

Centrometal

HEATING TECHNIQUE

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ENG

TECHNICAL MANUAL



for installation, use and maintenance
of heat pump



THE FIRST START-UP MUST BE DONE BY AUTHORIZED PERSON,
OTHERWISE PRODUCT WARRANTY IS NOT VALID.

Mars series R290 Mono Heat pumps

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Part 1

General Information

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1 R290 Mono system

1.1 System

Centrometal Mars R290 Mono is an integrated air to water heat pump system which is one-step solution for space heating, space cooling and domestic hot water. The outdoor heat pump system extracts heat from the outdoor air and transfers this heat through refrigerant piping to the plate heat exchanger in the hydronic system. The heated water in the hydronic system circulates to low temperature heat emitters (floor heating loops or low temperature radiators) to provide space heating, and to the domestic hot water tank to provide domestic hot water. The 4-way valve in the outdoor unit can reverse the refrigerant cycle so that the hydronic system can provide chilled water for cooling by fan coil units.

The heating capacity of heat pumps decreases with ambient temperature dropping. Centrometal Mars R290 Mono can be installed with a backup electric heater on the outside of the unit to provide additional heating capacity for use during extremely cold weather when the heat pump capacity is insufficient. The backup electric heater also serves as a secondary heat source in event of a heat pump malfunction and for anti-freeze protection of the outside water piping in winter.

1.2 System configurations

Centrometal R290 Mono can be configured to run with or without the external electric heater, and can also be used in conjunction with an auxiliary heat source such as a boiler.

The chosen configuration affects the size of 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.

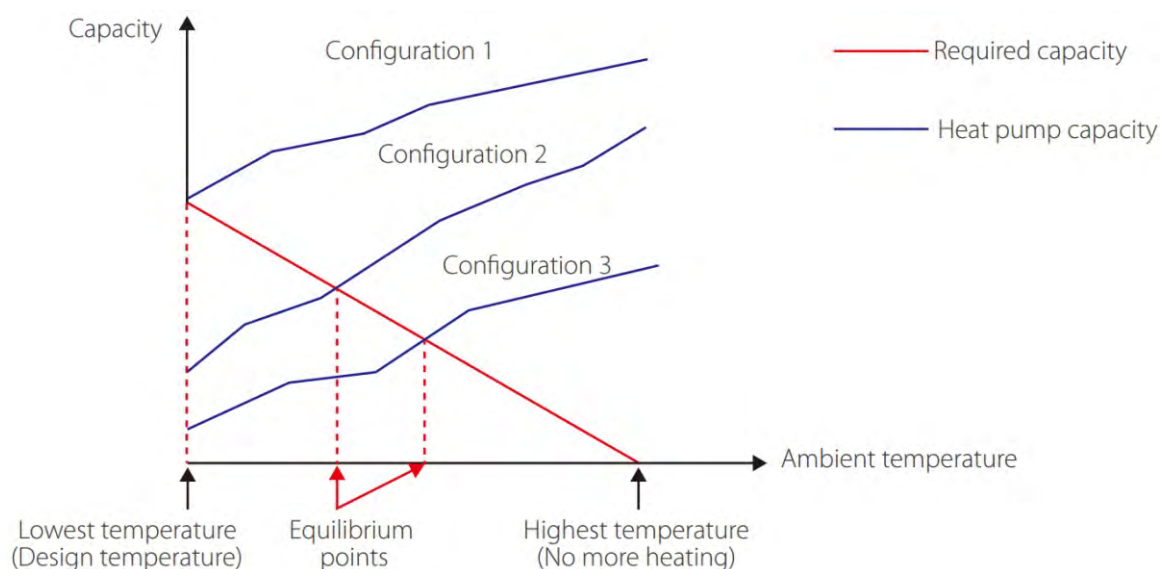
Configuration 2: Heat pump and backup electric heater

- 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 (as shown below), 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 (as shown below), 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 1-1.1: Product lineup

Power supply	380-415V/3N/50Hz		
Model	MHP26R290P3CM	MHP30R290P3CM	MHP35R290P3CM
Appearance			

3 Nomenclature

Table 1-1.2: Nomenclature

M	HP	30	R290	P3	CM
1	2	3	4	5	6

Legend		
No.	Code	Remarks
1	M	Type: Monobloc
2	HP	Product: Heat Pump
3	30	Capacity code: 26 = 26 kW; 30 = 30 kW; 35 = 35 kW
4	R290	Refrigerant type: R290
5	P3	Power supply: P3 = 3-phase (380-415V, 50Hz)
6	CM	Brand: Centrometal

4 System design and unit selection

4.1 Selection procedure

Step 1: Total heat load calculation

Calculate conditioned surface area
 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 Centrometal R290 Mono unit capacity based on nominal capacity

Correct capacity of the outdoor units for the following items:
 Outdoor air temperature / Outdoor humidity / Water outlet temperature¹ /
 Altitude / Anti-freeze fluid

Is corrected R290 Mono unit capacity \geq Required total heat load on outdoor units²

Yes

No

Centrometal R290 Mono system selection is complete

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 Centrometal R290 Mono 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 the 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 R290 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.
- For some old radiators: 70 to 80°C

4.3 Optimizing system design

To get the most comfort with the lowest energy consumption with Centrometal R290 Mono, 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 thermostat (supplied by user) to the hydronic system helps prevent excessive space heating by stopping the outdoor unit and circulation 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]
26-35 kW	≥40
Cascade	≥40*n

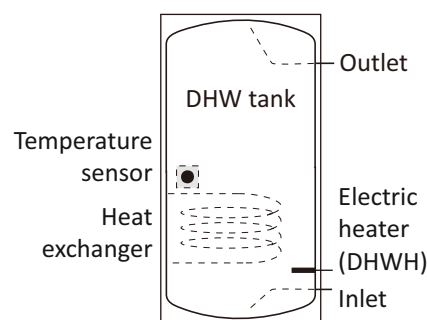
n = number of heat pumps in cascade

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	26-35 kW	
DHW tank volume [L]	Recommended	300-500
Heat exchanger area - stainless steel coil [m ²]	Minimum	3,5
Heat exchanger area - enamel coil [m ²]	Minimum	5,0



Part 2

Engineering Data

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1 Specifications

R290 Mars HT Series		MHP35R290P3CM	MHP30R290P3CM	MHP26R290P3CM	
Power supply	V/Ph/Hz		380-415/3/50		
Heating A7W35	Capacity	W	35000	30000	26000
	Rated input	W	8400	6670	5450
	COP		4.17	4.50	4.77
Heating A7W45	Capacity	W	35000	30000	26000
	Rated input	W	10050	8260	6820
	COP		3.48	3.63	3.81
Heating A7W55	Capacity	W	35000	30000	26000
	Rated input	W	11750	9570	7850
	COP		2.98	3.13	3.31
Heating A7W65	Capacity	W	35000	30000	26000
	Rated input	W	14600	11850	9860
	COP		2.40	2.53	2.64
Heating A2W35	Capacity	W	30400	26800	23500
	Rated input	W	9520	7620	6350
	COP		3.19	3.52	3.70
Heating A2W45	Capacity	W	30000	26100	22600
	Rated input	W	11200	8380	7180
	COP		2.68	3.11	3.15
Heating A2W55	Capacity	W	29600	25350	21950
	Rated input	W	12060	9650	8100
	COP		2.45	2.63	2.71
Heating A-7W35	Capacity	W	28200	24000	21000
	Rated input	W	11100	8380	6930
	COP		2.54	2.86	3.03
Heating A-7W45	Capacity	W	26900	23100	20100
	Rated input	W	12000	9590	7530
	COP		2.24	2.41	2.67
Heating A-7W55	Capacity	W	24800	21300	18800
	Rated input	W	11900	9600	8170
	COP		2.08	2.22	2.30
Cooling A35W18	Capacity	W	35000	30000	26000
	Rated input	W	8500	6800	5600
	EER		4.12	4.41	4.64
Cooling A35W7	Capacity	W	32000	30000	26000
	Rated input	W	11980	10700	8400
	EER		2.67	2.80	3.10

R290 Mars HT Series			MHP35R290P3CM	MHP30R290P3CM	MHP26R290P3CM
Seasonal space heating energy efficiency class	LWT (leaving water temperature)	35°C	A+++	A+++	A+++
		55°C	A++	A++	A+++
SCOP	Warmer climate	35°C	6.08	6.26	6.57
		55°C	4.75	4.90	4.94
	Average climate	35°C	4.48	4.92	4.95
		55°C	3.63	3.79	3.84
	Colder climate	35°C	3.85	3.91	3.95
		55°C	3.03	3.14	3.23
SEER	LWT (leaving water temperature)	7°C	4.82	4.99	5.21
		18°C	6.43	6.80	7.17
Erp Sound power level		dB	75	74	69
Sound power level	Heating A7W35	dB	75.6	75.0	70.2
	Heating max	dB	75.5	74.8	74.5
	Heating Silence mode 1	dB	65.5	64.6	62.9
	Heating Silence mode 2	dB	63.6	62.3	62.4
	Cooling A35W18	dB	74.3	73.8	69.8
	Cooling max	dB	75.0	75.9	74.6
	Cooling Silence mode 1	dB	68.4	66.6	65.9
	Cooling Silence mode 2	dB	65.1	62.9	62.4
Sound pressure level (1m)	Heating A7W35	dB(A)	61.7	61.3	54.8
	Heating max	dB(A)	62.8	61.4	61.1
	Heating Silence mode 1	dB(A)	51.3	50.4	48.5
	Heating Silence mode 2	dB(A)	48.1	47.0	45.0
	Cooling A35W18	dB(A)	60.7	60.3	59.9
	Cooling max	dB(A)	61.1	60.1	59.8
	Cooling Silence mode 1	dB(A)	53.5	53.8	50.2
	Cooling Silence mode 2	dB(A)	49.4	47.9	47.3
Sound pressure level (2m)	Heating A7W35	dB(A)	58.3	58.0	53.4
	Heating max	dB(A)	59.2	58.0	57.8
	Heating Silence mode 1	dB(A)	49.9	47.9	48.0
	Heating Silence mode 2	dB(A)	47.6	45.8	45.2
	Cooling A35W18	dB(A)	57.0	56.3	55.8
	Cooling max	dB(A)	57.0	56.7	56.4
	Cooling Silence mode 1	dB(A)	48.8	48.9	46.0
	Cooling Silence mode 2	dB(A)	46.7	44.9	43.7

R290 Mars HT Series			MHP35R290P3CM	MHP30R290P3CM	MHP26R290P3CM
Water flow range		m ³ /h	1.2 - 7.2	1.2 - 6.2	1.2 - 5.4
Compressor	Type		Scroll		
Outdoor fan	Motor type / Number of fans		DC fan / 2		
Air side heat exchanger			Finned tube heat exchanger		
Refrigerant			R290 2900g		
Unit dimension (W×H×D)		mm	1384×1816×523		
Packing dimension (W×H×D)		mm	1480×2000×570		
Net weight		kg	260		
Gross weight		kg	285		
Water side heat exchanger			Plate heat exchanger		
Water side connection dimension			G1 1/4" BSP (DN32)		
Water pump	Max. pump head	m	12		
Expansion vessel (primary circuit)	Nominal volume	L	5		
	Max. working pressure	bar	8		
Safety valve		bar	3		
Flow switch		m ³ /h	0.87		
Outdoor air temperature range	Cooling	°C	-15 ~ 48		
	Heating	°C	-25 ~ 43		
	DHW	°C	-25 ~ 43		
Water setting temperature range	Cooling	°C	5 ~ 25		
	Heating	°C	25 ~ 85		
	DHW	°C	20 ~ 75		
Notes: The above data test reference standard EN 14511; EN 14825; EN 50564; EN 12102; (EU) No: 811.					

2 Electrical characteristics

Heat pumps

System	Outdoor unit			Power current			Fan	
	Power supply	Min. (V)	Max. (V)	MCA (A)	TOCA (A)	MFA (A)	kW	FLA (A)
MHP35R290P3CM	380-415/3N/50Hz	342	456	32	35	40	0.2	1.1
MHP30R290P3CM	380-415/3N/50Hz	342	456	30	35	40	0.2	1.1
MHP26R290P3CM	380-415/3N/50Hz	342	456	28	35	40	0.2	1.1

Capacity		26	30	35
Outdoor unit	Phases	3		
	Voltage and frequency	380-415 V, 50 Hz		
	The wire cross-sectional area [mm ²]	5 x 6,0		
	Fuse [A]	B32/3f	B40/3f	B40/3f

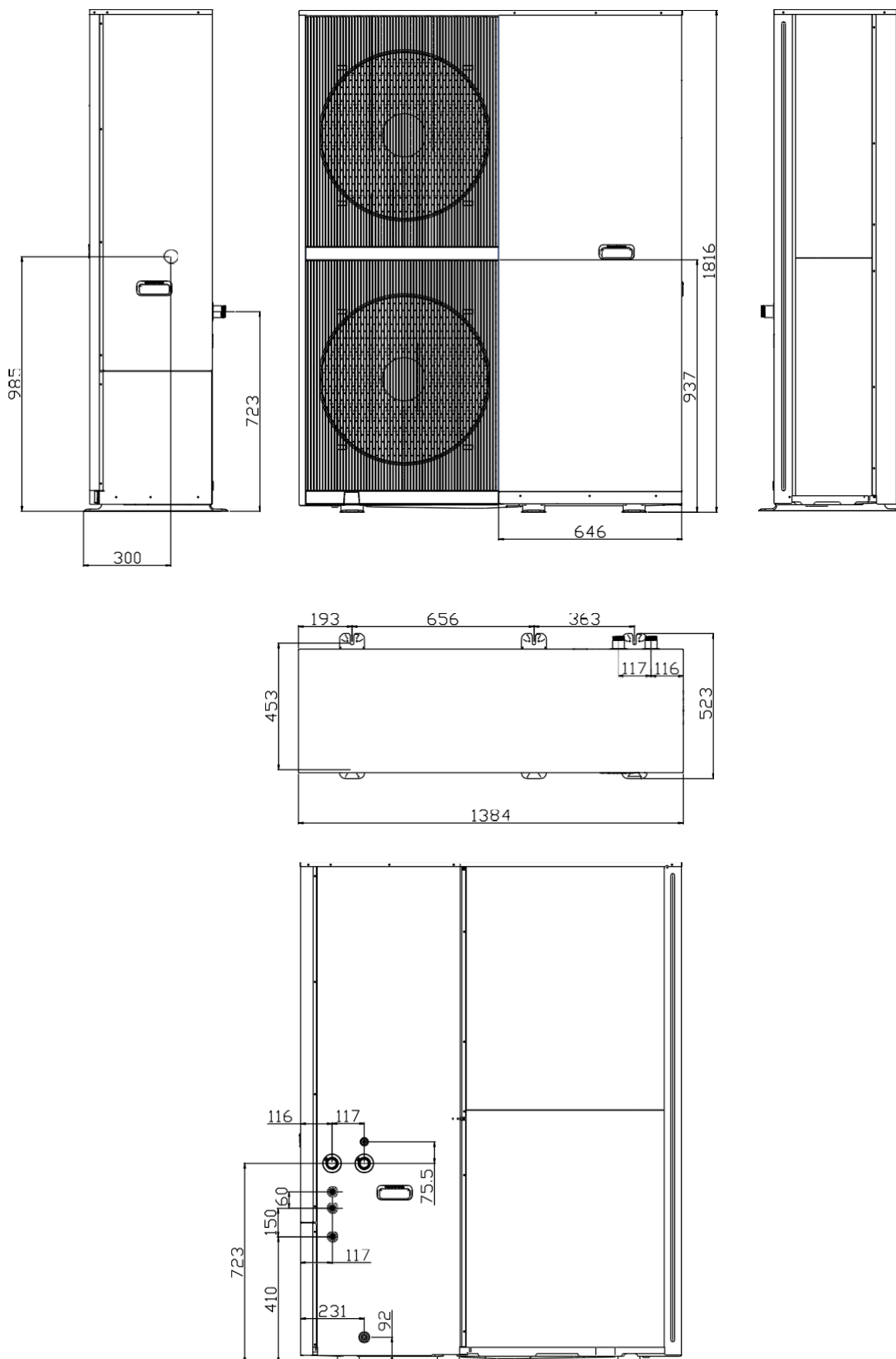
Notes:

Name	Description	Explanation
Min. & Max.	Minimum & Maximum running voltage (V)	Required voltage range for system operation
MCA	Min. Circuit Amps. (A)	To determine the minimum wire diameter
TOCA	Total Over-current Amps. (A)	The maximum current for protecting system
MFA	Max. Fuse Amps. (A)	To determine air-break switch / circuit breaker / fuse
MSC	Max. Starting Amps. (A)	The starting current of the inverter compressor is very small and can be ignored
kW	Rated Motor Output	/
FLA	Full Load Amps. (A)	The current measured by the motor at rated voltage and rated speed (usually the highest motor speed) under rated load

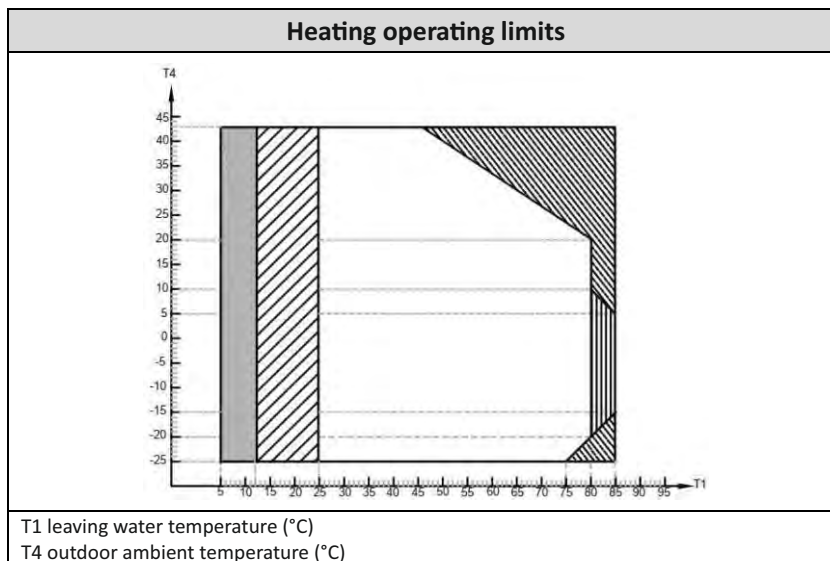
For models with backup heater, the backup heater does not share wiring with the unit, so it needs to be connected separately.

