



## **MHNCCW-08-03 (4-Pipe) Chilled/Hot Water Ceiling Concealed 115V**

**4-Pipe Heating & Cooling Fan Coil 24,000 BTUH**

*Rev. 2*

# HVAC Guide Specifications

Chilled and Hot Water Fan Coil  
4-Pipe

Nominal Size:  
**24,000 BTUH**

Multiagua Model Number:  
**MHNCCW-08-03**

## Part 1-General

### **1.01 System Description**

Multiagua 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-08-03 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-08-03	10	37.72	21.65	72.6	4-14	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-08-03	800	115-1-60	1/4	1.13	1.41	3

## MHNCCW-08-03 Chilled Water Performance Data

<b>MHNCCW-08-03 COOLING CAPACITIES</b>				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
800	42	2.75	TC	19885
			SC	16073
			WPD	3.8
		3.5	TC	22605
			SC	17284
			WPD	6.0
		4.5	TC	25515
			SC	18664
			WPD	9.7
		5.25	TC	27281
			SC	19445
			WPD	12.9

**\*High Speed**

<b>MHNCCW-08-03 COOLING CAPACITIES</b>				
CFM	EWT (°F)	GPM	ENTERING AIR TEMPERATURE (F)	
				80° D.B. / 67° W.B.
800	45	2.75	TC	17294
			SC	15427
			WPD	3.8
		3.5	TC	20206
			SC	16399
			WPD	6.0
		4.5	TC	22727
			SC	17553
			WPD	9.6
		5.25	TC	24240
			SC	18208
			WPD	12.9

**\*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-08-03 Hot Water Performance Data

MHNCCW-08-03 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	800	1.5	3.6	13636	16960	20311	23683	27073	30476	33890	37313	10741	44173
		2.75	10.9	16186	20168	24176	28205	32250	36309	40379	44457	48541	52629
		3.0	12.8	16494	20554	24639	28745	32867	37002	41147	45300	49460	53623
		3.75	19.4	17213	21453	25717	29999	34296	38605	42924	47251	51583	55919

MHNCCW-08-03 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	800	1.5	3.6	10426	13737	17075	20436	23815	27209	30614	34029	37450	40875
		2.75	10.9	12308	16275	20268	24284	28318	32366	36426	40495	44751	48653
		3.0	12.8	12535	16580	20651	24743	28853	32978	37114	41259	45411	49567
		3.75	19.3	13066	17291	21541	25810	30097	34396	38706	43025	47350	51679

MHNCCW-08-03 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	800	1.5	3.5	7200	10498	13825	17175	20544	23930	27327	30735	34149	37569
		2.75	10.8	8420	12372	16352	20355	24378	28416	32467	36528	40597	44671
		3.0	12.7	8568	12597	16655	20735	24834	28948	33075	37212	41357	45507
		3.75	19.2	8912	13122	17359	21617	25892	30182	34484	38794	43112	47436

MHNCCW-08-03 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	800	1.5	3.5	3958	7245	10561	13902	17263	20640	24030	27431	30840	34255
		2.75	10.8	4524	8462	12429	16420	20432	24461	28503	32556	36618	40687
		3.0	12.7	4592	8608	12652	16721	20809	24914	29033	33162	37299	41443
		3.75	19.2	4752	8948	13172	17419	21684	25965	30258	34561	38873	43191

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	24006
	2.75	28531
	3.0	29069
	3.75	30316

## MHNCCW-08-03 CFM Adjustments

CFM vs. External Static Pressure Table						
Model Number	Hi Speed					
	0.05	0.1	0.15	0.2	0.25	0.3
MHNCCW-08-03	757	723	700	659	621	582

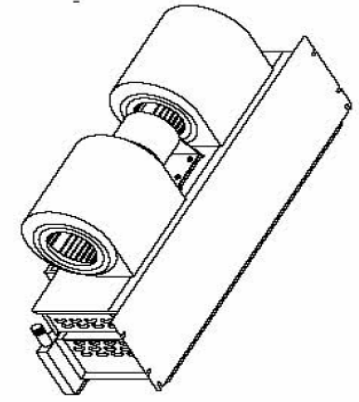
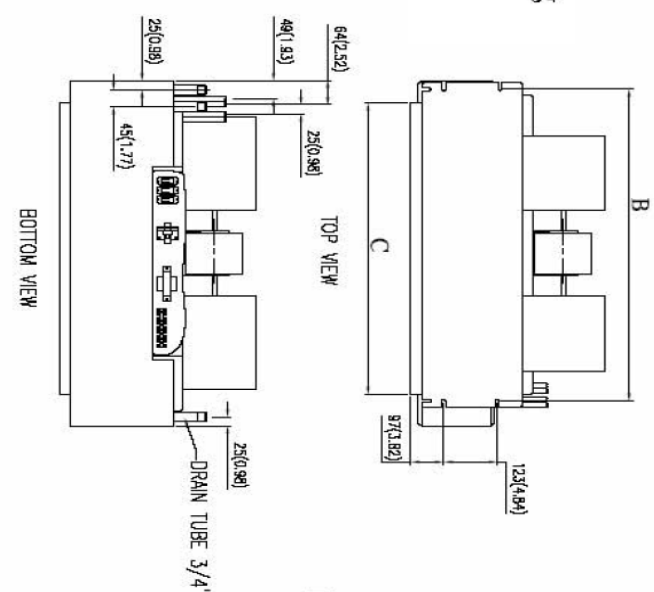
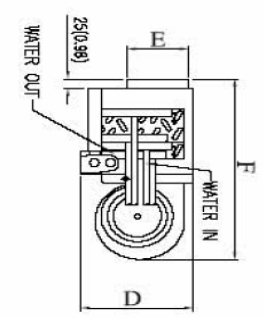
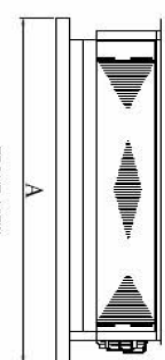
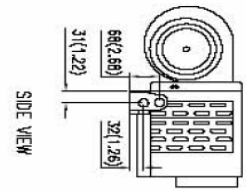
## MHNCCW-08-03 Sound Data

MODEL #	MHCCW-08-03
Fan Speed	dB @ 1 m
H	44



# MHNCCW-08-03 Dimensional Drawing

MHNCCW Certified Drawing  
 Drawing # 0907400071



Model MHNCCW

MODEL	A	B	C	D	E	F
04	956(37.64)	843(33.19)	763(30.04)	265(10.43)	140(5.51)	548(21.57)
06	956(37.64)	843(33.19)	763(30.04)	265(10.43)	140(5.51)	548(21.57)
08	956(37.64)	843(33.19)	763(30.04)	265(10.43)	140(5.51)	548(21.57)
10	1108(43.62)	995(39.17)	915(36.02)	265(10.43)	140(5.51)	548(21.57)
12	1260(49.61)	1147(45.16)	1067(42.01)	265(10.43)	140(5.51)	548(21.57)