



# CLIMATE MASTER

## 10 Series

WATER TO AIR

### HEAT PUMPS

VERTICAL MODEL  
HORIZONTAL MODEL

*Better Cooling... Better Heating... Economically*

CHOOSE FROM VERTICAL AND HORIZONTAL MODELS

3 Electrical Options

Different Return Air Configurations

Ease of Installation

Versatility of Application

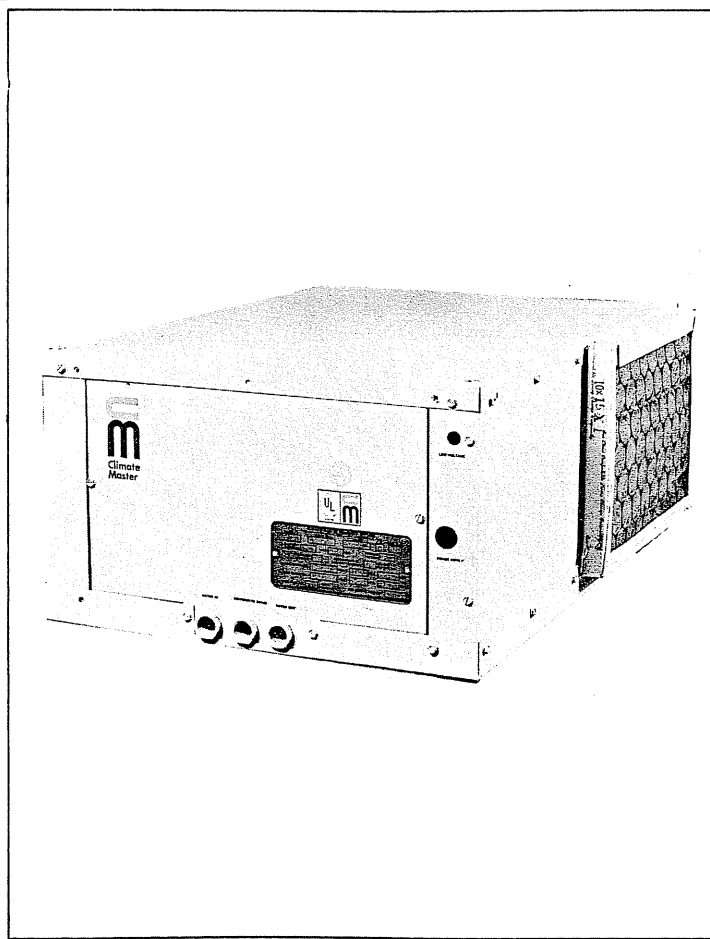
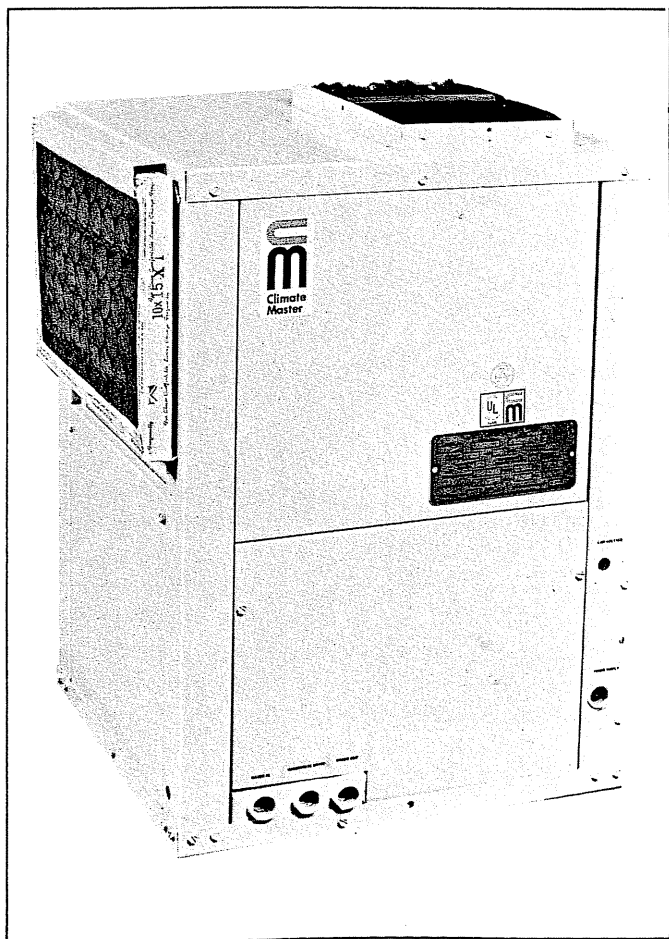