3 Dimensions and center of gravity

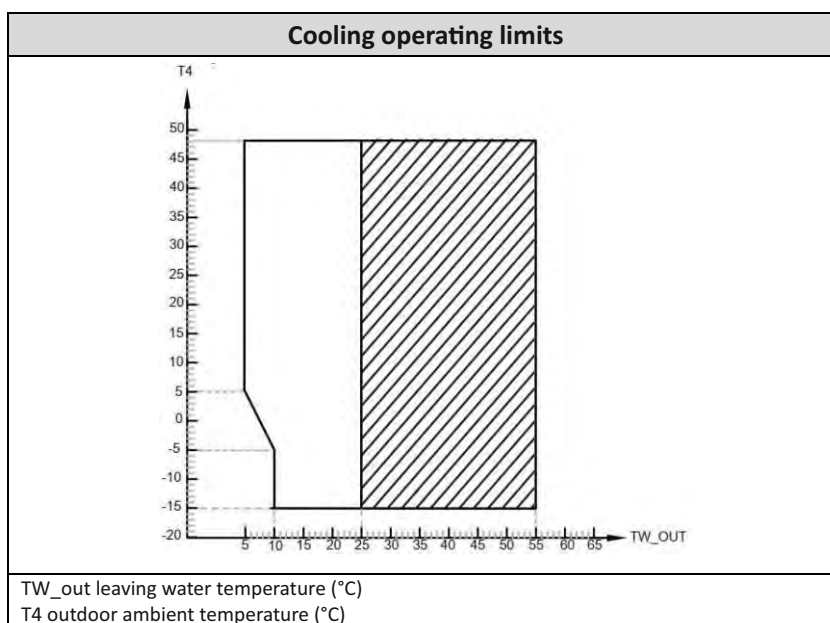
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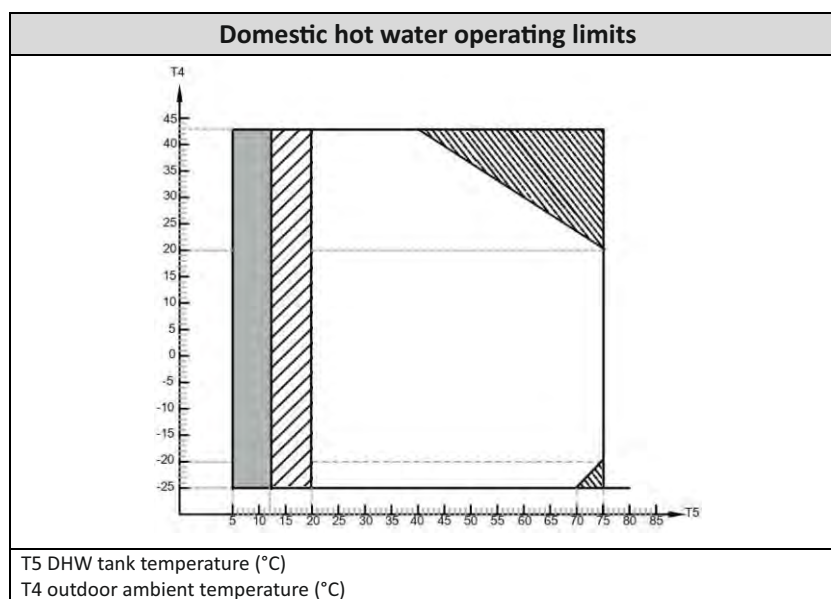
4 Operating limits



- Notes:
1. 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 during heat pump operation.
 2. Operating range by heat pump with possible limitation and protection.
 3. Heat pump turns off, only IBH/AHS on.
 4. The minimum adjustable water flow of the pump needs to be as low as 1.2 m³/h.



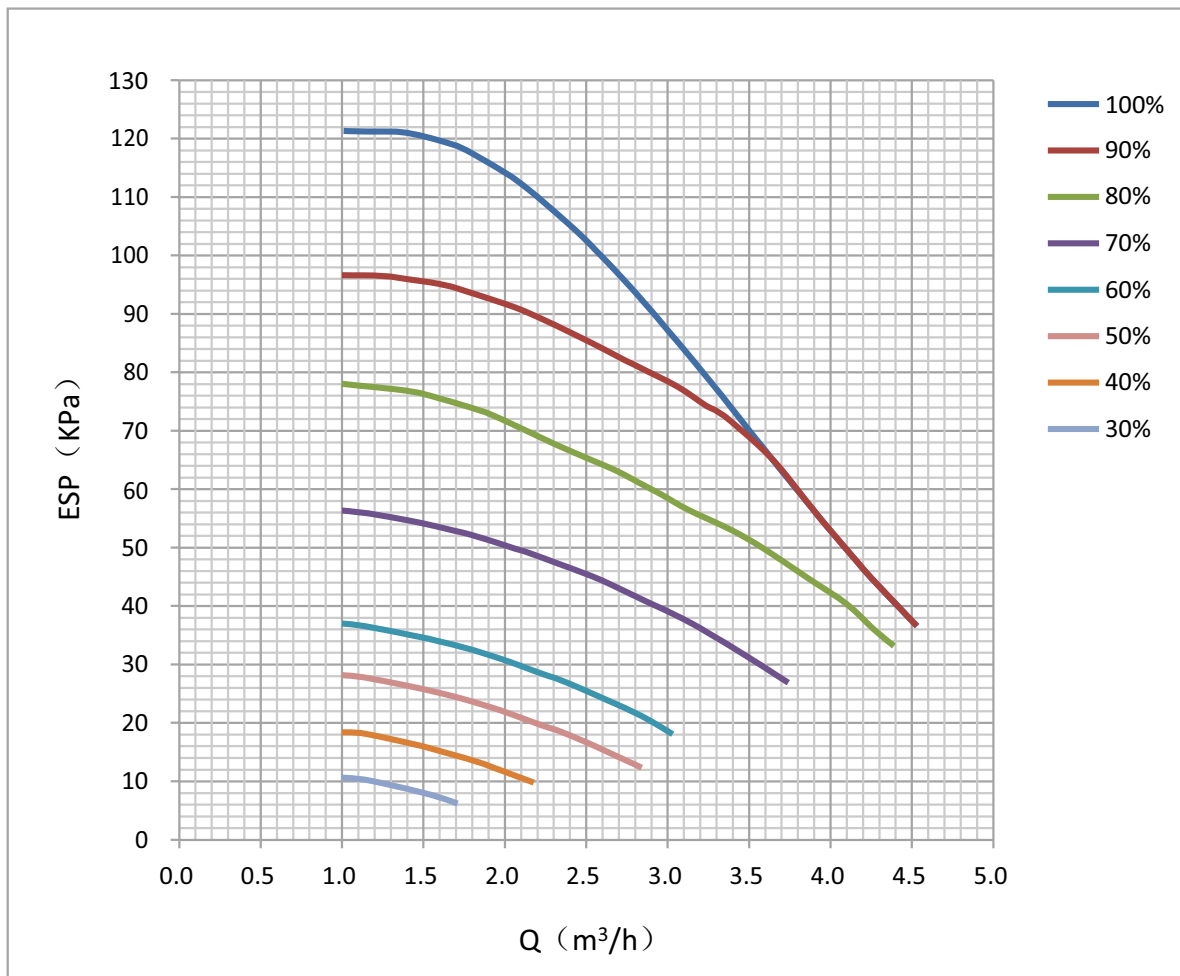
- Notes:
5. Heat pump operating range by heat pump with possible limitation and protection.



Notes:

6. 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 during heat pump operation.
7. Heat pump operating range by heat pump with possible limitation and protection.
8. Heat pump turns off, only IBH/AHS on.

5 Hydronic performance



Abbreviations:

ESP: External static pressure

6 Capacity tables

6.1 Heating capacity tables (test standard: EN14511)

35 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
25	-25	13.50	2.12	6.37	13.50	2.12	6.37	10.13	2.22	4.57	6.78	2.26	3.00	4.06	2.44	1.67
	-20	21.04	2.30	9.15	21.04	2.30	9.15	15.78	2.40	6.57	10.57	2.45	4.31	6.33	2.49	2.54
	-15	24.10	2.51	9.60	24.10	2.51	9.60	18.08	2.62	6.89	12.11	2.67	4.53	7.25	2.72	2.67
	-10	29.99	2.71	11.08	29.99	2.71	11.08	22.49	2.83	7.95	15.07	2.88	5.23	9.03	2.93	3.08
	-7	31.38	2.64	11.87	26.69	2.93	9.12	23.89	2.80	8.53	16.00	3.22	4.97	9.59	3.27	2.93
	-5	31.31	2.82	11.11	27.06	3.55	7.63	24.02	2.78	8.63	16.09	3.32	4.84	9.64	3.38	2.86
	0	29.94	3.28	9.12	27.98	3.85	7.27	24.64	3.44	7.16	16.50	3.74	4.42	9.89	3.92	2.53
	2	31.88	3.53	9.02	29.19	3.42	8.53	25.23	3.62	6.97	16.90	3.88	4.35	10.13	4.13	2.45
	5	33.26	3.81	8.73	32.73	4.27	7.66	25.91	3.93	6.59	17.36	4.31	4.03	10.40	4.38	2.37
	7	35.06	4.26	8.23	35.00	4.51	7.76	26.25	4.72	5.57	17.58	4.81	3.66	10.54	4.78	2.20
	10	37.02	4.57	8.10	35.04	4.67	7.51	26.28	4.88	5.39	17.60	4.97	3.54	10.55	4.95	2.13
	15	41.81	5.01	8.34	35.06	5.24	6.70	26.30	5.47	4.81	17.61	5.58	3.16	10.55	5.42	1.95
	20	44.92	5.21	8.62	35.06	5.44	6.44	26.30	5.69	4.62	17.61	5.80	3.04	10.55	5.64	1.87
	25	46.25	5.93	7.80	35.06	6.20	5.66	26.30	6.48	4.06	17.61	6.60	2.67	10.55	6.42	1.64
	30	46.99	6.29	7.47	35.08	6.57	5.34	26.31	6.87	3.83	17.62	7.00	2.52	10.56	6.81	1.55
35	40.56	6.95	5.84	35.06	7.26	4.83	26.30	7.59	3.46	17.61	7.74	2.28	10.55	7.52	1.40	
40	35.38	7.12	4.97	35.06	7.44	4.71	26.30	7.78	3.38	17.61	7.93	2.22	10.55	7.71	1.37	
43	32.54	7.55	4.31	32.54	7.55	4.31	24.41	7.89	3.09	16.35	8.04	2.03	9.79	7.80	1.26	
30	-25	14.50	2.07	7.00	14.50	2.07	7.00	10.88	2.16	5.03	7.28	2.20	3.30	4.36	2.24	1.95
	-20	22.05	2.21	9.98	22.05	2.21	9.98	16.54	2.31	7.16	11.08	2.35	4.71	6.64	2.39	2.77
	-15	25.12	2.41	10.42	25.12	2.41	10.42	18.84	2.52	7.48	12.62	2.57	4.92	7.56	2.61	2.90
	-10	31.05	2.55	12.18	31.05	2.55	12.18	23.29	2.66	8.74	15.60	2.72	5.74	9.35	2.76	3.39
	-7	32.07	2.38	13.48	27.28	2.64	10.35	24.41	2.52	9.68	16.35	2.90	5.65	9.80	2.94	3.33
	-5	32.27	2.64	12.22	27.89	3.32	8.39	24.76	2.61	9.50	16.58	3.11	5.33	9.94	3.16	3.14
	0	30.99	3.20	9.70	28.96	3.74	7.74	25.50	3.35	7.62	17.08	3.64	4.70	10.23	3.81	2.69
	2	32.75	3.48	9.42	29.97	3.37	8.90	25.91	3.56	7.28	17.36	3.82	4.54	10.40	4.07	2.56
	5	33.75	3.75	9.01	33.22	4.20	7.90	26.30	3.87	6.80	17.61	4.24	4.15	10.55	4.31	2.45
	7	35.88	4.21	8.52	35.00	4.40	7.95	26.25	4.60	5.71	17.58	4.69	3.75	10.54	4.67	2.26
	10	37.99	4.42	8.60	35.06	4.51	7.77	26.30	4.72	5.58	17.61	4.81	3.66	10.55	4.78	2.21
	15	42.56	4.85	8.78	35.06	5.07	6.92	26.30	5.30	4.96	17.61	5.40	3.26	10.55	5.25	2.01
	20	45.18	5.00	9.03	35.06	5.23	6.71	26.30	5.46	4.81	17.61	5.57	3.16	10.55	5.42	1.95
	25	46.35	5.78	8.02	35.06	6.04	5.80	26.30	6.31	4.17	17.61	6.43	2.74	10.55	6.26	1.69
	30	47.35	6.15	7.70	35.06	6.43	5.46	26.30	6.72	3.92	17.61	6.85	2.57	10.55	6.66	1.59
35	40.87	6.85	5.97	35.06	7.16	4.90	26.30	7.48	3.52	17.61	7.62	2.31	10.55	7.41	1.42	
40	35.65	6.96	5.12	35.01	7.27	4.81	26.26	7.60	3.45	17.59	7.75	2.27	10.54	7.53	1.40	
43	32.88	7.35	4.47	32.88	7.35	4.47	24.66	7.68	3.21	16.52	7.83	2.11	9.90	7.63	1.30	
35	-25	16.52	2.01	8.22	16.52	2.01	8.22	12.39	2.10	5.90	8.30	2.14	3.88	4.97	2.18	2.29
	-20	23.70	2.07	11.45	23.70	2.07	11.45	17.78	2.16	8.22	11.91	2.20	5.40	7.13	2.24	3.18
	-15	26.04	2.25	11.57	26.04	2.25	11.57	19.53	2.35	8.31	13.08	2.40	5.46	7.84	2.44	3.22
	-10	32.54	2.45	13.28	32.54	2.45	13.28	24.41	2.56	9.53	16.35	2.61	6.26	9.79	2.65	3.69
	-7	33.15	2.29	14.46	28.20	2.54	11.10	25.24	2.43	10.39	16.91	2.79	6.06	10.13	2.84	3.57
	-5	33.25	2.49	13.37	28.74	3.13	9.19	25.51	2.45	10.40	17.09	2.93	5.83	10.24	2.98	3.44
	0	31.50	3.09	10.20	29.44	3.62	8.14	25.92	3.23	8.02	17.36	3.51	5.28	10.40	3.68	2.83
	2	33.60	3.29	10.20	30.40	3.19	9.52	26.28	3.37	7.79	17.60	3.62	4.87	10.55	3.85	2.74
	5	34.55	3.62	9.54	33.18	4.07	8.16	26.27	3.74	7.02	17.59	4.10	4.29	10.54	4.17	2.53
	7	36.55	4.05	9.02	35.00	4.17	8.40	26.25	4.36	6.02	17.58	4.44	3.96	10.54	4.51	2.33
	10	38.66	4.20	9.20	35.06	4.29	8.18	26.30	4.48	5.87	17.61	4.57	3.86	10.55	4.55	2.32
	15	43.66	4.66	9.37	35.06	4.87	7.20	26.30	5.09	5.17	17.61	5.19	3.40	10.55	5.04	2.09
	20	45.35	4.85	9.35	35.06	5.07	6.92	26.30	5.30	4.96	17.61	5.40	3.26	10.55	5.25	2.01
	25	46.75	5.54	8.44	35.06	5.79	6.06	26.30	6.05	4.35	17.61	6.17	2.86	10.55	6.00	1.76
	30	47.66	5.99	7.96	35.06	6.26	5.60	26.30	6.54	4.02	17.61	6.67	2.64	10.55	6.48	1.63
35	40.99	6.42	6.38	35.06	6.71	5.23	26.30	7.01	3.75	17.61	7.15	2.46	10.55	6.95	1.52	
40	35.85	6.55	5.47	35.01	6.73	5.20	26.26	7.03	3.73	17.59	7.17	2.45	10.54	7.09	1.49	
43	32.99	6.85	4.82	32.99	6.85	4.82	24.74	7.16	3.46	16.57	7.30	2.27	9.93	7.31	1.36	

