

# Centrometal

## HEATING TECHNIQUE

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### Technical manual

for installation, use and maintenance  
of heat pump

R32

ENG

CE



## Heat pumps Mono P-series

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# CONTENTS

Part 1	General Information .....	3
Part 2	Engineering Data .....	8

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# Part 1

# General Information

<b>1 System Configurations .....</b>	<b>4</b>
<b>2 Product lineup .....</b>	<b>5</b>
<b>3 Nomenclature .....</b>	<b>5</b>
<b>4 System Design and Unit Selection .....</b>	<b>6</b>

# 1 System Configurations

Heat pump can be configured to run with the electric heater either enabled or disabled and can also be used in conjunction with an auxiliary heat source such as a boiler.

The chosen configuration affects the size of the heat pump that is required. Three typical configurations are described below.

### Configuration 1: Heat pump only

- The heat pump covers the required capacity and no extra heating capacity is necessary.
- Requires selection of larger capacity heat pump and implies higher initial investment.
- Ideal for new construction in projects where energy efficiency is paramount.

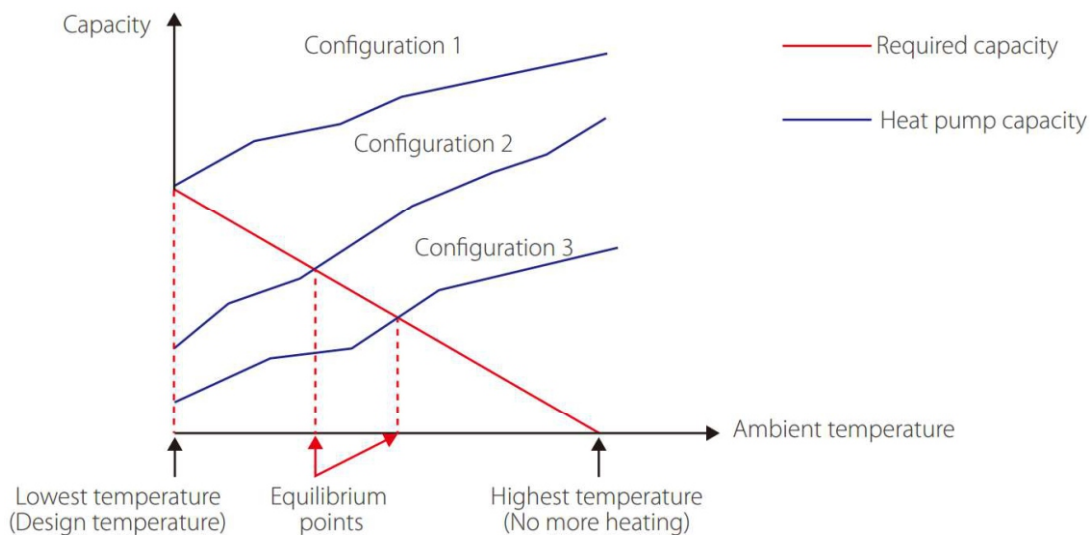
### Configuration 2: Heat pump and backup electric heater

- Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point, the backup electric heater supplies the required additional heating capacity.
- Best balance between initial investment and running costs, results in lowest lifecycle cost.
- Ideal for new construction.

### Configuration 3: Heat pump with auxiliary heat source

- Heat pump covers the required capacity until the ambient temperature drops below the point at which the heat pump is able to provide sufficient capacity. When the ambient temperature is below this equilibrium point, depending on the system settings, either the auxiliary heat source supplies the required additional heating capacity or the heat pump does not run and the auxiliary heat source covers the required capacity.
- Enables selection of lower capacity heat pump.
- Ideal for refurbishments and upgrades.


Figure 1-1.1: System configurations



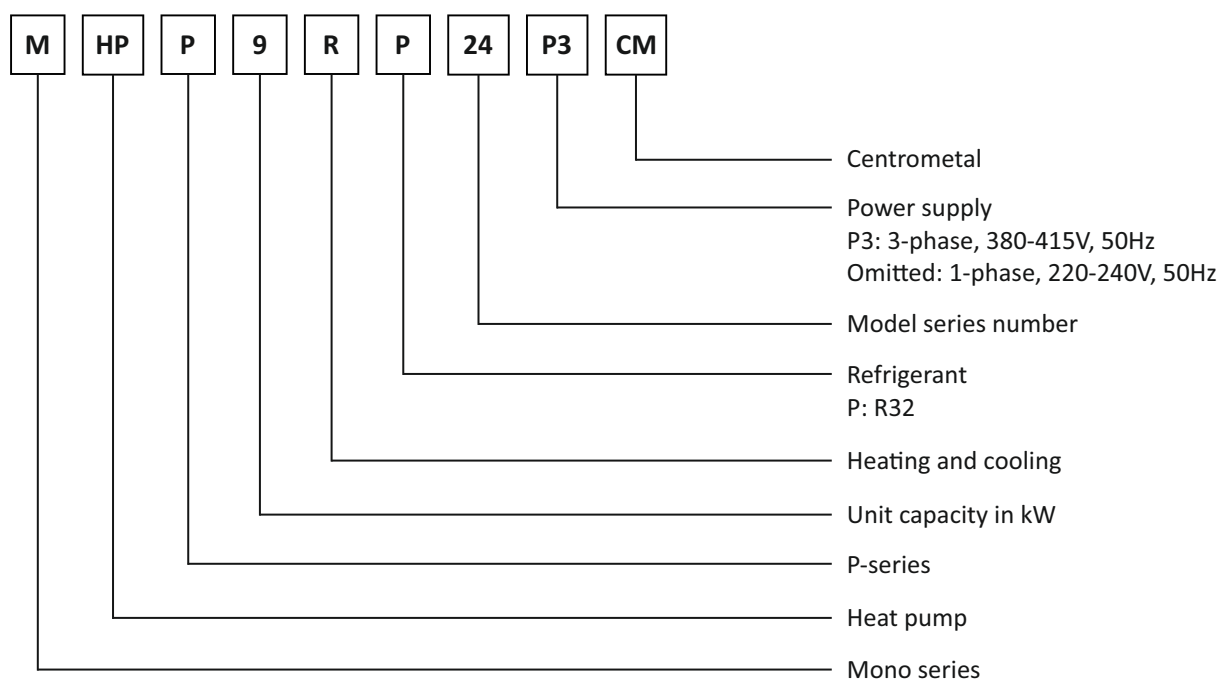


## 2 Product lineup

Table 1-2.1: Heat pump models

Model	Power supply (V/Ph/Hz)	Refrigerant	Appearance
MHPP5RP24CM	220-240/1/50	R32	
MHPP9RP24CM	220-240/1/50	R32	
MHPP16RP24P3CM	380-415/3/50	R32	

## 3 Nomenclature



## 4 System Design and Unit Selection

### 4.1 Selection Procedure

#### Step 1: Total heat load calculation

Calculate total heat losses of the building.  
Select the heat emitters (type, quantity, water temperature and heat load).

#### Step 2: System configuration

Decide whether to include AHS and set AHS's switching temperature.  
Decide whether backup electric heater is enabled or disabled.

#### Step 3: Selection of outdoor units

Determine required total heat load on outdoor units.  
Set capacity safety factor.  
Select power supply.

Provisionally select heat pump unit capacity based on nominal capacity.

Correct capacity of the outdoor units for the following items:  
Outdoor air temperature / Outdoor humidity / Water outlet temperature<sup>1</sup> /  
Altitude / Anti-freeze fluid.

Is corrected heat pump unit capacity  $\geq$  Required total heat load on outdoor units<sup>2</sup>.

Yes

Heat pump system selection is complete.

No

Select a larger model or enable backup electric heater operation.

Notes:

1. If the required water temperatures of the heat emitters are not all the same, the heat pump unit's outlet water temperature setting should be set at the highest of the heat emitter required water temperatures. If the water outlet design temperature falls between two temperatures listed in the outdoor unit's capacity table, calculate corrected capacity by interpolation.
2. If the outdoor unit selection is to be based on total heating load and total cooling load, select Mono units which satisfy not only the total heating load requirements but also the total cooling load requirements.

## 4.2 Heat Pump Leaving Water Temperature (LWT) Selection

The recommended design LWT ranges for different types of heat emitter are:

- For floor heating: 30 to 35°C;
- For fan coil units: 30 to 45°C;
- For low temperature radiators: 40 to 50°C.

## 4.3 Optimizing System Design

To get the most comfort with the lowest energy consumption with heat pump, it is important to take account of the following considerations:

- Choose heat emitters that allow the heat pump system to operate at as low a hot water temperature as possible whilst still providing sufficient heating.
- Make sure the correct weather dependency curve is selected to match the installation environment (building structure, climate) as well as ender user's demands.
- Connecting room thermostats (field supplied) to the hydronic system helps prevent excessive space heating by stopping the outdoor unit and circulator pump when the room temperature is above the thermostat set point.

## 4.4 Selection of the buffer tank and DHW tank

### 4.4.1 Selection of the buffer tank

The heat pump must be connected to the buffer tank in order to satisfy the minimum amount of water in the system. The volume of the buffer tank must be selected according to table 1-4.1.

Table 1-4.1: Minimum buffer tank volume

Model	Buffer tank [L]
5-9 kW	≥25
16 kW	≥40
Cascade	≥40*n

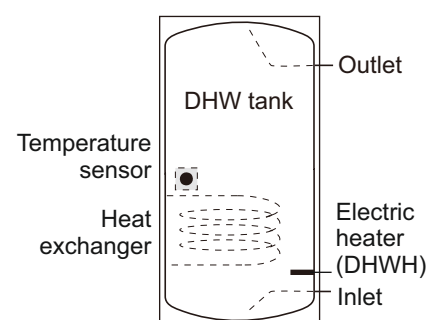
*n* = number of heat pumps in cascade

### 4.4.2 Selection of the DHW tank

The heat pump can be connected to the DHW tank. The tank can be with or without a built-in electric heater. The electric heater of the DHW tank must be installed below the tank temperature sensor. The tank temperature sensor must be above the heat exchangers in the tank. For the correct operation of the DHW heating system with a heat pump, it is necessary to comply with the minimum requirements of the DHW tank given in table 1-4.2.

Table 1-4.2: Minimum requirements of the DHW tank

Model		5 kW	9 kW	16 kW
DHW tank volume [L]	Recommended	100-250	150-300	200-500
Heat exchanger area - stainless steel coil [m <sup>2</sup> ]	Minimum	1,4	1,4	1,6
Heat exchanger area - enamel coil [m <sup>2</sup> ]	Minimum	2,0	2,0	2,5



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# Part 2

# Engineering Data

<b>1 Specifications .....</b>	<b>9</b>
<b>2 Electrical Characteristic .....</b>	<b>11</b>
<b>3 Dimensions and Center of Gravity .....</b>	<b>11</b>
<b>4 Operating Limits .....</b>	<b>12</b>
<b>5 Capacity Tables .....</b>	<b>13</b>
<b>6 Hydronic Performance .....</b>	<b>28</b>
<b>7 Sound Levels .....</b>	<b>29</b>

## 1 Specifications

Table 2-1.1: MHPP5(9,16)RP24(P3)CM specifications

Model			MHPP5RP24CM	MHPP9RP24CM	MHPP16RP24P3CM
Power supply (V/Ph/Hz)			220-240/1/50	220-240/1/50	380-415/3/50
Heating A7W35	Capacity	W	6500	10000	16000
	Rated input	W	1226	2128	3556
	COP		5.30	4.70	4.50
Heating A7W45	Capacity	W	6600	10200	16200
	Rated input	W	1650	2795	4696
	COP		4.00	3.65	3.45
Heating A7W55	Capacity	W	6300	9400	16000
	Rated input	W	1969	3032	5614
	COP		3.20	3.10	2.85
Heating A2W35	Capacity	W	5600	8200	14500
	Rated input	W	1333	2158	4462
	COP		4.20	3.80	3.25
Heating A2W45	Capacity	W	6500	8500	14300
	Rated input	W	2063	2881	5296
	COP		3.15	2.95	2.70
Heating A2W55	Capacity	W	6300	8400	13500
	Rated input	W	2250	3170	5870
	COP		2.80	2.65	2.30
Heating A-7W35	Capacity	W	6200	8000	13500
	Rated input	W	1938	2667	5000
	COP		3.20	3.00	2.70
Heating A-7W45	Capacity	W	6100	7400	13500
	Rated input	W	2346	3083	6000
	COP		2.60	2.40	2.25
Heating A-7W55	Capacity	W	5700	7200	12800
	Rated input	W	2651	3512	6244
	COP		2.15	2.05	2.05
Cooling A35W18	Capacity	W	6500	10000	15400
	Rated input	W	1275	2326	3667
	EER		5.10	4.30	4.20
Cooling A35W7	Capacity	W	5500	9000	14000
	Rated input	W	1692	3103	4828
	EER		3.25	2.90	2.90
Seasonal space heating energy efficiency class	Water outlet at 35°C		A+++	A+++	A+++
	Water outlet at 55°C		A++	A++	A++
SCOP	Warmer climate	35°C	6.78	7.05	6.46
		55°C	4.35	4.91	4.72
	Average climate	35°C	5.12	5.12	4.84
		55°C	3.59	3.71	3.59
	Colder climate	35°C	4.41	4.44	4.35
		55°C	2.90	3.14	3.18

SEER	Water outlet at 7°C		5.09	5.08	5.14
	Water outlet at 18°C		7.81	8.31	7.54
Sound power level <sup>2</sup>	Heating A7W35	dB	60	65	72
	Heating max	dB	64	68	74
	Heating silence mode 1	dB	58	63	67
	Heating silence mode 2	dB	56	60	64
	Cooling A35W18	dB	60	65	71
	Cooling max	dB	64	68	74
	Cooling silence mode 1	dB	58	63	67
	Cooling silence mode 2	dB	56	60	64
Compressor	Type		DC twin rotary		
Fan	Type		DC motor		
	Number		1	1	1
	Air flow	m <sup>3</sup> /h	3900	4500	5200
Air side heat exchanger	Type		Fin coil		
Throttle	Type		Electronic expansion valve		
Refrigerant	Type		R32		
	Charged volume	kg	1.25	1.25	1.8
Water side heat exchanger	Type		Plate		
Rated water flow		m <sup>3</sup> /h	1.12	1.72	2.75
Water flow range		m <sup>3</sup> /h	0.4 ~ 1.25	0.4 ~ 2.10	0.7 ~ 3.00
Water pump	Type		DC	DC	DC
	Maximum pump head	m	9	9	9
Expansion vessel	Volume	L	5	5	5
	Maximum working pressure	bar	8	8	8
Safety valve		MPa	0.3	0.3	0.3
Flow switch		m <sup>3</sup> /h	0.36	0.36	0.6
Water side connection			G1"BSP	G1"BSP	G5/4"BSP
Unit dimension (W×H×D)		mm	865×1040×410	865×1040×410	865×1040×410
Packing dimension (W×H×D)		mm	970×1190×560	970×1190×560	970×1190×560
Net weight		kg	87	87	120
Gross weight		kg	103	103	136
Ambient temperature range	Cooling	°C	-5 ~ 43	-5 ~ 43	-5 ~ 43
	Heating	°C	-25 ~ 35	-25 ~ 35	-25 ~ 35
	DHW	°C	-25 ~ 43	-25 ~ 43	-25 ~ 43
Water setting temperature range	Cooling	°C	5 ~ 25	5 ~ 25	5 ~ 25
	Heating	°C	25 ~ 65	25 ~ 65	25 ~ 65
	DHW	°C	20 ~ 60	20 ~ 60	20 ~ 60

Notes:

1. The above data test reference standard EN14511; EN14825; EN50564; EN12102; (EU) No 811/2013; (EU) No 813/2013; OJ 2014/C 207/02.
2. Sound power test condition: EN12102-1.

## 2 Electrical Characteristics

Table 2-2.1: Electrical characteristics

System	Outdoor unit				Power current			Compressor		Fan	
	Voltage (V)	Hz	Min. (V)	Max. (V)	MCA (A)	TOCA (A)	MFA (A)	MSC (A)	RLA (A)	kW	FLA (A)
MHPP5RP24CM	220-240	50	198	264	13	18	25	-	10.5	0.17	1.5
MHPP9RP24CM	220-240	50	198	264	16	18	25	-	10.5	0.17	1.5
MHPP16RP24P3CM	380-415	50	342	456	11.5	14	16	-	16	0.17	0.7

Table 2-2.2: Outdoor unit wiring and circuit breakers

Model	Power supply (V/Ph/Hz)	Nominal cross-sectional area (mm <sup>2</sup> )	Circuit breaker (A)/Ph
MHPP5RP24CM	220-240/1/50	3x4.0	B16/1ph
MHPP9RP24CM	220-240/1/50	3x4.0	B20/1ph
MHPP16RP24P3CM	380-415/3/50	5x2.5	B16/3ph

## 3 Dimensions and Center of Gravity

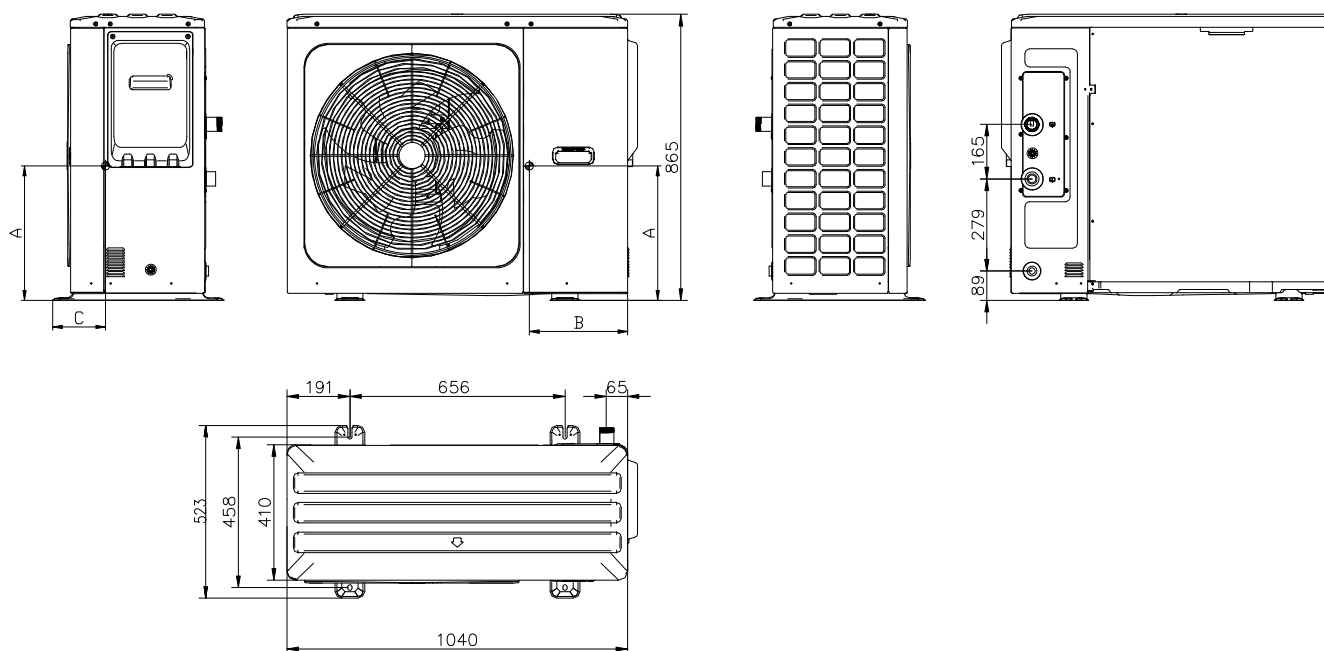


Table 2-3.1: Outdoor unit dimensions

Unit: mm

Model	A	B	C
MHPP5RP24CM	350	355	285
MHPP9RP24CM	350	355	285
MHPP16RP24P3CM	500	400	275

## 4 Operating Limits

Figure 2-4.1: Heating operating limits

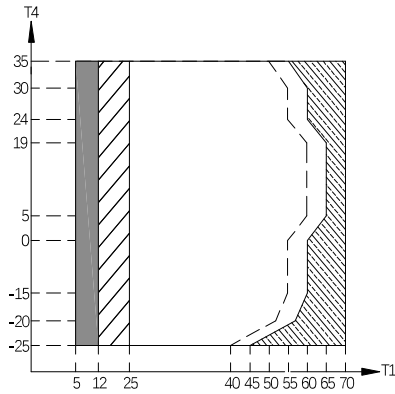


Figure 2-4.2: Cooling operating limits

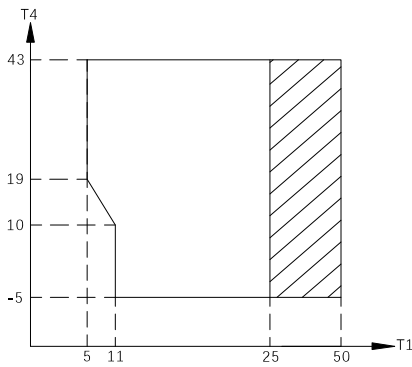
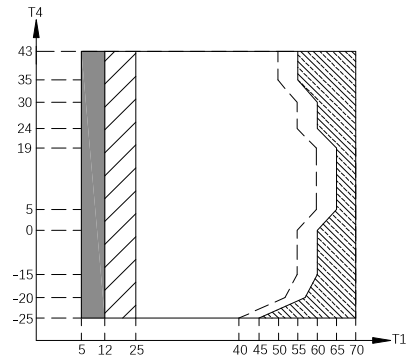


Figure 2-4.3: Domestic hot water operating limits



**Abbreviations:**

T4: Outdoor temperature (°C)

T1: Leaving water temperature (°C)

IBH: Backup electric heater

AHS: Additional heat source

**Notes:**

- If IBH/AHS setting is valid, only IBH/AHS turns on;  
If IBH/AHS setting is invalid, only heat pump turns on, limitation and protection may occur.
- ▨ Heat pump turns off, only IBH/AHS turns on.  
(IBH can heat the water temperature up to 65°C, AHS can heat the water temperature up to 70°C)
- ▧ Operation range by heat pump with possible limitation and protection.
- - - Maximum inlet water temperature line for heat pump operation.