Compact, Space-Saving Design

Designed & Tested for High Efficiency

Completely Serviceable

Acoustically Improved



# ADVANCED FEATURES and SPECIFICATIONS

## MAKE CLIMATE MASTER YOUR BEST BUY IN ALL WEATHER COMFORT...

The Climate Master<sup>®</sup> is a complete factory-packaged water-to-air heat pump that provides total comfort. Each unit is designed and built per the specifications listed below:

### Cabinet:

The cabinet is made of heavy gauge, galvanized steel, and painted electro-statically to prevent corrosion. The interior of the cabinet is lined with high density, coated insulation with improved thermal insulating and accoustical absorption characteristics. The units have access panels for ease of inspection and service to all components. The design incorporates externally stubbed water and drain (FPT) connections in the front of the unit for easy installation. The electrical power, control voltage wiring and control box are also accessible from the front of the unit. The supply air opening is provided with a duct collar and the return air incorporates a filter rack permitting removal of the filter in any direction (also optionally available is a flanged filter rack for ducted returns). The horizontal unit has threaded fasteners on the top for ceiling suspended installation.

### Compressor:

The hermetic compressor is internally spring-mounted and mounted in the cabinet on rails with vibration isolators for quiet, smooth running operation. The compressor is furnished with external (line break) motor protection and features an anti-slug device for extended life.

### Reversing Valve:

The reverse cycle feature is provided by a four way electro-magnetic reversing valve designed for low pressure drops and reliable operation.

### Refrigerant-To-Water Heat Exchanger:

The heat exchanger is coaxial (tube-in-tube) spirally wound with booster fins on the refrigerant side to provide optimum heat transfer. The inner (water) tube is available in copper or 90/10 cupro-nickel construction designed to withstand water pressures of 500 psi. The outer (refrigerant) tube is made of primed and painted steel. Design working pressure on the refrigerant side is 450 psi.

### Air-To-Refrigerant Heat Exchanger:

The large face area, fin coil heat exchanger utilizes 3/8" staggered copper tubes with rippled and corrugated aluminum fins for added heat transfer. The refrigerant circuiting is designed for optimum pressure drops and efficiency.

### Refrigerant Control:

The optimum factory charge of Refrigerant 22 is metered by precisely designed capillary tubes. The critical charge and sizing of capillary tubes is laboratory researched for balancing on the cooling and heating modes at varied conditions. The refrigerant piping is factory pressure and leak tested. Abnormal pressures within the refrigerant circuit are prevented with safety high and low pressure switches. Charging and service ports are provided on the high and low pressure sides of the unit as standard equipment.

### Blower and Motor:

The centrifugal type blower wheel and housing is custom designed for quiet operation and efficient air delivery. The blower is close-coupled to the motor with inherent thermal overload protection. Each unit is provided with a high velocity type disposable filter.

### Controls:

The control box, easily accessible from the front panel, includes a 24 volt control transformer, compressor contactor, blower and impedance relays. Completely factory wired, the circuit features a lock-out relay to provide a manual reset at the thermostat in case of interrupted operation by the safety controls. The individual control components are designed for ease of inspection and serviceability. A terminal block is provided for convenient field wiring to the thermostat. A remote thermostat for comfort control is furnished with the unit.

# SUPERIOR COOLING CAPACITIES AND PERFORMANCE

## COOLING

In accordance with ARI Standard 240-67  
Cooling Capacity: 10000 BTUH \*  
Power Input: 1350 Watts.