Part 2

35 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
40	-25	17.38	1.79	9.74	17.38	1.79	9.74	13.04	1.87	6.99	8.73	1.90	4.59	5.23	1.93	2.71
	-20	24.95	1.88	13.27	24.95	1.88	13.27	18.71	1.96	9.52	12.53	2.00	6.26	7.51	2.03	3.69
	-15	26.35	2.16	12.23	26.35	2.16	12.23	19.76	2.25	8.78	13.24	2.30	5.77	7.93	2.33	3.40
	-10	33.53	2.38	14.09	33.53	2.38	14.09	25.15	2.49	10.11	16.85	2.54	6.64	10.09	2.58	3.92
	-7	33.48	2.20	15.24	28.48	2.43	11.70	25.49	2.33	10.95	17.07	2.67	6.39	10.23	2.72	3.76
	-5	33.78	2.40	14.10	29.19	3.01	9.69	25.91	2.36	10.96	17.36	2.82	6.15	10.40	2.87	3.63
	0	32.50	2.95	11.01	29.86	3.46	8.64	26.30	3.09	8.51	17.61	3.36	5.25	10.55	3.52	3.00
	2	33.87	3.15	10.74	30.43	3.09	9.84	26.31	3.27	8.05	17.62	3.51	5.02	10.56	3.69	2.86
	5	34.67	3.31	10.47	33.25	3.87	8.59	26.32	3.56	7.39	17.63	3.90	4.51	10.56	3.92	2.70
	7	36.75	3.60	10.21	35.00	3.86	9.07	26.25	4.03	6.51	17.58	4.11	4.28	10.54	4.09	2.57
	10	39.21	3.88	10.11	35.06	3.96	8.85	26.30	4.14	6.35	17.61	4.22	4.17	10.55	4.20	2.51
	15	43.85	4.28	10.25	35.06	4.47	7.84	26.30	4.67	5.63	17.61	4.76	3.70	10.55	4.63	2.28
	20	45.57	4.62	9.86	35.06	4.83	7.26	26.30	5.05	5.21	17.61	5.14	3.43	10.55	5.00	2.11
	25	46.78	5.32	8.79	35.06	5.56	6.31	26.30	5.81	4.53	17.61	5.92	2.97	10.55	5.76	1.83
	30	47.87	5.69	8.41	35.06	5.95	5.90	26.30	6.21	4.23	17.61	6.33	2.78	10.55	6.16	1.71
	35	41.15	6.15	6.69	35.06	6.43	5.46	26.30	6.72	3.92	17.61	6.85	2.57	10.55	6.66	1.59
40	36.02	6.24	5.77	35.00	6.52	5.37	26.25	6.81	3.85	17.58	6.95	2.53	10.54	6.75	1.56	
43	33.05	6.65	4.97	33.05	6.65	4.97	24.79	6.95	3.57	16.60	7.08	2.34	9.95	6.98	1.42	
45	-25	18.54	1.62	11.44	18.54	1.62	11.44	13.91	1.69	8.21	9.31	1.73	5.40	5.58	1.75	3.18
	-20	25.62	1.75	14.64	25.62	1.75	14.64	19.22	1.83	10.51	12.87	1.86	6.90	7.71	1.89	4.07
	-15	26.85	2.05	13.10	26.85	2.05	13.10	20.14	2.14	9.40	13.49	2.18	6.18	8.08	2.22	3.64
	-10	33.58	2.28	14.73	33.58	2.28	14.73	25.19	2.38	10.57	16.87	2.43	6.95	10.11	2.47	4.10
	-7	33.54	2.13	15.78	28.54	2.36	12.11	25.54	2.25	11.33	17.11	2.59	6.61	10.25	2.63	3.90
	-5	33.91	2.24	15.12	29.30	2.82	10.39	26.01	2.21	11.76	17.42	2.64	6.60	10.44	2.68	3.89
	0	32.62	2.71	12.06	29.86	3.17	9.42	26.30	2.83	9.28	17.61	3.08	5.72	10.55	3.23	3.27
	2	33.97	2.87	11.85	30.43	2.81	10.82	26.30	2.97	8.85	17.62	3.19	5.52	10.56	3.36	3.15
	5	34.80	3.11	11.21	33.22	3.58	9.27	26.30	3.29	7.98	17.61	3.61	4.87	10.55	3.63	2.91
	7	36.99	3.35	11.04	35.00	3.48	10.05	26.25	3.64	7.22	17.58	3.71	4.74	10.54	3.77	2.80
	10	40.25	3.64	11.06	35.06	3.72	9.43	26.30	3.88	6.77	17.61	3.96	4.45	10.55	3.94	2.68
	15	44.03	4.00	11.01	35.06	4.18	8.39	26.30	4.37	6.02	17.61	4.45	3.96	10.55	4.33	2.44
	20	45.65	4.38	10.42	35.06	4.58	7.66	26.30	4.78	5.50	17.61	4.88	3.61	10.55	4.74	2.23
	25	47.55	5.01	9.49	35.06	5.24	6.70	26.30	5.47	4.81	17.61	5.58	3.16	10.55	5.42	1.95
	30	47.99	5.21	9.21	35.06	5.44	6.44	26.30	5.69	4.62	17.61	5.80	3.04	10.55	5.64	1.87
	35	41.25	5.45	7.57	35.06	5.70	6.16	26.30	5.95	4.42	17.61	6.07	2.90	10.55	5.90	1.79
40	36.21	5.72	6.33	35.03	5.80	6.04	26.27	6.06	4.33	17.60	6.18	2.85	10.54	6.19	1.70	
43	33.65	5.84	5.76	33.65	5.84	5.76	25.24	6.10	4.14	16.91	6.22	2.72	10.13	6.32	1.60	
50	-25	20.65	1.52	13.63	20.65	1.52	13.63	15.48	1.58	9.78	10.37	1.61	6.43	6.21	1.64	3.79
	-20	25.72	1.67	15.45	25.72	1.67	15.45	19.29	1.74	11.09	12.92	1.77	7.29	7.74	1.80	4.30
	-15	26.94	1.91	14.14	26.94	1.91	14.14	20.20	1.99	10.15	13.53	2.03	6.67	8.11	2.06	3.93
	-10	33.68	2.12	15.92	33.68	2.13	15.83	25.26	2.22	11.36	16.92	2.27	7.47	10.14	2.29	4.43
	-7	33.84	2.00	16.89	28.79	2.23	12.89	25.76	2.14	12.06	17.26	2.45	7.03	10.34	2.48	4.17
	-5	34.11	2.14	15.95	29.48	2.71	10.89	26.17	2.12	12.33	17.53	2.53	6.92	10.50	2.56	4.10
	0	32.76	2.42	13.54	29.77	2.85	10.45	26.21	2.55	10.28	17.56	2.77	6.34	10.52	2.88	3.65
	2	34.29	2.58	13.29	30.37	2.53	12.00	26.26	2.68	9.81	17.59	2.87	6.13	10.54	3.02	3.49
	5	35.30	2.80	12.61	33.18	3.21	10.34	26.27	2.95	8.90	17.59	3.24	5.44	10.54	3.25	3.25
	7	37.55	3.10	12.11	35.00	3.30	10.61	26.25	3.45	7.62	17.58	3.51	5.01	10.54	3.50	3.01
	10	40.88	3.42	11.97	35.06	3.49	10.06	26.30	3.64	7.22	17.61	3.71	4.74	10.55	3.70	2.85
	15	44.65	3.77	11.84	35.01	3.94	8.89	26.26	4.12	6.38	17.59	4.20	4.19	10.54	4.08	2.58
	20	45.85	4.12	11.13	35.02	4.31	8.13	26.27	4.50	5.84	17.59	4.59	3.84	10.54	4.46	2.36
	25	47.87	4.67	10.26	35.07	4.87	7.19	26.30	5.09	5.16	17.62	5.19	3.39	10.56	5.05	2.09
	30	48.55	4.90	9.91	35.07	5.12	6.85	26.30	5.35	4.92	17.62	5.45	3.23	10.56	5.30	1.99
	35	42.55	5.22	8.15	35.06	5.45	6.43	26.30	5.70	4.61	17.61	5.81	3.03	10.55	5.65	1.87
40	33.55	5.32	6.31	33.55	5.56	6.03	25.16	5.81	4.33	16.86	5.92	2.85	10.10	5.68	1.78	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
55	-25	22.75	1.41	16.13	22.75	1.41	16.13	17.06	1.47	11.58	11.43	1.50	7.61	6.85	1.53	4.49
	-20	25.82	1.58	16.34	25.82	1.58	16.34	19.37	1.65	11.73	12.97	1.68	7.71	7.77	1.71	4.54
	-15	27.02	1.76	15.35	27.02	1.76	15.35	20.27	1.84	11.02	13.57	1.87	7.24	8.13	1.91	4.27
	-10	35.01	1.95	17.95	35.01	1.97	17.73	26.26	2.06	12.73	17.59	2.10	8.36	10.54	2.11	4.99
	-7	34.90	1.92	18.18	24.80	2.08	11.90	26.27	2.18	12.05	17.59	2.32	7.59	10.54	2.33	4.53
	-5	33.50	2.05	16.34	26.60	2.24	11.90	26.30	2.22	11.84	17.61	2.43	7.26	10.55	2.44	4.33
	0	31.90	2.16	14.77	28.70	2.38	12.04	26.27	2.41	10.90	17.60	2.46	7.15	10.54	2.54	4.15
	2	33.20	2.29	14.50	29.60	2.45	12.06	26.28	2.52	10.43	17.60	2.56	6.88	10.55	2.68	3.93
	5	34.90	2.48	14.07	33.60	2.89	11.62	26.27	2.71	9.69	17.59	2.86	6.16	10.54	2.87	3.67
	7	37.85	2.85	13.28	35.00	2.98	11.75	26.25	3.11	8.43	17.58	3.17	5.54	10.54	3.23	3.27
	10	41.25	3.19	12.93	35.06	3.26	10.76	26.30	3.40	7.73	17.61	3.47	5.08	10.55	3.45	3.06
	15	44.85	3.54	12.67	35.06	3.70	9.48	26.30	3.87	6.80	17.61	3.94	4.47	10.55	3.83	2.75
	20	45.99	3.86	11.91	35.06	4.03	8.69	26.30	4.22	6.24	17.61	4.30	4.10	10.55	4.18	2.53
	25	48.00	4.32	11.11	35.06	4.51	7.77	26.30	4.72	5.57	17.61	4.81	3.66	10.55	4.68	2.26
	30	48.65	4.59	10.60	35.06	4.80	7.31	26.30	5.01	5.25	17.61	5.11	3.45	10.55	4.97	2.12
	35	40.25	4.99	8.07	35.06	5.21	6.72	26.30	5.45	4.83	17.61	5.55	3.17	10.55	5.24	2.01
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

35 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
60	-25	23.55	1.35	17.44	23.55	1.35	17.44	17.66	1.41	12.52	11.83	1.44	8.23	7.09	1.46	4.85
	-20	26.55	1.52	17.47	26.55	1.52	17.47	19.91	1.59	12.54	13.34	1.62	8.24	7.99	1.65	4.86
	-15	27.88	1.70	16.40	27.88	1.70	16.40	20.91	1.78	11.77	14.01	1.81	7.74	8.39	1.84	4.56
	-10	35.44	1.85	19.16	35.04	1.87	18.70	26.28	1.96	13.42	17.60	2.00	8.82	10.55	2.00	5.27
	-7	35.43	1.83	19.35	24.83	1.98	12.52	26.30	2.08	12.65	17.61	2.21	7.97	10.55	2.22	4.76
	-5	34.10	2.00	17.09	26.61	2.18	12.23	26.30	2.16	12.17	17.62	2.36	7.46	10.56	2.37	4.45
	0	32.40	2.07	15.67	28.74	2.28	12.59	26.31	2.31	11.40	17.62	2.36	7.48	10.56	2.44	4.34
	2	33.47	2.15	15.56	29.62	2.30	12.87	26.30	2.37	11.11	17.61	2.41	7.32	10.55	2.52	4.18
	5	35.26	2.29	15.38	33.56	2.42	13.87	26.30	2.51	10.50	17.61	2.64	6.67	10.55	2.65	3.98
	7	38.01	2.53	15.02	35.00	2.62	13.34	26.25	2.74	9.57	17.58	2.80	6.29	10.54	2.78	3.79
	10	41.65	2.85	14.61	35.01	2.91	12.03	26.26	3.04	8.64	17.59	3.10	5.67	10.54	3.08	3.42
	15	44.99	3.24	13.89	35.01	3.39	10.34	26.26	3.54	7.42	17.59	3.61	4.88	10.54	3.51	3.00
	20	46.55	3.54	13.15	35.01	3.70	9.46	26.26	3.87	6.79	17.59	3.94	4.46	10.54	3.83	2.75
	25	48.21	3.85	12.52	35.01	4.02	8.70	26.26	4.20	6.25	17.59	4.29	4.10	10.54	4.17	2.53
30	48.75	4.21	11.58	35.06	4.40	7.97	26.30	4.60	5.72	17.61	4.69	3.76	10.55	4.85	2.18	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
65	-25	24.55	1.30	18.88	24.55	1.30	18.88	18.41	1.36	13.55	12.33	1.38	8.91	7.39	1.41	5.25
	-20	26.75	1.42	18.84	26.75	1.42	18.84	20.06	1.48	13.52	13.44	1.51	8.88	8.05	1.54	5.24
	-15	28.25	1.61	17.55	28.25	1.61	17.55	21.19	1.68	12.59	14.19	1.71	8.28	8.50	1.74	4.88
	-10	35.58	1.72	20.69	35.01	1.74	20.10	26.26	1.82	14.43	17.59	1.86	9.48	10.54	1.86	5.66
	-7	35.57	1.71	20.85	24.81	1.85	13.43	26.27	1.94	13.57	17.60	2.06	8.54	10.54	2.07	5.10
	-5	34.19	1.83	18.71	26.58	1.99	13.34	26.27	1.98	13.28	17.60	2.16	8.14	10.54	2.17	4.86
	0	31.87	1.94	16.43	28.71	2.14	13.41	26.28	2.16	12.14	17.60	2.21	7.97	10.55	2.28	4.62
	2	33.73	2.04	16.53	29.62	2.18	13.57	26.30	2.25	11.71	17.61	2.28	7.72	10.55	2.39	4.41
	5	35.45	2.14	16.54	33.56	2.31	14.53	26.30	2.34	11.23	17.62	2.47	7.13	10.56	2.48	4.26
	7	38.35	2.31	16.60	35.00	2.40	14.60	26.25	2.51	10.47	17.58	2.56	6.88	10.54	2.60	4.06
	10	41.75	2.70	15.46	35.06	2.76	12.72	26.30	2.88	9.13	17.61	2.94	6.00	10.55	2.92	3.61
	15	45.32	2.95	15.36	35.06	3.08	11.37	26.30	3.22	8.16	17.61	3.28	5.36	10.55	3.19	3.30
	20	47.05	3.25	14.48	35.06	3.40	10.32	26.30	3.55	7.41	17.61	3.62	4.87	10.55	3.52	3.00
	25	48.54	3.55	13.67	35.06	3.71	9.45	26.30	3.88	6.78	17.61	3.95	4.46	10.55	3.84	2.75
30	48.99	3.89	12.59	35.06	4.07	8.62	26.30	4.25	6.19	17.61	4.33	4.07	10.55	4.65	2.27	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
70	-25	21.97	1.25	17.57	21.97	1.25	17.57	16.47	1.31	12.61	11.04	1.33	8.29	6.61	1.35	4.89
	-20	26.85	1.38	19.46	26.85	1.38	19.46	20.14	1.44	13.96	13.49	1.47	9.18	8.08	1.49	5.41
	-15	28.65	1.55	18.48	28.65	1.55	18.48	21.49	1.62	13.27	14.39	1.65	8.72	8.62	1.68	5.14
	-10	36.21	1.68	21.55	35.01	1.70	20.58	26.26	1.78	14.77	17.59	1.81	9.71	10.54	1.82	5.80
	-7	36.42	1.66	21.93	24.83	1.80	13.80	26.30	1.89	13.94	17.61	2.01	8.78	10.55	2.01	5.24
	-5	35.12	1.78	19.74	26.60	1.94	13.71	26.30	1.93	13.65	17.61	2.11	8.36	10.55	2.11	4.99
	0	32.72	1.83	17.89	28.72	2.02	14.23	26.30	2.04	12.88	17.61	2.08	8.46	10.55	2.15	4.90
	2	34.42	1.93	17.84	29.63	2.06	14.35	26.30	2.12	12.39	17.62	2.16	8.17	10.56	2.26	4.67
	5	36.48	2.02	18.03	33.47	2.18	15.35	26.26	2.21	11.88	17.59	2.33	7.54	10.54	2.34	4.50
	7	39.25	2.24	17.52	35.00	2.35	14.90	26.25	2.45	10.70	17.58	2.50	7.03	10.54	2.49	4.23
	10	41.55	2.45	16.99	35.06	2.50	14.04	26.30	2.61	10.08	17.61	2.66	6.62	10.55	2.65	3.99
	15	46.05	2.66	17.34	35.06	2.77	12.64	26.30	2.90	9.07	17.61	2.96	5.96	10.55	2.87	3.67
	20	47.35	2.78	17.06	35.06	2.90	12.09	26.30	3.03	8.68	17.61	3.09	5.70	10.55	3.00	3.51
	25	48.88	3.01	16.24	35.06	3.15	11.15	26.30	3.29	8.00	17.61	3.35	5.26	10.55	3.75	2.81
30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
75	-25	19.38	1.20	16.15	19.38	1.20	16.15	14.54	1.25	11.59	9.74	1.28	7.62	5.83	1.30	4.49
	-20	23.55	1.27	18.54	23.55	1.27	18.54	17.66	1.33	13.31	11.83	1.35	8.75	7.09	1.37	5.16
	-15	26.52	1.50	17.68	26.52	1.50	17.68	19.89	1.57	12.69	13.33	1.60	8.34	7.98	1.62	4.92
	-10	30.25	1.64	18.45	30.25	1.64	18.45	22.69	1.71	13.24	15.20	1.75	8.70	9.11	1.78	5.13
	-7	33.41	1.62	20.67	23.74	1.73	13.73	25.14	1.81	13.87	16.84	1.93	8.73	10.09	1.96	5.15
	-5	34.17	1.73	19.73	26.61	1.89	14.09	26.30	1.88	14.03	17.62	2.05	8.60	10.56	2.06	5.13
	0	33.34	1.77	18.86	28.74	1.95	14.73	26.31	1.97	13.34	17.62	2.01	8.75	10.56	2.08	5.07
	2	35.11	1.87	18.82	29.62	2.00	14.84	26.30	2.05	12.81	17.61	2.09	8.45	10.55	2.19	4.83
	5	37.44	1.97	19.05	34.21	2.11	16.21	26.41	2.15	12.30	17.69	2.27	7.81	10.60	2.27	4.66
	7	40.28	2.15	18.73	35.00	2.30	15.24	26.25	2.40	10.93	17.58	2.45	7.19	10.54	2.44	4.33
	10	42.74	2.35	18.19	35.07	2.40	14.62	26.30	2.51	10.49	17.62	2.56	6.89	10.56	2.54	4.15
	15	46.55	2.51	18.55	35.08	2.51	13.98	26.31	2.62	10.03	17.62	2.67	6.59	10.56	2.72	3.89
	20	48.24	2.62	18.41	35.06	2.65	13.23	26.30	2.74	9.60	17.61	2.79	6.31	10.55	2.84	3.72
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Part 2