## 5 Capacity Tables

### 5.1 Heating Capacity Tables (Test standard: EN14511)

Table 2-5.1: MHPP5RP24CM heating capacity

Part load: Maximum

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	3.92	1.59	2.46	3.89	1.69	2.30	3.86	1.80	2.14	3.83	1.92	1.99	3.60	2.05	1.76	/	/	/	/	/	/	/	/	/	/	/	
-20	4.76	1.73	2.75	4.72	1.84	2.56	4.68	1.97	2.38	4.62	2.10	2.20	4.57	2.24	2.04	4.51	2.39	1.89	2.93	1.68	1.74	/	/	/	/	/	
-15	5.70	1.85	3.08	5.65	1.98	2.85	5.59	2.12	2.64	5.53	2.27	2.44	5.45	2.42	2.25	5.37	2.58	2.08	5.18	2.68	1.93	3.31	1.86	1.78	/	/	
-10	6.77	1.95	3.47	6.70	2.09	3.20	6.63	2.26	2.94	6.54	2.42	2.70	6.44	2.60	2.48	6.33	2.78	2.28	5.98	2.82	2.12	5.51	2.80	1.97	/	/	
-7	6.83	1.82	3.75	6.76	1.98	3.42	6.67	2.13	3.13	6.57	2.30	2.86	6.47	2.47	2.62	6.36	2.65	2.40	6.31	2.80	2.25	5.91	2.84	2.08	/	/	
-5	7.36	1.82	4.04	7.06	1.95	3.62	6.96	2.12	3.29	6.86	2.29	3.00	6.75	2.46	2.74	6.61	2.64	2.50	6.13	2.59	2.37	5.71	2.61	2.19	/	/	
-2	7.35	1.70	4.32	7.26	1.87	3.89	7.16	2.03	3.52	7.05	2.21	3.19	6.92	2.39	2.89	6.78	2.58	2.63	6.42	2.60	2.47	5.95	2.61	2.28	/	/	
0	7.48	1.65	4.54	7.39	1.82	4.07	7.28	1.99	3.66	7.16	2.17	3.30	7.03	2.35	2.99	6.88	2.54	2.71	6.50	2.56	2.54	6.01	2.58	2.33	/	/	
2	7.51	1.55	4.86	7.40	1.71	4.32	7.29	1.89	3.86	7.16	2.07	3.46	7.03	2.25	3.12	6.87	2.44	2.81	6.64	2.48	2.68	6.13	2.55	2.40	/	/	
5	8.39	1.45	5.79	8.31	1.63	5.10	8.22	1.83	4.50	8.07	2.02	4.00	7.90	2.21	3.58	7.72	2.40	3.21	7.65	2.67	2.86	7.04	2.60	2.71	5.09	2.17	2.35
7	8.74	1.38	6.33	8.61	1.57	5.49	8.47	1.76	4.82	8.31	1.96	4.25	8.14	2.15	3.78	7.81	2.31	3.38	7.87	2.53	3.11	7.23	2.56	2.82	5.17	2.13	2.43
10	9.00	1.24	7.28	8.86	1.43	6.20	8.71	1.63	5.36	8.54	1.82	4.68	8.35	2.03	4.12	7.77	2.21	3.51	7.87	2.36	3.34	7.34	2.45	3.00	5.33	2.07	2.57
12	9.26	1.17	7.91	9.09	1.35	6.73	8.94	1.55	5.75	8.76	1.76	4.99	8.56	1.96	4.36	7.83	2.07	3.79	7.71	2.22	3.47	7.29	2.32	3.14	5.38	2.01	2.68
15	9.29	1.00	9.30	9.14	1.19	7.65	8.97	1.40	6.43	8.78	1.60	5.50	8.34	1.75	4.76	7.76	1.87	4.16	7.53	2.06	3.65	7.03	2.10	3.35	5.51	1.94	2.84
20	8.66	0.82	10.6	8.50	0.95	8.94	8.44	1.16	7.27	8.09	1.32	6.13	7.82	1.45	5.38	7.50	1.66	4.51	6.89	1.71	4.03	5.57	1.47	3.80	/	/	/
25	8.78	0.73	12.0	8.52	0.83	10.2	8.34	1.04	8.00	7.62	1.15	6.63	7.21	1.25	5.78	7.21	1.50	4.80	6.32	1.50	4.20	6.10	1.51	4.05	/	/	/
30	/	/	/	/	/	9.61	9.16	1.01	9.06	8.69	1.17	7.40	8.28	1.29	6.43	7.53	1.48	5.08	6.83	1.43	4.77	7.03	1.50	4.69	/	/	/
35	/	/	/	/	/	/	9.93	0.98	10.1	9.30	1.16	8.02	8.88	1.27	6.97	7.83	1.38	5.67	7.64	1.50	5.11	/	/	/	/	/	/

Part load: 130%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	3.92	1.59	2.46	3.89	1.69	2.30	3.86	1.80	2.14	3.83	1.92	1.99	3.60	2.05	1.76	/	/	/	/	/	/	/	/	/	/	/	/
-20	4.76	1.73	2.75	4.72	1.84	2.56	4.68	1.97	2.38	4.62	2.10	2.20	4.57	2.24	2.04	4.51	2.39	1.89	2.93	1.68	1.74	/	/	/	/	/	/
-15	5.70	1.85	3.08	5.65	1.98	2.85	5.59	2.12	2.64	5.53	2.27	2.44	5.45	2.42	2.25	5.37	2.58	2.08	5.18	2.68	1.93	3.31	1.86	1.78	/	/	/
-10	6.77	1.95	3.47	6.70	2.09	3.20	6.63	2.26	2.94	6.54	2.42	2.70	6.44	2.60	2.48	6.33	2.78	2.28	5.98	2.82	2.12	5.51	2.80	1.97	/	/	/
-7	6.83	1.82	3.75	6.76	1.98	3.42	6.67	2.13	3.13	6.57	2.30	2.86	6.47	2.47	2.62	6.36	2.65	2.40	6.31	2.80	2.25	5.91	2.84	2.08	/	/	/
-5	7.36	1.82	4.04	7.06	1.95	3.62	6.96	2.12	3.29	6.86	2.29	3.00	6.75	2.46	2.74	6.61	2.64	2.50	6.13	2.59	2.37	5.71	2.61	2.19	/	/	/
-2	7.35	1.70	4.32	7.26	1.87	3.89	7.16	2.03	3.52	7.05	2.21	3.19	6.92	2.39	2.89	6.78	2.58	2.63	6.42	2.60	2.47	5.95	2.61	2.28	/	/	/
0	7.48	1.65	4.54	7.39	1.82	4.07	7.28	1.99	3.66	7.16	2.17	3.30	7.03	2.35	2.99	6.88	2.54	2.71	6.50	2.56	2.54	6.01	2.58	2.33	/	/	/
2	7.51	1.55	4.86	7.40	1.71	4.32	7.29	1.89	3.86	7.16	2.07	3.46	7.03	2.25	3.12	6.87	2.44	2.81	6.64	2.48	2.68	6.13	2.55	2.40	/	/	/
5	8.39	1.45	5.79	8.31	1.63	5.10	8.22	1.83	4.50	8.07	2.02	4.00	7.90	2.21	3.58	7.72	2.40	3.21	7.65	2.67	2.86	7.04	2.60	2.71	5.09	2.17	2.35
7	8.59	1.35	6.38	8.53	1.56	5.46	8.47	1.76	4.82	8.31	1.96	4.25	8.14	2.15	3.78	7.81	2.31	3.38	7.87	2.53	3.11	7.23	2.56	2.82	5.17	2.13	2.43
10	8.50	1.15	7.37	8.55	1.38	6.20	8.55	1.59	5.37	8.54	1.82	4.68	8.35	2.03	4.12	7.77	2.21	3.51	7.87	2.36	3.34	7.34	2.45	3.00	5.33	2.07	2.57
12	8.46	1.04	8.12	8.59	1.27	6.75	8.48	1.46	5.80	8.59	1.72	5.00	8.36	1.96	4.36	7.76	2.05	3.79	7.71	2.22	3.47	7.29	2.32	3.14	5.38	2.01	2.68
15	8.60	0.90	9.56	8.82	1.14	7.72	8.61	1.33	6.48	8.64	1.57	5.51	8.34	1.75	4.76	7.68	1.84	4.17	7.53	2.06	3.65	7.03	2.10	3.35	5.51	1.94	2.84
20	8.39	0.77	10.9	8.50	0.95	8.94	8.44	1.16	7.27	8.09	1.32	6.13	7.82	1.45	5.38	7.50	1.66	4.51	6.89	1.71	4.03	5.57	1.47	3.80	/	/	/
25	8.48	0.71	12.0	8.31	0.81	10.3	8.34	1.04	8.00	7.62	1.15	6.63	7.21	1.25	5.78	7.21	1.50	4.80	6.32	1.50	4.20	6.10	1.51	4.05	/	/	/
30	/	/	/	/	/	8.45	8.20	0.88	9.35	8.24	1.12	7.37	8.11	1.24	6.56	7.16	1.40	5.13	6.60	1.38	4.79	7.03	1.50	4.69	/	/	/
35	/	/	/	/	/	/	8.19	0.79	10.4	7.82	0.88	8.93	7.75	1.08	7.16	6.73	1.16	5.82	6.60	1.25	5.26	/	/	/	/	/	/

Part load: 100%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	3.92	1.59	2.46	3.89	1.69	2.30	3.86	1.80	2.14	3.83	1.92	1.99	3.60	2.05	1.76	/	/	/	/	/	/	/	/	/	/	/	/
-20	4.76	1.73	2.75	4.72	1.84	2.56	4.68	1.97	2.38	4.63	2.10	2.20	4.57	2.24	2.04	4.51	2.39	1.89	2.93	1.68	1.74	/	/	/	/	/	/
-15	5.70	1.85	3.08	5.65	1.98	2.85	5.59	2.12	2.64	5.53	2.27	2.44	5.45	2.42	2.25	5.37	2.58	2.08	5.18	2.68	1.93	3.31	1.86	1.78	/	/	/
-10	6.47	1.84	3.51	6.53	2.03	3.21	6.24	2.10	2.97	6.20	2.28	2.72	6.13	2.45	2.50	6.00	2.61	2.30	5.62	2.63	2.14	5.51	2.80	1.97	/	/	/
-7	6.54	1.73	3.79	6.55	1.90	3.45	6.26	1.97	3.17	6.33	2.20	2.88	6.10	2.35	2.60	6.03	2.49	2.42	5.70	2.65	2.15	5.91	2.84	2.08	/	/	/
-5	6.69	1.61	4.15	6.58	1.79	3.67	6.32	1.89	3.35	6.67	2.22	3.01	6.30	2.27	2.77	6.12	2.42	2.53	6.13	2.59	2.37	5.71	2.61	2.19	/	/	/
-2	6.57	1.47	4.47	6.49	1.62	4.00	6.11	1.68	3.64	6.64	2.06	3.22	6.40	2.18	2.93	6.34	2.38	2.66	6.26	2.52	2.48	5.95	2.61	2.28	/	/	/
0	6.50	1.37	4.76	6.50	1.54	4.21	6.54	1.56	3.80	6.56	1.95	3.36	6.41	2.12	3.02	6.36	2.32	2.74	6.17	2.41	2.56	6.01	2.58	2.33	/	/	/
2	6.62	1.31	5.07	6.58	1.48	4.44	6.60	1.33	4.20	6.58	1.87	3.52	6.50	2.06	3.15	6.37	2.24	2.85	6.30	2.25	2.80	6.13	2.55	2.40	/	/	/
5	6.56	1.08	6.10	6.54	1.23	5.31	6.51	1.40	4.65	6.59	1.61	4.10	6.50	1.78	3.65	6.31	1.94	3.26	6.56	2.18	3.01	6.52	2.40	2.72	5.09	2.17</	

# Part 2

## Part load: 90%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	3.47	1.39	2.49	3.44	1.48	2.32	3.41	1.58	2.16	3.43	1.71	2.01	3.39	1.81	1.87	/	/	/	/	/	/	/	/	/	/	/	
-20	4.21	1.51	2.79	4.17	1.61	2.60	4.13	1.72	2.41	4.15	1.86	2.23	4.10	1.98	2.07	4.04	2.12	1.91	2.60	1.41	1.84	/	/	/	/	/	
-15	5.05	1.60	3.15	5.00	1.72	2.90	4.94	1.84	2.68	4.96	2.01	2.47	4.89	2.14	2.28	4.81	2.29	2.10	4.64	2.37	1.96	3.00	1.60	1.88	/	/	
-10	5.72	1.59	3.60	5.78	1.76	3.28	5.60	1.85	3.02	5.48	1.98	2.77	5.41	2.13	2.54	5.30	2.28	2.33	4.97	2.29	2.17	4.87	2.43	2.00	/	/	
-7	5.78	1.48	3.90	5.88	1.67	3.53	5.52	1.71	3.23	5.60	1.91	2.93	5.48	2.04	2.68	5.41	2.21	2.45	5.34	2.31	2.31	5.22	2.47	2.11	/	/	
-5	5.90	1.38	4.27	5.81	1.54	3.77	5.59	1.63	3.42	5.90	1.92	3.07	5.56	1.98	2.81	5.40	2.10	2.57	5.50	2.29	2.40	5.12	2.31	2.22	/	/	
-2	5.80	1.27	4.58	5.72	1.40	4.09	5.49	1.50	3.67	5.86	1.79	3.28	5.78	1.94	2.98	5.60	2.07	2.70	5.61	2.23	2.52	5.34	2.31	2.31	/	/	
0	5.84	1.21	4.84	5.72	1.34	4.28	5.12	1.34	3.83	5.78	1.69	3.41	5.85	1.91	3.07	5.71	2.05	2.78	5.43	2.10	2.59	5.30	2.24	2.36	/	/	
2	5.95	1.16	5.15	5.80	1.29	4.51	4.92	1.22	4.04	5.90	1.66	3.56	5.73	1.80	3.19	5.62	1.96	2.87	5.54	2.07	2.67	5.40	2.23	2.42	/	/	
5	5.75	0.93	6.21	5.88	1.09	5.38	5.85	1.25	4.69	5.92	1.43	4.13	5.83	1.59	3.67	5.67	1.73	3.28	5.89	1.89	3.12	5.71	2.09	2.73	4.70	1.90	2.47
7	5.91	0.86	6.84	5.73	0.99	5.81	5.70	1.13	5.02	5.87	1.34	4.39	5.93	1.53	3.87	5.45	1.58	3.44	5.79	1.83	3.16	5.87	2.07	2.84	4.76	1.86	2.56
10	5.86	0.74	7.96	5.72	0.87	6.59	5.89	1.05	5.59	5.81	1.20	4.82	5.94	1.41	4.21	5.27	1.48	3.57	5.51	1.62	3.39	5.57	1.84	3.02	4.90	1.81	2.71
12	5.83	0.65	8.91	5.74	0.80	7.22	5.67	0.94	6.05	5.75	1.11	5.16	5.94	1.33	4.47	5.20	1.35	3.86	5.17	1.47	3.52	5.50	1.74	3.16	5.08	1.80	2.82
15	5.73	0.56	10.3	5.90	0.71	8.35	5.75	0.84	6.85	5.94	1.03	5.74	5.61	1.17	4.81	5.28	1.24	4.26	5.15	1.39	3.71	5.31	1.58	3.37	5.21	1.74	2.99
20	5.57	0.46	12.1	5.91	0.62	9.53	5.84	0.74	7.86	5.60	0.87	6.43	5.76	1.04	5.54	5.46	1.18	4.61	5.11	1.25	4.10	5.27	1.32	3.99	/	/	/
25	5.85	0.46	12.8	5.73	0.53	10.8	5.75	0.65	8.90	5.26	0.74	7.10	5.30	0.88	5.99	5.29	1.08	4.91	4.63	1.09	4.26	5.76	1.34	4.29	/	/	/
30	/	/	/	5.54	0.47	11.7	5.38	0.56	9.60	5.67	0.66	8.56	5.58	0.81	6.92	4.92	0.90	5.48	4.53	0.90	5.01	6.65	1.34	4.98	/	/	/
35	/	/	/	/	/	/	5.93	0.55	10.9	5.54	0.57	9.78	5.28	0.63	8.41	4.62	0.73	6.32	4.54	0.81	5.62	/	/	/	/	/	/

## Part load: 70%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.71	1.06	2.55	2.69	1.14	2.37	2.66	1.21	2.20	2.64	1.29	2.04	2.61	1.37	1.90	/	/	/	/	/	/	/	/	/	/	/	/
-20	3.29	1.14	2.89	3.26	1.23	2.66	3.23	1.31	2.46	3.20	1.40	2.28	3.16	1.50	2.11	3.11	1.59	1.95	2.08	1.12	1.86	/	/	/	/	/	/
-15	3.95	1.20	3.28	3.91	1.30	3.00	3.87	1.40	2.76	3.82	1.50	2.54	3.77	1.61	2.34	3.71	1.72	2.16	3.57	1.77	2.02	2.41	1.28	1.89	/	/	/
-10	4.41	1.17	3.76	4.53	1.33	3.41	4.32	1.39	3.10	4.21	1.49	2.83	4.16	1.61	2.59	4.07	1.71	2.38	3.66	1.65	2.22	3.58	1.75	2.04	/	/	/
-7	4.45	1.10	4.04	4.36	1.20	3.64	4.25	1.29	3.30	4.21	1.41	2.99	4.14	1.52	2.73	4.00	1.61	2.49	4.04	1.72	2.35	3.93	1.83	2.15	/	/	/
-5	4.64	1.06	4.38	4.47	1.16	3.86	4.39	1.27	3.47	4.44	1.42	3.14	4.36	1.53	2.85	4.15	1.60	2.59	4.24	1.74	2.44	3.86	1.73	2.23	/	/	/
-2	4.46	0.95	4.70	4.41	1.06	4.16	4.15	1.11	3.73	4.61	1.38	3.33	4.37	1.46	3.00	4.30	1.58	2.72	4.23	1.67	2.54	4.12	1.78	2.32	/	/	/
0	4.42	0.89	4.99	4.41	1.01	4.37	4.13	1.06	3.89	4.44	1.29	3.45	4.52	1.46	3.10	4.42	1.58	2.80	4.17	1.60	2.61	4.07	1.72	2.37	/	/	/
2	4.49	0.84	5.32	4.57	0.99	4.63	3.90	0.95	4.09	4.46	1.24	3.61	4.53	1.41	3.22	4.43	1.53	2.90	4.25	1.58	2.69	4.15	1.70	2.44	/	/	/
5	4.43	0.69	6.44	4.41	0.80	5.51	4.39	0.92	4.77	4.58	1.10	4.18	4.38	1.18	3.70	4.25	1.29	3.30	4.56	1.46	3.13	4.60	1.68	2.74	3.60	1.46	2.47
7	4.58	0.64	7.12	4.39	0.74	5.97	4.37	0.86	5.11	4.55	1.02	4.44	4.45	1.14	3.90	4.19	1.21	3.46	4.58	1.44	3.17	4.41	1.55	2.85	3.78	1.48	2.56
10	4.37	0.52	8.37	4.56	0.67	6.81	4.40	0.77	5.71	4.62	0.94	4.89	4.60	1.08	4.24	4.19	1.17	3.58	4.37	1.29	3.39	4.27	1.41	3.03	3.89	1.44	2.70
12	4.34	0.46	9.46	4.58	0.61	7.50	4.36	0.70	6.19	4.58	0.88	5.23	4.44	0.98	4.51	4.13	1.07	3.87	4.11	1.16	3.53	4.36	1.38	3.16	3.78	1.35	2.80
15	4.35	0.41	10.6	4.52	0.51	8.82	4.42	0.62	7.09	4.60	0.78	5.87	4.47	0.90	4.97	4.09	0.96	4.28	3.95	1.06	3.73	3.96	1.17	3.37	4.03	1.35	2.98
20	4.40	0.36	12.3	4.36	0.45	9.72	4.31	0.52	8.33	4.08	0.61	6.66	4.47	0.79	5.67	4.23	0.91	4.66	3.96	0.96	4.12	4.08	1.02	4.00	/	/	/
25	5.06	0.38	13.2	5.03	0.46	10.9	4.82	0.54	8.96	4.39	0.59	7.41	4.07	0.67	6.07	4.06	0.81	4.99	3.73	0.87	4.31	4.46	1.03	4.33	/	/	/
30	/	/	/	5.64	0.48	11.8	5.38	0.56	9.60	5.09	0.57	8.96	4.88	0.68	7.15	4.37	0.78	5.58	4.02	0.79	5.06	4.67	0.93	5.05	/	/	/
35	/	/	/	/	/	/	5.93	0.55	10.9	5.54	0.57	9.78	5.28	0.63	8.41	4.62	0.73	6.32	4.50	0.80	5.62	/	/	/	/	/	/

## Part load: 50%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	1.91	0.75	2.55	1.90	0.81	2.36	1.88	0.86	2.19	1.86	0.91	2.04	1.84	0.97	1.90	/	/	/	/	/	/	/	/	/	/	/	/
-20	2.33	0.81	2.89	2.31	0.87	2.66	2.28	0.93	2.46	2.26	0.99	2.28	2.23	1.06	2.11	2.13	1.09	1.96	1.44	0.78	1.86	/	/	/	/	/	/
-15	2.80	0.85	3.30	2.77	0.92	3.01	2.74	0.99	2.76	2.70	1.06	2.54	2.66	1.14	2.34	2.55	1.18	2.16	2.52	1.24	2.03	1.70	0.90	1.88	/	/	/
-10	3.18	0.84	3.80	3.12	0.91	3.43	3.06	0.98	3.11	3.04	1.07	2.83	3.00	1.16	2.59	2.93	1.23	2.38	2.67	1.20	2.22	2.61	1.27	2.05	/	/	/
-7	3.22	0.79	4.10	3.22	0.88	3.67	2.99	0.91	3.30	3.11	1.04	2.99	2.99	1.10	2.72	2.95	1.19	2.48	2.91	1.24	2.35	2.81	1.30	2.16	/	/	/
-5	3.19	0.72	4.44	3.14	0.80	3.92	3.11	0.89	3.51	3.28	1.04	3.16	3.00	1.05	2.86	2.91	1.12	2.60	2.91	1.19	2.44	2.70	1.21	2.23	/	/	/
-2	3.13	0.66	4.77	3.20	0.76	4.23	3.02	0.81	3.75	3.27	0.98	3.35	3.07	1.02	3.01	3.12	1.15	2.72	2.97	1.17	2.54	2.92	1.26	2.31	/	/	/
0	3.22	0.63	5.13	3.21	0.72	4.45	2.93	0.75	3.91	3.23	0.93	3.47	3.21	1.03	3.11	3.13	1.12	2.80	2.93	1.13	2.60	2.95	1.25	2.36	/	/	/
2	3.16	0.58	5.49	3.13	0.66	4.72	2.77	0.68	4.10	3.24	0.90	3.62	3.10	0.96	3.23	3.03	1.05	2.89	2.98	1.11	2.68	2.91	1.20	2.42	/	/	/
5	2.95	0.44	6.70	3.24	0.58	5.63	3.22	0.67	4.81	3.25	0.78	4.19	3.20	0.87	3.69	3.11	0.95	3.27	3.10	1.03	3.02	3.26	1.20	2.72	2.39	0.98	2.43
7	3.10	0.42	7.36	3.08	0.50	6.12	2.92	0.57	5.16	2.94	0.66	4															