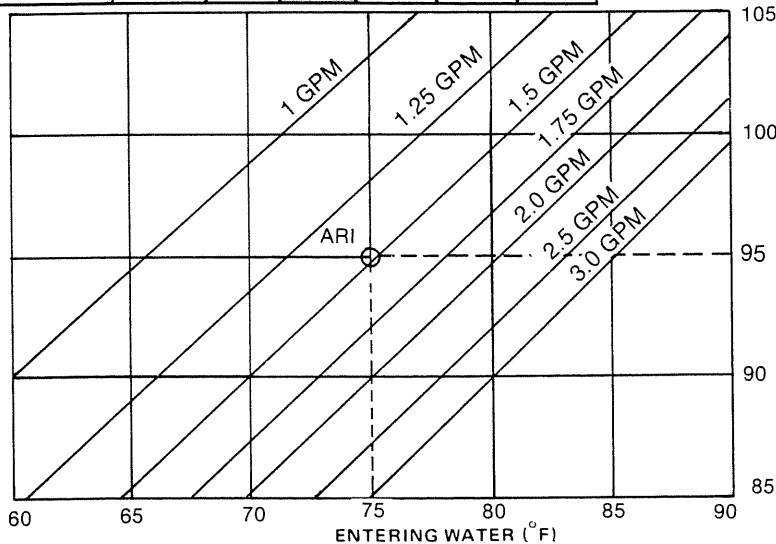
\* Basis: 350 CFM of 80° F DB/67° F WB entering air  
1.5 GPM of Water entering at 75° F, leaving at 95° F.

### APPLICATION DATA

ENTERING AIR (°F) WET BULB	BASED ON 350 CFM & 95° F LEAVING WATER					
	TOTAL CAPACITY (BTUH)	SENSIBLE CAPACITY (BTUH) ENTERING AIR (°F) DRY BULB				HEAT OF REJECTION (BTUH)
		75	80	85	90	
61	8650	6920	7960	—	—	13150
64	9350	6450	7500	8760	—	13900
67	10000	5800	6950	8200	9600	14700
70	10600	—	6250	7420	8740	15600
73	11250	—	—	6750	7930	16700

### ENTERING WATER & FLOW RATE VARIATION MULTIPLIER

CFM	380	365	350	335	318	300
TOTAL CAPACITY	1.024	1.012	1.000	.983	.963	.942
SENSIBLE CAPACITY	1.038	1.019	1.000	.979	.952	.925
HEAT OF REJECTION	1.060	1.029	1.000	.987	.972	.957



TOTAL & SENSIBLE CAPACITY MULTIPLIER	HEAT OF REJECTION MULTIPLIER	POWER INPUT (WATTS)
0.927	0.954	1420
0.967	0.978	1380
1.000	1.000	1350
1.029	1.022	1320
1.057	1.044	1290

### BLOWER PERFORMANCE (INCLUDES ALLOWANCE FOR WET COIL & FILTER)

SCFM @ AVAILABLE EXTERNAL STATIC PRESS (IWG)					
.05	.10	.15	.20	.25	.3
380	365	350	335	318	300

#### SAMPLE PROBLEM (COOLING)

335 CFM AIR ENTERING AT 75° DB/ 64° WB  
3 GPM OF 80° F ENTERING WATER

TOTAL CAPACITY = 9350 x .983 x 1.029 = 9458 BTUH  
SENSIBLE CAPACITY = 6450 x .979 x 1.029 = 6498 BTUH  
HEAT REJECTION = 13900 x .987 x 1.022 = 14021 BTUH