35 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
80	-25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	22.34	1.22	18.31	22.34	1.22	18.31	16.76	1.27	13.14	11.22	1.30	8.64	6.72	1.32	5.09
	-15	24.62	1.28	19.23	24.62	1.28	19.23	18.47	1.34	13.80	12.37	1.36	9.07	7.41	1.39	5.35
	-10	27.97	1.56	17.93	27.97	1.56	17.93	20.97	1.63	12.87	14.05	1.66	8.46	8.42	1.69	4.99
	-7	30.94	1.47	21.00	21.99	1.58	13.95	23.29	1.65	14.09	15.60	1.76	8.88	9.35	1.79	5.23
	-5	30.07	1.62	18.60	23.94	1.74	13.75	23.66	1.73	13.69	15.85	1.89	8.39	9.50	1.92	4.94
	0	28.80	1.70	16.94	26.64	1.85	14.38	24.39	1.87	13.02	16.34	1.91	8.54	9.79	2.00	4.89
	2	29.92	1.80	16.62	27.75	1.90	14.59	24.64	1.96	12.59	16.50	1.99	8.30	9.89	2.11	4.68
	5	31.25	1.95	16.05	30.14	1.92	15.70	24.76	2.03	12.20	16.58	2.14	7.75	9.94	2.18	4.57
	7	32.82	2.12	15.48	32.82	1.95	16.83	24.62	2.04	12.08	16.49	2.08	7.94	9.88	2.11	4.68
	10	32.72	2.24	14.61	32.72	1.99	16.44	24.54	2.08	11.80	16.44	2.12	7.75	9.85	2.15	4.57
	15	32.62	2.30	14.18	32.62	2.14	15.24	24.46	2.24	10.94	16.39	2.28	7.19	9.82	2.32	4.24
	20	32.55	2.42	13.45	32.55	2.47	13.18	24.41	2.53	9.65	16.35	2.58	6.34	9.80	2.62	3.74
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
85	-25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-15	18.03	1.24	14.54	18.03	1.24	14.54	13.52	1.30	10.44	9.06	1.32	6.86	5.43	1.34	4.04
	-10	18.95	1.50	12.63	18.95	1.50	12.63	14.21	1.57	9.07	9.52	1.60	5.96	5.70	1.62	3.51
	-7	19.45	1.44	13.53	13.82	1.54	8.99	14.64	1.61	9.08	9.81	1.71	5.72	5.88	1.74	3.37
	-5	18.92	1.50	12.58	15.06	1.62	9.30	14.89	1.61	9.26	9.97	1.76	5.67	5.97	1.79	3.35
	0	17.46	1.55	11.24	16.16	1.69	9.54	14.79	1.71	8.64	9.91	1.75	5.67	5.94	1.83	3.24
	2	17.78	1.66	10.70	16.49	1.76	9.39	14.64	1.81	8.11	9.81	1.83	5.34	5.88	1.95	3.02
	5	18.34	1.81	10.16	16.38	1.82	9.00	14.53	1.95	7.46	9.74	2.06	4.74	5.83	2.09	2.79
	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT: Leaving water temperature (°C)

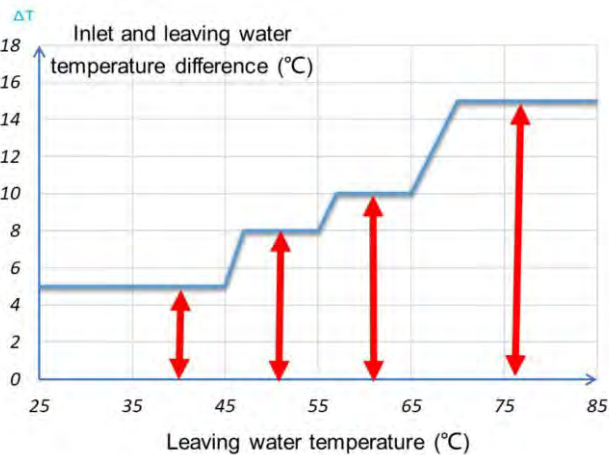
DB: Dry-bulb temperature for Outdoor air temperature (°C)

HC: Total heating capacity (kW)

PI: Power input (kW)

Note:

In heating mode, the temperature difference between the inlet and leaving water of the unit is shown in the figure below:



30 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
25	-25	13.50	2.25	6.00	13.50	2.25	6.00	10.15	2.36	4.31	6.83	2.39	2.86	4.74	2.43	1.95
	-20	18.22	2.46	7.40	18.22	2.46	7.40	13.70	2.58	5.32	9.22	2.61	3.53	6.40	2.66	2.40
	-15	20.87	2.69	7.77	20.87	2.69	7.77	15.69	2.81	5.58	10.56	2.85	3.70	7.33	2.90	2.52
	-10	25.97	2.90	8.97	25.97	2.90	8.97	19.53	3.03	6.44	13.14	3.07	4.27	9.12	3.13	2.91
	-7	27.49	2.89	9.53	22.72	3.30	6.89	20.74	3.24	6.39	13.96	3.43	4.07	9.68	3.49	2.77
	-5	26.44	3.04	8.69	23.19	3.13	7.41	20.86	3.26	6.40	14.04	3.54	3.96	9.74	3.61	2.70
	0	25.19	3.56	7.08	24.49	3.77	6.50	21.39	3.93	5.44	14.39	3.99	3.61	9.99	4.19	2.39
	2	26.53	3.77	7.03	26.01	3.71	7.01	21.91	4.11	5.33	14.74	4.15	3.55	10.23	4.42	2.31
	5	28.32	4.05	6.99	27.18	3.95	6.87	22.50	4.38	5.13	15.14	4.60	3.29	10.50	4.68	2.24
	7	30.36	4.56	6.66	30.00	4.66	6.44	22.56	4.88	4.62	15.18	4.95	3.07	10.53	5.04	2.09
	10	32.06	4.89	6.56	30.01	4.96	6.05	22.57	5.20	4.34	15.19	5.27	2.88	10.53	5.36	1.96
	15	36.20	5.36	6.75	30.02	5.44	5.52	22.58	5.70	3.96	15.19	5.77	2.63	10.54	5.88	1.79
	20	38.90	5.57	6.98	30.06	5.69	5.28	22.61	5.96	3.79	15.21	6.04	2.52	10.55	6.15	1.71
	25	40.05	6.35	6.31	30.15	6.55	4.60	22.67	6.86	3.30	15.26	6.95	2.19	10.58	7.08	1.49
	30	40.69	6.73	6.05	30.16	6.85	4.40	22.68	7.18	3.16	15.26	7.27	2.10	10.59	7.41	1.43
35	35.12	7.44	4.72	30.25	7.59	3.99	22.75	7.95	2.86	15.31	8.06	1.90	10.62	8.21	1.29	
40	30.64	7.62	4.02	30.04	7.75	3.88	22.59	8.12	2.78	15.20	8.23	1.85	10.54	8.38	1.26	
43	28.18	8.08	3.49	28.18	8.08	3.49	21.19	8.46	2.50	14.26	8.58	1.66	9.89	8.74	1.13	
30	-25	14.50	2.07	7.00	14.50	2.07	7.00	10.90	2.17	5.03	7.34	2.20	3.34	5.09	2.24	2.27
	-20	19.10	2.36	8.08	19.10	2.36	8.08	14.36	2.48	5.80	9.66	2.51	3.85	6.70	2.56	2.62
	-15	21.75	2.58	8.44	21.75	2.58	8.44	16.36	2.70	6.06	11.01	2.74	4.02	7.64	2.79	2.74
	-10	26.89	2.73	9.85	26.89	2.73	9.85	20.22	2.86	7.07	13.61	2.90	4.70	9.44	2.95	3.20
	-7	28.09	2.60	10.81	23.22	2.97	7.82	21.20	2.92	7.26	14.26	3.09	4.62	9.89	3.15	3.14
	-5	27.24	2.85	9.56	23.90	2.93	8.15	21.50	3.05	7.04	14.46	3.32	4.36	10.03	3.38	2.97
	0	26.08	3.46	7.53	25.35	3.66	6.92	22.14	3.82	5.79	14.90	3.88	3.84	10.33	4.07	2.54
	2	27.25	3.71	7.34	26.71	3.65	7.32	22.50	4.05	5.56	15.14	4.09	3.70	10.50	4.35	2.41
	5	28.73	3.99	7.21	27.30	3.97	6.87	22.60	4.40	5.13	15.21	4.62	3.29	10.55	4.70	2.24
	7	31.07	4.49	6.92	30.01	4.56	6.58	22.57	4.78	4.72	15.19	4.84	3.14	10.53	4.93	2.14
	10	32.90	4.73	6.96	30.01	4.85	6.19	22.57	5.08	4.44	15.19	5.15	2.95	10.53	5.25	2.01
	15	36.86	5.19	7.10	30.02	5.29	5.67	22.58	5.54	4.07	15.19	5.62	2.71	10.54	5.72	1.84
	20	39.13	5.35	7.31	30.01	5.46	5.50	22.57	5.72	3.95	15.19	5.80	2.62	10.53	5.90	1.78
	25	40.14	6.18	6.49	30.00	6.29	4.77	22.56	6.59	3.42	15.18	6.68	2.27	10.53	6.80	1.55
	30	41.01	6.58	6.23	30.00	6.75	4.44	22.56	7.07	3.19	15.18	7.17	2.12	10.53	7.30	1.44
35	35.39	7.33	4.83	30.00	7.25	4.14	22.56	7.59	2.97	15.18	7.70	1.97	10.53	7.84	1.34	
40	30.87	7.45	4.15	30.06	7.69	3.91	22.61	8.06	2.81	15.21	8.16	1.86	10.55	8.32	1.27	
43	28.47	7.86	3.62	28.47	7.86	3.62	21.41	8.24	2.60	14.41	8.35	1.73	9.99	8.51	1.18	
35	-25	16.52	2.01	8.22	16.52	2.01	8.22	12.42	2.11	5.90	8.36	2.13	3.92	5.80	2.17	2.67
	-20	20.52	2.21	9.27	20.52	2.21	9.27	15.43	2.32	6.65	10.39	2.35	4.42	7.20	2.40	3.01
	-15	22.55	2.41	9.37	22.55	2.41	9.37	16.96	2.52	6.72	11.41	2.56	4.47	7.92	2.60	3.04
	-10	28.18	2.62	10.75	28.18	2.62	10.75	21.19	2.75	7.72	14.26	2.78	5.12	9.89	2.84	3.49
	-7	29.04	2.50	11.60	24.00	2.86	8.38	21.91	2.81	7.79	14.75	2.98	4.96	10.23	3.03	3.37
	-5	28.07	2.68	10.47	24.62	2.76	8.92	22.15	2.87	7.71	14.90	3.12	4.77	10.34	3.18	3.25
	0	26.51	3.34	7.93	25.77	3.54	7.28	22.51	3.69	6.09	15.14	3.75	4.04	10.51	3.93	2.67
	2	27.96	3.52	7.95	26.80	3.52	7.62	22.58	3.90	5.78	15.19	3.94	3.85	10.54	4.20	2.51
	5	29.30	3.86	7.60	27.25	3.84	7.09	22.56	4.26	5.29	15.18	4.47	3.40	10.53	4.55	2.31
	7	31.56	4.40	7.17	30.00	4.50	6.67	22.56	4.71	4.79	15.18	4.78	3.18	10.53	4.87	2.16
	10	33.48	4.66	7.18	30.00	4.75	6.32	22.56	4.98	4.53	15.18	5.04	3.01	10.53	5.14	2.05
	15	37.81	4.99	7.58	30.02	5.05	5.94	22.58	5.29	4.27	15.19	5.36	2.83	10.54	5.46	1.93
	20	39.27	5.19	7.57	30.05	5.25	5.72	22.60	5.50	4.11	15.21	5.57	2.73	10.55	5.68	1.86
	25	40.49	5.93	6.83	30.00	6.05	4.96	22.56	6.34	3.56	15.18	6.42	2.36	10.53	6.54	1.61
	30	41.27	6.41	6.44	30.00	6.52	4.60	22.56	6.83	3.30	15.18	6.92	2.19	10.53	7.05	1.49
35	35.50	6.87	5.17	30.04	6.96	4.32	22.59	7.29	3.10	15.20	7.39	2.06	10.54	7.53	1.40	
40	31.05	7.01	4.43	30.02	7.15	4.20	22.58	7.49	3.01	15.19	7.59	2.00	10.54	7.73	1.36	
43	28.57	7.33	3.90	28.57	7.33	3.90	21.48	7.68	2.80	14.46	7.78	1.86	10.03	7.93	1.27	

30kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
40	-25	17.38	1.79	9.74	17.38	1.79	9.74	13.07	1.87	6.99	8.80	1.89	4.64	6.10	1.93	3.16
	-20	21.61	2.01	10.74	21.61	2.01	10.74	16.25	2.11	7.71	10.93	2.14	5.12	7.58	2.18	3.49
	-15	22.82	2.31	9.90	22.82	2.31	9.90	17.16	2.42	7.10	11.55	2.45	4.72	8.01	2.49	3.21
	-10	29.04	2.55	11.40	29.04	2.55	11.40	21.84	2.67	8.19	14.69	2.70	5.44	10.19	2.75	3.70
	-7	29.43	2.40	12.27	24.32	2.74	8.88	22.21	2.70	8.24	14.94	2.85	5.24	10.37	2.90	3.57
	-5	28.52	2.58	11.04	25.01	2.66	9.40	22.50	2.77	8.12	15.14	3.01	5.03	10.50	3.07	3.42
	0	27.35	3.20	8.56	25.84	3.46	7.46	22.58	3.61	6.25	15.19	3.67	4.14	10.54	3.85	2.74
	2	28.19	3.37	8.37	26.80	3.40	7.88	22.58	3.77	5.98	15.19	3.81	3.99	10.54	4.06	2.60
	5	29.52	3.52	8.37	27.25	3.52	7.75	22.56	3.90	5.79	15.18	4.09	3.71	10.53	4.16	2.53
	7	31.83	3.85	8.26	30.08	3.95	7.62	22.62	4.14	5.47	15.22	4.19	3.63	10.56	4.27	2.47
	10	33.96	4.15	8.18	30.01	4.25	7.06	22.57	4.45	5.07	15.19	4.51	3.37	10.53	4.60	2.29
	15	37.97	4.58	8.29	30.02	4.69	6.40	22.58	4.91	4.60	15.19	4.98	3.05	10.54	5.07	2.08
	20	39.46	4.94	7.98	30.01	5.05	5.94	22.57	5.29	4.27	15.19	5.36	2.83	10.53	5.46	1.93
	25	40.51	5.69	7.12	30.01	5.78	5.19	22.57	6.05	3.73	15.19	6.14	2.47	10.53	6.25	1.69
	30	41.46	6.09	6.81	30.02	6.19	4.85	22.58	6.48	3.48	15.19	6.57	2.31	10.54	6.69	1.57
35	35.64	6.58	5.42	30.03	6.69	4.49	22.58	7.01	3.22	15.20	7.10	2.14	10.54	7.24	1.46	
40	31.19	6.68	4.67	30.06	6.75	4.45	22.61	7.07	3.20	15.21	7.17	2.12	10.55	7.30	1.45	
43	28.62	7.12	4.02	28.62	7.12	4.02	21.52	7.45	2.89	14.48	7.55	1.92	10.05	7.70	1.31	
45	-25	17.85	1.62	11.02	17.85	1.62	11.02	13.42	1.70	7.91	9.03	1.72	5.25	6.27	1.75	3.58
	-20	22.19	1.82	12.19	22.19	1.82	12.19	16.68	1.91	8.75	11.23	1.93	5.81	7.79	1.97	3.96
	-15	23.25	2.13	10.91	23.25	2.13	10.91	17.49	2.23	7.83	11.77	2.26	5.20	8.16	2.31	3.54
	-10	29.08	2.37	12.26	29.08	2.37	12.26	21.87	2.48	8.80	14.71	2.52	5.85	10.21	2.56	3.98
	-7	29.39	2.26	13.02	24.29	2.58	9.42	22.17	2.54	8.74	14.92	2.68	5.56	10.35	2.73	3.79
	-5	28.62	2.35	12.18	25.08	2.49	10.09	22.56	2.59	8.72	15.18	2.81	5.40	10.53	2.87	3.67
	0	27.45	2.85	9.64	25.84	3.12	8.27	22.58	3.26	6.93	15.19	3.31	4.59	10.54	3.47	3.04
	2	28.27	2.98	9.50	26.78	3.01	8.89	22.56	3.34	6.76	15.18	3.37	4.50	10.53	3.59	2.93
	5	29.77	3.21	9.27	27.25	3.22	8.45	22.56	3.57	6.31	15.18	3.75	4.05	10.53	3.82	2.76
	7	32.75	3.53	9.28	30.00	3.63	8.26	22.56	3.80	5.93	15.18	3.85	3.94	10.53	3.93	2.68
	10	34.86	3.79	9.21	30.01	3.84	7.82	22.57	4.02	5.61	15.19	4.08	3.73	10.53	4.15	2.54
	15	38.13	4.16	9.17	30.02	4.28	7.01	22.58	4.48	5.04	15.19	4.54	3.34	10.54	4.63	2.28
	20	39.53	4.56	8.68	30.01	4.66	6.44	22.57	4.88	4.62	15.19	4.95	3.07	10.53	5.04	2.09
	25	41.18	5.21	7.90	30.01	5.35	5.61	22.57	5.60	4.03	15.19	5.68	2.67	10.53	5.79	1.82
	30	41.56	5.42	7.67	30.03	5.49	5.47	22.58	5.75	3.93	15.20	5.83	2.61	10.54	5.94	1.78
35	35.72	5.67	6.30	30.02	5.76	5.21	22.58	6.03	3.74	15.19	6.11	2.48	10.54	6.23	1.69	
40	31.36	5.95	5.27	30.00	6.01	4.99	22.56	6.30	3.58	15.18	6.38	2.38	10.53	6.50	1.62	
43	29.14	6.07	4.80	29.14	6.07	4.80	21.91	6.36	3.44	14.75	6.45	2.29	10.23	6.57	1.56	
50	-25	19.39	1.52	12.80	19.39	1.52	12.80	14.58	1.59	9.19	9.81	1.61	6.10	6.81	1.64	4.15
	-20	22.27	1.73	12.86	22.27	1.73	12.86	16.75	1.81	9.23	11.27	1.84	6.13	7.82	1.87	4.17
	-15	23.33	1.98	11.77	23.33	1.98	11.77	17.54	2.08	8.45	11.80	2.10	5.61	8.19	2.14	3.82
	-10	29.65	2.20	13.48	29.65	2.20	13.48	22.30	2.30	9.68	15.00	2.33	6.43	10.41	2.38	4.37
	-7	29.65	2.13	13.94	24.50	2.43	10.08	22.37	2.39	9.36	15.05	2.53	5.95	10.44	2.58	4.05
	-5	28.80	2.24	12.85	25.09	2.37	10.57	22.58	2.47	9.14	15.19	2.69	5.66	10.54	2.74	3.85
	0	27.56	2.55	10.82	25.83	2.73	9.45	22.56	2.85	7.91	15.18	2.89	5.24	10.53	3.04	3.46
	2	28.54	2.68	10.65	26.79	2.68	10.01	22.57	2.97	7.61	15.19	3.00	5.07	10.53	3.19	3.30
	5	30.05	2.90	10.38	27.25	2.88	9.47	22.56	3.19	7.07	15.18	3.34	4.54	10.53	3.41	3.09
	7	33.25	3.22	10.31	30.00	3.32	9.04	22.56	3.48	6.49	15.18	3.52	4.31	10.53	3.59	2.93
	10	35.40	3.55	9.97	30.01	3.65	8.22	22.57	3.82	5.90	15.19	3.87	3.92	10.53	3.95	2.67
	15	38.67	3.92	9.86	30.02	3.99	7.52	22.58	4.18	5.40	15.19	4.24	3.59	10.54	4.32	2.44
	20	39.71	4.28	9.27	30.01	4.35	6.90	22.57	4.56	4.95	15.19	4.62	3.29	10.53	4.70	2.24
	25	41.46	4.85	8.54	30.03	4.96	6.05	22.58	5.20	4.35	15.20	5.27	2.89	10.54	5.36	1.96
	30	42.04	5.10	8.25	30.01	5.24	5.73	22.57	5.49	4.11	15.19	5.56	2.73	10.53	5.67	1.86
35	36.85	5.43	6.79	30.00	5.64	5.32	22.56	5.91	3.82	15.18	5.99	2.54	10.53	6.10	1.73	
40	32.55	5.53	5.88	30.01	5.76	5.21	22.57	6.03	3.74	15.19	6.11	2.48	10.53	6.23	1.69	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
55	-25	20.93	1.41	14.84	20.93	1.41	14.84	15.74	1.48	10.66	10.59	1.50	7.08	7.35	1.52	4.82
	-20	22.36	1.64	13.61	22.36	1.64	13.61	16.81	1.72	9.77	11.31	1.74	6.49	7.85	1.78	4.42
	-15	23.40	1.83	12.78	23.40	1.83	12.78	17.60	1.92	9.18	11.84	1.94	6.09	8.21	1.98	4.15
	-10	30.05	2.03	14.82	30.05	2.03	14.82	22.60	2.12	10.64	15.21	2.15	7.06	10.55	2.19	4.81
	-7	30.22	2.00	15.14	21.30	2.22	9.60	22.57	2.28	9.90	15.19	2.41	6.30	10.53	2.46	4.29
	-5	29.01	2.13	13.61	22.76	2.38	9.55	22.56	2.37	9.51	15.18	2.58	5.88	10.53	2.63	4.01
	0	27.63	2.25	12.30	24.59	2.48	9.70	22.57	2.57	8.79	15.19	2.61	5.83	10.53	2.74	3.85
	2	28.75	2.38	12.07	25.35	2.63	9.64	22.56	2.67	8.46	15.18	2.69	5.64	10.53	2.87	3.67
	5	30.22	2.58	11.72	25.37	2.60	9.75	22.58	2.89	7.82	15.19	3.03	5.02	10.54	3.08	3.42
	7	33.75	3.02	11.18	30.00	3.13	9.57	22.56	3.28	6.88	15.18	3.32	4.57	10.53	3.39	3.11
	10	35.72	3.32	10.77	30.01	3.42	8.77	22.57	3.58	6.30	15.19	3.63	4.18	10.53	3.70	2.85
	15	38.84	3.68	10.55	30.02	3.75	8.01	22.58	3.93	5.75	15.19	3.98	3.82	10.54	4.06	2.60
	20	39.83	4.01	9.92	30.01	4.15	7.23	22.57	4.35	5.19	15.19	4.41	3.45	10.53	4.49	2.35
	25	41.57	4.49	9.25	30.01	4.56	6.58	22.57	4.78	4.72	15.19	4.84	3.14	10.53	4.93	2.14
	30	42.13	4.77	8.83	30.03	4.85	6.19	22.58	5.08	4.45	15.20	5.15	2.95	10.54	5.25	2.01
35	34.86	5.19	6.72	30.01	5.29	5.67	22.57	5.54	4.07	15.19	5.62	2.70	10.53	5.72	1.84	
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43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

30kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
60	-25	21.67	1.35	16.05	21.67	1.35	16.05	16.29	1.41	11.52	10.96	1.43	7.65	7.60	1.46	5.21
	-20	22.99	1.58	14.54	22.99	1.58	14.54	17.29	1.66	10.44	11.63	1.68	6.93	8.07	1.71	4.72
	-15	24.14	1.77	13.66	24.14	1.77	13.66	18.16	1.85	9.80	12.22	1.88	6.51	8.47	1.91	4.43
	-10	30.69	1.92	15.95	30.00	1.92	15.59	22.56	2.02	11.19	15.18	2.04	7.43	10.53	2.08	5.06
	-7	30.68	1.90	16.11	21.29	2.11	10.08	22.56	2.17	10.41	15.18	2.29	6.62	10.53	2.34	4.51
	-5	29.53	2.08	14.23	22.76	2.33	9.75	22.56	2.32	9.70	15.18	2.53	6.01	10.53	2.57	4.09
	0	28.06	2.15	13.05	24.59	2.35	10.45	22.57	2.44	9.26	15.19	2.47	6.14	10.53	2.60	4.06
	2	28.99	2.24	12.96	25.35	2.48	10.22	22.56	2.51	8.97	15.18	2.54	5.98	10.53	2.70	3.89
	5	30.53	2.38	12.81	25.37	2.42	10.49	22.58	2.68	8.42	15.19	2.81	5.40	10.54	2.87	3.68
	7	34.05	2.63	12.94	30.01	2.75	10.91	22.57	2.88	7.83	15.19	2.92	5.20	10.53	2.97	3.54
	10	36.07	2.96	12.17	30.01	3.12	9.62	22.57	3.27	6.91	15.19	3.31	4.59	10.53	3.37	3.12
	15	38.96	3.37	11.56	30.01	3.45	8.70	22.57	3.61	6.24	15.19	3.66	4.15	10.53	3.73	2.82
	20	40.31	3.68	10.95	30.05	3.76	7.99	22.60	3.94	5.74	15.21	3.99	3.81	10.55	4.07	2.59
	25	41.75	4.00	10.43	30.02	4.15	7.23	22.58	4.35	5.19	15.19	4.41	3.45	10.54	4.49	2.35
	30	42.55	4.38	9.72	30.02	4.48	6.70	22.58	4.69	4.81	15.19	4.76	3.19	10.54	4.85	2.17
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43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
65	-25	21.88	1.30	16.83	21.88	1.30	16.83	16.45	1.36	12.08	11.07	1.38	8.02	7.68	1.41	5.46
	-20	23.17	1.48	15.69	23.17	1.48	15.69	17.42	1.55	11.26	11.72	1.57	7.48	8.13	1.60	5.09
	-15	24.46	1.67	14.61	24.46	1.67	14.61	18.40	1.75	10.49	12.38	1.78	6.96	8.59	1.81	4.74
	-10	30.81	1.79	17.23	30.01	1.79	16.77	22.57	1.88	12.04	15.19	1.90	7.99	10.53	1.94	5.44
	-7	30.80	1.77	17.36	21.29	1.97	10.83	22.56	2.02	11.18	15.18	2.13	7.11	10.53	2.17	4.84
	-5	29.61	1.90	15.58	22.77	2.05	11.13	22.57	2.04	11.08	15.19	2.21	6.86	10.53	2.26	4.67
	0	28.40	2.02	14.08	24.58	2.24	10.95	22.56	2.32	9.70	15.18	2.36	6.43	10.53	2.48	4.25
	2	29.68	2.12	13.99	25.36	2.37	10.69	22.57	2.40	9.39	15.19	2.43	6.25	10.53	2.58	4.08
	5	31.76	2.23	14.25	25.37	2.27	11.16	22.58	2.52	8.96	15.19	2.64	5.75	10.54	2.69	3.91
	7	35.25	2.43	14.51	30.00	2.53	11.85	22.56	2.65	8.51	15.18	2.69	5.65	10.53	2.74	3.85
	10	36.65	2.81	13.05	30.01	2.89	10.38	22.57	3.03	7.45	15.19	3.07	4.95	10.53	3.13	3.37
	15	39.25	3.07	12.79	30.02	3.21	9.35	22.58	3.36	6.71	15.19	3.41	4.46	10.54	3.47	3.04
	20	40.75	3.38	12.05	30.05	3.56	8.44	22.60	3.73	6.06	15.21	3.78	4.02	10.55	3.85	2.74
	25	42.04	3.69	11.39	30.03	3.79	7.92	22.58	3.97	5.69	15.20	4.02	3.78	10.54	4.10	2.57
	30	43.25	4.05	10.69	30.01	4.21	7.13	22.57	4.41	5.12	15.19	4.47	3.40	10.53	4.55	2.31
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43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
70	-25	21.97	1.25	17.58	21.97	1.25	17.58	16.52	1.31	12.62	11.12	1.33	8.38	7.71	1.35	5.70
	-20	23.45	1.44	16.34	23.45	1.44	16.34	17.63	1.50	11.73	11.87	1.52	7.79	8.23	1.55	5.30
	-15	24.81	1.61	15.39	24.81	1.61	15.39	18.66	1.69	11.05	12.55	1.71	7.34	8.71	1.74	5.00
	-10	31.36	1.75	17.95	30.00	1.85	16.22	22.56	1.94	11.64	15.18	1.96	7.73	10.53	2.00	5.26
	-7	31.54	1.73	18.26	21.31	2.00	10.63	22.58	2.06	10.97	15.19	2.18	6.98	10.54	2.22	4.75
	-5	30.41	1.85	16.43	22.76	2.11	10.79	22.56	2.10	10.74	15.18	2.28	6.65	10.53	2.33	4.53
	0	28.92	1.90	15.20	24.59	2.13	11.56	22.57	2.20	10.24	15.19	2.24	6.79	10.53	2.35	4.49
	2	30.10	2.01	15.00	25.36	2.26	11.21	22.57	2.29	9.84	15.19	2.32	6.56	10.53	2.47	4.27
	5	32.04	2.10	15.23	25.37	2.15	11.83	22.58	2.38	9.49	15.19	2.49	6.09	10.54	2.54	4.15
	7	35.65	2.33	15.30	30.00	2.46	12.20	22.56	2.58	8.75	15.18	2.61	5.81	10.53	2.66	3.96
	10	37.01	2.54	14.55	30.01	2.65	11.32	22.57	2.78	8.13	15.19	2.81	5.40	10.53	2.87	3.68
	15	39.88	2.76	14.44	30.02	2.85	10.53	22.58	2.99	7.56	15.19	3.03	5.02	10.54	3.08	3.42
	20	41.35	2.89	14.33	30.01	2.95	10.17	22.57	3.09	7.30	15.19	3.13	4.85	10.53	3.19	3.30
	25	42.55	3.13	13.59	30.01	3.21	9.35	22.57	3.36	6.71	15.19	3.41	4.46	10.53	3.47	3.03
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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75	-25	19.38	1.20	16.15	19.38	1.20	16.15	14.57	1.26	11.59	9.81	1.27	7.70	6.80	1.30	5.24
	-20	20.39	1.32	15.44	20.39	1.32	15.44	15.34	1.38	11.08	10.32	1.40	7.36	7.16	1.43	5.01
	-15	22.97	1.56	14.72	22.97	1.56	14.72	17.27	1.63	10.57	11.62	1.66	7.02	8.06	1.69	4.78
	-10	26.20	1.71	15.36	26.20	1.71	15.36	19.70	1.79	11.03	13.26	1.81	7.32	9.19	1.84	4.98
	-7	28.93	1.68	17.21	20.60	1.84	11.19	21.83	1.89	11.55	14.69	2.00	7.35	10.19	2.04	5.00
	-5	29.59	1.80	16.43	22.76	1.97	11.54	22.56	1.96	11.49	15.18	2.13	7.11	10.53	2.17	4.84
	0	29.09	1.84	15.82	24.58	2.01	12.23	22.56	2.08	10.84	15.18	2.11	7.19	10.53	2.22	4.75
	2	30.59	1.94	15.77	25.36	2.14	11.83	22.57	2.17	10.39	15.19	2.19	6.92	10.53	2.34	4.51
	5	32.42	2.04	15.86	25.37	2.05	12.40	22.57	2.27	9.95	15.19	2.38	6.39	10.53	2.42	4.35
	7	35.99	2.24	16.10	30.00	2.34	12.82	22.56	2.45	9.20	15.18	2.48	6.11	10.53	2.53	4.16
	10	37.56	2.44	15.37	30.01	2.51	11.96	22.57	2.63	8.58	15.19	2.66	5.70	10.53	2.71	3.88
	15	40.31	2.61	15.44	30.02	2.71	11.08	22.58	2.84	7.95	15.19	2.88	5.28	10.54	2.93	3.60
	20	41.78	2.65	15.76	30.01	2.66	11.28	22.57	2.78	8.12	15.19	2.81	5.40	10.53	2.87	3.67
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
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40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Part 2

