Engineered for flexibility and performance.™

TM: MCCKCM - W - 2150B

Fan Coil Units

Models: MWM-FW Series
MCM-DW Series
MCK-AW/BW Series
MCC-CW Series
MDB-BW Series

McQuay®
Air Conditioning

Contents

Note: Installation and maintenance are to be performed only by qualified personnel who are familiar with local codes and regulations, and experienced with this type of equipment.

Caution: Sharp edges and coil surfaces are a potential injury hazard. Avoid contact with them.

Warning: Moving machinery and electrical power hazards. May cause severe personal injury or death. Disconnect and lock off power before servicing equipment.

Features

Space Saving

Different types of fan coil units are designed to be both versatile and space saving to suit every interior design. Ceiling concealed type for the sophisticated, luxurious floor space saving, all kind of interior decoration; ceiling exposed type for economical and space saving installation; etc.

Zone Control

These fan coil units can be installed in different zones as each unit operates independently. Zone control on energy saving, different comfort requirement; better air distribution needs can therefore be easily achieved.

Unique Features For MWM-FW Series

Easy Installation
The wall mounted fan coil unit is easily installed because of its compact size, slimness and light weight. Slim and short outdoor unit can be easily installed even in a narrow balcony and passageway and yet have a stable profile.

Space Saving
No space is required on either floor or ceiling. This newly developed super slim design for wall mounting maximises floor space usage and enhance ceiling appearance where ceilings are low.

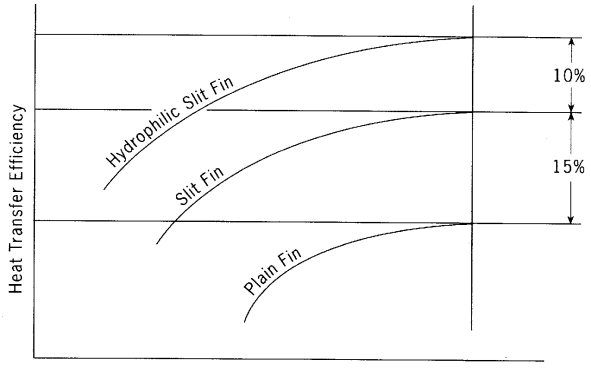
Quiet Operation
Cooling comfort is improved by whisper-quiet operation which is achieved by a tangential fan.

Excellent Air Distribution
Air discharge direction can be adjusted in four directions, manually or automatically by using LCD remote control, coupled with good air flow, the unit provides excellent air distribution.

Facilitated Maintenance Ensured
The new design cassette filter is slide-out type which can be easily removed at the air inlet grille for cleaning. Maintenance is easy for electrical components, piping and wiring as these are all easily accessible by merely removing front plastic panel.

Wireless Remote Control
The compact LCD transmitter is able to operate the air conditioner unit within the distance of 9 meters. Fan motor speed can be set at low/medium/high or automatic.Sleep mode automatically increase set temperature since room temperature is lower at night thus achieving comfort surrounding. Air flow direction can be controlled automatically. Room temperature is controlled by electronic thermostat. The unit can be preset to on and off automatically for maximum of 15 hours by using timer on/off.

Slit Fin
The unique Hydrophilic slit fin has greatly improved the air flow and the contact surfaces with the air thus to boost the cooling capacity.



Unique Features For MCK-AW/BW Series

Built In High Head Drain Pump
The unit comes with a built in high head drain pump. Condensate water can be pumped up to 500mm and drain out smoothly.

4-Way Air Discharge And Air Swing
These features greatly improve the air distribution in the conditioned space.

Wireless And Wired Controller Option
Wireless Handset is the standard controller. However if wired controller required, Netware wired controller is a wise choice(optional).

Unique Features For MCM-DW Series

2-Way Air Discharge And Air Swing
The 2-way air discharge couple with the air swing function, provide better air distribution in the conditioned space.

Easy Maintenance
The air filter and components can be easily accessed from the bottom of the unit. This make servicing and maintenance become a simple task.

Wireless And Wired Controller Option
Wireless Handset is the standard controller. However if wired controller required, Netware wired controller is a wise choice(optional).

Unique Features For MCC-CW Series

Elegance And Prestige
As the unit is installed above the ceiling with only the supply and return air grille exposed to view, the air conditioned space will appear as elegant and prestigious as a centralized air conditioned area.

Evergreen Design
This unit will never become obsolete as the unit is completely concealed away. Interior decoration for maximum aesthetic beauty as well as interior design is easily achieved.

Superior Air Distribution
As the conditioned air can be distributed to every corner of the area by air duct, this will ensure more pleasant living environment, thus provide extra comfort to the occupants.

Optional Duct Accessories
The optional duct accessories makes the ducting and installation work so easy.

Optional Wired Controller
Optional Netware wired controller offers simple and flexibility in controlling the unit.

Unique Features For MDB-BW Series

Superb Air Distribution
These units are designed with high air flow and static, enables adequate distribution of air to the desired space. Providing comfort to every corner of the room.

Reliability
The structures are strong and robust to ensure the product operation life.

Versatile
Multiple rooms can be cooled together by just using one unit of MDB.

Specifications

MODEL		MWM 005FW	007FW	010FW	015FW	020FW	025FW
PERFORMANCE							
Air Flow (CFM / L/s)	High	300 / 510	300 / 510	270 / 127	300 / 142	480 / 227	580 / 274
	Medium	230 / 390	230 / 390	230 / 109	270 / 127	430 / 203	485 / 229
	Low	190 / 320	190 / 320	190 / 90	230 / 109	370 / 175	380 / 179
Nominal Total Cooling Capacity	kcal/hr	1210	1638	2520	3024	4284	5292
	W	1410	1910	2931	3517	4982	6154
	Btu/hr	4800	6500	10000	12000	17000	21000
Sensible Cooling Capacity	kcal/hr	1179	1373	1739	2026	2956	3651
	W	1375	1600	2022	2356	3438	4247
	Btu/hr	4680	5447	6900	8040	11730	14490
Nominal Total Heating Capacity (Entering water Temp. : 60°C)	kcal/hr	2772	3150	4032	4536	6552	8064
	W	3220	3660	4689	5275	7620	9378
	Btu/hr	11000	12500	16000	18000	26000	32000
Water Flow Rate	USGPM / LITRES/M	1.10 / 4.16	1.54 / 5.83	2.00 / 7.57	2.67 / 10.11	4.22 / 15.97	5.33 / 20.18
Head Loss (Cooling)	psi / Pa	0.245 / 1689	0.436 / 3006	7.77 / 53572	12.93 / 89149	4.89 / 33715	7.40 / 51021
Head Loss (Heating) : 60 °C	psi / Pa	0.186 / 1282	0.335 / 2310	6.09 / 41989	10.28 / 70878	3.86 / 26614	5.86 / 40403
COIL							
Type		Seamless copper tube mechanically boded to aluminium slit fin.					
Tube		OD 7mm, thickness 0.35 mm.					
Fin		thickness 0.11 mm					
Connection		OD 1/2" copper tube					
Number of rows / fin per inch		1 / 18	1 / 20	2 / 18	2 / 18	2 / 18	2 / 18
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233					
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min.					
Surface Area	m^2 / ft^2	0.208 / 2.239	0.208 / 2.239	0.198 / 2.131	0.198 / 2.131	0.254 / 2.733	0.254 / 2.733
Surface Air Velocity	(m/s) / (ft/min)	0.690 / 135.84	0.690 / 135.84	0.64 / 126.70	0.72 / 140.78	0.89 / 175.63	1.08 / 212.22
MOTOR							
Type		Permanent split capacitor motor					
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60					
Rated Input power	W (50/60Hz)	25	25	25 / 26	25 / 26	53 / 67	57 / 81
Rated Running Current	A (50/60Hz)	0.11	0.11	0.11 / 0.12	0.11 / 0.12	0.23 / 0.31	0.24 / 0.38
Poles		4					
Sound Level (dBA)	High Fan			38	38	45	47
	Medium Fan			34	35	42	44
	Low Fan			30	31	39	42
Control	Room Temp.	Micro-computer Controlled Thermostat					
	Air Discharge	Automatic Louver (Up & Down)					
	Operation	LCD wireless micro-computer remote control					
Condensate Drain Size	mm	19.05					
AIR FILTER		Washable Saran Net Filter					
WEIGHT	kg	12	12	12	12	15	15
DIMENSION (H x W x D)	mm	290 x 815 x 179				306 x 1062 x 202	

Condition

Cooling capacity : Entering air temp. : 26.7 °C (80 °F) DB, 19.4 °C (67 °F) WB
Entering water temp. : 7.2 °C (45 °F)
Leaving water temp. : 12.8 °C (55 °F)

Heating capacity : Entering air temp. : 21.1 °C (64 °F) DB
Entering water temp. : 60 °C (140 °F)
Leaving water temp. : 55 °C (131 °F)

Microphone position : 1m in front of the unit & 0.8m below the vertical centre line of the unit. (JIS C 9612)

MODEL		MCK 020AW	025AW	030AW	040AW	050AW
PERFORMANCE						
Air Flow (CFM/CMH)	High	770 / 1,310	810 / 1,380	920 / 1,560	1,020 / 1,740	1,080 / 1,840
	Medium	650 / 1,100	700 / 1,190	770 / 1,320	900 / 1,530	990 / 1,680
	Low	630 / 1,070	630 / 1,070	700 / 1,190	790 / 1,340	910 / 1,540
Nominal Total Cooling Capacity	kcal/hr	6,048	6,804	7,964	9,073	9,829
	W	7,034	7,913	9,261	10,551	11,430
	Btu/hr	24,000	27,000	31,600	36,000	39,000
Sensible Cooling Capacity	kcal/hr	4,209	4,738	5,494	6,162	6,628
	W	4,894	5,510	6,389	7,166	7,708
	Btu/hr	16,700	18,800	21,800	24,450	26,300
Nominal Total Heating Capacity (Entering water Temp. : 60 °C)	kcal/hr	9,451	10,585	12,198	13,584	14,365
	W	10,991	12,309	14,185	15,797	16,706
	Btu/hr	37,500	42,000	48,400	53,900	57,000
Water Flow Rate	USGPM / LITRES/M	5.32 / 20.17	6.22 / 23.45	7.11 / 26.84	8.00 / 30.14	8.88 / 33.49
Head Loss (Cooling)	psi / Pa	2.13 / 14,686	3.16 / 21,774	4.36 / 30,061	7.29 / 50,263	10.99 / 75,773
Head Loss (Heating) : 60 °C	psi / Pa	1.70 / 11,721	2.545 / 17,547	3.55 / 24,476	6.07 / 41,851	9.20 / 63,459
COIL						
Type		Seamless copper tube mechanically bonded to aluminium slit fin				
Tube		OD 9.52 mm, thickness 0.35 mm				
Fin		Thickness 0.11 mm				
Connection		OD 3/4" copper tube				
Number of rows / fin per inch		2/12	2/14	2/16	2/16	2/16
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233				
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min				
Surface Area	m^2 / ft^2	0.459 / 5.022	0.459 / 5.022	0.459 / 5.022	0.459 / 5.022	0.459 / 5.022
Surface Air Velocity	(m/s) / (ft/min)	0.78 / 153.33	0.82 / 161.29	0.93 / 183.19	1.03 / 203.11	1.09 / 215.05
MOTOR						
Type		Permanent split capacitor motor				
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50, 208 - 230/1/60				
Rated Input	W	127 / 139	151 / 163	164 / 208	192 / 321	253 / 328
Running Current	A	0.53 / 0.64	0.65 / 0.75	0.69 / 0.98	0.80 / 1.50	1.08 / 1.50
Poles		6				
Control	Room Temp.	Micro-computer Controlled Thermostat				
	Air Discharge	Automatic Louver (Up & Down)				
	Operation	LCD wireless micro-computer remote control				
Condensate Drain Size	mm	19.05				
AIR FILTER		Washable Saran Net Filter				
WEIGHT (Unit + panel)	kg	21 + 4	32 + 4	35 + 4	38 + 4	40 + 4
DIMENSION (H x W x D)	mm	335 x 820 x 820 (363 x 930 x 930)				

Condition

Cooling capacity : Entering air temp. : 26.7°C (80°F)DB, 19.4C (67°F)WB
Entering water temp. : 7.2°C (45°F)
Leaving water temp. : 12.8°C (55°F)

Heating capacity : Entering air temp. : 21.1°C (64°F)DB
Entering water temp. : 60°C (140°F)
Leaving water temp. : 55°C (131°F)

MODEL		MCK			
		015BW	020BW	025BW	030BW
PERFORMANCE					
Air Flow (CFM / L/s)	High	430 / 203	430 / 203	500 / 236	607 / 287
	Medium	370 / 175	370 / 175	450 / 212	537 / 253
	Low	310 / 146	310 / 146	390 / 184	475 / 224
Nominal Total Cooling Capacity	kcal/hr	3150	4284	5040	5796
	W	3660	4977	5860	6740
	Btu/hr	12500	17000	20000	23000
Sensible Cooling Capacity	kcal/hr	2331	2853	3352	3872
	W	2708	3315	3897	4499
	Btu/hr	9250	11322	13300	15364
Nominal Total Heating capacity (Entering water Temp. : 60 °C)	kcal/hr	5292	6300	7308	8316
	W	6150	7320	8500	9663
	Btu/hr	21000	25000	29000	33000
Water Flow Rate	USGPM/LITRES/M	3.34 / 12.7	4.44 / 16.8	5.54 / 21	6.64 / 25
Head Loss (Cooling)	psi / Pa	0.582 / 4013	1.849 / 12749	2.739 / 18885	3.78 / 26063
Head Loss (Heating) : 60 °C	psi / Pa	0.455 / 3137	1.461 / 10074	2.189 / 15093	3.055 / 21064
COIL					
Type		Seamless copper tube mechanically bonded to aluminium slit fin.			
Tube		OD 9.52 mm, thickness 0.35 mm.			
Fin		thickness 0.11 mm			
Connection		OD 3/4" copper tube			
Number of rows / fin per inch		1 / 18	2 / 14	2 / 14	2 / 14
Max. Working Pressure	$(kg/cm^2)/(psi)$	16.4 / 233			
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min.			
Surface Area	m^2/ft^2	0.431 / 4.637	0.416 / 4.483	0.416 / 4.483	0.416 / 4.483
Surface Air Velocity	(m/s)/(ft/min)	0.471 / 92.73	0.487 / 95.91	0.567 / 111.53	0.688 / 135.40
MOTOR					
Type		Permanent split capacitor motor			
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60			
Rated Input power	W (50/60Hz)	72 / 73	72 / 73	79 / 88	108 / 108
Rated Running Current	A (50/60Hz)	0.31 / 0.34	0.31 / 0.34	0.33 / 0.41	0.45 / 0.50
Poles		6			
Sound pressure level (dBA)	High Fan	43.7	43.7	44	47
	Medium Fan	39	39	40	44
	Low Fan	37.5	37.5	38	40
Control	Room Temp.	Micro-computer Controlled Thermostat			
	Air Discharge	Manual Louver			
	Operation	LCD wireless micro-computer remote control			
Condensate Drain Size	mm	19.05			
AIR FILTER		Washable Saran Net Filter			
WEIGHT (Unit + Panel)	kg	30 + 3	30 + 3	31 + 3	32 + 3
DIMENSION - HxWxD ( ) - with panel	mm	293 x 650 x 650 (363 x 930 x 930)			

Condition

Cooling capacity : Entering air temp. : 26.7 °C (80 °F) DB, 19.4 °C (67 °F) WB
Entering water temp. : 7.2 °C (45 °F)
Leaving water temp. : 12.8 °C (55 °F)

Heating capacity : Entering air temp. : 21.1 °C (64 °F) DB
Entering water temp. : 60 °C (140 °F)
Leaving water temp. : 55 °C (131 °F)

Microphone position : MCK015-025B - 1.4m below the facia (JIS C 9612) , MCK030B - 1.5m below the facia (JIS B 8615).

		MCM				
MODEL		**020DW**	**025DW**	**030DW**	**040DW**	**050DW**
PERFORMANCE						
Air Flow (CFM/CMH)	High	590 / 1,000	660 / 1,130	730 / 1,240	1,000 / 1,700	1,110 / 1,890
	Medium	530 / 900	650 / 1,110	720 / 1,220	950 / 1,620	1,070 / 1,820
	Low	420 / 710	580 / 990	680 / 1,160	930 / 1,580	1,000 / 1,700
Nominal Total Cooling Capacity	kcal/hr	5,040	5,544	6,552	9,535	12,096
	W	5,862	6,448	7,620	11,137	14,068
	Btu/hr	20,000	22,000	26,000	38,000	48,000
Sensible Cooling Capacity	kcal/hr	3,528	3,825	4,455	6,485	7,983
	W	4,102	4,448	5,180	7,538	9,282
	Btu/hr	14,000	15,180	17,680	25,730	31,680
Nominal Total Heating Capacity (Entering water Temp. : 60 °C)	kcal/hr	7,560	8,442	9,674	16,207	17,065
	W	8,792	9,818	11,250	18,639	19,846
	Btu/hr	30,000	33,500	38,385	63,600	67,715
Water Flow Rate	USGPM / LITRES/M	4.44 / 16.75	4.88 / 18.42	5.76 / 21.77	8.44 / 31.82	10.66 / 40.19
Head Loss (Cooling)	psi / Pa	2.95 / 20,315	3.52 / 24,250	3.17 / 21,875	5.96 / 41,170	9.19 / 63,330
Head Loss (Heating) : 60 °C	psi / Pa	2.46 / 16,915	2.83 / 20,191	2.64 / 18,215	4.98 / 34,279	7.65 / 52,731
COIL						
Type		Seamless copper tube mechanically bonded to aluminium slit fin				
Tube		OD 9.52 mm, thickness 0.35 mm				
Fin		Thickness 0.11 mm				
Connection		OD 3/4" copper tube				
Number of rows / fin per inch		3/12	3/12	3/12	4/12	4/14
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233				
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min				
Surface Area	m^2 / ft^2	0.217 / 2.338	0.217 / 2.338	0.263 / 2.826	0.406 / 4.361	0.406 / 4.361
Surface Air Velocity	(m/s) / (ft/min)	1.28 / 252.35	1.43 / 282.29	1.31 / 258.32	1.16 / 229.31	1.29 / 254.53
MOTOR						
Type		Permanent split capacitor motor				
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50, 208 - 230/ 1 / 60				
Rated Input	W	96 / 114	130 / 155	132 / 179	240 / 337	240 / 337
Running Current	A	0.40 / 0.50	0.58 / 0.70	0.58 / 0.80	1.04 / 1.50	1.04 / 1.50
Poles		4				
Sound pressure level (H / M / L)	dBA	50 / 47 / 40	54 / 53 / 50	51 / 50 / 48	54 / 53 / 52	54 / 53 / 52
Control	Room Temp.	Micro-computer Controlled Thermostat				
	Air Discharge	Automatic Louver (Up & Down)				
	Operation	LCD wireless micro-computer remote control				
Condensate Drain Size	mm	19.05				
AIR FILTER		Washable Saran Net Filter				
WEIGHT	kg	43	43	45	70	70
DIMENSION (H x W x D)	mm	214 X 1,214 X 670		249 x 1,214 x 670	249 X 1,714 X 670	

Condition

Cooling capacity : Entering air temp. : 26.7°C (80°F)DB, 19.4C (67°F)WB
Entering water temp. : 7.2°C (45°F)
Leaving water temp. : 12.8°C (55°F)

Heating capacity : Entering air temp. : 21.1°C (64°F)DB
Entering water temp. : 60°C (140°F)
Leaving water temp. : 55°C (131°F)

MODEL		MCC 010CW	MCC 015CW	MCC 020CW	MCC 025CW
PERFORMANCE					
Air Flow (CFM/CMH)	High	300 / 510	430 / 730	620 / 1,050	840 / 1,430
	Medium	280 / 480	310 / 530	610 / 1,040	790 / 1,340
	Low	240 / 410	270 / 460	500 / 850	640 / 1,090
Nominal Total Cooling Capacity	kcal/hr	2,520	3,780	4,788	6,048
	W	2,931	4,397	5,569	7,034
	Btu/hr	10,000	15,000	19,000	24,000
Sensible Cooling Capacity	kcal/hr	1,789	2,646	3,352	4,234
	W	2,081	3,078	3,898	4,924
	Btu/hr	7,100	10,500	13,300	16,800
Nominal Total Heating Capacity (Entering water Temp. : 60 °C)	kcal/hr	4,032	6,048	7,560	9,324
	W	4,690	7,034	8,793	10,845
	Btu/hr	16,000	24,000	30,000	37,000
Water Flow Rate	USGPM / LITRES/M	2.22 / 8.40	3.33 / 12.61	4.44 / 16.81	5.55 / 21.01
Head Loss (Cooling)	psi / Pa	1.53 / 10550	3.48 / 24000	2.92 / 20130	4.70 / 32410
Head Loss (Heating) : 60 °C	psi / Pa	1.21 / 8340	2.8 / 19300	2.34 / 16130	3.83 / 26410
COIL					
Type		Seamless copper tube mechanically bonded to aluminium slit fin			
Tube		OD 9.52 mm, thickness 0.35 mm			
Fin		Thickness 0.11 mm			
Connection		OD 3/4" copper tube			
Number of rows / fin per inch		3/12	3/14	3/12	3/12
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233			
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min			
Surface Area	m^2 / ft^2	0.129 / 1.39	0.161 / 1.734	0.197 / 2.128	0.228 / 2.461
Surface Air Velocity	(m/s) / (ft/min)	1.10 / 215.8	1.26 / 248.0	1.48 / 291.4	1.73 / 341.3
MOTOR					
Type		Permanent split capacitor motor			
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60			
Rated Input	W	71 / 72	102 / 114	148 / 172	180 / 223
Running Current	A	0.30 / 0.33	0.43 / 0.53	0.65 / 0.80	0.74 / 1.01
Poles		4			
Control	Room Temp.	Micro-computer Controlled Thermostat			
	Operation	LCD wireless micro-computer remote control			
Condensate Drain Size	mm	19.05			
AIR FILTER		Washable Saran Net Filter			
WEIGHT	kg	17	21	22	25
DIMENSION (H x W x D)	mm	261 x 765 x 411	261 x 905 x 411	261 x 1,065 x 411	261 x 1,200 x 411

Condition

Cooling capacity : Entering air temp. : 26.7°C (80°F)DB, 19.4C (67°F)WB
Entering water temp. : 7.2°C (45°F)
Leaving water temp. : 12.8°C (55°F)

Heating capacity : Entering air temp. : 21.1°C (64°F)DB
Entering water temp. : 60°C (140°F)
Leaving water temp. : 55°C (131°F)

MODEL		MCC	
		028CW	038CW
PERFORMANCE			
Air Flow (CFM/CMH)	High	1440/2450	1540/2620
	Medium	1270/2160	1450/2460
	Low	1120/1900	1260/2140
Nominal Total Cooling Capacity	kcal/hr	6,804	10,550
	W	7,914	12,270
	Btu/hr	27,000	41,864
Sensible Cooling Capacity	kcal/hr	4,695	7,490
	W	5,460	8,712
	Btu/hr	18,630	29,723
Nominal Total Heating Capacity (Entering water Temp. : 60°C)	kcal/hr	7,056	16,872
	W	8,207	19,623
	Btu/hr	28,000	66,951
Water Flow Rate	USGPM / LITRES/M	6.16/23.31	8.36/31.64
Head Loss (Cooling)	psi / Pa	2.437/16800	4.992/34420
Head Loss (Heating) : 60 °C	psi / Pa	1.952/13460	4.084/28160
COIL			
Type		Seamless copper tube mechanically boded to aluminium slit fin.	
Tube		OD 9.52 mm, thickness 0.35 mm.	
Fin		thickness 0.11 mm	
Connection		OD 3/4" copper tube	
Number of rows / fin per inch		3/18	3/14
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233	
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min.	
Surface Area	m^2 / ft^2	0.264/2.844	0.363/3.909
Surface Air Velocity	(m/s) / (ft/min)	1.14/224.44	1.764/347.16
MOTOR			
Type		Permanent split capacitor motor	
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50	
Rated Input	W	300	563
Running Current	A	1.30	2.4
Poles		4	
Control	Room Temp.	Micro-computer Controlled Thermostat	
	Air Discharge	Automatic Louver (Up & Down)	
	Operation	LCD wireless micro-computer remote control	
Condensate Drain Size	mm	19.05	
AIR FILTER		Washable Saran Net Filter	
WEIGHT	kg	38	41
DIMENSION (H x W x D)	mm	290X942X600	310X1247X638

Condition

Cooling capacity : Entering air temp. : 26.7 °C (80 °F) DB, 19.4 °C (67 °F) WB
Entering water temp. : 7.2 °C (45 °F)
Leaving water temp. : 12.8 °C (55 °F)

Heating capacity : Entering air temp. : 21.1 °C (64 °F) DB
Entering water temp. : 60 °C (140 °F)
Leaving water temp. : 55 °C (131 °F)

MODEL		MCC 030CW	MCC 040CW	MCC 050CW	MCC 060CW
PERFORMANCE					
Air Flow (CFM/CMH)	High	1,030 / 1,750	1,150 / 1,960	1,540 / 2,620	1,990 / 3,380
	Medium	820 / 1,390	1,025 / 1,740	1,430 / 2,430	1,830 / 3,110
	Low	660 / 1,120	840 / 1,430	1,300 / 2,210	1,630 / 2,770
Nominal Total Cooling Capacity	kcal/hr	7,308	9,576	12,348	13,608
	W	8,500	11,138	14,362	15,827
	Btu/hr	29,000	38,000	49,000	54,000
Sensible Cooling Capacity	kcal/hr	5,189	6,799	8,644	9,798
	W	6,035	7,908	10,053	11,396
	Btu/hr	20,590	26,980	34,300	38,880
Nominal Total Heating Capacity (Entering water Temp. : 60 °C)	kcal/hr	11,592	15,120	19,152	22,680
	W	13,483	17,586	22,276	26,379
	Btu/hr	46,000	60,000	76,000	90,000
Water Flow Rate	USGPM / LITRES/M	6.66 / 25.21	8.88 / 33.61	11.11 / 42.06	13.33 / 50.46
Head Loss (Cooling)	psi / Pa	2.11 / 14550	3.78 / 26060	6.48 / 44680	1.48 / 10205
Head Loss (Heating) : 60 °C	psi / Pa	1.68 / 11580	3.06 / 21100	5.36 / 36960	1.18 / 8140
COIL					
Type		Seamless copper tube mechanically bonded to aluminium slit fin			
Tube		OD 9.52 mm, thickness 0.35 mm			
Fin		Thickness 0.11 mm			
Connection		OD 3/4" copper tube			
Number of rows / fin per inch		3/12	3/12	3/12	3/12
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233			
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min			
Surface Area	m^2 / ft^2	0.37 / 3.98	0.31 / 3.44	0.41 / 4.40	0.48 / 5.16
Surface Air Velocity	(m/s) / (ft/min)	1.31 / 258.78	1.70 / 334.30	1.78 / 350.00	1.96 / 385.66
MOTOR					
Type		Permanent split capacitor motor			
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60			
Rated Input	W	421 / 486	550 / 661	670 / 767	748 / 804
Running Current	A	1.90 / 2.40	2.60 / 3.40	2.90 / 3.70	3.20 / 3.70
Poles		4			
Control	Room Temp.	Micro-computer Controlled Thermostat			
	Operation	LCD wireless micro-computer remote control			
Condensate Drain Size	mm	19.05			
AIR FILTER		Washable Saran Net Filter			
WEIGHT	kg	39	42	54	62
DIMENSION (H x W x D)	mm	378 x 929 x 474	378 x 1,045 x 474	378 x 1,299 x 474	378 x 1,499 x 474

Condition
Cooling capacity : Entering air temp. : 26.7°C (80°F)DB, 19.4C (67°F)WB
Entering water temp. : 7.2°C (45°F)
Leaving water temp. : 12.8°C (55°F)

Heating capacity : Entering air temp. : 21.1°C (64°F)DB
Entering water temp. : 60°C (140°F)
Leaving water temp. : 55°C (131°F)

MODEL		MDB 075BW	MDB 100BW	MDB 125BW	MDB 150BW
PERFORMANCE					
Air Flow (CFM/CMH)		2,500 / 4,250	3,200 / 5,440	4,200 / 7,140	4,600 / 7,820
Nominal Total Cooling Capacity	kcal/hr	19,152	24,696	32,760	41,076
	W	22,274	28,722	38,101	47,773
	Btu/hr	76,000	98,000	130,000	163,000
Sensible Cooling Capacity	kcal/hr	13,598	18,028	23,587	29,164
	W	15,810	20,961	27,425	33,909
	Btu/hr	53,960	71,540	93,600	115,730
Nominal Total Heating Capacity (Entering water Temp. : 60 °C)	kcal/hr	30,996	40,320	53,734	66,348
	W	36,049	46,700	62,490	77,160
	Btu/hr	123,000	160,000	213,215	263,270
Water Flow Rate	USGPM / LITRES/M	16.88 / 63.64	21.77 / 82.06	28.88 / 108.86	36.22 / 136.49
Head Loss (Cooling)	psi / Pa	8.72 / 60,050	2.65 / 18,230	3.55 / 24,472	2.77 / 19,092
Head Loss (Heating) : 60 °C	psi / Pa	7.26 / 50,000	2.20 / 15,179	2.96 / 20,377	2.31 / 15,897
Ext. static	mmAq	10	10	15	15
COIL					
Type		Seamless copper tube mechanically bonded to aluminium slit fin			
Tube		OD 9.52 mm, thickness 0.35 mm			
Fin		Thickness 0.11 mm			
Connection		OD 1 $^{1}/_{8}$" copper tube			
Number of rows / fin per inch		3/14	4/12	3/14	4/14
Max. Working Pressure	(kg/cm^2) / (psi)	16.4 / 233			
Testing Pressure		30 kg/cm^2 for 1 min, leak test : 16 kg/cm^2 for 5 min			
Surface Area	m^2 / ft^2	0.54 / 5.82	0.54 / 5.82	1.01 / 10.83	1.01 / 10.83
Surface Air Velocity	(m/s) / (ft/min)	2.15 / 430	2.75 / 550	1.94 / 388	2.12 / 425
MOTOR					
Type		Permanent split capacitor motor			
Power Supply	V/Ph/Hz	220 - 240 / 1 / 50 , 208 - 230 / 1 / 60		415 / 3 / 50 , 415 / 3 / 60	
Rated Input	W	810 / 1062	1008 / 1310	2730 / 1620	3370 / 1999
Running Current	A	3.70 / 5.16	4.22 / 7.04	3.39 / 5.70	3.39 / 5.70
Poles		4			
Number of motors		2	2	1	1
Sound pressure level	dBA	62	64	63	67
Control		LCD wireless micro-computer remote control			
Condensate Drain Size	mm	25.4			
FAN					
Type/Drive		Centrifugal fan (forward curved) / Direct		Centrifugal fan (forward curved) / Belt Driven	
Number of Fans		2	2	1	1
AIR FILTER (OPTIONAL)					
Type		Washable Saran Net Filter			
Length x Height	mm	622 x 433			
Quantity		2	2	1	1
WEIGHT	kg	96	100	140	145
DIMENSION (H x W x D)	mm	572 x 1,502 x 761		885 x 1,640 x 1,040	

Condition

Cooling capacity : Entering air temp. : 26.7°C (80°F)DB, 19.4C (67°F)WB
Entering water temp. : 7.2°C (45°F)
Leaving water temp. : 12.8°C (55°F)

Heating capacity : Entering air temp. : 21.1°C (64°F)DB
Entering water temp. : 60°C (140°F)
Leaving water temp. : 55°C (131°F)

Unit Selection Procedure

The cooling and heating capacities of the fan coil units can be determined by the Cooling Capacity Performance Chart and Heating Capacity Performance Chart in the following pages based on nominal air flow at standard water temperature. The total and sensible capacities must be adjusted as variables come in. A sample of selection procedure is given as below:

Step 1

Determine type of fan coil units to be used, i.e. ceiling cassette (MCK-AW Series); ceiling exposed (MCM-DW Series); etc.

Step 2

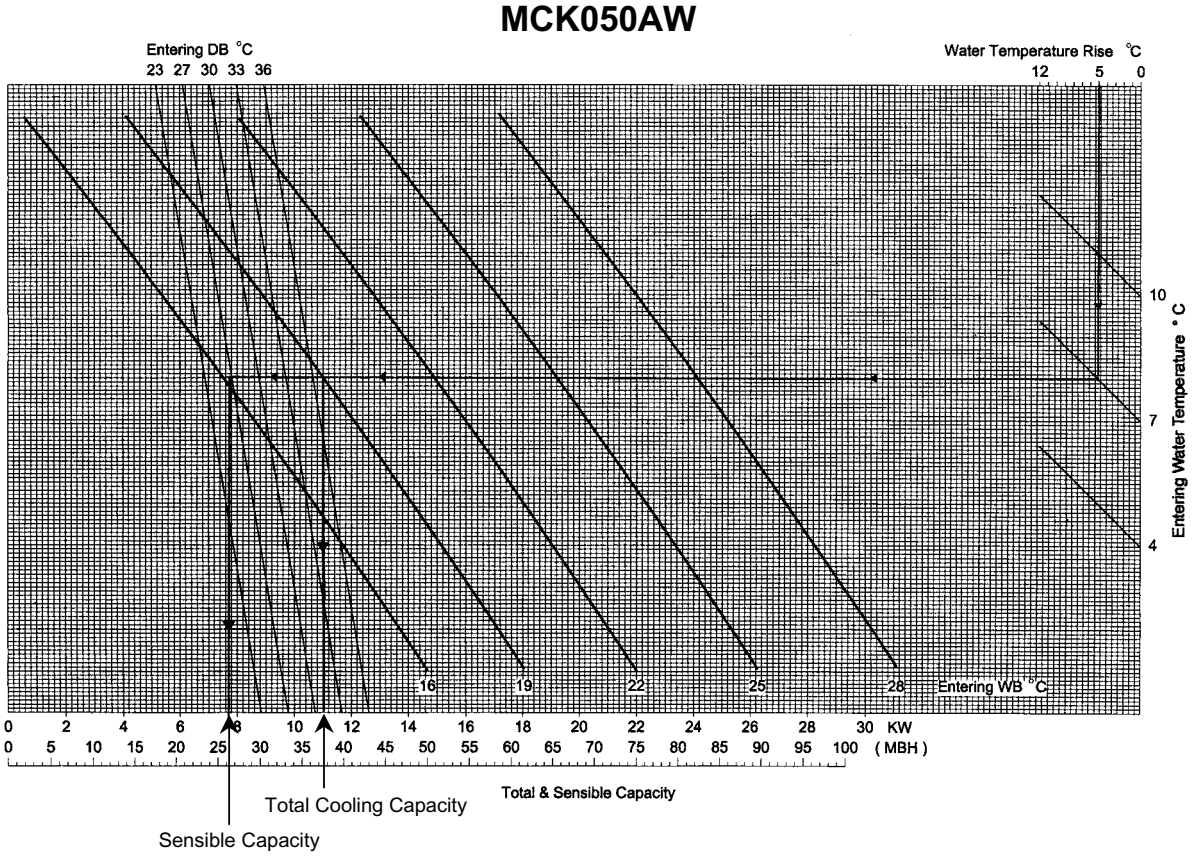
Select a tentative unit size based on cooling capacities at nominal air flow. Design entering air temperatures and required water flows from cooling capacities chart (Page 14 - 35) or the nominal capacities ratings (Page 3 - 10) from standard specification.

Step 3

Determine the nominal unit cooling capacities for the unit selected. If the cooling capacities chart must be used, the following information must be known :-

a) Design water temperature rise
b) Design entering water temperature
c) Design entering air dry bulb temperature
d) Design entering air wet bulb temperature

Example of how to read the cooling performance chart.



Step 4

If air flow value is different from the nominal value(high speed), then refer to specification from Page 3 to 10 for the air flow required(medium or low speed). Determine the total and sensible correction factor from Air Flow Capacity Correction Factor (Page 57).

Step 5

If the unit is to operate at an altitude above sea level, multiply the capacity correction factors by an Altitude Correction Factors. Refer to Page 57.

Step 6

Calculate the actual cooling capacity by multiply the nominal capacity (from Step 3) with Air Flow Capacity Correction Factor from Step 4 and the Altitude Correction Factor from Step 5.

Actual Capacity, W = Nominal capacity (Step 3) x Air Flow Capacity Correction Factor (Step 4) x Altitude Correction Factor (Step 5)

Step 7

Water flow rate can be determined by:

$$\text{Litres/Min} = \frac{\text{Total Cooling Capacity, W}}{\text{70 x Water Temperature Rise °C}}$$

$$\text{USGPM} = \frac{\text{Total Cooling Capacity, Btu/H}}{\text{500 x Water Temperature Rise °F}}$$

Step 8

Heating Capacities at nominal air flow (Page 36 to 51 - Heating Performance Chart) are based on standard condition of 60°C EWT and 21°C EAT. The actual heating capacity can be obtained by using the Heating Capacity Correction Factor (Page 57) and Altitude Correction Factor as per Step 5.

Hence Actual Heating Capacity, W = Nominal Capacity (Page 36 to 51) x Heating Capacity Correction Factor (Page 57) x Air Flow Capacity Correction Factor (Step 4) x Altitude Correction Factor (Step 5)

Step 9

Water Pressure Drop Tables are on Page 52 to 56.

EXAMPLE

Select a ceiling cassette type fan coil unit at the following design specification:

Room design condition	: 26.7°C DB / 19°C WB
Room Cooling Load	: 7 kW sensible capacity / 10 kW total capacity
Room Heating Load	: 10 kW
Entering water temperature	: 7°C cooling / 54°C heating
Water temperature rise	: 5°C
Air Volume	: 1700 cmh
Altitude	: 600 m

SOLUTION

Step 1

Based on the type of fan coil required and the design conditions, tentatively select MCK050AW. From the cooling capacity performance chart (Page 15), at 26.7°C DB / 19°C WB air temperature, 7°C entering water temperature and with 5°C water temperature rise, the cooling capacity for this unit is 11 kW total capacity and 7.6 kW sensible

Step 2
From page 57, the air flow correction factor table, at high speed, the air volume is 1840 cmh and medium speed is 1680 cmh, hence high speed is selected. And the correction factor is hence 1.0.

If lower air flow required, then use the medium and low fan speed. The correction factor can be determined by getting the ratio of air flow (i.e. medium or low speed / high speed).

Step 3
As the unit is operating at 600m above sea level, the Altitude correction factor is 0.98 total and 0.93 sensible.

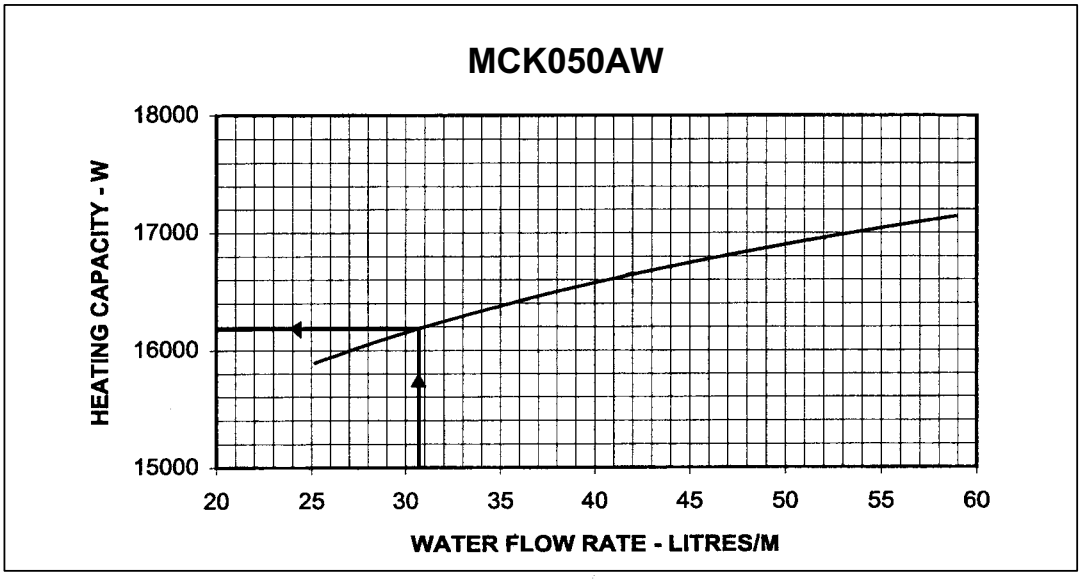
Step 4
Multiply the cooling capacities obtained from step 1 (as per specification and design condition) by correction factors from (2) and (3)

Actual total cooling capacity = 11 x 1.0 x 0.98 kW = 10.78 kW

Actual sensible cooling capacity = 7.6 x 1.0 x 0.93 kW = 7.068 kW

Step 5
Water flow rate = Litres/M = $\frac{10780\ W}{70 \times 5}$ = 30.8

Step 6
From Heating Capacity Performance Chart (Page 40), determine the heating capacity at the nominal air



volume by using the flow rate calculated in Step 5. The heating capacity is at 16.18 kW.

Step 7
From Heating Capacity Correction Factor Tables at 54.4°C water entering temperature and 26.7°C entering air temperature, the correction factor is 0.717,

Actual Heating Capacity = 16.18 x 0.98 x 0.717 = 11.37 kW

Step 8

Water Pressure Drop can be estimated from water Pressure Drop Table (Page 52 to 56) using interpolate method:

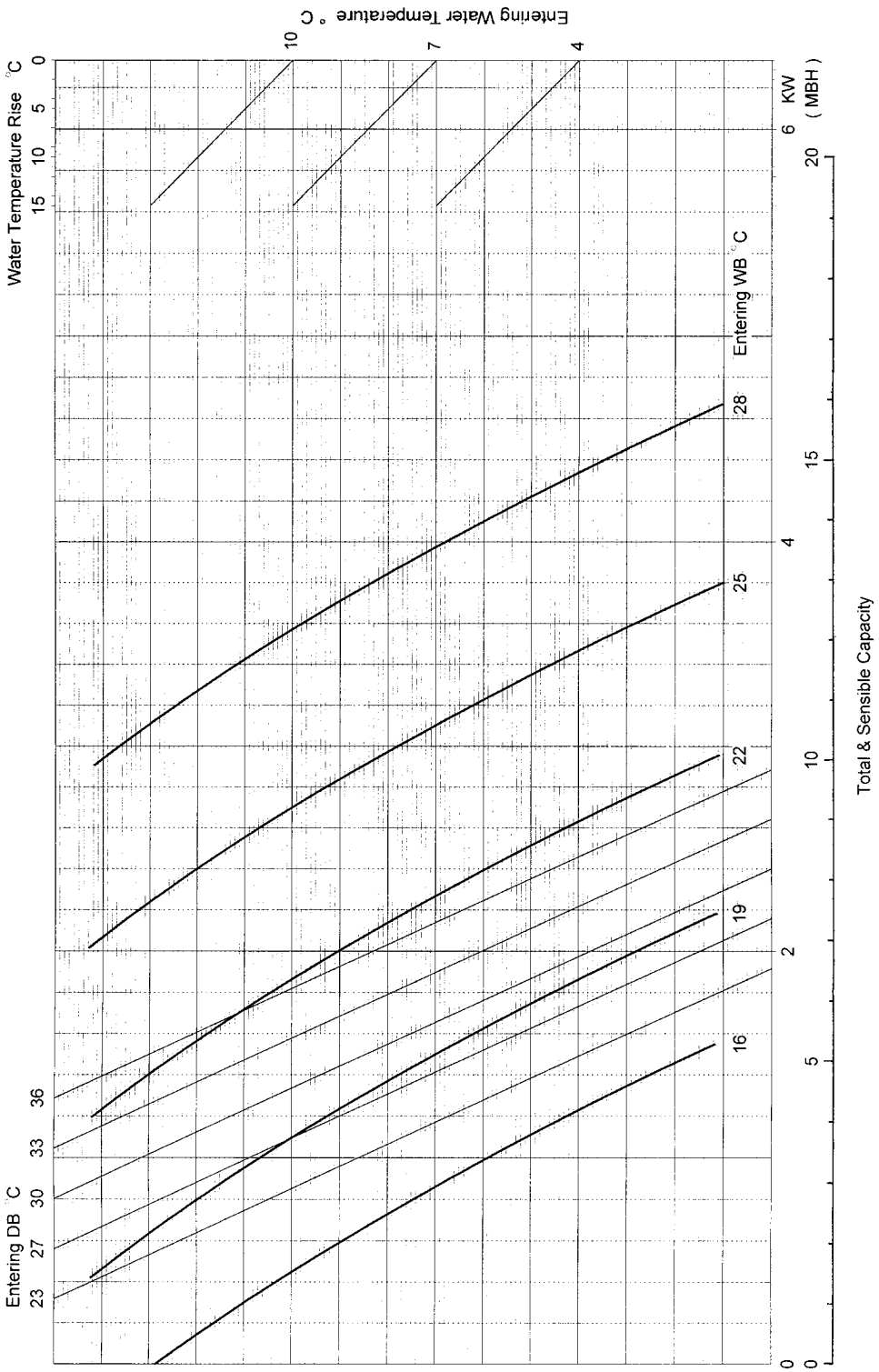
At flow rate of 30.8 Litres/Min, the nominal pressure drop is 68,322 Pa

Pressure drop correction factor = 1.2947 - 0.0021 x (EWT°C x 1.8 + 32) = 1.0234

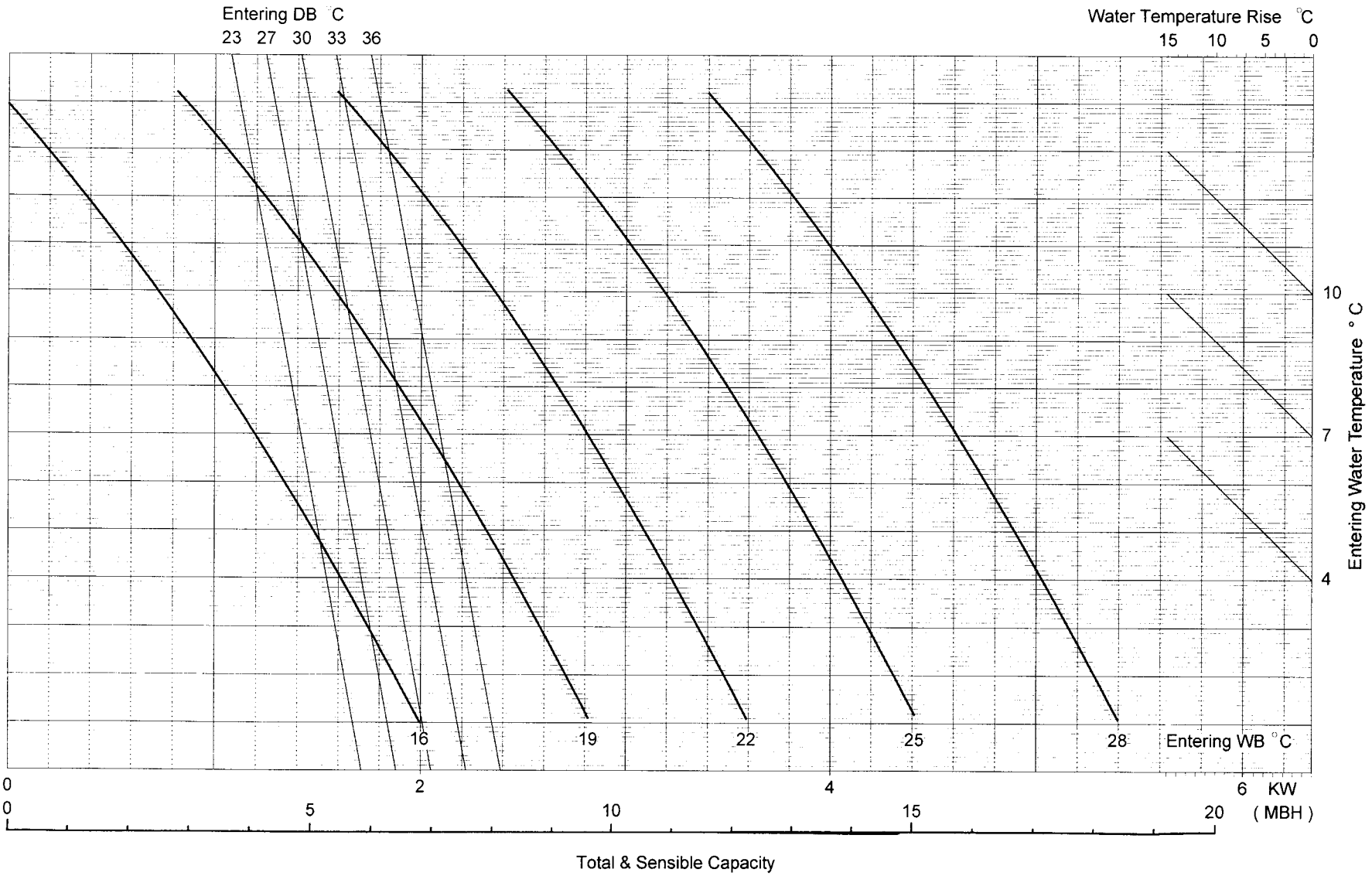
Hence the actual pressure drop = nominal pressure drop x correction factor = 69,921 Pa.

