MB Large Series

The MB-Series Compact High-Capacity Series raises the bar for water-source heat pump efficiencies, features and application flexibility. Not only does the MARS MB exceed ASHRAE 90.1 efficiencies, but it also uses R-454B low Global Warming Potential (GWP) refrigerant, making it an extremely environmentally friendly space conditioning product solution. MB-Series is eligible for additional LEED® (Leadership in Energy and Environmental Design) points due to its innovative and environmentally conscious design.

Available standard with high quality construction, reliable refrigerant circuit, standard safety controls, and many field acceptability/ convertibility features.

FEATURES

- Horizontal sizes 072 (6 Tons, 21.1 kW) through 120 (10 Tons, 35.2 kW)
- Vertical sizes 072 (6 Tons, 21.1 kW) through 300 (25 Tons, 87.9 kW)
- Environmentally friendly R-454B low-GWP refrigerant
- Refrigerant Detection System (RDS) (required for all sizes)
- Horizontal configurations with left or right return- air and straight or back supply-air discharge. Discharge is field convertible. Field conversion uses all existing parts, including panels and belts
- Vertical configurations with front or back return and top, front, or back discharge. Fan discharge on vertical unit sizes 072-120 is field convertible. Field conversion uses all existing parts, including panels and belts
- Electric power entry points from either side of the front
- Configurable water connections for left or right handling on horizontal units
- Dual refrigeration circuits (all sizes)
- Exceeds ASHRAE 90.1 efficiencies
- Galvanized-steel cabinet construction
- Insulated divider and separate compressor/ air-handler compartments
- TXV metering device
- Standard hanger brackets for horizontal units
- Premium-duty motor that is VFD compatible
- CXM2 Communicating Controls:
  - Connect directly to the system with a handheld service tool
  - Provides real-time unit operating conditions
  - Reduces startup, commissioning, and service time by providing key system temperatures electronically
  - Captures operating conditions in the event of a safety shutdown

WATER SOURCE HEAT PUMPS

6 to 25 Tons
Energy Efficient Heating & Cooling for Commercial Applications

UNIT SIZE

Vertical Model		W	D	H
072 - 120	in. cm	41.0 104.1	29.0 73.7	69.8 177.2
160 - 300	in. cm	82.0 208.2	29.0 73.7	69.8 177.2

Horizontal Model		W	D	H
072 - 120	in. cm	36.3 92.2	84.9 215.6	21.6 54.9

Warranty—5 years on compressor, 1 year on parts
(Some limitations apply; see printed warranty for details.)

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TESTED TO ASHRAE/AHRI/ISO 13256-1 ENGLISH (I-P) UNITS
MB HORIZONTAL AND VERTICAL

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 86 ºF		Heating 68 ºF		Cooling 59 ºF		Heating 50 ºF		Cooling 77 ºF		Heating 32 ºF	
	Capacity BTUH	EER BTUH/W	Capacity BTUH	COP	Capacity BTUH	EER BTUH/W	Capacity BTUH	COP	Capacity BTUH	EER BTUH/W	Capacity BTUH	COP
72	71,000	14.1	92,300	5.3	77,800	20.5	76,000	4.6	74,100	15.5	58,300	3.8
	72,000	14.5	91,400	5.4	78,000	21.6	75,000	4.7	75,200	16.3	58,000	3.9
96	101,000	15.3	122,800	5.0	110,500	22.3	99,500	4.4	101,700	16.3	76,600	3.6
	101,700	15.5	123,000	5.1	110,800	23.0	100,000	4.4	102,000	16.5	76,800	3.6
120	122,000	13.7	156,000	4.6	128,000	18.1	127,000	4.0	124,500	14.3	98,500	3.4
	124,000	13.9	156,000	4.7	128,500	18.6	127,000	4.1	125,000	14.8	98,500	3.5

Notes:
- *Where dual voltages are available, ratings are based on the lower voltage setting.*
- *Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature.*
- *Heating capacities based upon 68°F DB, 59°F WB entering air temperature.*
- *Ground Loop Heat Pump ratings based on 15% antifreeze solution.*