Part load: 30%

DB	LWT																												
	25			30			35			40			45			50			55			60			65				
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI
-25	1.02	0.42	2.45	1.01	0.44	2.27	1.00	0.47	2.11	0.99	0.50	1.98	0.97	0.52	1.86	/	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	1.25	0.44	2.80	1.24	0.48	2.57	1.22	0.51	2.37	1.21	0.55	2.20	1.19	0.58	2.05	1.17	0.61	1.92	1.12	0.61	1.84	/	/	/	/	/	/	/	/
-15	1.51	0.47	3.23	1.49	0.51	2.93	1.47	0.55	2.67	1.45	0.59	2.46	1.43	0.63	2.27	1.40	0.66	2.11	1.34	0.67	2.00	1.31	0.70	1.86	/	/	/	/	
-10	1.80	0.48	3.74	1.81	0.56	3.25	1.72	0.57	3.01	1.71	0.63	2.74	1.69	0.67	2.51	1.65	0.72	2.30	1.59	0.73	2.17	1.55	0.77	2.01	/	/	/	/	
-7	1.96	0.50	3.95	1.93	0.55	3.48	1.88	0.61	3.10	1.84	0.65	2.83	1.78	0.68	2.63	1.75	0.73	2.40	1.76	0.77	2.29	1.65	0.78	2.11	/	/	/	/	
-5	2.10	0.50	4.21	2.06	0.54	3.79	2.03	0.59	3.45	1.93	0.65	2.99	1.81	0.65	2.80	1.80	0.71	2.54	1.87	0.79	2.38	1.82	0.83	2.18	/	/	/	/	
-2	2.26	0.47	4.77	2.21	0.54	4.12	2.16	0.58	3.70	2.13	0.67	3.20	2.07	0.70	2.95	1.99	0.75	2.66	2.01	0.81	2.49	1.95	0.86	2.26	/	/	/	/	
0	2.33	0.46	5.09	2.30	0.53	4.35	2.25	0.58	3.87	2.21	0.66	3.35	2.15	0.70	3.05	2.03	0.74	2.74	2.09	0.82	2.55	2.03	0.88	2.31	/	/	/	/	
2	2.48	0.45	5.48	2.42	0.52	4.65	2.40	0.59	4.08	2.32	0.66	3.50	2.26	0.71	3.17	2.11	0.75	2.83	2.20	0.84	2.63	2.10	0.89	2.37	/	/	/	/	
5	2.95	0.44	6.70	2.63	0.49	5.35	2.75	0.57	4.81	2.71	0.66	4.13	2.70	0.74	3.66	2.60	0.80	3.24	2.58	0.86	2.99	2.41	0.90	2.68	2.39	0.98	2.43	2.43	
7	3.10	0.42	7.36	3.01	0.50	6.06	2.98	0.58	5.16	2.93	0.66	4.44	2.82	0.73	3.87	2.71	0.80	3.40	2.77	0.88	3.13	2.62	0.94	2.79	2.54	1.01	2.51	2.51	
10	3.36	0.38	8.93	3.32	0.47	7.02	3.25	0.56	5.79	3.16	0.64	4.90	3.09	0.73	4.22	2.80	0.79	3.54	2.95	0.88	3.36	2.85	0.95	2.99	2.79	1.05	2.65	2.65	
12	3.55	0.35	10.1	3.50	0.45	7.74	3.43	0.55	6.29	3.32	0.63	5.23	3.28	0.73	4.49	2.97	0.77	3.84	2.96	0.85	3.49	2.95	0.95	3.12	2.94	1.07	2.76	2.76	
15	3.92	0.36	11.0	3.83	0.45	8.51	3.73	0.51	7.26	3.67	0.62	5.94	3.56	0.71	5.00	3.20	0.75	4.27	3.06	0.82	3.71	2.95	0.88	3.34	3.18	1.08	2.94	2.94	
20	4.40	0.36	12.3	4.36	0.45	9.72	4.31	0.52	8.33	4.08	0.61	6.66	3.92	0.69	5.71	3.74	0.80	4.67	3.73	0.91	4.12	3.18	0.80	3.98	/	/	/	/	
25	5.06	0.38	13.2	5.03	0.46	10.9	4.82	0.54	8.96	4.39	0.59	7.41	4.07	0.67	6.07	4.06	0.81	4.99	3.80	0.86	4.42	3.52	0.81	4.34	/	/	/	/	
30	/	/	/	5.64	0.48	11.8	5.38	0.56	9.60	5.09	0.57	8.96	4.88	0.68	7.15	4.37	0.78	5.58	4.02	0.79	5.06	4.67	0.93	5.05	/	/	/	/	
35	/	/	/	/	/	/	5.93	0.55	10.9	5.54	0.57	9.78	5.28	0.63	8.41	4.62	0.73	6.32	4.22	0.75	5.62	/	/	/	/	/	/	/	

Part load: Minimum

DB	LWT																												
	25			30			35			40			45			50			55			60			65				
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI
-25	1.00	0.43	2.33	0.99	0.46	2.15	0.98	0.47	2.09	0.97	0.51	1.91	0.90	0.49	1.84	/	/	/	/	/	/	/	/	/	/	/	/	/	
-20	1.23	0.46	2.68	1.21	0.49	2.45	1.19	0.53	2.25	1.15	0.55	2.10	1.12	0.55	2.04	1.13	0.59	1.90	1.12	0.61	1.84	/	/	/	/	/	/	/	
-15	1.49	0.48	3.09	1.45	0.52	2.80	1.42	0.56	2.55	1.41	0.60	2.36	1.35	0.60	2.25	1.33	0.64	2.09	1.34	0.67	2.00	1.31	0.70	1.86	/	/	/	/	
-10	1.78	0.49	3.63	1.73	0.54	3.23	1.70	0.57	2.98	1.64	0.62	2.63	1.61	0.64	2.50	1.56	0.68	2.30	1.59	0.73	2.17	1.55	0.77	2.01	/	/	/	/	
-7	1.96	0.50	3.95	1.93	0.55	3.48	1.88	0.61	3.10	1.84	0.65	2.83	1.78	0.68	2.63	1.75	0.73	2.40	1.76	0.77	2.29	1.65	0.78	2.11	/	/	/	/	
-5	2.10	0.50	4.21	2.06	0.54	3.79	2.03	0.59	3.45	1.93	0.65	2.99	1.81	0.65	2.80	1.80	0.71	2.54	1.87	0.79	2.38	1.82	0.83	2.18	/	/	/	/	
-2	2.26	0.47	4.77	2.21	0.54	4.12	2.16	0.58	3.70	2.13	0.67	3.20	2.07	0.70	2.95	1.99	0.75	2.66	2.01	0.81	2.49	1.95	0.86	2.26	/	/	/	/	
0	2.33	0.46	5.09	2.30	0.53	4.35	2.25	0.58	3.87	2.21	0.66	3.35	2.15	0.70	3.05	2.03	0.74	2.74	2.09	0.82	2.55	2.03	0.88	2.31	/	/	/	/	
2	2.48	0.45	5.48	2.42	0.52	4.65	2.40	0.59	4.08	2.32	0.66	3.50	2.26	0.71	3.17	2.11	0.75	2.83	2.20	0.84	2.63	2.10	0.89	2.37	/	/	/	/	
5	2.83	0.43	6.63	2.63	0.49	5.35	2.75	0.57	4.81	2.71	0.66	4.13	2.70	0.74	3.66	2.60	0.80	3.24	2.58	0.86	2.99	2.41	0.90	2.68	2.39	0.98	2.43	2.43	
7	3.10	0.42	7.36	3.01	0.50	6.06	2.98	0.58	5.16	2.93	0.66	4.44	2.82	0.73	3.87	2.71	0.80	3.40	2.77	0.88	3.13	2.62	0.94	2.79	2.54	1.01	2.51	2.51	
10	3.36	0.38	8.93	3.32	0.47	7.02	3.25	0.56	5.79	3.16	0.64	4.90	3.09	0.73	4.22	2.80	0.79	3.54	2.95	0.88	3.36	2.85	0.95	2.99	2.79	1.05	2.65	2.65	
12	3.55	0.35	10.1	3.50	0.45	7.74	3.43	0.55	6.29	3.32	0.63	5.23	3.28	0.73	4.49	2.97	0.77	3.84	2.96	0.85	3.49	2.95	0.95	3.12	2.94	1.07	2.76	2.76	
15	3.92	0.36	11.0	3.83	0.45	8.51	3.73	0.51	7.26	3.67	0.62	5.94	3.56	0.71	5.00	3.20	0.75	4.27	3.06	0.82	3.71	2.95	0.88	3.34	3.18	1.08	2.94	2.94	
20	4.40	0.36	12.3	4.36	0.45	9.72	4.31	0.52	8.33	4.08	0.61	6.66	3.92	0.69	5.71	3.74	0.80	4.67	3.73	0.91	4.12	3.18	0.80	3.98	/	/	/	/	
25	5.06	0.38	13.2	5.03	0.46	10.9	4.82	0.54	8.96	4.39	0.59	7.41	4.07	0.67	6.07	4.06	0.81	4.99	3.80	0.86	4.42	3.52	0.81	4.34	/	/	/	/	
30	/	/	/	5.64	0.48	11.8	5.38	0.56	9.60	5.09	0.57	8.96	4.88	0.68	7.15	4.37	0.78	5.58	4.02	0.79	5.06	4.67	0.93	5.05	/	/	/	/	
35	/	/	/	/	/	/	5.93	0.55	10.9	5.54	0.57	9.78	5.28	0.63	8.41	4.62	0.73	6.32	4.22	0.75	5.62	/	/	/	/	/	/	/	

Abbreviations:

- LWT: Leaving water temperature (°C)
- DB: Dry-bulb temperature for Outdoor air temperature (°C)
- HC: Total heating capacity (kW)
- PI: Power input (kW)

# Part 2

Table 2-5.2: MHPP9RP24CM heating capacity

Part load: Maximum

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	4.40	1.86	2.36	4.37	1.98	2.21	4.41	2.15	2.05	4.37	2.28	1.92	2.97	1.72	1.73	/	/	/	/	/	/	/	/	/	/	/	
-20	5.34	2.04	2.62	5.30	2.17	2.44	5.33	2.35	2.27	5.28	2.50	2.11	5.22	2.66	1.96	5.15	2.83	1.82	3.44	2.01	1.71	/	/	/	/	/	
-15	6.61	2.27	2.91	6.55	2.43	2.70	6.48	2.59	2.50	6.41	2.76	2.32	6.33	2.96	2.14	6.23	3.13	1.99	6.12	3.24	1.89	3.69	2.11	1.75	/	/	
-10	7.84	2.40	3.27	7.76	2.57	3.02	7.68	2.76	2.78	7.58	2.96	2.56	7.47	3.28	2.28	7.29	3.34	2.18	6.92	3.43	2.02	6.48	3.34	1.94	/	/	
-7	8.65	2.45	3.53	8.50	2.62	3.25	8.40	2.82	2.98	8.29	3.04	2.73	8.16	3.50	2.33	7.89	3.42	2.31	7.41	3.67	2.02	6.98	3.40	2.05	/	/	
-5	8.94	2.38	3.75	8.92	2.61	3.42	8.98	2.81	3.20	8.43	2.98	2.83	8.47	3.22	2.63	8.04	3.31	2.43	7.60	3.39	2.24	7.14	3.35	2.13	/	/	
-2	9.47	2.34	4.05	9.36	2.56	3.66	9.42	2.77	3.40	9.02	2.97	3.04	8.95	3.23	2.77	8.40	3.29	2.55	7.92	3.38	2.34	7.34	3.31	2.22	/	/	
0	9.69	2.30	4.22	9.58	2.51	3.82	9.63	2.73	3.53	9.22	2.93	3.15	9.13	3.20	2.85	8.56	3.27	2.62	8.07	3.36	2.40	7.45	3.28	2.27	/	/	
2	10.1	2.26	4.48	10.0	2.47	4.05	9.94	2.75	3.62	9.51	2.90	3.28	9.42	3.25	2.90	8.90	3.28	2.71	8.47	3.27	2.59	7.63	3.26	2.34	/	/	
5	11.0	2.15	5.13	10.3	2.34	4.41	10.8	2.61	4.15	10.8	2.87	3.75	10.7	3.15	3.39	10.3	3.34	3.07	9.55	3.42	2.79	8.66	3.32	2.61	5.75	2.46	2.34
7	11.4	2.03	5.61	11.3	2.27	4.97	11.2	2.51	4.45	11.0	2.78	3.99	10.9	3.04	3.58	10.5	3.25	3.22	9.69	3.25	2.98	9.04	3.30	2.74	5.60	2.30	2.43
10	11.8	1.84	6.43	11.7	2.08	5.62	11.5	2.32	4.94	11.3	2.58	4.37	11.0	2.84	3.89	10.1	3.01	3.35	9.57	3.03	3.16	8.87	3.01	2.95	5.85	2.28	2.57
12	12.0	1.69	7.09	11.8	1.94	6.11	11.6	2.18	5.33	11.4	2.44	4.68	11.2	2.70	4.13	10.2	2.83	3.62	9.50	2.81	3.38	8.70	2.82	3.09	5.92	2.21	2.68
15	12.0	1.46	8.21	11.8	1.69	6.95	11.6	1.94	5.96	11.4	2.20	5.17	11.1	2.46	4.52	10.1	2.52	3.99	9.45	2.66	3.55	8.45	2.56	3.30	6.09	2.14	2.84
20	11.9	1.32	9.01	11.7	1.55	7.52	11.5	1.71	6.69	11.0	1.91	5.75	10.7	2.08	5.12	10.2	2.36	4.34	9.58	2.41	3.97	8.68	2.33	3.73	/	/	/
25	10.7	1.03	10.4	10.5	1.27	8.32	10.3	1.40	7.39	9.45	1.51	6.26	8.95	1.62	5.54	8.95	1.92	4.65	8.22	1.94	4.23	7.85	1.95	4.03	/	/	/
30	/	/	/	/	11.8	1.31	9.05	11.3	1.40	8.04	10.7	1.58	6.81	10.4	1.74	5.96	9.31	1.89	4.93	8.61	1.85	4.66	7.32	1.67	4.38	/	/
35	/	/	/	/	/	/	12.4	1.41	8.79	11.6	1.58	7.34	11.1	1.74	6.37	9.76	1.86	5.24	8.93	1.80	4.95	/	/	/	/	/	/

Part load: 130%

DB	LWT																											
	25			30			35			40			45			50			55			60			65			
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	
-25	4.40	1.86	2.36	4.37	1.98	2.21	4.41	2.15	2.05	4.37	2.28	1.92	2.97	1.72	1.73	/	/	/	/	/	/	/	/	/	/	/	/	
-20	5.34	2.04	2.62	5.30	2.17	2.44	5.33	2.35	2.27	5.28	2.50	2.11	5.22	2.66	1.96	5.15	2.83	1.82	3.44	2.01	1.71	/	/	/	/	/	/	
-15	6.61	2.27	2.91	6.55	2.43	2.70	6.48	2.59	2.50	6.41	2.76	2.32	6.33	2.96	2.14	6.23	3.13	1.99	6.12	3.24	1.89	3.69	2.11	1.75	/	/	/	
-10	7.84	2.40	3.27	7.76	2.57	3.02	7.68	2.76	2.78	7.58	2.96	2.56	7.47	3.28	2.28	7.29	3.34	2.18	6.92	3.43	2.02	6.48	3.34	1.94	/	/	/	
-7	8.65	2.45	3.53	8.50	2.62	3.25	8.40	2.82	2.98	8.29	3.04	2.73	8.16	3.50	2.33	7.89	3.42	2.31	7.41	3.67	2.02	6.98	3.40	2.05	/	/	/	
-5	8.94	2.38	3.75	8.92	2.61	3.42	8.98	2.81	3.20	8.43	2.98	2.83	8.47	3.22	2.63	8.04	3.31	2.43	7.60	3.39	2.24	7.14	3.35	2.13	/	/	/	
-2	9.47	2.34	4.05	9.36	2.56	3.66	9.42	2.77	3.40	9.02	2.97	3.04	8.95	3.23	2.77	8.40	3.29	2.55	7.92	3.38	2.34	7.34	3.31	2.22	/	/	/	
0	9.69	2.30	4.22	9.58	2.51	3.82	9.63	2.73	3.53	9.22	2.93	3.15	9.13	3.20	2.85	8.56	3.27	2.62	8.07	3.36	2.40	7.45	3.28	2.27	/	/	/	
2	10.1	2.26	4.48	10.0	2.47	4.05	9.94	2.75	3.62	9.51	2.90	3.28	9.42	3.25	2.90	8.90	3.28	2.71	8.47	3.27	2.59	7.63	3.26	2.34	/	/	/	
5	11.0	2.15	5.13	10.3	2.34	4.41	10.8	2.61	4.15	10.8	2.87	3.75	10.7	3.15	3.39	10.3	3.34	3.07	9.55	3.42	2.79	8.66	3.32	2.61	5.75	2.46	2.34	
7	11.4	2.03	5.61	11.3	2.27	4.97	11.2	2.51	4.45	11.1	2.78	3.99	10.9	3.04	3.58	10.5	3.25	3.22	9.69	3.25	2.98	9.04	3.30	2.74	5.60	2.30	2.43	
10	11.8	1.84	6.43	11.7	2.08	5.62	11.5	2.32	4.94	11.3	2.58	4.37	11.0	2.84	3.89	10.1	3.01	3.35	9.57	3.03	3.16	8.87	3.01	2.95	5.85	2.28	2.57	
12	12.0	1.69	7.09	11.8	1.94	6.11	11.6	2.18	5.33	11.4	2.44	4.68	11.2	2.70	4.13	10.2	2.83	3.62	9.50	2.81	3.38	8.70	2.82	3.09	5.92	2.21	2.68	
15	12.0	1.46	8.21	11.8	1.69	6.95	11.6	1.94	5.96	11.4	2.20	5.17	11.1	2.46	4.52	10.1	2.52	3.99	9.45	2.66	3.55	8.45	2.56	3.30	6.09	2.14	2.84	
20	11.9	1.32	9.01	11.7	1.55	7.52	11.5	1.71	6.69	11.0	1.91	5.75	10.7	2.08	5.12	10.2	2.36	4.34	9.58	2.41	3.97	8.68	2.33	3.73	/	/	/	
25	10.7	1.03	10.4	10.5	1.27	8.32	10.3	1.40	7.39	9.45	1.51	6.26	8.95	1.62	5.54	8.95	1.92	4.65	8.22	1.94	4.23	7.85	1.95	4.03	/	/	/	
30	/	/	/	/	11.8	1.31	9.05	11.3	1.40	8.04	10.7	1.58	6.81	10.4	1.74	5.96	9.31	1.89	4.93	8.61	1.85	4.66	7.32	1.67	4.38	/	/	/
35	/	/	/	/	/	/	12.4	1.41	8.79	11.6	1.58	7.34	11.1	1.74	6.37	9.76	1.86	5.24	8.93	1.80	4.95	/	/	/	/	/	/	

Part load: 100%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	4.40	1.86	2.36	4.37	1.98	2.21	4.41	2.15	2.05	4.37	2.28	1.92	2.97	1.72	1.73	/	/	/	/	/	/	/	/	/	/	/	/
-20	5.34	2.04	2.62	5.30	2.17	2.44	5.33	2.35	2.27	5.28	2.50	2.11	5.22	2.66	1.96	5.15	2.83	1.82	3.44	2.01	1.71	/	/	/	/	/	/
-15	6.61	2.27	2.91	6.55	2.43	2.70	6.48	2.59	2.50	6.41	2.76	2.32	6.33	2.96	2.14	6.23	3.13	1.99	6.12	3.24	1.89	3.69	2.11	1.75	/	/	/
-10	7.84	2.40	3.27	7.76	2.57	3.02	7.68	2.76	2.78	7.58	2.96	2.56	7.47	3.28	2.28	7.29	3.34	2.18	6.92	3.43	2.02	6.48	3.34	1.94	/	/	/
-7	8.65	2.45	3.53	8.50	2.62	3.25	8.40	2.82	2.98	8.29	3.04	2.73	8.16	3.50	2.33	7.89	3.42	2.31	7.41	3.67	2.02	6.98	3.40	2.05	/	/	/
-5	8.94	2.38	3.75	8.92	2.61	3.42	8.98	2.81	3.20	8.43	2.98	2.83	8.47	3.22	2.63	8.04	3.31	2.43	7.60	3.39	2.24	7.14	3.35	2.13	/	/	/
-2	9.47	2.34	4.05	9.36	2.56	3.66	9.42	2.77	3.40	9.02	2.97	3.04	8.95	3.23	2.77	8.40	3.29	2.55	7.92	3.38	2.34	7.34	3.31	2.22	/	/	/
0	9.69	2.30	4.22	9.58	2.51	3.82	9.63	2.73	3.53	9.22	2.93	3.15	9.13	3.20	2.85	8.56	3.27	2.62	8.07	3.36	2.40	7.45	3.28	2.27	/	/	/
2	10.1	2.26	4.48	10.0	2.47	4.05	9.94	2.75	3.62	9.51	2.90	3.28	9.42	3.25	2.90	8.90	3.28	2.71	8.47	3.27	2.59	7.63	3.26	2.34	/	/	/
5	10.2	1.94	5.28	9.95	2.23	4.46	9.56	2.24	4.27	9.34	2.42	3.86	10.0	2.92	3.42	9.46	3.04	3.11	9.13	3.26	2.80	8.66	3.32	2.61	5.75	2.46	2.34
7	10.3	1.76	5.85	10.2	1.98	5.14																					

Part load: 90%

DB	LWT																												
	25			30			35			40			45			50			55			60			65				
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI
-25	3.95	1.65	2.39	3.92	1.75	2.24	3.91	1.87	2.09	3.88	2.00	1.94	2.80	1.53	1.83	/	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	4.73	1.77	2.68	4.75	1.90	2.50	4.73	2.04	2.32	4.68	2.18	2.15	4.68	2.35	1.99	4.61	2.49	1.85	3.24	1.78	1.82	/	/	/	/	/	/	/	/
-15	5.93	1.98	2.99	5.87	2.11	2.78	5.81	2.26	2.57	5.74	2.41	2.38	5.67	2.59	2.19	5.59	2.75	2.03	5.49	2.84	1.93	3.43	1.84	1.86	/	/	/	/	/
-10	7.03	2.08	3.38	6.96	2.24	3.11	6.88	2.40	2.87	6.80	2.59	2.63	6.27	2.57	2.44	6.37	2.84	2.24	6.20	3.01	2.06	5.74	2.93	1.96	/	/	/	/	/
-7	7.76	2.13	3.65	7.62	2.27	3.35	7.53	2.45	3.07	7.01	2.47	2.84	6.64	2.54	2.61	6.58	2.76	2.38	6.27	2.86	2.19	6.18	2.99	2.07	/	/	/	/	/
-5	8.02	2.07	3.88	8.00	2.26	3.54	7.36	2.20	3.34	6.84	2.33	2.94	6.68	2.44	2.74	6.84	2.75	2.49	6.55	2.87	2.28	6.40	2.96	2.16	/	/	/	/	/
-2	8.50	2.03	4.19	8.40	2.22	3.78	7.40	2.07	3.58	7.18	2.26	3.18	7.05	2.44	2.89	6.96	2.66	2.62	6.97	2.93	2.38	6.58	2.92	2.25	/	/	/	/	/
0	8.70	1.99	4.37	8.59	2.18	3.94	7.58	2.03	3.73	7.31	2.22	3.29	7.33	2.47	2.97	7.23	2.69	2.69	7.10	2.91	2.44	6.59	2.85	2.31	/	/	/	/	/
2	9.08	1.96	4.64	8.97	2.15	4.18	7.70	1.97	3.90	7.68	2.25	3.42	7.66	2.50	3.07	7.44	2.68	2.78	7.21	2.66	2.71	6.75	2.85	2.37	/	/	/	/	/
5	9.05	1.66	5.47	8.94	1.95	4.59	8.46	1.93	4.39	8.39	2.12	3.95	8.97	2.56	3.50	8.38	2.65	3.16	8.07	2.83	2.85	7.65	2.88	2.66	5.43	2.20	2.47	/	/
7	9.10	1.50	6.08	9.01	1.70	5.31	8.91	1.88	4.73	8.78	2.09	4.19	9.28	2.52	3.68	8.71	2.63	3.31	8.15	2.59	3.14	7.99	2.86	2.79	5.17	2.02	2.56	/	/
10	9.29	1.28	7.24	9.15	1.48	6.17	8.99	1.68	5.34	9.04	1.95	4.64	9.14	2.26	4.05	8.51	2.47	3.45	8.59	2.67	3.22	7.96	2.65	3.00	5.40	1.99	2.71	/	/
12	8.93	1.11	8.04	9.19	1.37	6.72	9.03	1.57	5.75	9.08	1.83	4.97	9.33	2.16	4.32	8.36	2.21	3.78	8.53	2.47	3.45	7.71	2.46	3.13	5.46	1.93	2.82	/	/
15	8.66	0.95	9.14	8.52	1.11	7.67	8.98	1.40	6.41	8.80	1.61	5.48	9.10	1.93	4.72	8.00	1.93	4.14	8.16	2.26	3.61	6.59	1.98	3.33	5.76	1.93	2.99	/	/
20	8.63	0.84	10.2	9.09	1.05	8.66	9.12	1.28	7.13	8.77	1.45	6.04	8.85	1.68	5.27	8.40	1.90	4.42	8.43	2.11	4.00	7.40	1.97	3.76	/	/	/	/	/
25	9.05	0.77	11.7	8.89	0.94	9.47	8.70	1.14	7.63	8.29	1.31	6.33	7.85	1.41	5.58	7.85	1.68	4.67	7.21	1.70	4.24	5.72	1.35	4.24	/	/	/	/	/
30	/	/	/	9.05	0.90	10.1	9.02	1.02	8.83	8.57	1.18	7.26	8.62	1.40	6.16	7.74	1.53	5.05	7.27	1.54	4.71	5.66	1.20	4.73	/	/	/	/	/
35	/	/	/	/	/	/	8.61	0.87	9.93	8.46	1.01	8.34	8.07	1.11	7.24	7.44	1.31	5.68	6.80	1.30	5.25	/	/	/	/	/	/	/	/