AIRFLOW  
CORRECTION

WATER FLOW  
CORRECTION

Climate Master Gives You Quiet. A

# SUPERIOR HEATING CAPACITIES AND PERFORMANCE

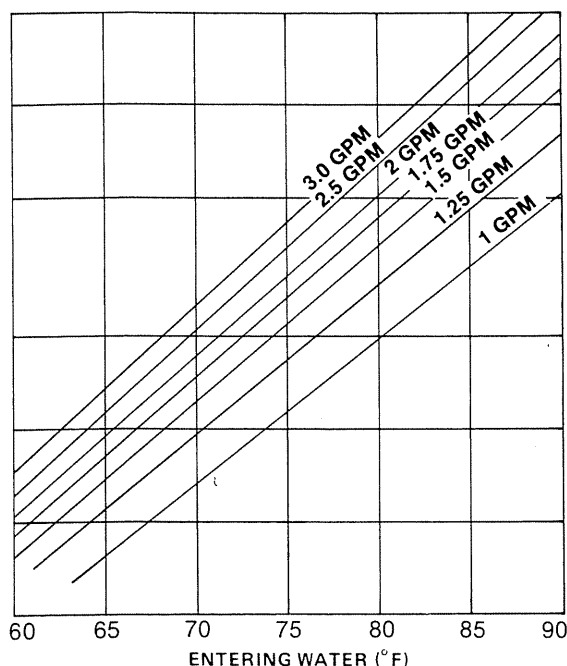
## HEATING

In accordance with ARI Standard 240-67.  
Heating Capacity 11000 BTUH.\*  
Power Input 1300 Watts.

\* Basis: 350 CFM of 70° F entering air.  
1.5 GPM of 60° F entering water.

### APPLICATION DATA

#### VARIATION OF ENTERING WATER TEMPERATURE AND FLOW RATE



HEATING CAPACITY (BTUH)	HEAT OF ABSORPTION (BTUH)	POWER INPUT (WATTS)
16200	11600	1620
15200	10700	1560
14300	9900	1500
13400	9100	1440
12600	8400	1390
11800	7700	1340
11000	7000	1300

#### VARIATION OF ENTERING AIR TEMPERATURES

ENTERING AIR °F	60	65	70	75	80
HEATING CAPACITY MULTIPLIER	1.05	1.03	1.00	.97	.94
HEAT OF ABSORPTION MULTIPLIER	1.07	1.04	1.00	.95	.94
POWER INPUT MULTIPLIER	0.96	0.98	1.00	1.04	1.08

#### VARIATION OF AIRFLOW

CFM	380	365	350	335	318	300
HEATING CAPACITY MULTIPLIER	1.024	1.012	1.000	.983	.962	.942
HEAT OF ABSORPTION MULTIPLIER	1.033	1.016	1.000	.979	.956	.932
POWER INPUT MULTIPLIER	.980	.990	1.000	1.025	1.055	1.081

## WATER PRESSURE DROP-PSIG.

WATER FLOW RATE (GPM)	1.00	1.25	1.50	1.75	2.00	2.50	3.00
PRESSURE DROP (PSIG)	1.4	1.7	2.0	2.4	2.8	3.8	4.9

### SAMPLE PROBLEM (HEATING)

335 CFM OF AIR ENTERING @65° F  
3 GPM OF 71° F ENTERING WATER

ENTERING AIR  
CORRECTION

AIRFLOW  
CORRECTION

HEATING CAPACITY = 13400 x 1.03 x .983 = 13567 BTUH  
HEAT OF ABSORPTION = 9100 x 1.04 x .979 = 9265 BTUH  
POWER INPUT (WATTS) = 1440 x 0.98 x 1.025 = 1447 Watts