TESTED TO ASHRAE/AHRI/ISO 13256-1 ENGLISH (I-P) UNITS
MB VERTICAL

Model	Water Loop Heat Pump				Ground Water Heat Pump				Ground Loop Heat Pump			
	Cooling 86 ºF		Heating 68 ºF		Cooling 59 ºF		Heating 50 ºF		Cooling 77 ºF		Heating 32 ºF	
	Capacity BTUH	EER BTUH/W	Capacity BTUH	COP	Capacity BTUH	EER BTUH/W	Capacity BTUH	COP	Capacity BTUH	EER BTUH/W	Capacity BTUH	COP
72	35,600	14.5	44,800	5.2	39,200	21.8	36,700	4.4	37,600	18.6	32,200	4.0
96	50,300	16.3	61,200	5.1	54,900	24.2	49,800	4.3	52,400	20.4	43,200	3.9
120	61,000	14.8	74,800	4.7	64,500	20.0	61,200	4.1	63,500	18.0	53,000	3.8
168	168,000	14.4	192,000	4.7	186,000	21.0	151,800	4.1	172,000	16.2	121,000	3.5
	169,000	15.3	198,000	4.9	186,000	21.4	152,000	4.1	174,000	17.0	121,000	3.5
	82,000	15.5	93,000	4.8	93,000	23.5	75,000	4.2	89,000	21.0	68,000	3.9
192	187,000	14.9	220,000	5.1	201,000	21.5	181,000	4.5	194,000	16.5	139,000	3.7
	188,000	15.2	222,000	5.2	202,000	22.0	182,000	4.5	194,000	17.0	140,000	3.7
	93,000	16.0	110,000	5.2	100,000	24.0	89,000	4.5	99,000	21.0	76,000	4.0
240	232,000	13.9	294,000	4.9	256,000	20.0	236,000	4.3	232,000	14.3	179,000	3.5
	232,000	14.0	298,000	4.9	257,000	21.0	239,000	4.3	235,000	15.0	179,000	3.5
	115,000	15.5	142,000	5.1	128,000	22.0	114,000	4.4	122,000	20.5	97,000	4.0
300	300,000	13.3	378,000	4.6	330,000	19.1	294,000	3.9	302,000	14.3	221,000	3.1
	149,000	14.5	183,000	4.8	168,000	23.0	147,000	4.2	155,000	18.5	129,000	3.7

Notes:
- *Where dual voltages are available, ratings are based on the lower voltage setting.*
- *Cooling capacities based upon 80.6°F DB, 66.2°F WB entering air temperature.*
- *Heating capacities based upon 68°F DB, 59°F WB entering air temperature.*
- *Ground Loop Heat Pump ratings based on 15% antifreeze solution.*