Part load: 70%

DB	LWT																												
	25			30			35			40			45			50			55			60			65				
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI
-25	3.00	1.23	2.45	2.97	1.30	2.28	3.04	1.43	2.12	3.01	1.53	1.97	2.10	1.15	1.83	/	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	3.64	1.32	2.77	3.61	1.41	2.56	3.69	1.56	2.37	3.65	1.67	2.19	3.60	1.77	2.03	3.50	1.86	1.88	2.44	1.34	1.82	/	/	/	/	/	/	/	/
-15	4.51	1.45	3.12	4.46	1.55	2.87	4.42	1.67	2.65	4.36	1.79	2.44	4.37	1.94	2.25	4.31	2.07	2.08	4.17	2.10	1.98	2.69	1.45	1.86	/	/	/	/	/
-10	5.35	1.50	3.56	5.30	1.63	3.25	5.23	1.76	2.97	5.17	1.90	2.72	4.76	1.90	2.51	4.83	2.10	2.30	4.71	2.22	2.12	4.41	2.18	2.02	/	/	/	/	/
-7	5.91	1.53	3.87	5.89	1.68	3.51	5.73	1.79	3.20	5.32	1.82	2.93	5.10	1.89	2.70	5.14	2.10	2.45	4.90	2.17	2.26	4.75	2.23	2.13	/	/	/	/	/
-5	6.10	1.48	4.12	6.08	1.64	3.72	5.76	1.66	3.47	5.27	1.73	3.04	5.23	1.85	2.83	5.28	2.05	2.57	5.03	2.14	2.35	4.85	2.19	2.22	/	/	/	/	/
-2	6.47	1.44	4.49	6.39	1.60	3.99	5.80	1.55	3.73	5.56	1.69	3.29	5.45	1.83	2.98	5.35	1.98	2.70	5.39	2.19	2.46	4.99	2.16	2.31	/	/	/	/	/
0	6.73	1.43	4.70	6.65	1.59	4.18	5.87	1.51	3.88	5.66	1.66	3.41	5.67	1.85	3.07	5.56	2.01	2.77	5.39	2.14	2.52	5.06	2.15	2.36	/	/	/	/	/
2	6.91	1.37	5.03	6.83	1.53	4.46	5.93	1.46	4.07	5.94	1.67	3.55	5.93	1.86	3.18	5.82	2.03	2.87	5.65	2.05	2.76	5.29	2.19	2.42	/	/	/	/	/
5	7.11	1.20	5.92	6.79	1.38	4.93	6.25	1.36	4.59	6.11	1.50	4.08	6.80	1.87	3.64	6.45	1.98	3.26	6.21	2.12	2.93	5.66	2.09	2.71	4.08	1.65	2.47	/	/
7	6.87	1.05	6.53	6.80	1.21	5.61	7.01	1.42	4.94	6.61	1.52	4.34	7.18	1.87	3.83	6.70	1.96	3.42	6.27	1.97	3.19	6.02	2.12	2.84	4.09	1.60	2.56	/	/
10	7.04	0.92	7.64	6.93	1.08	6.42	6.81	1.24	5.50	7.00	1.47	4.76	7.03	1.69	4.17	6.54	1.85	3.54	6.65	2.03	3.28	6.16	2.04	3.02	4.13	1.53	2.70	/	/
12	6.88	0.81	8.53	6.96	0.99	7.00	6.99	1.18	5.93	7.03	1.38	5.09	7.22	1.63	4.42	6.33	1.65	3.83	6.46	1.85	3.50	6.08	1.93	3.15	4.33	1.54	2.81	/	/
15	6.95	0.73	9.56	6.84	0.85	8.08	7.09	1.06	6.66	6.95	1.23	5.64	7.00	1.45	4.83	6.31	1.50	4.21	6.41	1.74	3.69	6.22	1.85	3.36	4.30	1.44	2.99	/	/
20	6.64	0.58	11.5	6.99	0.75	9.34	6.87	0.91	7.51	6.61	1.06	6.26	6.81	1.26	5.42	6.74	1.49	4.52	6.49	1.60	4.06	6.15	1.62	3.79	/	/	/	/	/
25	6.95	0.56	12.3	6.82	0.68	10.0	6.68	0.79	8.42	6.37	0.94	6.78	6.03	1.03	5.86	6.03	1.25	4.84	5.54	1.27	4.35	5.23	1.21	4.32	/	/	/	/	/
30	/	/	/	6.73	0.63	10.7	6.73	0.71	9.44	6.38	0.79	8.04	6.67	1.01	6.61	5.99	1.13	5.30	5.77	1.18	4.88	4.77	0.95	5.03	/	/	/	/	/
35	/	/	/	/	/	/	6.68	0.63	10.6	6.56	0.73	9.04	6.25	0.80	7.82	5.54	0.93	5.96	5.27	0.97	5.42	/	/	/	/	/	/	/	/

Part load: 50%

DB	LWT																													
	25			30			35			40			45			50			55			60			65					
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.15	0.88	2.43	2.13	0.94	2.26	2.10	1.00	2.11	2.08	1.06	1.96	1.52	0.84	1.80	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
-20	2.62	0.95	2.77	2.59	1.01	2.56	2.55	1.08	2.37	2.52	1.15	2.19	2.48	1.22	2.04	2.45	1.30	1.89	1.76	0.96	1.83	/	/	/	/	/	/	/	/	/
-15	3.17	1.00	3.17	3.21	1.11	2.90	3.17	1.19	2.66	3.13	1.28	2.45	3.09	1.37	2.26	3.04	1.45	2.09	2.99	1.49	2.01	1.83	0.99	1.85	/	/	/	/	/	
-10	3.76	1.03	3.64	3.81	1.15	3.30	3.77	1.25	3.01	3.71	1.35	2.75	3.34	1.33	2.51	3.40	1.47	2.31	3.30	1.54	2.14	3.17	1.56	2.03	/	/	/	/	/	
-7	4.17	1.05	3.98	4.09	1.14	3.58	4.03	1.24	3.24	3.75	1.28	2.94	3.68	1.35	2.72	3.64	1.49	2.45	3.39	1.50	2.26	3.34	1.56	2.14	/	/	/	/	/	
-5	4.40	1.04	4.23	4.29	1.12	3.83	3.99	1.13	3.52	3.71	1.20	3.09	3.71	1.31	2.84	3.65	1.41	2.59	3.53	1.50	2.35	3.41	1.54	2.22	/	/	/	/	/	
-2	4.56	0.97	4.68	4.50	1.09	4.12	4.01	1.06	3.78	3.94	1.19	3.32	3.87	1.29	3.00	3.76	1.39	2.71	3.81	1.54	2.47	3.60	1.56	2.31	/	/	/	/	/	
0	4.67	0.95	4.90	4.61	1.06	4.34	4.06	1.03	3.94	3.91	1.14	3.44	4.02	1.30	3.09	3.91	1.40	2.79	3.78	1.49	2.53	3.56	1.51	2.36	/	/	/	/	/	
2	4.99	0.95	5.27	4.93	1.06	4.63	4.																							

# Part 2

## Part load: 30%

DB	LWT																												
	25			30			35			40			45			50			55			60			65				
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI
-25	1.22	0.51	2.39	1.21	0.55	2.21	1.26	0.61	2.06	1.25	0.65	1.93	0.94	0.53	1.76	/	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	1.49	0.54	2.74	1.47	0.59	2.51	1.54	0.66	2.32	1.52	0.71	2.15	1.50	0.75	2.01	1.47	0.79	1.87	1.12	0.63	1.79	/	/	/	/	/	/	/	/
-15	1.92	0.61	3.16	1.90	0.66	2.86	1.88	0.72	2.62	1.85	0.77	2.41	1.76	0.79	2.23	1.73	0.84	2.06	1.76	0.89	1.98	1.31	0.72	1.82	/	/	/	/	/
-10	2.29	0.63	3.66	2.26	0.69	3.28	2.23	0.75	2.97	2.20	0.81	2.71	1.95	0.79	2.46	2.06	0.91	2.27	2.00	0.95	2.11	1.87	0.94	1.99	/	/	/	/	/
-7	2.53	0.63	4.03	2.48	0.69	3.57	2.45	0.76	3.21	2.19	0.76	2.89	2.18	0.82	2.66	2.16	0.90	2.40	2.05	0.92	2.22	2.02	0.97	2.09	/	/	/	/	/
-5	2.52	0.58	4.30	2.61	0.68	3.84	2.43	0.70	3.48	2.26	0.75	3.02	2.20	0.79	2.77	2.21	0.88	2.52	2.14	0.93	2.30	2.07	0.95	2.17	/	/	/	/	/
-2	2.67	0.56	4.77	2.63	0.63	4.15	2.23	0.60	3.71	2.13	0.66	3.24	2.08	0.72	2.91	2.29	0.87	2.64	2.26	0.94	2.41	1.94	0.86	2.25	/	/	/	/	/
0	2.85	0.57	5.04	2.81	0.64	4.36	2.36	0.61	3.87	2.17	0.65	3.36	2.17	0.72	3.01	2.38	0.88	2.71	2.30	0.93	2.46	2.07	0.90	2.29	/	/	/	/	/
2	2.98	0.55	5.40	2.94	0.63	4.67	2.43	0.60	4.08	2.28	0.65	3.52	2.27	0.73	3.13	2.23	0.79	2.81	2.15	0.85	2.53	2.11	0.90	2.34	/	/	/	/	/
5	2.87	0.43	6.60	2.66	0.50	5.29	2.76	0.58	4.74	2.74	0.66	4.13	2.65	0.73	3.66	2.64	0.81	3.24	2.53	0.87	2.90	2.52	0.95	2.65	2.43	1.01	2.40	2.40	
7	3.03	0.41	7.39	3.02	0.50	6.04	3.00	0.58	5.14	2.94	0.67	4.42	2.89	0.75	3.86	2.74	0.81	3.40	2.70	0.89	3.02	2.66	0.96	2.77	2.58	1.04	2.49	2.49	
10	3.38	0.38	8.94	3.35	0.48	6.98	3.27	0.57	5.77	3.19	0.65	4.88	3.12	0.74	4.21	2.87	0.82	3.52	2.92	0.90	3.24	2.90	0.98	2.96	4.53	1.04	4.36	4.36	
12	3.59	0.36	10.1	3.53	0.45	7.82	3.45	0.55	6.26	3.36	0.64	5.24	3.29	0.73	4.48	2.99	0.78	3.82	2.98	0.86	3.47	2.83	0.92	3.09	4.83	1.06	4.54	4.54	
15	3.92	0.36	11.0	3.83	0.45	8.51	3.73	0.51	7.26	3.67	0.62	5.94	3.56	0.71	5.00	3.20	0.75	4.27	3.06	0.82	3.71	2.95	0.88	3.34	3.17	1.08	2.94	2.94	
20	4.44	0.37	12.0	4.31	0.42	10.2	4.28	0.53	8.03	4.08	0.61	6.74	3.92	0.69	5.71	3.74	0.80	4.67	3.73	0.91	4.12	3.58	0.94	3.79	/	/	/	/	/
25	5.06	0.38	13.2	5.03	0.46	10.9	4.82	0.54	8.96	4.46	0.61	7.29	4.22	0.69	6.13	4.22	0.85	4.97	4.34	0.98	4.41	3.68	0.85	4.33	/	/	/	/	/
30	/	/	/	5.64	0.48	11.8	5.35	0.55	9.75	5.09	0.57	8.96	4.88	0.68	7.15	4.37	0.78	5.58	4.09	0.81	5.05	3.96	0.78	5.07	/	/	/	/	/
35	/	/	/	/	/	/	5.93	0.55	10.9	5.54	0.57	9.78	5.28	0.63	8.41	4.62	0.73	6.32	4.22	0.75	5.62	/	/	/	/	/	/	/	/

## Part load: Minimum

DB	LWT																												
	25			30			35			40			45			50			55			60			65				
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI
-25	1.01	0.44	2.31	1.00	0.47	2.14	0.98	0.49	1.99	0.96	0.51	1.87	0.94	0.53	1.76	/	/	/	/	/	/	/	/	/	/	/	/	/	/
-20	1.24	0.47	2.65	1.22	0.50	2.43	1.20	0.53	2.25	1.17	0.56	2.09	1.15	0.59	1.95	1.13	0.62	1.83	1.12	0.63	1.79	/	/	/	/	/	/	/	/
-15	1.49	0.49	3.06	1.47	0.53	2.78	1.44	0.57	2.54	1.41	0.60	2.34	1.38	0.64	2.16	1.35	0.67	2.01	1.35	0.69	1.95	1.31	0.72	1.82	/	/	/	/	/
-10	1.78	0.50	3.57	1.75	0.55	3.19	1.72	0.60	2.88	1.68	0.64	2.63	1.65	0.68	2.41	1.60	0.72	2.21	1.56	0.75	2.07	1.57	0.80	1.97	/	/	/	/	/
-7	1.97	0.50	3.94	1.93	0.55	3.49	1.90	0.61	3.13	1.86	0.66	2.83	1.82	0.70	2.61	1.77	0.75	2.35	1.72	0.79	2.18	1.71	0.83	2.06	/	/	/	/	/
-5	2.11	0.50	4.22	2.07	0.55	3.78	2.06	0.60	3.43	1.94	0.65	2.97	1.85	0.68	2.71	1.88	0.76	2.48	1.83	0.81	2.27	1.84	0.86	2.15	/	/	/	/	/
-2	2.27	0.48	4.75	2.23	0.54	4.10	2.23	0.60	3.71	2.13	0.66	3.24	2.08	0.72	2.91	2.03	0.78	2.61	1.97	0.83	2.38	1.94	0.86	2.25	/	/	/	/	/
0	2.37	0.47	5.03	2.32	0.54	4.32	2.36	0.61	3.87	2.17	0.65	3.36	2.17	0.72	3.01	2.11	0.79	2.68	2.05	0.84	2.44	2.07	0.90	2.29	/	/	/	/	/
2	2.52	0.46	5.43	2.47	0.53	4.64	2.43	0.60	4.08	2.28	0.65	3.52	2.27	0.73	3.13	2.23	0.79	2.81	2.15	0.85	2.53	2.11	0.90	2.34	/	/	/	/	/
5	2.86	0.43	6.63	2.66	0.50	5.29	2.76	0.58	4.74	2.74	0.66	4.13	2.65	0.73	3.66	2.64	0.81	3.24	2.53	0.87	2.90	2.52	0.95	2.65	2.43	1.01	2.40	2.40	
7	3.03	0.41	7.39	3.02	0.50	6.04	3.00	0.58	5.14	2.94	0.67	4.42	2.89	0.75	3.86	2.74	0.81	3.40	2.70	0.89	3.02	2.66	0.96	2.77	2.58	1.04	2.49	2.49	
10	3.38	0.38	8.94	3.35	0.48	6.98	3.27	0.57	5.77	3.19	0.65	4.88	3.12	0.74	4.21	2.87	0.82	3.52	2.92	0.90	3.24	2.90	0.98	2.96	4.53	1.04	4.36	4.36	
12	3.59	0.36	10.1	3.53	0.45	7.82	3.45	0.55	6.26	3.36	0.64	5.24	3.29	0.73	4.48	2.99	0.78	3.82	2.98	0.86	3.47	2.83	0.92	3.09	4.83	1.06	4.54	4.54	
15	3.92	0.36	11.0	3.83	0.45	8.51	3.73	0.51	7.26	3.67	0.62	5.94	3.56	0.71	5.00	3.20	0.75	4.27	3.06	0.82	3.71	2.95	0.88	3.34	3.17	1.08	2.94	2.94	
20	4.44	0.37	12.0	4.31	0.42	10.2	4.28	0.53	8.03	4.08	0.61	6.74	3.92	0.69	5.71	3.74	0.80	4.67	3.73	0.91	4.12	3.58	0.94	3.79	/	/	/	/	/
25	5.06	0.38	13.2	5.03	0.46	10.9	4.82	0.54	8.96	4.46	0.61	7.29	4.22	0.69	6.13	4.22	0.85	4.97	4.34	0.98	4.41	3.68	0.85	4.33	/	/	/	/	/
30	/	/	/	5.64	0.48	11.8	5.35	0.55	9.75	5.09	0.57	8.96	4.88	0.68	7.15	4.37	0.78	5.58	4.09	0.81	5.05	3.96	0.78	5.07	/	/	/	/	/
35	/	/	/	/	/	/	5.93	0.55	10.9	5.54	0.57	9.78	5.28	0.63	8.41	4.62	0.73	6.32	4.22	0.75	5.62	/	/	/	/	/	/	/	/

### Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

HC: Total heating capacity (kW)

PI: Power input (kW)



Table 2-5.3: MHPP16RP24P3CM heating capacity

Part load: Maximum

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP			
-25	7.89	3.83	2.06	8.04	4.10	1.96	8.20	4.41	1.86	8.24	4.63	1.78	5.60	3.03	1.85	/	/	/	/	/	/	/	/	/	/		
-20	9.45	4.18	2.26	9.62	4.50	2.14	9.80	4.83	2.03	9.81	5.06	1.94	10.1	5.57	1.82	10.2	5.84	1.74	6.87	3.84	1.79	/	/	/	/		
-15	11.2	4.50	2.49	11.4	4.85	2.35	11.6	5.22	2.22	11.8	5.61	2.10	12.0	6.04	1.98	11.9	6.28	1.89	11.0	6.06	1.81	7.01	3.94	1.78	/		
-10	13.2	4.78	2.76	13.4	5.15	2.60	13.6	5.55	2.45	13.8	6.00	2.30	13.7	6.24	2.19	13.2	6.26	2.11	12.2	6.10	2.00	11.9	6.19	1.92	/		
-7	12.4	4.49	2.76	12.9	4.87	2.64	13.3	5.31	2.51	13.7	5.76	2.37	13.6	6.08	2.24	13.3	6.13	2.16	12.8	6.24	2.05	11.8	6.03	1.96	/		
-5	12.7	4.34	2.92	13.1	4.71	2.79	13.6	5.15	2.65	14.0	5.60	2.49	13.5	5.72	2.36	13.4	5.98	2.24	13.6	6.17	2.20	11.5	5.72	2.01	/		
-2	13.1	4.15	3.15	13.6	4.52	3.00	14.1	4.95	2.84	14.5	5.49	2.64	14.3	5.66	2.53	14.1	5.89	2.39	14.3	6.15	2.32	11.9	5.68	2.10	/		
0	13.7	4.06	3.36	14.1	4.45	3.18	14.6	4.88	3.00	15.0	5.34	2.80	15.0	5.67	2.64	14.5	5.82	2.49	14.5	6.05	2.40	12.4	5.67	2.18	/		
2	14.2	3.99	3.57	14.7	4.37	3.37	15.2	4.80	3.17	15.6	5.27	2.95	15.5	5.63	2.76	14.7	5.61	2.62	14.9	5.99	2.48	13.1	5.76	2.27	/		
5	16.4	4.08	4.01	16.9	4.50	3.75	17.4	4.95	3.51	17.9	5.53	3.24	18.8	6.04	3.11	17.4	5.95	2.92	17.1	6.17	2.78	15.3	5.95	2.57	8.99		
7	17.6	3.94	4.47	18.1	4.35	4.16	18.6	4.82	3.86	18.8	5.30	3.54	19.1	5.81	3.28	18.3	5.99	3.06	17.7	6.07	2.91	15.8	5.90	2.67	9.41		
10	19.0	3.58	5.30	19.1	4.00	4.78	19.2	4.44	4.33	19.3	4.90	3.94	19.4	5.39	3.59	18.6	5.58	3.33	17.9	5.65	3.17	16.1	5.56	2.89	9.72		
12	19.2	3.30	5.83	19.3	3.71	5.21	19.4	4.15	4.68	19.4	4.59	4.23	19.5	5.09	3.83	19.5	5.57	3.49	18.4	5.58	3.29	16.8	5.58	3.01	10.2		
15	19.1	2.71	7.06	19.1	3.15	6.04	19.0	3.58	5.30	18.9	4.02	4.69	18.7	4.48	4.18	18.6	4.95	3.75	18.3	5.45	3.35	16.7	5.33	3.14	10.5		
20	18.6	2.30	8.12	18.6	2.87	6.48	18.4	3.20	5.75	18.2	3.54	5.15	18.0	3.85	4.69	17.9	4.41	4.05	16.0	4.40	3.64	9.26	2.72	3.41	/		
25	16.3	1.65	9.90	16.7	2.22	7.50	16.1	2.28	7.04	15.8	2.90	5.46	15.6	3.14	4.96	15.4	3.60	4.26	15.2	3.81	3.98	9.80	2.55	3.85	/		
30	/	/	/	/	/	/	18.3	2.19	8.32	18.1	2.35	7.70	17.8	3.01	5.91	17.6	3.30	5.32	17.3	3.84	4.50	16.7	3.92	4.25	11.1		
35	/	/	/	/	/	/	20.3	2.38	8.56	20.0	3.16	6.35	19.7	3.45	5.70	19.4	4.04	4.80	16.5	3.62	4.56	/	/	/	/		