Cooling Capacity Performance Chart

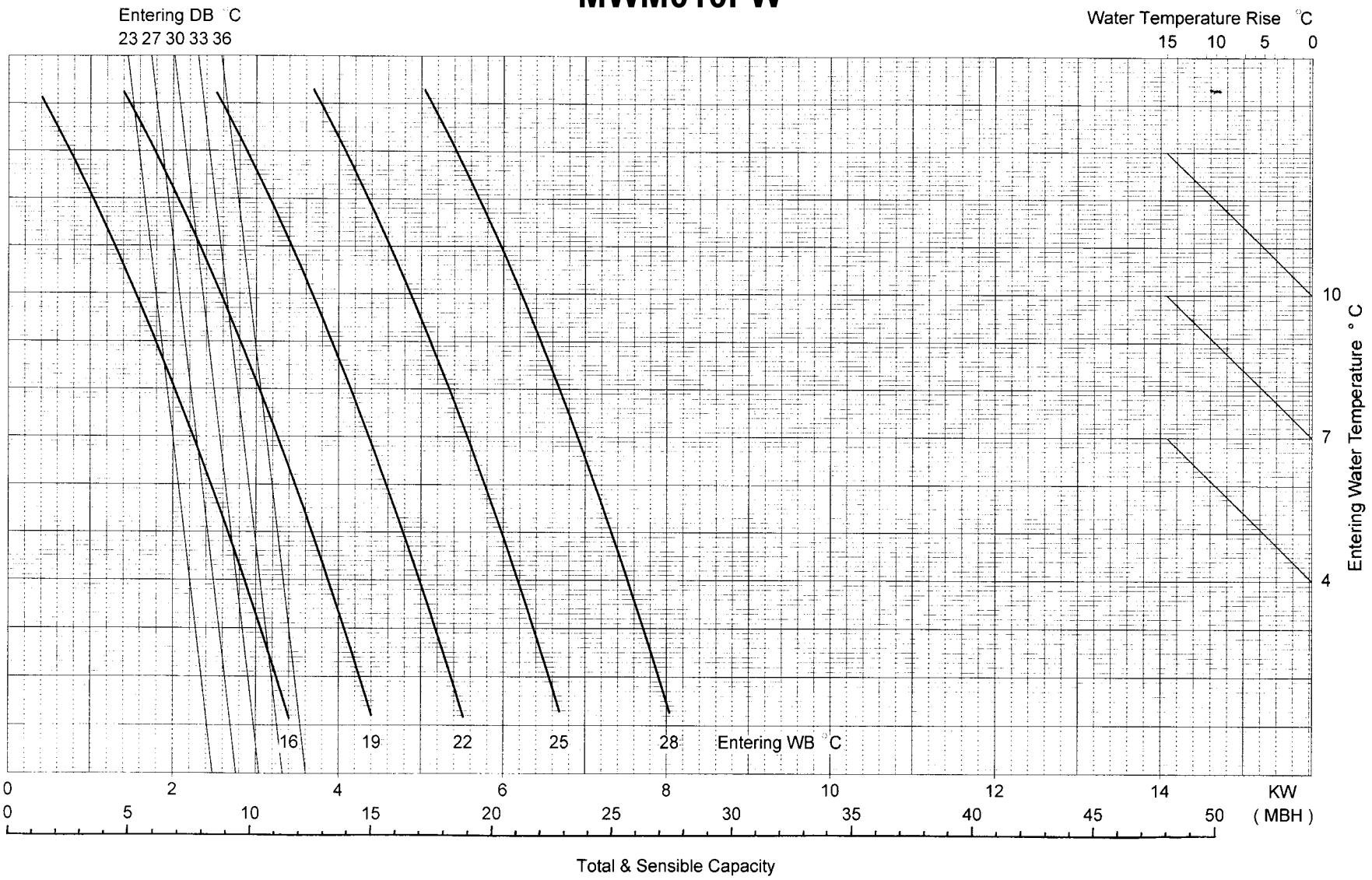
MWM005FW



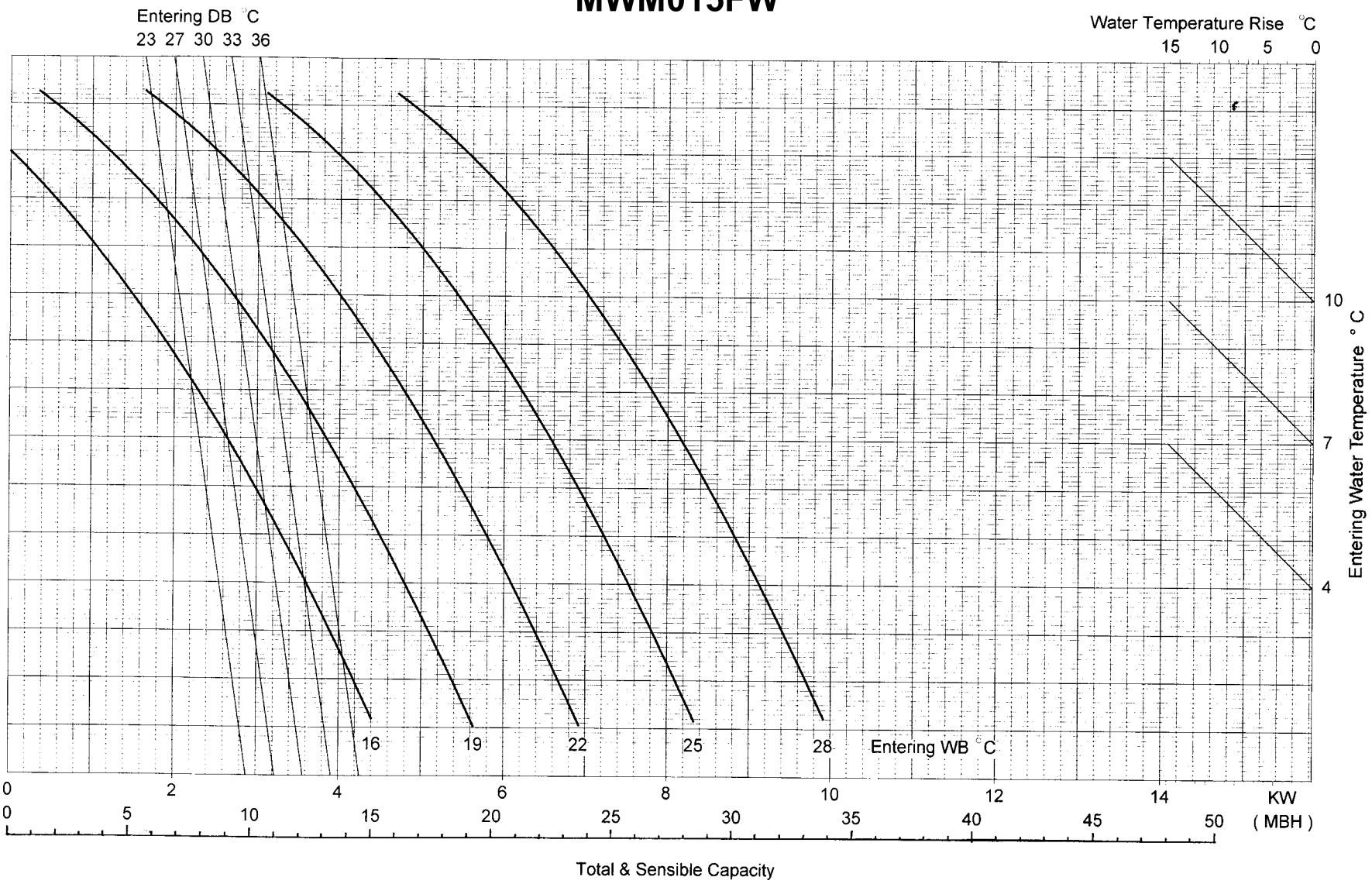
MWM007FW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0
2
4
6 KW
0
5
10
15
20 (MBH)
Total & Sensible Capacity

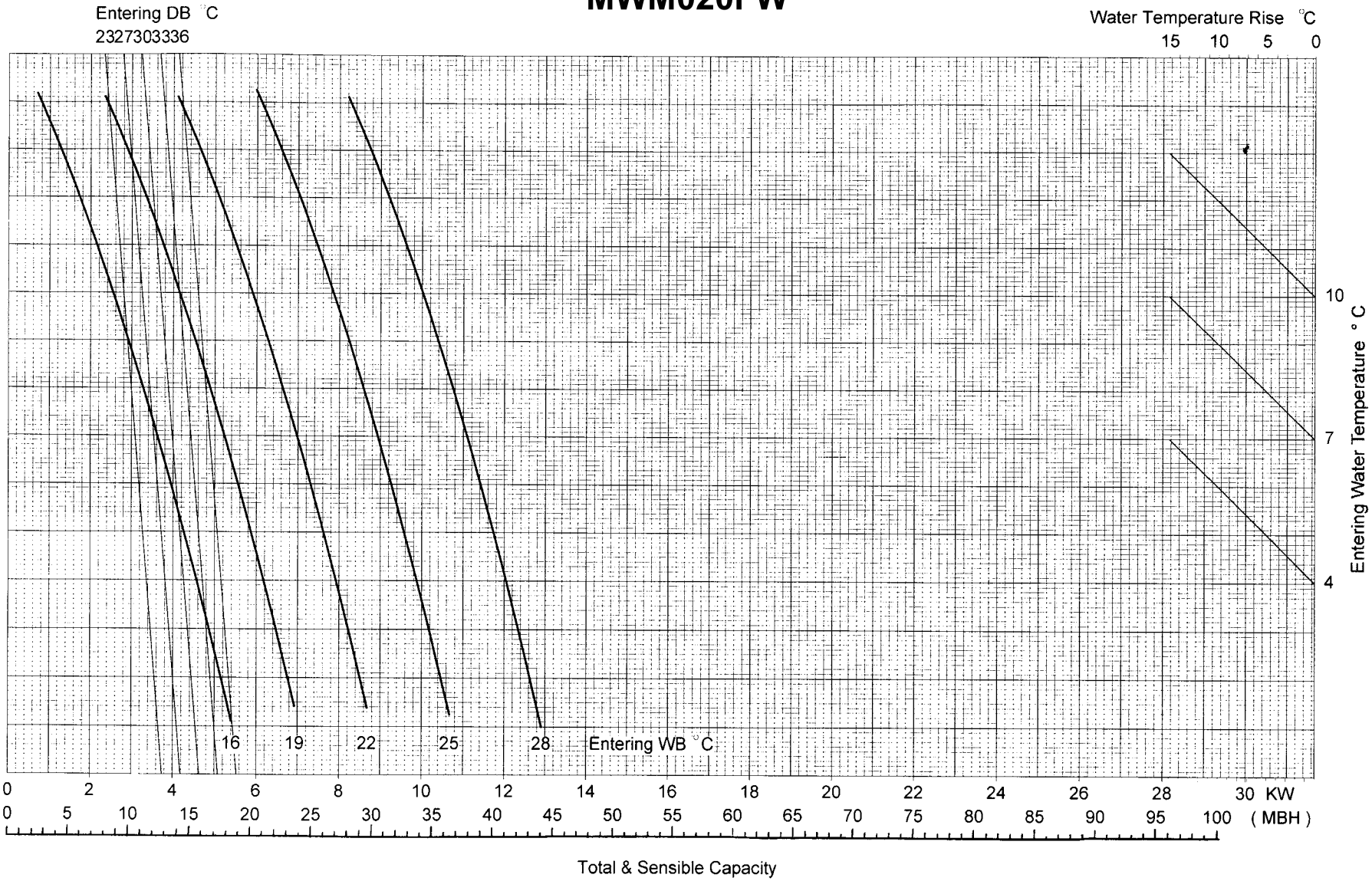
MWM010FW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 KW
0 5 10 15 20 25 30 35 40 45 50 (MBH)
Total & Sensible Capacity

MWM015FW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 KW
0 5 10 15 20 25 30 35 40 45 50 (MBH)
Total & Sensible Capacity

MWM020FW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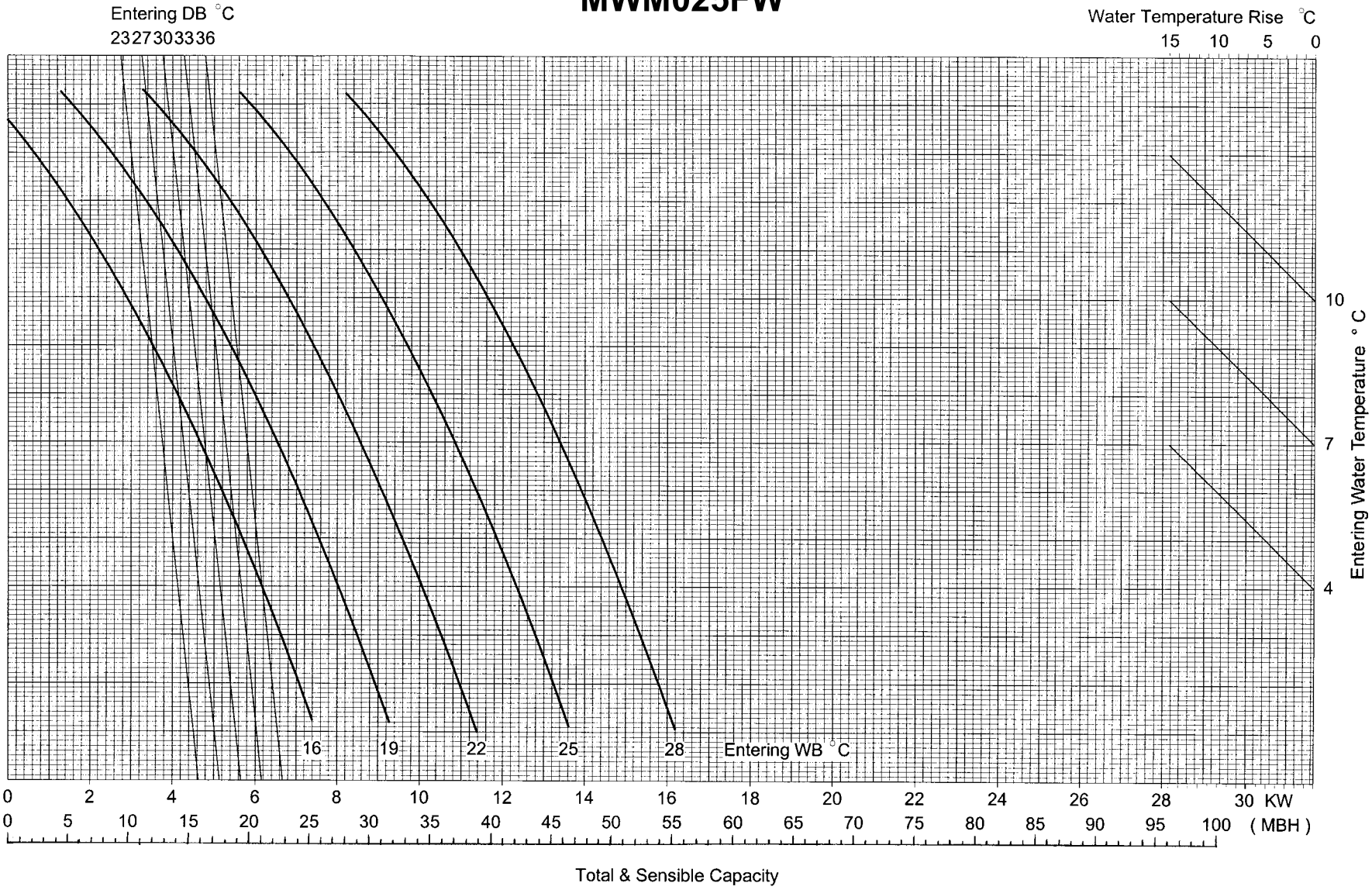
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MWM025FW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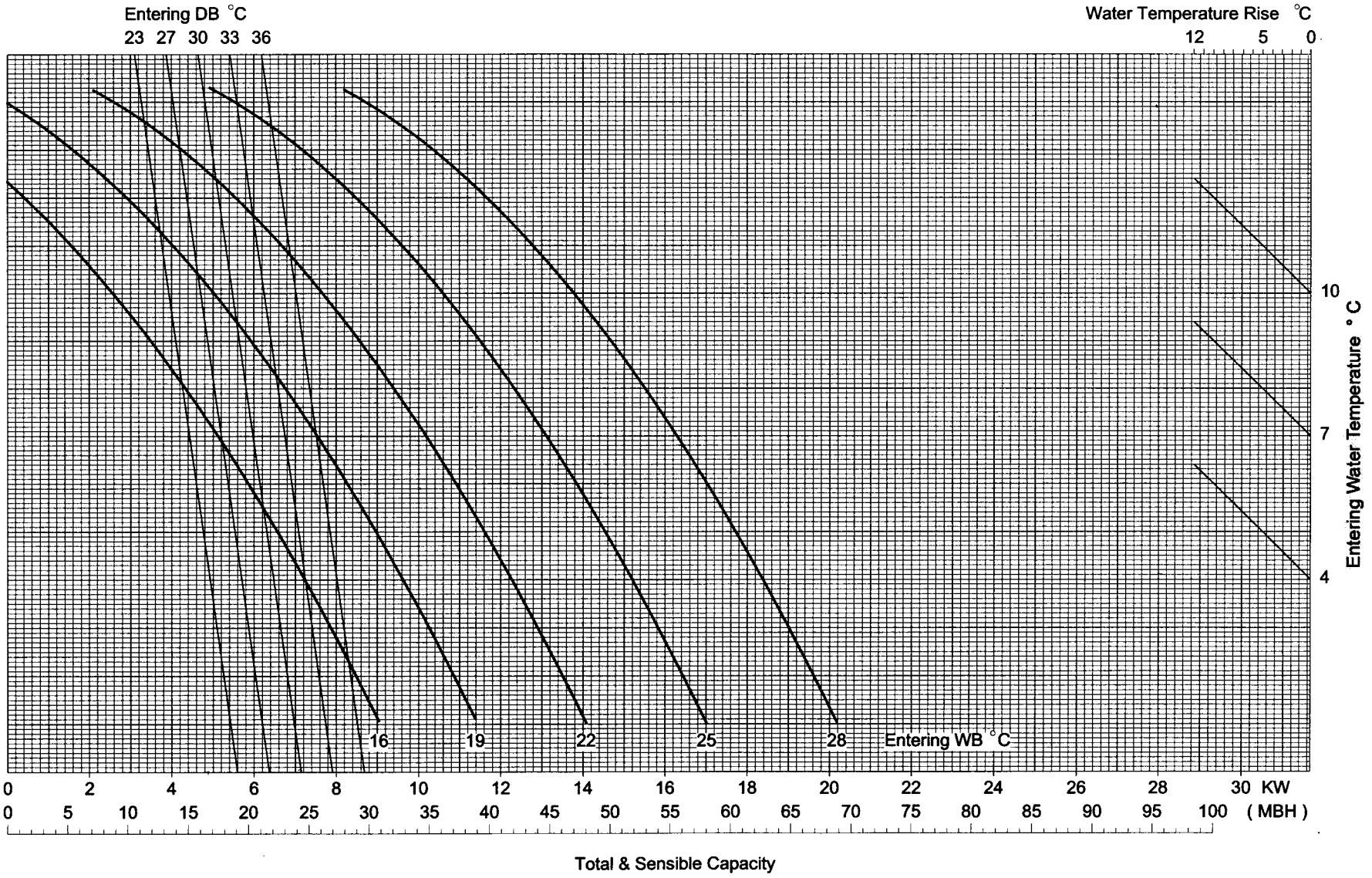
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK020AW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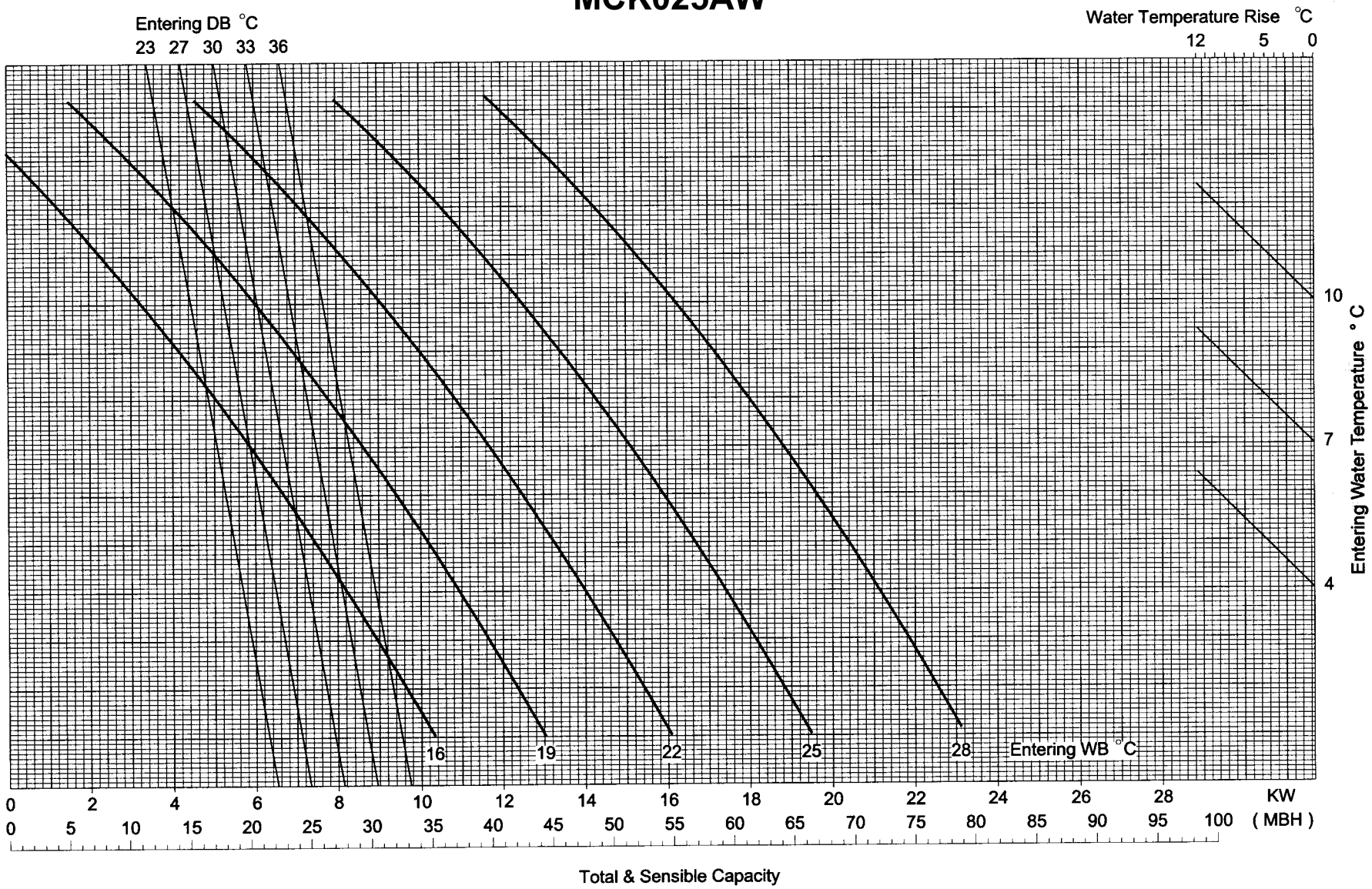
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK025AW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Water Temperature Rise °C
12 5 0
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7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
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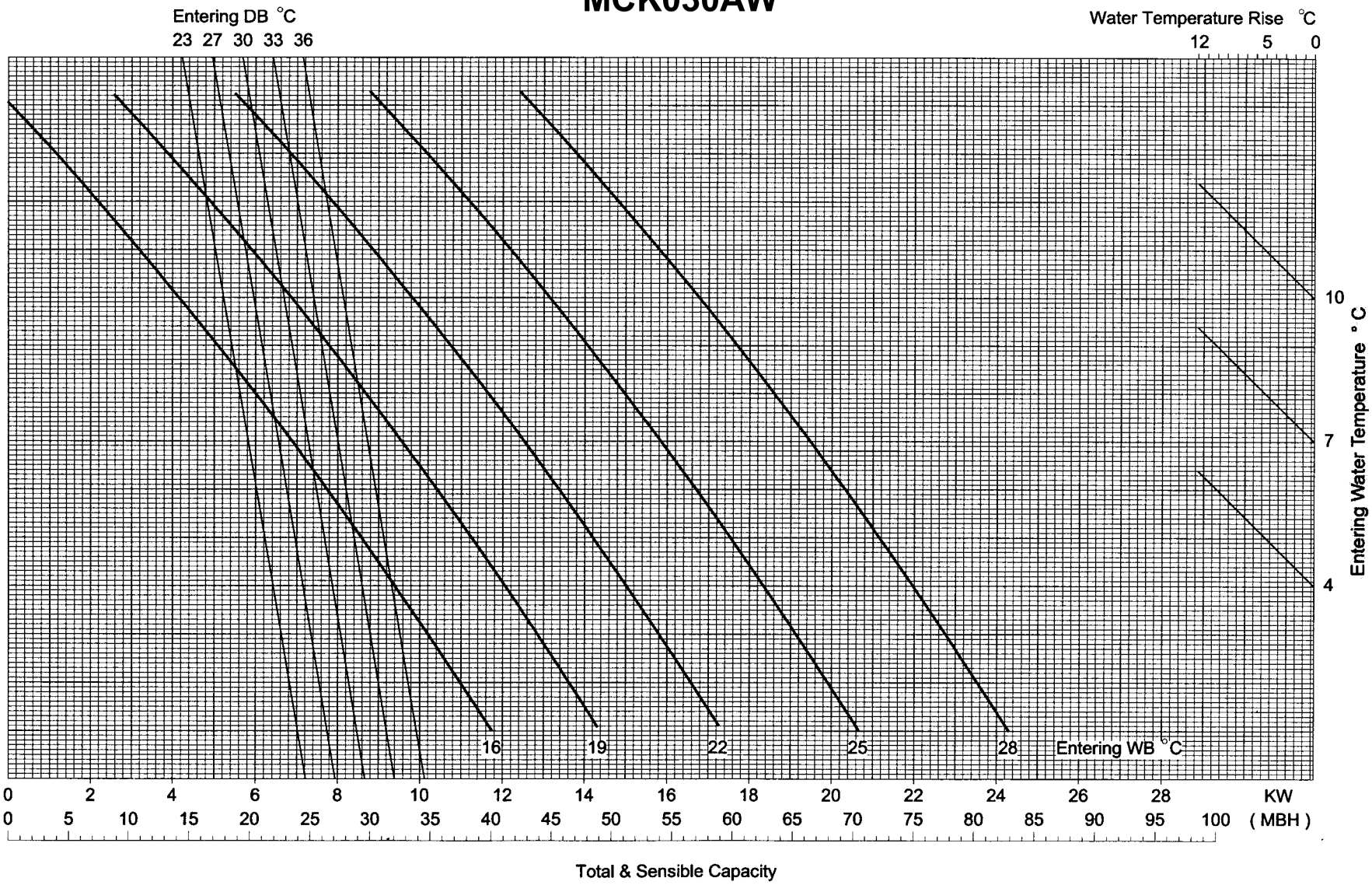
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK030AW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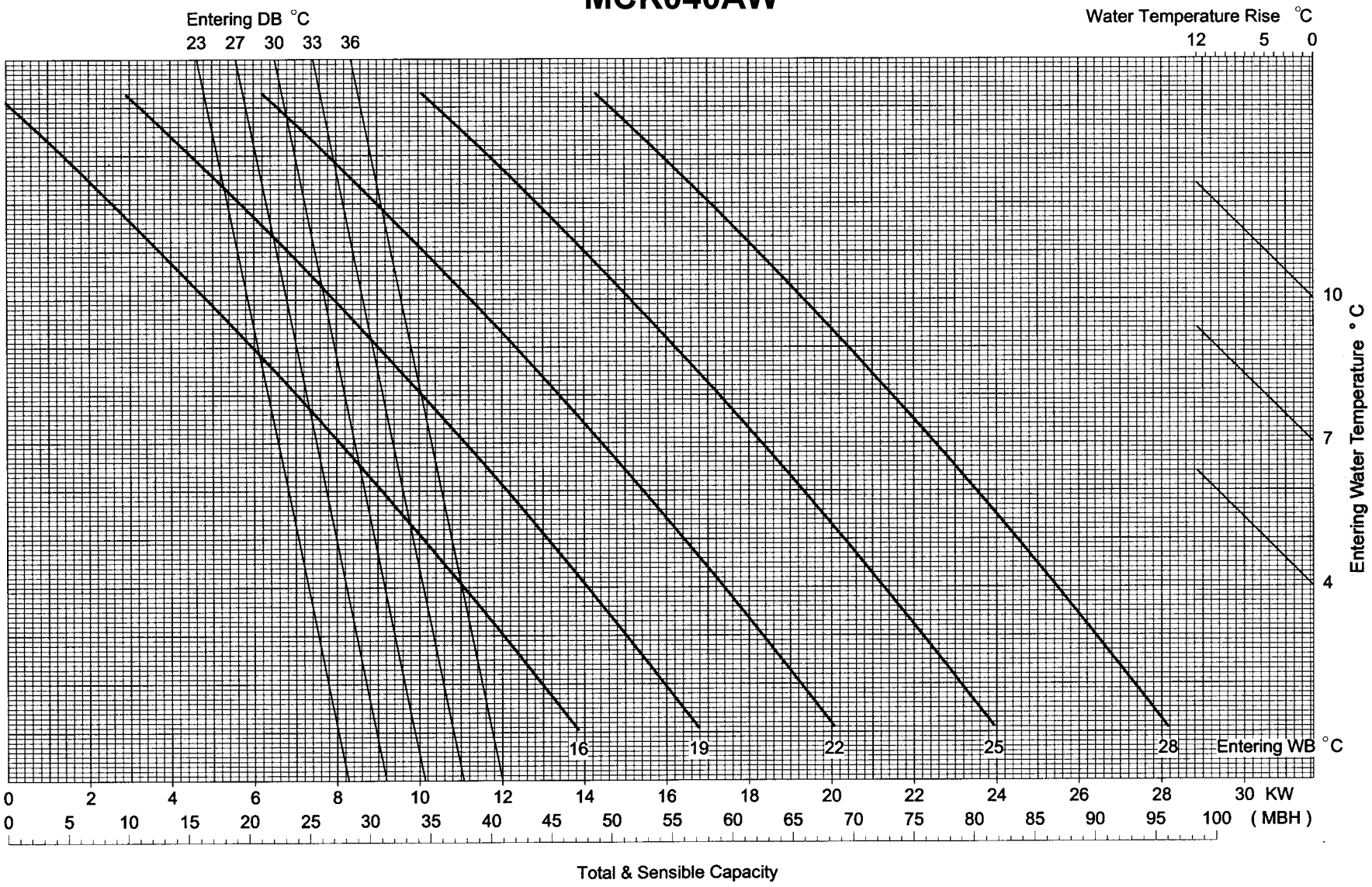
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK040AW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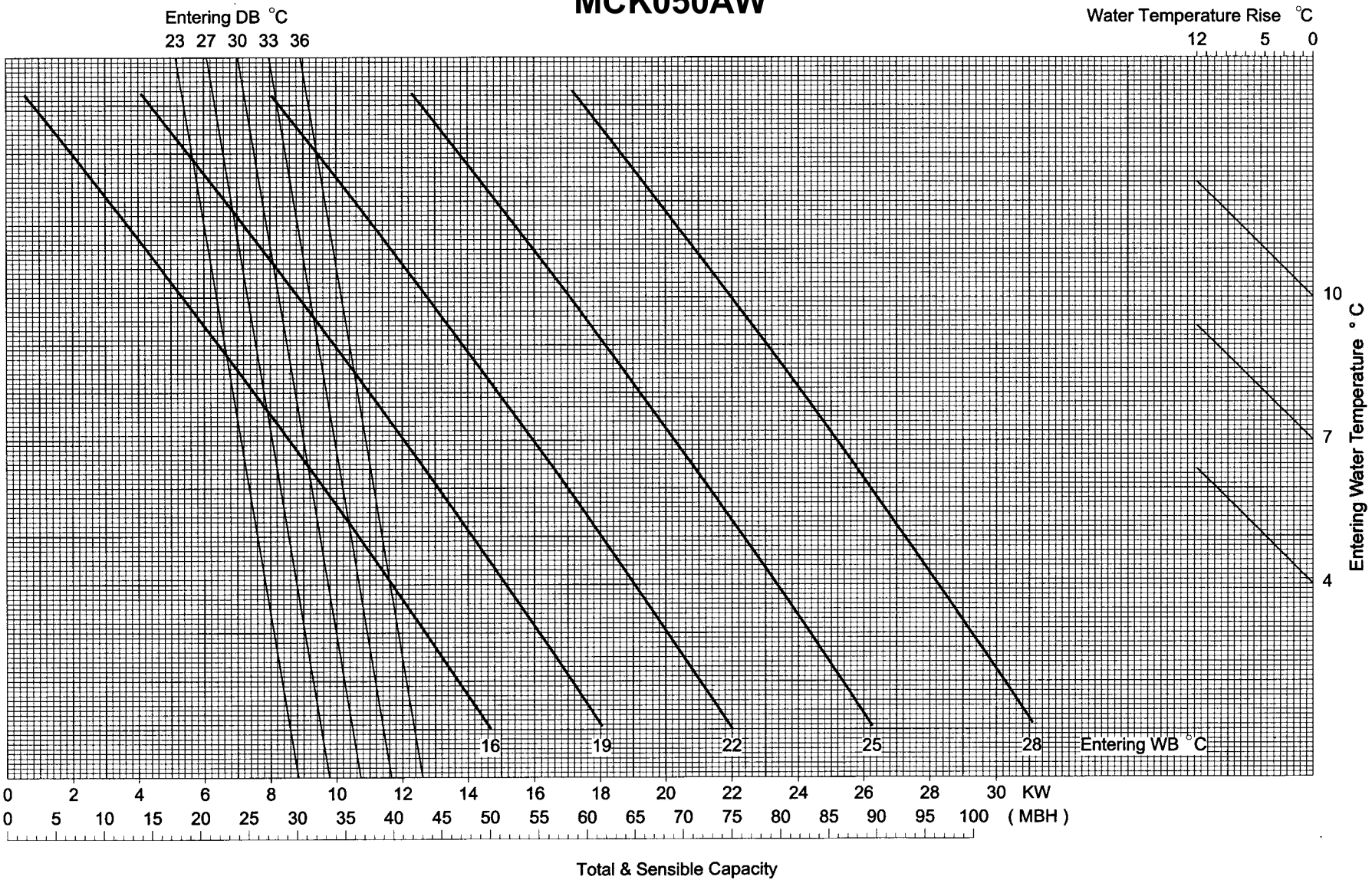
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK050AW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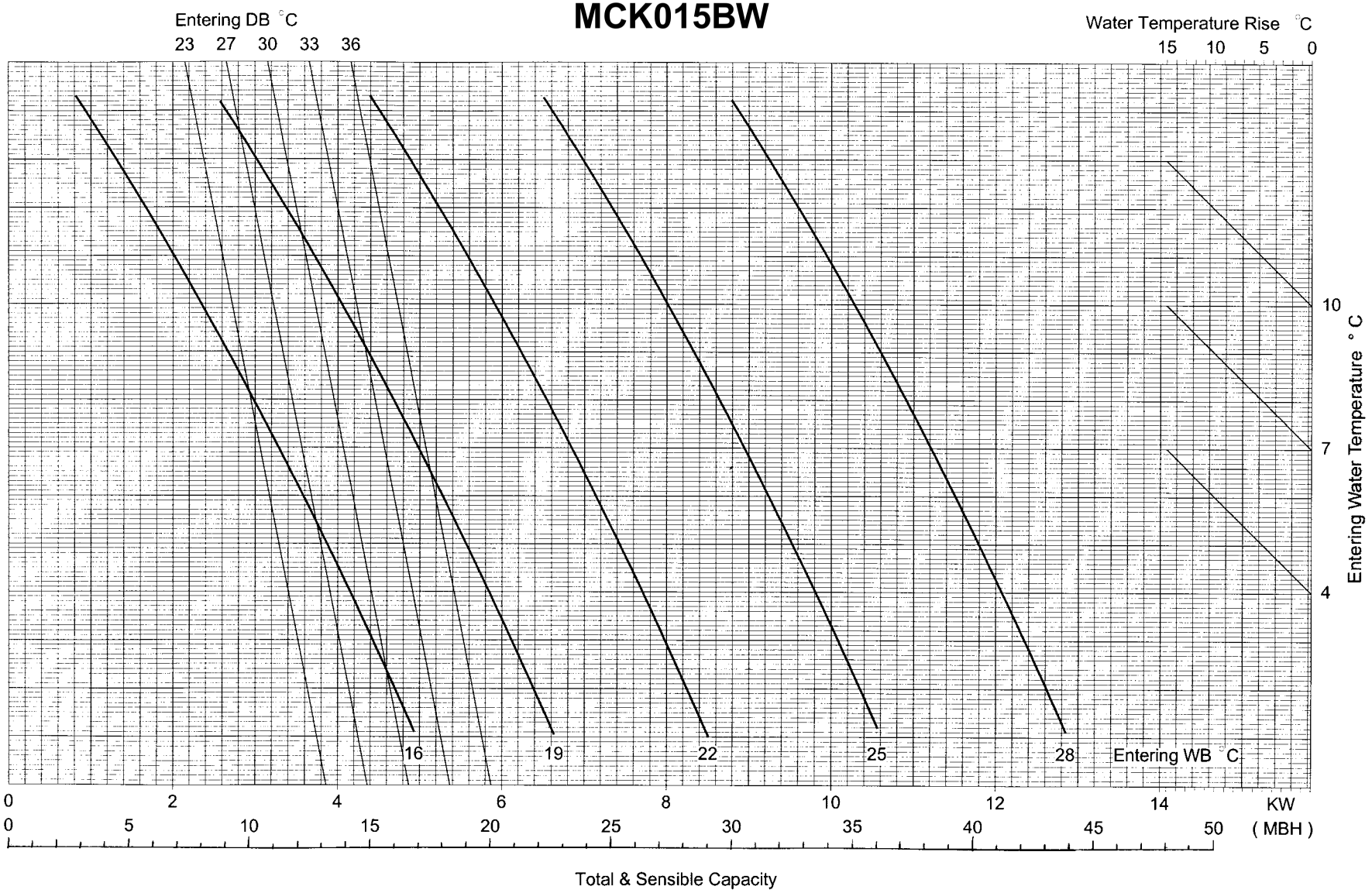
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK015BW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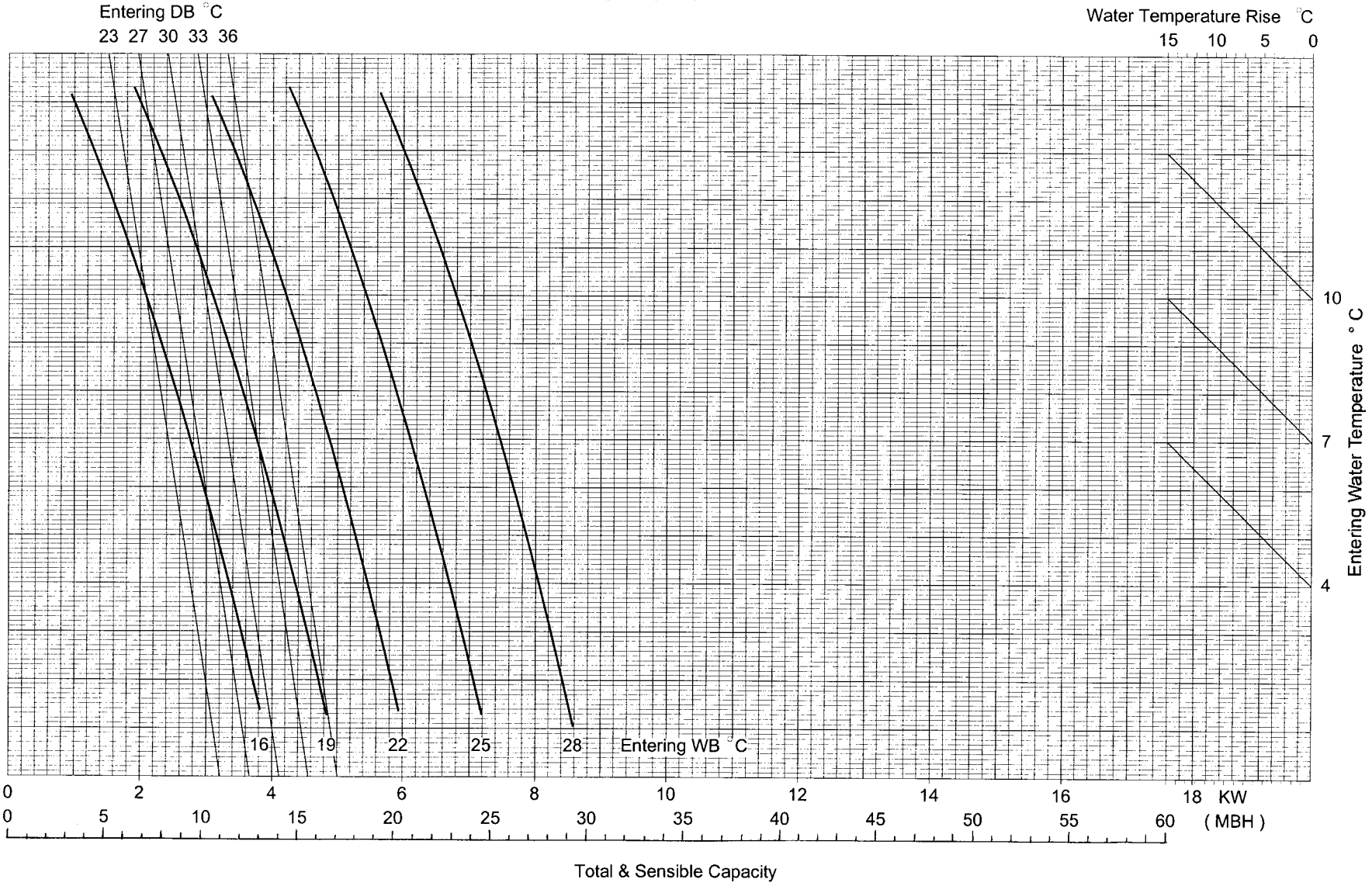
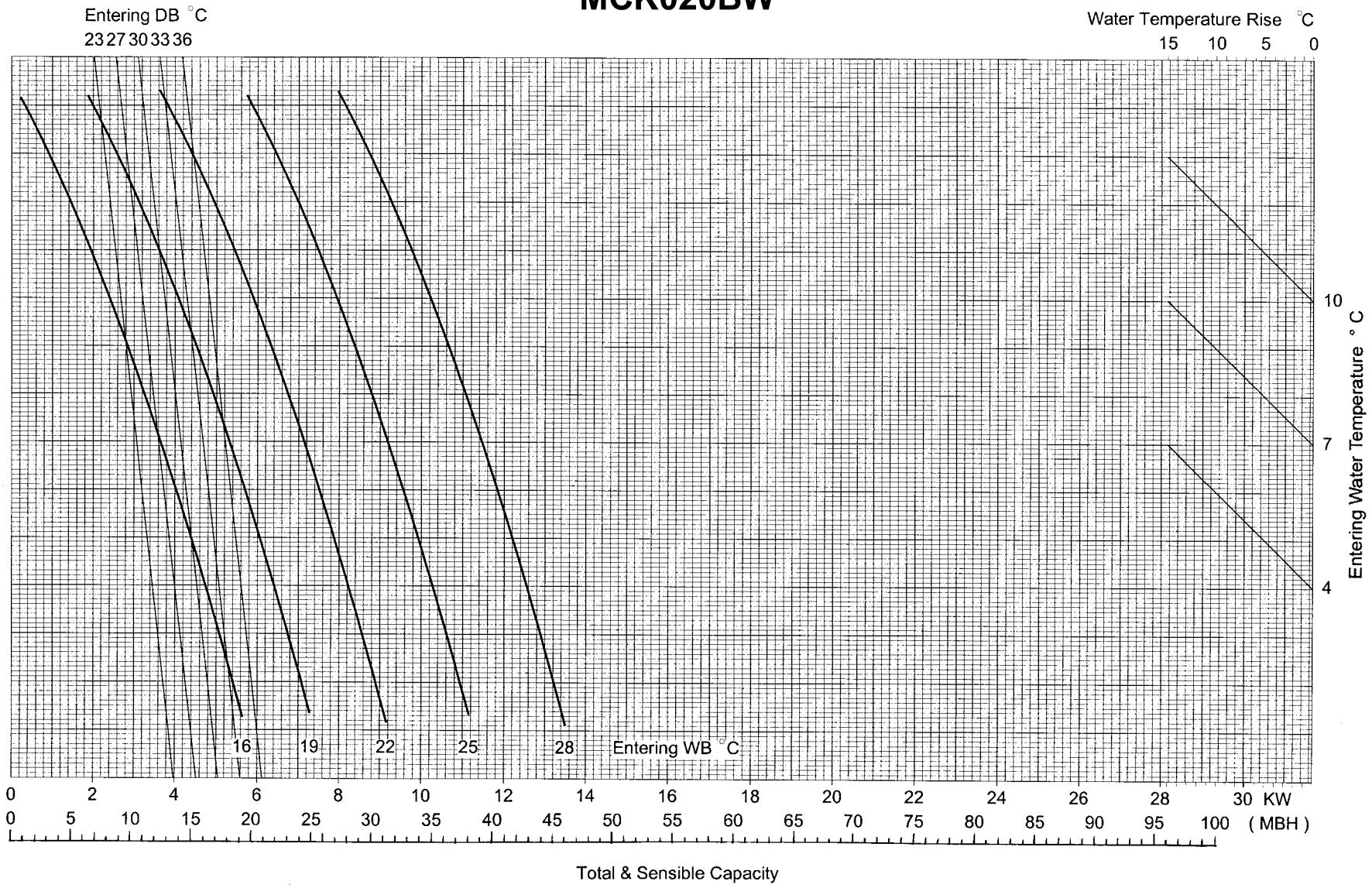
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 KW
0 5 10 15 20 25 30 35 40 45 50 (MBH)
Total & Sensible Capacity

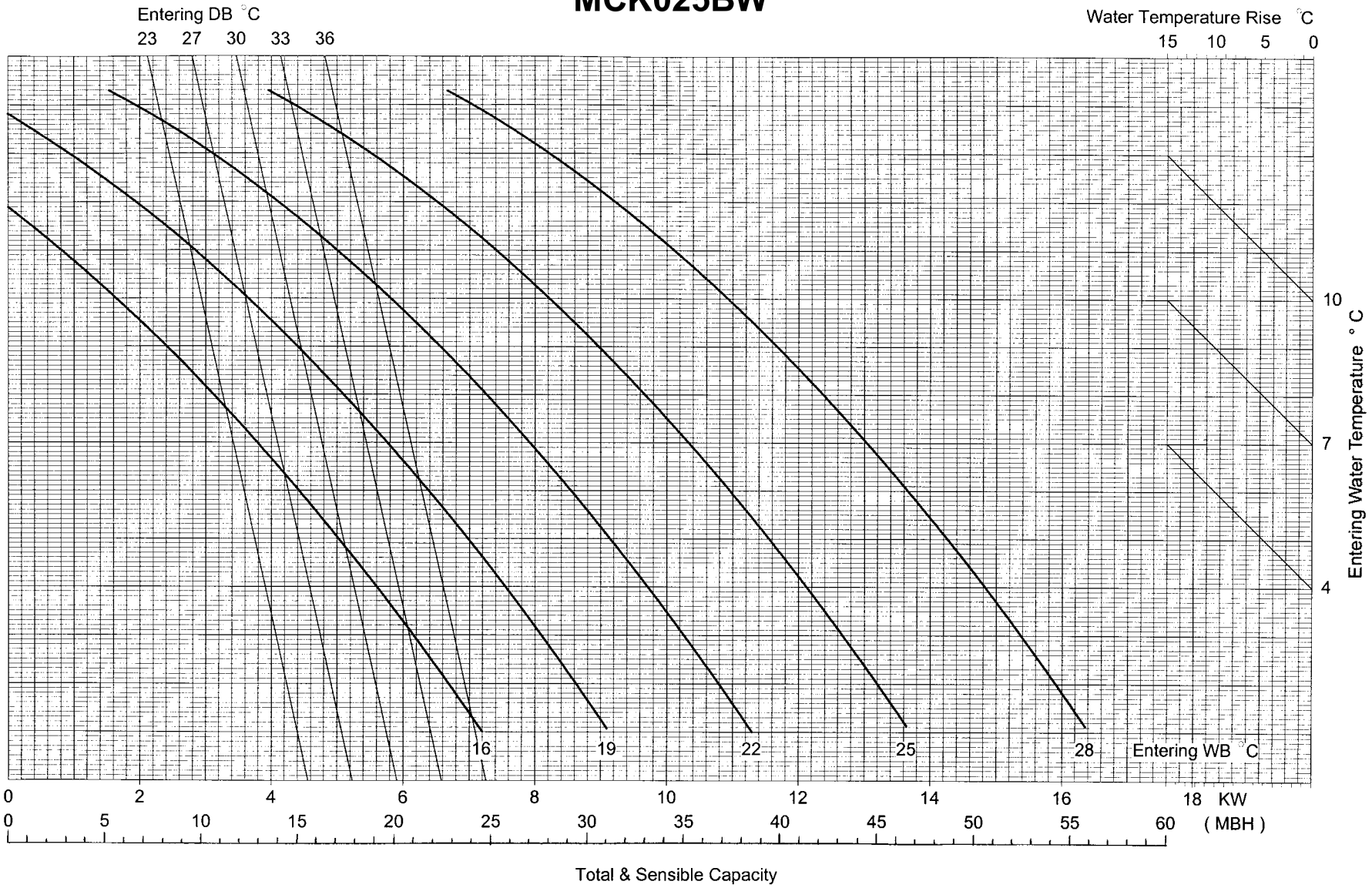
MCK015BWN


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature °C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 (MBH)
Total & Sensible Capacity

MCK020BW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCK025BW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Water Temperature Rise °C
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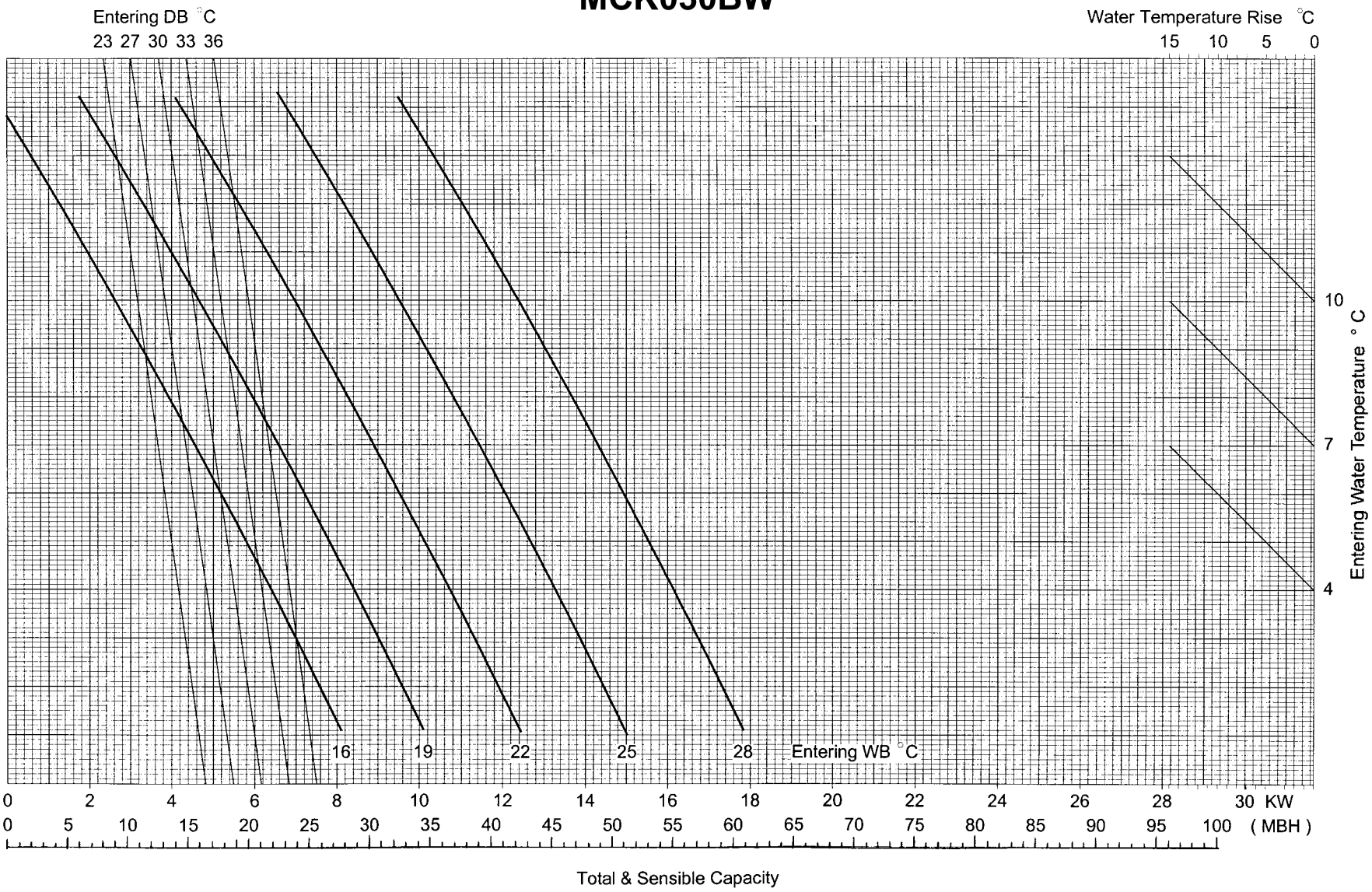
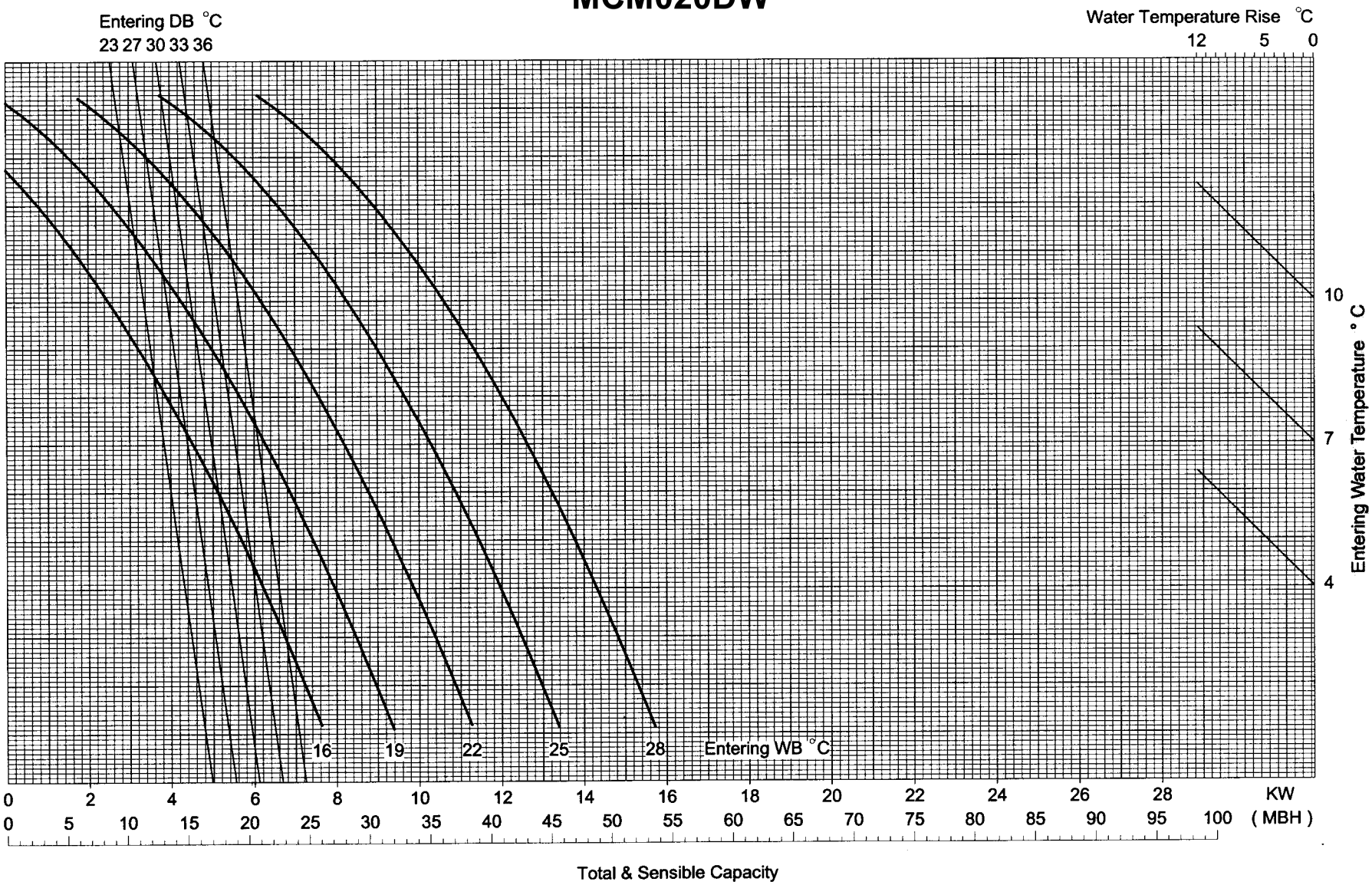
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 (MBH)
Total & Sensible Capacity