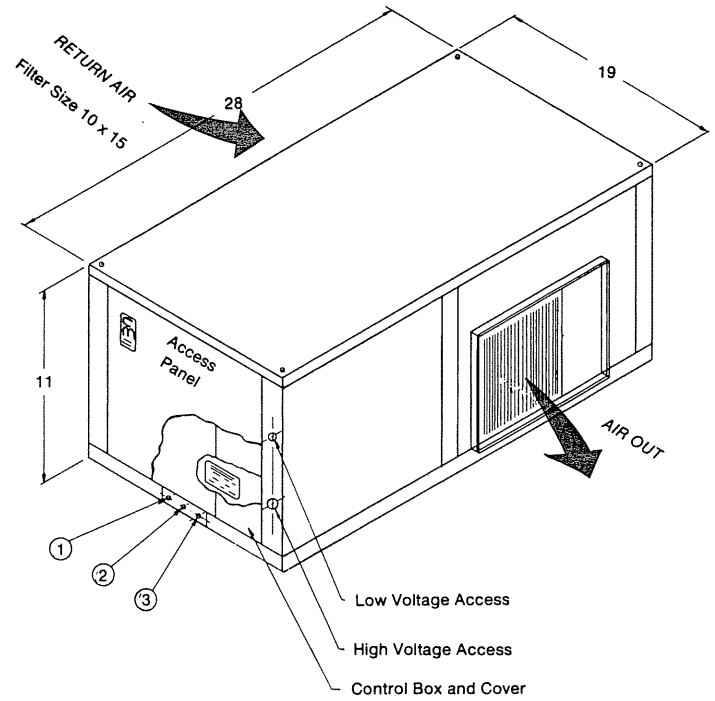
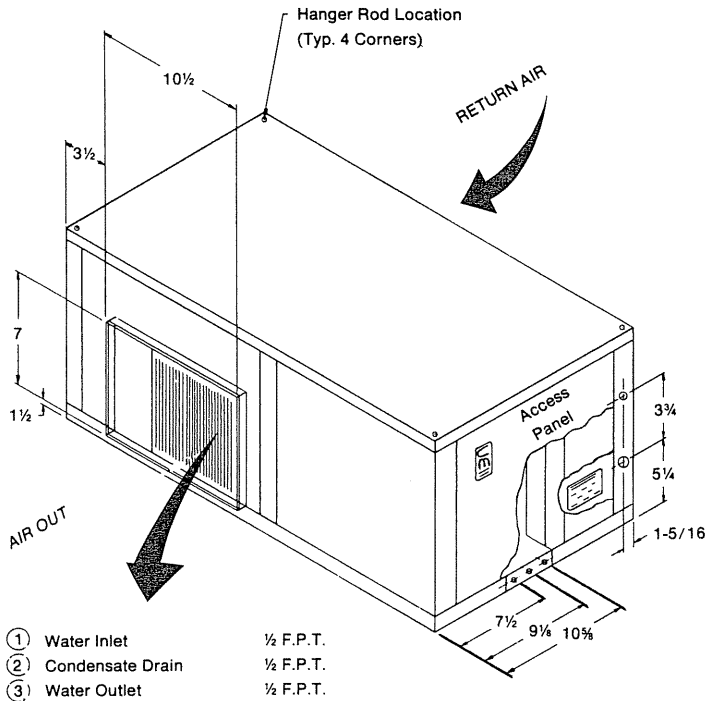
# Seasons Comfort At Less Cost