Part load: 130%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP			
-25	7.89	3.83	2.06	8.04	4.10	1.96	8.20	4.41	1.86	8.24	4.63	1.78	5.60	3.03	1.85	/	/	/	/	/	/	/	/	/	/		
-20	9.45	4.18	2.26	9.62	4.50	2.14	9.80	4.83	2.03	9.81	5.06	1.94	10.1	5.57	1.82	10.2	5.84	1.74	6.87	3.84	1.79	/	/	/	/		
-15	11.2	4.50	2.49	11.4	4.85	2.35	11.6	5.22	2.22	11.8	5.61	2.10	12.0	6.04	1.98	11.9	6.28	1.89	11.0	6.06	1.81	7.01	3.94	1.78	/		
-10	13.2	4.78	2.76	13.4	5.15	2.60	13.6	5.55	2.45	13.8	6.00	2.30	13.7	6.24	2.19	13.2	6.26	2.11	12.2	6.10	2.00	11.9	6.19	1.92	/		
-7	12.4	4.49	2.76	12.9	4.87	2.64	13.3	5.31	2.51	13.7	5.76	2.37	13.6	6.08	2.24	13.3	6.13	2.16	12.8	6.24	2.05	11.8	6.03	1.96	/		
-5	12.7	4.34	2.92	13.1	4.71	2.79	13.6	5.15	2.65	14.0	5.60	2.49	13.5	5.72	2.36	13.4	5.98	2.24	13.6	6.17	2.20	11.5	5.72	2.01	/		
-2	13.1	4.15	3.15	13.6	4.52	3.00	14.1	4.95	2.84	14.5	5.49	2.64	14.3	5.66	2.53	14.1	5.89	2.39	14.3	6.15	2.32	11.9	5.68	2.10	/		
0	13.7	4.06	3.36	14.1	4.45	3.18	14.6	4.88	3.00	15.0	5.34	2.80	15.0	5.67	2.64	14.5	5.82	2.49	14.5	6.05	2.40	12.4	5.67	2.18	/		
2	14.2	3.99	3.57	14.7	4.37	3.37	15.2	4.80	3.17	15.6	5.27	2.95	15.5	5.63	2.76	14.7	5.61	2.62	14.9	5.99	2.48	13.1	5.76	2.27	/		
5	16.4	4.08	4.01	16.9	4.50	3.75	17.4	4.95	3.51	17.9	5.53	3.24	18.8	6.04	3.11	17.4	5.95	2.92	17.1	6.17	2.78	15.3	5.95	2.57	8.99		
7	17.6	3.94	4.47	18.1	4.35	4.16	18.6	4.82	3.86	18.8	5.30	3.54	19.1	5.81	3.28	18.3	5.99	3.06	17.7	6.07	2.91	15.8	5.90	2.67	9.41		
10	19.0	3.58	5.30	19.1	4.00	4.78	19.2	4.44	4.33	19.3	4.90	3.94	19.4	5.39	3.59	18.6	5.58	3.33	17.9	5.65	3.17	16.1	5.56	2.89	9.72		
12	19.2	3.30	5.83	19.3	3.71	5.21	19.4	4.15	4.68	19.4	4.59	4.23	19.5	5.09	3.83	19.5	5.57	3.49	18.4	5.58	3.29	16.8	5.58	3.01	10.2		
15	19.1	2.71	7.06	19.1	3.15	6.04	19.0	3.58	5.30	18.9	4.02	4.69	18.7	4.48	4.18	18.6	4.95	3.75	18.3	5.45	3.35	16.7	5.33	3.14	10.5		
20	18.6	2.30	8.12	18.6	2.87	6.48	18.4	3.20	5.75	18.2	3.54	5.15	18.0	3.85	4.69	17.9	4.41	4.05	16.0	4.40	3.64	9.26	2.72	3.41	/		
25	16.3	1.65	9.90	16.7	2.22	7.50	16.1	2.28	7.04	15.8	2.90	5.46	15.6	3.14	4.96	15.4	3.60	4.26	15.2	3.81	3.98	9.80	2.55	3.85	/		
30	/	/	/	/	/	/	18.3	2.19	8.32	18.1	2.35	7.70	17.8	3.01	5.91	17.6	3.30	5.32	17.3	3.84	4.50	16.7	3.92	4.25	11.1		
35	/	/	/	/	/	/	20.3	2.38	8.56	20.0	3.16	6.35	19.7	3.45	5.70	19.4	4.04	4.80	16.5	3.62	4.56	/	/	/	/		

Part load: 100%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP			
-25	7.89	3.83	2.06	8.04	4.10	1.96	8.20	4.41	1.86	8.24	4.63	1.78	5.60	3.03	1.85	/	/	/	/	/	/	/	/	/	/		
-20	9.45	4.18	2.26	9.62	4.50	2.14	9.80	4.83	2.03	9.81	5.06	1.94	10.1	5.57	1.82	10.2	5.84	1.74	6.87	3.84	1.79	/	/	/	/		
-15	11.2	4.50	2.49	11.4	4.85	2.35	11.6	5.22	2.22	11.8	5.61	2.10	12.0	6.04	1.98	11.9	6.28	1.89	11.0	6.06	1.81	7.01	3.94	1.78	/		
-10	13.2	4.78	2.76	13.4	5.15	2.60	13.6	5.55	2.45	13.8	6.00	2.30	13.7	6.24	2.19	13.2	6.26	2.11	12.2	6.10	2.00	11.9	6.19	1.92	/		
-7	12.5	4.48	2.79	13.0	4.88	2.66	13.5	5.00	2.70	13.8	5.77	2.39	13.5	6.00	2.25	13.4	6.14	2.18	12.8	6.24	2.05	11.8	6.03	1.96	/		
-5	12.8	4.34	2.95	13.3	4.73	2.81	13.8	5.16	2.67	14.1	5.59	2.52	13.6	5.72	2.38	13.5	5.96	2.27	13.6	6.17	2.20	11.5	5.72	2.01	/		
-2	13.2	4.14	3.19	13.7	4.52	3.03	14.2	4.94	2.87	14.6	5.48	2.67	14.5	5.67	2.55	14.2	5.90	2.41	14.3	6.15	2.32	11.9	5.68	2.10	/		
0	13.8	4.07	3.39	14.3	4.45	3.21	14.8	4.87	3.03	15.1	5.34	2.83	15.1	5.66	2.67	14.6	5.83	2.51	14.5	6.05	2.40	12.4	5.67	2.18	/		
2	14.4	3.98	3.61	14.9	4.38	3.40	15.5	4.46	3.25	15.7	5.27	2.98	15.3	5.30	2.70	14.6	5.47	2.66	13.5	5.87	2.30	13.1	5.76	2.27	/		
5	16.5	4.08	4.05	16.2	4.17	3.87	15.9	4.34	3.67	16.4	4.84	3.39	16.2	5.00	3.25	16.1	5.40	2.99	15.9	5.63	2.83	15.3	5.95	2.57	8.99		
7	16.1	3.36	4.79	16.2	3.74	4.33	16.0	3.56	4.50	16.2	4.26	3.79	16.2	4.70	3.45	16.2	5.10	3.17	16.0	5.61	2.85	15.8	5.90	2.67	9.41		
10	16.1	2.72	5.91	16.1	3.07	5.25	15.9	3.38	5.70	15.8	3.74	4.24	15.9	4.14	3.83	16.2	4.66	3.47	16.5	5.07	3.25	16.1	5.56	2.89	9.72		
12	15.8	2.39	6.63	16.1	2.81	5.72	16.2	3.19	5.07	16.1	3.53	4.56	16														

# Part 2

## Part load: 90%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	7.05	3.26	2.16	7.19	3.49	2.06	7.34	3.76	1.95	7.37	3.98	1.85	5.10	2.71	1.88	/	/	/	/	/	/	/	/	/	/		
-20	8.45	3.54	2.39	8.61	3.79	2.27	8.77	4.10	2.14	8.78	4.33	2.03	9.08	4.75	1.91	9.10	5.03	1.81	6.06	3.33	1.82	/	/	/	/		
-15	10.0	3.78	2.65	10.2	4.08	2.50	10.4	4.39	2.36	10.6	4.76	2.22	10.7	5.12	2.09	10.6	5.36	1.98	9.83	5.26	1.87	6.62	3.50	1.89	/		
-10	11.8	3.98	2.96	12.0	4.31	2.78	12.2	4.66	2.61	12.4	5.07	2.44	12.2	5.32	2.30	11.8	5.43	2.18	10.9	5.34	2.05	10.5	5.36	1.96	/		
-7	11.2	3.77	2.98	11.5	4.06	2.84	12.0	4.45	2.69	12.4	4.90	2.53	12.4	5.22	2.37	12.0	5.35	2.25	11.7	5.41	2.17	10.7	5.34	2.01	/		
-5	11.4	3.62	3.14	11.8	3.95	2.98	12.4	4.39	2.82	12.7	4.78	2.65	12.1	4.90	2.47	12.0	5.16	2.33	12.2	5.39	2.26	10.5	5.10	2.05	/		
-2	11.9	3.50	3.39	12.2	3.80	3.20	12.6	4.18	3.01	13.2	4.70	2.80	12.8	4.86	2.64	12.8	5.15	2.48	12.6	5.30	2.38	10.7	4.97	2.15	/		
0	12.2	3.41	3.59	12.7	3.75	3.38	13.1	4.14	3.17	13.6	4.60	2.95	13.6	4.93	2.76	13.1	5.07	2.59	12.9	5.22	2.46	11.1	5.16	2.15	/		
2	12.8	3.34	3.82	13.2	3.69	3.58	13.0	3.83	3.40	14.1	4.55	3.10	13.1	4.44	2.95	13.3	4.84	2.74	13.1	5.15	2.55	11.7	5.04	2.33	/		
5	14.7	3.40	4.31	14.5	3.55	4.08	14.5	3.77	3.85	14.5	4.12	3.53	14.6	4.34	3.36	14.3	4.61	3.09	14.3	4.89	2.92	13.5	5.12	2.64	8.90		
7	14.2	2.77	5.13	15.5	3.38	4.58	14.2	3.26	4.36	14.5	3.67	3.95	14.5	4.07	3.57	14.5	4.44	3.27	14.7	4.80	3.06	14.4	5.22	2.75	9.08		
10	14.4	2.31	6.24	14.5	2.64	5.48	14.5	2.98	4.86	14.5	3.33	4.34	14.5	3.71	3.90	14.3	4.05	3.52	14.5	4.41	3.29	14.4	4.95	2.92	9.19		
12	13.9	2.03	6.84	13.9	2.34	5.94	14.2	2.73	5.21	13.6	2.94	4.62	14.5	3.52	4.13	14.6	3.93	3.71	14.7	4.26	3.45	14.2	4.66	3.04	9.63		
15	14.4	1.82	7.89	14.4	2.17	6.65	14.2	2.48	5.71	14.2	2.84	4.98	13.8	3.08	4.48	13.7	3.51	3.90	14.5	4.16	3.49	14.2	4.53	3.13	10.2		
20	14.1	1.60	8.81	14.5	1.92	7.56	14.5	2.29	6.34	14.5	2.64	5.48	14.2	2.89	4.91	13.9	3.38	4.12	13.4	3.41	3.92	8.43	2.93	3.62	/		
25	14.4	1.37	10.6	14.5	1.74	8.34	14.1	1.90	7.43	13.8	2.43	5.68	12.2	2.30	5.30	13.4	3.07	4.36	13.2	3.34	3.96	9.59	2.34	4.09	/		
30	/	/	/	14.5	1.57	9.25	14.4	1.71	8.45	14.0	2.16	6.50	14.5	2.56	5.68	13.4	2.82	4.74	14.4	3.11	4.61	10.8	2.41	4.50	/		
35	/	/	/	/	/	/	14.4	1.60	9.05	14.0	1.91	7.35	13.9	2.13	6.55	14.5	2.74	5.29	14.8	2.94	5.02	/	/	/	/		

## Part load: 70%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	5.33	2.31	2.31	5.43	2.49	2.18	5.64	2.74	2.06	5.67	2.91	1.95	3.93	2.08	1.89	/	/	/	/	/	/	/	/	/	/		
-20	6.39	2.47	2.59	6.51	2.68	2.43	6.74	2.96	2.28	6.76	3.14	2.15	6.99	3.46	2.02	6.90	3.61	1.91	4.54	2.48	1.83	/	/	/	/		
-15	7.58	2.61	2.90	7.72	2.85	2.71	7.98	3.15	2.53	8.00	3.38	2.37	8.25	3.72	2.22	8.06	3.86	2.09	7.46	3.77	1.98	5.21	2.76	1.89	/		
-10	8.93	2.73	3.27	9.08	3.00	3.03	9.37	3.32	2.82	9.38	3.58	2.62	9.44	3.84	2.46	8.97	3.87	2.32	8.45	3.89	2.17	8.10	3.97	2.04	/		
-7	8.57	2.57	3.34	8.90	2.83	3.14	9.39	3.19	2.94	9.46	3.45	2.74	9.60	3.76	2.55	9.35	3.88	2.41	8.90	3.89	2.29	8.32	4.00	2.08	/		
-5	8.76	2.47	3.54	9.25	2.79	3.32	9.44	3.05	3.10	9.66	3.35	2.88	9.51	3.56	2.67	9.30	3.73	2.49	9.41	3.97	2.37	7.62	3.61	2.11	/		
-2	9.04	2.34	3.87	9.54	2.69	3.55	9.73	2.94	3.31	10.2	3.34	3.06	10.1	3.56	2.84	9.77	3.67	2.66	9.71	3.88	2.50	8.23	3.76	2.19	/		
0	9.60	2.34	4.11	9.78	2.61	3.75	10.3	2.93	3.52	10.5	3.28	3.21	10.6	3.54	2.99	10.4	3.74	2.77	9.88	3.86	2.56	8.55	3.77	2.27	/		
2	9.83	2.24	4.38	10.4	2.61	3.97	10.3	2.76	3.72	10.8	3.20	3.37	10.2	3.25	3.14	10.1	3.51	2.89	10.3	3.89	2.65	9.09	3.87	2.35	/		
5	11.5	2.33	4.95	11.4	2.52	4.53	10.8	2.61	4.15	11.0	2.94	3.75	11.3	3.24	3.48	11.2	3.53	3.18	11.1	3.75	2.96	10.6	4.02	2.65	6.69		
7	11.2	1.97	5.71	12.0	2.40	5.01	10.7	2.35	4.53	10.5	2.56	4.09	11.4	3.11	3.68	11.2	3.38	3.33	11.2	3.62	3.09	10.9	3.95	2.76	7.01		
10	10.9	1.61	6.73	11.2	1.93	5.79	11.2	2.21	5.06	11.2	2.50	4.47	11.2	2.81	3.99	11.2	3.14	3.58	11.2	3.39	3.31	10.9	3.75	2.92	7.14		
12	10.9	1.46	7.42	10.9	1.73	6.29	11.2	2.06	5.44	11.2	2.35	4.76	11.0	2.60	4.22	11.3	3.00	3.76	11.4	3.29	3.47	11.2	3.68	3.05	7.48		
15	11.2	1.39	8.01	11.1	1.54	7.23	11.2	1.84	6.09	11.2	2.13	5.24	11.3	2.48	4.57	11.2	2.78	4.03	11.1	3.07	3.62	10.9	3.39	3.20	7.61		
20	10.8	1.16	9.29	11.2	1.39	8.08	11.3	1.69	6.64	11.2	1.99	5.65	10.9	2.18	5.02	10.6	2.48	4.26	10.4	2.60	4.02	6.66	1.81	3.67	/		
25	10.9	0.99	11.1	10.8	1.19	9.10	10.6	1.34	7.92	10.6	1.70	6.19	10.4	1.90	5.45	10.9	2.40	4.55	10.5	2.52	4.17	7.47	1.79	4.17	/		
30	/	/	/	11.2	1.14	9.86	11.1	1.27	8.75	11.2	1.53	7.30	10.9	1.75	6.23	11.2	2.23	5.01	11.1	2.52	4.41	8.65	1.79	4.82	/		
35	/	/	/	/	/	/	10.9	1.15	9.48	10.7	1.23	8.70	11.2	1.52	7.35	10.9	1.89	5.78	11.4	2.06	5.54	/	/	/	/		

## Part load: 50%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	3.81	1.60	2.38	3.89	1.74	2.24	3.88	1.83	2.12	3.90	1.95	2.00	2.68	1.43	1.87	/	/	/	/	/	/	/	/	/	/		
-20	4.58	1.71	2.68	4.67	1.86	2.51	4.65	1.98	2.35	4.66	2.11	2.21	4.61	2.22	2.08	4.62	2.36	1.96	3.25	1.78	1.83	/	/	/	/		
-15	5.44	1.80	3.02	5.54	1.97	2.81	5.50	2.10	2.62	5.48	2.25	2.44	5.44	2.38	2.29	5.53	2.58	2.14	5.25	2.61	2.01	3.69	1.97	1.87	/		
-10	6.41	1.86	3.44	6.52	2.06	3.16	6.47	2.22	2.92	6.43	2.37	2.71	6.52	2.59	2.52	6.46	2.75	2.35	5.99	2.74	2.19	5.70	2.79	2.04	/		
-7	6.18	1.76	3.52	6.42	1.96	3.27	6.67	2.18	3.06	6.83	2.41	2.83	6.83	2.61	2.62	6.66	2.73	2.44	6.43	2.78	2.31	5.91	2.83	2.09	/		
-5	6.17	1.66	3.72	6.57	1.90	3.45	6.82	2.12	3.21	6.98	2.36	2.96	6.77	2.49	2.72	6.74	2.66	2.53	6.51	2.72	2.39	5.75	2.73	2.11	/		
-2	6.54	1.62	4.04	6.61	1.78	3.71	7.04	2.06	3.42	7.26	2.31	3.14	7.19	2.48	2.90	6.90	2.57	2.68	7.02	2.80	2.51	5.97	2.73	2.19	/		
0	6.65	1.55	4.30	7.08	1.80	3.93	7.14	1.98	3.61	7.50	2.27	3.30	7.33	2.42	3.03	7.19	2.58	2.79	6.96	2.70	2.58	5.84	2.57	2.27	/		
2	6.93	1.51	4.60	7.18	1.72	4.18	7.30	1.91	3.82	7.81	2.25	3.47	7.26	2.29	3.17	7.35	2.53	2.91	7.14	2.66	2.68	6.08	2.59	2.35	/		
5	8.88	1.58	5.62	8.61	1.74	4.94	7.84	1.79	4.39	7.82	1.99	3.92	7.76	2.17	3.57	7.50	2.33	3.22	7.42	2.48	2.99	7.34	2.77	2.65	4.91		
7	7.95	1.26	6.33	8.36	1.55	5.41	7.93	1.67	4.76	7.70	1.83	4.21	8.12	2.17	3.75	7.99	2.37	3.37	7.86	2.52	3.12	7.70	2.79	2.76	4.89		
10	7.62	1.03	7.38	7.64	1.24	6.18	7.95	1.50	5.29	7.94	1.72	4.61	7.69	1.89	4.07	7.72	2.13	3.63	8.17	2.44	3.35	7.97	2.72	2.93	5.12		
12	7.62	0.93	8.23	7.93	1.17	6.76	7.96	1.39	5.71	7.94	1.61	4.93	7.70	1.79	4.3												



Part load: 30%

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	2.33	1.01	2.31	2.29	1.06	2.17	2.34	1.14	2.05	2.35	1.21	1.95	1.94	1.06	1.83	/	/	/	/	/	/	/	/	/	/	/	
-20	2.59	0.99	2.61	2.76	1.13	2.44	2.81	1.23	2.29	2.82	1.31	2.16	2.80	1.37	2.04	2.92	1.51	1.93	2.19	1.19	1.84	/	/	/	/	/	
-15	3.08	1.04	2.97	3.28	1.19	2.75	3.33	1.30	2.56	3.26	1.36	2.39	3.31	1.48	2.24	3.29	1.56	2.11	3.05	1.53	2.00	3.19	1.72	1.86	/	/	
-10	3.63	1.06	3.41	3.86	1.24	3.12	3.92	1.37	2.87	3.83	1.44	2.66	3.80	1.54	2.47	3.83	1.67	2.30	3.39	1.57	2.16	3.31	1.66	2.00	/	/	
-7	3.68	1.05	3.52	3.65	1.12	3.25	3.79	1.26	3.01	4.06	1.46	2.79	4.06	1.57	2.58	3.96	1.66	2.39	3.65	1.61	2.27	3.50	1.70	2.06	/	/	
-5	3.77	0.98	3.85	3.91	1.11	3.52	3.88	1.20	3.24	4.15	1.42	2.92	3.85	1.42	2.72	3.83	1.52	2.52	3.96	1.69	2.35	3.25	1.57	2.07	/	/	
-2	3.65	0.87	4.21	4.04	1.06	3.80	4.19	1.21	3.47	4.13	1.31	3.16	4.09	1.41	2.90	4.03	1.51	2.67	4.17	1.69	2.47	3.47	1.62	2.14	/	/	
0	3.90	0.86	4.52	4.21	1.04	4.05	4.36	1.19	3.67	4.27	1.29	3.32	4.28	1.41	3.03	4.40	1.58	2.78	4.26	1.65	2.58	3.63	1.64	2.21	/	/	
2	4.11	0.84	4.87	4.19	0.97	4.32	4.25	1.10	3.87	4.65	1.33	3.50	4.25	1.34	3.17	4.17	1.44	2.89	4.12	1.55	2.66	3.85	1.68	2.29	/	/	
5	5.29	0.86	6.15	5.13	0.98	5.24	5.16	1.13	4.55	5.02	1.25	4.01	4.99	1.40	3.57	4.91	1.53	3.21	4.80	1.61	2.99	4.65	1.77	2.63	4.50	1.88	2.39
7	5.56	0.83	6.73	5.54	0.98	5.64	5.48	1.13	4.86	5.33	1.25	4.25	5.26	1.40	3.76	5.09	1.51	3.36	5.14	1.64	3.14	4.81	1.76	2.73	4.73	1.91	2.48
10	5.99	0.77	7.79	5.97	0.93	6.39	5.81	1.08	5.40	5.81	1.25	4.66	5.73	1.40	4.09	5.54	1.53	3.62	5.55	1.66	3.35	5.23	1.80	2.90	5.12	1.96	2.61
12	6.36	0.73	8.67	6.24	0.89	6.99	6.20	1.06	5.83	6.06	1.22	4.98	6.09	1.41	4.33	5.86	1.54	3.81	5.86	1.67	3.51	5.52	1.83	3.02	5.61	2.07	2.71
15	6.69	0.72	9.23	6.58	0.79	8.35	6.47	0.96	6.77	6.41	1.13	5.65	6.34	1.31	4.83	6.25	1.49	4.20	6.18	1.63	3.79	5.81	1.78	3.27	5.76	2.01	2.87
20	7.63	0.73	10.4	7.55	0.86	8.83	7.47	0.98	7.59	7.37	1.08	6.85	7.12	1.24	5.72	6.96	1.52	4.57	6.85	1.64	4.18	6.66	1.81	3.67	/	/	/
25	8.70	0.74	11.7	8.61	0.89	9.72	8.50	1.01	8.38	8.22	1.11	7.38	8.12	1.28	6.34	7.92	1.65	4.80	7.67	1.68	4.57	7.47	1.79	4.17	/	/	/
30	/	/	/	9.89	0.94	10.5	9.40	1.06	8.88	9.37	1.21	7.75	9.24	1.30	7.12	8.97	1.71	5.26	8.54	1.76	4.86	8.65	1.79	4.82	/	/	/
35	/	/	/	/	/	/	10.9	1.15	9.48	10.7	1.23	8.70	10.4	1.37	7.60	10.2	1.72	5.90	9.62	1.91	5.04	/	/	/	/	/	/