MCK030BW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCM020DW


Entering DB °C
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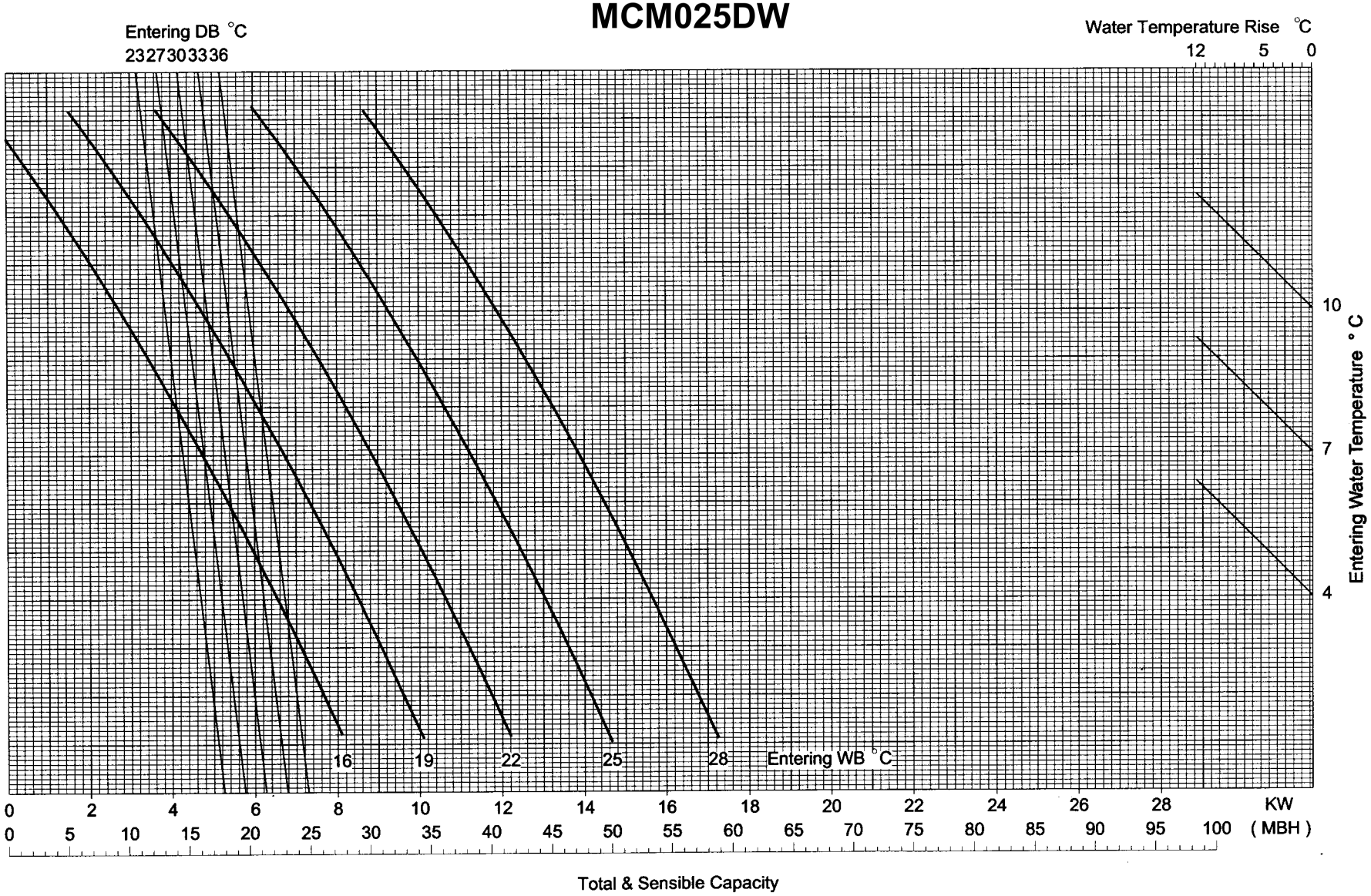
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCM025DW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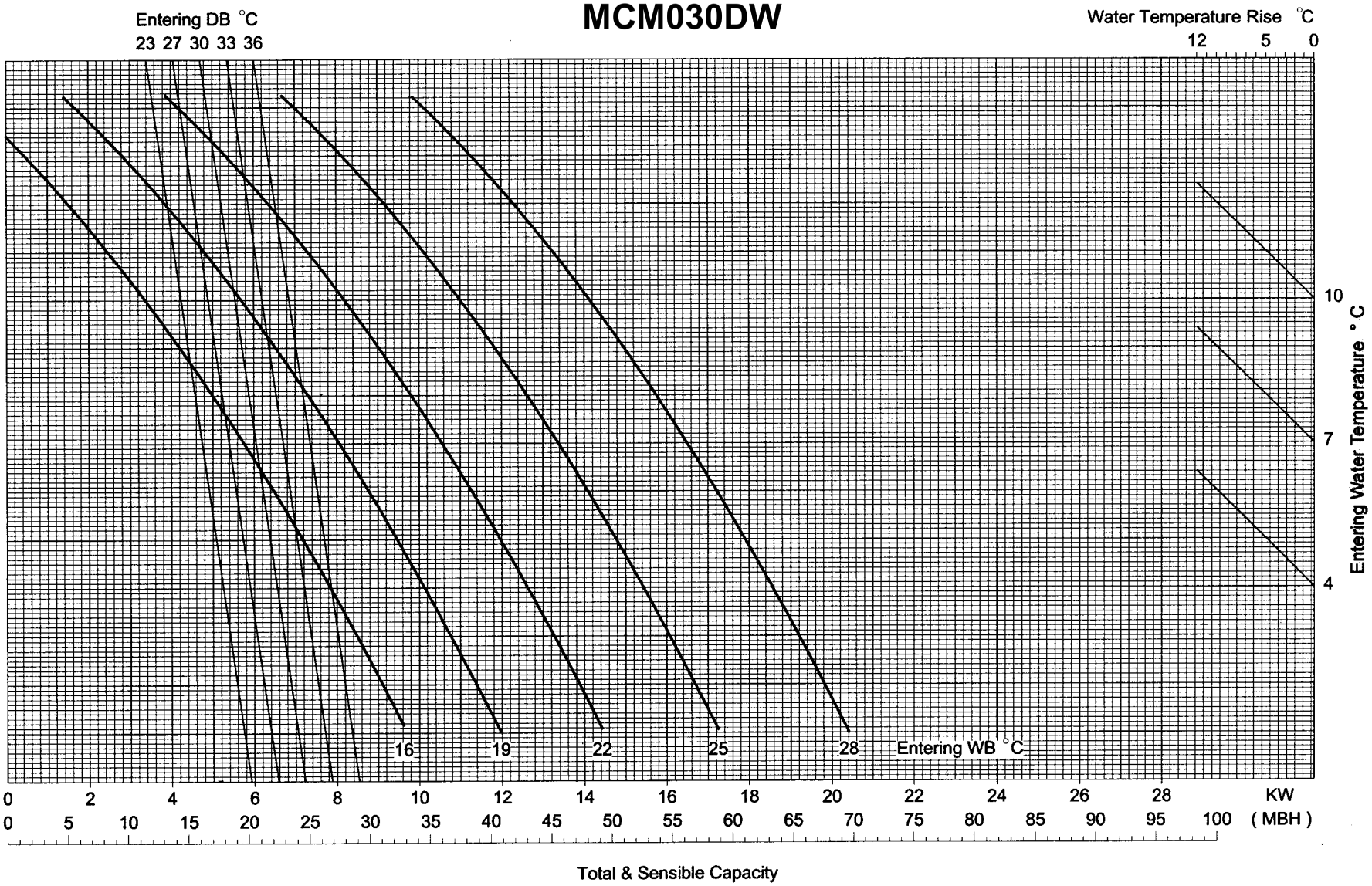
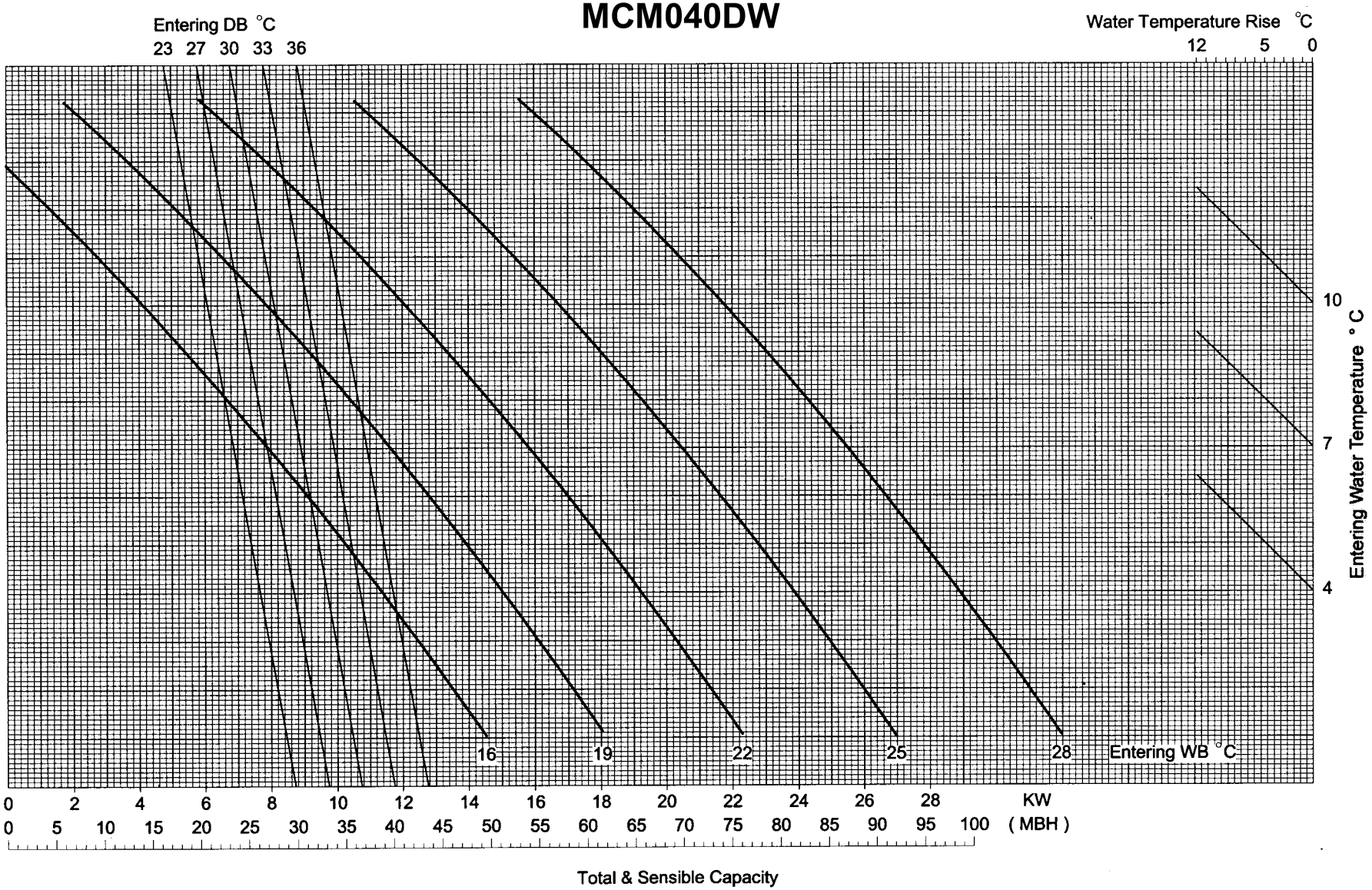
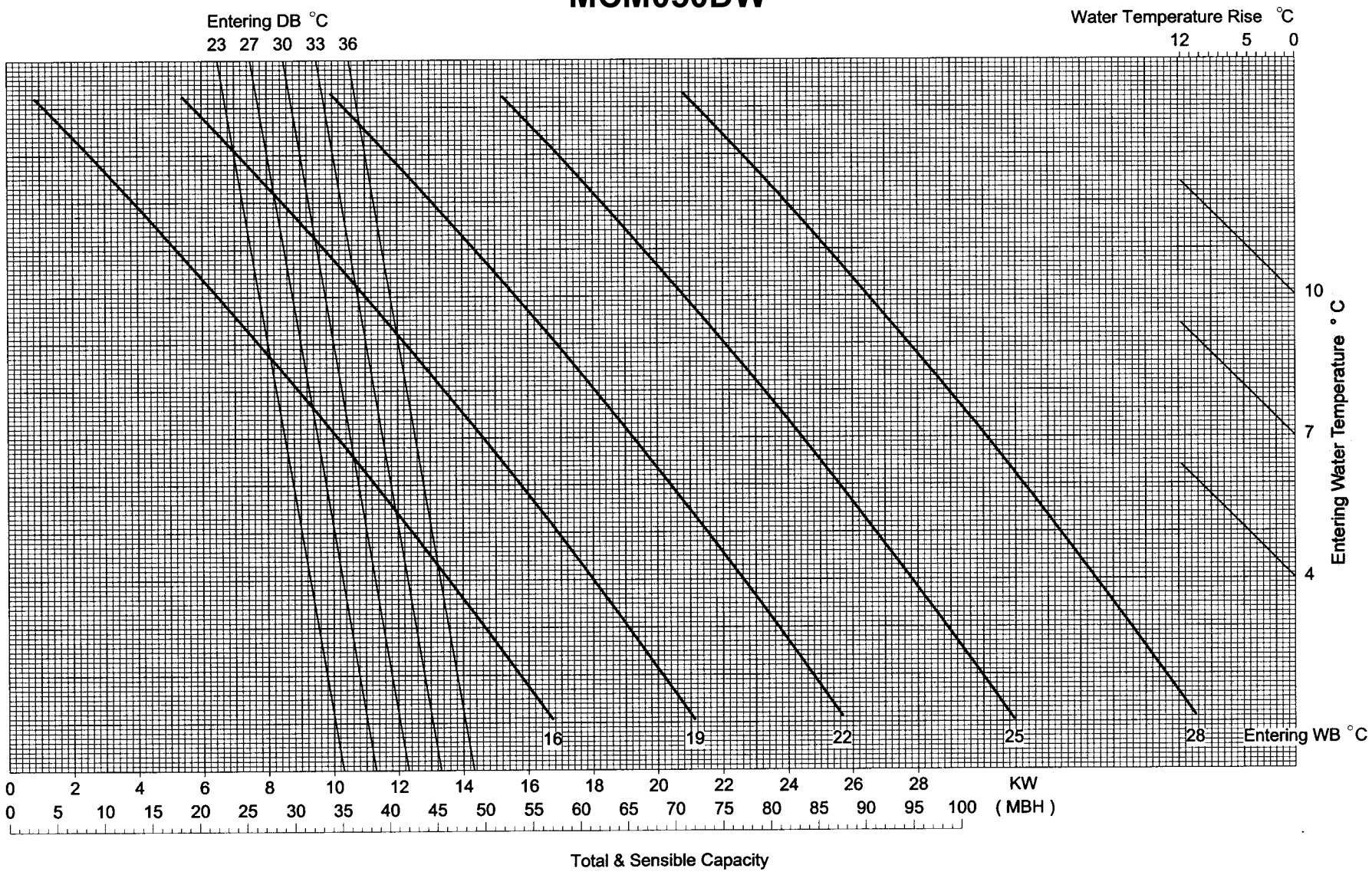
2327303336
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity


MCM030DW
Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

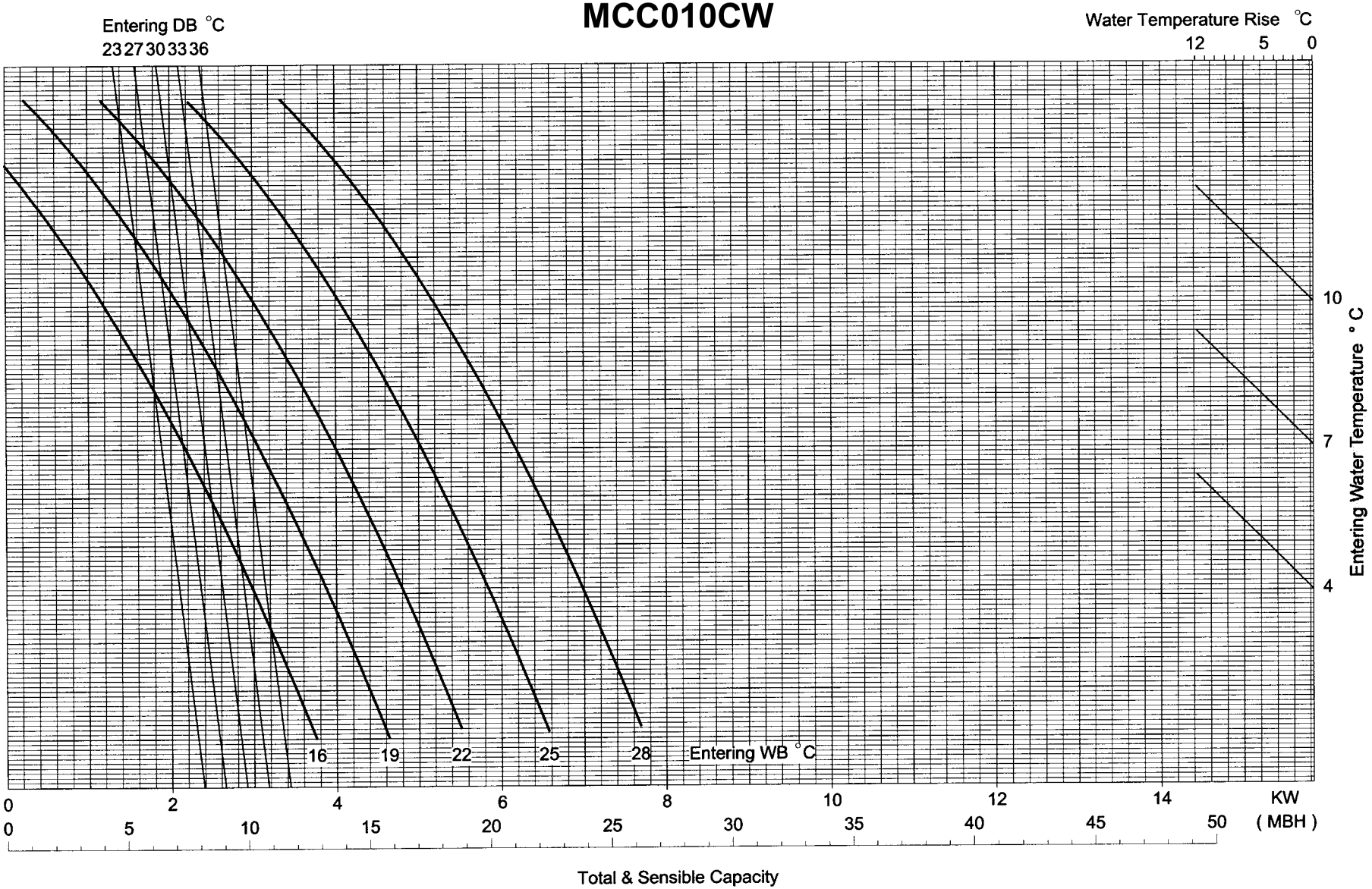
MCM040DW

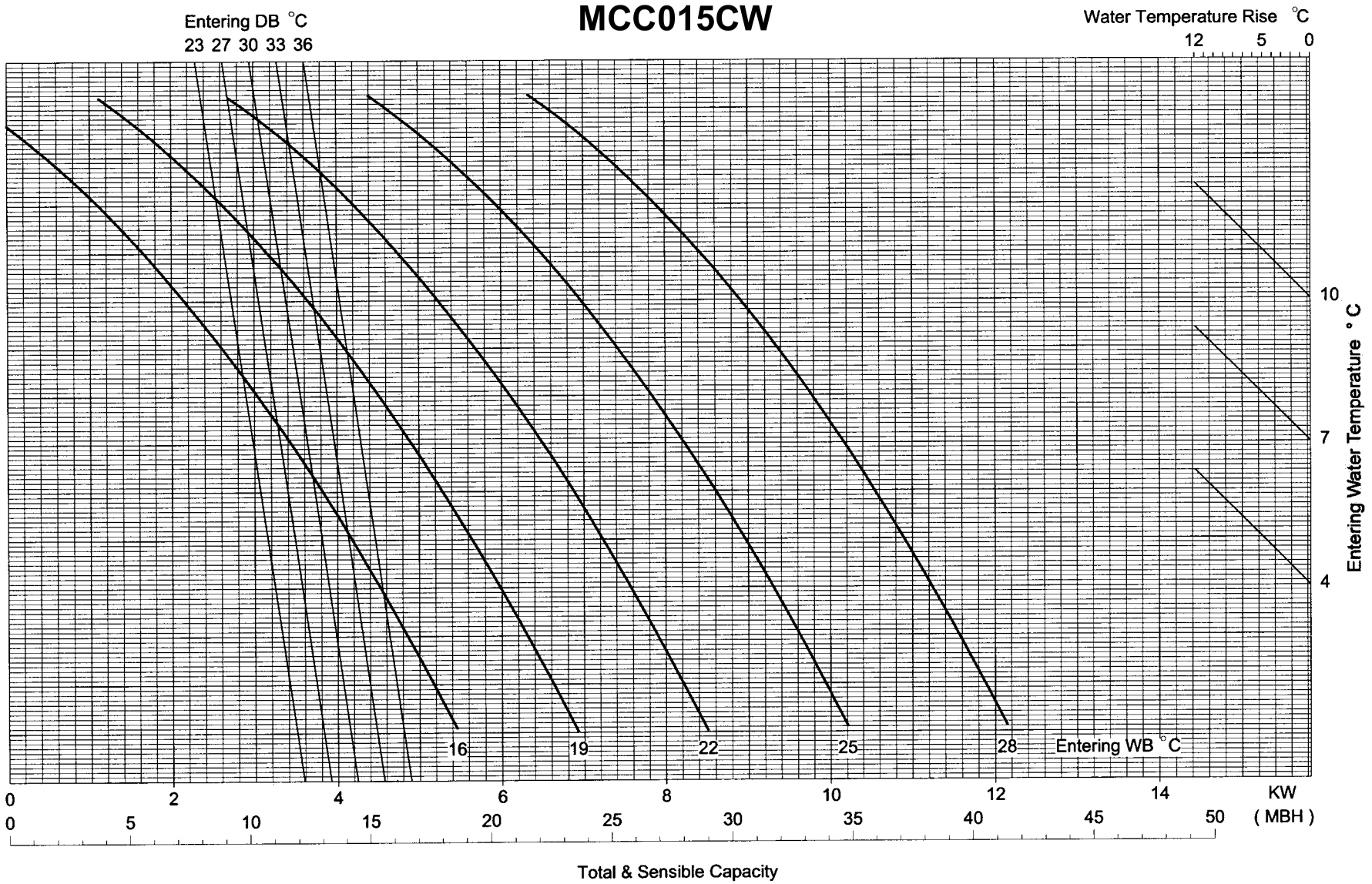

Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCM050DW

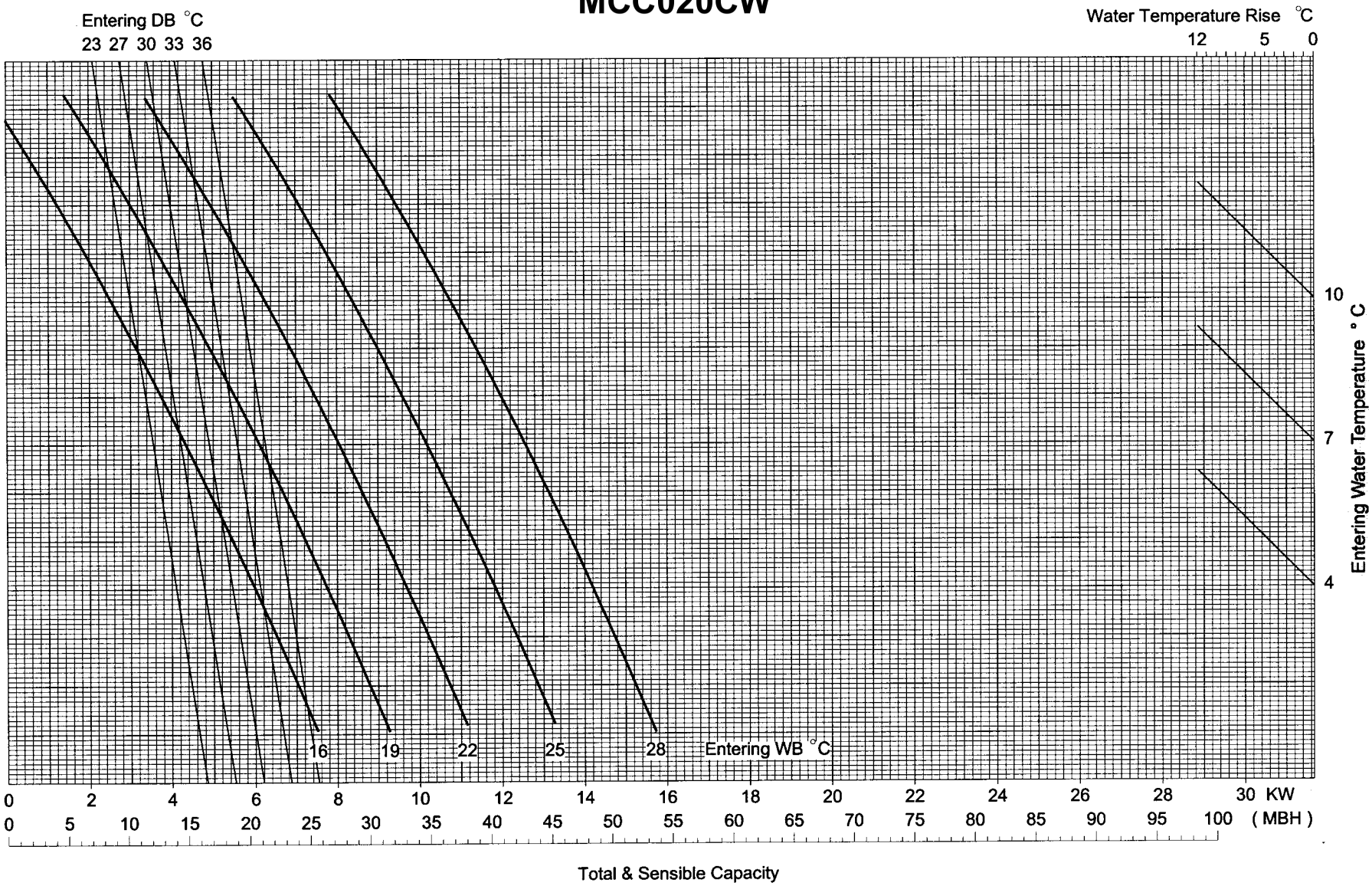

Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

MCC010CW

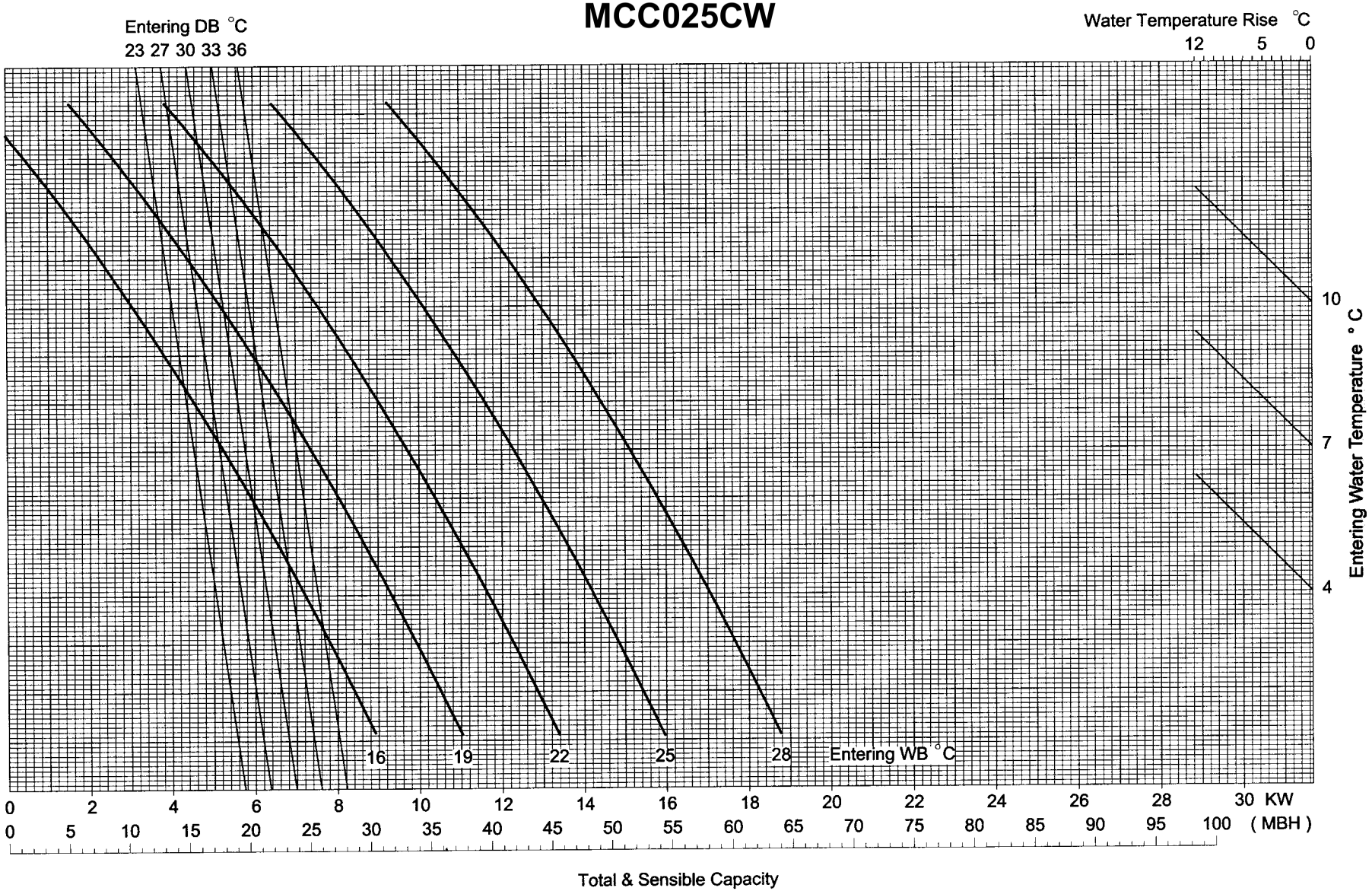

Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 KW
0 5 10 15 20 25 30 35 40 45 50 (MBH)
Total & Sensible Capacity


MCC015CW
Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 KW
0 5 10 15 20 25 30 35 40 45 50 (MBH)
Total & Sensible Capacity

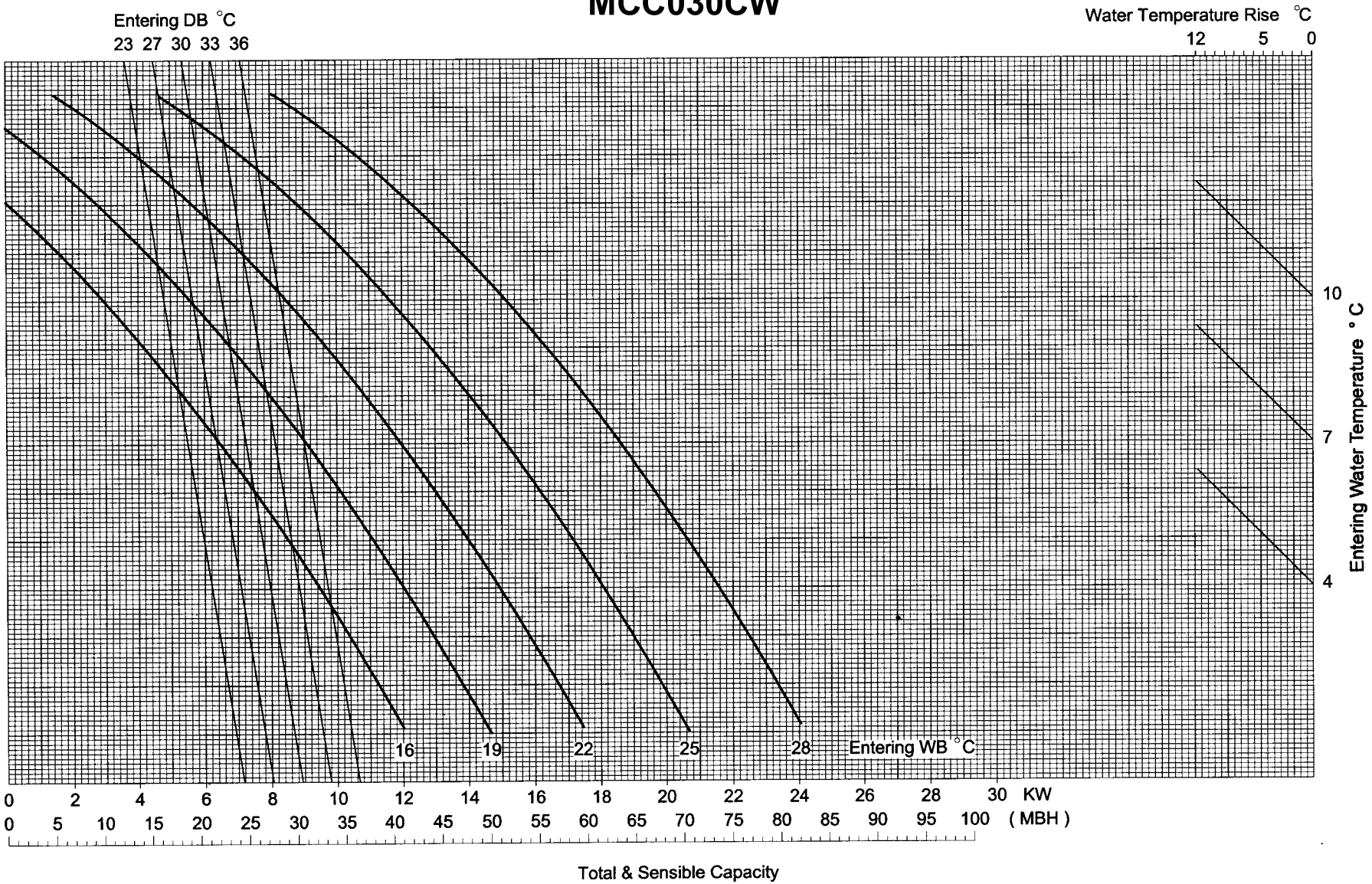
MCC020CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

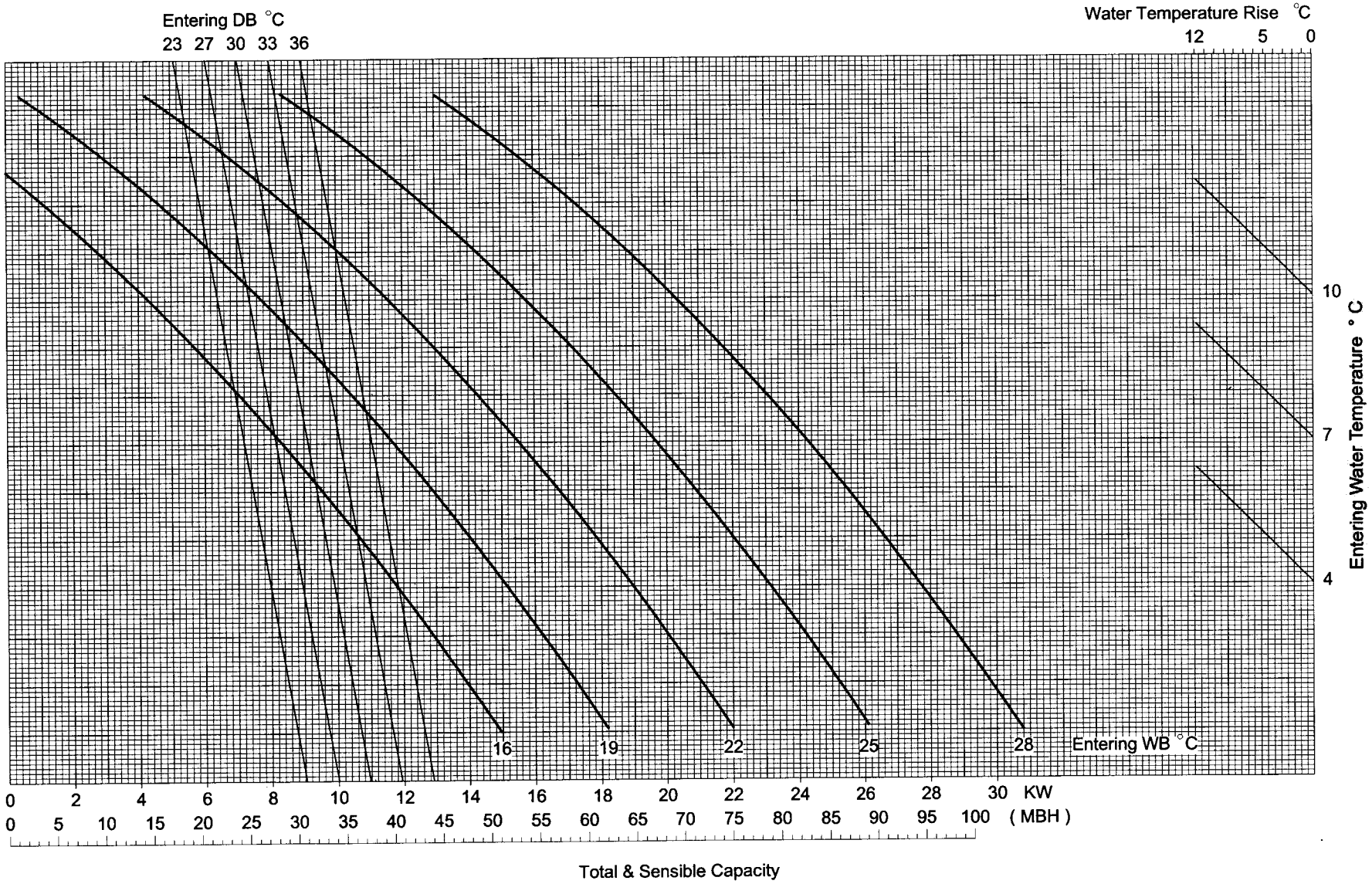
MCC025CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

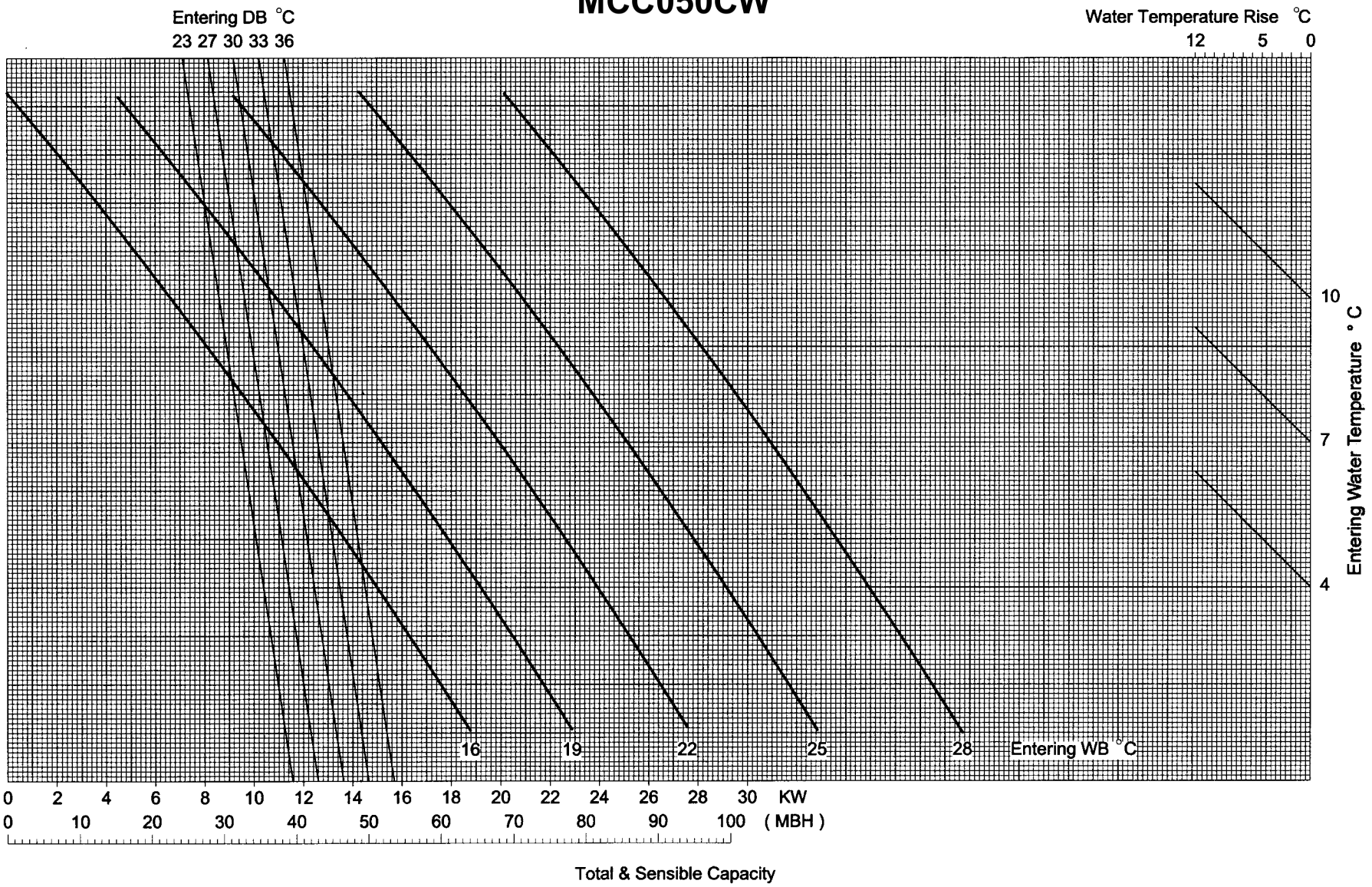
MCC030CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

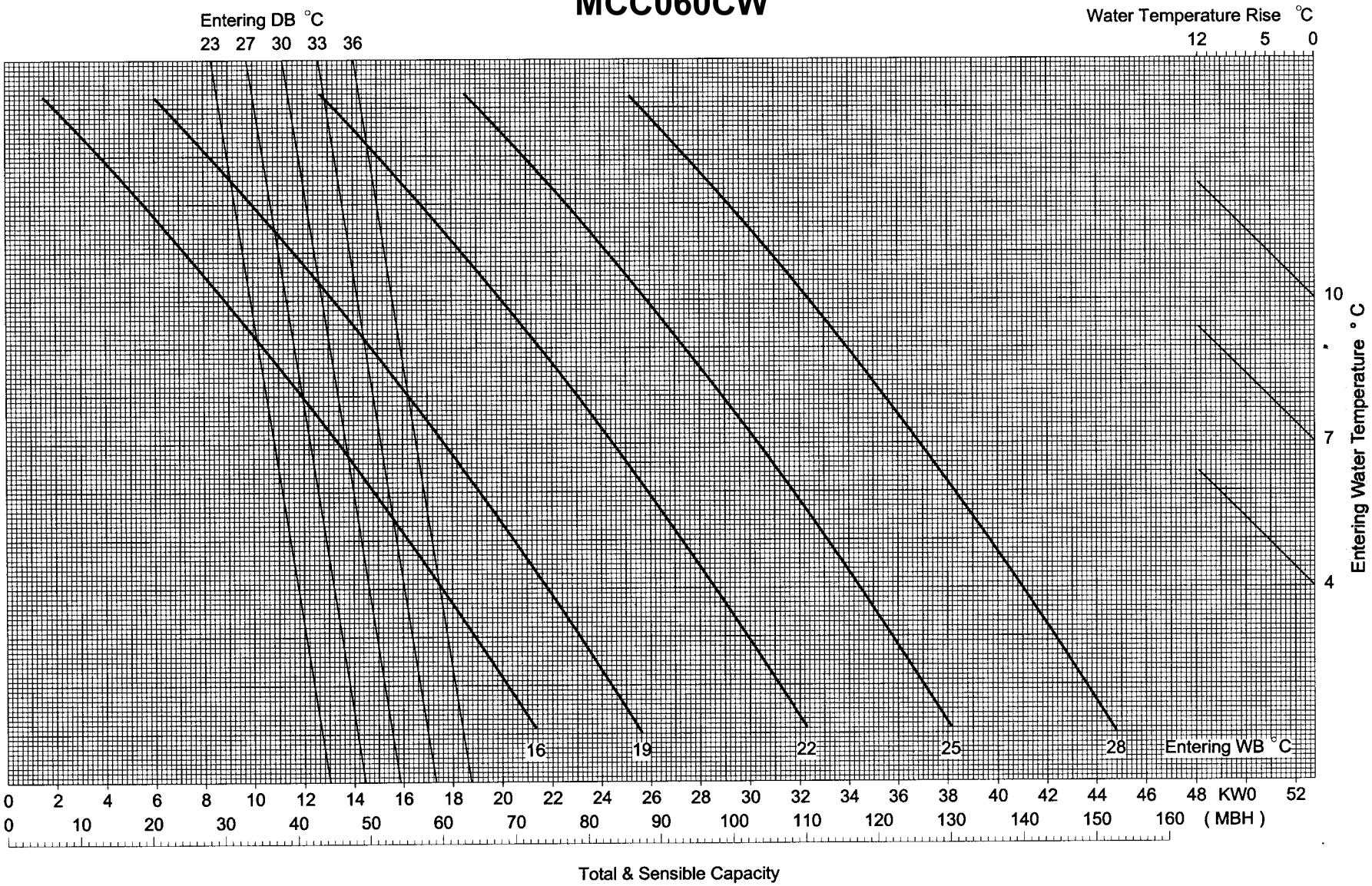
MCC040CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

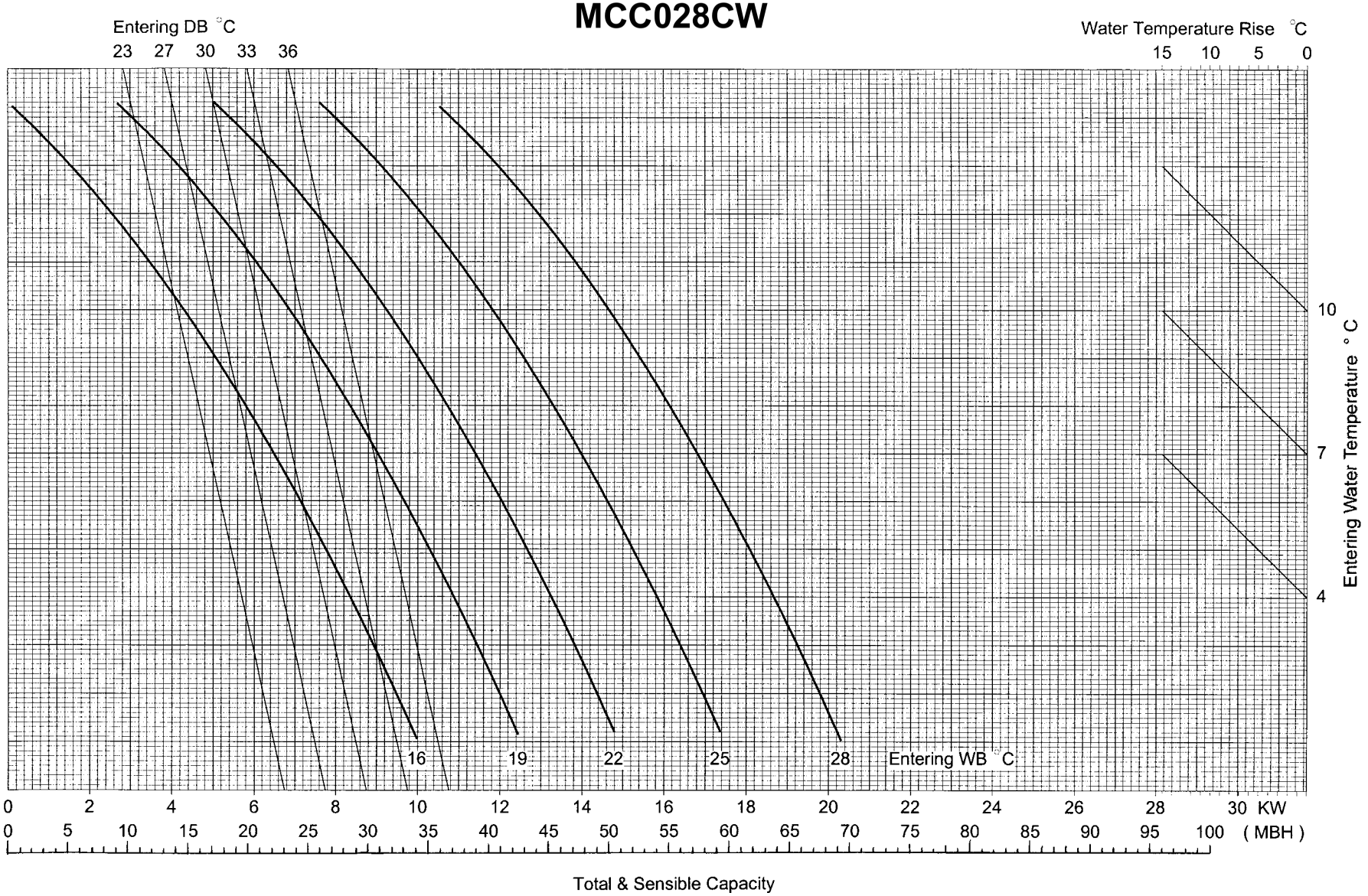
MCC050CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 10 20 30 40 50 60 70 80 90 100 (MBH)
Total & Sensible Capacity

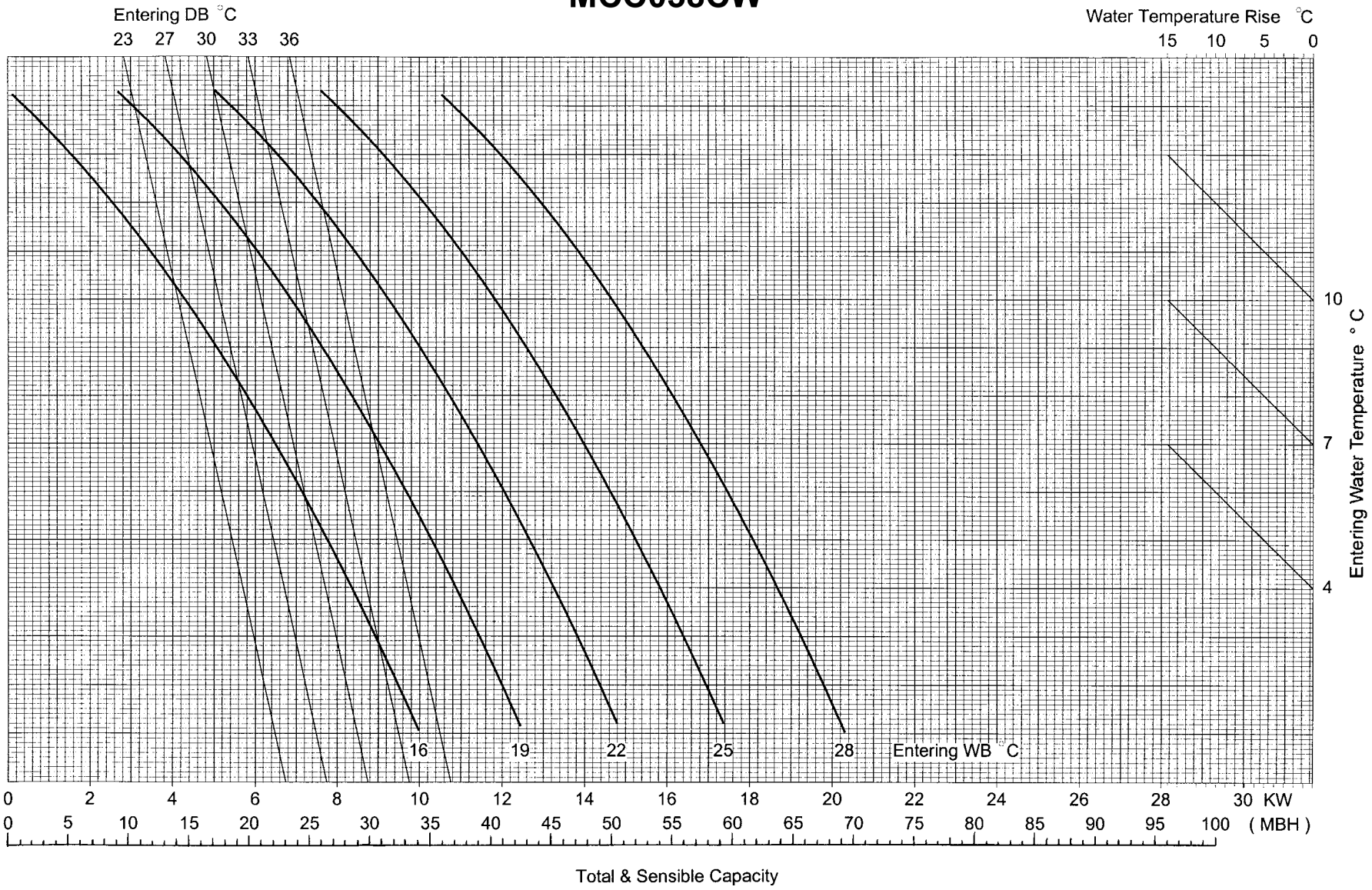
MCC060CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 KW0 52
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 (MBH)
Total & Sensible Capacity