30 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
80	-25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	19.35	1.27	15.25	19.35	1.27	15.25	14.55	1.33	10.95	9.79	1.35	7.27	6.79	1.37	4.95
	-15	21.32	1.33	16.02	21.32	1.33	16.02	16.03	1.39	11.50	10.79	1.41	7.63	7.48	1.44	5.20
	-10	24.22	1.62	14.93	24.22	1.62	14.93	18.21	1.70	10.72	12.25	1.72	7.12	8.50	1.75	4.84
	-7	26.80	1.53	17.49	19.09	1.68	11.37	20.22	1.72	11.74	13.61	1.82	7.47	9.44	1.86	5.09
	-5	26.04	1.68	15.49	20.73	1.81	11.45	20.55	1.80	11.40	13.83	1.96	7.06	9.59	2.00	4.80
	0	24.94	1.77	14.10	23.07	1.89	12.23	21.18	1.95	10.84	14.25	1.98	7.19	9.88	2.08	4.75
	2	25.91	1.87	13.84	24.04	2.01	11.94	21.39	2.04	10.49	14.39	2.06	6.99	9.99	2.19	4.55
	5	27.06	2.02	13.37	24.16	1.98	12.23	21.50	2.19	9.82	14.46	2.30	6.30	10.03	2.34	4.29
	7	28.43	2.20	12.89	28.43	2.20	12.89	21.38	2.31	9.26	14.38	2.34	6.15	9.98	2.38	4.18
	10	28.34	2.33	12.16	28.34	2.33	12.16	21.31	2.44	8.73	14.34	2.47	5.80	9.95	2.52	3.95
	15	28.24	2.39	11.81	28.24	2.39	11.81	21.24	2.51	8.48	14.29	2.54	5.63	9.91	2.59	3.83
	20	28.19	2.46	11.46	28.19	2.49	11.32	21.20	2.58	8.22	14.26	2.61	5.46	9.89	2.61	3.79
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
85	-25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-15	18.03	1.29	13.98	18.03	1.29	13.98	13.56	1.35	10.04	9.12	1.37	6.66	6.33	1.39	4.54
	-10	18.95	1.56	12.15	18.95	1.56	12.15	14.25	1.63	8.72	9.59	1.66	5.79	6.65	1.69	3.94
	-7	19.45	1.50	13.01	13.85	1.64	8.46	14.68	1.68	8.73	9.88	1.78	5.56	6.85	1.81	3.78
	-5	18.92	1.56	12.10	15.06	1.68	8.95	14.93	1.68	8.91	10.04	1.82	5.51	6.97	1.86	3.75
	0	17.46	1.62	10.81	16.16	1.72	9.38	14.83	1.78	8.31	9.98	1.81	5.51	6.92	1.90	3.64
	2	17.78	1.73	10.29	16.49	1.86	8.88	14.68	1.88	7.80	9.88	1.90	5.19	6.85	2.02	3.38
	5	18.34	1.88	9.77	16.38	1.83	8.94	14.57	2.03	7.17	9.81	2.13	4.60	6.80	2.17	3.13
	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT: Leaving water temperature (°C)

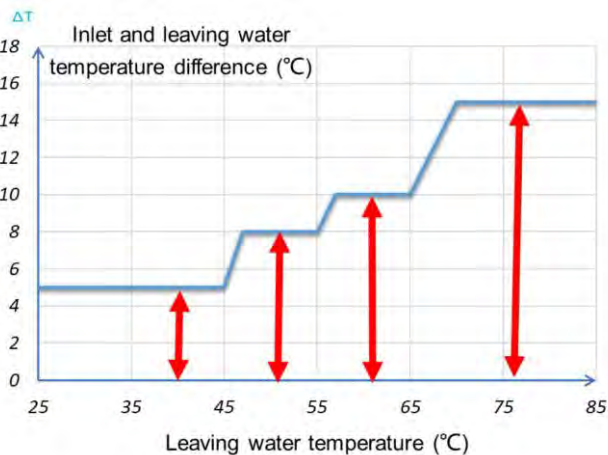
DB: Dry-bulb temperature for Outdoor air temperature (°C)

HC: Total heating capacity (kW)

PI: Power input (kW)

Note:

In heating mode, the temperature difference between the inlet and leaving water of the unit is shown in the figure below:



26 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
25	-25	13.50	2.25	6.00	13.50	2.25	6.00	10.14	2.34	4.33	6.76	2.40	2.82	5.05	2.44	2.07
	-20	16.54	2.46	6.72	16.54	2.46	6.72	12.42	2.56	4.85	8.29	2.63	3.15	6.19	2.67	2.31
	-15	18.94	2.69	7.05	18.94	2.69	7.05	14.23	2.80	5.09	9.49	2.87	3.31	7.08	2.92	2.43
	-10	23.57	2.90	8.14	23.57	2.90	8.14	17.70	3.02	5.87	11.81	3.09	3.82	8.82	3.14	2.80
	-7	24.66	2.83	8.72	20.21	3.44	5.88	18.80	2.99	6.30	12.54	3.45	3.64	9.36	3.51	2.67
	-5	24.61	3.02	8.16	21.27	3.30	6.44	18.91	2.97	6.37	12.61	3.56	3.54	9.42	3.62	2.60
	0	23.53	3.51	6.70	21.99	3.79	5.81	19.39	3.67	5.29	12.94	4.01	3.23	9.66	4.20	2.30
	2	25.06	3.78	6.63	23.50	3.99	5.89	19.54	4.28	4.56	13.04	4.62	2.82	9.73	4.93	1.97
	5	26.15	4.08	6.42	24.64	5.20	4.74	19.53	4.76	4.10	13.03	5.25	2.48	9.73	5.34	1.82
	7	27.56	4.56	6.05	26.00	5.21	4.99	19.53	5.43	3.60	13.03	5.56	2.34	9.72	5.66	1.72
	10	29.10	4.89	5.95	26.01	5.41	4.81	19.53	5.63	3.47	13.03	5.78	2.26	9.73	5.87	1.66
	15	32.86	5.36	6.13	26.01	5.65	4.60	19.53	5.88	3.32	13.03	6.03	2.16	9.73	6.13	1.59
	20	35.30	5.57	6.33	26.02	6.21	4.19	19.54	6.47	3.02	13.04	6.63	1.97	9.73	6.74	1.44
	25	36.35	6.35	5.73	26.01	7.02	3.71	19.53	7.31	2.67	13.03	7.49	1.74	9.73	7.62	1.28
	30	36.93	6.73	5.49	26.02	7.21	3.61	19.54	7.51	2.60	13.04	7.70	1.69	9.73	7.83	1.24
35	31.88	7.44	4.29	26.01	7.56	3.44	19.53	7.87	2.48	13.03	8.07	1.61	9.73	8.21	1.19	
40	27.81	7.62	3.65	26.01	7.95	3.27	19.53	8.28	2.36	13.03	8.49	1.54	9.73	8.63	1.13	
43	25.58	8.08	3.17	25.58	8.08	3.17	19.21	8.41	2.28	12.81	8.62	1.49	9.57	8.77	1.09	
30	-25	14.50	2.07	7.00	14.50	2.07	7.00	10.89	2.16	5.05	7.26	2.21	3.29	5.42	2.25	2.41
	-20	17.33	2.36	7.33	17.33	2.36	7.33	13.02	2.46	5.29	8.68	2.52	3.44	6.48	2.57	2.52
	-15	19.74	2.58	7.66	19.74	2.58	7.66	14.83	2.69	5.52	9.89	2.75	3.59	7.38	2.80	2.64
	-10	24.41	2.73	8.94	24.41	2.73	8.94	18.33	2.84	6.45	12.23	2.91	4.20	9.13	2.96	3.08
	-7	25.20	2.55	9.90	20.66	3.09	6.68	19.21	2.69	7.15	12.82	3.11	4.13	9.57	3.16	3.03
	-5	25.37	2.83	8.97	21.92	3.10	7.08	19.49	2.78	7.01	13.00	3.34	3.89	9.70	3.39	2.86
	0	24.36	3.42	7.12	22.15	3.74	5.93	19.53	3.62	5.40	13.03	3.96	3.29	9.73	4.15	2.35
	2	25.74	3.72	6.92	23.50	3.85	6.10	19.54	4.13	4.73	13.04	4.46	2.92	9.73	4.76	2.05
	5	26.52	4.01	6.62	24.65	5.02	4.91	19.54	4.60	4.25	13.04	5.07	2.57	9.73	5.16	1.89
	7	28.20	4.50	6.26	26.00	4.85	5.36	19.53	5.05	3.87	13.03	5.18	2.52	9.72	5.27	1.85
	10	29.86	4.73	6.31	26.01	5.21	4.99	19.53	5.43	3.60	13.03	5.56	2.34	9.73	5.66	1.72
	15	33.45	5.19	6.45	26.02	5.51	4.72	19.54	5.74	3.41	13.04	5.88	2.22	9.73	5.98	1.63
	20	35.51	5.35	6.63	26.01	5.85	4.45	19.53	6.09	3.21	13.03	6.24	2.09	9.73	6.35	1.53
	25	36.43	6.18	5.89	26.02	6.59	3.95	19.54	6.86	2.85	13.04	7.03	1.85	9.73	7.15	1.36
	30	37.22	6.58	5.66	26.01	6.95	3.74	19.53	7.24	2.70	13.03	7.42	1.76	9.73	7.55	1.29
35	32.12	7.33	4.38	26.02	7.52	3.46	19.54	7.83	2.50	13.04	8.03	1.62	9.73	8.16	1.19	
40	28.02	7.45	3.76	26.01	7.78	3.34	19.53	8.10	2.41	13.03	8.31	1.57	9.73	8.45	1.15	
43	25.84	7.86	3.29	25.84	7.86	3.29	19.41	8.19	2.37	12.95	8.40	1.54	9.67	8.54	1.13	
35	-25	16.52	2.01	8.22	16.52	2.01	8.22	12.41	2.09	5.93	8.28	2.15	3.86	6.18	2.18	2.83
	-20	18.63	2.21	8.41	18.63	2.21	8.41	13.99	2.31	6.07	9.33	2.36	3.95	6.97	2.40	2.90
	-15	20.47	2.41	8.50	20.47	2.41	8.50	15.37	2.51	6.13	10.25	2.57	3.99	7.65	2.61	2.93
	-10	25.58	2.62	9.76	25.58	2.62	9.76	19.21	2.73	7.04	12.81	2.80	4.58	9.57	2.85	3.36
	-7	26.06	2.45	10.62	21.00	3.03	6.93	19.53	2.63	7.42	13.03	3.04	4.28	9.73	3.09	3.14
	-5	26.13	2.66	9.82	21.98	2.98	7.37	19.53	2.68	7.30	13.03	3.21	4.06	9.73	3.27	2.98
	0	24.76	3.30	7.50	22.16	3.64	6.09	19.54	3.53	5.54	13.04	3.85	3.38	9.73	4.04	2.41
	2	26.41	3.52	7.50	23.50	3.70	6.35	19.54	3.97	4.92	13.04	4.29	3.04	9.73	4.57	2.13
	5	27.15	3.88	7.00	24.64	4.80	5.13	19.53	4.40	4.44	13.03	4.86	2.68	9.73	4.94	1.97
	7	28.73	4.33	6.63	26.00	4.77	5.45	19.53	4.97	3.93	13.03	5.09	2.56	9.72	5.18	1.88
	10	30.39	4.49	6.76	26.01	5.10	5.10	19.53	5.31	3.68	13.03	5.44	2.39	9.73	5.54	1.76
	15	34.32	4.99	6.88	26.02	5.35	4.86	19.54	5.57	3.51	13.04	5.71	2.28	9.73	5.81	1.68
	20	35.65	5.19	6.87	26.01	5.72	4.55	19.53	5.96	3.28	13.03	6.11	2.13	9.73	6.21	1.57
	25	36.75	5.93	6.20	26.02	6.31	4.12	19.54	6.57	2.97	13.04	6.74	1.94	9.73	6.85	1.42
	30	37.46	6.41	5.84	26.01	6.75	3.85	19.53	7.03	2.78	13.03	7.21	1.81	9.73	7.33	1.33
35	32.22	6.87	4.69	26.01	7.21	3.61	19.53	7.51	2.60	13.03	7.70	1.69	9.73	7.83	1.24	
40	28.18	7.01	4.02	26.01	7.30	3.56	19.53	7.60	2.57	13.03	7.79	1.67	9.73	7.93	1.23	
43	25.93	7.33	3.54	25.93	7.33	3.54	19.47	7.63	2.55	12.99	7.82	1.66	9.70	7.96	1.22	