Part load: Minimum

DB	LWT																										
	25			30			35			40			45			50			55			60			65		
	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP	HC	PI	COP
-25	1.99	0.87	2.28	1.97	0.92	2.13	1.95	0.97	2.01	1.94	1.02	1.91	1.94	1.06	1.83	/	/	/	/	/	/	/	/	/	/	/	/
-20	2.37	0.92	2.57	2.36	0.99	2.39	2.35	1.04	2.25	2.35	1.11	2.12	2.28	1.14	2.00	2.29	1.21	1.90	2.19	1.19	1.84	/	/	/	/	/	/
-15	2.83	0.97	2.93	2.83	1.04	2.71	2.79	1.11	2.51	2.74	1.17	2.34	2.73	1.24	2.20	2.69	1.30	2.07	2.59	1.31	1.98	3.19	1.72	1.86	/	/	/
-10	3.34	0.99	3.38	3.31	1.07	3.08	3.28	1.16	2.83	3.28	1.25	2.62	3.22	1.33	2.43	3.20	1.42	2.26	3.03	1.42	2.14	3.09	1.56	1.98	/	/	/
-7	3.31	0.95	3.49	3.37	1.05	3.21	3.45	1.16	2.98	3.39	1.24	2.74	3.38	1.33	2.55	3.37	1.42	2.37	3.35	1.49	2.25	3.26	1.59	2.05	/	/	/
-5	3.47	0.90	3.84	3.53	1.01	3.50	3.57	1.11	3.21	3.56	1.24	2.88	3.45	1.28	2.70	3.50	1.40	2.50	3.55	1.52	2.33	3.25	1.57	2.07	/	/	/
-2	3.65	0.87	4.21	3.70	0.98	3.79	3.80	1.10	3.45	3.82	1.22	3.14	3.74	1.29	2.89	3.77	1.42	2.66	3.78	1.54	2.45	3.47	1.62	2.14	/	/	/
0	3.90	0.86	4.52	3.97	0.98	4.04	3.99	1.09	3.65	3.98	1.21	3.30	4.07	1.34	3.03	3.95	1.43	2.77	3.95	1.54	2.57	3.63	1.64	2.21	/	/	/
2	4.11	0.84	4.87	4.23	0.98	4.32	4.25	1.10	3.87	4.26	1.22	3.48	4.25	1.34	3.17	4.17	1.44	2.89	4.12	1.55	2.66	3.85	1.68	2.29	/	/	/
5	5.29	0.86	6.15	5.13	0.98	5.24	5.16	1.13	4.55	5.02	1.25	4.01	4.99	1.40	3.57	4.91	1.53	3.21	4.80	1.61	2.99	4.65	1.77	2.63	4.50	1.88	2.39
7	5.56	0.83	6.73	5.54	0.98	5.64	5.48	1.13	4.86	5.33	1.25	4.25	5.26	1.40	3.76	5.09	1.51	3.36	5.14	1.64	3.14	4.81	1.76	2.73	4.73	1.91	2.48
10	5.99	0.77	7.79	5.97	0.93	6.39	5.81	1.08	5.40	5.81	1.25	4.66	5.73	1.40	4.09	5.54	1.53	3.62	5.55	1.66	3.35	5.23	1.80	2.90	5.12	1.96	2.61
12	6.36	0.73	8.67	6.24	0.89	6.99	6.20	1.06	5.83	6.06	1.22	4.98	6.09	1.41	4.33	5.86	1.54	3.81	5.86	1.67	3.51	5.52	1.83	3.02	5.61	2.07	2.71
15	6.69	0.72	9.23	6.68	0.82	8.17	6.47	0.96	6.77	6.41	1.13	5.65	6.34	1.31	4.83	6.25	1.49	4.20	6.18	1.63	3.79	5.81	1.78	3.27	5.76	2.01	2.87
20	7.63	0.73	10.4	7.55	0.86	8.83	7.47	0.98	7.59	7.37	1.08	6.85	7.12	1.24	5.72	7.02	1.55	4.52	6.85	1.64	4.18	6.66	1.81	3.67	/	/	/
25	8.70	0.74	11.7	8.61	0.89	9.72	8.50	1.01	8.38	8.22	1.11	7.38	8.12	1.28	6.34	7.92	1.65	4.80	7.67	1.68	4.57	7.47	1.79	4.17	/	/	/
30	/	/	/	9.89	0.94	10.5	9.40	1.06	8.88	9.37	1.21	7.75	9.24	1.30	7.12	8.97	1.71	5.26	8.54	1.76	4.86	8.65	1.79	4.82	/	/	/
35	/	/	/	/	/	/	10.9	1.15	9.48	10.7	1.23	8.70	10.4	1.37	7.60	10.2	1.72	5.90	9.62	1.91	5.04	/	/	/	/	/	/

Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

HC: Total heating capacity (kW)

PI: Power input (kW)

## Part 2

### 5.2 Cooling Capacity Tables (Test standard: EN14511)

Table 2-5.4: MHPP5RP24CM cooling capacity

Part load: Maximum

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	4.56	0.56	8.21	4.79	0.57	8.41	4.96	0.58	8.60	5.47	0.60	9.04
0	/	/	/	/	/	/	/	/	/	/	4.56	0.56	8.21	4.79	0.57	8.41	4.96	0.58	8.60	5.47	0.60	9.04
5	/	/	/	/	/	/	/	/	/	/	4.67	0.58	8.13	4.92	0.59	8.31	5.04	0.59	8.51	5.57	0.62	8.91
10	/	/	/	/	/	/	/	/	/	/	4.98	0.63	7.84	5.21	0.65	8.02	5.34	0.65	8.20	5.87	0.68	8.57
15	/	/	/	/	/	/	6.34	0.80	7.97	7.01	0.93	7.55	7.54	1.01	7.48	7.61	0.95	8.02	7.57	0.91	8.29	
20	6.33	1.19	5.32	6.69	1.19	5.64	7.26	1.18	6.17	7.40	1.07	6.95	7.39	1.11	6.66	7.40	0.99	7.49	7.48	0.93	8.03	
25	7.03	1.61	4.38	7.43	1.61	4.60	8.03	1.62	4.97	9.10	1.62	5.64	9.78	1.61	6.07	10.23	1.60	6.38	11.39	1.58	7.19	
30	7.57	2.11	3.59	7.98	2.13	3.75	8.61	2.16	3.99	9.72	2.20	4.42	9.65	1.94	4.97	10.09	1.94	5.19	11.20	1.95	5.75	
35	7.13	2.39	2.98	6.92	2.23	3.11	8.45	2.48	3.40	9.52	2.56	3.72	9.27	2.17	4.27	9.66	2.20	4.40	10.72	2.22	4.83	
40	5.95	2.14	2.78	6.03	2.06	2.93	7.49	2.41	3.11	8.26	2.38	3.46	8.85	2.42	3.66	9.01	2.33	3.87	10.02	2.36	4.24	
43	5.14	1.92	2.68	5.35	1.92	2.79	6.48	2.17	2.99	7.36	2.22	3.31	7.90	2.25	3.51	8.27	2.26	3.65	9.24	2.31	4.01	

Part load: 130%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	4.56	0.56	8.21	4.79	0.57	8.41	4.96	0.58	8.60	5.47	0.60	9.04
0	/	/	/	/	/	/	/	/	/	/	4.56	0.56	8.21	4.79	0.57	8.41	4.96	0.58	8.60	5.47	0.60	9.04
5	/	/	/	/	/	/	/	/	/	/	4.67	0.58	8.13	4.92	0.59	8.31	5.04	0.59	8.51	5.57	0.62	8.91
10	/	/	/	/	/	/	/	/	/	/	4.98	0.63	7.84	5.21	0.65	8.02	5.34	0.65	8.20	5.87	0.68	8.57
15	/	/	/	/	/	/	6.34	0.80	7.97	7.01	0.93	7.55	7.54	1.01	7.48	7.61	0.95	8.02	7.57	0.91	8.29	
20	6.33	1.19	5.32	6.69	1.19	5.64	7.26	1.18	6.17	7.40	1.07	6.95	7.39	1.11	6.66	7.40	0.99	7.49	7.48	0.93	8.02	
25	7.03	1.61	4.38	7.07	1.49	4.75	8.03	1.62	4.97	8.38	1.40	5.99	8.67	1.39	6.22	8.25	1.06	7.76	8.35	1.13	7.41	
30	6.99	1.87	3.74	7.40	1.89	3.92	8.32	2.03	4.09	8.43	1.73	4.87	8.34	1.59	5.24	8.34	1.38	6.05	7.99	1.25	6.42	
35	6.91	2.27	3.04	6.19	1.94	3.19	8.26	2.39	3.46	8.40	2.07	4.05	8.82	2.02	4.37	8.40	1.72	4.87	8.62	1.47	5.87	
40	5.95	2.14	2.78	6.03	2.06	2.93	7.49	2.41	3.11	8.26	2.38	3.46	8.67	2.34	3.71	8.40	2.08	4.05	8.65	1.82	4.76	
43	5.14	1.92	2.68	5.35	1.92	2.79	6.48	2.17	2.99	7.36	2.22	3.31	7.90	2.25	3.51	8.27	2.26	3.65	8.40	1.96	4.29	

Part load: 100%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	4.56	0.56	8.21	4.79	0.57	8.41	4.96	0.58	8.60	5.47	0.60	9.04
0	/	/	/	/	/	/	/	/	/	/	4.56	0.56	8.21	4.79	0.57	8.41	4.96	0.58	8.60	5.47	0.60	9.04
5	/	/	/	/	/	/	/	/	/	/	4.67	0.58	8.13	4.92	0.59	8.31	5.04	0.59	8.51	5.57	0.62	8.91
10	/	/	/	/	/	/	/	/	/	/	4.98	0.63	7.84	5.21	0.65	8.02	5.34	0.64	8.37	5.87	0.68	8.57
15	/	/	/	/	/	/	6.34	0.80	7.97	6.51	0.85	7.62	6.54	0.86	7.57	6.51	0.81	8.07	6.57	0.78	8.37	
20	5.62	1.00	5.62	5.66	0.94	6.00	6.43	1.00	6.44	6.48	0.91	7.11	6.49	0.95	6.86	6.50	0.85	7.61	6.48	0.79	8.22	
25	5.66	1.21	4.67	5.50	1.07	5.12	6.55	1.19	5.52	6.60	0.95	6.96	6.83	1.06	6.43	6.49	0.69	9.39	6.57	0.86	7.60	
30	5.45	1.37	3.99	5.77	1.37	4.20	6.55	1.43	4.57	6.65	1.20	5.55	6.57	1.09	6.01	6.57	0.93	7.07	6.29	0.92	6.86	
35	5.32	1.68	3.16	5.50	1.69	3.25	6.51	1.69	3.85	6.64	1.45	4.57	6.50	1.27	5.10	6.63	1.19	5.58	6.81	1.06	6.43	
40	5.42	1.85	2.93	5.60	1.85	3.02	6.68	2.05	3.26	6.63	1.73	3.84	6.87	1.64	4.19	6.65	1.45	4.58	6.85	1.25	5.50	
43	5.24	1.96	2.68	5.35	1.92	2.79	6.48	2.17	2.99	6.66	1.93	3.45	6.67	1.75	3.81	6.74	1.66	4.06	6.65	1.36	4.90	

Part load: 90%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	8.28	1.00	8.28	8.48	1.00	8.48	8.67	1.00	8.67	9.11	1.00	9.11
0	/	/	/	/	/	/	/	/	/	/	8.28	1.00	8.28	8.48	1.00	8.48	8.67	1.00	8.67	9.11	1.00	9.11
5	/	/	/	/	/	/	/	/	/	/	8.19	1.00	8.19	8.37	1.00	8.37	8.57	0.99	8.67	8.98	1.00	8.98
10	/	/	/	/	/	/	/	/	/	/	7.88	1.00	7.88	8.06	1.00	8.06	8.42	1.00	8.42	8.62	1.00	8.62
15	/	/	/	/	/	/	8.63	1.00	8.63	7.80	1.00	7.80	7.69	1.00	7.69	8.20	1.00	8.20	8.49	1.00	8.49	
20	5.76	1.00	5.76	6.30	1.00	6.30	6.84	1.00	6.84	7.51	1.00	7.51	7.27	1.00	7.27	7.84	1.00	7.84	8.45	1.00	8.45	
25	4.84	1.00	4.84	5.37	1.00	5.37	5.77	1.00	5.77	7.35	1.00	7.35	6.75	1.00	6.75	10.09	1.00	10.09	7.92	1.00	7.92	
30	4.10	1.00	4.10	4.34	1.00	4.34	4.74	1.00	4.74	5.81	1.00	5.81	6.43	0.95	6.75	7.47	1.00	7.47	7.36	1.00	7.36	
35	3.35	1.00	3.35	3.45	1.00	3.45	3.98	1.00	3.98	4.75	1.00	4.75	5.24	1.00	5.24	5.84	1.00	5.84	6.81	1.00	6.81	
40	3.00	1.00	3.00	3.11	1.00	3.11	3.37	1.00	3.37	3.98	1.00	3.98	4.36	0.83	5.24	4.76	1.00	4.76	5.77	1.00	5.77	
43	2.74	1.00	2.74	2.87	1.00	2.87	3.09	1.00	3.09	3.58	1.00	3.58	3.95	0.75	5.24	4.21	1.00	4.21	5.11	1.00	5.11	

Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

CC: Total cooling capacity (kW)

PI: Power input (kW)

Part load: 70%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	3.19	0.38	8.49	3.35	0.39	8.68	3.47	0.39	8.89	3.83	0.41	9.32
0	/	/	/	/	/	/	/	/	/	/	3.19	0.38	8.49	3.35	0.39	8.68	3.47	0.39	8.89	3.83	0.41	9.32
5	/	/	/	/	/	/	/	/	/	/	3.27	0.39	8.38	3.45	0.40	8.56	3.53	0.40	8.76	3.90	0.43	9.17
10	/	/	/	/	/	/	/	/	/	/	3.48	0.43	8.01	3.65	0.45	8.19	3.74	0.44	8.55	4.11	0.47	8.75
15	/	/	/	/	/	/	4.56	0.44	10.47	4.65	0.58	7.96	4.49	0.56	7.96	4.66	0.55	8.44	4.51	0.52	8.69	
20	3.87	0.61	6.35	4.06	0.58	7.02	4.46	0.57	7.83	4.49	0.58	7.80	4.49	0.58	7.78	4.50	0.55	8.11	4.48	0.51	8.71	
25	3.92	0.76	5.19	3.93	0.69	5.72	4.69	0.75	6.30	4.73	0.63	7.55	4.70	0.65	7.23	4.64	0.39	11.96	4.83	0.60	8.12	
30	3.78	0.87	4.34	4.00	0.87	4.63	4.70	0.92	5.10	4.77	0.75	6.36	4.52	0.67	6.71	4.51	0.54	8.42	4.67	0.59	7.86	
35	3.92	1.08	3.64	3.85	1.04	3.71	4.54	1.07	4.25	4.61	0.90	5.12	5.03	0.88	5.73	4.57	0.71	6.42	4.89	0.67	7.31	
40	4.19	1.34	3.14	4.46	1.36	3.28	4.81	1.35	3.57	4.77	1.13	4.24	4.78	1.02	4.70	4.79	0.93	5.13	4.72	0.74	6.36	
43	4.10	1.43	2.87	4.33	1.44	3.01	4.68	1.43	3.27	4.65	1.22	3.81	4.65	1.10	4.22	4.68	1.03	4.53	4.59	0.82	5.56	

Part load: 50%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	2.95	0.33	9.08	3.23	0.34	9.52
0	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	2.95	0.33	9.08	3.23	0.34	9.52
5	/	/	/	/	/	/	/	/	/	/	2.96	0.35	8.48	3.07	0.35	8.66	3.01	0.34	8.92	3.27	0.35	9.34
10	/	/	/	/	/	/	/	/	/	/	2.95	0.36	8.16	3.06	0.37	8.33	2.83	0.33	8.58	3.14	0.35	8.94
15	/	/	/	/	/	/	3.37	0.45	7.45	3.89	0.50	7.82	4.19	0.53	7.97	4.52	0.54	8.36	5.12	0.58	8.81	
20	2.77	0.39	7.15	2.98	0.37	8.03	3.27	0.47	7.01	3.80	0.52	7.35	4.12	0.54	7.62	4.38	0.55	7.92	4.96	0.59	8.37	
25	2.94	0.53	5.57	2.89	0.47	6.18	3.40	0.49	6.92	3.67	0.51	7.23	3.99	0.53	7.56	4.20	0.33	12.87	4.83	0.60	8.12	
30	2.83	0.62	4.57	3.00	0.61	4.92	3.27	0.60	5.48	3.54	0.51	6.87	3.84	0.54	7.10	4.04	0.45	9.04	4.67	0.59	7.86	
35	2.94	0.77	3.81	2.88	0.74	3.89	3.26	0.73	4.49	3.31	0.60	5.51	3.69	0.59	6.27	3.88	0.57	6.86	4.49	0.61	7.31	
40	3.04	0.94	3.24	3.34	0.98	3.42	3.37	0.90	3.75	3.31	0.74	4.48	3.61	0.72	5.02	3.72	0.68	5.44	4.30	0.65	6.66	
43	3.06	1.03	2.96	3.24	1.04	3.12	3.27	0.96	3.41	3.50	0.88	4.01	3.51	0.79	4.47	3.62	0.75	4.81	4.18	0.72	5.78	

Part load: 30%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	2.95	0.33	9.08	3.23	0.34	9.52
0	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	2.95	0.33	9.08	3.23	0.34	9.52
5	/	/	/	/	/	/	/	/	/	/	2.96	0.35	8.48	3.07	0.35	8.66	3.01	0.34	8.92	3.27	0.35	9.34
10	/	/	/	/	/	/	/	/	/	/	2.95	0.36	8.16	3.06	0.37	8.33	2.83	0.33	8.58	3.14	0.35	8.94
15	/	/	/	/	/	/	3.37	0.45	7.45	3.89	0.50	7.82	4.19	0.53	7.97	4.52	0.54	8.36	5.12	0.58	8.81	
20	2.80	0.39	7.25	3.00	0.44	6.87	3.27	0.47	7.01	3.80	0.52	7.35	4.12	0.54	7.62	4.38	0.55	7.92	4.96	0.59	8.37	
25	2.71	0.48	5.66	2.89	0.47	6.18	3.14	0.51	6.14	3.67	0.51	7.23	3.99	0.53	7.56	4.20	0.33	12.87	4.83	0.60	8.12	
30	2.61	0.57	4.61	2.78	0.56	4.98	3.05	0.55	5.58	3.54	0.51	6.87	3.84	0.54	7.10	4.04	0.45	9.04	4.67	0.59	7.86	
35	2.51	0.65	3.86	2.67	0.65	4.12	2.93	0.64	4.56	3.31	0.60	5.51	3.69	0.59	6.27	3.88	0.57	6.86	4.49	0.61	7.31	
40	2.41	0.74	3.25	2.57	0.74	3.46	2.81	0.74	3.81	3.31	0.74	4.48	3.61	0.72	5.02	3.72	0.68	5.44	4.30	0.65	6.66	
43	2.32	0.78	2.97	2.50	0.79	3.15	2.74	0.79	3.45	3.50	0.88	4.01	3.51	0.79	4.47	3.62	0.75	4.81	4.18	0.72	5.78	

Part load: Minimum

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	2.95	0.33	9.08	3.23	0.34	9.52
0	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	2.95	0.33	9.08	3.23	0.34	9.52
5	/	/	/	/	/	/	/	/	/	/	2.96	0.35	8.48	3.07	0.35	8.66	3.01	0.34	8.92	3.27	0.35	9.34
10	/	/	/	/	/	/	/	/	/	/	2.95	0.36	8.16	3.06	0.37	8.33	2.83	0.33	8.58	3.14	0.35	8.94
15	/	/	/	/	/	/	3.37	0.45	7.45	3.89	0.50	7.82	4.19	0.53	7.97	4.52	0.54	8.36	5.12	0.58	8.81	
20	2.80	0.39	7.25	3.00	0.44	6.87	3.27	0.47	7.01	3.80	0.52	7.35	4.12	0.54	7.62	4.38	0.55	7.92	4.96	0.59	8.37	
25	2.71	0.48	5.66	2.89	0.47	6.18	3.14	0.51	6.14	3.67	0.51	7.23	3.99	0.53	7.56	4.20	0.33	12.87	4.83	0.60	8.12	
30	2.61	0.57	4.61	2.78	0.56	4.98	3.05	0.55	5.58	3.54	0.51	6.87	3.84	0.54	7.10	4.04	0.45	9.04	4.67	0.59	7.86	
35	2.51	0.65	3.86	2.67	0.65	4.12	2.93	0.64	4.56	3.31	0.60	5.51	3.69	0.59	6.27	3.88	0.57	6.86	4.49	0.61	7.31	
40	2.41	0.74	3.25	2.57	0.74	3.46	2.81	0.74	3.81	3.31	0.74	4.48	3.61	0.72	5.02	3.72	0.68	5.44	4.30	0.65	6.66	
43	2.32	0.78	2.97	2.50	0.79	3.15	2.74	0.79	3.45	3.50	0.88	4.01	3.51	0.79	4.47	3.62	0.75	4.81	4.18	0.72	5.78	

Abbreviations:

- LWT: Leaving water temperature (°C)
- DB: Dry-bulb temperature for Outdoor air temperature (°C)
- CC: Total cooling capacity (kW)
- PI: Power input (kW)

# Part 2

Table 2-5.5: MHPP9RP24CM cooling capacity

Part load: Maximum

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	5.13	0.63	8.10	5.39	0.65	8.30	5.58	0.66	8.50	6.15	0.69	8.92
0	/	/	/	/	/	/	/	/	/	5.13	0.63	8.10	5.39	0.65	8.30	5.58	0.66	8.50	6.15	0.69	8.92
5	/	/	/	/	/	/	/	/	/	5.26	0.66	8.02	5.54	0.68	8.20	5.67	0.67	8.40	6.27	0.71	8.80
10	/	/	/	/	/	/	/	/	/	5.86	0.76	7.75	6.13	0.77	7.93	6.29	0.78	8.11	6.91	0.81	8.48
15	/	/	/	/	/	/	8.05	1.18	6.81	9.12	1.27	7.19	9.80	1.37	7.13	10.24	1.37	7.46	11.47	1.44	7.97
20	7.81	1.53	5.10	8.25	1.53	5.40	8.92	1.51	5.90	10.08	1.48	6.83	10.83	1.76	6.14	11.36	1.69	6.72	12.34	1.71	7.23
25	8.54	2.12	4.04	9.00	2.13	4.22	9.74	2.16	4.50	10.71	2.08	5.14	11.20	1.99	5.63	11.46	1.93	5.95	11.95	1.82	6.56
30	9.17	2.78	3.30	9.65	2.82	3.43	10.00	2.69	3.73	10.34	2.35	4.41	10.83	2.26	4.79	11.09	2.17	5.11	11.49	1.85	6.20
35	9.12	3.21	2.84	9.58	3.26	2.94	9.58	2.95	3.25	9.94	2.62	3.79	10.38	2.53	4.10	10.62	2.44	4.35	11.02	2.14	5.15
40	7.04	2.53	2.78	7.42	2.59	2.86	8.02	2.61	3.08	9.07	2.67	3.39	9.70	2.70	3.60	10.15	2.72	3.73	10.52	2.42	4.35
43	6.31	2.39	2.64	6.66	2.42	2.76	7.20	2.45	2.94	8.17	2.51	3.25	8.78	2.54	3.45	9.18	2.56	3.59	10.21	2.58	3.95