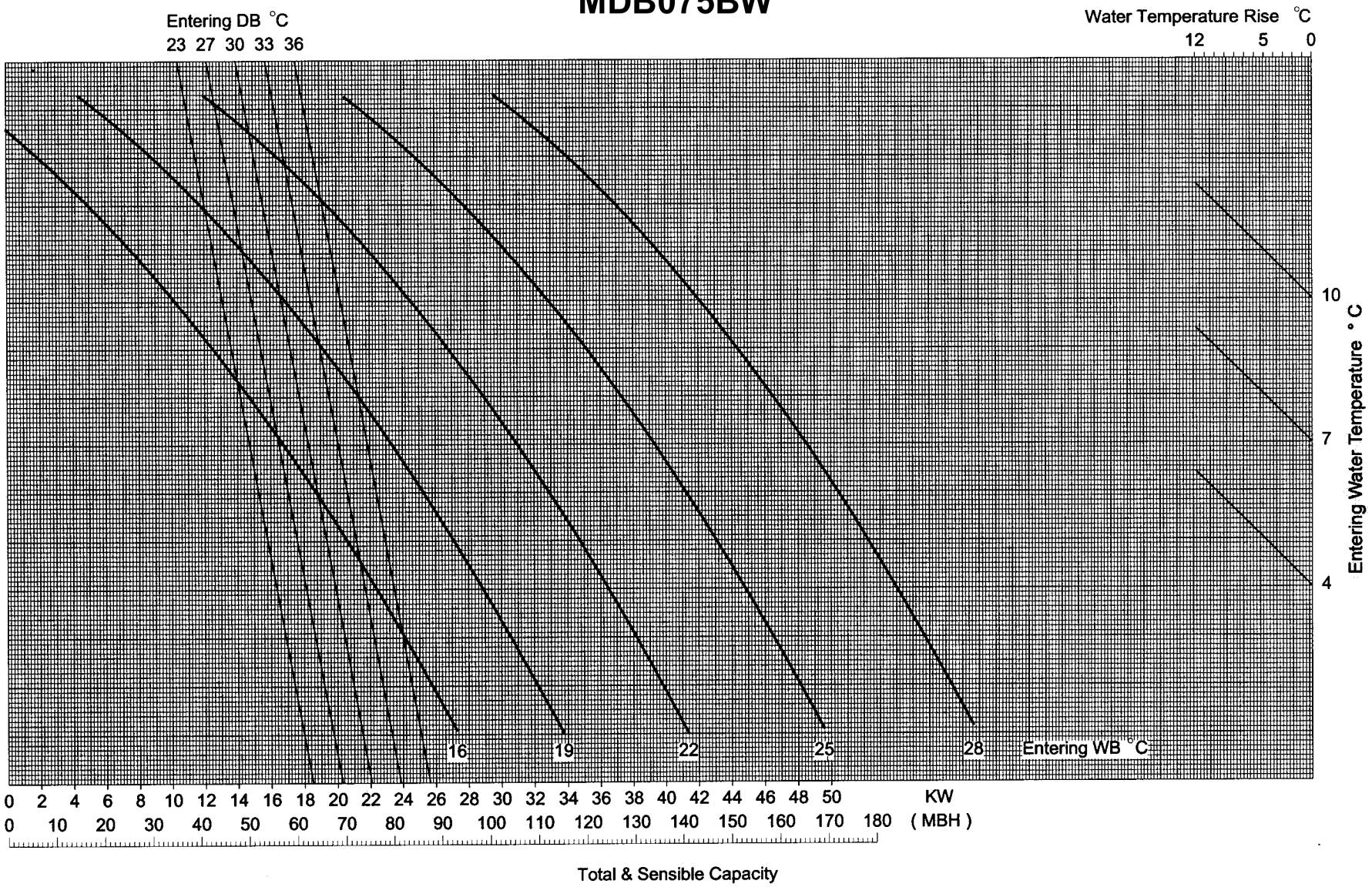
MCC028CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature ° C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

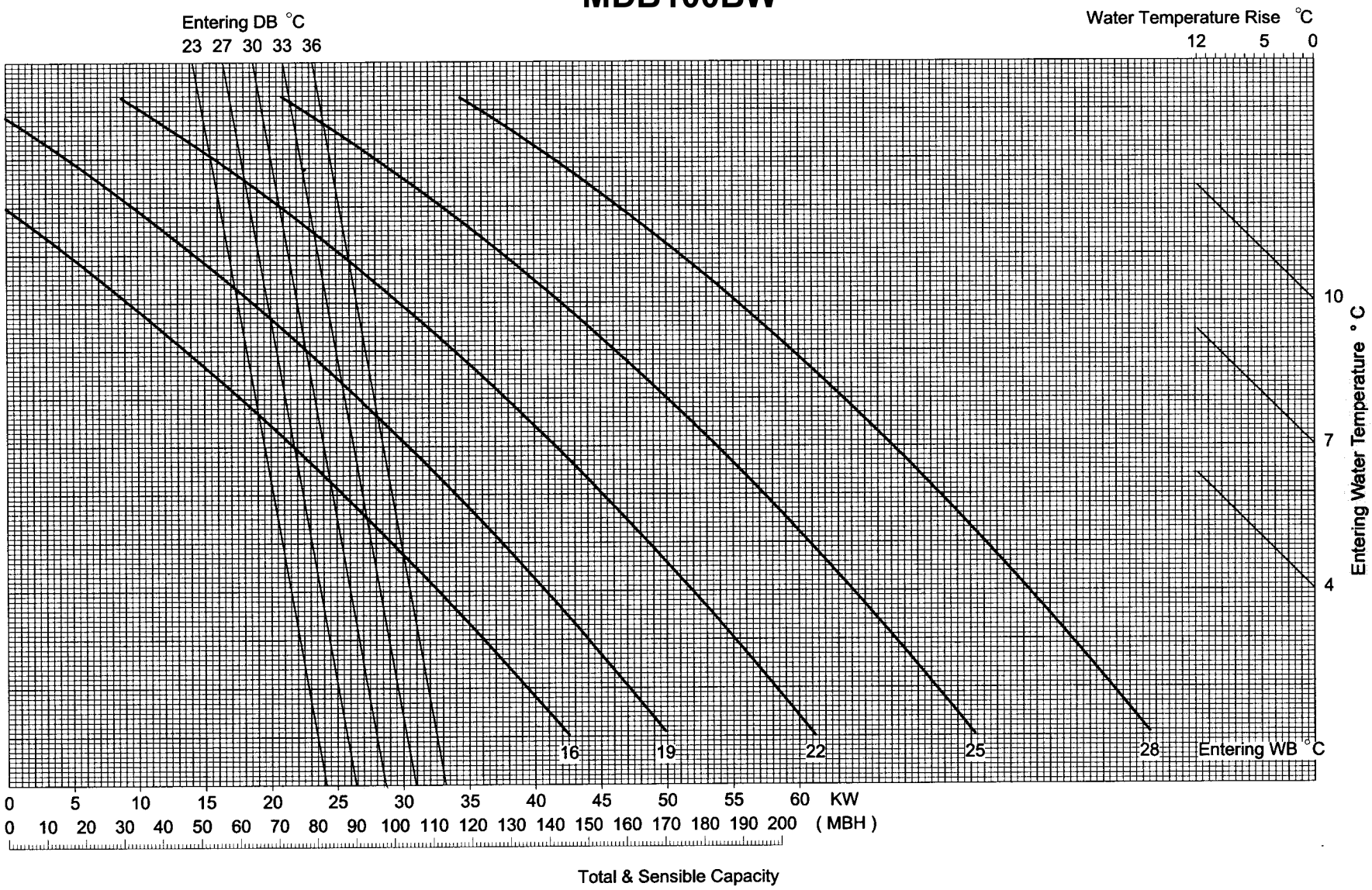
MCC038CW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
15 10 5 0
10
7
4
Entering Water Temperature °C
16 19 22 25 28 Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 KW
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 95 100 (MBH)
Total & Sensible Capacity

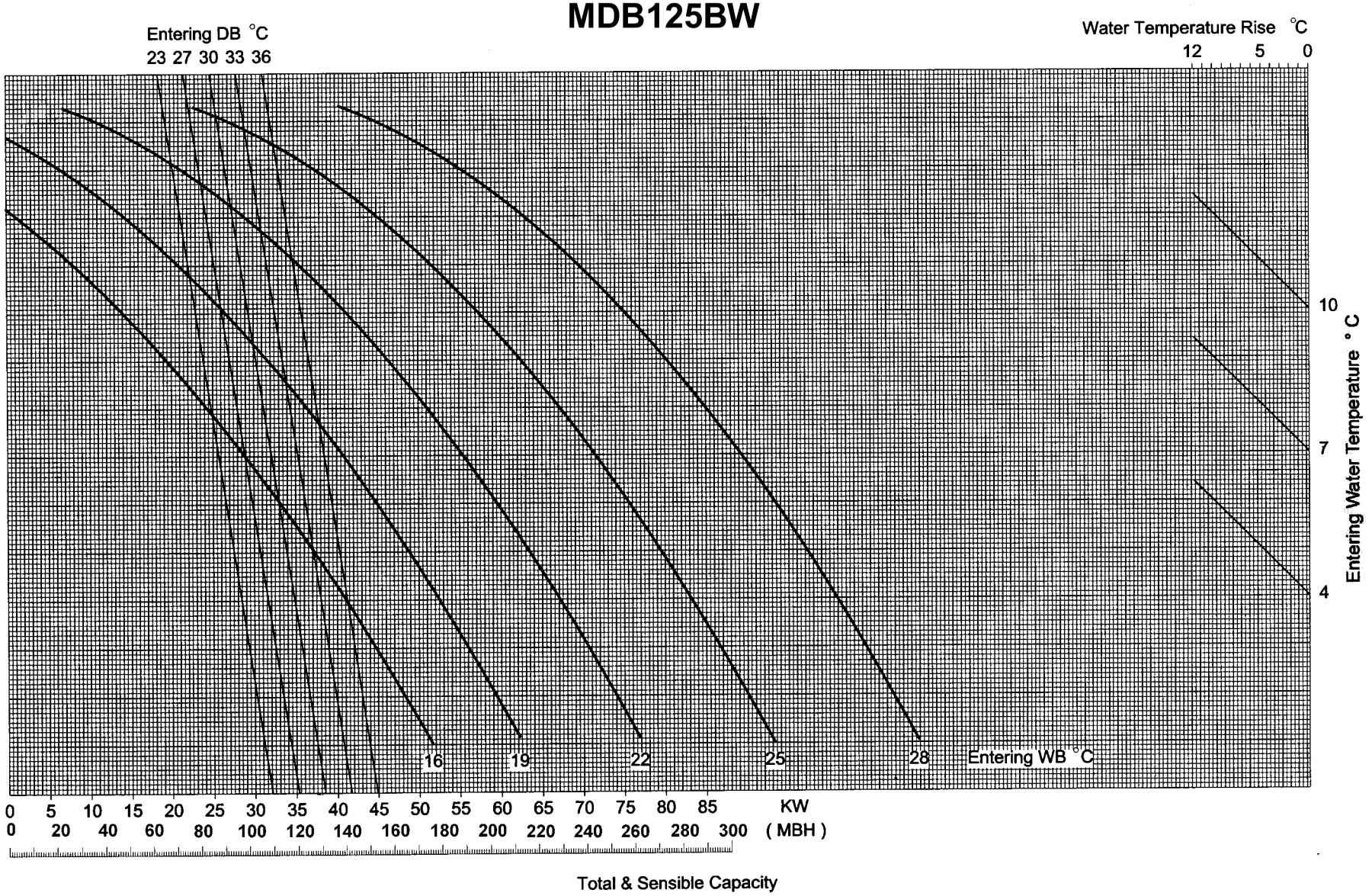
MDB075BW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30 32 34 36 38 40 42 44 46 48 50
KW
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180
(MBH)
Total & Sensible Capacity

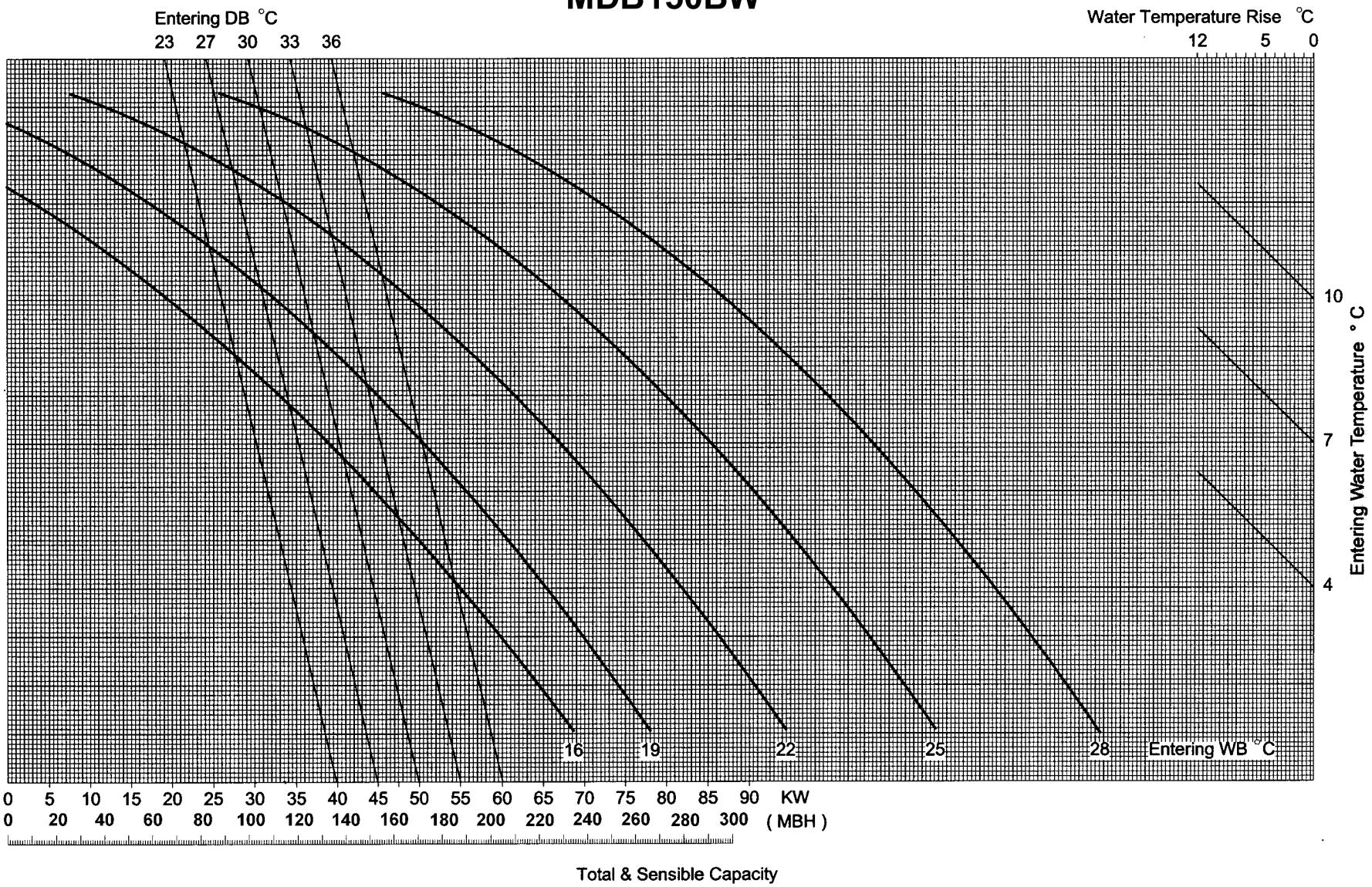
MDB100BW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16
19
22
25
28
Entering WB °C
0 5 10 15 20 25 30 35 40 45 50 55 60 KW
0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 (MBH)
Total & Sensible Capacity

MDB125BW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature °C
16
19
22
25
28
Entering WB °C
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 KW
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 (MBH)
Total & Sensible Capacity

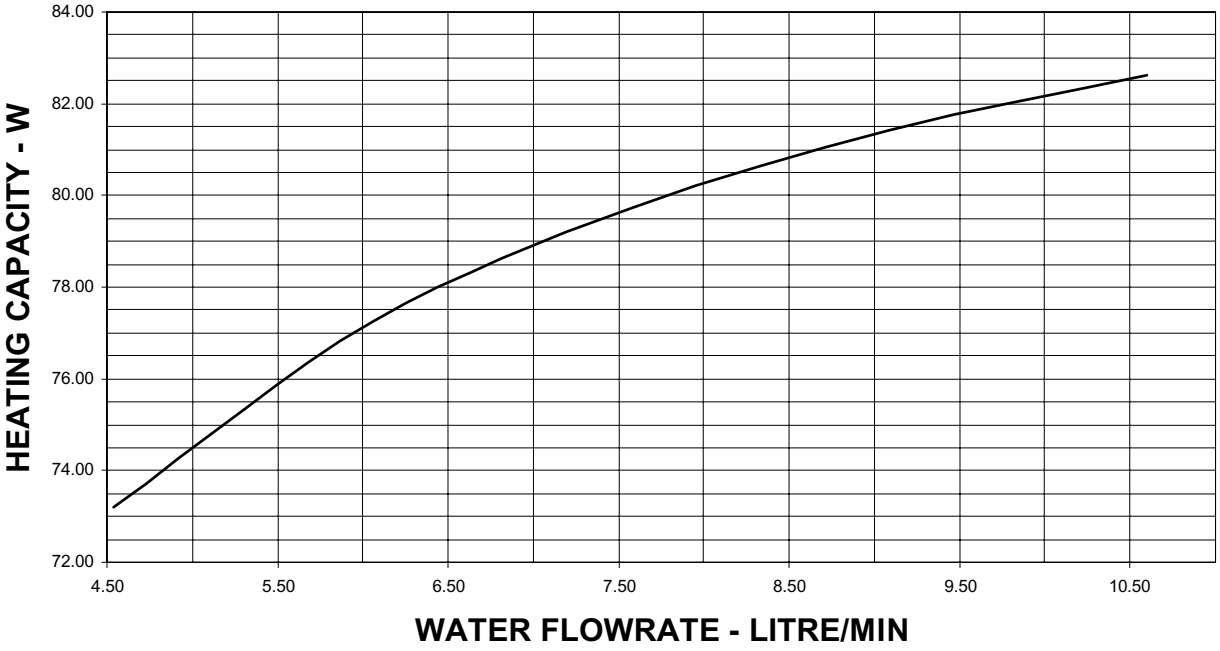
MDB150BW


Entering DB °C
23 27 30 33 36
Water Temperature Rise °C
12 5 0
10
7
4
Entering Water Temperature ° C
16 19 22 25 28 Entering WB °C
0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75 80 85 90 KW
0 20 40 60 80 100 120 140 160 180 200 220 240 260 280 300 (MBH)
Total & Sensible Capacity

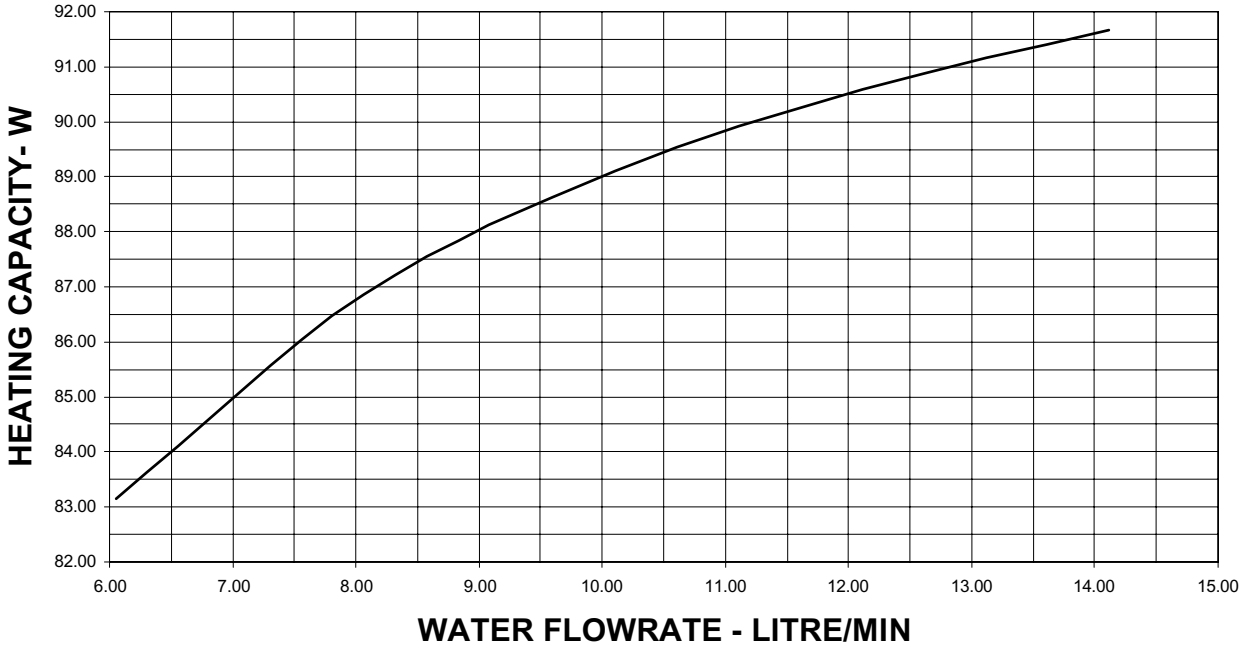
Heating Capacity Performance Chart

Wall Mounted Type

MWM010FW



MWM015FW



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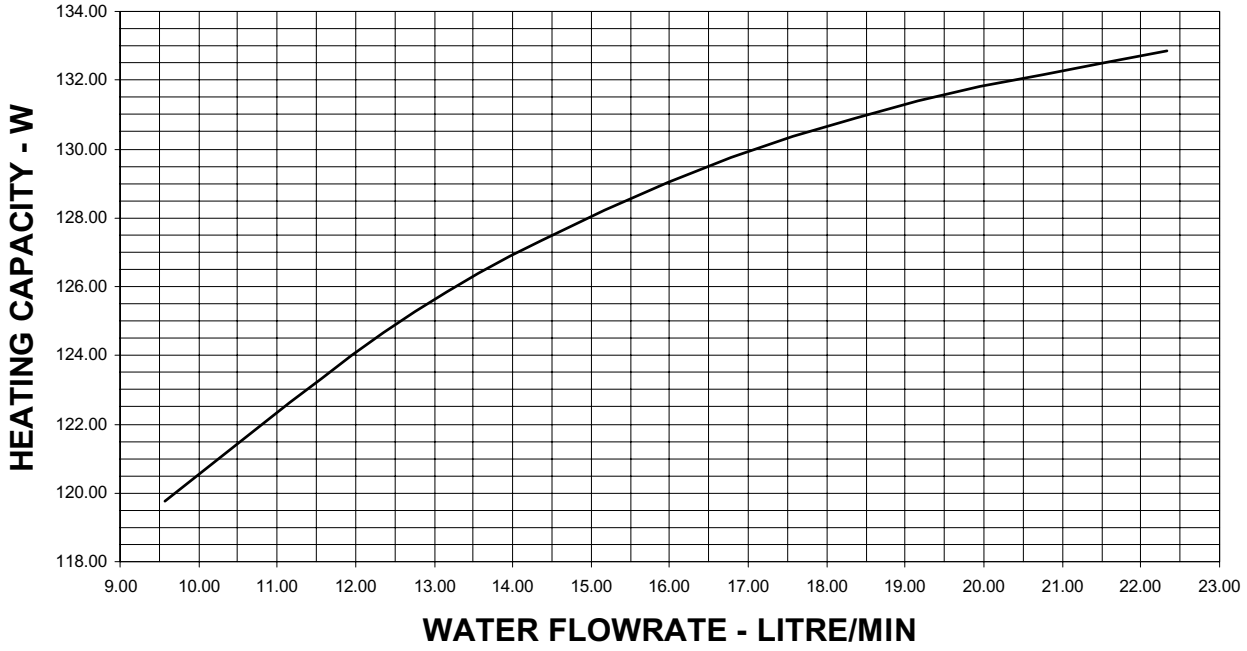
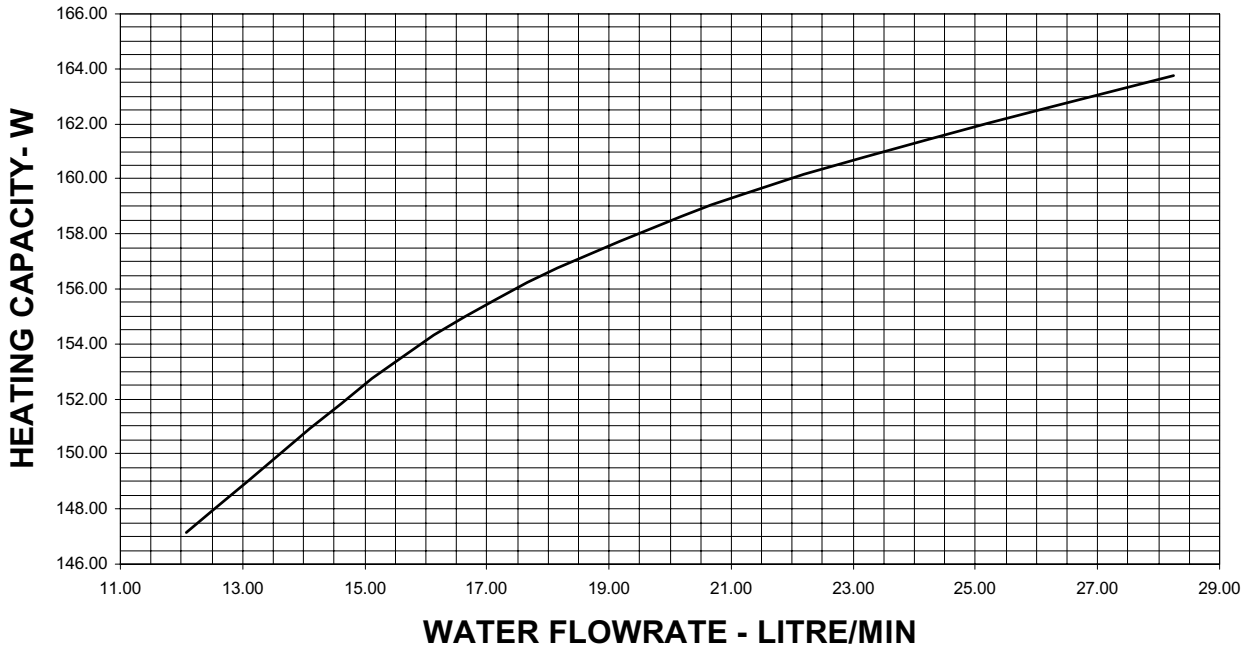
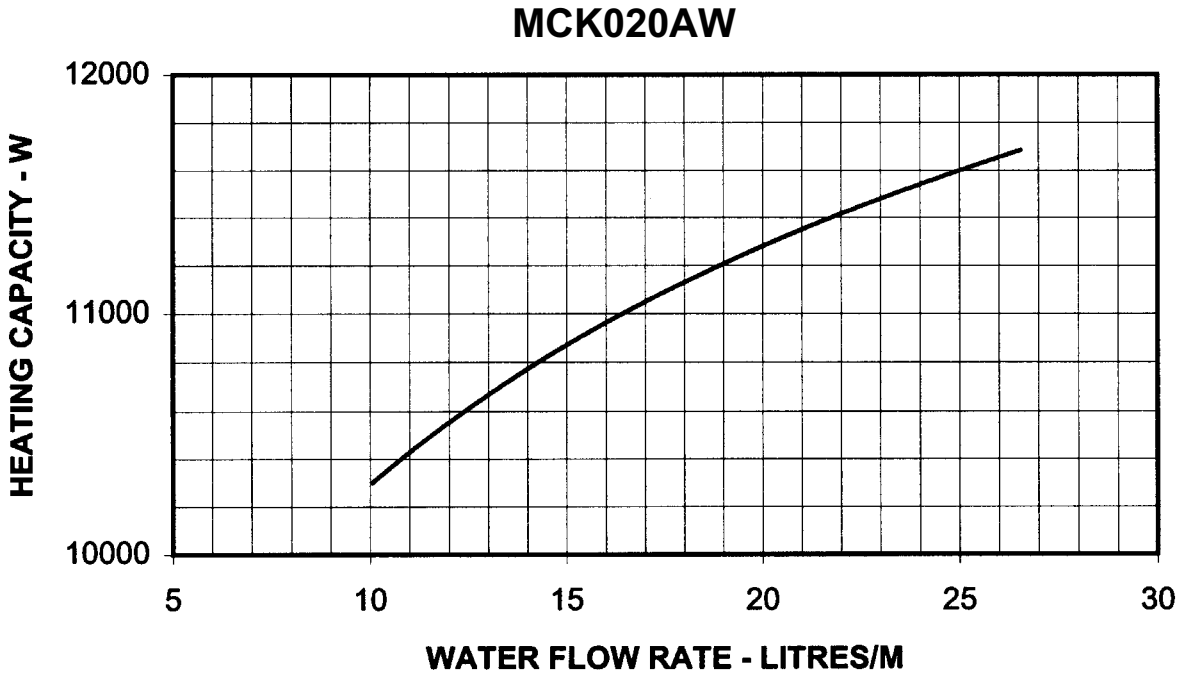
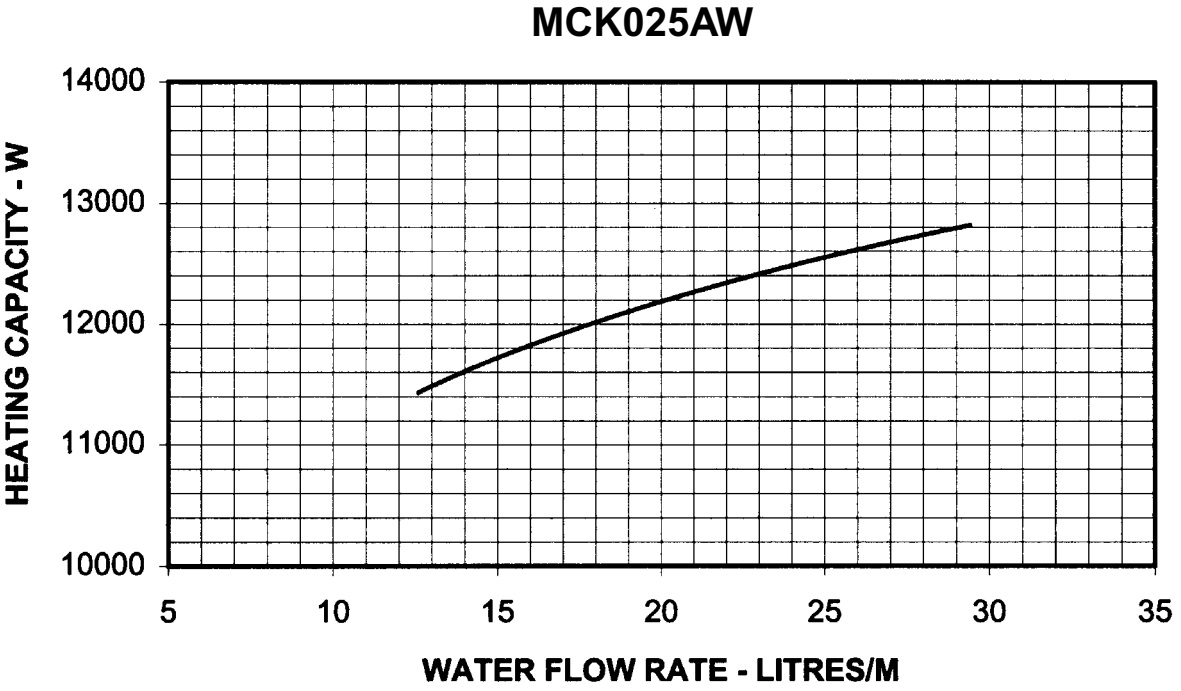


MWM025FW



Ceiling Cassette Type





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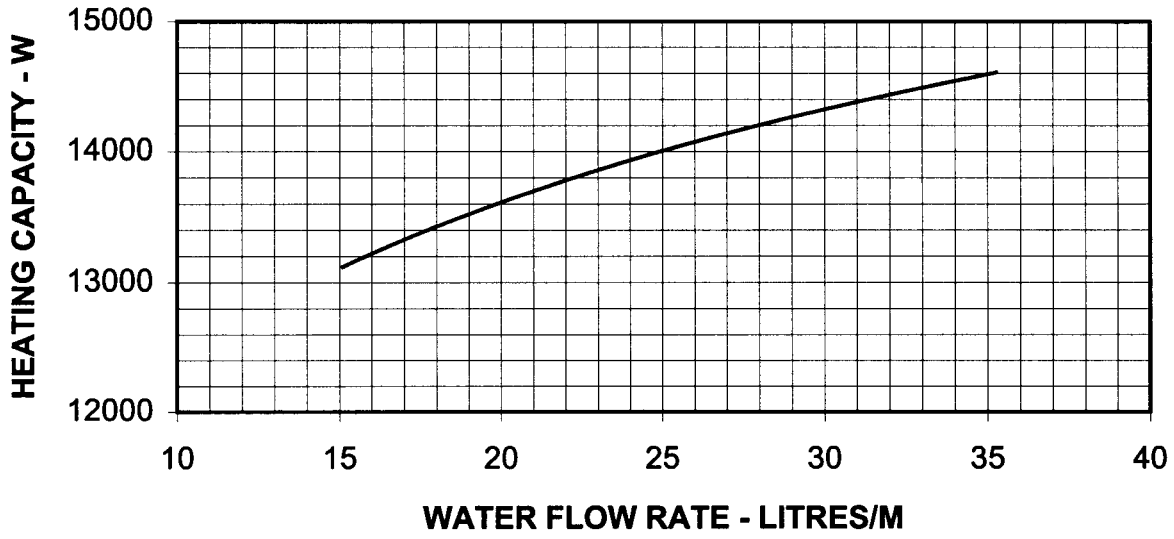

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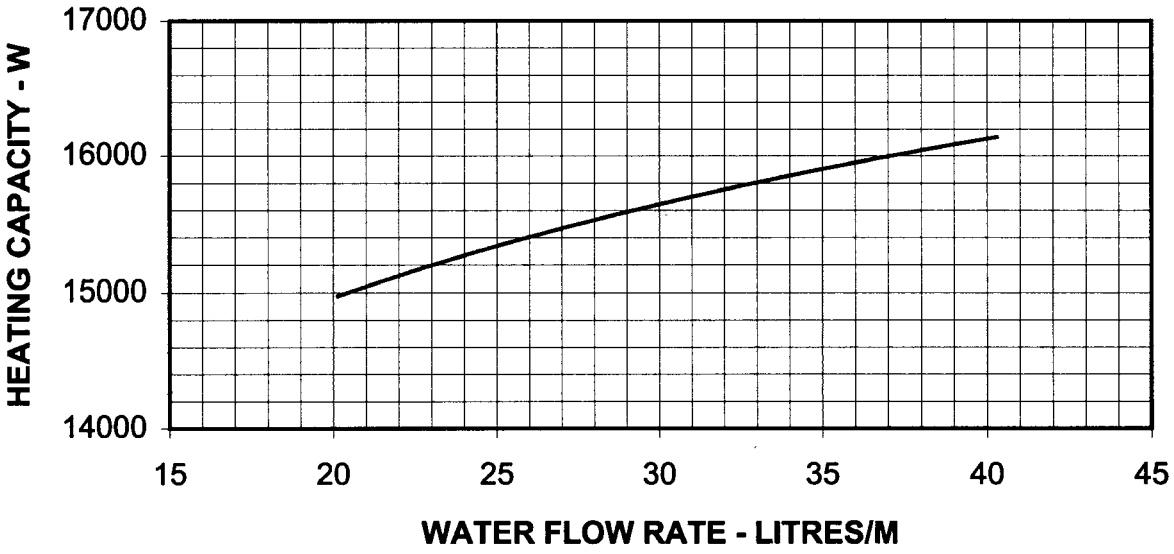

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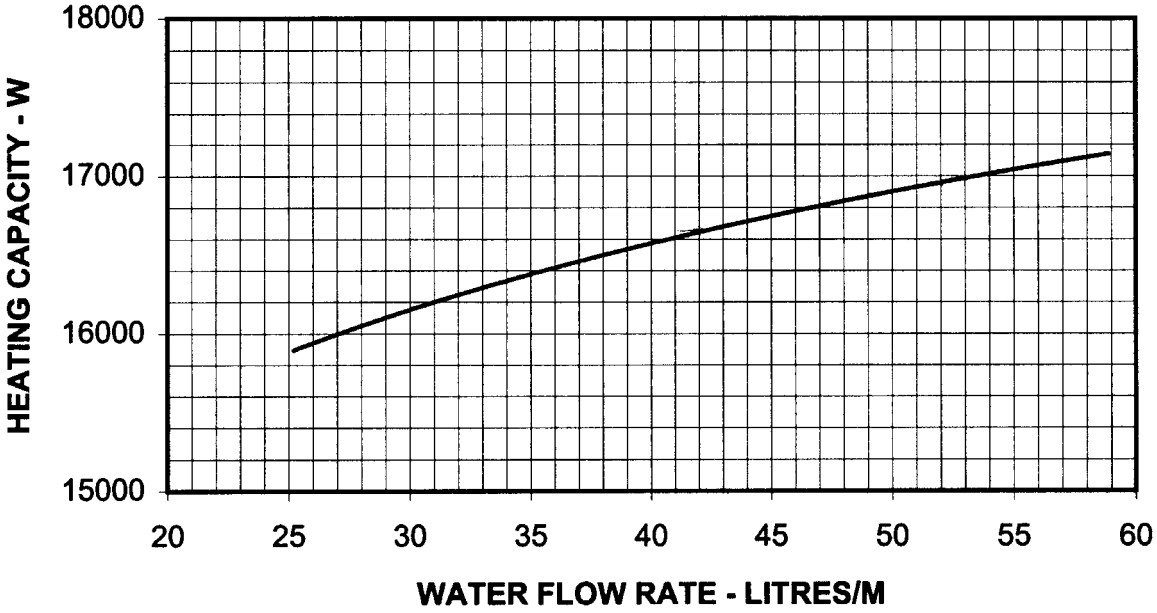
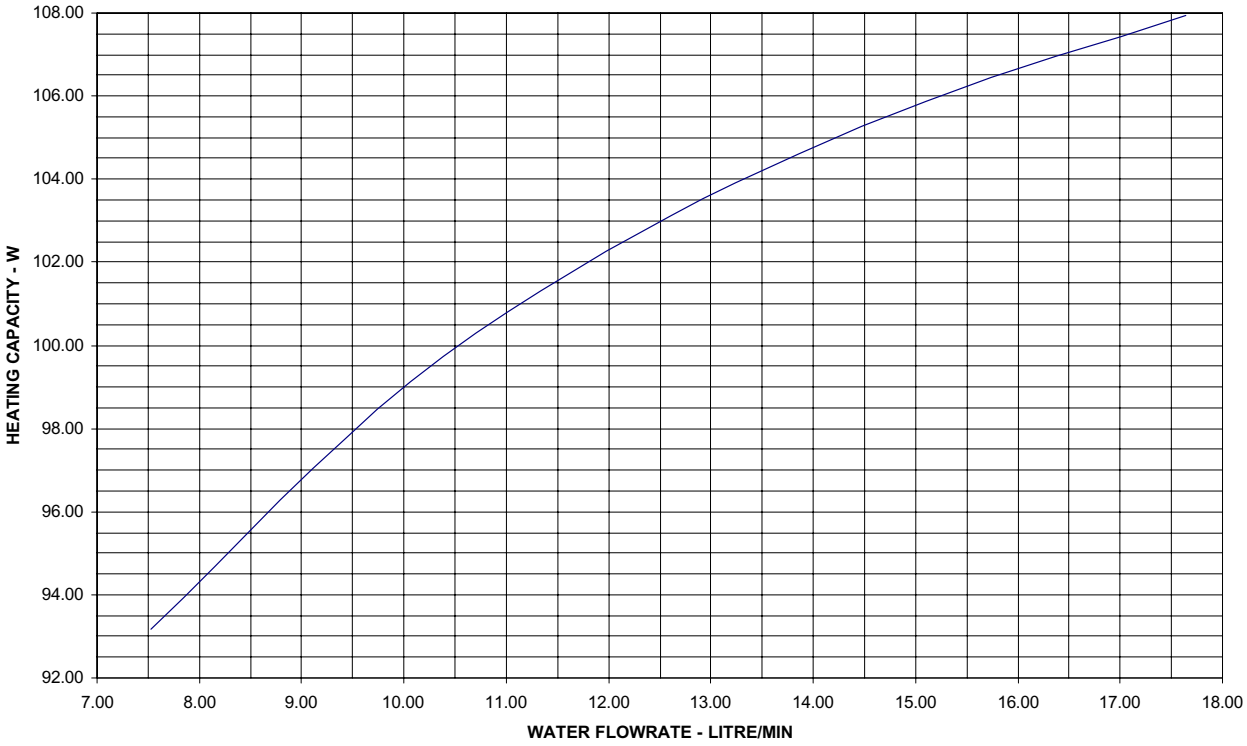
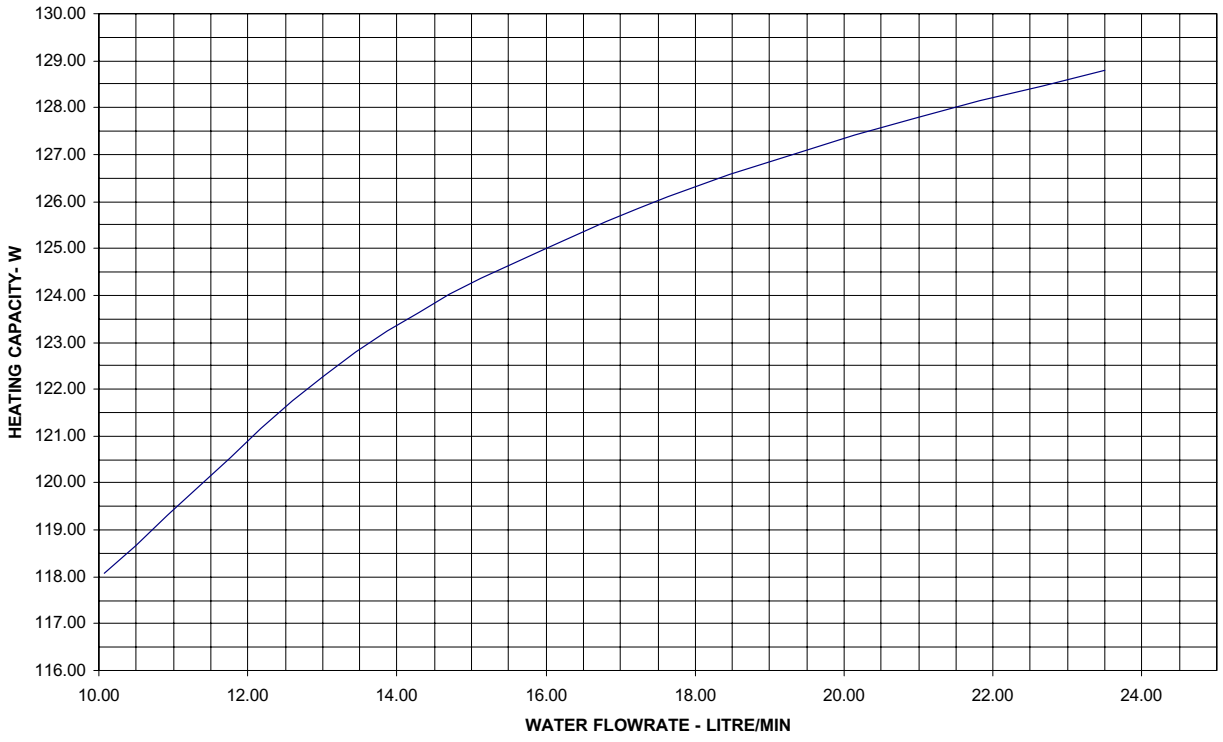

18000
17000
16000
15000
HEATING CAPACITY - W
20
25
30
35
40
45
50
55
60
WATER FLOW RATE - LITRES/M

MCK015BW



MCK020BW



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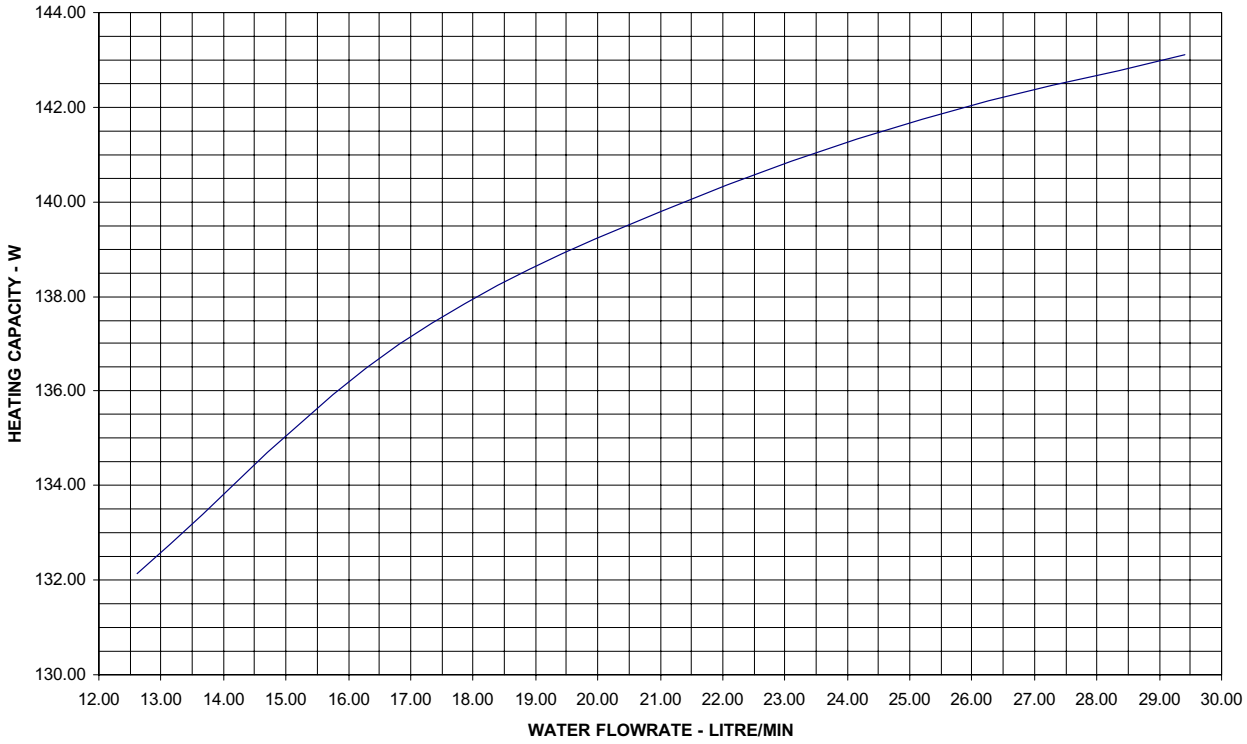
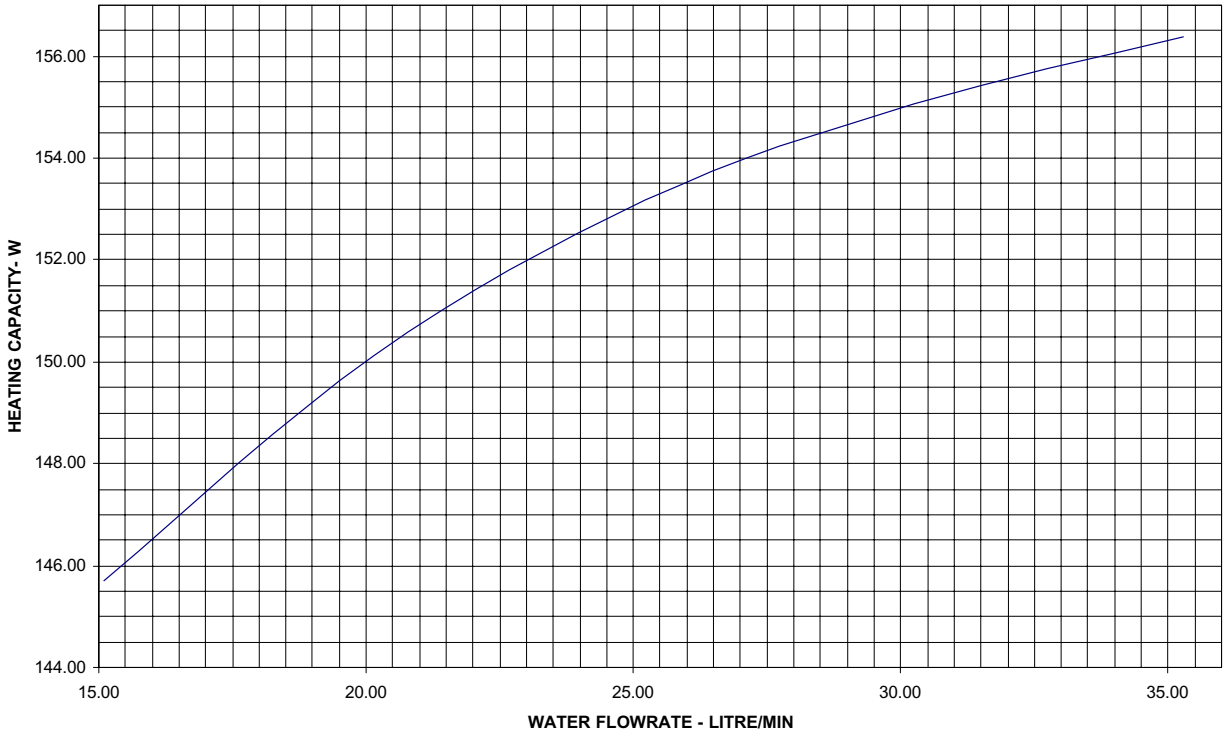
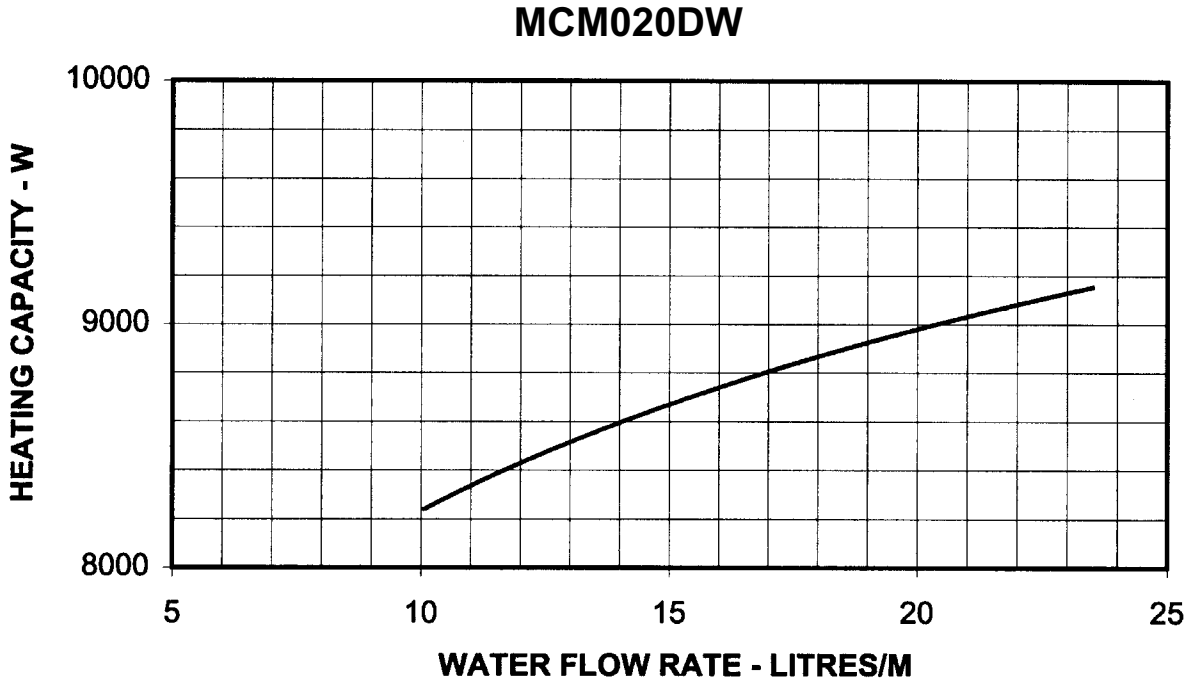
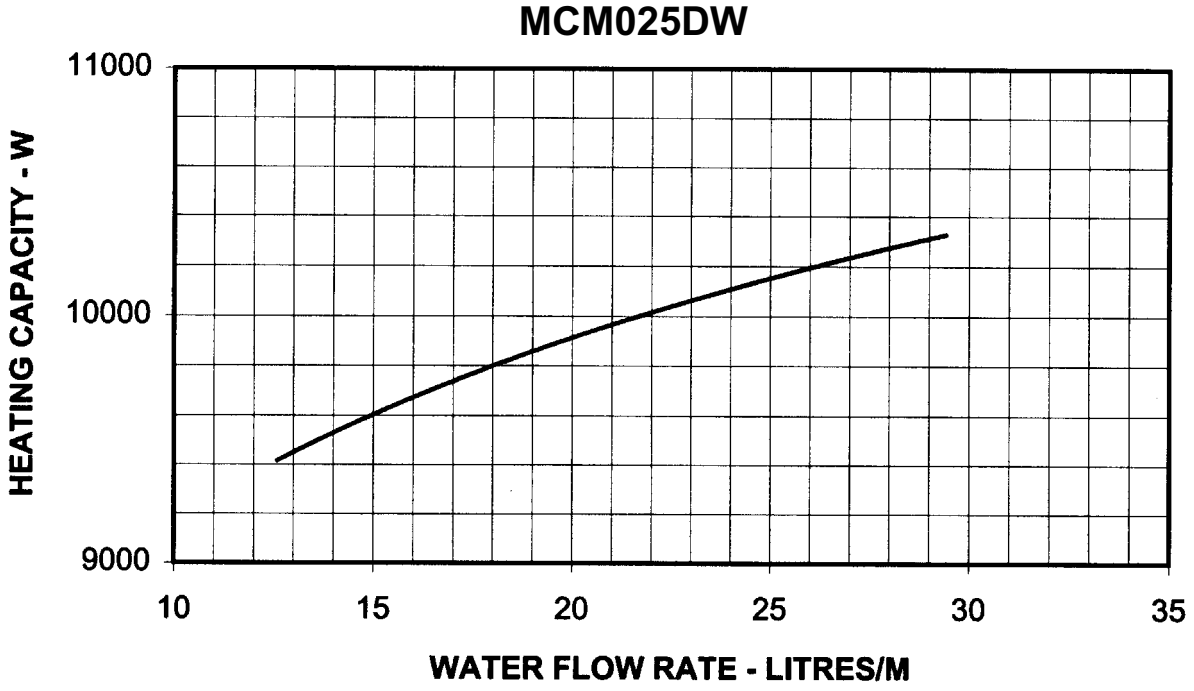


