



Capacity & Sizing Guide FirstCo VMB Ducted Air Handler For Use with Chiltrix Heat Pump Chillers

NOTE*

•Ducted systems are substantially less efficient than using the ductless [CXI series](#) room air handlers, due to duct system losses and static pressure. Ducted systems are also controlled by a central thermostat, instead of each room having its own on/off and thermostatic control, therefore ducted systems miss out on the multi-zone advantages of a ductless system. •For new construction, or adding air conditioning/heating to an existing building that has no existing duct system, the installed cost of a central ducted system with an air handler will be about the same, or higher, cost than the installed cost of a ductless system. •If a central ducted system is your choice, no central AC system will give you better efficiency than a FirstCo VMB combined with one or more ultra-efficient CX-series chillers from Chiltrix.

About FirstCo VMB series Ducted Hydronic Air Handlers – Variable Speed DC Fans

For customers who desire to use the Chiltrix system with a central duct system/air handler we strongly recommend the FirstCo VMB series. The VMB series uses DC-inverter variable speed fan motors which save at least 20% compared to an air handler with a standard fan motor. Of course DC motors are also longer-lasting and are much quieter than a standard air handler fan motor.

Sizing and Capacity Information

FirstCo VMB air handlers are usually rated based on typical American loop operating parameters of 44F for cooling. The Chiltrix system can use the typical parameters (IPLV), but if you select the Chiltrix Psychroligix controller, the air handlers should be configured to use the higher-efficiency parameters (NPLV) of 54F at times. This will allow sensible cooling to be adequate at times when the chiller is operating at a more efficient loop temperature. Below we have published the extended performance data provided by FirstCo showing the capacity of the VMB with both the Chiltrix NPLV and IPLV parameters. We also provide heating data based on Chiltrix LWT 105F.

Cooling NPLV LWT54F AHRI 550/590 80/67																
Model	8VMB	8VMB	8VMB	8VMB	12VMB	12VMB	12VMB	12VMB	16VMB	16VMB	16VMB	16VMB	20VMB	20VMB	20VMB	20VMB
CFM	800	700	600	500	1200	1050	900	750	1600	1400	1200	1100	1825	1700	1600	1400
(ESP)IWC	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
BTU	13,600	12,100	10,600	9,000	20,200	18,000	15,800	13,400	27,700	24,700	21,500	19,900	31,000	29,200	27,700	24,700
Cooling IPLV LWT44F AHRI 550/590 80/67																
Model	8VMB	8VMB	8VMB	8VMB	12VMB	12VMB	12VMB	12VMB	16VMB	16VMB	16VMB	16VMB	20VMB	20VMB	20VMB	20VMB
CFM	800	700	600	500	1200	1050	900	750	1600	1400	1200	1100	1825	1700	1600	1400
(ESP)IWC	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50	0.50
BTU	18,600	16,800	15,000	13,100	27,900	25,100	22,500	19,600	39,100	35,500	31,900	27,900	43,100	41,000	39,300	35,500
Heating LWT 105F AHRI/68 EAT																
Model	8VMB	8VMB	8VMB	8VMB	12VMB	12VMB	12VMB	12VMB	16VMB	16VMB	16VMB	16VMB	20VMB	20VMB	20VMB	20VMB
CFM	800	700	600	500	1200	1050	900	750	1600	1400	1200	1100	1825	1700	1600	1400
BTU	21,600	19,400	17,100	14,700	32,200	28,800	25,400	21,900	44,400	39,800	35,000	32,500	49,500	47,200	44,400	39,800
Heating LWT 95F AHRI/68 EAT																
Model	8VMB	8VMB	8VMB	8VMB	12VMB	12VMB	12VMB	12VMB	16VMB	16VMB	16VMB	16VMB	20VMB	20VMB	20VMB	20VMB
CFM	800	700	600	500	1200	1050	900	750	1600	1400	1200	1100	1825	1700	1600	1400
BTU	15,800	14,200	12,400	10,700	23,500	21,100	18,500	16,000	32,400	29,000	25,600	23,700	36,100	34,100	32,400	29,000

**VMB SERIES AIR HANDLERS REQUIRE A STANDARD THERMOSTAT.

*ESP=External Static Pressure

*Units should be sized based on the greater of Heating or NPLV Cooling requirements.

For more information please contact Chiltrix Inc. www.chiltrix.com