Part load: 130%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	5.13	0.63	8.10	5.39	0.65	8.30	5.58	0.66	8.50	6.15	0.69	8.92
0	/	/	/	/	/	/	/	/	/	5.13	0.63	8.10	5.39	0.65	8.30	5.58	0.66	8.50	6.15	0.69	8.92
5	/	/	/	/	/	/	/	/	/	5.26	0.66	8.02	5.54	0.68	8.20	5.67	0.67	8.40	6.27	0.71	8.80
10	/	/	/	/	/	/	/	/	/	5.86	0.76	7.75	6.13	0.77	7.93	6.29	0.78	8.11	6.91	0.81	8.48
15	/	/	/	/	/	/	8.05	1.18	6.81	9.12	1.27	7.19	9.80	1.37	7.13	10.24	1.37	7.46	11.47	1.44	7.97
20	7.81	1.53	5.10	8.25	1.53	5.40	8.92	1.51	5.90	10.08	1.48	6.83	10.83	1.76	6.14	11.36	1.69	6.72	12.34	1.71	7.23
25	8.54	2.12	4.04	9.00	2.13	4.22	9.74	2.16	4.50	10.71	2.08	5.14	11.20	1.99	5.63	11.46	1.93	5.95	11.95	1.82	6.56
30	9.17	2.78	3.30	9.65	2.82	3.43	10.00	2.69	3.73	10.34	2.35	4.41	10.83	2.26	4.79	11.09	2.17	5.11	11.49	1.85	6.20
35	9.12	3.21	2.84	9.58	3.26	2.94	9.58	2.95	3.25	9.94	2.62	3.79	10.38	2.53	4.10	10.62	2.44	4.35	11.02	2.14	5.15
40	7.04	2.53	2.78	7.42	2.59	2.86	8.02	2.61	3.08	9.07	2.67	3.39	9.70	2.70	3.60	10.15	2.72	3.73	10.52	2.42	4.35
43	6.31	2.39	2.64	6.66	2.42	2.76	7.20	2.45	2.94	8.17	2.51	3.25	8.78	2.54	3.45	9.18	2.56	3.59	10.21	2.58	3.95

Part load: 100%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	5.13	0.63	8.10	5.39	0.65	8.30	5.58	0.66	8.50	6.15	0.69	8.92
0	/	/	/	/	/	/	/	/	/	5.13	0.63	8.10	5.39	0.65	8.30	5.58	0.66	8.50	6.15	0.69	8.92
5	/	/	/	/	/	/	/	/	/	5.26	0.66	8.02	5.54	0.68	8.20	5.67	0.67	8.40	6.27	0.71	8.80
10	/	/	/	/	/	/	/	/	/	5.86	0.76	7.75	6.13	0.77	7.93	6.29	0.78	8.11	6.91	0.81	8.48
15	/	/	/	/	/	/	8.05	1.18	6.81	9.12	1.27	7.19	9.80	1.37	7.13	10.24	1.37	7.46	10.15	1.24	8.21
20	7.81	1.53	5.10	8.25	1.53	5.40	8.92	1.51	5.90	9.94	1.53	6.49	10.11	1.63	6.20	10.12	1.46	6.95	10.13	1.32	7.70
25	8.54	2.12	4.04	9.00	2.13	4.22	9.74	2.16	4.50	10.11	1.86	5.44	9.98	1.68	5.96	10.08	1.63	6.17	10.13	1.46	6.92
30	9.17	2.78	3.30	9.15	2.58	3.54	10.00	2.69	3.73	10.14	2.26	4.48	10.15	1.98	5.12	10.16	1.83	5.56	10.17	1.57	6.46
35	9.12	3.21	2.84	9.00	3.10	2.90	9.58	2.95	3.25	9.94	2.62	3.79	10.00	2.33	4.30	10.14	2.24	4.54	10.15	1.83	5.54
40	7.04	2.53	2.78	7.42	2.59	2.86	8.02	2.61	3.08	9.07	2.67	3.39	9.70	2.70	3.60	10.15	2.72	3.73	10.16	2.27	4.47
43	6.31	2.39	2.64	6.66	2.42	2.76	7.20	2.45	2.94	8.17	2.51	3.25	8.78	2.54	3.45	9.18	2.56	3.59	10.13	2.55	3.97

Part load: 90%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	4.61	0.56	8.17	4.85	0.58	8.37	4.87	0.57	8.57	5.53	0.62	8.99
0	/	/	/	/	/	/	/	/	/	4.61	0.56	8.17	4.85	0.58	8.37	4.87	0.57	8.57	5.53	0.62	8.99
5	/	/	/	/	/	/	/	/	/	4.73	0.59	8.08	4.98	0.60	8.27	5.10	0.60	8.46	5.64	0.64	8.86
10	/	/	/	/	/	/	/	/	/	5.27	0.68	7.80	5.51	0.69	7.97	5.66	0.69	8.15	6.21	0.73	8.52
15	/	/	/	/	/	/	7.16	1.02	7.01	8.30	1.13	7.36	8.93	1.23	7.24	9.33	1.23	7.58	9.01	1.08	8.33
20	7.02	1.34	5.23	7.42	1.34	5.54	7.86	1.30	6.07	8.88	1.29	6.86	9.02	1.37	6.57	9.01	1.26	7.16	9.10	1.15	7.91
25	7.76	1.81	4.28	8.18	1.81	4.51	8.86	1.82	4.86	9.08	1.61	5.65	8.56	1.40	6.12	8.99	1.41	6.38	8.91	1.25	7.13
30	8.22	2.36	3.48	8.33	2.22	3.75	8.97	2.26	3.98	9.23	1.92	4.82	9.06	1.66	5.47	8.87	1.49	5.95	9.03	1.37	6.60
35	8.31	2.78	2.99	8.15	2.54	3.21	8.60	2.49	3.45	9.06	2.23	4.06	9.46	2.14	4.41	9.06	1.88	4.82	9.23	1.55	5.94
40	6.28	2.19	2.87	6.62	2.21	3.00	7.17	2.24	3.21	8.11	2.27	3.58	8.84	2.31	3.82	9.26	2.32	3.99	9.07	1.90	4.76
43	5.73	2.13	2.70	6.05	2.14	2.82	6.55	2.17	3.02	7.44	2.20	3.38	7.53	2.09	3.61	7.87	2.09	3.77	8.87	2.10	4.23

Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

CC: Total cooling capacity (kW)

PI: Power input (kW)

Part load: 70%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	3.45	0.41	8.38	3.62	0.42	8.57	3.75	0.43	8.77	4.13	0.45	9.20
0	/	/	/	/	/	/	/	/	/	/	3.45	0.41	8.38	3.62	0.42	8.57	3.75	0.43	8.77	4.13	0.45	9.20
5	/	/	/	/	/	/	/	/	/	/	3.53	0.43	8.27	3.72	0.44	8.44	3.81	0.44	8.65	4.21	0.47	9.05
10	/	/	/	/	/	/	/	/	/	/	4.10	0.52	7.92	4.29	0.53	8.10	4.40	0.53	8.28	4.83	0.56	8.66
15	/	/	/	/	/	/	/	5.74	0.80	7.15	6.33	0.84	7.51	6.81	0.91	7.50	7.12	0.91	7.80	7.26	0.85	8.52
20	5.39	0.95	5.67	5.69	0.94	6.06	6.15	0.94	6.51	7.13	1.00	7.12	7.06	1.00	7.03	7.05	0.95	7.41	7.25	0.89	8.16	
25	6.10	1.32	4.63	6.29	1.28	4.91	6.82	1.27	5.36	7.24	1.10	6.59	6.98	1.07	6.55	7.04	1.05	6.73	7.09	0.95	7.48	
30	6.62	1.71	3.86	6.34	1.53	4.14	6.81	1.52	4.49	7.33	1.35	5.43	7.28	1.21	6.01	7.28	1.16	6.29	7.06	1.00	7.06	
35	6.61	1.99	3.32	6.57	1.86	3.54	6.53	1.70	3.85	7.04	1.56	4.43	7.53	1.51	4.98	7.34	1.34	5.46	7.28	1.12	6.53	
40	5.06	1.69	2.99	5.34	1.70	3.15	5.66	1.66	3.40	6.42	1.66	3.88	7.05	1.68	4.20	7.38	1.66	4.43	7.33	1.35	5.45	
43	4.52	1.59	2.84	4.77	1.60	2.99	5.04	1.56	3.22	5.73	1.57	3.66	6.17	1.56	3.96	6.46	1.55	4.17	7.33	1.53	4.80	

Part load: 50%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	3.13	0.35	9.02	3.42	0.36	9.46
0	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	3.13	0.35	9.02	3.42	0.36	9.46
5	/	/	/	/	/	/	/	/	/	/	2.96	0.35	8.48	3.07	0.35	8.66	3.19	0.36	8.87	3.46	0.37	9.28
10	/	/	/	/	/	/	/	/	/	/	2.95	0.36	8.16	3.06	0.37	8.33	3.14	0.37	8.53	3.49	0.39	8.89
15	/	/	/	/	/	/	4.03	0.56	7.23	4.59	0.60	7.62	4.94	0.63	7.79	5.18	0.64	8.08	5.08	0.58	8.73	
20	3.89	0.61	6.41	4.11	0.63	6.48	4.45	0.66	6.72	5.22	0.72	7.24	5.31	0.73	7.25	5.10	0.67	7.63	5.06	0.61	8.28	
25	4.42	0.88	5.04	4.52	0.84	5.40	4.91	0.83	5.89	5.25	0.78	6.78	5.06	0.73	6.91	5.31	0.75	7.11	5.07	0.65	7.76	
30	4.80	1.14	4.20	4.65	1.03	4.53	5.26	1.06	4.98	5.15	0.84	6.16	5.32	0.80	6.63	5.13	0.76	6.72	5.09	0.70	7.31	
35	4.80	1.34	3.58	4.64	1.21	3.83	5.04	1.20	4.20	5.23	1.04	5.03	5.47	0.97	5.63	5.33	0.86	6.21	5.33	0.77	6.94	
40	3.55	1.12	3.16	3.75	1.12	3.35	4.07	1.12	3.65	4.78	1.13	4.25	5.13	1.10	4.67	5.20	1.04	4.99	5.16	0.83	6.19	
43	3.29	1.13	2.92	4.77	1.60	2.99	3.77	1.12	3.35	4.30	1.11	3.88	4.46	1.05	4.26	4.67	1.03	4.54	5.38	1.00	5.40	

Part load: 30%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	3.13	0.35	9.02	3.42	0.36	9.46
0	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	3.13	0.35	9.02	3.42	0.36	9.46
5	/	/	/	/	/	/	/	/	/	/	2.96	0.35	8.48	3.07	0.35	8.66	3.19	0.36	8.87	3.46	0.37	9.28
10	/	/	/	/	/	/	/	/	/	/	2.95	0.36	8.16	3.06	0.37	8.33	3.12	0.37	8.54	3.49	0.39	8.89
15	/	/	/	/	/	/	3.37	0.45	7.45	3.89	0.50	7.82	4.19	0.53	7.97	4.52	0.54	8.36	5.08	0.58	8.73	
20	2.82	0.39	7.22	3.00	0.44	6.87	3.27	0.47	7.01	3.80	0.52	7.35	4.12	0.54	7.62	4.38	0.55	7.92	5.06	0.61	8.28	
25	2.72	0.48	5.66	2.88	0.47	6.18	3.14	0.51	6.14	3.69	0.53	7.02	3.98	0.56	7.15	4.22	0.56	7.50	4.23	0.52	8.16	
30	2.82	0.63	4.46	2.80	0.58	4.83	3.08	0.57	5.45	3.62	0.53	6.84	3.89	0.57	6.78	4.13	0.59	7.01	4.69	0.62	7.60	
35	2.95	0.78	3.76	2.93	0.73	4.03	2.95	0.66	4.48	3.34	0.61	5.48	3.69	0.59	6.21	3.87	0.59	6.52	4.51	0.62	7.31	
40	2.40	0.76	3.16	2.57	0.76	3.37	2.82	0.76	3.72	3.27	0.74	4.42	3.57	0.72	4.94	3.78	0.71	5.34	4.33	0.66	6.58	
43	2.37	0.82	2.90	3.47	1.13	3.08	2.75	0.81	3.37	3.18	0.80	3.97	3.43	0.78	4.40	3.64	0.77	4.73	4.21	0.74	5.73	

Part load: Minimum

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	3.13	0.35	9.02	3.42	0.36	9.46
0	/	/	/	/	/	/	/	/	/	/	2.87	0.33	8.63	2.99	0.34	8.82	3.13	0.35	9.02	3.42	0.36	9.46
5	/	/	/	/	/	/	/	/	/	/	2.96	0.35	8.48	3.07	0.35	8.66	3.19	0.36	8.87	3.46	0.37	9.28
10	/	/	/	/	/	/	/	/	/	/	2.95	0.36	8.16	3.06	0.37	8.33	3.12	0.37	8.54	3.49	0.39	8.89
15	/	/	/	/	/	/	3.37	0.45	7.45	3.89	0.50	7.82	4.19	0.53	7.97	4.52	0.54	8.36	5.08	0.58	8.73	
20	2.82	0.39	7.22	3.00	0.44	6.87	3.27	0.47	7.01	3.80	0.52	7.35	4.12	0.54	7.62	4.38	0.55	7.92	5.06	0.61	8.28	
25	2.72	0.48	5.66	2.88	0.47	6.18	3.14	0.51	6.14	3.69	0.53	7.02	3.98	0.56	7.15	4.22	0.56	7.50	4.23	0.52	8.16	
30	2.61	0.58	4.48	2.80	0.58	4.83	3.08	0.57	5.45	3.62	0.53	6.84	3.89	0.57	6.78	4.13	0.59	7.01	4.69	0.62	7.60	
35	2.50	0.66	3.77	2.69	0.67	4.04	2.95	0.66	4.48	3.34	0.61	5.48	3.69	0.59	6.21	3.87	0.59	6.52	4.51	0.62	7.31	
40	2.40	0.76	3.16	2.57	0.76	3.37	2.82	0.76	3.72	3.27	0.74	4.42	3.57	0.72	4.94	3.78	0.71	5.34	4.33	0.66	6.58	
43	2.37	0.82	2.90	2.50	0.81	3.08	2.75	0.81	3.37	3.18	0.80	3.97	3.43	0.78	4.40	3.64	0.77	4.73	4.21	0.74	5.73	

Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

CC: Total cooling capacity (kW)

PI: Power input (kW)

# Part 2

Table 2-5.6: MHPP16RP24P3CM cooling capacity

Part load: Maximum

DB	LWT																						
	5			7			10			15			18			20			25				
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER		
-5	/	/	/	/	/	/	/	/	/	11.45	1.73	6.62	12.19	1.84	6.63	12.64	1.91	6.63	13.71	2.19	6.25		
0	/	/	/	/	/	/	/	/	/	11.63	1.61	7.23	12.19	1.84	6.62	12.75	1.84	6.92	13.71	2.20	6.23		
5	/	/	/	/	/	/	/	/	/	11.63	1.62	7.19	12.39	1.72	7.22	12.86	1.78	7.22	13.84	2.13	6.50		
10	/	/	/	/	/	/	/	/	/	12.24	1.79	6.83	13.08	1.83	7.16	13.54	1.89	7.16	14.60	2.27	6.43		
15	/	/	/	/	/	/	/	/	13.14	1.96	6.70	14.95	1.95	7.65	15.14	2.21	6.84	16.11	2.37	6.80	17.31	2.73	6.35
20	13.09	2.75	4.76	13.73	2.74	5.01	15.27	2.86	5.33	17.19	2.88	5.96	17.89	2.79	6.41	18.45	3.01	6.12	19.65	3.47	5.67		
25	14.97	3.99	3.75	15.35	3.91	3.93	16.55	3.99	4.15	18.65	4.24	4.40	17.78	3.42	5.20	18.55	3.45	5.37	19.65	3.47	5.67		
30	15.65	5.10	3.07	16.17	5.10	3.17	17.28	5.20	3.32	19.17	5.37	3.57	17.26	3.81	4.53	18.38	3.94	4.67	20.28	4.02	5.04		
35	15.62	5.96	2.62	16.01	5.91	2.71	16.90	5.91	2.86	18.32	5.89	3.11	16.51	4.24	3.89	17.58	4.40	4.00	18.34	4.11	4.46		
40	12.84	5.00	2.57	13.17	4.88	2.70	12.96	4.38	2.96	12.95	3.78	3.43	13.22	3.52	3.76	13.22	3.30	4.01	13.62	2.91	4.68		
43	9.76	3.77	2.59	9.96	3.65	2.73	9.96	3.36	2.96	9.93	2.90	3.43	10.21	2.72	3.76	10.21	2.55	4.01	10.21	2.16	4.72		

Part load: 130%

DB	LWT																						
	5			7			10			15			18			20			25				
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER		
-5	/	/	/	/	/	/	/	/	/	11.45	1.73	6.62	12.19	1.84	6.63	12.64	1.91	6.63	13.71	2.19	6.25		
0	/	/	/	/	/	/	/	/	/	11.63	1.61	7.23	12.19	1.84	6.62	12.75	1.84	6.92	13.71	2.20	6.23		
5	/	/	/	/	/	/	/	/	/	11.63	1.62	7.19	12.39	1.72	7.22	12.86	1.78	7.22	13.84	2.13	6.50		
10	/	/	/	/	/	/	/	/	/	12.24	1.79	6.83	13.08	1.83	7.16	13.54	1.89	7.16	14.60	2.27	6.43		
15	/	/	/	/	/	/	/	/	13.14	1.96	6.70	14.95	1.95	7.65	15.14	2.21	6.84	16.11	2.37	6.80	15.95	2.96	5.38
20	13.09	2.75	4.76	13.73	2.74	5.01	15.27	2.86	5.33	17.19	2.88	5.96	17.89	2.79	6.41	18.45	3.01	6.12	18.95	3.28	5.77		
25	14.97	3.99	3.75	15.35	3.91	3.93	16.55	3.99	4.15	18.65	4.24	4.40	17.78	3.42	5.20	18.39	3.39	5.43	19.16	3.19	6.01		
30	15.65	5.10	3.07	16.17	5.10	3.17	17.28	5.20	3.32	18.44	4.93	3.74	17.26	3.81	4.53	18.38	3.94	4.67	18.91	3.53	5.35		
35	15.62	5.96	2.62	16.01	5.91	2.71	16.90	5.91	2.86	18.32	5.89	3.11	16.51	4.24	3.89	17.58	4.40	4.00	18.86	4.36	4.33		
40	12.84	5.00	2.57	13.17	4.88	2.70	12.96	4.38	2.96	12.95	3.78	3.43	13.22	3.52	3.76	13.22	3.30	4.01	13.62	2.91	4.68		
43	9.76	3.77	2.59	9.96	3.65	2.73	9.96	3.36	2.96	9.93	2.90	3.43	10.21	2.72	3.76	10.21	2.55	4.01	10.21	2.16	4.72		

Part load: 100%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	11.45	1.73	6.62	12.19	1.84	6.63	12.64	1.91	6.63	13.71	2.19	6.25
0	/	/	/	/	/	/	/	/	/	11.63	1.61	7.23	12.19	1.84	6.62	12.75	1.84	6.92	13.71	2.20	6.23
5	/	/	/	/	/	/	/	/	/	11.63	1.62	7.19	12.39	1.72	7.22	12.86	1.78	7.22	13.84	2.13	6.50
10	/	/	/	/	/	/	/	/	/	12.24	1.79	6.83	13.08	1.83	7.16	14.65	2.27	6.45	14.60	2.27	6.43
15	/	/	/	/	/	/	13.14	1.96	6.70	14.95	1.95	7.65	15.49	2.26	6.84	14.47	2.38	6.08	15.95	2.96	5.38
20	13.09	2.75	4.76	13.73	2.74	5.01	15.27	2.86	5.33	15.35	2.33	6.60	15.29	1.99	7.68	15.12	2.03	7.43	15.18	1.99	7.61
25	13.83	3.50	3.95	13.72	3.26	4.21	15.18	3.41	4.45	14.48	2.72	5.33	15.21	2.49	6.10	14.80	2.24	6.61	15.17	2.00	7.58
30	13.59	4.01	3.39	13.59	3.73	3.64	14.75	3.83	3.85	14.04	3.07	4.58	15.04	2.95	5.10	15.04	2.77	5.43	14.97	2.22	6.73
35	13.79	4.79	2.88	14.00	4.83	2.90	15.11	4.77	3.17	14.94	3.90	3.83	15.40	3.67	4.20	14.95	3.34	4.47	14.99	2.80	5.35
40	12.84	5.00	2.57	13.17	4.88	2.70	12.96	4.38	2.96	12.95	3.78	3.43	13.22	3.52	3.76	13.22	3.30	4.01	13.62	2.91	4.68
43	9.76	3.77	2.59	9.96	3.65	2.73	9.96	3.36	2.96	9.93	2.90	3.43	10.21	2.72	3.76	10.21	2.55	4.01	10.21	2.16	4.72

Part load: 90%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	10.50	1.40	7.48	11.20	1.48	7.56	11.63	1.53	7.60	12.46	1.77	7.05
0	/	/	/	/	/	/	/	/	/	10.64	1.31	8.11	11.17	1.51	7.42	11.70	1.49	7.84	12.43	1.79	6.95
5	/	/	/	/	/	/	/	/	/	10.62	1.33	7.96	11.33	1.41	8.06	11.77	1.45	8.10	12.52	1.74	7.19
10	/	/	/	/	/	/	/	/	/	11.18	1.49	7.52	11.96	1.50	7.99	13.06	1.80	7.24	12.64	1.67	7.57
15	/	/	/	/	/	/	11.35	1.81	6.28	12.87	1.82	7.07	13.30	2.11	6.31	12.90	1.91	6.77	12.53	1.74	7.22
20	11.63	2.33	4.99	12.46	2.36	5.28	13.34	2.35	5.68	13.56	1.95	6.95	13.56	1.62	8.39	13.41	1.64	8.16	13.85	1.64	8.44
25	12.46	3.02	4.12	11.96	2.71	4.42	13.83	2.93	4.72	13.70	2.40	5.71	13.42	2.09	6.41	13.12	1.83	7.18	13.83	1.65	8.38
30	12.57	3.53	3.56	12.34	3.25	3.80	13.41	3.32	4.04	13.28	2.74	4.84	13.69	2.53	5.41	14.01	2.42	5.79	13.59	1.87	7.28
35	12.35	4.02	3.07	12.35	3.80	3.25	13.76	4.06	3.39	13.63	3.37	4.04	13.72	3.12	4.40	13.93	2.93	4.75	13.63	2.37	5.74
40	11.50	4.26	2.70	11.79	4.17	2.83	11.55	3.75	3.08	11.77	3.30	3.57	12.05	3.07	3.93	11.72	2.79	4.20	12.04	2.44	4.94
43	9.03	3.42	2.64	9.25	3.32	2.79	9.03	2.98	3.03	9.00	2.56	3.51	9.28	2.40	3.86	8.96	2.17	4.13	9.61	1.97	4.89

Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

CC: Total cooling capacity (kW)

PI: Power input (kW)

Part load: 70%

DB	LWT																					
	5			7			10			15			18			20			25			
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	
-5	/	/	/	/	/	/	/	/	/	8.16	0.79	10.28	8.73	0.82	10.67	9.09	0.83	10.91	11.44	1.39	8.22	
0	/	/	/	/	/	/	/	/	/	8.22	0.75	10.91	8.66	0.87	9.94	9.09	0.84	10.84	11.38	1.43	7.96	
5	/	/	/	/	/	/	/	/	/	8.17	0.80	10.22	8.74	0.82	10.60	9.10	0.84	10.84	11.43	1.40	8.14	
10	/	/	/	/	/	/	/	/	/	8.62	0.91	9.51	9.60	0.92	10.47	10.46	1.09	9.57	11.53	1.34	8.59	
15	/	/	/	/	/	/	/	9.30	1.23	7.57	10.60	1.18	9.01	10.65	1.33	8.01	10.33	1.18	8.72	11.43	1.41	8.11
20	9.33	1.71	5.45	10.05	1.73	5.82	11.00	1.72	6.39	10.73	1.30	8.27	11.02	1.10	10.02	10.61	1.05	10.08	11.07	1.03	10.71	
25	10.10	2.23	4.52	10.06	2.09	4.82	10.96	2.10	5.23	10.79	1.67	6.47	10.63	1.40	7.58	10.39	1.21	8.61	11.05	1.05	10.54	
30	9.76	2.55	3.83	9.76	2.39	4.09	10.62	2.40	4.43	10.51	1.95	5.38	10.91	1.79	6.09	10.80	1.64	6.60	10.74	1.25	8.58	
35	9.78	2.97	3.29	9.79	2.80	3.50	11.19	3.01	3.72	10.88	2.44	4.45	11.21	2.28	4.91	11.12	2.09	5.33	11.19	1.69	6.61	
40	9.33	3.25	2.87	9.35	3.10	3.02	9.35	2.84	3.29	9.31	2.42	3.84	9.61	2.26	4.25	9.28	2.04	4.56	9.91	1.81	5.48	
43	7.12	2.60	2.74	7.12	2.46	2.90	7.35	2.33	3.15	7.36	2.01	3.67	7.36	1.82	4.04	7.36	1.70	4.34	7.70	1.48	5.20	