MCK030BW



Ceiling Suspended Type





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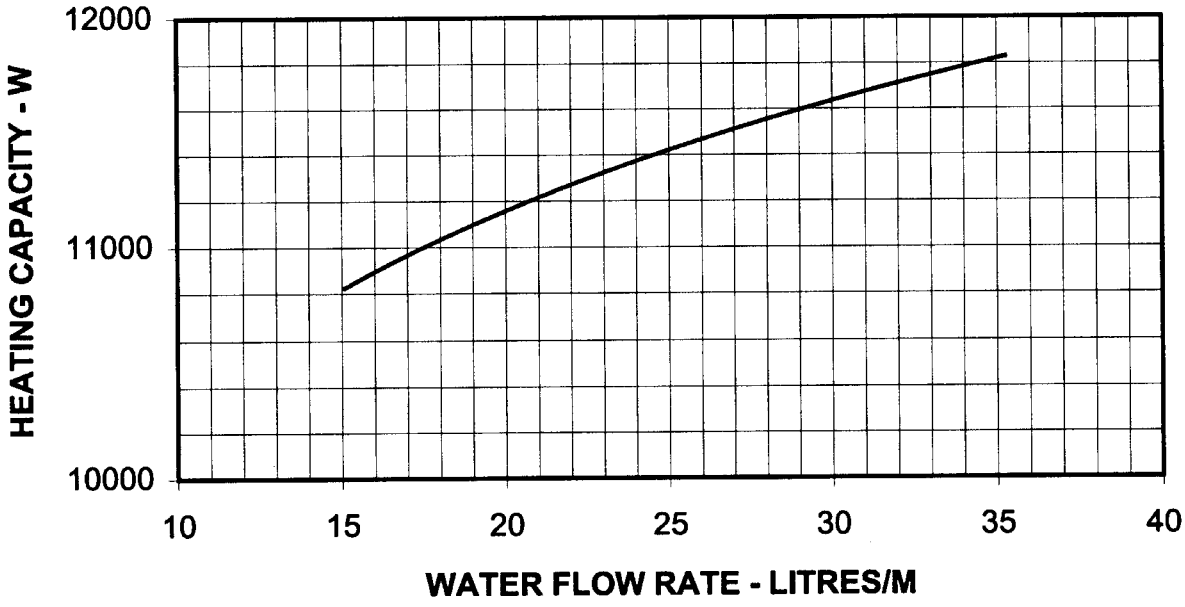
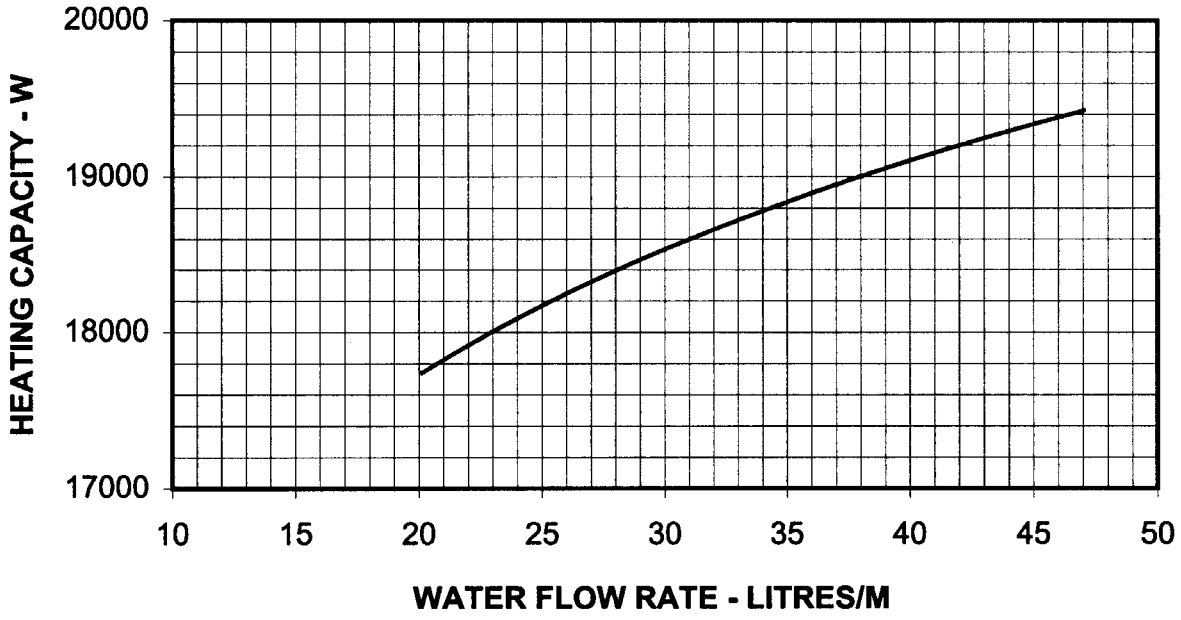
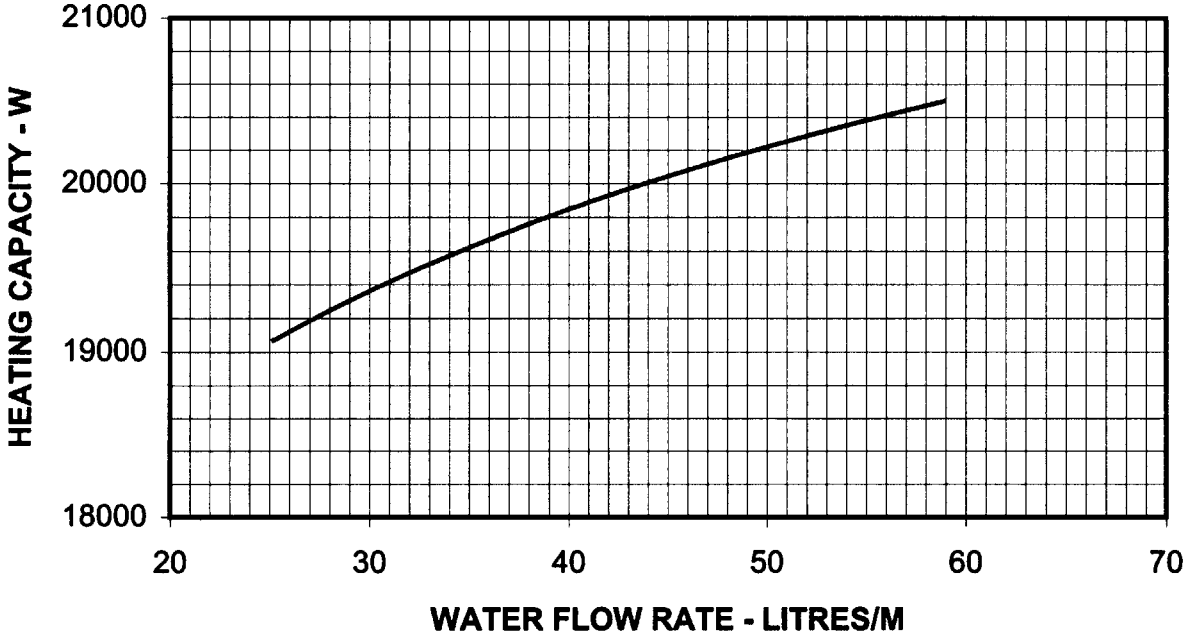


MCM040DW

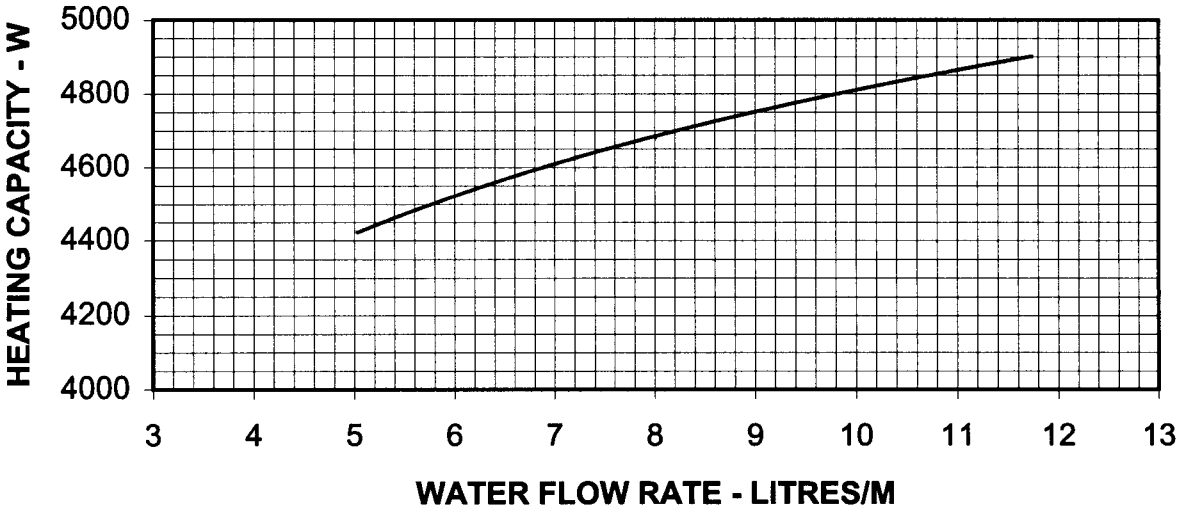


MCM050DW

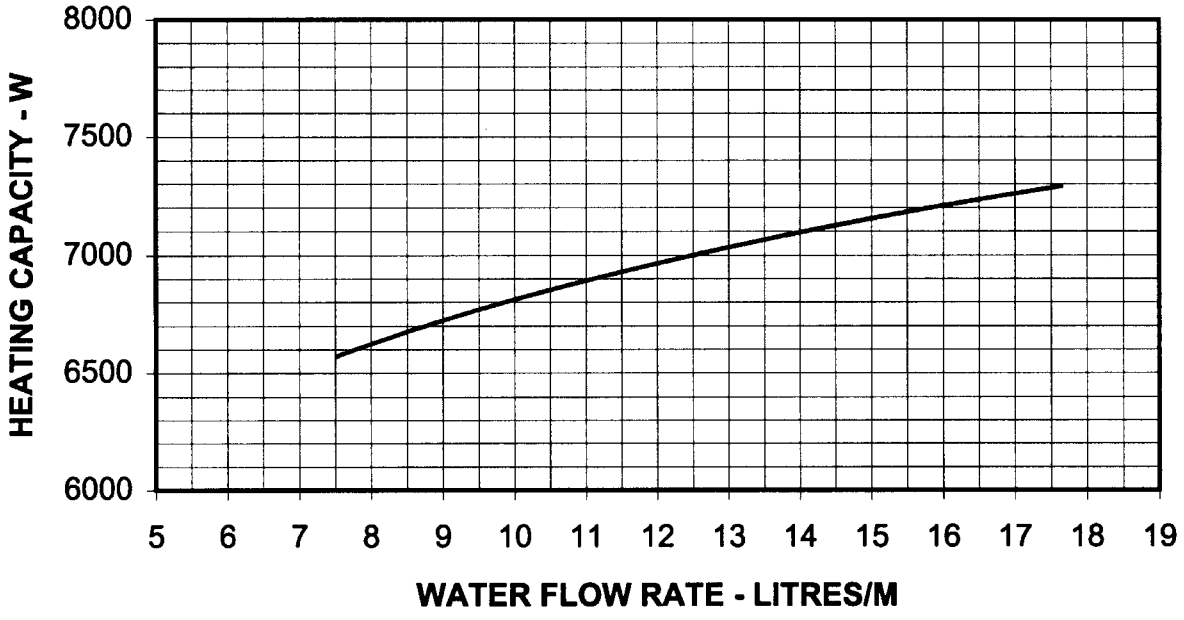

21000
20000
19000
18000
HEATING CAPACITY - W
20
30
40
50
60
70
WATER FLOW RATE - LITRES/M

Ceiling Concealed Type

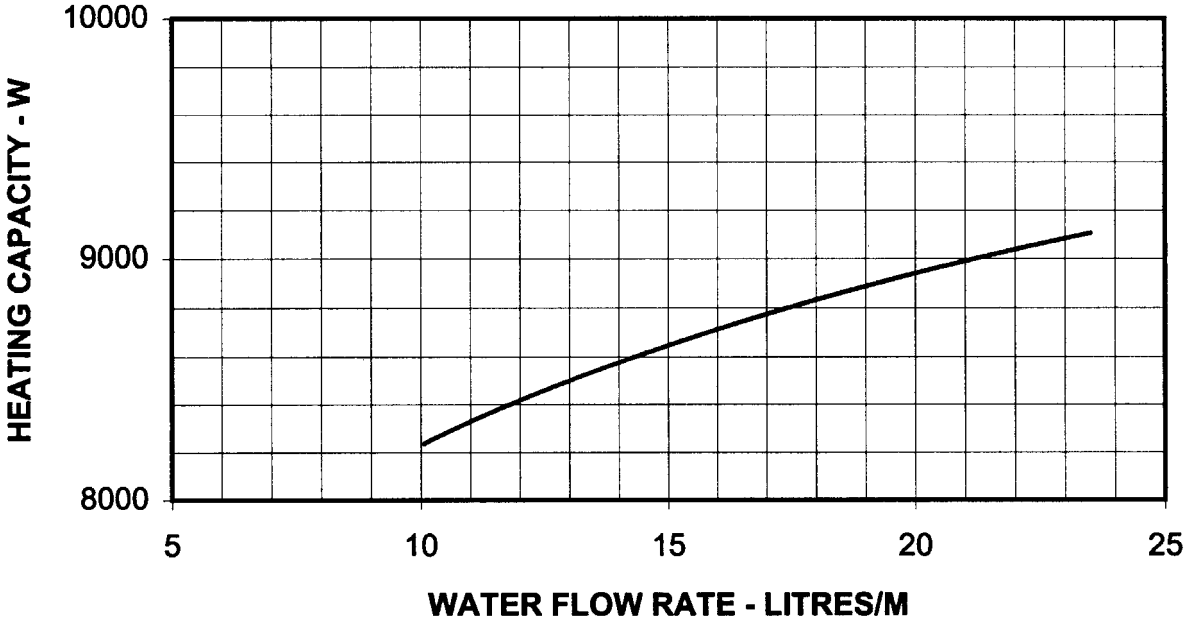
MCC010CW



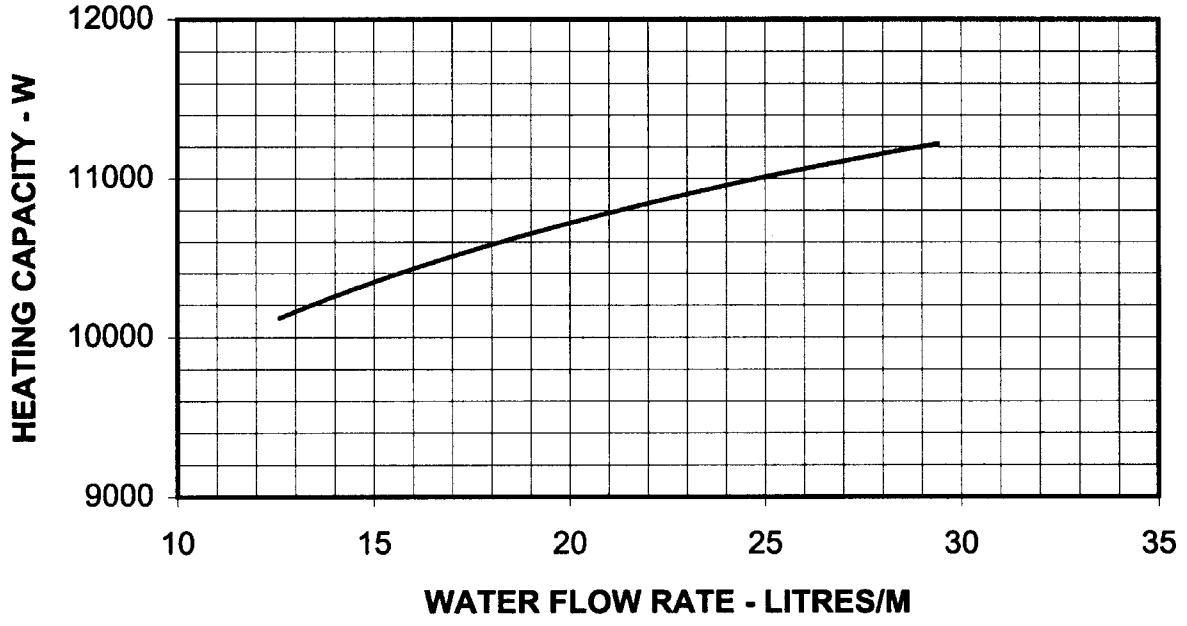
MCC015CW



MCC020CW



MCC025CW



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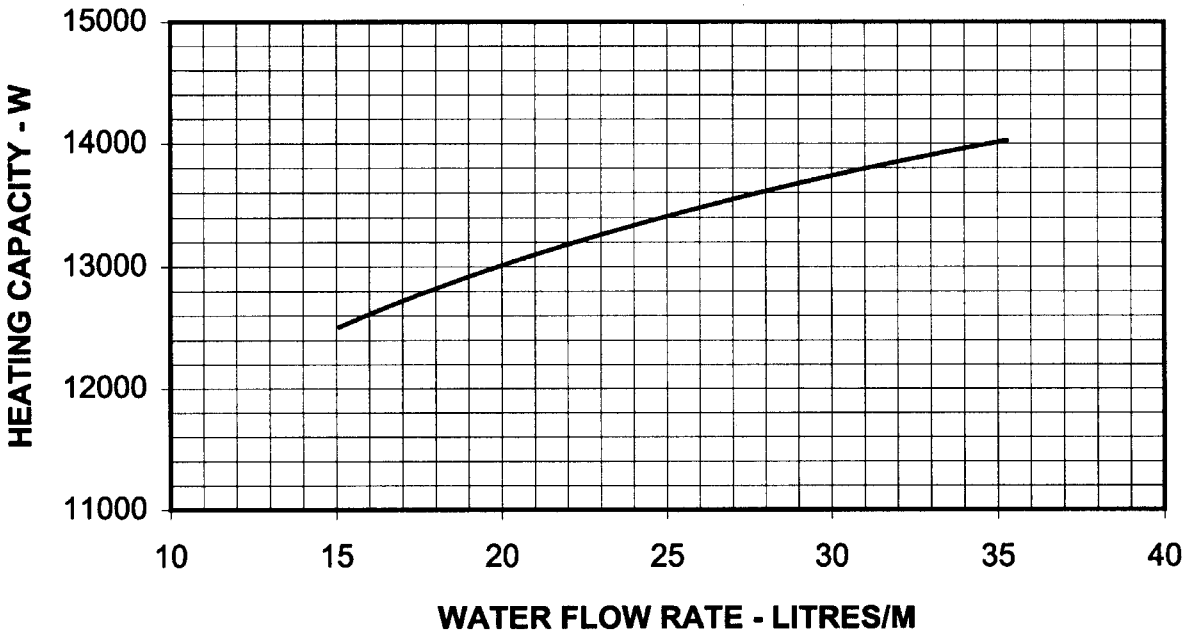
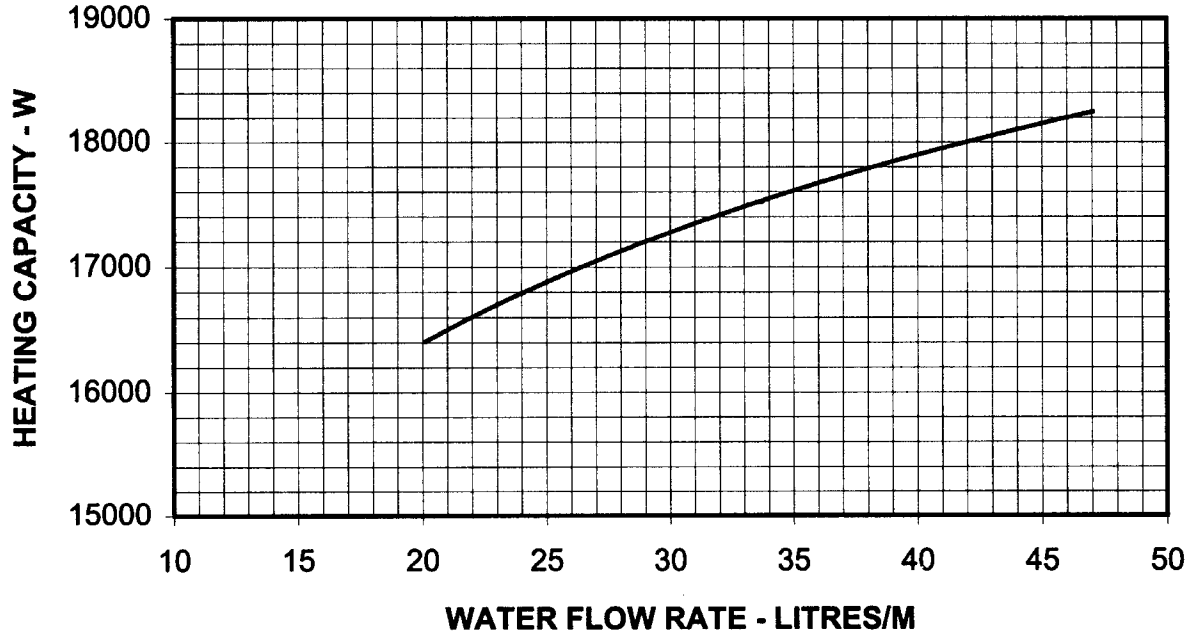


MCC040CW



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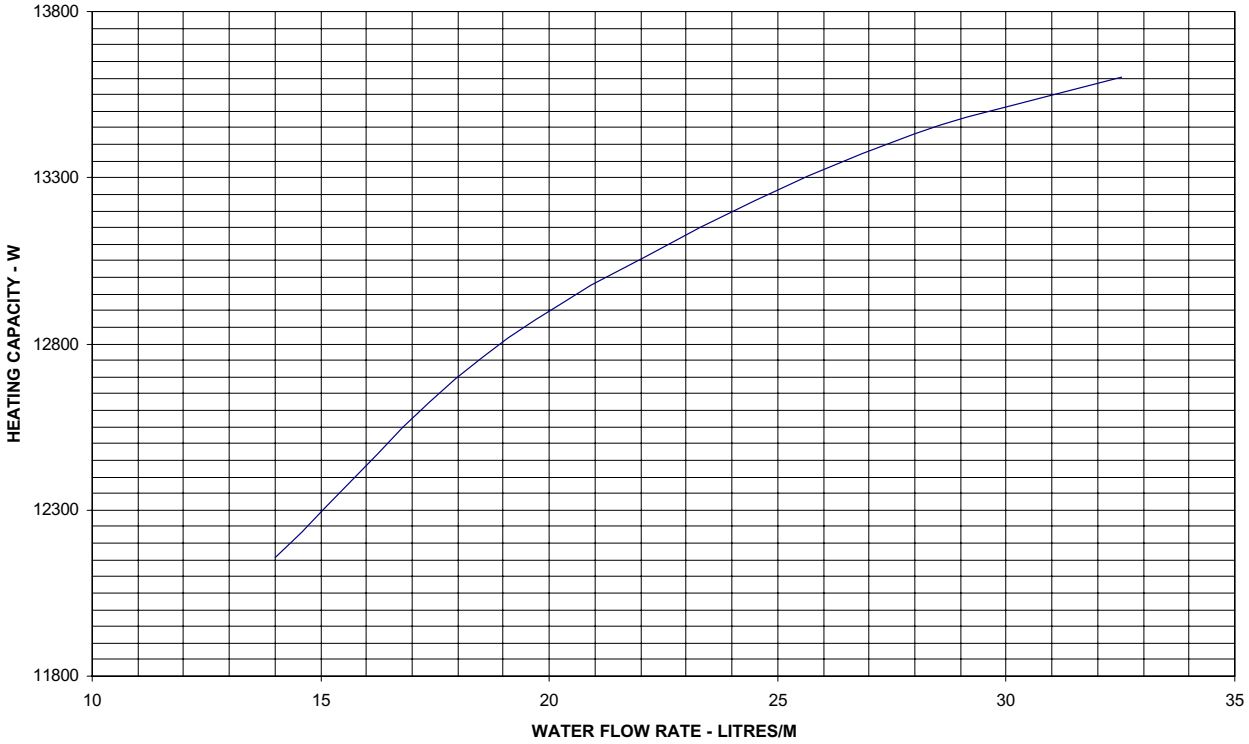

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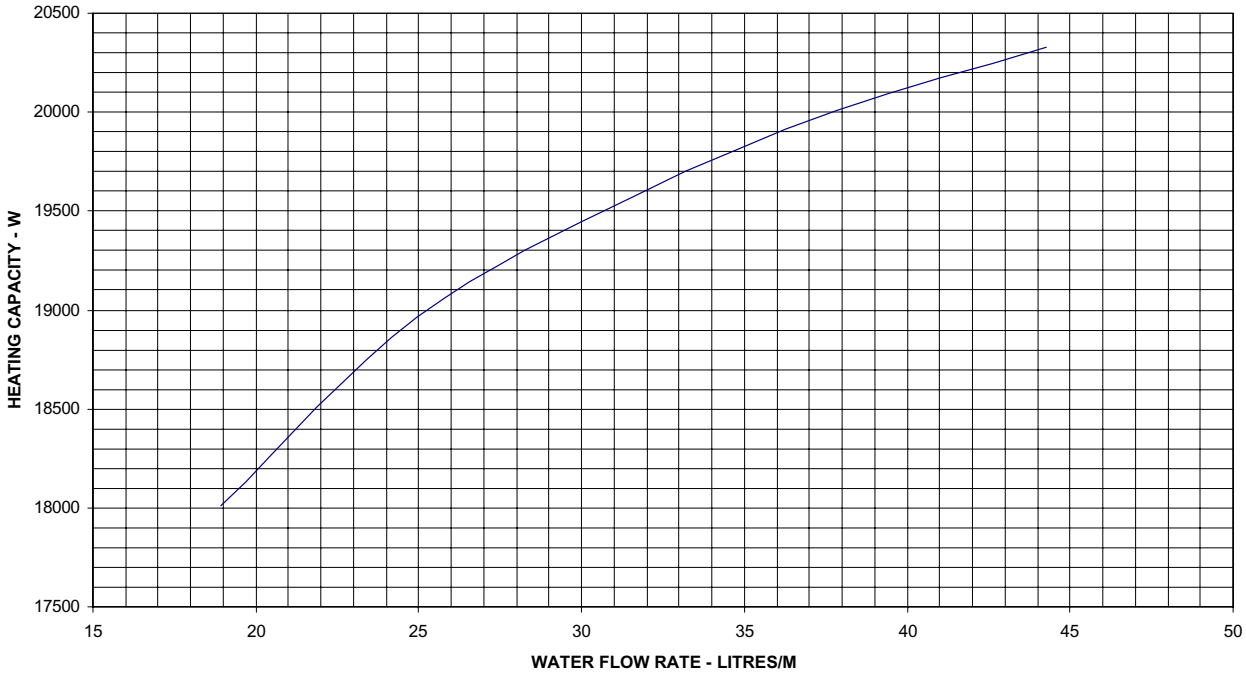

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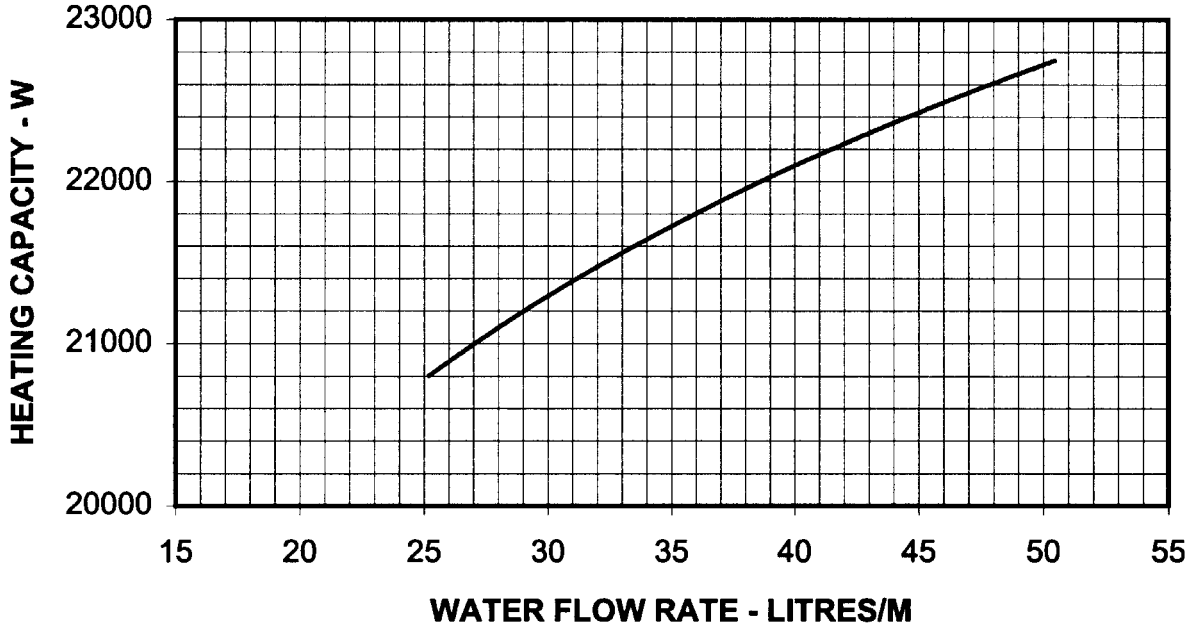

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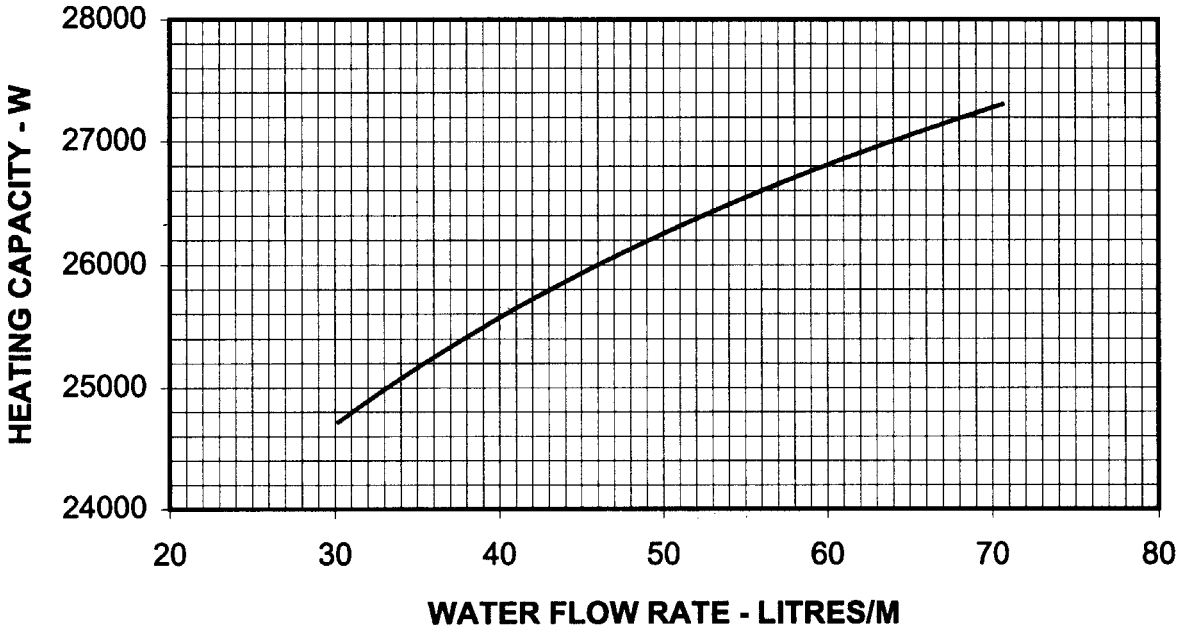
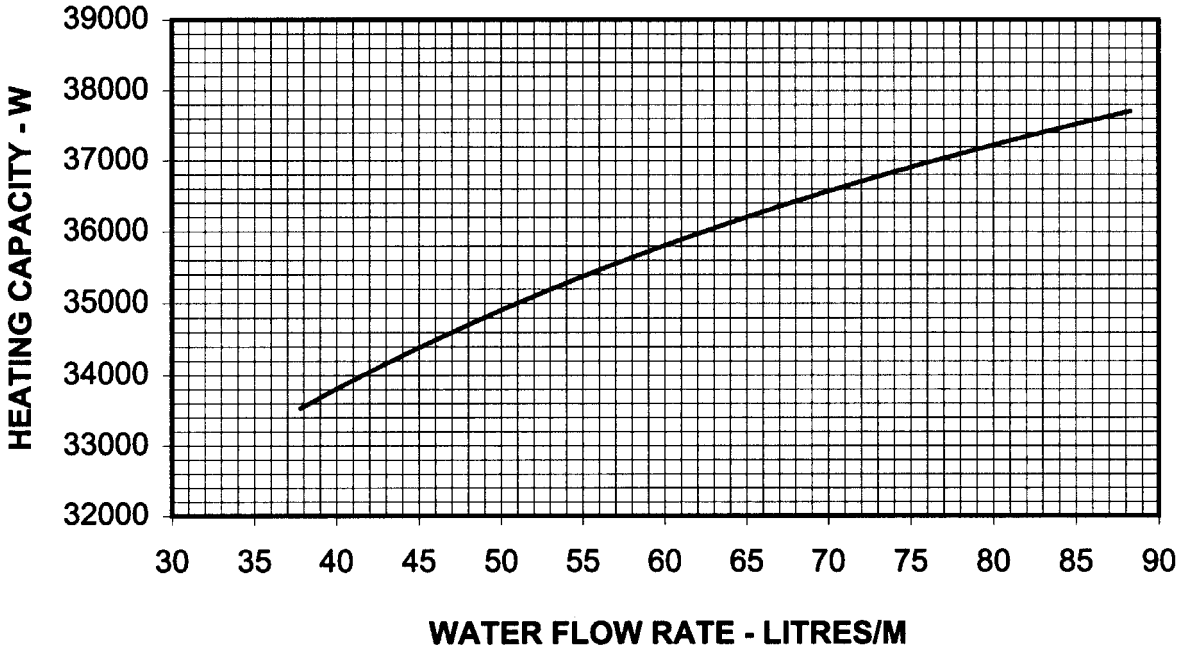
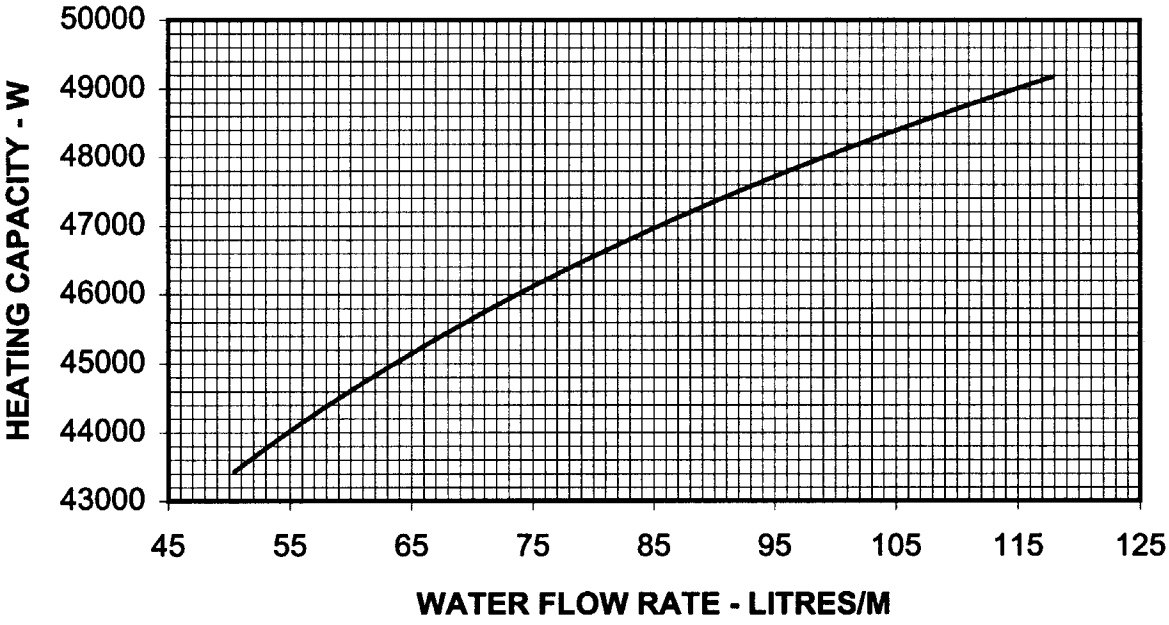


Ducted Blower Split Type

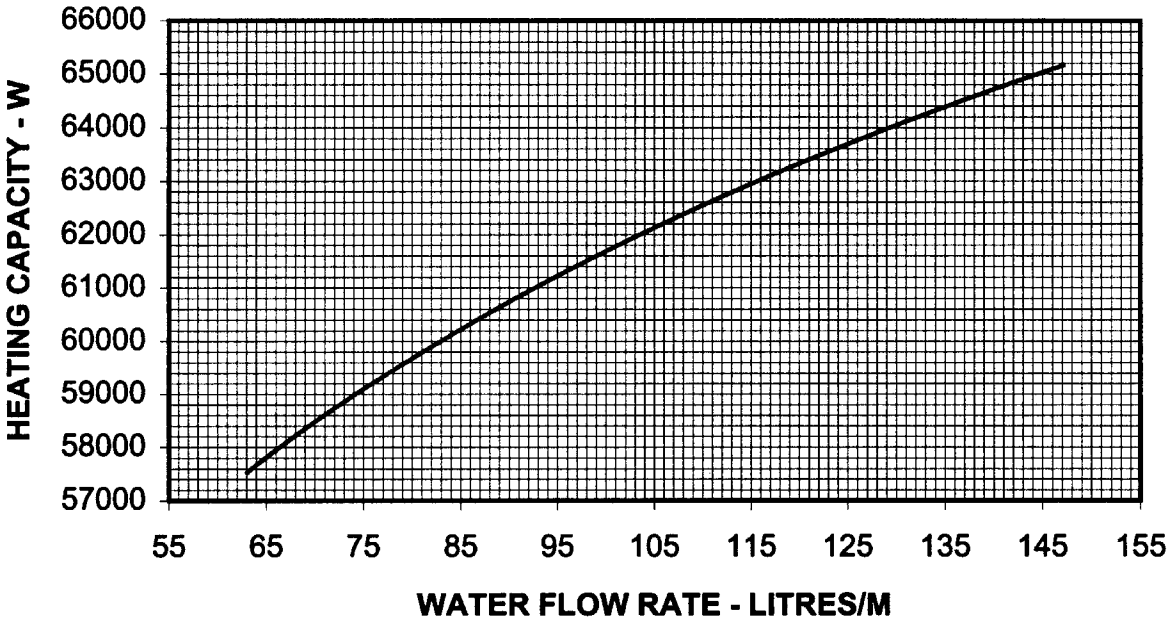
MDB075BW



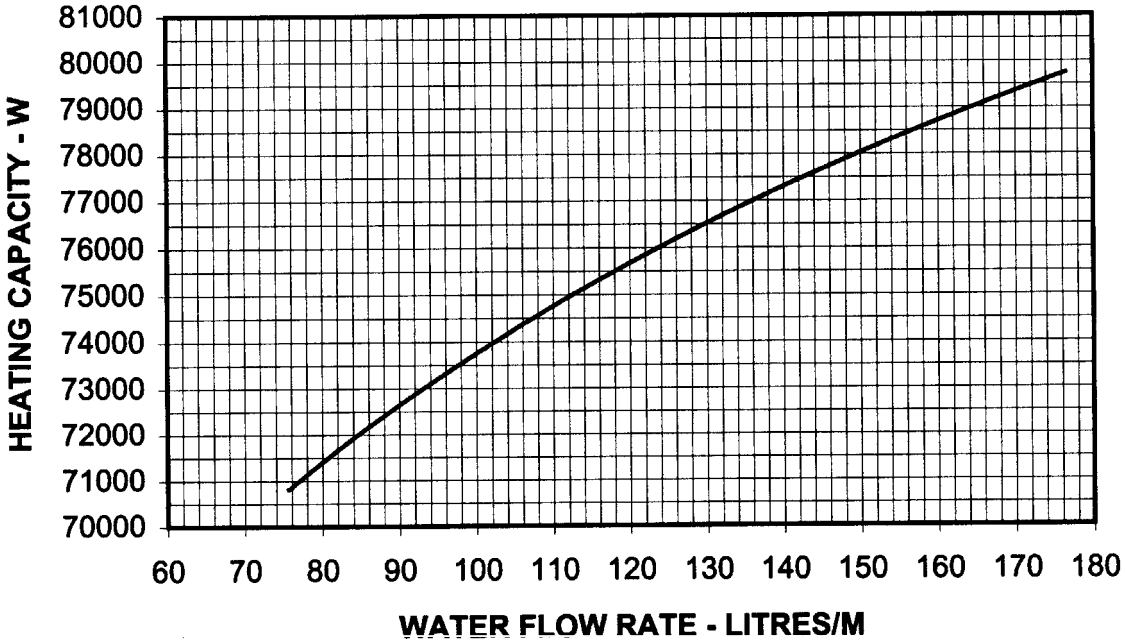
MDB100BW



MDB125BW



MDB150BW



Water Flow Rate Vs Pressure Drop

MODELS	FLOW RATE		WATER PRESSURE DROP	
	LITRES / M	USGPM	Pa	PSI
MWM010FW	4.54	1.20	3.67	0.533
	6.06	1.60	6.08	0.882
	7.57	2.00	9.01	1.308
	9.08	2.40	12.55	1.822
	10.60	2.80	16.57	2.405
MWM015FW	6.06	1.60	6.08	0.883
	8.06	2.13	10.15	1.473
	10.11	2.67	15.22	2.209
	12.11	3.20	21.11	3.064
	14.12	3.73	27.90	4.049
MWM020FW	9.58	2.53	2.29	0.333
	12.76	3.37	3.80	0.551
	15.97	4.22	5.69	0.826
	19.15	5.06	7.88	1.144
	22.33	5.90	10.40	1.510
MWM025FW	12.07	3.19	3.45	0.501
	16.12	4.26	5.80	0.842
	20.17	5.33	8.67	1.258
	24.19	6.39	12.04	1.747
	28.24	7.46	15.95	2.315

Note :

a. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * (EWT°C * 1.8 + 32)

b. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * EWT°F

MODELS	FLOW RATE		WATER PRESSURE DROP	
	LITRES / M	USGPM	Pa	PSI
MCK020AW	10.07	2.66	8,681	1.26
	13.44	3.55	14,614	2.12
	16.81	4.44	21,869	3.17
	20.17	5.32	30,385	4.41
	26.55	7.02	40,589	5.89
MCK025AW	12.60	3.33	13,043	1.89
	16.81	4.44	21,890	3.18
	23.45	6.22	40,614	5.89
	25.21	6.66	46,204	6.71
	29.41	7.77	61,479	8.92
MCK030AW	15.10	3.99	18,079	2.62
	20.14	5.32	30,440	4.42
	26.84	7.11	52,258	7.58
	30.14	7.97	64,794	9.40
	35.28	9.32	86,339	12.53
MCK040AW	20.14	5.32	30,468	4.42
	26.87	7.10	52,075	7.56
	30.14	8.00	64,821	9.41
	33.61	8.88	78,911	11.45
	40.31	10.65	110,901	16.10
MCK050AW	25.21	6.66	46,287	6.72
	33.49	8.88	78,925	11.46
	42.06	11.11	120,093	17.43
	50.42	13.32	169,129	24.55
	58.86	15.55	228,341	33.14

MODELS	FLOW RATE		WATER PRESSURE DROP	
	LITRES / M	USGPM	Pa	PSI
MCK015BW	7.53	1.99	1.26	0.183
	10.07	2.66	2.09	0.304
	12.60	3.33	3.13	0.455
	15.10	3.99	4.33	0.628
	17.64	4.66	5.73	0.831
MCK020BW	10.07	2.66	4.02	0.583
	13.44	3.55	6.74	0.978
	16.81	4.44	10.07	1.461
	20.14	5.32	13.96	2.026
	23.50	6.21	18.31	2.658
MCK025BW	12.60	3.33	5.98	0.868
	16.81	4.44	10.07	1.462
	21.01	5.55	15.08	2.189
	25.21	6.66	21.04	3.053
	29.41	7.77	28.10	4.078
MCK030BW	15.10	3.99	8.32	1.208
	20.14	5.32	15.22	2.209
	25.21	6.66	21.04	3.054
	30.24	7.99	29.59	4.295
	35.28	9.32	39.36	5.713

Note :

a. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * (EWT°C * 1.8 + 32)

b. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * EWT°F

MODELS	FLOW RATE		WATER PRESSURE DROP	
	LITRES / M	USGPM	Pa	PSI
MCM020DW	10.07	2.66	6,704	0.97
	13.44	3.55	11,293	1.64
	16.75	4.44	16,915	2.46
	20.14	5.32	23,509	3.41
	23.50	6.21	31,418	4.56
MCM025DW	12.60	3.33	10,080	1.46
	16.81	4.44	16,929	2.46
	18.42	4.88	20,191	2.83
	25.21	6.66	35,766	5.19
	29.41	7.77	47,603	6.91
MCM030DW	15.10	3.99	9,329	1.35
	21.77	5.76	18,215	2.64
	25.21	6.66	23,578	3.42
	30.24	7.99	33,141	4.81
	35.28	9.32	44,075	6.40
MCM040DW	20.14	5.32	14,800	2.15
	26.87	7.10	24,900	3.61
	31.82	8.44	34,279	4.98
	40.31	10.65	52,681	7.65
	47.05	12.43	70,195	10.19
MCM050DW	25.21	6.66	22,186	3.22
	33.61	8.88	37,688	5.47
	40.19	10.66	52,731	7.65
	42.06	11.11	56,987	8.27
	50.45	13.33	79,986	11.61
	58.86	15.55	106,726	15.49

Note :

a. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * (EWT°C * 1.8 + 32)

b. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * EWT°F

MODELS	FLOW RATE		WATER PRESSURE DROP	
	LITRES / M	USGPM	Pa	PSI
MCC010CW	5.03	1.33	10,266	1.49
	6.70	1.77	17,204	2.50
	8.40	2.22	25,900	3.76
	10.07	2.66	35,993	5.22
	11.73	3.10	47,954	6.96
MCC015CW	7.53	1.99	23,702	3.44
	10.07	2.66	40,086	5.82
	12.61	3.33	60,894	8.84
	13.45	3.55	68,612	9.96
	15.10	3.99	85,119	12.35
	17.64	4.66	113,685	16.50
MCC020CW	10.07	2.66	14,331	2.08
	13.44	3.55	24,129	3.50
	16.75	4.44	36,500	5.30
	20.14	5.32	50,972	7.40
	23.50	6.21	67,942	9.86
MCC025CW	12.60	3.33	10,459	1.52
	16.81	4.44	17,556	2.55
	20.10	5.33	24,455	3.55
	25.21	6.66	37,082	5.38
	29.41	7.77	49,346	7.16
MCC028CW	14.01	3.7	5594	0.78
	18.55	4.9	9273	1.29
	23.47	6.2	13999	1.95
	28.01	7.4	19528	2.72
	32.55	8.6	25703	3.58
MCC030CW	15.10	3.99	4,603	0.67
	20.14	5.32	7,717	1.12
	24.28	6.44	10,852	1.58
	30.24	7.99	16,067	2.33
	35.28	9.32	21,269	3.09
MCC038CW	18.93	5.0	11568	1.61
	24.98	6.6	19062	2.66
	31.80	8.4	29289	4.08
	37.85	10.0	40957	5.71
	44.29	11.7	54784	7.64
MCC040CW	20.14	5.32	8,358	1.21
	26.87	7.10	14,035	2.04
	31.82	8.44	19,194	2.79
	40.31	10.65	29,565	4.29
	47.05	12.43	39,335	5.71
MCC050CW	25.21	6.66	14,476	2.10
	33.61	8.88	24,356	3.54
	41.03	10.89	35,408	5.14
	42.05	11.11	36,930	5.36
	50.45	13.33	51,730	7.51
	58.86	15.55	68,914	10.00
MCC060CW	30.24	7.99	22,296	3.24
	40.31	10.65	37,929	5.51
	49.41	13.11	55,316	8.03
	60.52	15.99	80,413	11.67
	70.63	18.66	107,394	15.59

Note :

a. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * (EWT°C * 1.8 + 32)

b. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * EWT°F

MODELS	FLOW RATE		WATER PRESSURE DROP	
	LITRES / M	USGPM	Pa	PSI
MDB075BW	37.81	9.99	19,499	2.83
	50.42	13.32	32,900	4.78
	63.64	16.88	50,000	7.26
	75.66	19.99	70,154	10.18
	88.27	23.32	93,601	13.59
MDB100BW	50.45	13.33	6,304	0.92
	67.26	17.77	10,549	1.53
	82.06	21.77	15,179	2.20
	100.91	26.67	22,206	3.22
	117.71	31.11	29,503	4.28
MDB125BW	63.06	16.66	7,648	1.11
	84.06	22.22	12,822	1.86
	108.86	28.88	20,377	2.96
	126.12	33.33	27,036	3.92
	17.12	38.88	35,945	5.22
MDB150BW	75.66	20.00	5,567	0.81
	100.91	26.67	9,357	1.36
	136.49	36.22	15,897	2.31
	151.36	40.00	19,499	2.83
	176.61	46.67	26,037	3.78

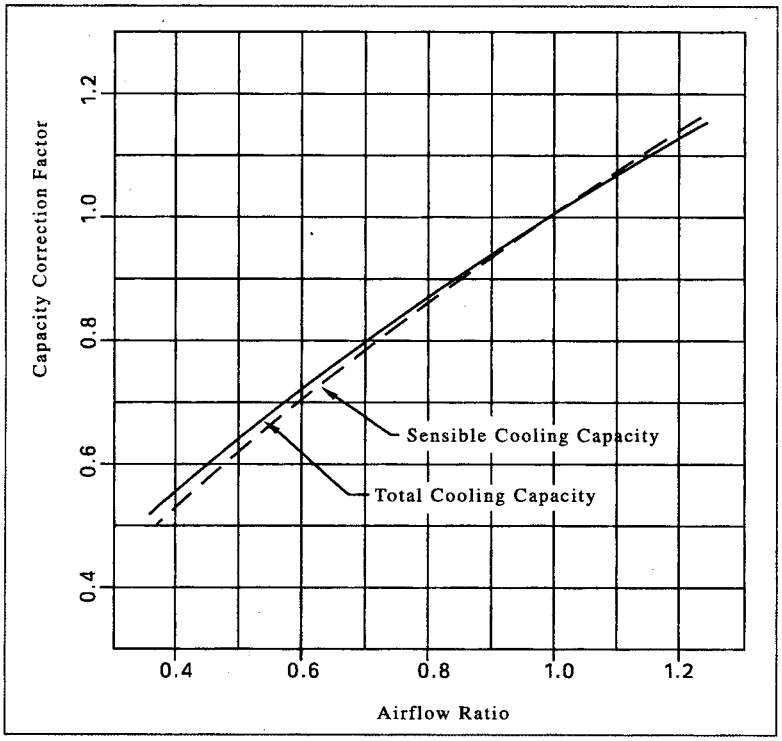
Note :

a. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * (EWT°C * 1.8 + 32)

b. PRESSURE DROP CORRECTION FACTOR = 1.2947 – 0.0021 * EWT°F

Correction Factors

AIRFLOW CAPACITY
CORRECTION FACTORS



Water temperature rise is held as constant.