Part 2

26 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
40	-25	17.38	1.79	9.74	17.38	1.79	9.74	13.05	1.86	7.02	8.71	1.91	4.57	6.50	1.94	3.35
	-20	19.61	2.01	9.75	19.61	2.01	9.75	14.73	2.09	7.03	9.82	2.15	4.58	7.33	2.18	3.36
	-15	20.71	2.31	8.98	20.71	2.31	8.98	15.55	2.40	6.48	10.38	2.46	4.22	7.75	2.50	3.09
	-10	26.35	2.55	10.35	26.02	2.58	10.09	19.54	2.69	7.27	13.04	2.75	4.73	9.73	2.80	3.47
	-7	26.31	2.35	11.20	21.00	2.96	7.11	19.53	2.57	7.60	13.03	2.97	4.39	9.73	3.02	3.22
	-5	26.55	2.56	10.36	21.98	2.92	7.53	19.54	2.62	7.45	13.04	3.15	4.14	9.73	3.20	3.04
	0	25.55	3.16	8.09	22.15	3.57	6.20	19.53	3.46	5.65	13.03	3.78	3.45	9.73	3.96	2.45
	2	26.63	3.38	7.89	23.49	3.53	6.65	19.53	3.79	5.15	13.03	4.09	3.18	9.73	4.36	2.23
	5	27.25	3.54	7.69	24.64	4.59	5.36	19.53	4.21	4.64	13.03	4.64	2.81	9.73	4.72	2.06
	7	28.89	3.85	7.50	26.00	4.52	5.75	19.53	4.71	4.15	13.03	4.83	2.70	9.72	4.91	1.98
	10	30.82	4.15	7.42	26.01	5.01	5.19	19.53	5.22	3.74	13.03	5.35	2.44	9.73	5.44	1.79
	15	34.47	4.58	7.53	26.01	5.21	4.99	19.53	5.43	3.60	13.03	5.56	2.34	9.73	5.66	1.72
	20	35.82	4.94	7.25	26.02	5.55	4.69	19.54	5.78	3.38	13.04	5.92	2.20	9.73	6.03	1.62
	25	36.77	5.69	6.46	26.02	6.21	4.19	19.54	6.47	3.02	13.04	6.63	1.97	9.73	6.74	1.44
	30	37.63	6.09	6.18	26.01	6.52	3.99	19.53	6.79	2.88	13.03	6.96	1.87	9.73	7.08	1.37
	35	32.34	6.58	4.92	26.02	7.00	3.72	19.54	7.29	2.68	13.04	7.47	1.74	9.73	7.60	1.28
40	28.31	6.68	4.24	26.01	7.10	3.66	19.53	7.39	2.64	13.03	7.58	1.72	9.73	7.71	1.26	
43	25.98	7.12	3.65	25.98	7.12	3.65	19.51	7.41	2.63	13.01	7.60	1.71	9.72	7.73	1.26	
45	-25	17.85	1.62	11.02	17.85	1.62	11.02	13.41	1.69	7.95	8.94	1.73	5.17	6.68	1.76	3.80
	-20	20.14	1.87	10.75	20.14	1.87	10.75	15.12	1.95	7.76	10.09	2.00	5.05	7.53	2.03	3.70
	-15	21.10	2.19	9.62	21.10	2.19	9.62	15.85	2.28	6.94	10.57	2.34	4.52	7.89	2.38	3.31
	-10	26.39	2.44	10.82	26.02	2.50	10.41	19.54	2.60	7.51	13.04	2.67	4.88	9.73	2.71	3.59
	-7	26.37	2.28	11.59	21.00	2.87	7.32	19.53	2.49	7.83	13.03	2.88	4.52	9.73	2.93	3.32
	-5	26.65	2.40	11.11	21.98	2.87	7.66	19.54	2.58	7.58	13.04	3.10	4.21	9.73	3.15	3.09
	0	25.64	2.90	8.86	22.15	3.23	6.86	19.53	3.13	6.25	13.03	3.42	3.81	9.73	3.58	2.72
	2	26.70	3.07	8.70	23.49	3.08	7.64	19.53	3.30	5.91	13.03	3.56	3.66	9.73	3.80	2.56
	5	27.36	3.32	8.23	24.64	3.91	6.31	19.53	3.58	5.46	13.03	3.95	3.30	9.73	4.02	2.42
	7	29.07	3.58	8.11	26.00	3.81	6.82	19.53	3.97	4.92	13.03	4.07	3.20	9.72	4.14	2.35
	10	31.64	3.89	8.12	26.02	4.65	5.60	19.54	4.84	4.04	13.04	4.96	2.63	9.73	5.05	1.93
	15	34.61	4.28	8.09	26.02	4.95	5.26	19.54	5.15	3.79	13.04	5.28	2.47	9.73	5.37	1.81
	20	35.88	4.69	7.66	26.01	5.31	4.90	19.53	5.53	3.53	13.03	5.67	2.30	9.73	5.77	1.69
	25	37.37	5.36	6.97	26.02	5.85	4.45	19.54	6.09	3.21	13.04	6.24	2.09	9.73	6.35	1.53
	30	37.72	5.57	6.77	26.02	6.21	4.19	19.54	6.47	3.02	13.04	6.63	1.97	9.73	6.74	1.44
	35	32.42	5.83	5.56	26.02	6.75	3.85	19.54	7.03	2.78	13.04	7.21	1.81	9.73	7.33	1.33
40	28.46	6.12	4.65	26.01	6.85	3.80	19.53	7.13	2.74	13.03	7.31	1.78	9.73	7.44	1.31	
43	26.45	7.01	3.77	26.01	7.01	3.71	19.53	7.30	2.68	13.03	7.48	1.74	9.73	7.61	1.28	
50	-25	18.26	1.52	12.05	18.26	1.52	12.05	13.71	1.58	8.69	9.15	1.62	5.66	6.83	1.64	4.15
	-20	20.22	1.78	11.35	20.22	1.78	11.35	15.18	1.86	8.18	10.13	1.90	5.33	7.56	1.93	3.91
	-15	21.17	2.04	10.39	21.17	2.04	10.39	15.90	2.12	7.49	10.61	2.18	4.87	7.92	2.21	3.58
	-10	26.47	2.26	11.70	26.02	2.40	10.84	19.54	2.50	7.82	13.04	2.56	5.09	9.73	2.61	3.73
	-7	26.60	2.14	12.41	21.01	2.76	7.60	19.54	2.40	8.13	13.04	2.78	4.70	9.73	2.82	3.45
	-5	26.81	2.29	11.72	21.98	2.71	8.10	19.53	2.44	8.02	13.03	2.92	4.46	9.73	2.97	3.27
	0	25.75	2.59	9.94	22.15	2.98	7.42	19.53	2.89	6.76	13.03	3.16	4.13	9.73	3.31	2.94
	2	26.95	2.76	9.76	23.49	2.92	8.05	19.53	3.13	6.23	13.03	3.38	3.85	9.73	3.60	2.70
	5	27.75	3.00	9.26	24.64	3.64	6.76	19.53	3.34	5.85	13.03	3.68	3.54	9.73	3.75	2.60
	7	29.51	3.32	8.90	26.00	3.65	7.12	19.53	3.80	5.14	13.03	3.90	3.34	9.72	3.96	2.45
	10	32.13	3.65	8.79	26.01	4.01	6.49	19.53	4.18	4.68	13.03	4.28	3.04	9.73	4.35	2.23
	15	35.09	4.03	8.70	26.01	4.65	5.59	19.53	4.84	4.03	13.03	4.96	2.63	9.73	5.05	1.93
	20	36.04	4.41	8.17	26.02	5.02	5.18	19.54	5.23	3.74	13.04	5.36	2.43	9.73	5.45	1.79
	25	37.63	4.99	7.54	26.02	5.64	4.61	19.54	5.87	3.33	13.04	6.02	2.17	9.73	6.12	1.59
	30	38.16	5.24	7.28	26.01	6.01	4.33	19.53	6.26	3.12	13.03	6.42	2.03	9.73	6.53	1.49
	35	33.44	5.59	5.99	26.01	6.45	4.03	19.53	6.72	2.91	13.03	6.89	1.89	9.73	7.00	1.39
40	29.55	5.69	5.19	26.01	6.58	3.95	19.53	6.85	2.85	13.03	7.02	1.86	9.73	7.14	1.36	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
55	-25	18.67	1.41	13.24	18.67	1.41	13.24	14.02	1.47	9.55	9.35	1.51	6.21	6.98	1.53	4.56
	-20	20.29	1.69	12.00	20.29	1.69	12.00	15.24	1.76	8.66	10.17	1.80	5.63	7.59	1.84	4.14
	-15	21.24	1.88	11.28	21.24	1.88	11.28	15.95	1.96	8.13	10.64	2.01	5.29	7.94	2.04	3.88
	-10	27.52	2.09	13.19	26.01	2.31	11.26	19.53	2.41	8.12	13.03	2.47	5.28	9.73	2.51	3.88
	-7	27.43	2.05	13.35	18.80	2.30	8.17	19.53	2.51	7.77	13.03	2.69	4.84	9.73	2.74	3.56
	-5	26.33	2.19	12.00	19.73	2.35	8.40	19.53	2.57	7.59	13.03	2.83	4.61	9.73	2.88	3.38
	0	25.07	2.31	10.85	21.31	2.51	8.49	19.53	2.88	6.79	13.03	2.95	4.41	9.73	3.09	3.14
	2	26.10	2.45	10.65	21.95	2.71	8.10	19.53	3.01	6.49	13.03	3.08	4.24	9.73	3.27	2.98
	5	27.43	2.65	10.34	21.99	2.94	7.48	19.54	3.24	6.03	13.04	3.44	3.79	9.73	3.50	2.78
	7	29.75	3.05	9.76	26.00	3.31	7.85	19.53	3.45	5.67	13.03	3.53	3.69	9.72	3.59	2.71
	10	32.42	3.41	9.50	26.01	3.78	6.88	19.53	3.94	4.96	13.03	4.04	3.23	9.73	4.10	2.37
	15	35.25	3.79	9.31	26.02	4.21	6.18	19.54	4.38	4.46	13.04	4.49	2.90	9.73	4.57	2.13
	20	36.15	4.13	8.75	26.02	4.75	5.48	19.54	4.95	3.95	13.04	5.07	2.57	9.73	5.16	1.89
	25	37.73	4.62	8.16	26.01	5.21	4.99	19.53	5.43	3.60	13.03	5.56	2.34	9.73	5.66	1.72
	30	38.24	4.91	7.79	26.01	5.64	4.61	19.53	5.87	3.33	13.03	6.02	2.16	9.73	6.12	1.59
	35	31.64	5.34	5.93	26.01	5.95	4.37	19.53	6.20	3.15	13.03	6.35	2.05	9.73	6.46	1.51
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43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

26 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
60	-25	19.05	1.35	14.11	19.05	1.35	14.11	14.31	1.41	10.18	9.54	1.44	6.62	7.12	1.47	4.86
	-20	20.87	1.63	12.83	20.87	1.63	12.83	15.67	1.69	9.25	10.46	1.74	6.02	7.80	1.77	4.42
	-15	21.91	1.82	12.05	21.91	1.82	12.05	16.46	1.89	8.69	10.98	1.94	5.65	8.20	1.97	4.15
	-10	27.86	1.98	14.07	26.02	2.21	11.77	19.54	2.30	8.49	13.04	2.36	5.53	9.73	2.40	4.06
	-7	27.85	1.96	14.22	18.80	2.14	8.77	19.53	2.34	8.33	13.03	2.51	5.19	9.73	2.55	3.81
	-5	26.80	2.14	12.55	19.73	2.17	9.08	19.53	2.38	8.21	13.03	2.62	4.98	9.73	2.66	3.66
	0	25.47	2.21	11.51	21.32	2.42	8.80	19.54	2.78	7.04	13.04	2.85	4.58	9.73	2.99	3.26
	2	26.31	2.30	11.43	21.95	2.57	8.55	19.53	2.85	6.85	13.03	2.91	4.48	9.73	3.09	3.14
	5	27.71	2.45	11.30	21.98	2.69	8.16	19.53	2.97	6.58	13.03	3.15	4.14	9.73	3.20	3.04
	7	29.88	2.71	11.04	26.00	3.10	8.39	19.53	3.23	6.05	13.03	3.31	3.94	9.72	3.37	2.89
	10	32.74	3.05	10.74	26.01	3.55	7.33	19.53	3.70	5.28	13.03	3.79	3.44	9.73	3.85	2.52
	15	35.36	3.47	10.20	26.02	4.01	6.49	19.54	4.18	4.68	13.04	4.28	3.05	9.73	4.35	2.24
	20	36.59	3.79	9.66	26.01	4.56	5.70	19.53	4.75	4.11	13.03	4.87	2.68	9.73	4.95	1.96
	25	37.89	4.12	9.20	26.01	4.99	5.21	19.53	5.20	3.76	13.03	5.33	2.45	9.73	5.42	1.80
30	38.32	4.50	8.51	26.01	5.31	4.90	19.53	5.53	3.53	13.03	5.67	2.30	9.73	5.77	1.69	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
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43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
65	-25	19.68	1.30	15.14	19.68	1.30	15.14	14.78	1.35	10.92	9.86	1.39	7.10	7.36	1.41	5.21
	-20	21.03	1.52	13.84	21.03	1.52	13.84	15.79	1.58	9.98	10.53	1.62	6.49	7.86	1.65	4.77
	-15	22.20	1.72	12.89	22.20	1.72	12.89	16.68	1.79	9.30	11.12	1.84	6.05	8.30	1.87	4.44
	-10	27.97	1.84	15.20	26.01	2.10	12.39	19.53	2.19	8.93	13.03	2.24	5.81	9.73	2.28	4.27
	-7	27.96	1.83	15.32	18.81	2.02	9.32	19.54	2.21	8.86	13.04	2.36	5.53	9.73	2.40	4.06
	-5	26.87	1.96	13.74	19.73	2.05	9.63	19.53	2.24	8.71	13.03	2.47	5.28	9.73	2.51	3.88
	0	25.32	2.08	12.20	21.32	2.14	9.96	19.54	2.45	7.97	13.04	2.52	5.18	9.73	2.64	3.69
	2	26.51	2.18	12.14	21.95	2.24	9.79	19.53	2.49	7.85	13.03	2.54	5.12	9.73	2.70	3.60
	5	27.86	2.29	12.15	21.98	2.32	9.48	19.53	2.56	7.64	13.03	2.71	4.81	9.73	2.76	3.53
	7	30.14	2.47	12.20	26.00	2.64	9.86	19.53	2.75	7.10	13.03	2.82	4.62	9.72	2.87	3.39
	10	32.82	2.89	11.36	26.01	3.15	8.26	19.53	3.28	5.96	13.03	3.36	3.88	9.73	3.42	2.84
	15	35.62	3.16	11.29	26.01	3.69	7.05	19.53	3.84	5.08	13.03	3.94	3.31	9.73	4.01	2.43
	20	36.98	3.48	10.63	26.01	4.02	6.47	19.53	4.19	4.67	13.03	4.29	3.04	9.73	4.36	2.23
	25	38.15	3.80	10.04	26.01	4.52	5.75	19.53	4.71	4.15	13.03	4.83	2.70	9.73	4.91	1.98
30	38.51	4.16	9.25	26.01	5.01	5.19	19.53	5.22	3.74	13.03	5.35	2.44	9.73	5.44	1.79	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
70	-25	19.99	1.25	15.99	19.99	1.25	15.99	15.01	1.30	11.53	10.01	1.33	7.51	7.48	1.36	5.51
	-20	21.10	1.48	14.29	21.10	1.48	14.29	15.85	1.54	10.31	10.57	1.58	6.71	7.89	1.60	4.92
	-15	22.52	1.66	13.58	22.52	1.66	13.58	16.91	1.73	9.79	11.28	1.77	6.37	8.42	1.80	4.68
	-10	28.46	1.80	15.83	26.01	1.95	13.34	19.53	2.03	9.62	13.03	2.08	6.26	9.73	2.12	4.59
	-7	28.63	1.78	16.11	18.81	1.92	9.81	19.54	2.10	9.33	13.04	2.24	5.82	9.73	2.28	4.27
	-5	27.60	1.90	14.50	19.73	1.96	10.07	19.53	2.15	9.10	13.03	2.36	5.52	9.73	2.40	4.05
	0	25.72	1.96	13.14	21.31	2.02	10.57	19.53	2.31	8.45	13.03	2.37	5.49	9.73	2.49	3.91
	2	27.05	2.06	13.10	21.95	2.07	10.60	19.53	2.30	8.49	13.03	2.35	5.55	9.73	2.50	3.90
	5	28.67	2.16	13.24	21.99	2.24	9.83	19.54	2.47	7.93	13.04	2.62	4.98	9.73	2.66	3.66
	7	30.85	2.40	12.87	26.00	2.45	10.61	19.53	2.55	7.65	13.03	2.62	4.98	9.72	2.66	3.66
	10	32.66	2.62	12.48	26.01	2.85	9.13	19.53	2.97	6.58	13.03	3.04	4.28	9.73	3.09	3.14
	15	36.20	2.84	12.74	26.01	2.95	8.82	19.53	3.07	6.36	13.03	3.15	4.14	9.73	3.20	3.04
	20	37.22	2.97	12.53	26.01	3.42	7.61	19.53	3.56	5.49	13.03	3.65	3.57	9.73	3.71	2.62
	25	38.64	3.22	12.00	26.01	4.01	6.49	19.53	4.18	4.68	13.03	4.28	3.04	9.73	4.35	2.23
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75	-25	17.55	1.20	14.63	17.55	1.20	14.63	13.18	1.25	10.55	8.79	1.28	6.86	6.56	1.30	17.55
	-20	18.51	1.36	13.62	18.51	1.36	13.62	13.90	1.42	9.82	9.27	1.45	6.39	6.92	1.48	18.51
	-15	20.85	1.61	12.99	20.85	1.61	12.99	15.66	1.67	9.37	10.44	1.71	6.10	7.80	1.74	20.85
	-10	23.78	1.75	13.55	23.78	1.75	13.55	17.86	1.83	9.77	11.91	1.87	6.36	8.89	1.91	23.78
	-7	26.26	1.73	15.18	18.80	1.81	10.40	19.53	1.98	9.89	13.03	2.11	6.17	9.73	2.15	4.53
	-5	26.86	1.85	14.49	19.73	1.85	10.65	19.53	2.03	9.63	13.03	2.23	5.84	9.73	2.27	4.29
	0	26.21	1.89	13.85	21.31	1.87	11.41	19.53	2.14	9.13	13.03	2.20	5.93	9.73	2.30	4.23
	2	27.60	2.00	13.83	21.95	2.03	10.84	19.53	2.25	8.68	13.03	2.30	5.67	9.73	2.44	3.98
	5	29.43	2.10	13.99	21.98	2.14	10.29	19.53	2.35	8.30	13.03	2.50	5.22	9.73	2.54	3.83
	7	31.66	2.30	13.76	26.00	2.35	11.06	19.53	2.45	7.98	13.03	2.51	5.19	9.72	2.55	31.66
	10	33.59	2.51	13.36	26.01	2.61	9.97	19.53	2.72	7.19	13.03	2.79	4.68	9.73	2.83	33.59
	15	36.59	2.69	13.62	26.02	2.73	9.53	19.54	2.84	6.87	13.04	2.91	4.47	9.73	2.96	36.59
	20	37.92	2.72	13.94	26.02	2.74	9.50	19.54	2.83	6.90	13.04	2.90	4.50	9.73	2.95	37.92
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Part 2

