

MHP0270R

Commercial Heat Pump Water Heating Systems

MODULAR WATER SOURCE HEAT PUMP



DESIGNED ★ ENGINEERED ★ ASSEMBLED

USA



MHP0270R

Specifications

Operating Conditions	Model Number	MHP0270R
	Nominal DOE Capacity*	278,800 BTU/hr
	Nominal DOE Performance*	4.1 COP
	Recovery Rate ¹	664 Gal/hr
	Compressor Type	Scroll
	Refrigerant	R513A
	Factory Charge	38.5 lbs.
	Max Water Temperature	175° F
	Source Water Range	35° F - 120° F
	Min. Ambient Exposure	33° F
	Max Working Water Pressure	150 psig (DHW); 300 psig (Source)



Multi-Pass Unit Sizing	DHW & Source Water Connections	2" FPT Copper
	DHW Condenser Flow Rate	36 GPM
	DHW Water Circuit Condenser Pressure Drop ²	7.4 ft Head
	DHW Water Circuit Cv Value ²	20
	Source Evaporator Water Flow Rate	48 GPM
	Source Water Circuit Pressure Drop	11.1 ft. Head
	Source Water Circuit Cv Value	22
	External Head Pressure Allowed by Unit	18.7 ft Head
	Min Cold Cycle Volume ⁵	119 Gallons
	Min. Warm Cycle Volume ⁶	334 Gallons
	Min. Tank Recovery ⁷	835 Gallons

Single-Pass Unit Sizing	DHW & Source Water Connections	2" FPT Copper
	DHW Condenser Water Flow Rate	22 GPM
	DHW Water Circuit Condenser Pressure Drop ²	16.9 ft Head
	DHW Water Circuit Cv Value ²	8
	Source Evaporator Water Flow Rate	48 GPM
	Source Evaporator Pressure Drop	11.1 ft Head
	Source Water Circuit Cv Value	22
	DHW External Head Pressure Allowed by Unit	19.5 ft Head
	Min. Cold Water Cycle Volume ⁵	119 Gallons

Unit Specifications	Dry Weight	1,074 lbs
	Operating Weight	1,113 lbs
	Sound Pressure ⁴	72.1dB Front; 71.9 dB Left; 70.9 dB Right; 73.6 dB Rear
	Dimensions (L x D x H)	32 1/2" x 39" x 66 1/4"

Power Requirements	Voltage	Compressor LRA	RLA Per Compressor	Wire and Disconnect Sizing	
				MCA	MOCP
	208-230/3/60	605	88	108	175
	440-480/3/60	272	45	55	100
	575/3/60	238	30	38	60

Legend
 LRA: Locked Rotor Amps
 RLA: Rated Load Amps
 MCA: Maximum Current Ampacity (used for wire sizing)
 MOCP: Minimum Overcurrent Protection (minimum disconnect size to be used)

Performance Data

Performance Test Conditions: 50 EWT, 140 LWT, 100% Water Source Side

Entering Source Water Temp (°F)	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (kW)	Heating COP	Cooling COP	Combined COP
90°F	280,400	203,630	22.5	3.7	2.7	6.3
80°F	253,600	178,536	22	3.4	2.4	5.8
70°F	226,900	153,542	21.5	3.1	2.1	5.2
60°F	200,600	129,460	20.9	2.8	1.8	4.6
50°F	174,400	105,478	20.2	2.5	1.5	4.1
40°F	152,200	87,031	19.1	2.3	1.3	3.7

In view of ongoing product improvements, design and specification are subject to change without notice. Lochinvar Water Heating Systems can accept no responsibility for possible errors in catalogs, brochures or any other printed material.

Multi-pass Performance Test Data: 140 LWT, Design GPM, 100% Water Source Side

Entering Source Water	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
110°F	336,000	252,065	24.6	4	3	7
90°F	306,000	222,065	24.6	3.6	2.6	6.3
70°F	230,000	148,112	24	2.8	1.8	4.6
50°F	178,000	98,159	23.4	2.2	1.2	3.5
35°F	149,000	72,571	22.4	1.9	0.9	2.9

High Temperature Performance Test Data: 160 EWT, 175 LWT, 100% Water Source Side

Entering Source Water Range	Source Design GPM	Load Design GPM	Supply Heating Capacity (Btu/hr)	Source Cooling Capacity (Btu/hr)	Power Input (KW)	Heating COP	Cooling COP	Combined COP
90 - 104 °F	60	39	291,400	178,122	33.2	2.6	1.6	4.1

Note: Operation over 160 LWT requires the above adjustments to design flow rates, and restricts allowable source temperature ranges as shown. Requires Multipass HP. Source pressure drop increases to 17.2 Ft. Hd. Load side available head allowance drops to 17.4 Ft. Hd.

Notes: Certified to UL60335-1, UL60335-2-40, CSA C22.2 60335-1, CSA 60335-2-40 (LC16116-1)
Short Circuit Current Rating (SCCR) 100, Compressor Horsepower 25 HP, 1000 hrs. Salt Spray Resistance
Cabinet/Evap

*Nominal DOE specs at 70 EWT, 120 LWT, 80°F 100% water source

1. Recovery rate at 80° F source 100% water, DHW 70 EWT 120 LWT

2. Water Circuit Pressure Drop and Heat Pump Cv value apply to external pump applications

3. Pressure drop allowed by internal circulator for external piping, at design flow rate

4. Sound pressure recorded 3' from unit face, 3' from ground

5. Cold Cycle volume is the volume below the cold trigger sensor. Cold in water over 70° F will need more volume.

6. Warm Cycle volume is the volume of water below the warm/recirc trigger sensor.

7. Tank volume is based on individual project demands, but cannot be lower than minimum value. Contact factory for accurate sizing.

Dimensions

Water Connections and Required Clearances