ALTITUDE CORRECTION FACTORS

Elevation, m	Total Capacity	Sensible Capacity
0	1.00	1.00
300	0.99	0.96
600	0.98	0.93
900	0.97	0.90
1200	0.96	0.86
1500	0.94	0.83
1800	0.93	0.80

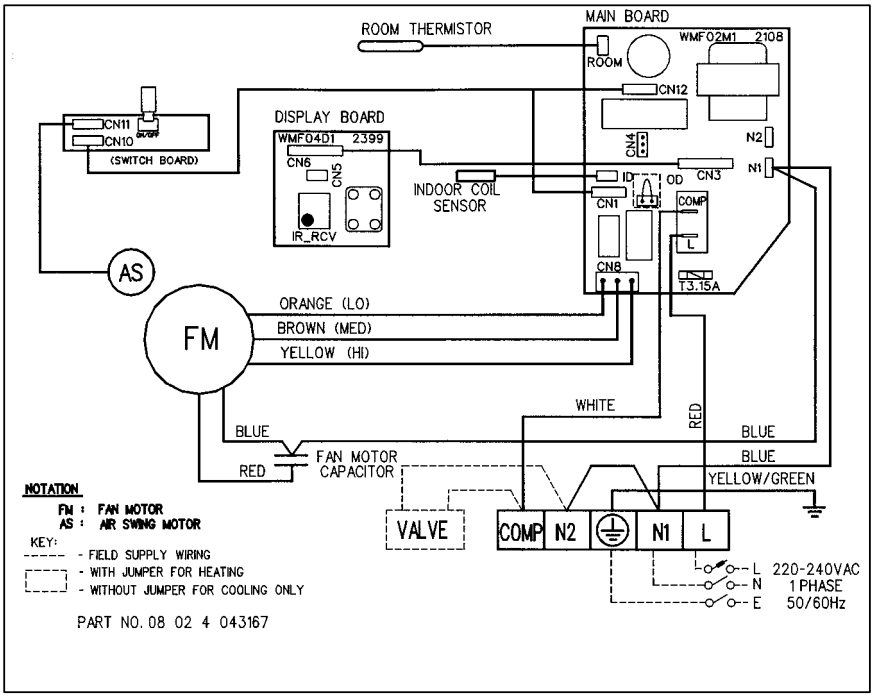
HEATING CAPACITY CORRECTION FACTORS

EAT °C	ENTERING TEMPERATURE, °C										
	37.8	**43.3**	**45.0**	**48.8**	**54.4**	**60.0**	**65.5**	**71.1**	**76.7**	**82.2**	**87.7**
4.4	0.838	0.980	1.021	1.122	1.265	1.406	1.552	1.698	1.845	1.988	2.134
7.2	0.771	0.913	0.954	1.055	1.198	1.379	1.485	1.631	1.778	1.920	2.067
10.0	0.700	0.843	0.885	0.986	0.130	1.272	1.417	1.563	1.710	1.853	2.000
12.7	0.631	0.773	0.817	0.918	1.062	1.205	1.349	1.495	1.639	1.786	1.931
15.5	0.562	0.705	0.748	0.848	0.992	1.137	1.281	1.427	1.572	1.719	1.865
18.3	0.493	0.636	0.679	0.779	0.923	1.070	1.212	1.358	1.504	1.650	1.799
21.1	0.424	0.567	0.610	0.711	0.855	1.000	1.146	1.290	1.438	1.583	1.730
23.9	0.354	0.498	0.541	0.642	0.786	0.932	1.078	1.222	1.369	1.515	1.664
26.7	0.284	0.428	0.471	0.573	0.717	0.863	1.008	1.155	1.302	1.449	1.597

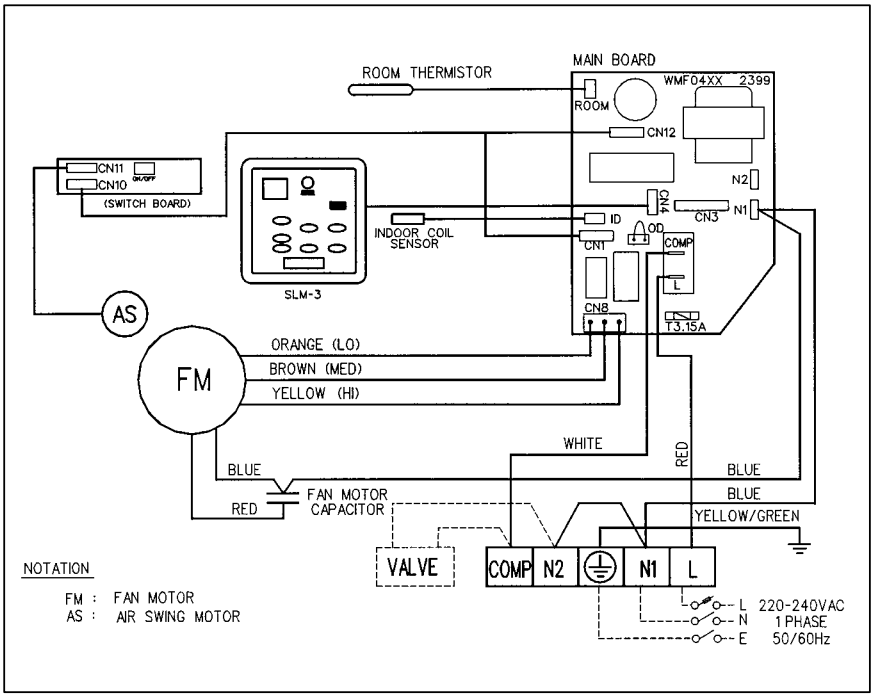
Notes : Adjusted capacity, W (@ Nominal air flow) = base heating capacity (@ nominal 60°C EWT, 21.1°C EAT) x Heating Capacity Correction Factor

Wiring Diagrams

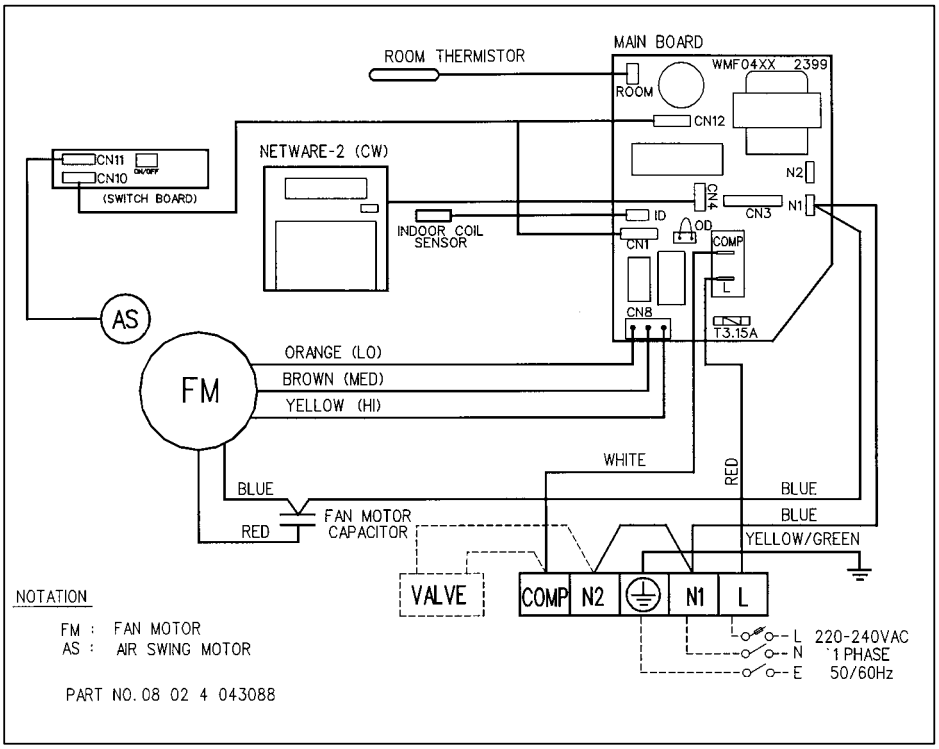
Model : MWM005/007/010/015FW (G6 Controller)



Model : MWM005/007/010/015FW (SLM-3)



Model : MWM005/007/010/015FW (Netware 2)



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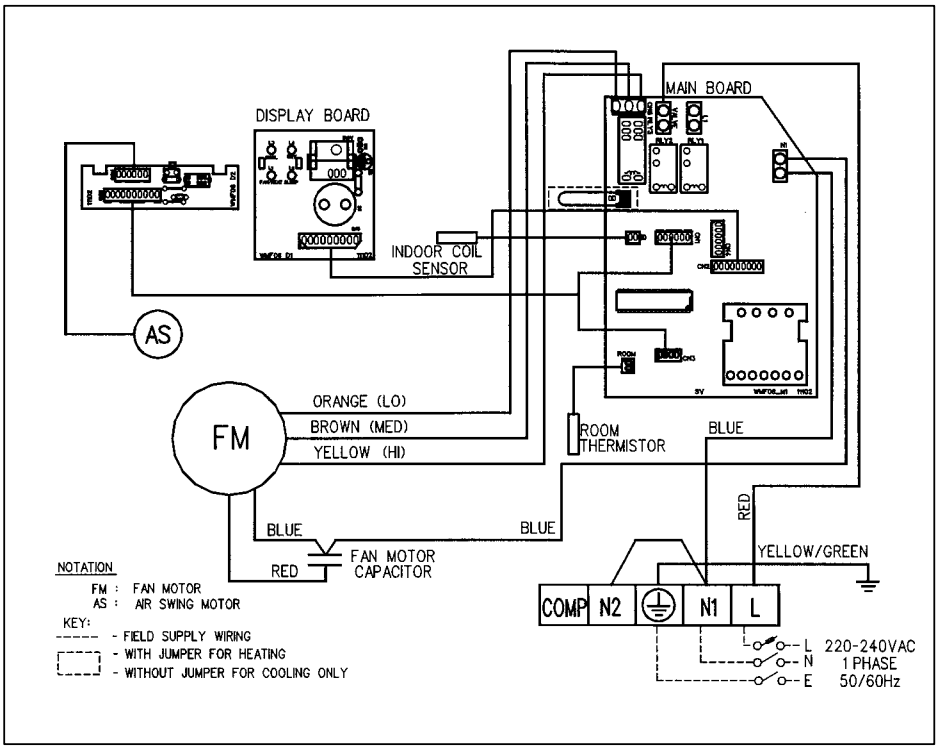

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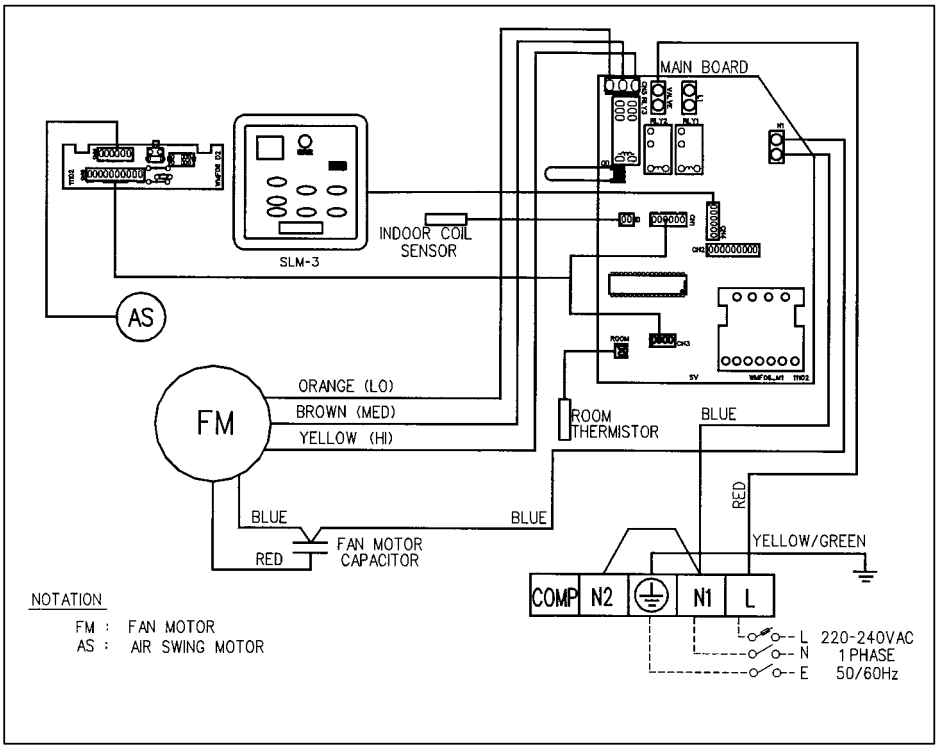

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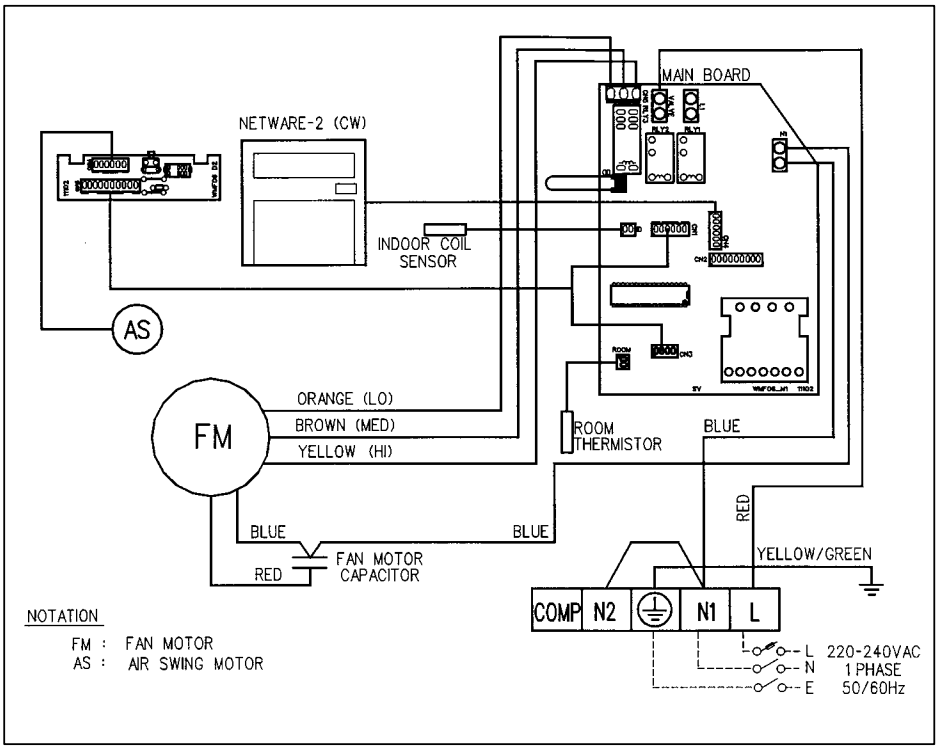
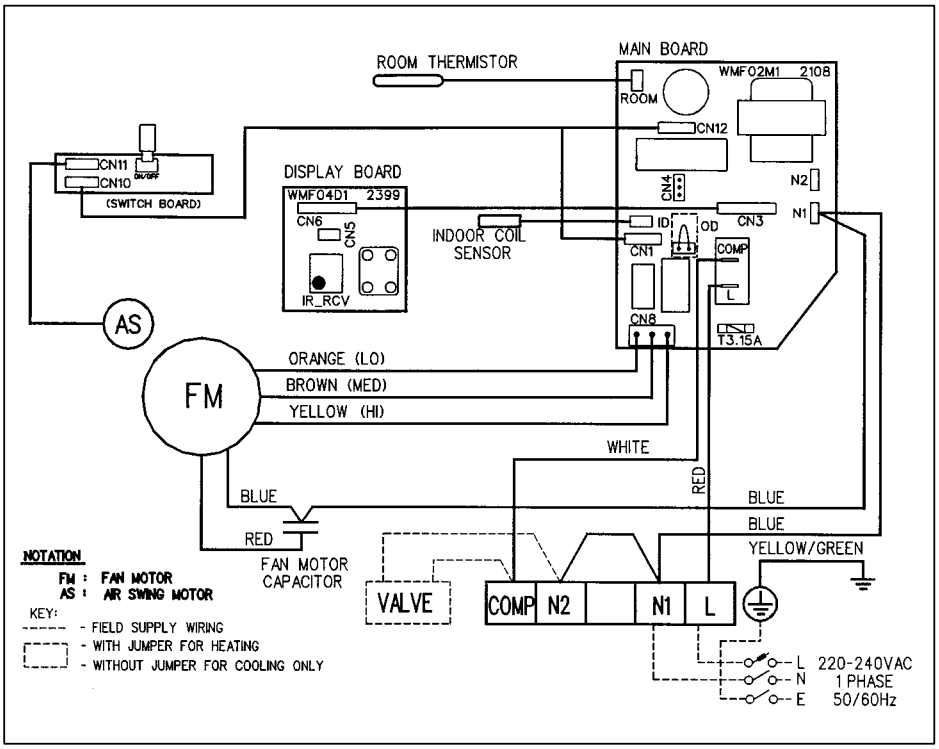
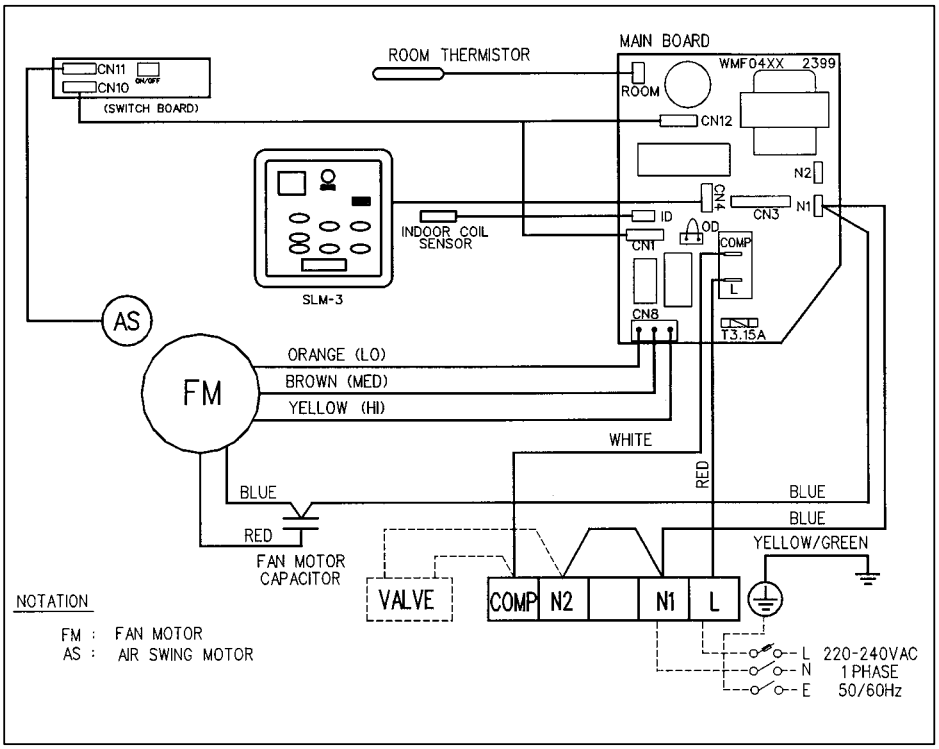


Model : MWM020/025FW (G6 Controller)



Model : MWM020/025FW (SLM-3)



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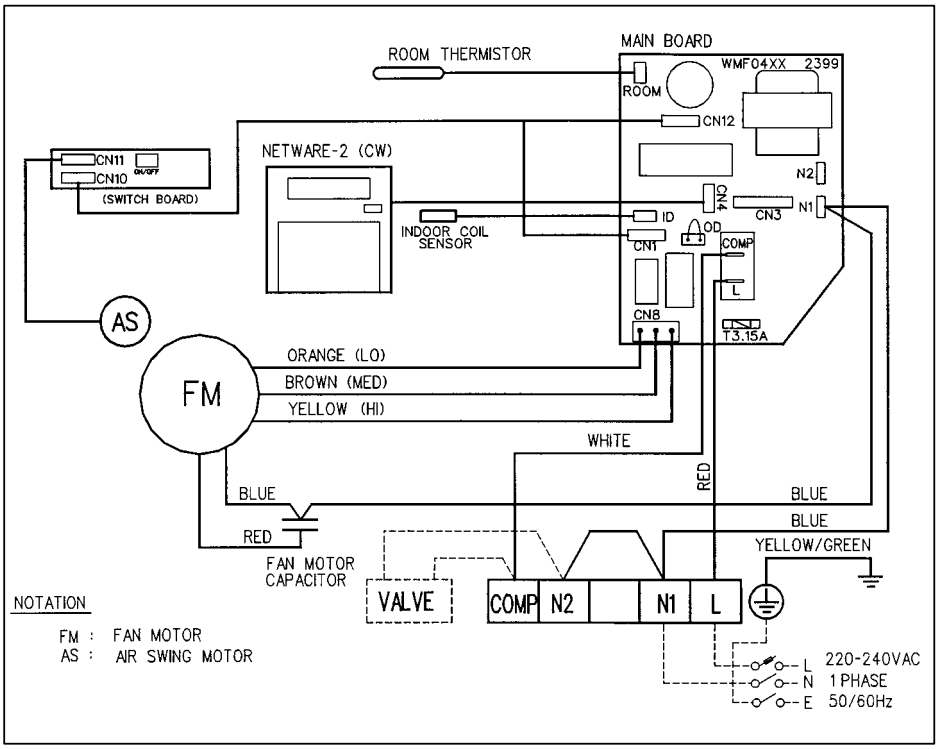

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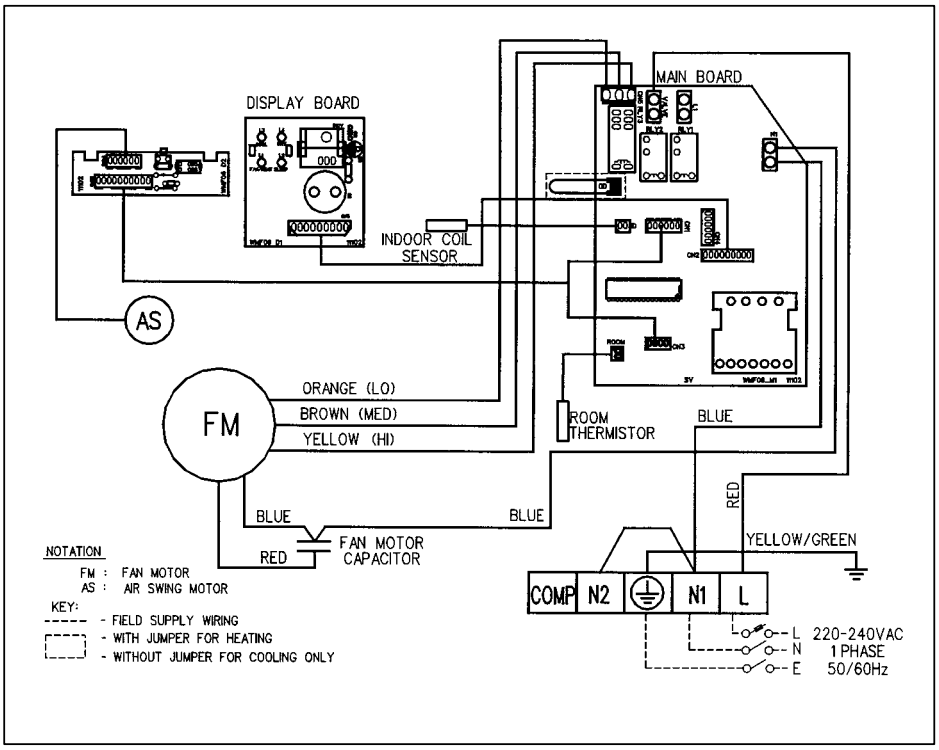
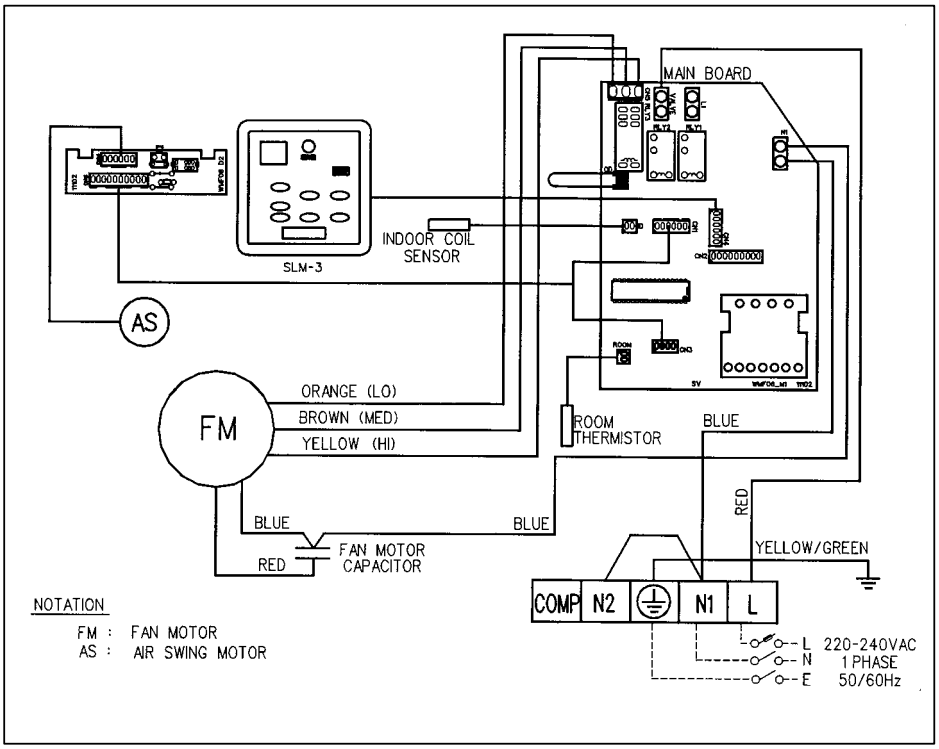
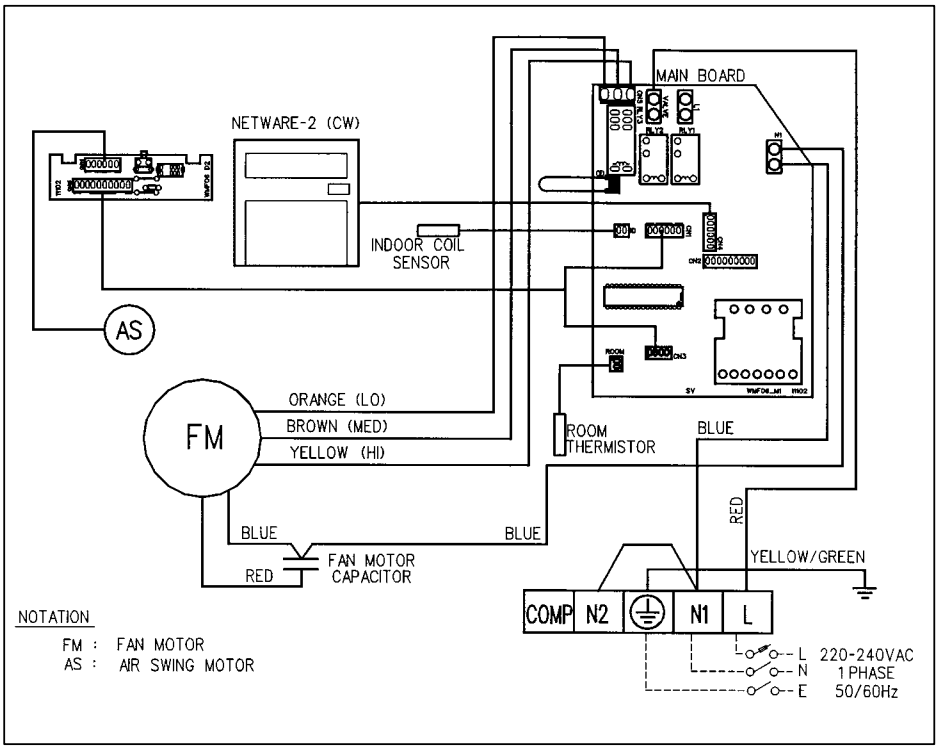


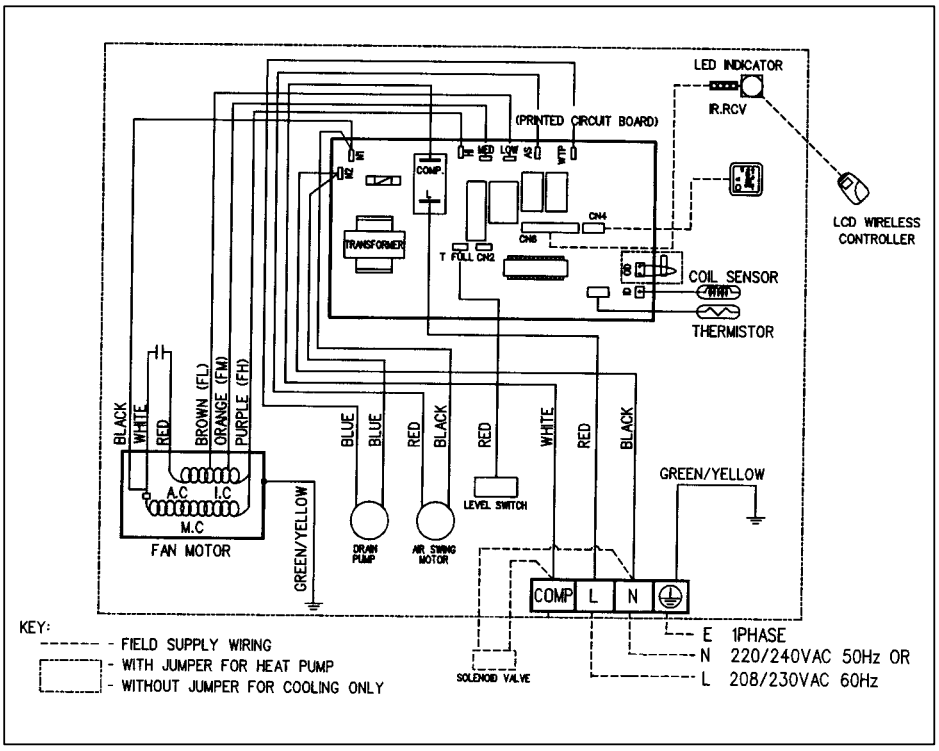
Model : MWM020/025FWN (SLM-3)



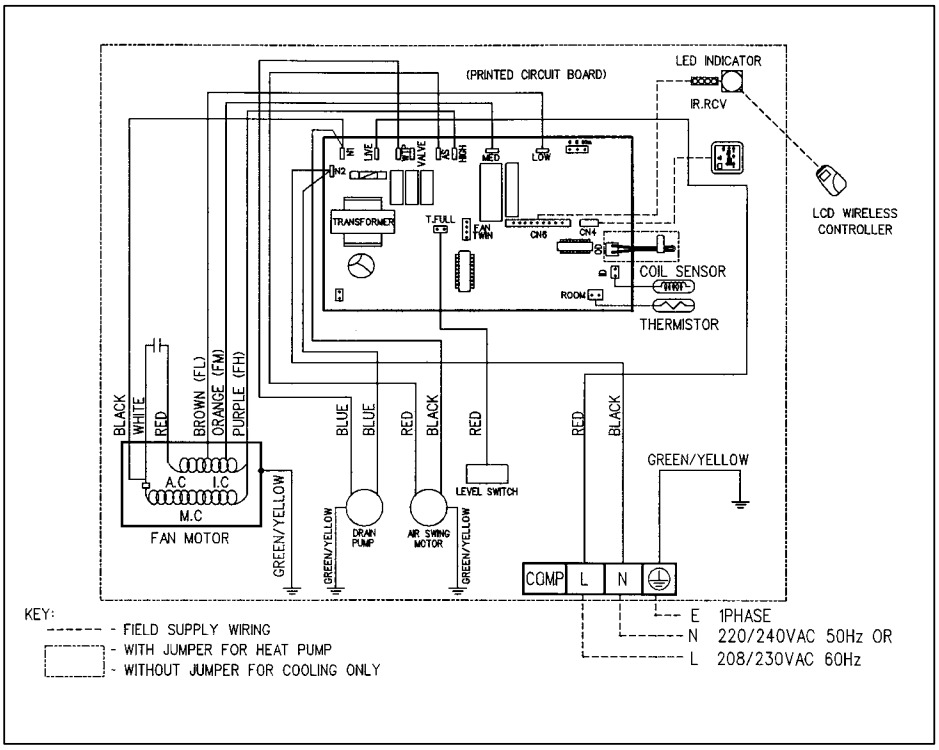
Model : MWM020/025FWN (Netware 2)



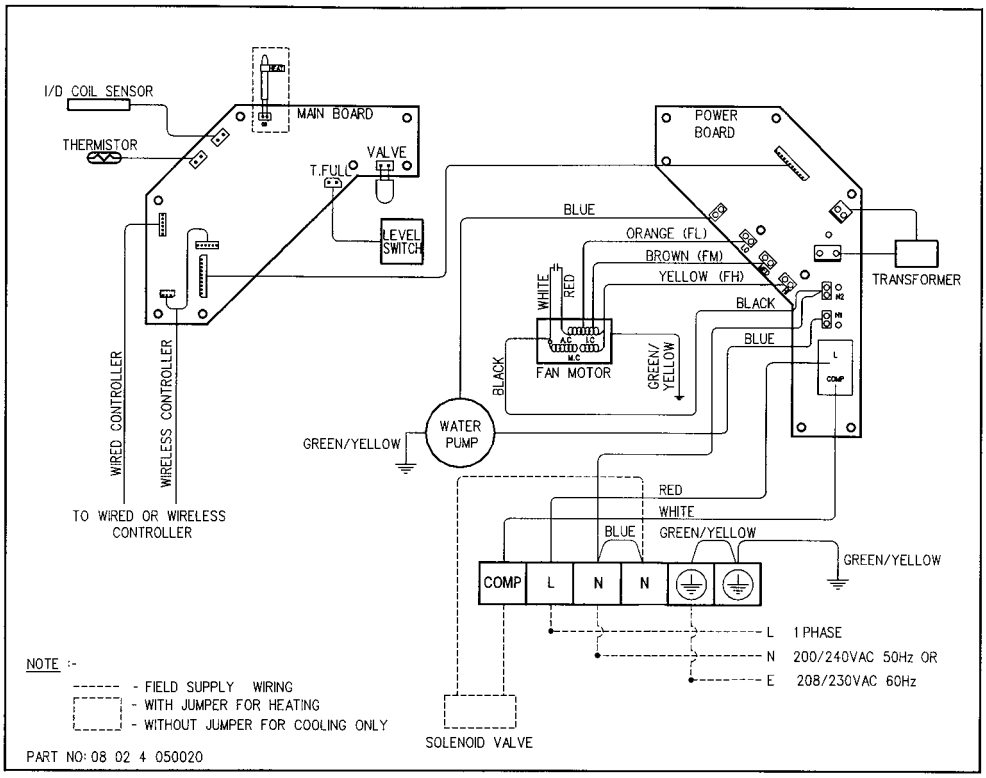
Model : MCK020/025/030/040/050AW C/W G6 Controller Or Netware-1 CW Wired Controller



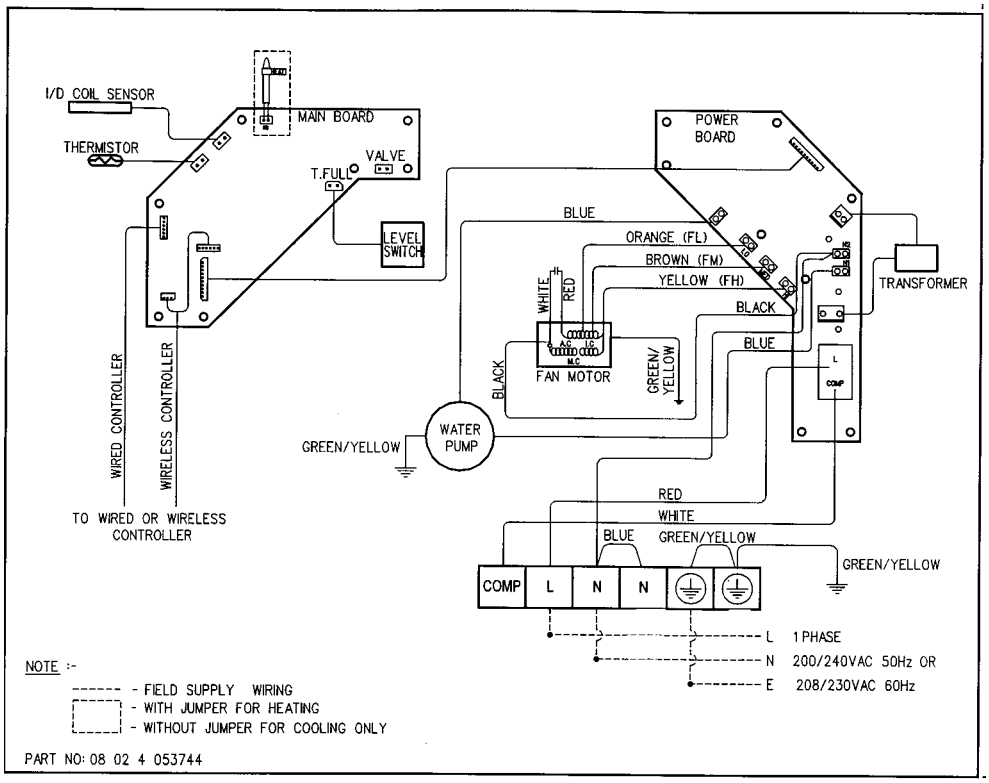
Model : MCK020/025/030/040/050AWN (With W1V3 Controller Without Valve)



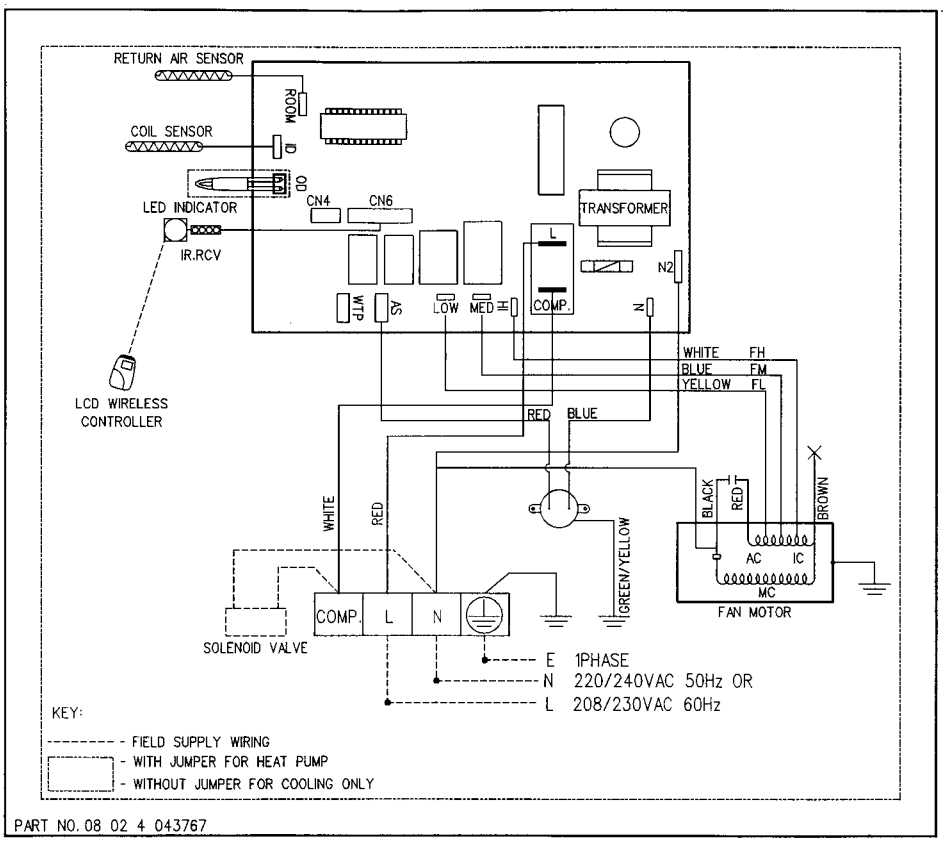
Model : MCK015/020/025/030BW



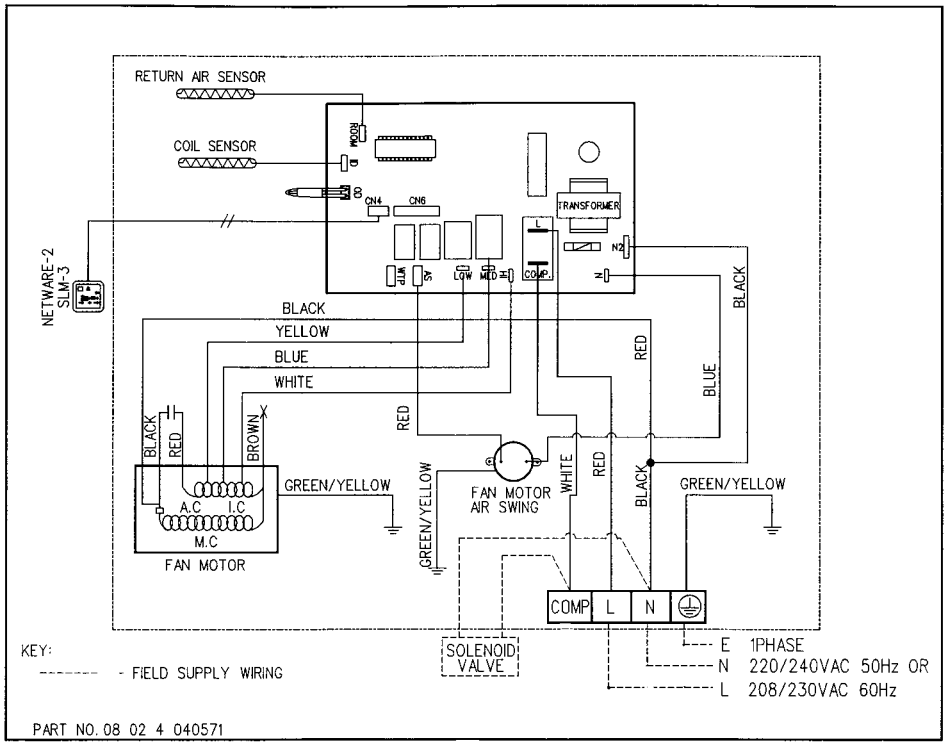
Model : MCK015/020/025/030BWN (W1V3 Valveless)



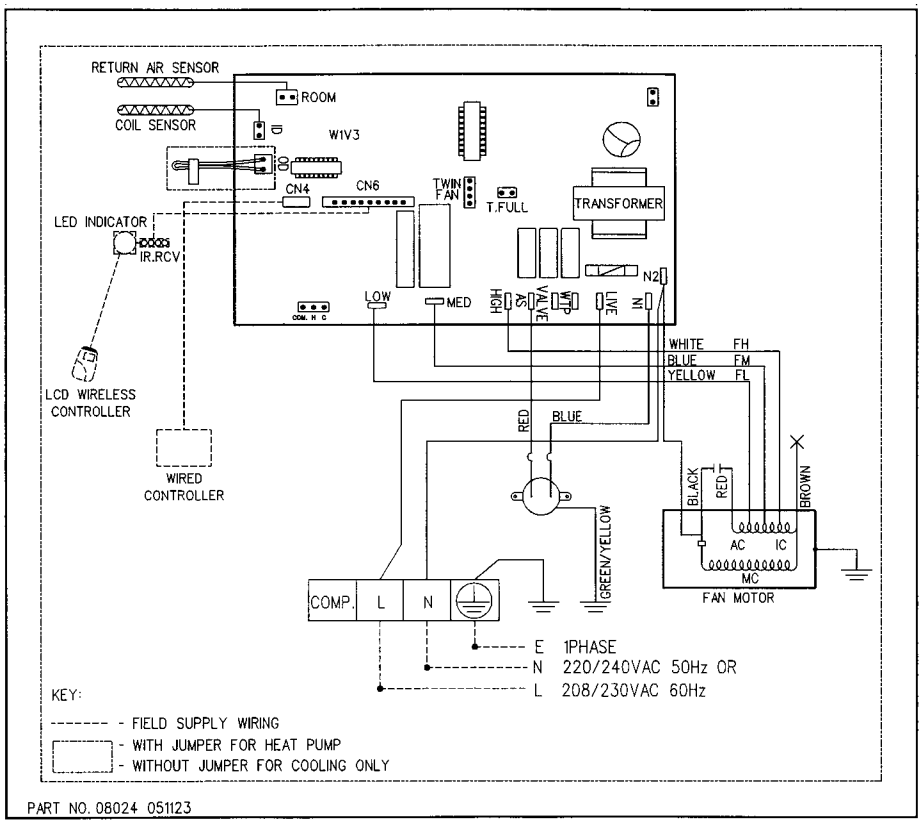
Model : MCM020/025/030/040/050DW (G6 CONTROLLER)



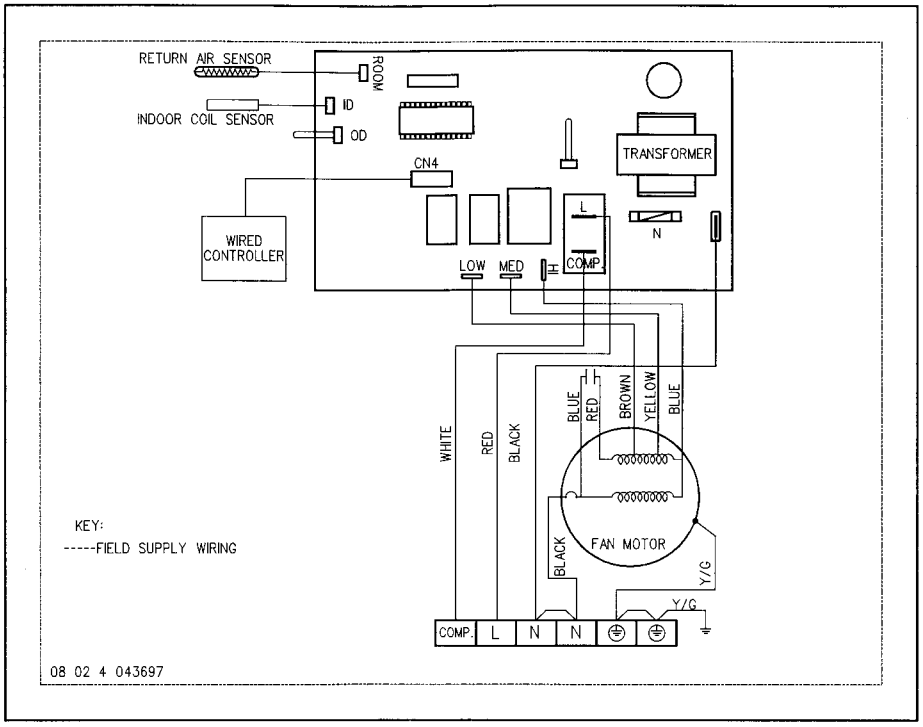
Model : MCM020/025/030/040/050DW (NETWARE 2)



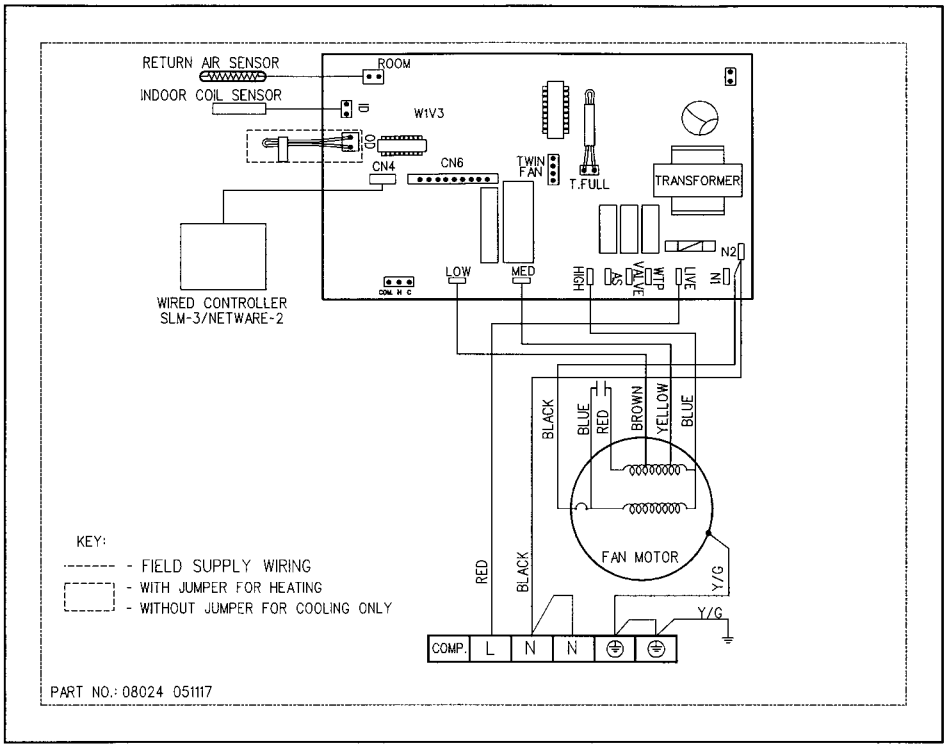
Model : MCM020/025/030/040/050DWN



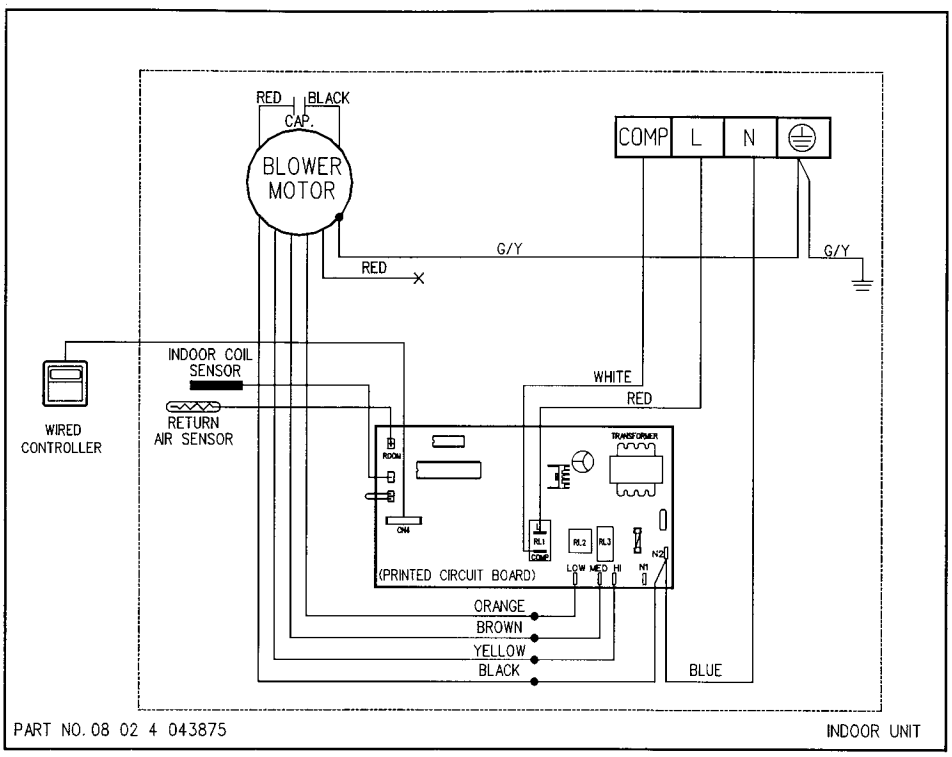
Model : MCC010/015/020/025CW (Netware 2 / SLM-3)



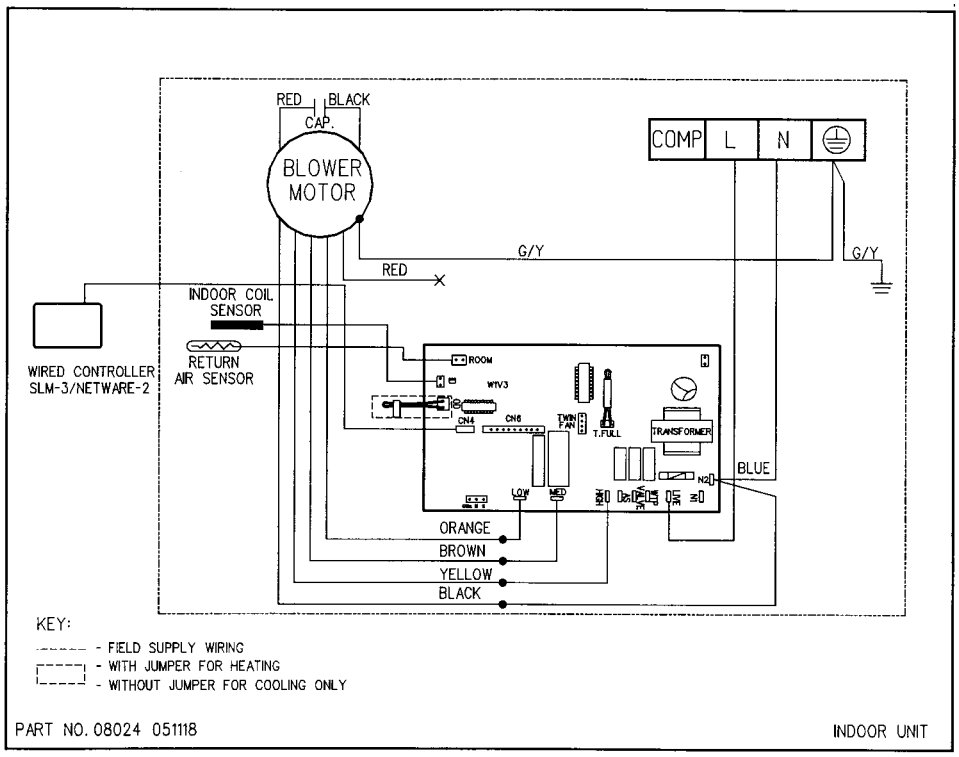
Model : MCC010/015/020/025CWN



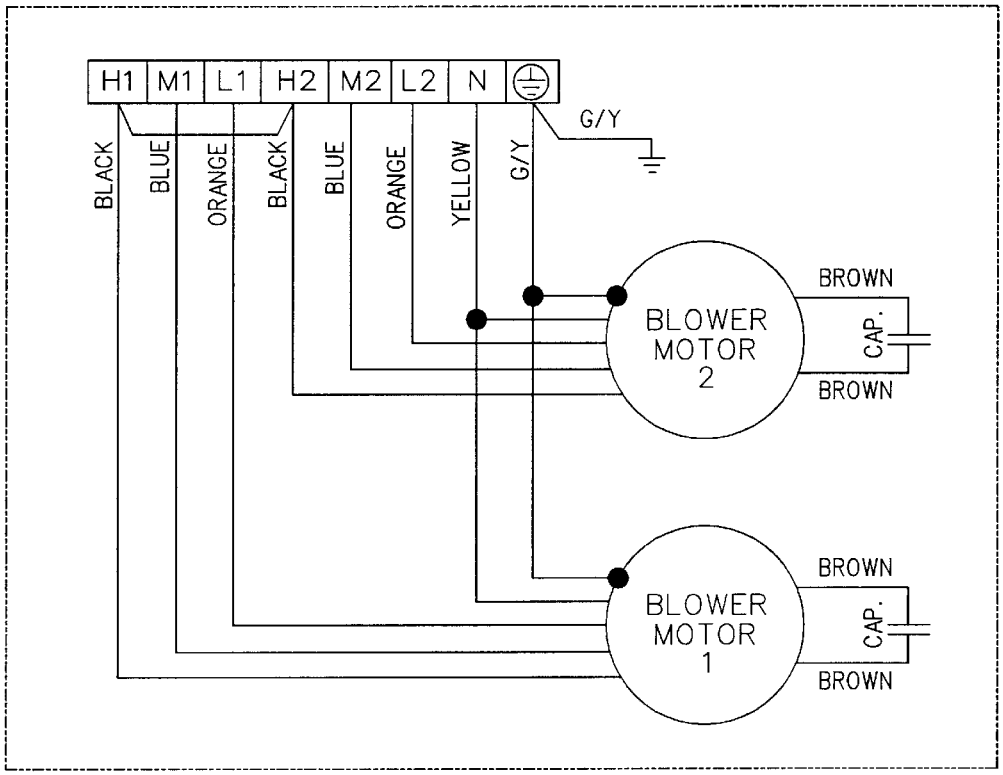
Model : MCC028/030/038/040/050/060CW



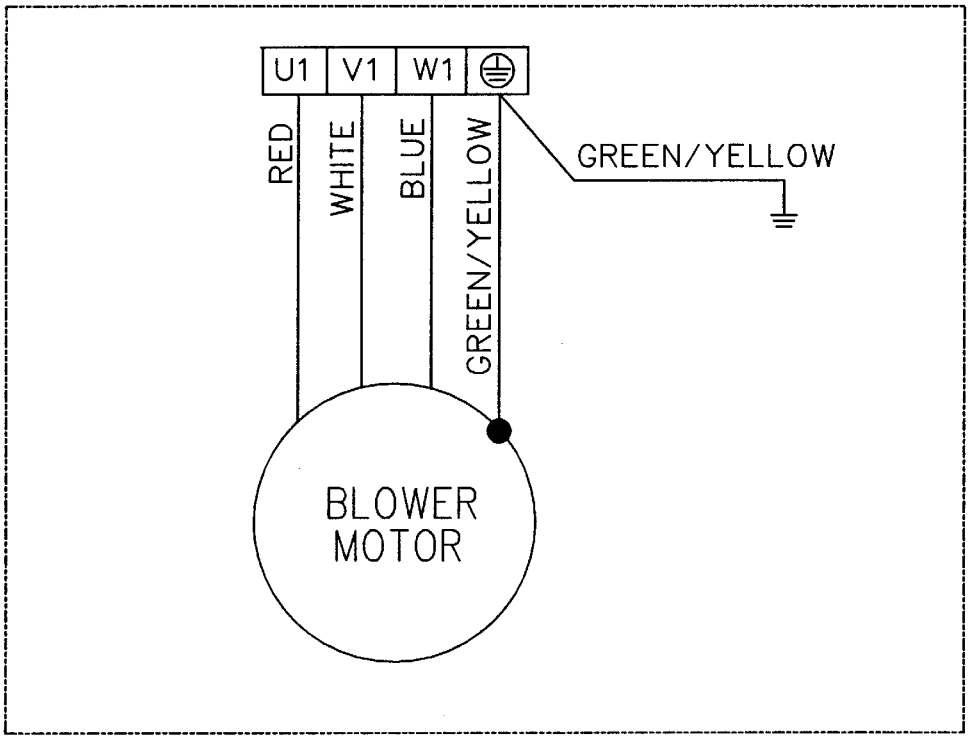
Model : MCC028/030/038/040/050/060CWN



Model : MDB075/100BW - WITHOUT CONTROLLER



Model : MDB125/150BW - WITHOUT CONTROLLER



Controllers

TYPE OF CONTROLLER VS TYPE OF FAN COIL

MODELS	STANDARD CONTROLLER	OPTIONAL CONTROLLER
MCK020~050AW	G6 WIRELESS CONTROL	NETWARE 2 CW (WIRED CONTROLLER)
MCM020~050DW	G6 WIRELESS CONTROL	NETWARE 2 CW (WIRED CONTROLLER)
MCC010~060CW	NETWARE 2 CW (WIRED CONTROLLER)	-
MDB075~150BW	WITHOUT CONTROLLER	-

SELF DIAGNOSIS TABLE

Wireless		Wired	Operation / Faulty Indication
Power LED	Other LEDs	7 Segment Display	
Blinks 4 times	Fan blinks	E1 Blinking	Room sensor contact loose / short
Blinks 4 times	Sleep blinks	E2 Blinking	Indoor coil sensor contact loose / short
Blinks 1 time	Cool blinks	E4 Blinking	Pipe water temperature fault
Blinks 2 times	Cool & Fan blinks	E6 Blinking	Pump faulty

OPERATION GUIDE FOR G6

7

FAN SPEED AND VENTILATION MODE SELECTION

- Press the button until the desired fan speed is achieved.