Part load: 50%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	6.84	0.44	15.46	7.45	0.46	16.06	7.93	0.50	16.02	9.68	0.77	12.53
0	/	/	/	/	/	/	/	/	/	6.85	0.43	15.77	7.37	0.54	13.68	7.90	0.53	15.00	9.58	0.84	11.34
5	/	/	/	/	/	/	/	/	/	6.79	0.50	13.66	7.40	0.52	14.22	7.88	0.55	14.33	9.57	0.86	11.16
10	/	/	/	/	/	/	/	/	/	6.77	0.51	13.21	7.43	0.50	14.99	7.66	0.52	14.69	9.63	0.82	11.81
15	/	/	/	/	/	/	6.54	0.67	9.80	7.49	0.58	12.82	8.16	0.73	11.18	7.55	0.60	12.58	9.54	0.88	10.83
20	6.99	1.15	6.09	7.07	1.07	6.61	7.76	1.04	7.48	8.10	0.79	10.27	7.68	0.58	13.19	7.67	0.57	13.40	8.79	0.64	13.69
25	7.11	1.44	4.93	7.36	1.37	5.36	8.04	1.35	5.95	7.82	1.02	7.64	8.05	0.87	9.24	7.51	0.69	10.82	8.76	0.66	13.31
30	7.06	1.74	4.06	7.05	1.62	4.36	7.69	1.60	4.81	7.60	1.28	5.93	7.63	1.12	6.83	8.17	1.08	7.53	8.62	0.86	10.03
35	7.32	2.10	3.49	7.33	1.98	3.71	7.95	1.97	4.03	7.97	1.64	4.85	7.89	1.45	5.44	7.81	1.31	5.95	8.27	1.09	7.60
40	6.83	2.28	3.00	7.01	2.21	3.17	7.02	2.02	3.47	7.03	1.73	4.07	7.04	1.55	4.53	6.70	1.37	4.89	7.91	1.35	5.88
43	5.13	1.83	2.80	5.35	1.81	2.95	5.36	1.66	3.22	5.66	1.51	3.75	6.37	1.55	4.11	6.72	1.53	4.39	7.70	1.48	5.20

Part load: 30%

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	6.84	0.44	15.46	7.45	0.46	16.06	7.93	0.50	16.02	8.81	0.55	15.89
0	/	/	/	/	/	/	/	/	/	6.85	0.43	15.77	7.37	0.54	13.68	7.90	0.53	15.00	8.70	0.64	13.66
5	/	/	/	/	/	/	/	/	/	6.79	0.50	13.66	7.40	0.52	14.22	7.88	0.55	14.33	8.67	0.66	13.10
10	/	/	/	/	/	/	/	/	/	6.77	0.51	13.21	7.43	0.50	14.99	7.91	0.52	15.09	8.72	0.63	13.90
15	/	/	/	/	/	/	5.99	0.54	11.07	6.85	0.45	15.38	7.33	0.58	12.74	7.80	0.61	12.87	8.63	0.69	12.49
20	5.05	0.76	6.62	5.31	0.72	7.42	6.04	0.71	8.52	6.76	0.58	11.64	7.47	0.53	14.17	7.92	0.58	13.62	8.79	0.64	13.69
25	4.87	0.91	5.36	5.12	0.87	5.88	5.69	0.85	6.67	6.53	0.77	8.49	7.21	0.73	9.89	7.51	0.69	10.82	8.76	0.66	13.31
30	4.72	1.13	4.18	4.96	1.10	4.51	5.64	1.12	5.04	6.33	1.02	6.21	6.99	0.99	7.09	7.29	0.95	7.71	8.62	0.86	10.03
35	4.50	1.26	3.58	4.77	1.25	3.82	5.42	1.28	4.22	6.08	1.20	5.07	6.72	1.18	5.68	7.00	1.15	6.11	8.27	1.09	7.60
40	4.34	1.43	3.03	4.56	1.42	3.21	5.19	1.47	3.52	5.82	1.41	4.14	6.43	1.40	4.58	6.70	1.37	4.89	7.91	1.35	5.88
43	4.25	1.52	2.79	4.44	1.51	2.95	5.05	1.57	3.22	5.66	1.51	3.75	6.37	1.55	4.11	6.72	1.53	4.39	7.70	1.48	5.20

Part load: Minimum

DB	LWT																				
	5			7			10			15			18			20			25		
	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER	CC	PI	EER
-5	/	/	/	/	/	/	/	/	/	6.84	0.44	15.46	7.45	0.46	16.06	7.93	0.50	16.02	8.81	0.55	15.89
0	/	/	/	/	/	/	/	/	/	6.85	0.43	15.77	7.37	0.54	13.68	7.90	0.53	15.00	8.70	0.64	13.66
5	/	/	/	/	/	/	/	/	/	6.79	0.50	13.66	7.40	0.52	14.22	7.88	0.55	14.33	8.67	0.66	13.10
10	/	/	/	/	/	/	/	/	/	6.77	0.51	13.21	7.43	0.50	14.99	7.91	0.52	15.09	8.72	0.63	13.90
15	/	/	/	/	/	/	5.99	0.54	11.07	6.85	0.45	15.38	7.33	0.58	12.74	7.80	0.61	12.87	8.63	0.69	12.49
20	5.05	0.76	6.62	5.31	0.72	7.42	6.04	0.71	8.52	6.76	0.58	11.64	7.47	0.53	14.17	7.92	0.58	13.62	8.79	0.64	13.69
25	4.87	0.91	5.36	5.12	0.87	5.88	5.69	0.85	6.67	6.53	0.77	8.49	7.21	0.73	9.89	7.51	0.69	10.82	8.76	0.66	13.31
30	4.72	1.13	4.18	4.96	1.10	4.51	5.64	1.12	5.04	6.33	1.02	6.21	6.99	0.99	7.09	7.29	0.95	7.71	8.62	0.86	10.03
35	4.50	1.26	3.58	4.77	1.25	3.82	5.42	1.28	4.22	6.08	1.20	5.07	6.72	1.18	5.68	7.00	1.15	6.11	8.27	1.09	7.60
40	4.34	1.43	3.03	4.56	1.42	3.21	5.19	1.47	3.52	5.82	1.41	4.14	6.43	1.40	4.58	6.70	1.37	4.89	7.91	1.35	5.88
43	4.25	1.52	2.79	4.44	1.51	2.95	5.05	1.57	3.22	5.66	1.51	3.75	6.37	1.55	4.11	6.72	1.53	4.39	7.70	1.48	5.20

Abbreviations:

LWT: Leaving water temperature (°C)

DB: Dry-bulb temperature for Outdoor air temperature (°C)

CC: Total cooling capacity (kW)

PI: Power input (kW)

## 6 Hydronic Performance

Figure 2-6.1: *MHPP5RP24CM / MHPP9RP24CM* hydronic performance

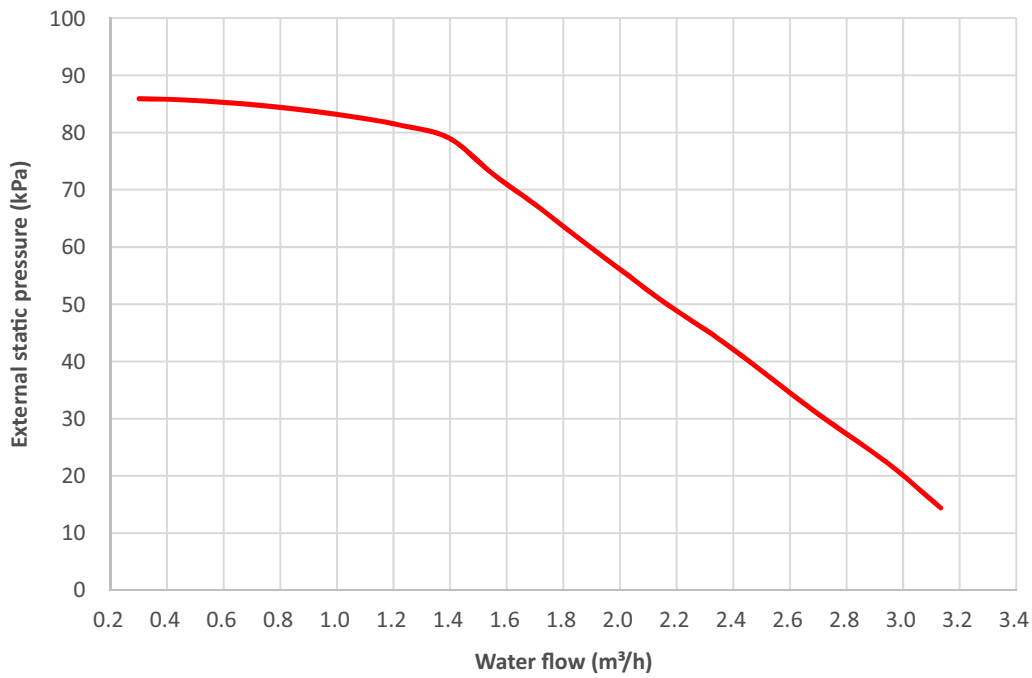
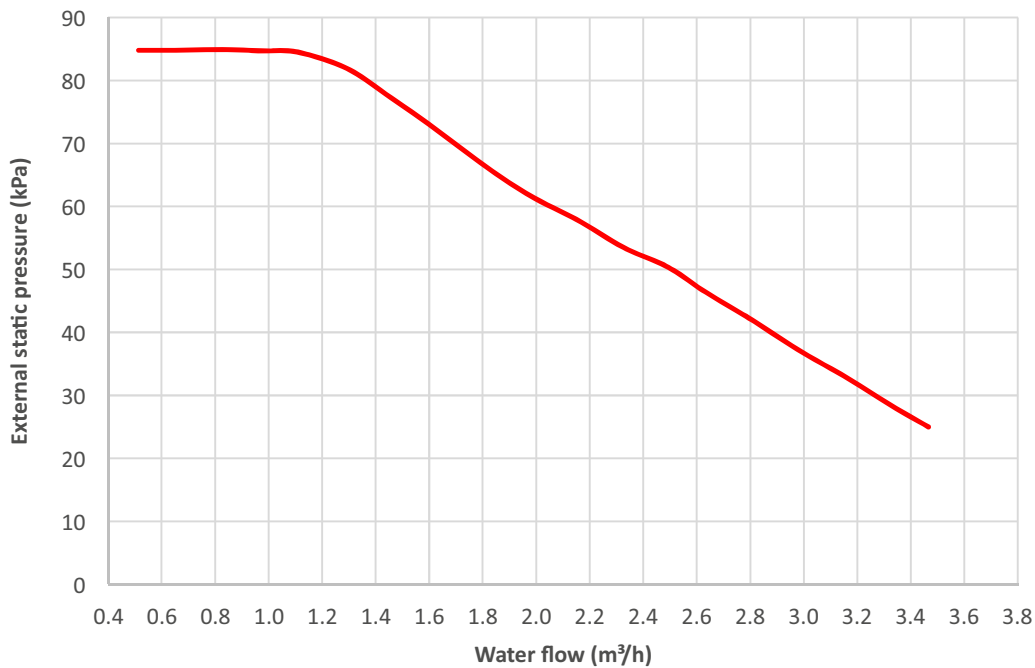


Figure 2-6.2: *MHPP16RP24P3CM* hydronic performance





## 7 Sound Levels

### 7.1 Overall

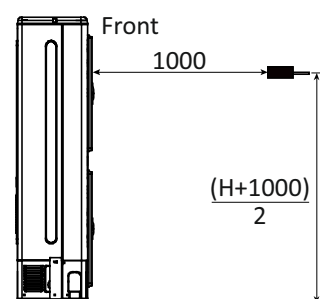
Table 2-7.1: Sound pressure levels<sup>1</sup>

Model name	dB(A) <sup>2</sup>
MHPP5RP24CM	48
MHPP9RP24CM	53
MHPP16RP24P3CM	59

Notes:

1. Sound pressure level is measured at a position 1m in front of the unit and  $(1+H)/2$ m (where H is the height of the unit) above the floor in a semi-anechoic chamber. During in-situ operation, sound pressure levels may be higher as a result of ambient noise.

Figure 2-7.1: Sound pressure level measurement (unit: mm)



2. dB(A) is the maximum value tested under the conditions below:

Outdoor air temperature 7°C DB, 6°C WB; EWT 30°C, LWT 35°C. Free compressor frequency.

Outdoor air temperature 7°C DB, 6°C WB; EWT 47°C, LWT 55°C. Free compressor frequency.

### 7.2 Octave Band Levels (NR)

Figure 2-7.2: MHPP5RP24CM octave band levels

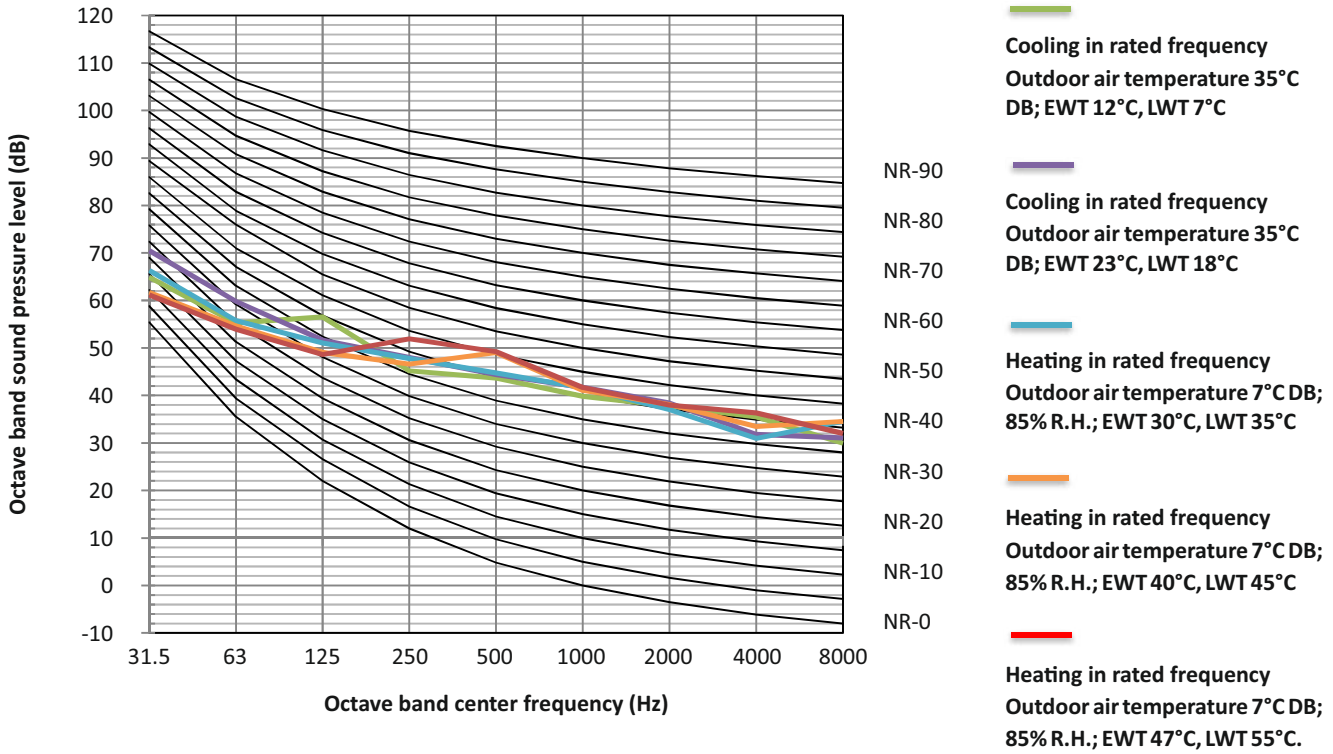


Figure 2-7.3: MHPP9RP24CM octave band levels

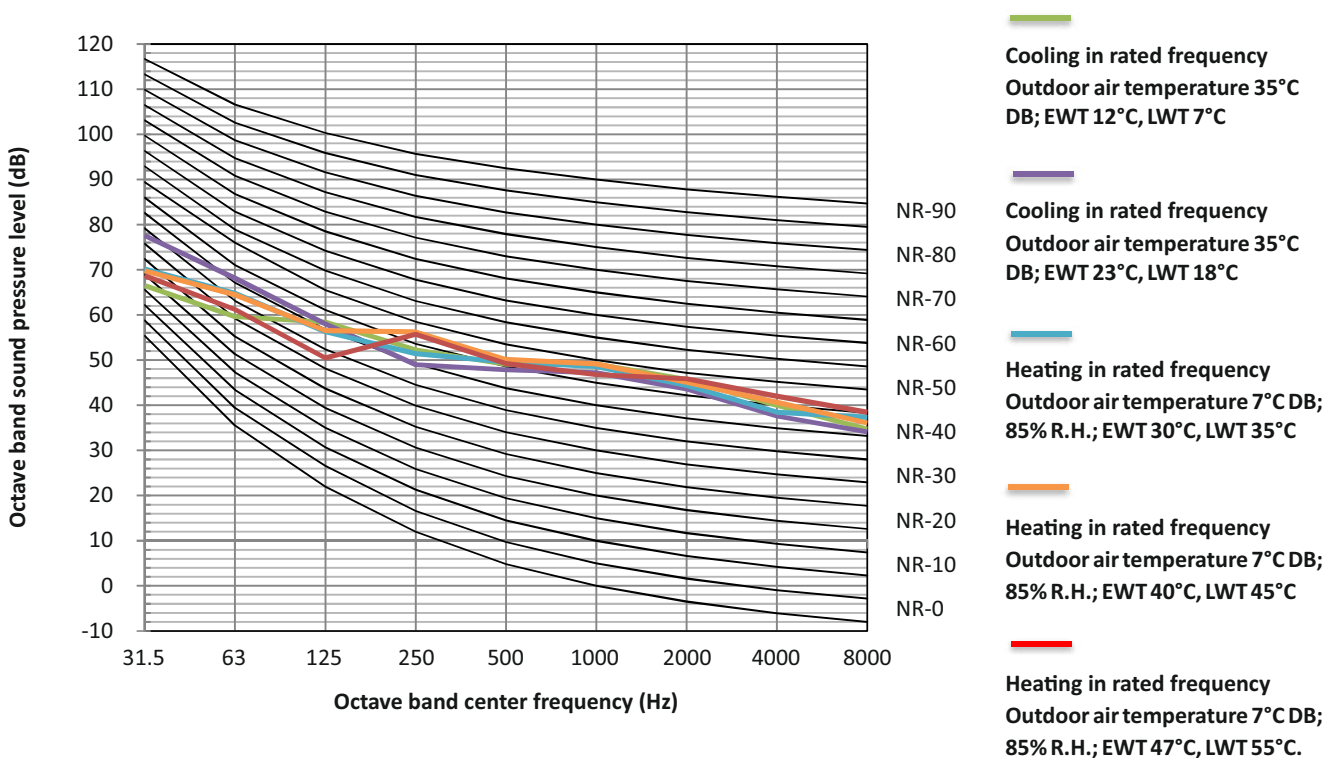
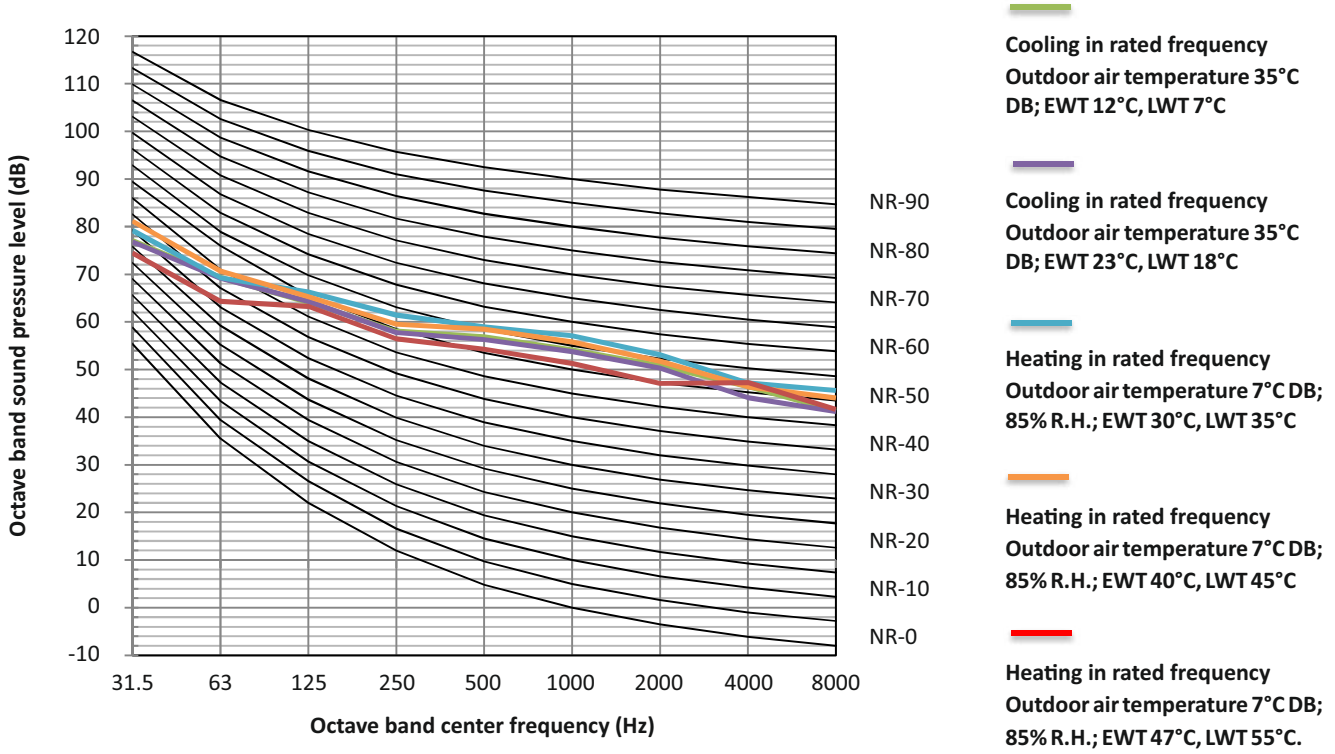


Figure 2-7.4: MHPP16RP24P3CM octave band levels







Company assumes no responsibility for possible inaccuracies in this book originated typographical errors or rewriting. All the pictures and diagrams are principal and it is necessary to adjust each actual situation on the field, in any case the company reserves the right to enter their own products such modifications as considered necessary.

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