Century®

PHYSICAL DATA

Standard Range Cabinet										
Configuration	**Horizontal**			**Vertical**						
Unit Size	**072**	**096**	**120**	**072**	**096**	**120**	**168**	**192**	**240**	**300**
Compressor Type	Scroll			Scroll						
Number of Circuits (Compressors)	2			2						
Refrigerant Leak Detection System	R	R	R	R	R	R	R	R	R	R
Number of Sensors	2	2	2	2	2	2	2	2	2	2
Factory Charge R-454B (oz) [kg] per Circuit	54 [1.5]	62 [1.8]	66 [1.9]	54 [1.5]	62 [1.8]	66 [1.9]	94 [2.7]	103 [2.9]	134 [3.8]	184 [5.2]
Blower Motor										
Standard Motor (hp) [kW]	1 [0.75]	2 [1.49]	3 [2.23]	1 [0.75]	2 [1.49]	3 [2.23]			5 [3.73]	
Large Motor* (hp) [kW]	2 [1.49]	3 [2.23]	5 [3.73]	2 [1.49]	3 [2.23]	5 [3.73]			7.5 [5.60]	5 [3.73]
Water Connections										
FPT (in) [mm]	1-1/4" [31.8]		1-1/2" [31.8]	1-1/4" [31.8]		1-1/2" [38.1]	2" [50.8]			2-1/2" [63.5]
Coax Data										
Number of Coaxes per Circuit	1			1			2		3	
Volume per Coax (gallon) [liter]	1.62 [6.13]	2.40 [9.08]	2.40 [9.08]	1.62 [6.13]	2.40 [9.08]	2.40 [9.08]	3.62 [13.70]	4.83 [18.55]	4.90 [18.55]	7.39 [27.98]
Condensate Connection Size										
FPT (in) [mm]	3/4" [19.1]			1" [25.4]						
Miscellaneous Data										
Filter Standard - 1" [2.54cm] Throwaway (qty) (in) [cm]	(QTY.3) 16 x 20 [40.6 x 50.8]			(QTY.4) 20 x 20 [50.8 x 50.8]			(QTY.4) 20 x 25 [50.80 x 63.5]			
	(QTY.1) 20 x 20 [50.8 x 50.8]						(QTY.2) 20 x 30 [50.80 x 76.2]			
Weight - Operating (lbs) [kg]	586 [265.8]	644 [292.1]	698 [316.6]	586 [265.8]	644 [292.1]	698 [316.6]	1069 [484.9]	1164 [528.0]	1184 [537.1]	1297 [588.3]
Weight - Packaged (lbs) [kg]	626 [283.9]	684 [310.3]	738 [334.8]	626 [283.9]	684 [310.3]	738 [334.8]	1149 [521.2]	1244 [564.3]	1264 [573.3]	1377 [624.6]
Corner Weights - Standard Configuration										
Compressor Section - Left Front (lb) [kg]	101 [46]	120 [52]	137 [62]							
Control Box - Right Front (lb) [kg]	235 [107]	254 [115]	271 [123]							
Air Coil Side - Back (lb) [kg]	70 [32]	80 [36]	90 [41]							
Blower Side - Back (lb) [kg]	180 [82]	190 [86]	200 [91]							
EXTENDED RANGE CABINET WITH WATERSIDE ECONOMIZER										
Dimensions										
Weight - Operating (lbs.) [kg]	838 [380.1]	921 [417.7]	998 [452.7]	762 [345.5]	837 [379.7]	907 [411.6]	1,529 [693.4]	1665 [755.0]	1693 [768.0]	1855 [841.3]
Weight - Packaged (lbs.) [kg]	900 [408.2]	978 [443.7]	1008 [457.2]	814 [369.1]	889 [403.3]	962 [436.4]	1643 [745.3]	1779 [806.9]	1808 [819.9]	1974 [895.4]
Air Coil Volume (gal) [L]	4.0 [15.1]	4.4 [16.7]		4.3 [16.3]	4.8 [18.2]		9.7 [36.7]		19.0 [71.9]	
Corner Weights										
Compressor Section - Left Front (lb) [kg]	154 [70]	169 [77]	183 [83]							
Control Box - Right Front (lb) [kg]	331 [150]	364 [165]	394 [179]							
Air Coil Side - Back (lb) [kg]	104 [47]	115 [52]	124 [56]							
Blower Side - Back (lb) [kg]	249 [113]	273 [124]	296 [134]							

O = Optional, R = Required
** VFD Option comes with Large motor option*

UNIT MAXIMUM WATER WORKING PRESSURE

Unit Maximum Water Working Pressure	Max Pressure PSIG [kPa]
Base Unit	300 [2,068]
MWV	200 [1,379]
MOD Valve	200 [1,379]

Use the lowest maximum pressure rating when multiple options are combined.

MB Large Series

Due to ongoing product improvements, specifications and dimensions are subject to change and correction without notice or incurring obligations. Determining the application and suitability for use of any product is the responsibility of the installer. Additionally, the installer is responsible for verifying dimensional data on the actual product before beginning any installation preparations. All products meet applicable regulations in effect on date of manufacture; however, certifications aren't necessarily granted for life of the product. It is the responsibility of the applicant to determine whether a specific model qualifies for third party incentive/rebate programs (Federal, state, utilities, etc.).

"This product complies with all California product labeling laws including, but not limited to, the Safe Drinking Water and Toxic Enforcement Act of 1986, more commonly known as Proposition 65."

SP-1M 7/25 CY-MB-LARGE

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