6

OPERATION MODES

- Press the “mode” button for select the type of operating mode.
- Cooling only unit: Cool→Dry→Fan.
- Heating cycles: Cool→Dry→Heat→Fan.

5

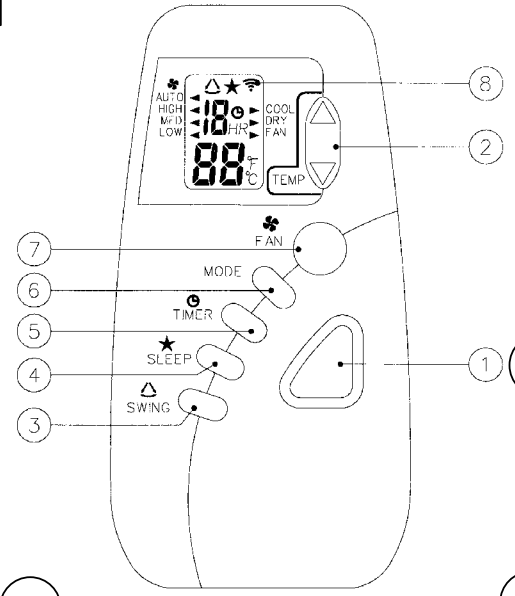
TIMER SETTING

- Press set button to activate the timer setting (from 1 hour to 15 hour) of the air conditioning unit. It will be in "On" or "Off" condition after the set time depending to the current condition (either from "On" to Off" or vise versa)
- To cancel the timer setting, press the button continuously until the timer display goes off.

8

SIGNAL TRANSMISSION INDICATION

- Blink to confirm the last setting has been send to the unit.



2

TEMPERATURE SETTING

- Set the desire room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C setting (60°F to 80°F)(Optional setting from 20°C to 30°C).
- Press ▲ or ▼ button simultaneously will toggle the temperature setting between °C and °F.

1

ON / OFF switch

- Press to start the air conditioner unit.
- Press again to stop the unit.

4

SLEEP MODE

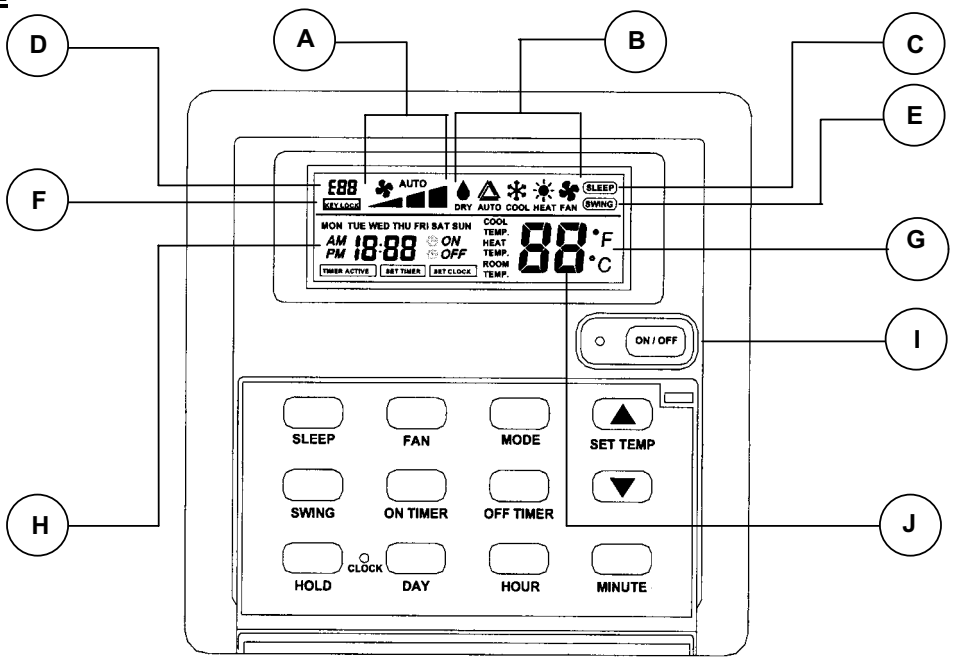
- Press the button to activate sleep mode. This mode can only be activated while in cooling or heating mode operation. If it is activated in “COOL” mode, the set temperature will be increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours.

3

AUTOMATIC AIR SWING

- Press the button to activate the automatic air swing function. The swing angle ranging from horizontal to 25° to bottom.

Netware 2



Display

A : Fan Speed Display
- Displays the fan speed setting (Auto/High/Medium/Low)

B : Operation Mode Display
- Displays the current mode of operation.

C : Sleep Display
- Display the sleep / energy saving status.

D : Error Display

E : Swing Display
- Display the aur swing status.

F : Key Lock Display
- Display indicates when key lock function is activated.

G : °C or °F Display
- Display the temperature in °C or °F.

H : Current Time Start / Stop Time Display
- Display the current time as well as the start and stop time programmed.

I : On / Off Status Lamp Display

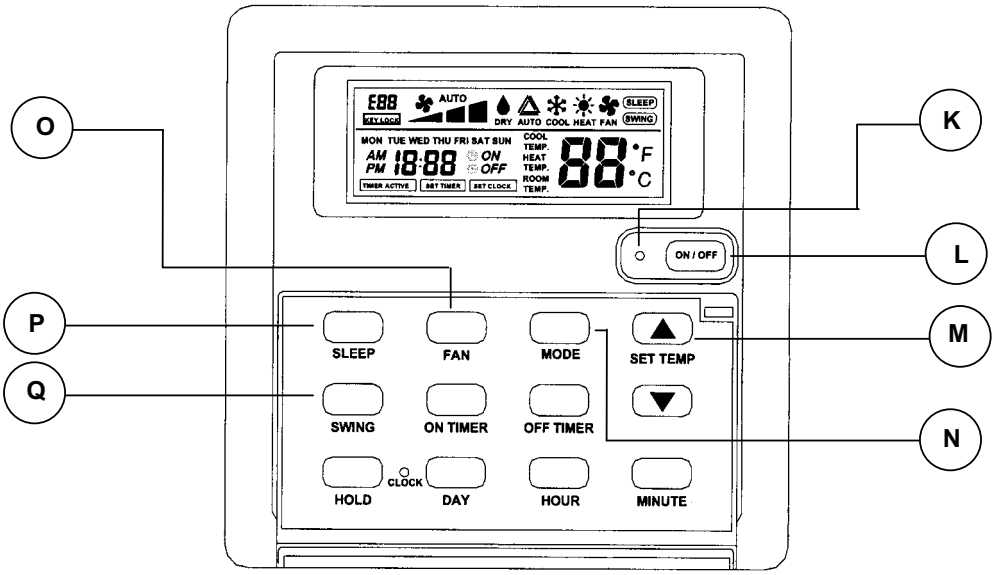
J : Set Temperature or Room Temperature Display
- Display the set or room temperature.

Other functions
- Last state memory using battery back up.

For 7-days programmable time option, battery back up is used to retain the last state data.
Units without battery back up will depend on the EEPROM on the main board.

- Error Indicator

Error code will be shown for any abnormal condition detected.
Refer to main board error codes for detail.



Operation

K : Operating Lamp

L : On / Off

- *Starting operation :*

When the unit is off, press the ON/OFF button. The operation LED lights and the unit will be turned on.

- *Stopping operation :*

When the unit is on, press the ON/OFF button. The operation LED is extinguished and controls are turned off.

M : Set Temperature

- Press this button to set the temperature. By pressing up or down once, temperature changes by 1°C (or 1°F).
- The temperature range is16°C to 30°C (60°F to 85°F).
- In FAN mode, temperature can not be set.
- Pressing up and down buttons simultaneously will toggle the temperature unit between °C and °F.
- When set temperature button is pressed, the set temperature will be displayed for 5 seconds. After that, room temperature will be displayed.

N : Mode

- Press MODE button to select operation mode from Cool, Heat, Auto, Dry and Fan. The display will show the selected mode.

O : Fan

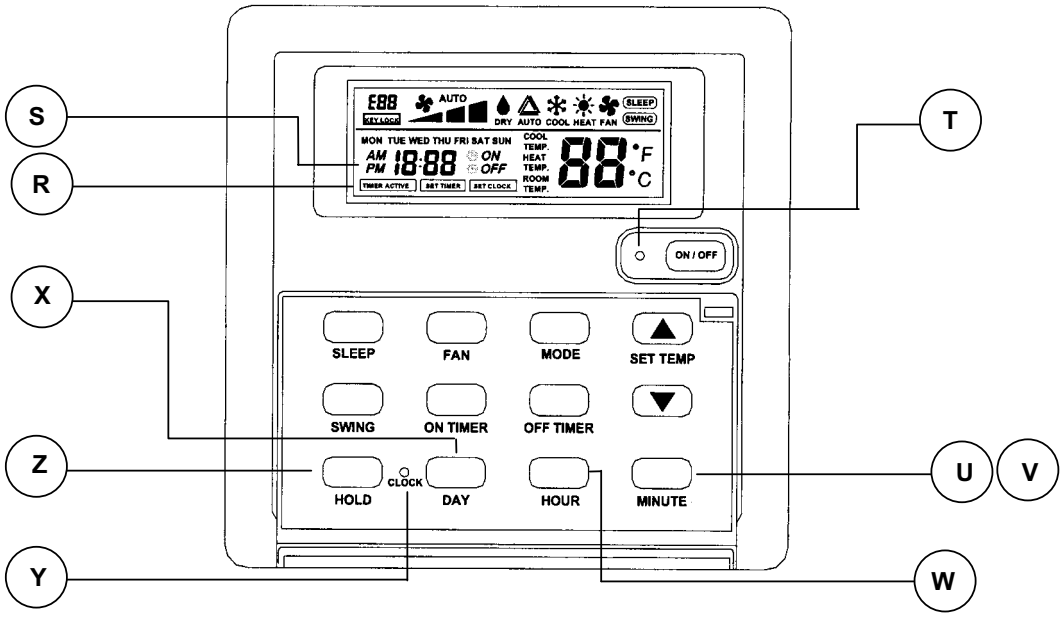
- Press FAN button to select Auto, High, Medium or Low fan speed.

P : Swing

- Press SWING button to activate the air sweep function.

Q : Sleep

- Press SLEEP button to activate the sleep or energy saving mode.



R : Timer Hold / Resume Display
S : Current Time Display
T : Operating Lamp
U : Key Lock

- This feature protects the controls from being tampered with by children or unauthorized persons.
- To activate, press the MINUTE button three times consecutively. 'KEY LOCK' symbol will appear on the LCD display.
- During this time, ON/OFF button and FAN button can be used.
- To cancel this feature, press the MINUTE button again three times consecutively.

V : Minute

- When the control is in set clock or set timer mode, pressing the HOUR button will change the set hour.

W : Hour

- When the control is in set clock or set timer mode, pressing the HOUR button will change the set hour.

X : Day

- When the control is in set clock or set timer mode, pressing the DAY button will change the set day.

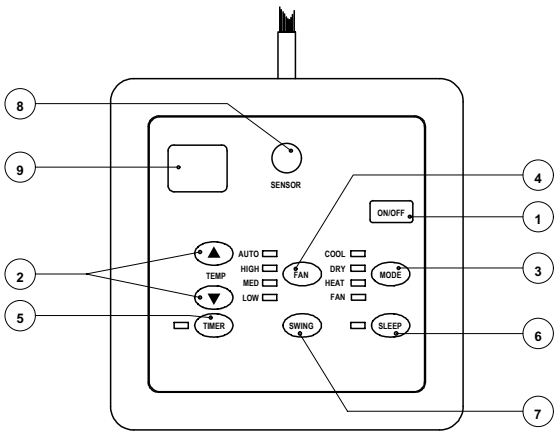
Y : Clock

- Press button once to set the clock mode.
- Press button again to disable the clock mode.
- When the clock mode is activated, the time and date can be set or changed by pressing the DAY, HOUR or MINUTE buttons.

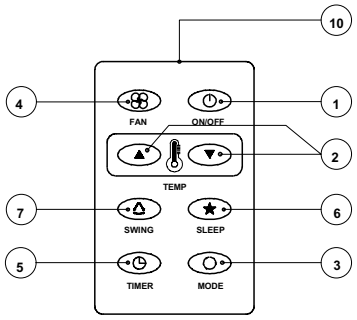
Z : Timer Hold / Resume

- If 7-days timer is set, the word 'TIMER ACTIVE' is displayed.
- To clear the timer setting, press and hold the HOLD button for 2 to 3 seconds until the word 'TIMER ACTIVE' is no longer displayed.
- To resume the timer setting after the timer has been placed on hold, press and hold the HOLD button again for 2 to 3 seconds until the word 'TIMER ACTIVE' is displayed.

SLM 3 WIRED CONTROLLER



SLM



AC5300 (OPTIONAL)

1. "ON/OFF" switch
- Press to start the air conditioner unit.
- Press again to stop the unit.

2. Temperature setting
- Set the desired room temperature.
- Press button to increase or decrease the set temperature. Setting range are between 16°C to 30°C (60°F to 80°F).

3. Operation Modes
- Press the "mode" button for select the type of operating mode.
  - Cooling Only :
    COOL, DRY, FAN
  - Heat Pump :
    AUTO, COOL, DRY, HEAT, FAN
    (AUTO mode is represented by both COOL and HEAT LED light on)

4. Fan Speed selection.
- Press the button until the desired fan speed is achieved.

5. Timer.
- Press the set button to select the switch timer of the air conditioner unit (the setting range is between 1 to 10 hours).

6. "Sleep" mode
- Press button to activate the sleep function. This function can only be activated under "cool" or heating mode operation. When it is activated under "cool" mode operation, the set temperature will increase 0.5°C after 30 minutes, 1°C after 1 hour and 2°C after 2 hours. If it is activated under "HEAT" mode operation, the set temperature will be decreased 0.5° C after 30 minutes, 1° C after 1 hour and 2° C after 2 hours.

7. Air Swing
- Press button to activate the automatic air swing function.

8. Sensor
- Infra red sensor to receive signals from wireless controller.

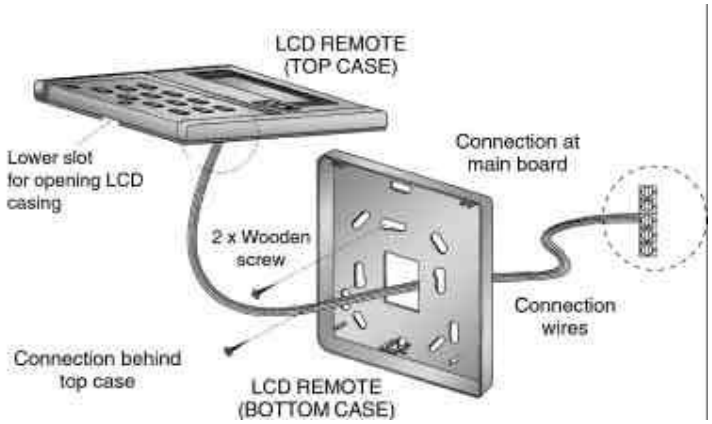
9. LED display
- To display the set temperature (in ° C) and timer delay setting (in hours).

10. Transmission source
- To transmit signals to the air conditioner.

Installation Of LCD Remote Controller

Step-By-Step Guide

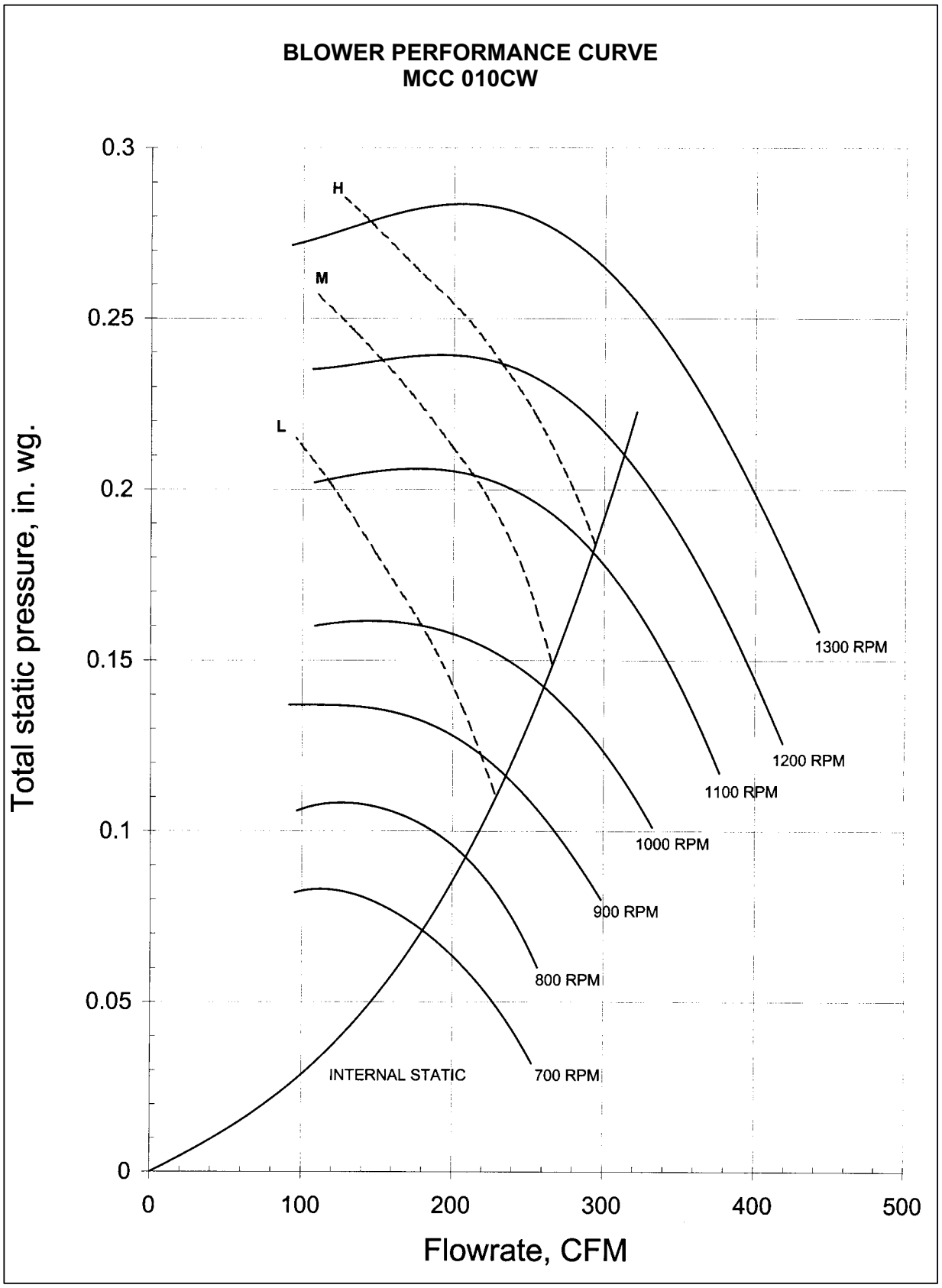
i) First, open up the casing of the LCD remote controller into its top and bottom case using a screwdriver. To do this, insert the screwdriver into the lower slot and slide it in the outward direction.
ii) Fix the bottom case onto the wall with the 2 wooden screws provided. Then, insert the 4 connecting wires (from the main board) through the slot on the lower center of the case as shown below.
iii) Connect one end in each of the 3 wires to the terminal block behind the top case as illustrated.
iv) To select cooling only model or heatpump model, some adjustment required in the dip switch setting.
v) Fasten back the top and bottom case into place. Hook the two upper claws into their respective slots and snap the lower part shut.



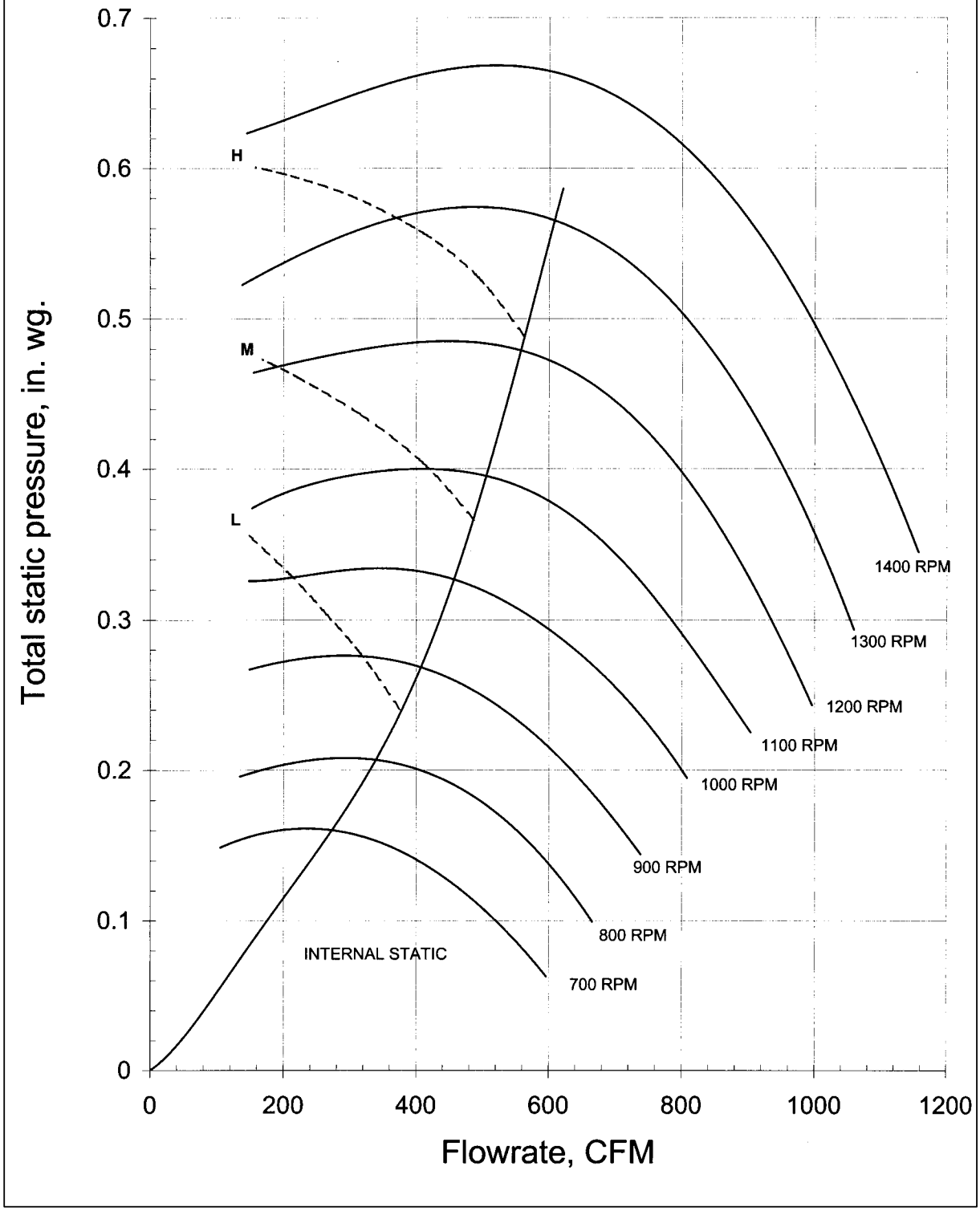
Dip switch setting for model selection

Pin	Function	Remarks
JH & JD	RESERVE	JH-OFF, JD-OFF
	COOL, DRY, FAN	JH-OFF, JD-ON
	COOL, DRY, FAN, HEAT	JH-ON, JD-OFF
	COOL, DRY, FAN HEAT, AUTO	JH-ON, JD-ON
RTC	NO REAL TIME CLOCK	RTC-OFF
	REAL TIME CLOCK	RTC-ON
NO DRY	WITHOUT DRY FUNCTION	NO DRY-ON
	DRY FUNCTION	NO DRY-OFF