# CHOOSE FROM VERTICAL AND HORIZONTAL STYLES

## DIMENSIONAL DATA

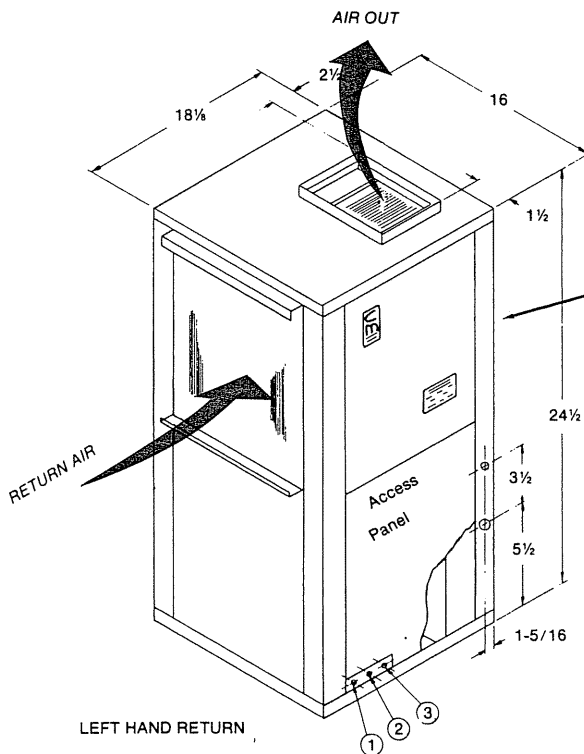
### HORIZONTAL MODEL

RIGHT HAND RETURN



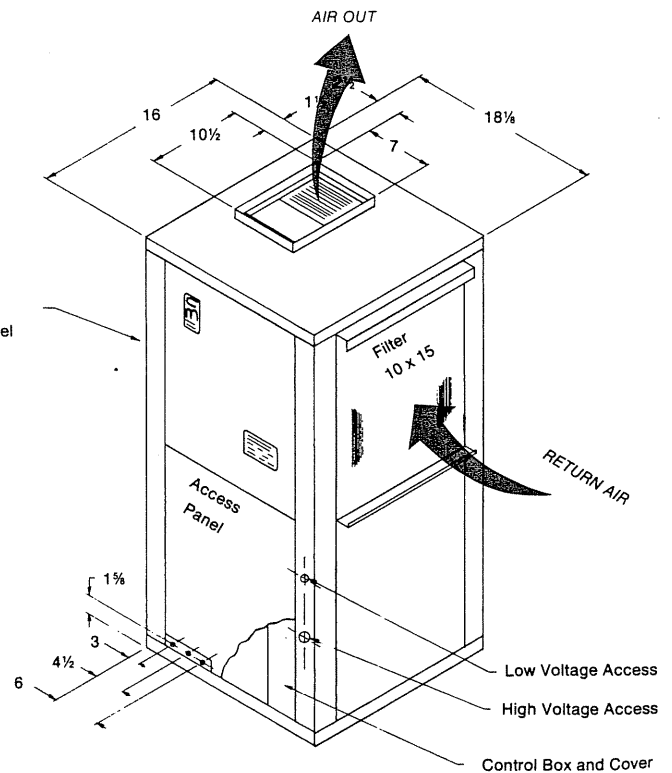
LEFT HAND RETURN

### VERTICAL MODEL



LEFT HAND RETURN

Full Side Access Panel



RIGHT HAND RETURN



# CLIMATE MASTER FOR QUALITY AND ECONOMY

## PHYSICAL DATA

### SPECIFICATION CHART

### FOR VERTICAL AND HORIZONTAL MODELS

MODEL	V10 - 11	H10 - 11	V10 - 12	H10 - 12	V10 - 13	H10 - 13
CONFIGURATION	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL	VERTICAL	HORIZONTAL
VOLTAGE*	115	115	208/230 •	208/230 •	277	277
PHASE	1	1	1	1	1	1
MIN. CIRCUIT AMPACITY	17.1	17.1	10.1	10.1	7	7
MAX. FUSE SIZE	25	25	15	15	15	15
COMPRESSOR F.L.A.	10.3	10.3	6.4	6.4	5.0	5.0
COMPRESSOR L.R.A.	47	47	28	28	27.4	27.4
BLOWER F.L.A.	4.2	4.2	2.1	2.1	0.73	0.73
BLOWER MOTOR-HP	1/12	1/12	1/12	1/12	1/8	1/8
BLOWER WHEEL DIA.	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4	10 1/4
BLOWER WHEEL LEN.	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2	4 1/2
REF. TO AIR HEAT EXCHANGER	ROWS	4	4	4	4	4
	FACE AREA	765	765	765	765	765
	FINS/INCH	11	11	11	11	11
WATER INLET (FPT)	1/2	1/2	1/2	1/2	1/2	1/2
WATER OUTLET (FPT)	1/2	1/2	1/2	1/2	1/2	1/2
DRAIN (FPT)	1/2	1/2	1/2	1/2	1/2	1/2
FILTER SIZE	10x15	10x15	11x15	10x15	10x15	10x15
OPERATING WT. (APPROX.)	140	140	140	140	140	140

\* MIN. VOLTAGE ON 208/230 VOLT MODELS IS 197 VOLTS.

\*\* TIME DELAY TYPE

NOTE: ALL UNITS ARE OPTIONALLY AVAILABLE WITH  
CONTROLS FOR AN AUTOMATIC CHANGEOVER THERMOSTAT.

• STANDARD VOLTAGE

0774



## CLIMATE MASTER PRODUCTS

DIVISION OF WEIL - MC LAIN COMPANY, INC.

2000 WEST COMMERCIAL BLVD., FORT LAUDERDALE, FLORIDA 33309 / 776-1961

In line with its policy of product improvement, Climate Master reserves the right to make reasonable changes without notice.

