil  
4-Pipe

Nominal Size:  
**12,000 BTUH**

MultiAqua Model Number:  
**MHNCCW-04-03**

## **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 115-1-50/60 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.
  - 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 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.

### **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- Accessories:**

#### **5.01 Enclosures**

- A. Fan coils are not offered on the MHNCCW models. Enclosure provided by others.

### **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.

## MHNCCW-04-03 Product Specifications

Physical Data										
Model Number	Height (in)	Length (in)	Depth (in)	Weight (lbs.)	Cooling Rows FPI	Heating Rows FPI	Copper Diameter (in)	Water Inlet (in)	Water Outlet (in)	Drain (in)
MHNCCW-04-03	10	37.72	21.65	66.0	2-14	2-14	3/8	5/8	5/8	3/4

Electrical Data						
Model Number	Nominal CFM	Volts/ Phase/ Hertz	Fan Motor HP	Full Load Ampacity	Fuse or HACR Circuit Breaker Per Circuit	
					MCA	MOP
MHNCCW-04-03	400	115-1-60	1/15	0.82	1.03	2

## MHNCCW-04-03 Chilled Water Performance Data

MHNCCW-04-03 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
400	42	1.5	TC	9420
			SC	7312
			WPD	3.8
		2.75	TC	12377
			SC	8735
			WPD	11.8
		3.0	TC	12768
			SC	8920
			WPD	13.8
		3.75	TC	13692
			SC	9355
			WPD	21.0

**\*High Speed**

MHNCCW-04-03 COOLING CAPACITIES				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
400	45	1.5	TC	8421
			SC	6948
			WPD	3.8
		2.75	TC	10974
			SC	8094
			WPD	11.7
		3.0	TC	11321
			SC	8325
			WPD	13.8
		3.75	TC	12107
			SC	8708
			WPD	20.8

**\*High Speed**

### Chilled Water Coil

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

### Hot Water Coil

Recommended minimum flow rate for this unit at  $\geq 2$  fps is 1.50 gpm

Recommended maximum flow rate for this unit at  $\leq 6$  fps is 3.75 gpm

# MHNCCW-04-03 Hot Water Performance Data

MHNCCW-04-03 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	400	1.5	3.6	9989	12469	14964	17472	19989	22514	25045	27580	30119	32660
		2.75	10.9	11221	14012	16815	19627	22448	25275	28107	30943	33781	36621
		3.0	12.8	11359	14124	17020	19866	22720	25579	28443	31311	34181	37053
		3.75	19.3	11674	14576	17488	20409	23336	26269	29206	32145	35088	38032

MHNCCW-04-03 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	400	1.5	3.5	7572	10043	12530	15030	17540	20059	22585	25115	27650	30187
		2.75	10.8	8479	11262	14057	16864	19678	22500	25327	28158	30993	33830
		3.0	12.7	8591	11398	14227	17067	19914	22769	25628	28492	31359	34228
		3.75	19.3	8813	11708	14614	17529	20451	23379	26311	29248	32187	35128

MHNCCW-04-03 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	400	1.5	3.5	5148	7610	10090	12583	15087	17600	20120	22646	25176	27710
		2.75	10.8	5734	8509	11297	14097	16906	19722	22545	25372	28203	31037
		3.0	12.7	5800	8609	11432	14265	17107	19956	22811	25671	28534	31400
		3.75	19.2	5950	8838	11737	14647	17564	20487	23416	26349	29284	32223

MHNCCW-04-03 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	400	1.5	3.5	2718	5172	7644	10130	12629	15136	17652	20173	22700	25230
		2.75	10.8	2986	5753	8535	11328	14132	16943	19761	22585	25412	28243
		3.0	12.7	3017	5818	8634	11461	14298	17142	19993	22849	25709	28572
		3.75	19.2	3085	5966	8860	11763	14675	17595	20519	23449	26381	29317

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	1.5	17693
	2.75	19849
	3.0	20086
	3.75	20627

## MHNCCW-04-03 CFM Adjustments

<b>CFM vs. External Static Pressure Table</b>				
<b>Model Number</b>	<b>MHNCCW-04-03</b>			
	<b>0</b>	<b>0.1</b>	<b>0.2</b>	<b>0.3</b>
Hi Speed	609	544	481	408
Medium Speed	530	462	408	337
Low Speed	466	396	324	260

## MHNCCW-04-03 Sound Data

MODEL #	MHNCCW-04-03
Fan Speed	dB @ 1 m
H	40



# MHNCCW-04-03 Dimensional Drawing