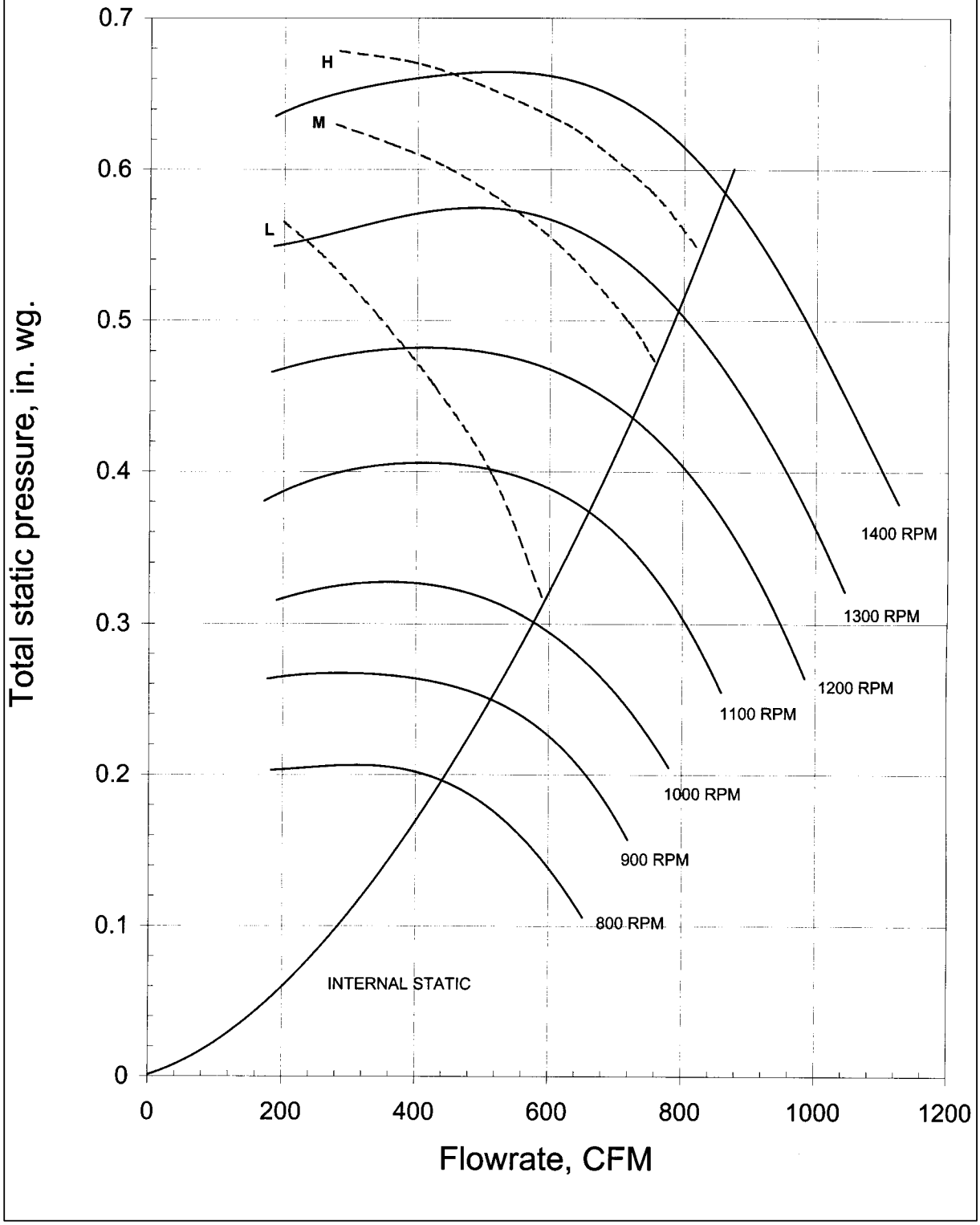
Blower Performance Curves



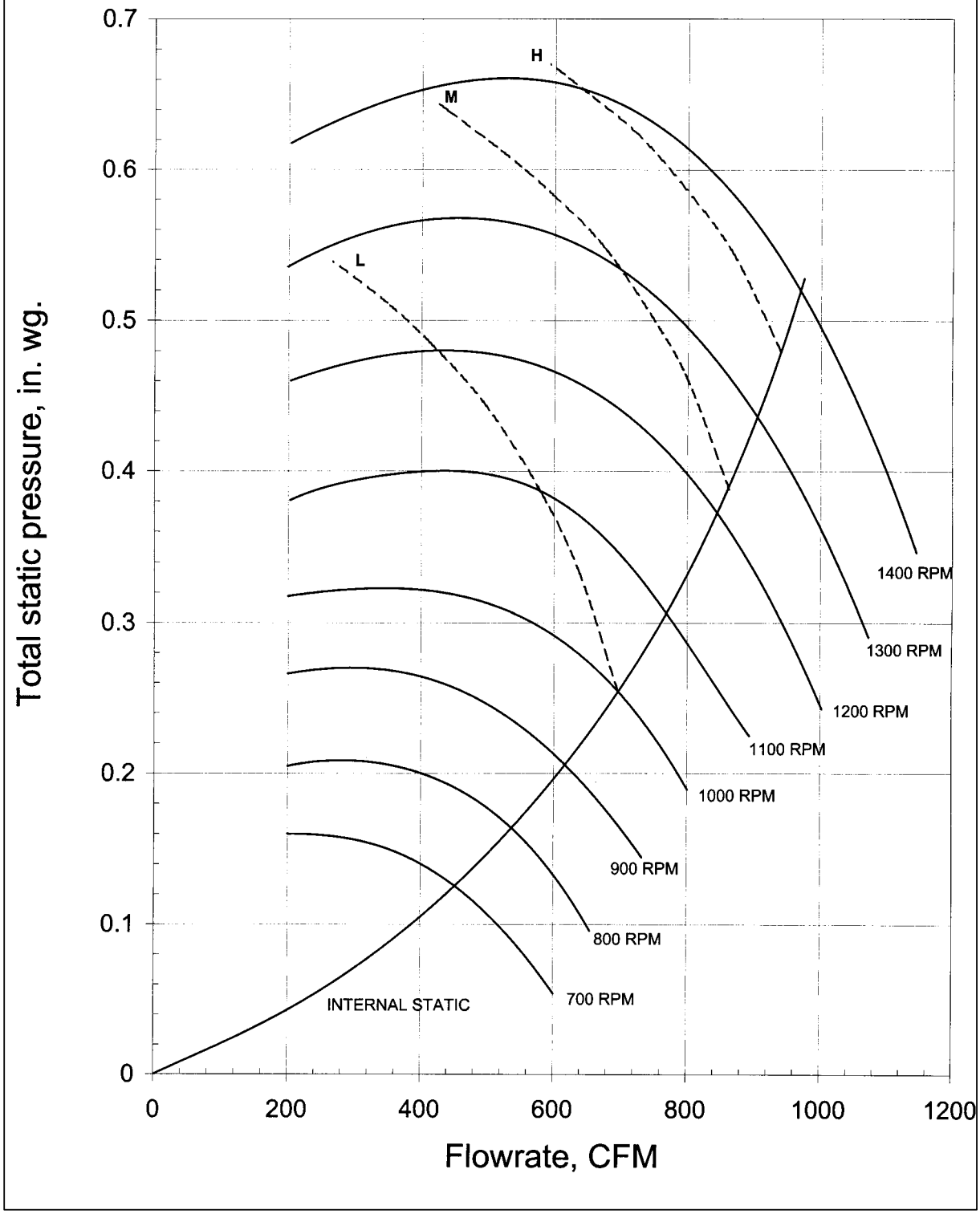
BLOWER PERFORMANCE CURVE
MCC 015CW



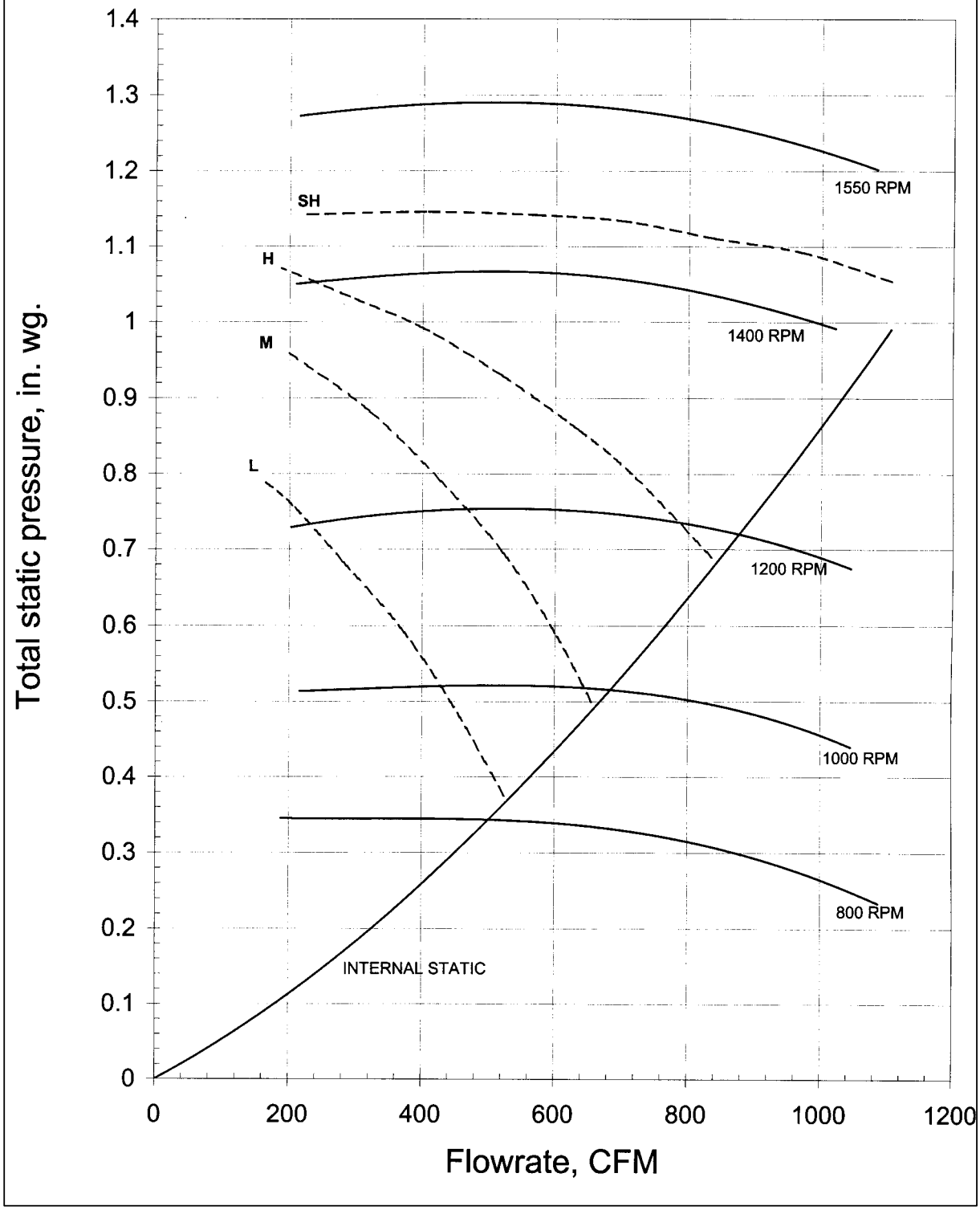
BLOWER PERFORMANCE CURVE
MCC 020CW



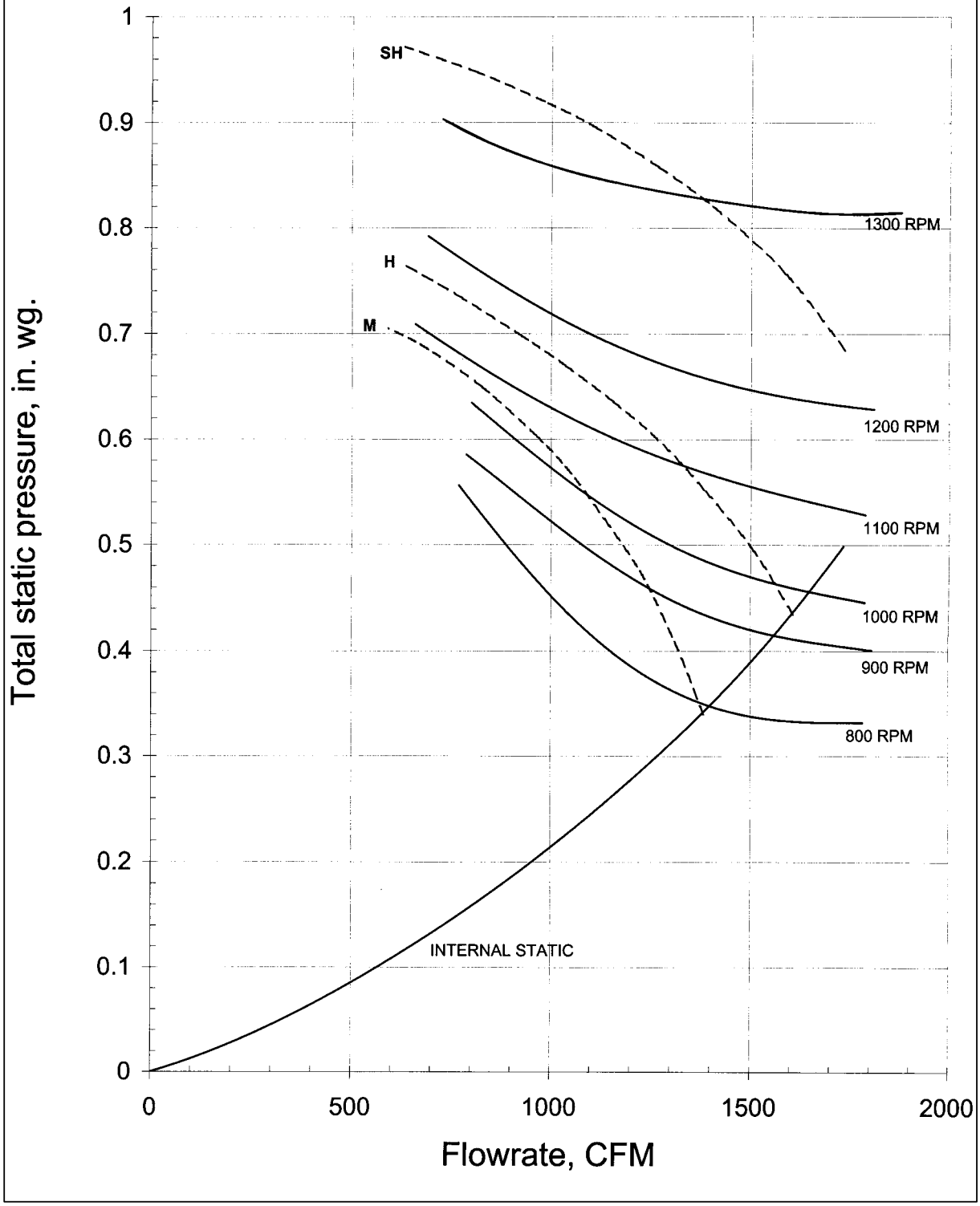
BLOWER PERFORMANCE CURVE
MCC 025CW



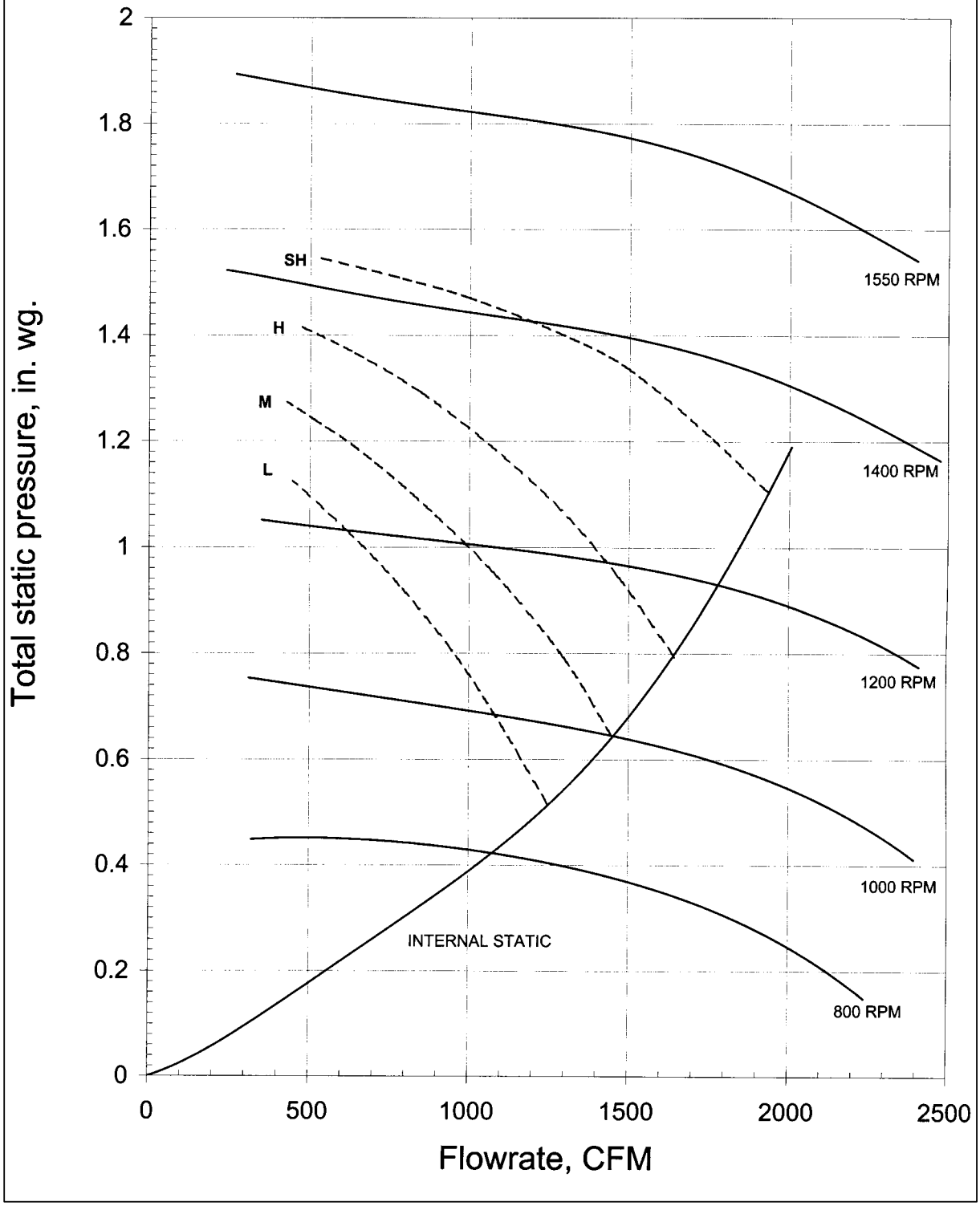
BLOWER PERFORMANCE CURVE
MCC 028CW



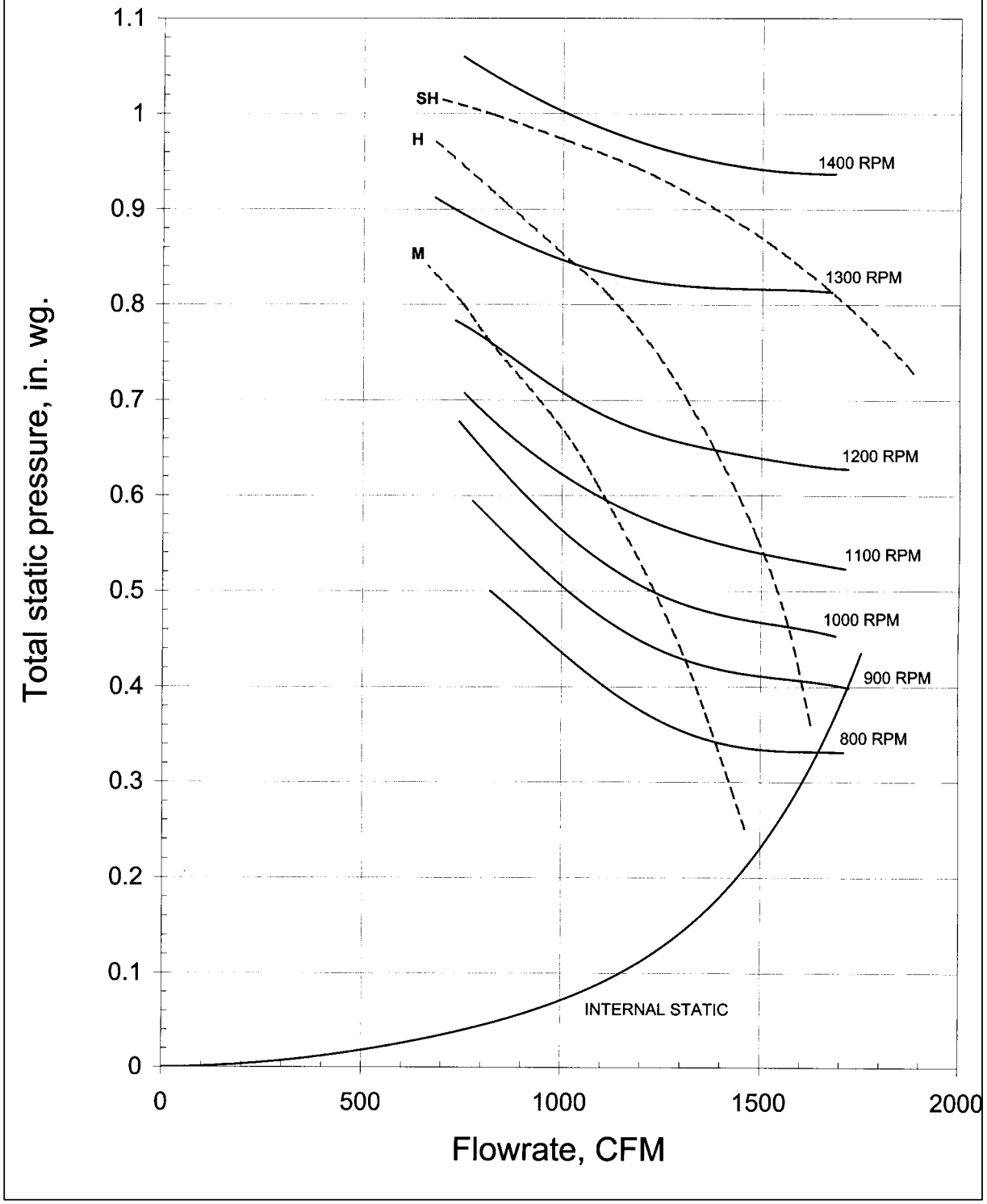
BLOWER PERFORMANCE CURVE
MCC 030CW



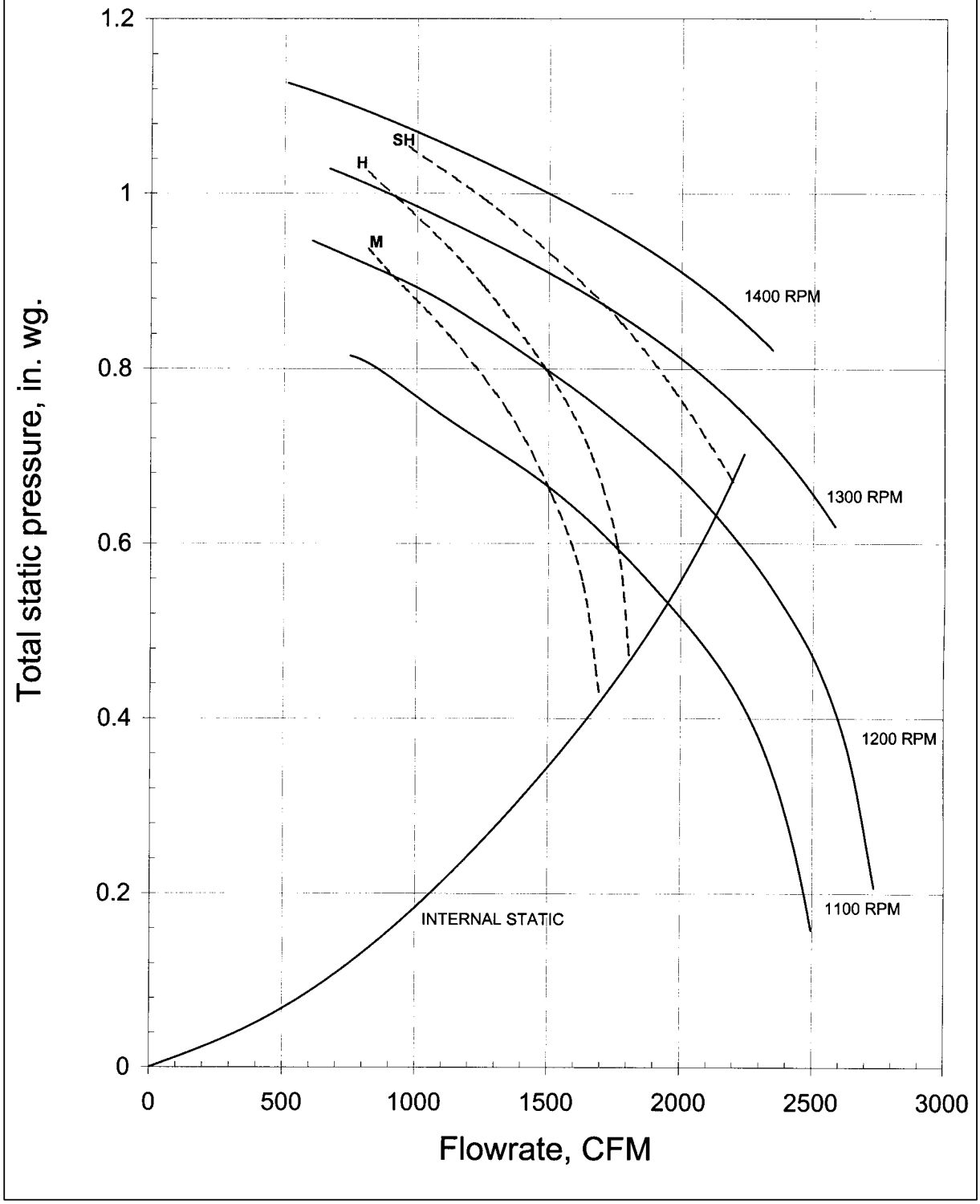
BLOWER PERFORMANCE CURVE
MCC 038CW



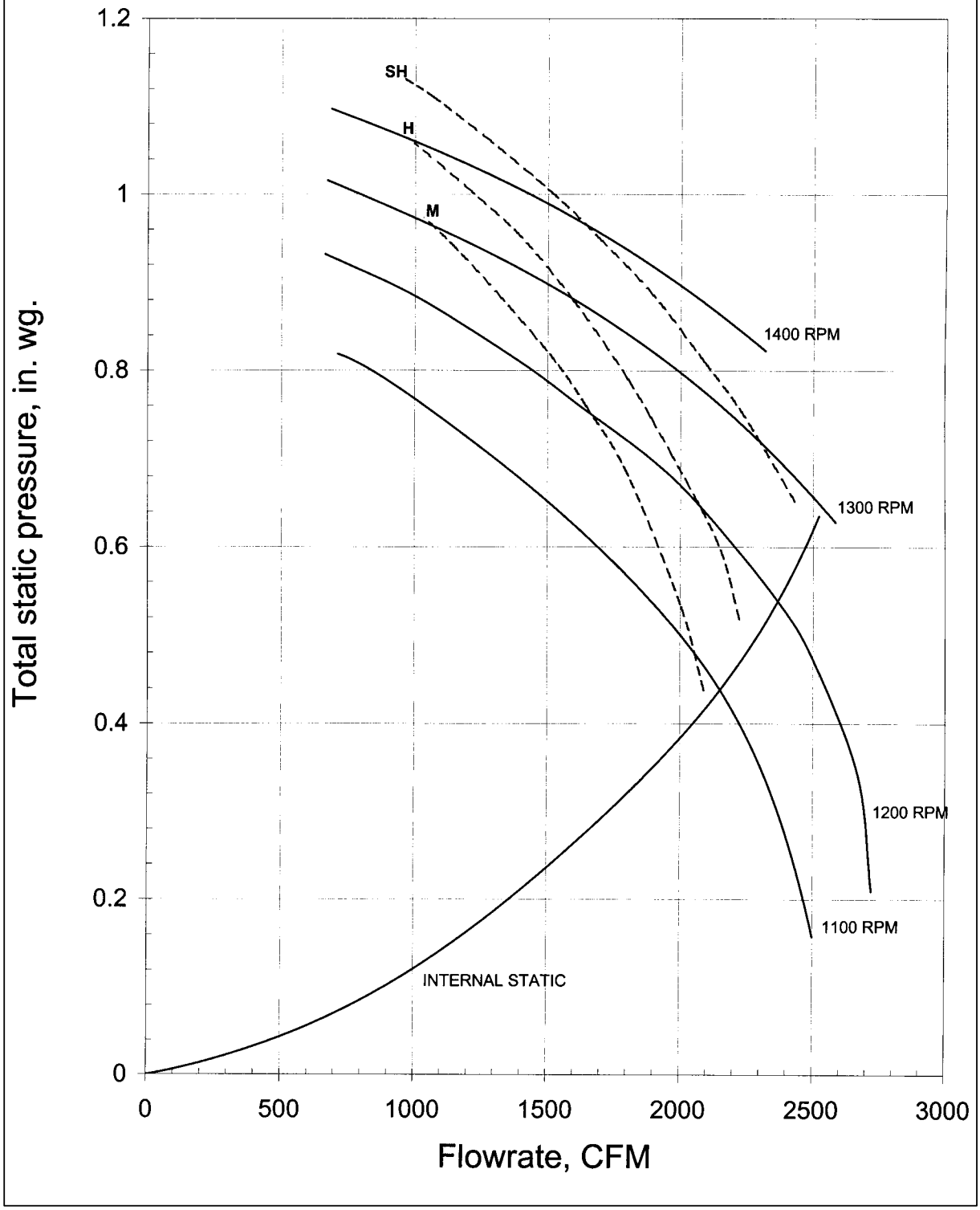
BLOWER PERFORMANCE CURVE
MCC 040CW



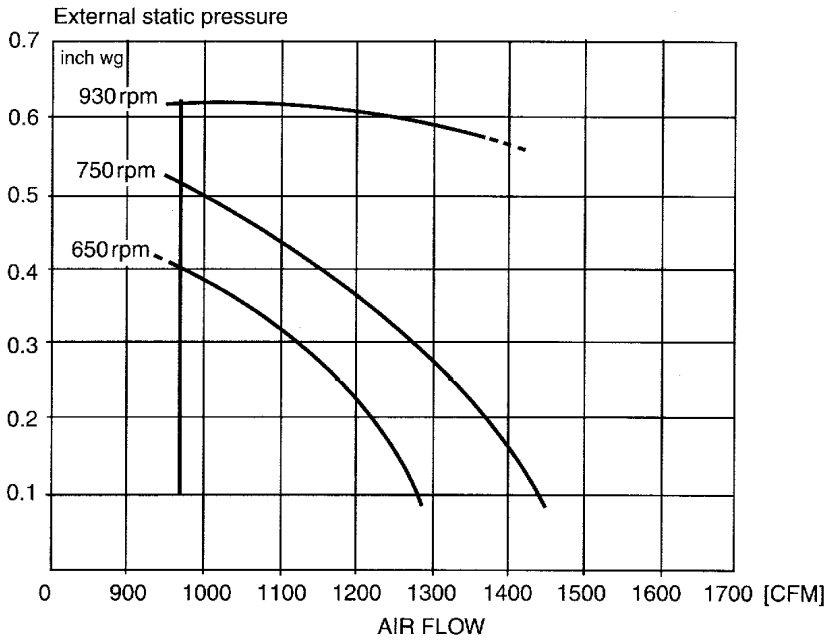
BLOWER PERFORMANCE CURVE
MCC 050CW



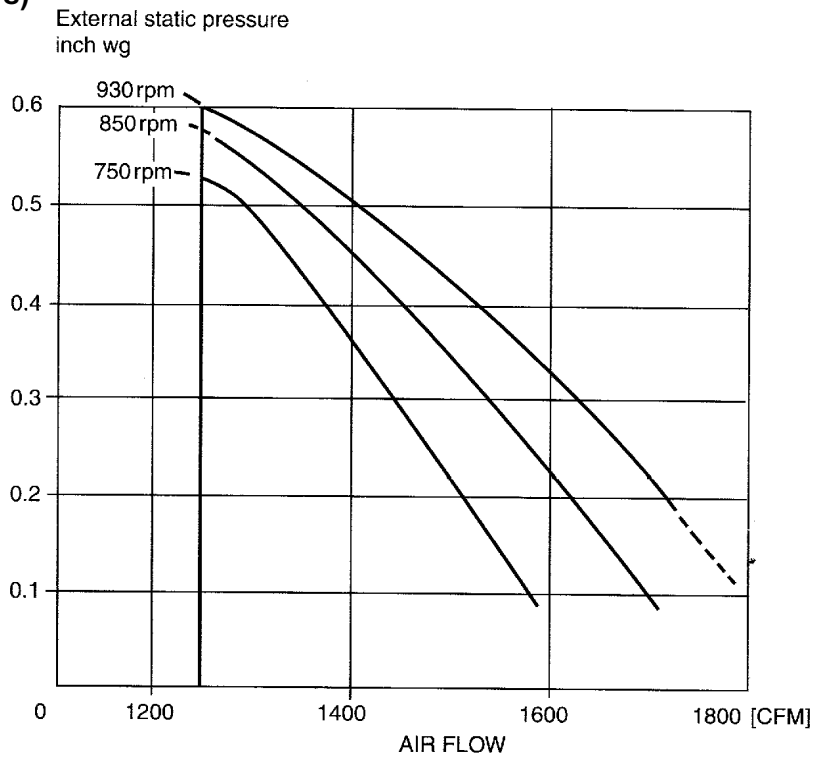
BLOWER PERFORMANCE CURVE
MCC 060CW



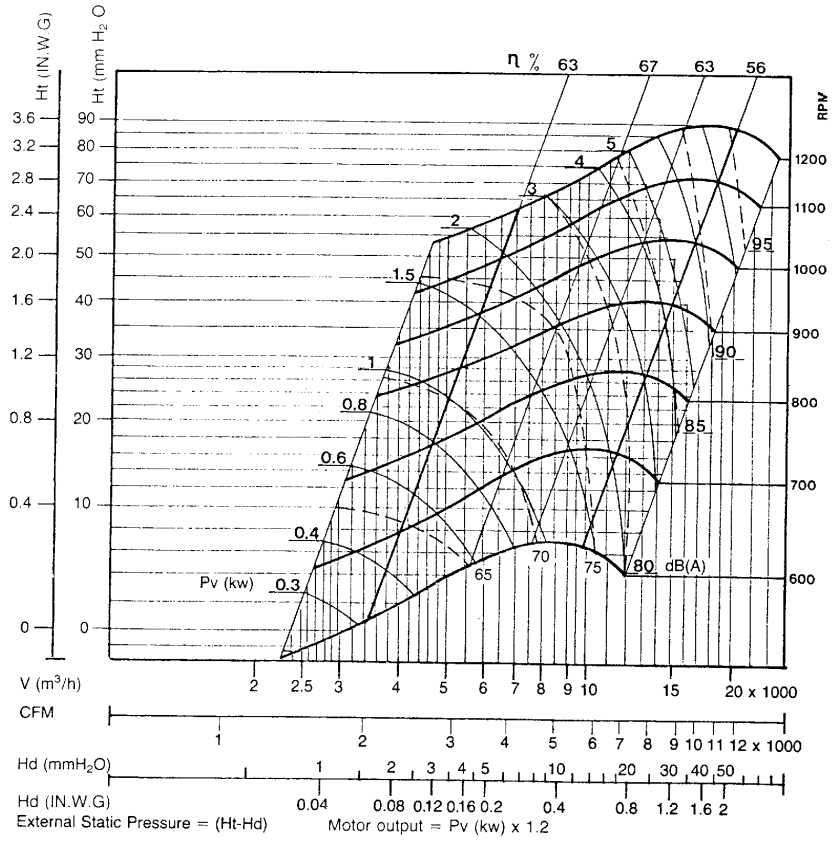
Model : MDB075BW
(Double Blowers)



Model : MDB100BW
(Double Blowers)

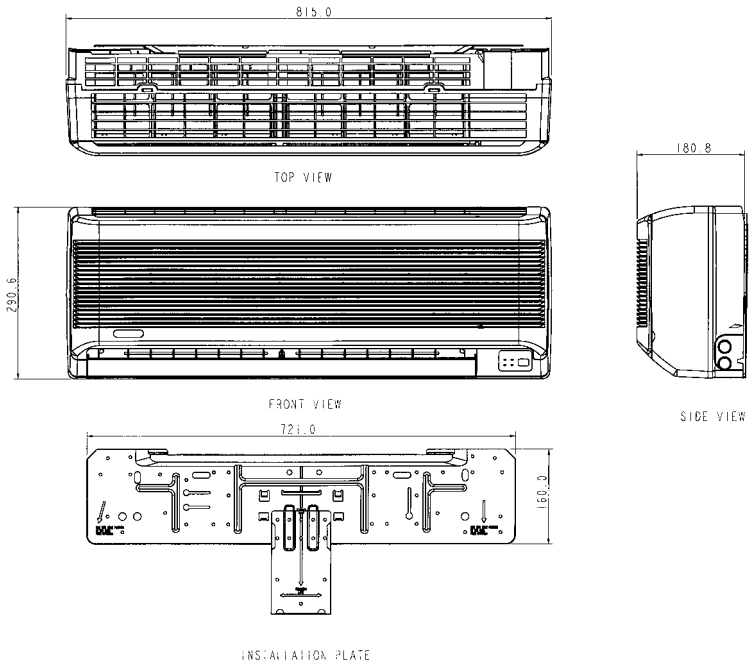


Model : MDB125/150BW



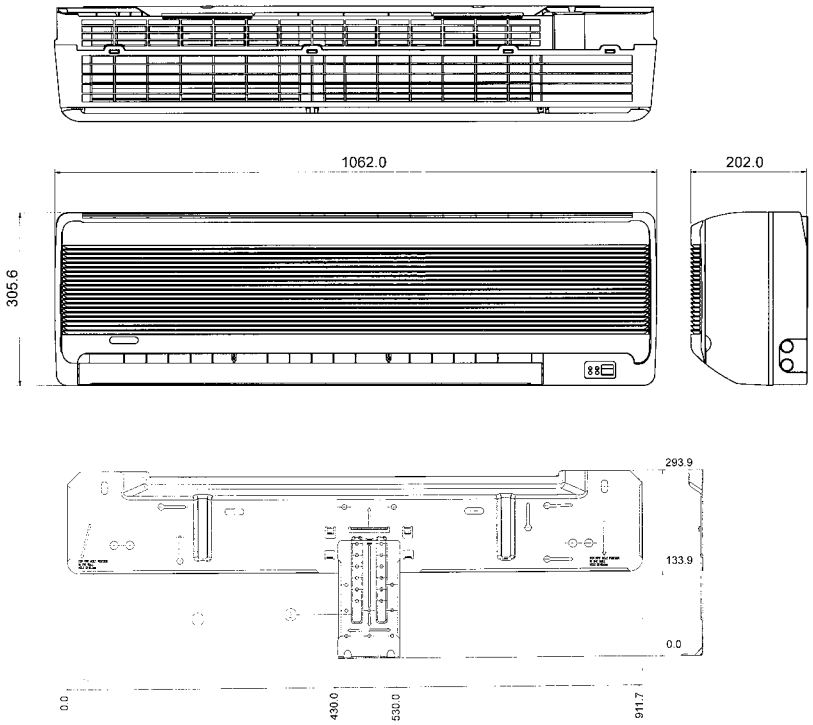
Outlines And Dimensions

Indoor Unit
Model: MWM 010F W / 015FW



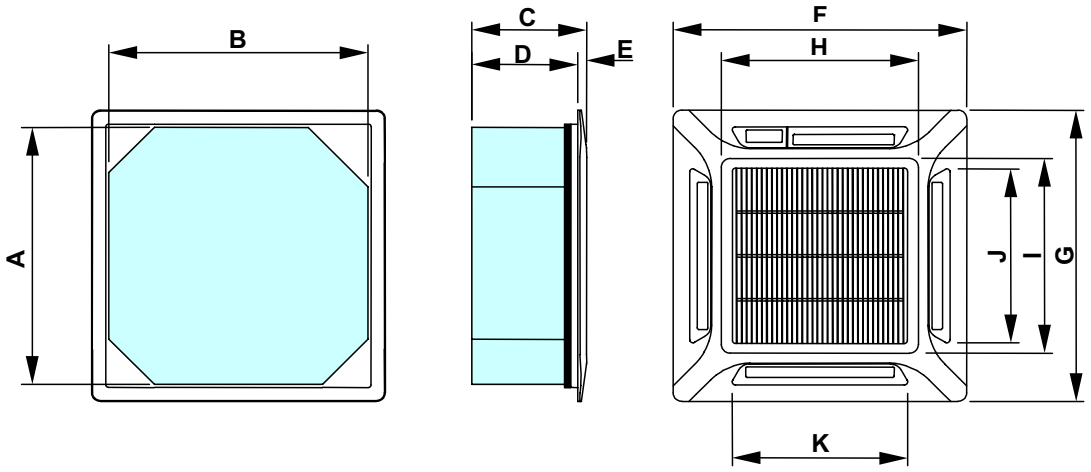
Note : Dimension in mm

Indoor Unit
Model : MWM 020FW / 025FW



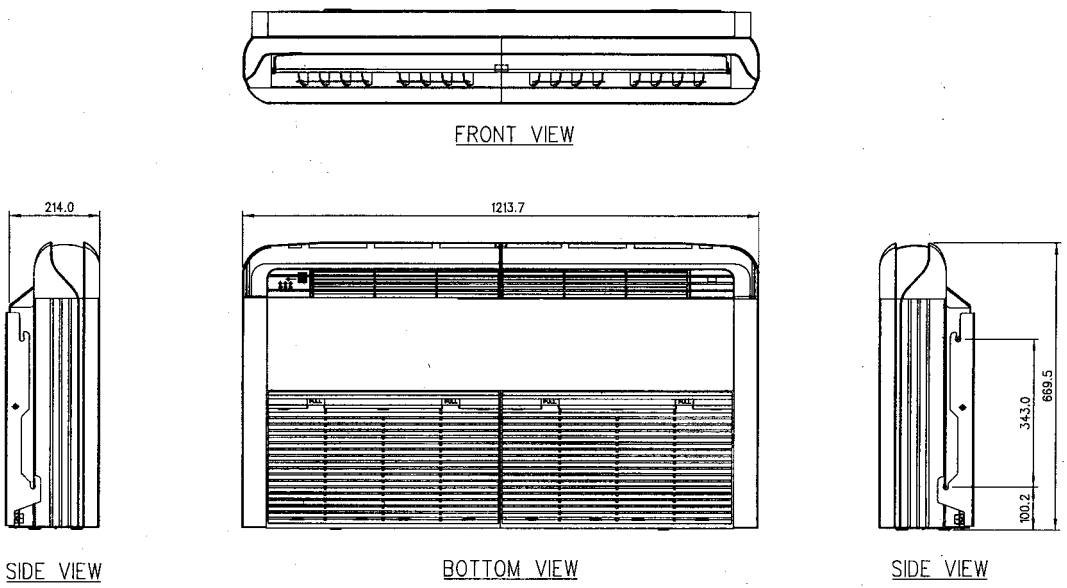
Note : Dimension in mm

Model : MCK020/025/030/040/050AW
MCK015/020/025/030BW

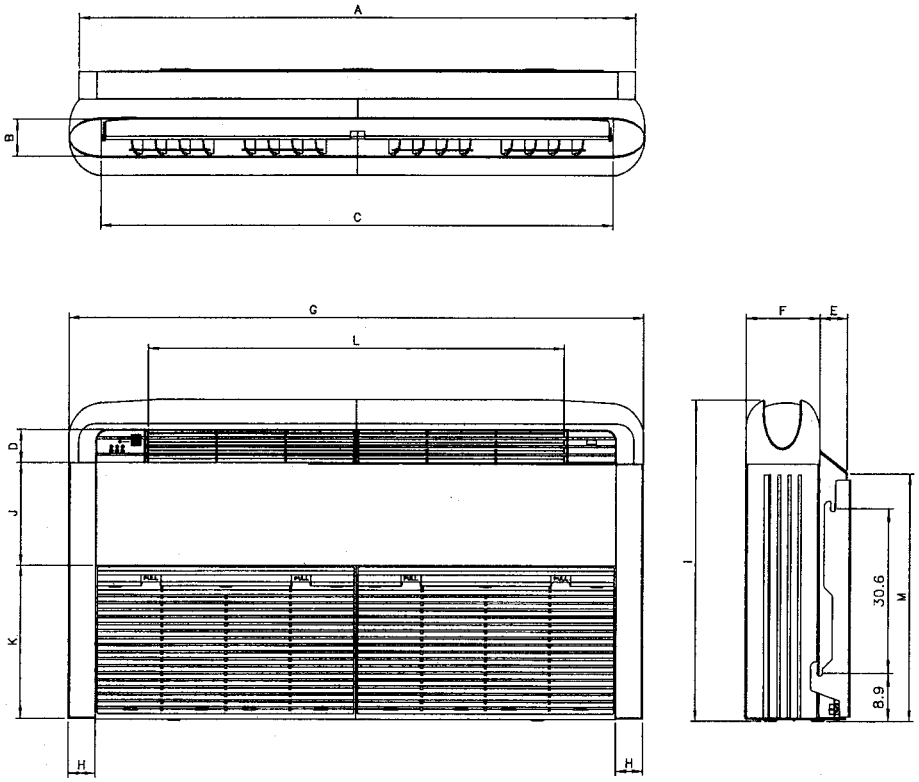


MODEL	A	B	C	D	E	F	G	H	I	J	K
MCK-AW	820	820	363	335	28	930	930	624	622	555	555
MCK-BW	650	650	345	323	22	727	727	489	489	444	444

Model : MCM 020/025DW

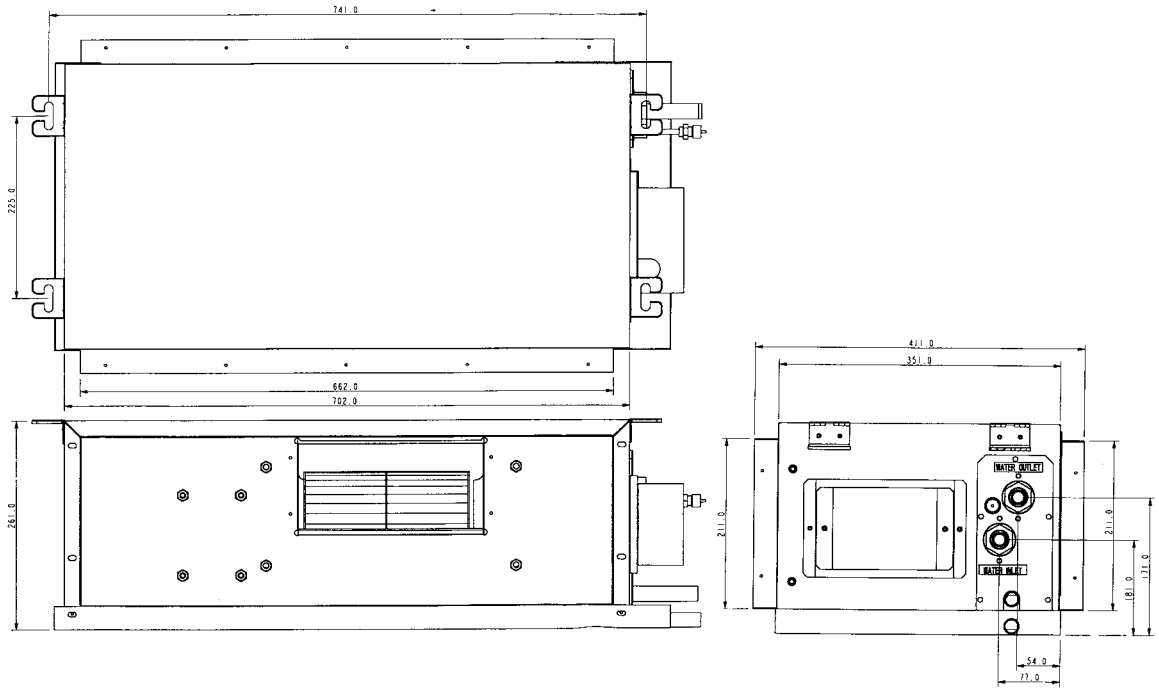


Model : MCM 030/040/050DW

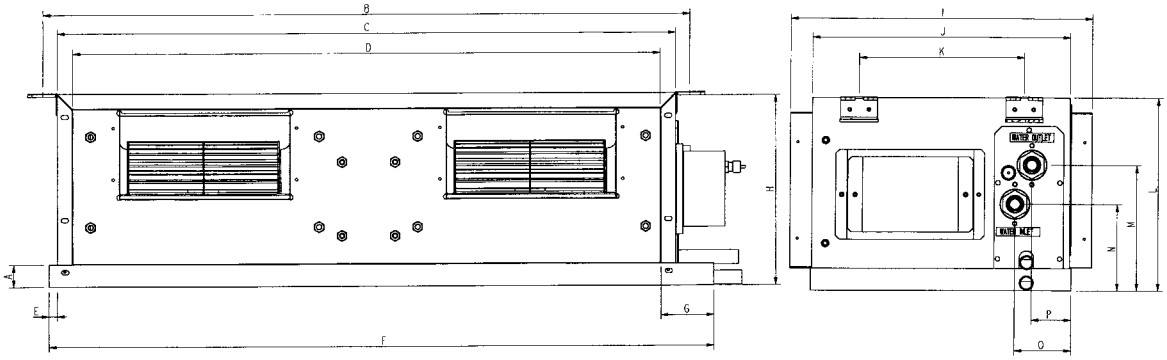


Model	A	B	C	D	E	F	G	H	I	J	K	L	M
MCM030DW	1174	75	1082	68	58	156	1214	57	670	216	319	879	517
MCM040DW	1674	75	1582	68	93	156	1714	57	670	216	319	1379	517
MCM050DW	1674	75	1582	68	93	156	1714	57	670	216	319	1379	517

Model : MCC010CW

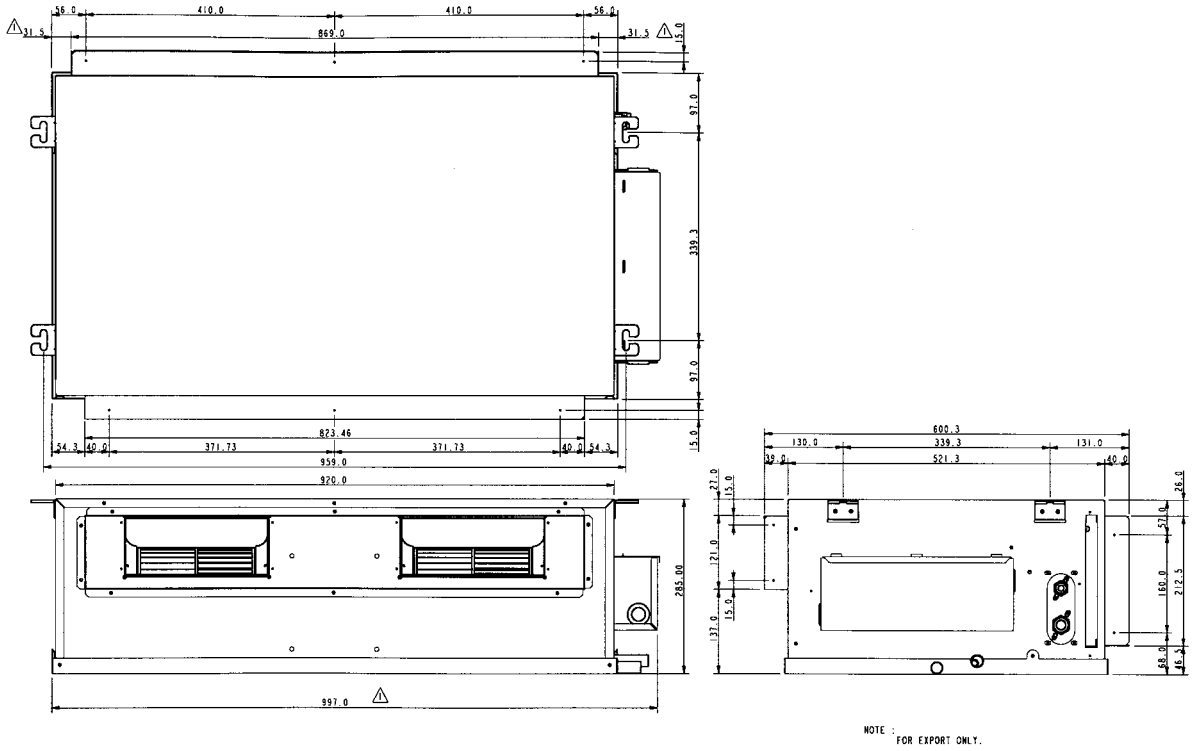


Model : MCC015/020/025CW



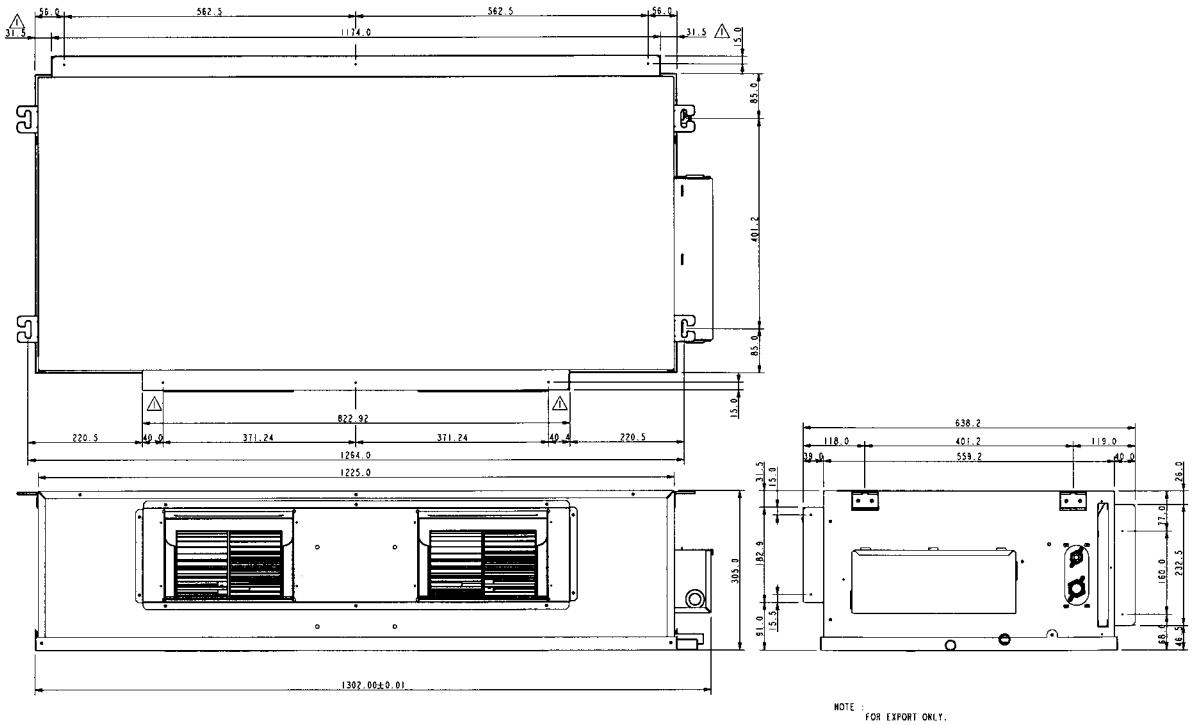
Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
MCC015CW	31	881	841	802	10	905	72	261	411	349	225	261	171	118	77	54
MCC020CW	31	1041	1002	962	10	1005	72	261	411	349	225	261	174	128	55	55
MCC025CW	31	1176	1137	1097	10	1200	72	261	411	349	225	261	171	118	77	54

Model : MCC 028CW



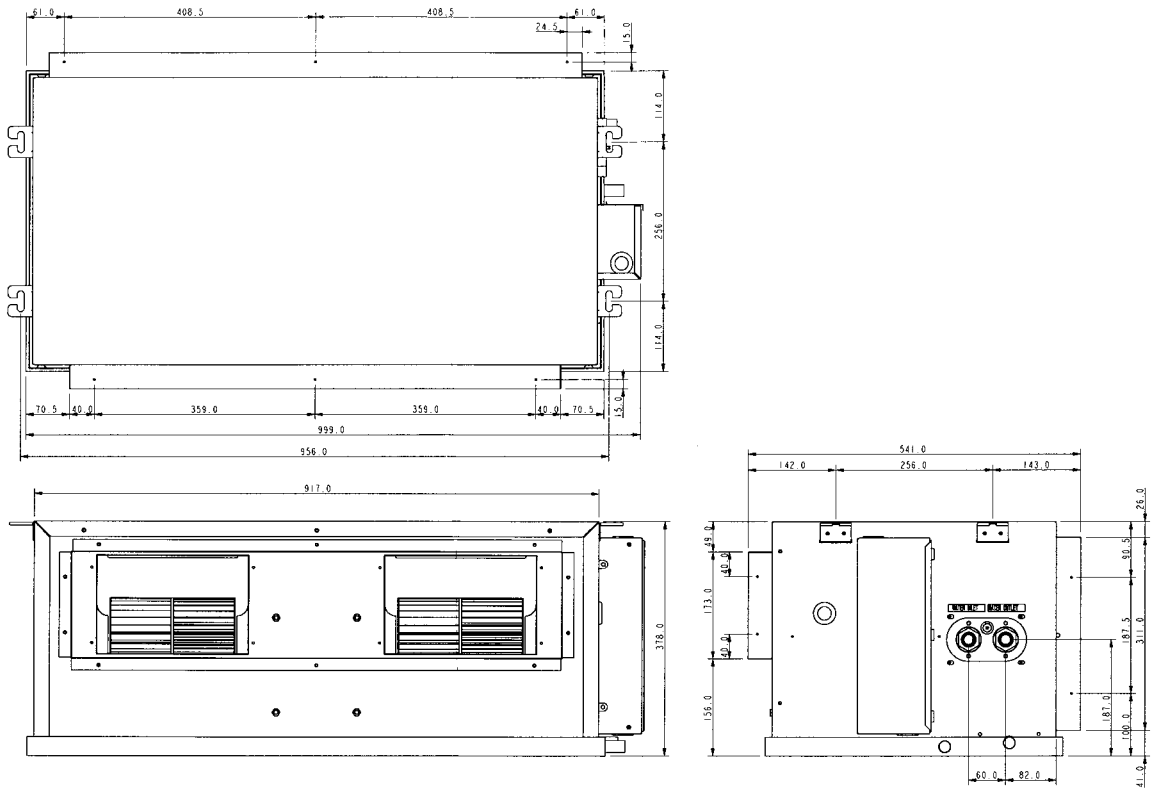
NOTE : FOR EXPORT ONLY.

Model : MCC 038CW

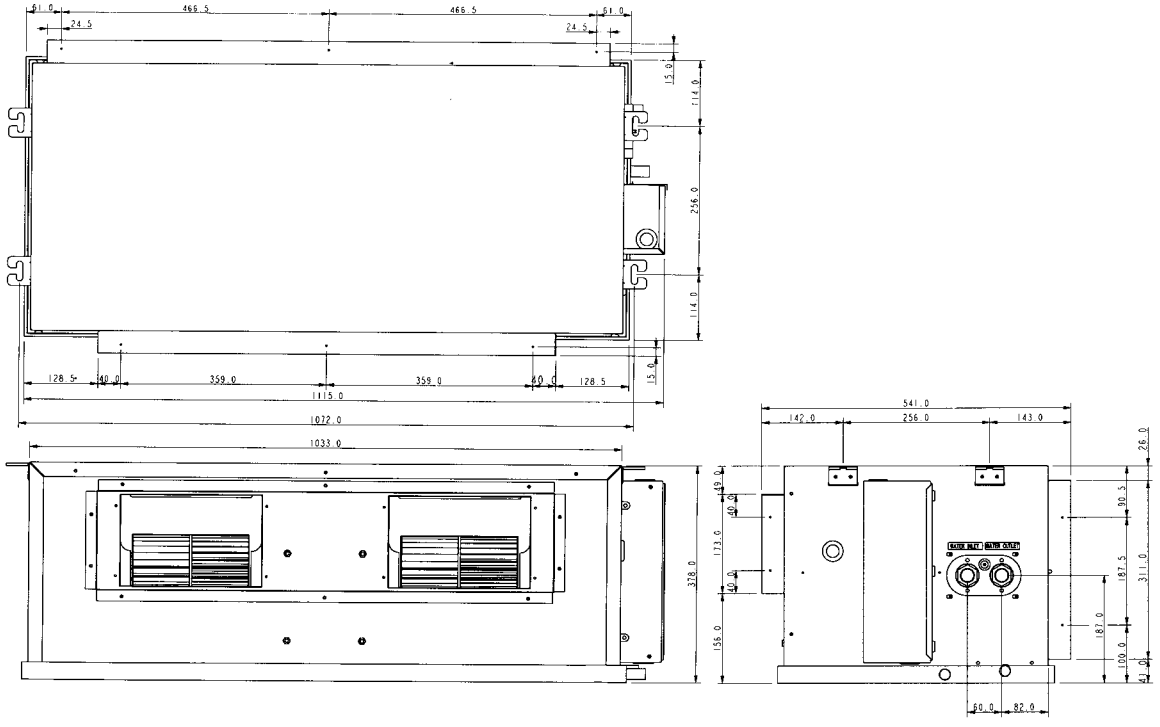


NOTE : FOR EXPORT ONLY.

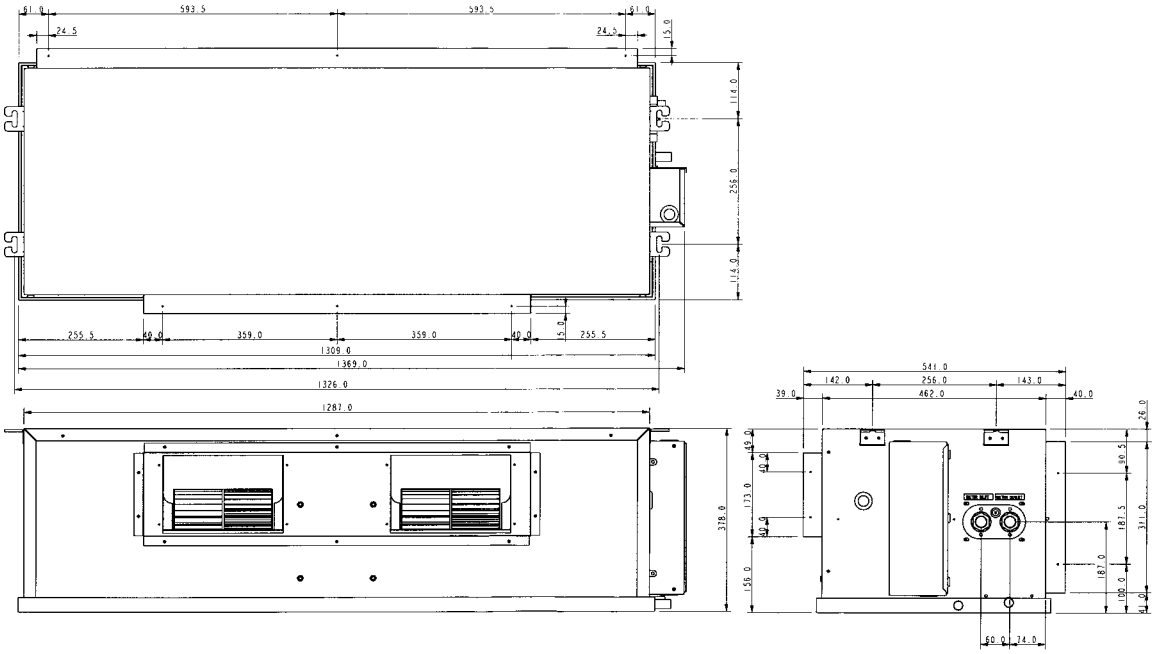
Model : MCC030CW



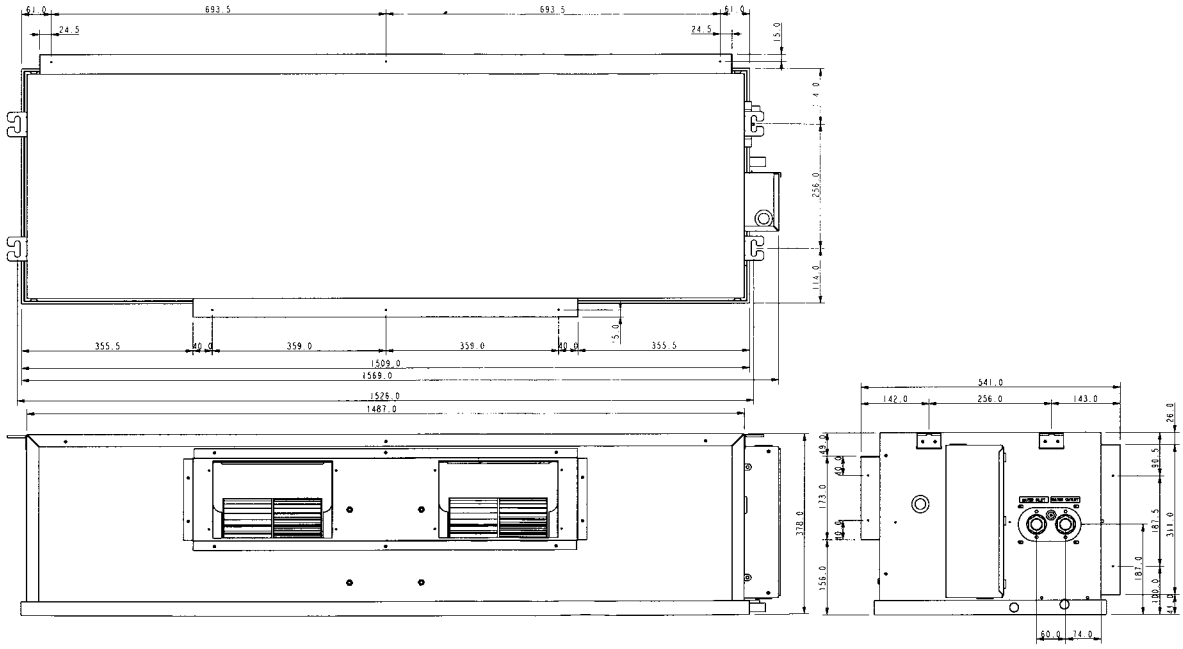
Model : MCC040CW



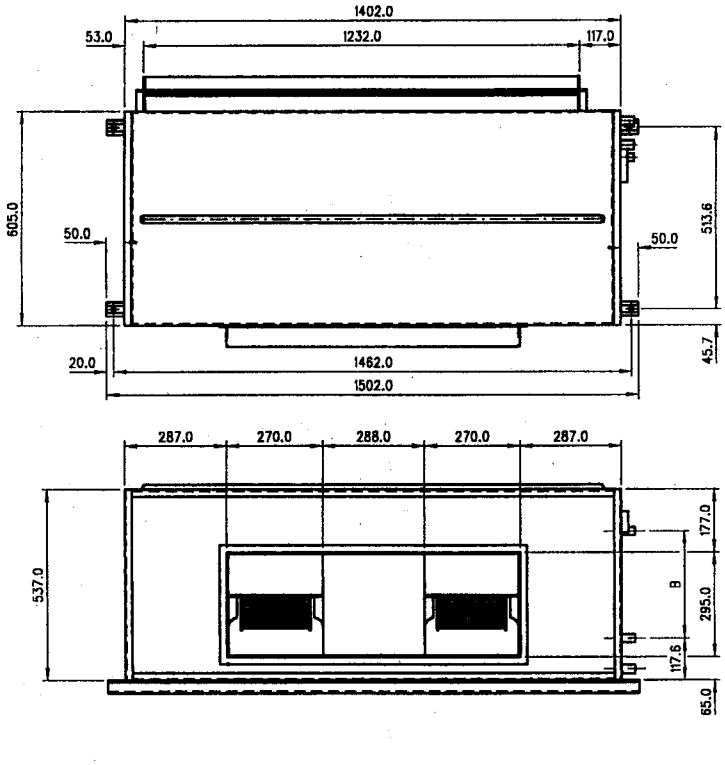
Model : MCC050CW



Model : MCC060CW



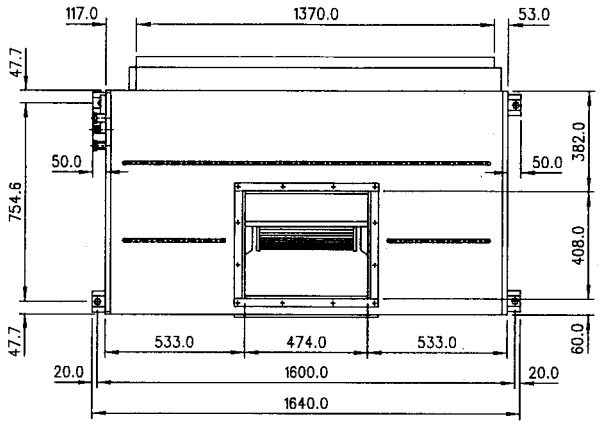
Model : MDB075/100BW

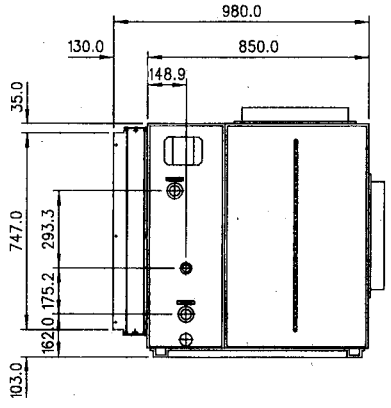


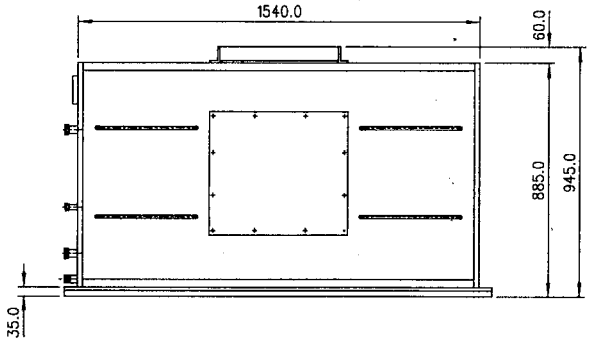
Model	A	B
MDB075BW	72	301.8
MDB100BW	94	289.1

Model : MDB125BW

NOTE:
FOR VERTICAL AIR DISCHARGE

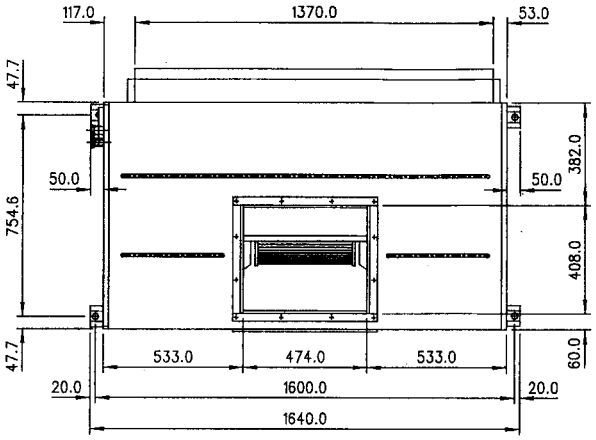


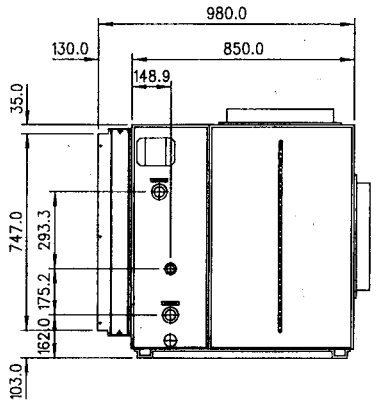


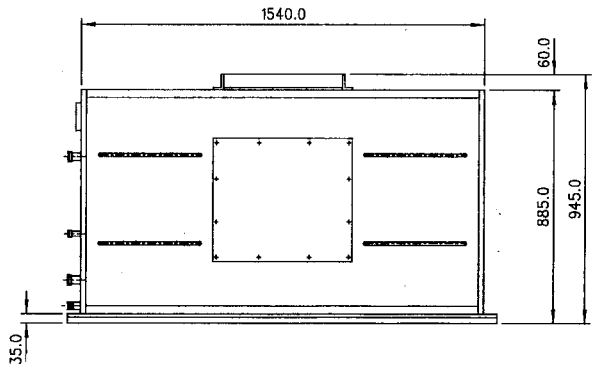


Model : MDB150BW

NOTE:
FOR VERTICAL AIR DISCHARGE







General Installation Guide

Preliminary Site Survey

Electrical supply and installation is to conform to LOCAL AUTHORITY's (e.g. National Electricity Board) CODES and REGULATIONS.

Voltage supply fluctuation must not exceed ± 10% of rated voltage. Electricity supply lines must be independent of welding transformers which can cause supply fluctuation.

Ensure that the location is convenient for wiring and piping.

Mounting

For ceiling mounted models, locate a position where piping and ducting work can be kept to a minimum. Ensure that overhead supports are strong enough to hold the unit's weight. Position hanger rods and check for alignment with the unit. Check that hangers are secure and that the base of fan coil unit is level in two horizontal positions.

Piping

Drain and water piping must be accurately connected.

Please refer to "Specification Sheet" for piping sizes.

Piping Support

All water mains must be adequately supported to carry the necessary weight involved, provisions must be made by the installing contractor to allow for adequate free movement of all vertical and horizontal risers and run outs. Due to the fact that cold water will be circulated through the water mains, a sizeable movement of the water mains can be expected due to contraction. If for example, the piping is rigidly supported with no provision for movement, it is very possible that the tubing of fitting may be broken causing water leakage in the conditioned spaces throughout the building.

Coil Venting

Each standard basic unit coil is equipped with a manually operated air vent which is installed at the end of a small copper line leading into the highest point of the coil. By means of this valve, air may be vented manually, from the coil to keep it operating at full capacity. When water is first introduced into a coil, air is sometimes trapped in the coil tubing. This trapped air will reduce cooling capacity and create "Bubbling" or "Clanking" noise within the units. To release air trapped in the coil, press the air vent head to allow air to flow out of the air vent opening. Release when a steady stream of water appear.

Electrical Connection

As wiring regulations differ from country to country, please refer to your LOCAL ELECTRICAL CODES for field wiring regulations and ensure that they are complied with. Besides, take note of the following general precaution:

1) Ensure that the rated voltage of the unit corresponds to the name plate before commencing wiring work.

2) Provide a power outlet to be used exclusively for each unit and a power supply disconnect and a circuit-breaker for over-current protection should be provided in the exclusive line.

3) The unit must be EARTH to prevent possible hazards due to insulation failure.

4) All wiring must be firmly connected.

General Operation Guide

Start-Up

The following procedure must be completed before any attempts is made to put the entire system Into operation:

1) Piping connections completed.
2) Electrical connections completed.
3) Duct connections completed.
4) Auxiliary drain pans in position where required.
5) Drain line draining into drain pans.
6) Filters correctly installed and free of construction debris.
7) Motor-blower assembly rotates freely.
8) Unit Hydrostatically tested and air vented.

Starting The Fan Coil Unit

1) Turn on the switch of water pump.
2) Start water chiller.
3) Operate the fan coil unit by turning on the fan and set the control switch to get the desired speed.
4) Inspect the duct and piping condition and rectify problem (e.g. vibration, noise, etc.) if exist.

Servicing And Maintenance

Fan coil units are designed to operate continuosly with minor routine maintenance. Since fan coil units cool the discharging forced air, the efficiency with which the units operate is directly related to the amount of air passing through the coil.

Air Filters

The function of the air filters is to remove foreign matter such as dirt, soot, pollen and certain other impurities from the air passing through it. A clogged or dirty filter not only fails to do the job for which it is designed, but restricts the flow of air over the coil.

The importance of cleaning the filter before it becomes clogged must be greatly stressed. The frequency with which a filter should be cleaned will depend upon the amount of dust and foreign material that enters a unit, and this depends upon location and situation.

The washable viledon or saranet filter may be cleaned by tapping the filter on a solid surface to dislodge heavy particles. Wash under stream of warm water, with detergent if necessary. Dry it thoroughly before replacing.

Fan Motor

The fan motor is prelubricated and sealed at the factory. Therefore, no lubricating maintenance is required.

Coils

Clean coil unit by brushing between fins with a nylon brush. Brushing should be followed by cleaning with a vacuum cleaner. The coil may also be cleaned by using a high pressure air hose and nozzle if a compressed air source is available. It should be pointed out that if suitable air filter is used and taken care of properly, the coils need no cleaning.

Drain Pipe

The drain pipe should be checked before operation of unit is begun. If it is clogged, steps should be taken to clean the debris so that condensate will flow out easily.

Replacement Of Parts

Replacement of parts are available through your local dealers. When ordering parts, you must supply
1) Model name of the unit.
2) Serial number of the unit.
3) Part name and number.

McQuay® International DOP :

Americas - 13600 Industrial Park Boulevard, P.O. Box 1551, Minneapolis, MINI 55440 USA (612) 553-5330
Asia - Jalan Pengapit 15/19, P.O. Box 7072, 40702 Shah Alam, Selangor Darul Eshan, Malaysia - Tel: 6-03-5594922 - Fax: 6-03-5506980 - Telex: MA 38521
Europe - 42 Cours Jean Jaurès - 17800 Pons - France - Tél: (33) 46 92 33 33 - Télex: 790 536 F - Télecopie: (33) 46 91 38 33