26 kW heating capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
80	-25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	17.56	1.31	13.45	17.56	1.31	13.45	13.19	1.36	9.70	8.80	1.39	6.31	6.57	1.42	4.63
	-15	19.35	1.37	14.13	19.35	1.37	14.13	14.53	1.43	10.19	9.70	1.46	6.63	7.24	1.49	4.87
	-10	21.98	1.67	13.17	21.98	1.67	13.17	16.51	1.74	9.50	11.01	1.78	6.18	8.22	1.81	4.54
	-7	24.32	1.58	15.43	17.64	1.61	10.95	18.33	1.76	10.40	12.23	1.88	6.49	9.13	1.92	4.76
	-5	23.63	1.73	13.66	18.81	1.68	11.17	18.62	1.84	10.10	12.42	2.03	6.13	9.27	2.06	4.50
	0	22.64	1.82	12.44	20.94	1.74	12.01	19.20	2.00	9.61	12.81	2.05	6.24	9.56	2.15	4.45
	2	23.52	1.93	12.21	21.79	1.88	11.60	19.39	2.09	9.29	12.94	2.13	6.07	9.66	2.27	4.26
	5	24.56	2.08	11.79	21.93	2.03	10.79	19.49	2.24	8.70	13.00	2.38	5.47	9.70	2.42	4.02
	7	25.80	2.27	11.37	25.80	2.27	11.37	19.38	2.36	8.20	12.93	2.42	5.34	9.65	2.46	3.92
	10	25.72	2.40	10.73	25.72	2.40	10.73	19.31	2.50	7.74	12.88	2.56	5.04	9.62	2.60	3.70
	15	25.64	2.46	10.42	25.64	2.46	10.42	19.25	2.56	7.51	12.84	2.63	4.89	9.59	2.67	3.59
	20	25.58	2.52	10.15	25.58	2.54	10.07	19.21	2.62	7.33	12.82	2.69	4.76	9.57	2.74	3.49
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	
LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI	HC	COP	PI
85	-25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-15	18.03	1.33	13.59	18.03	1.33	13.59	13.54	1.38	9.80	9.03	1.42	6.38	6.74	1.44	4.68
	-10	18.95	1.61	11.81	18.95	1.61	11.81	14.23	1.67	8.52	9.49	1.71	5.54	7.09	1.74	4.07
	-7	19.45	1.54	12.64	14.11	1.57	8.97	14.66	1.72	8.53	9.78	1.84	5.32	7.30	1.87	3.90
	-5	18.92	1.61	11.76	15.06	1.57	9.62	14.91	1.71	8.70	9.94	1.88	5.28	7.42	1.92	3.87
	0	17.46	1.66	10.51	16.16	1.59	10.14	14.81	1.82	8.12	9.88	1.87	5.27	7.38	1.96	3.76
	2	17.78	1.78	10.00	16.47	1.73	9.50	14.66	1.93	7.61	9.78	1.97	4.97	7.30	2.09	3.49
	5	18.34	1.93	9.49	16.38	1.89	8.69	14.55	2.08	7.00	9.71	2.20	4.40	7.25	2.24	3.23
	7	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	20	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	25	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	30	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	35	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	40	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
43	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	

Abbreviations:

LWT: Leaving water temperature (°C)

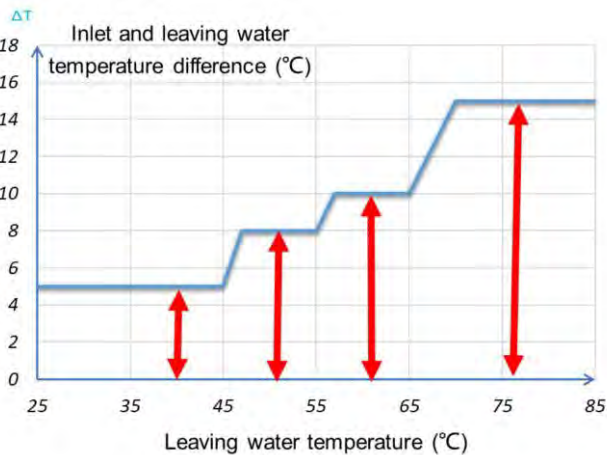
DB: Dry-bulb temperature for Outdoor air temperature (°C)

HC: Total heating capacity (kW)

PI: Power input (kW)

Note:

In heating mode, the temperature difference between the inlet and leaving water of the unit is shown in the figure below:



6.2 Cooling capacity tables (test standard: EN14511)

35 kW cooling capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
5	-15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	5	17.55	4.01	4.38	17.55	4.01	4.38	13.17	4.17	3.16	8.88	4.26	2.08	5.70	4.31	1.32
	10	17.99	3.95	4.55	17.99	3.95	4.55	13.50	4.11	3.29	9.10	4.20	2.17	5.85	4.25	1.38
	15	22.52	3.65	6.17	22.52	3.65	6.17	16.90	3.80	4.45	11.40	3.88	2.94	7.32	3.92	1.86
	20	24.25	3.36	7.22	24.25	3.36	7.22	18.20	3.50	5.21	12.27	3.57	3.44	7.88	3.61	2.18
	25	26.55	3.25	8.17	26.55	3.25	8.17	19.93	3.38	5.89	13.43	3.45	3.89	8.63	3.49	2.47
	30	28.01	3.05	9.18	28.01	3.05	9.18	21.02	3.17	6.62	14.17	3.24	4.37	9.10	3.28	2.78
	35	30.25	2.50	12.10	30.25	2.50	12.10	22.70	2.60	8.73	15.31	2.66	5.76	9.83	2.69	3.66
	40	24.35	2.44	9.98	24.35	2.44	9.98	18.27	2.54	7.20	12.32	2.59	4.75	7.91	2.62	3.02
	45	13.55	2.35	5.77	13.55	2.35	5.77	10.17	2.45	4.16	6.86	2.50	2.75	4.40	2.53	1.74
48	7.99	2.30	3.47	7.99	2.30	3.47	6.00	2.39	2.51	4.04	2.44	1.65	2.60	2.47	1.05	
7	-15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	0	17.39	4.13	4.21	17.39	4.13	4.21	13.05	4.30	3.04	8.80	4.39	2.01	5.65	4.44	1.27
	5	18.25	4.10	4.45	18.25	4.10	4.45	13.70	4.27	3.21	9.23	4.36	2.12	5.93	4.41	1.35
	10	19.52	4.07	4.80	19.52	4.07	4.80	14.65	4.23	3.46	9.88	4.32	2.29	6.34	4.37	1.45
	15	23.52	3.75	6.28	23.52	3.75	6.28	17.65	3.90	4.53	11.90	3.98	2.99	7.64	4.03	1.90
	20	25.10	3.55	7.07	25.10	3.55	7.07	18.84	3.69	5.10	12.70	3.77	3.37	8.16	3.82	2.14
	25	28.05	3.36	8.35	28.05	3.36	8.35	21.05	3.50	6.02	14.19	3.57	3.98	9.12	3.61	2.52
	30	29.01	3.13	9.27	29.01	3.13	9.27	21.77	3.26	6.69	14.68	3.33	4.41	9.43	3.37	2.80
	35	32.00	2.67	11.99	32.00	2.67	11.98	24.02	2.78	8.64	16.19	2.84	5.71	10.40	2.87	3.62
	40	25.33	2.51	10.09	25.33	2.51	10.09	19.01	2.61	7.28	12.82	2.67	4.81	8.23	2.70	3.05
	45	14.60	2.49	5.86	14.60	2.49	5.86	10.95	2.59	4.23	7.39	2.65	2.79	4.74	2.68	1.77
48	8.53	2.45	3.48	8.53	2.45	3.48	6.40	2.55	2.51	4.32	2.60	1.66	2.77	2.63	1.05	
10	-15	17.95	4.31	4.16	17.95	4.31	4.16	13.47	4.48	3.00	9.08	4.58	1.98	13.47	4.63	2.91
	-10	18.55	4.29	4.32	18.55	4.29	4.32	13.92	4.46	3.12	9.39	4.56	2.06	13.92	4.61	3.02
	-5	18.82	4.28	4.40	18.82	4.28	4.40	14.12	4.45	3.17	9.52	4.55	2.09	14.12	4.60	3.07
	0	19.25	4.25	4.53	19.25	4.25	4.53	14.45	4.42	3.27	9.74	4.52	2.16	14.45	4.57	3.16
	5	19.55	4.22	4.63	19.55	4.22	4.63	14.67	4.39	3.34	9.89	4.48	2.21	14.67	4.54	3.23
	10	20.55	4.15	4.95	20.55	4.15	4.95	15.42	4.32	3.57	10.40	4.41	2.36	15.42	4.46	3.46
	15	24.65	3.85	6.40	24.65	3.85	6.40	18.50	4.01	4.62	12.47	4.09	3.05	18.50	4.14	4.47
	20	27.01	3.74	7.22	27.01	3.74	7.22	20.27	3.89	5.21	13.67	3.97	3.44	20.27	4.02	5.04
	25	29.37	3.52	8.34	29.37	3.52	8.34	22.05	3.66	6.02	14.86	3.74	3.97	22.05	3.79	5.82
	30	32.19	3.21	10.03	32.19	3.21	10.03	24.16	3.34	7.23	16.29	3.41	4.78	24.16	3.45	7.00
	35	33.55	2.75	12.20	33.55	2.75	12.20	25.18	2.86	8.80	16.98	2.92	5.81	25.18	2.96	8.51
	40	25.98	2.61	9.96	25.98	2.61	9.96	19.50	2.72	7.18	13.15	2.77	4.74	19.50	2.81	6.95
	45	15.25	2.58	5.91	15.25	2.58	5.91	11.45	2.68	4.26	7.72	2.74	2.82	11.45	2.77	4.13
48	9.52	2.52	3.78	9.52	2.52	3.78	7.14	2.62	2.72	4.82	2.68	1.80	7.14	2.71	2.64	
15	-15	19.52	4.65	4.20	19.52	4.65	4.20	14.65	4.84	3.03	9.88	4.94	2.00	6.34	5.00	1.27
	-10	20.55	4.55	4.52	20.55	4.55	4.52	15.42	4.73	3.26	10.40	4.83	2.15	6.68	4.89	1.37
	-5	21.32	4.62	4.61	21.32	4.62	4.61	16.00	4.81	3.33	10.79	4.91	2.20	6.93	4.97	1.39
	0	22.10	4.60	4.80	22.10	4.60	4.80	16.59	4.79	3.47	11.18	4.89	2.29	7.18	4.95	1.45
	5	21.60	4.56	4.74	21.60	4.56	4.74	16.21	4.74	3.42	10.93	4.84	2.26	7.02	4.90	1.43
	10	22.34	4.48	4.99	22.34	4.48	4.99	16.76	4.66	3.60	11.30	4.76	2.38	7.26	4.82	1.51
	15	26.58	4.12	6.45	26.58	4.12	6.45	19.95	4.29	4.65	13.45	4.38	3.07	8.64	4.43	1.95
	20	30.43	4.05	7.51	30.43	4.05	7.51	22.83	4.21	5.42	15.40	4.30	3.58	9.89	4.35	2.27
	25	32.84	3.83	8.57	32.84	3.83	8.57	24.64	3.99	6.18	16.62	4.07	4.08	10.67	4.12	2.59
	30	35.71	3.36	10.63	35.01	3.36	10.42	26.28	3.50	7.52	17.72	3.57	4.96	11.38	3.61	3.15
	35	36.65	3.18	11.53	35.00	3.18	11.53	26.27	3.18	7.09	17.71	3.18	4.68	11.38	3.18	2.97
	40	31.82	3.25	9.79	31.82	3.25	9.79	23.88	3.38	7.06	16.10	3.45	4.66	10.34	3.49	2.96
	45	22.05	3.05	7.23	22.05	3.05	7.23	16.55	3.17	5.21	11.16	3.24	3.44	7.16	3.28	2.18
48	11.00	2.95	3.73	11.00	2.95	3.73	8.26	3.07	2.69	5.57	3.13	1.78	3.58	3.17	1.13	
18	-15	21.56	4.70	4.59	21.56	4.70	4.59	16.18	4.89	3.31	10.91	4.99	2.18	7.01	5.05	1.39
	-10	22.85	4.65	4.91	22.85	4.65	4.91	17.15	4.84	3.54	11.56	4.94	2.34	7.43	5.00	1.49
	-5	23.18	4.76	4.87	23.18	4.76	4.87	17.40	4.95	3.51	11.73	5.06	2.32	7.53	5.12	1.47
	0	23.88	4.81	4.96	23.88	4.81	4.96	17.92	5.00	3.58	12.08	5.11	2.36	7.76	5.17	1.50
	5	24.56	4.86	5.05	24.56	4.86	5.05	18.43	5.06	3.65	12.43	5.16	2.41	7.98	5.23	1.53
	10	26.19	4.88	5.37	26.19	4.88	5.37	19.66	5.08	3.87	13.25	5.18	2.56	8.51	5.25	1.62
	15	29.48	4.65	6.34	29.48	4.65	6.34	22.12	4.84	4.57	14.92	4.94	3.02	9.58	5.00	1.92
	20	32.83	4.31	7.62	32.83	4.31	7.62	24.64	4.48	5.49	16.61	4.58	3.63	10.67	4.63	2.30
	25	36.49	3.91	9.33	35.10	3.91	9.33	26.34	4.45	5.92	17.76	4.55	3.91	11.41	4.60	2.48
	30	38.55	3.46	11.14	35.10	3.46	11.14	26.34	4.42	5.96	17.76	4.52	3.93	11.41	4.57	2.50
	35	41.57	3.25	12.80	35.00	3.25	12.80	26.27	4.32	6.08	17.71	4.41	4.02	11.38	4.46	2.55
	40	37.68	3.21	11.74	35.05	3.21	11.74	26.31	4.01	6.57	17.74	4.09	4.34	11.39	4.14	2.75
	45	25.69	3.12	8.23	25.69	3.12	8.23	19.28	3.25	5.94	13.00	3.31	3.92	8.35	3.35	2.49
48	13.65	3.09	4.42	13.65	3.09	4.42	10.24	3.22	3.19	6.91	3.28	2.10	4.44	3.32	1.34	

Part 2

35 kW cooling capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
20	-15	21.65	4.95	4.37	21.65	4.95	4.37	16.25	5.15	3.15	10.95	5.26	2.08	7.04	5.32	1.32
	-10	23.00	4.96	4.64	23.00	4.96	4.64	17.26	5.16	3.34	11.64	5.27	2.21	7.48	5.33	1.40
	-5	23.88	4.88	4.89	23.88	4.88	4.89	17.92	5.08	3.53	12.08	5.18	2.33	7.76	5.25	1.48
	0	24.55	5.02	4.89	24.55	5.02	4.89	18.42	5.22	3.53	12.42	5.33	2.33	7.98	5.40	1.48
	5	25.66	5.10	5.03	25.66	5.10	5.03	19.26	5.31	3.63	12.98	5.42	2.40	8.34	5.48	1.52
	10	27.55	5.03	5.48	27.55	5.03	5.48	20.68	5.23	3.95	13.94	5.34	2.61	8.95	5.41	1.66
	15	30.71	4.85	6.33	30.71	4.85	6.33	23.05	5.05	4.57	15.54	5.15	3.02	9.98	5.22	1.91
	20	36.03	4.65	7.75	35.10	4.75	7.39	26.34	4.94	5.33	17.76	5.05	3.52	11.41	5.11	2.23
	25	38.44	4.02	9.56	35.01	4.35	8.05	26.28	4.53	5.81	17.72	4.62	3.83	11.38	4.68	2.43
	30	39.27	3.53	11.12	35.10	4.35	8.07	26.34	4.53	5.82	17.76	4.62	3.84	11.41	4.68	2.44
	35	42.58	3.35	12.71	35.00	4.24	8.25	26.27	4.41	5.95	17.71	4.50	3.93	11.38	4.56	2.49
	40	38.58	3.30	11.69	35.03	3.95	8.87	26.29	4.11	6.40	17.73	4.20	4.22	11.38	4.25	2.68
	45	26.54	3.25	8.17	26.54	3.25	8.17	19.92	3.38	5.89	13.43	3.45	3.89	8.63	3.49	2.47
48	14.51	3.20	4.53	14.51	3.20	4.53	10.89	3.33	3.27	7.34	3.40	2.16	4.72	3.44	1.37	
LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
25	-15	22.55	5.21	4.33	22.55	5.21	4.33	16.92	5.42	3.12	11.41	5.54	2.06	7.33	5.60	22.55
	-10	23.66	5.22	4.53	23.66	5.22	4.53	17.76	5.43	3.27	11.97	5.55	2.16	7.69	5.61	23.66
	-5	24.65	5.21	4.73	24.65	5.21	4.73	18.50	5.42	3.41	12.47	5.54	2.25	8.01	5.60	24.65
	0	25.65	5.19	4.94	25.65	5.19	4.94	19.25	5.40	3.56	12.98	5.51	2.35	8.34	5.58	25.65
	5	26.75	5.15	5.19	26.75	5.15	5.19	20.08	5.36	3.75	13.54	5.47	2.47	8.69	5.54	26.75
	10	28.56	5.13	5.57	28.56	5.13	5.57	21.43	5.34	4.02	14.45	5.45	2.65	9.28	5.52	28.56
	15	32.55	5.10	6.38	32.55	5.10	6.38	24.43	5.31	4.60	16.47	5.42	3.04	10.58	5.48	32.55
	20	39.80	4.95	8.04	35.01	5.01	6.99	26.28	5.21	5.04	17.72	5.32	3.33	11.38	5.39	39.80
	25	42.86	4.43	9.67	35.04	4.53	7.74	26.30	4.71	5.58	17.73	4.81	3.68	11.39	4.87	42.86
	30	43.69	4.13	10.58	35.06	4.45	7.88	26.31	4.63	5.68	17.74	4.73	3.75	11.39	4.79	43.69
	35	43.85	4.03	10.88	35.00	4.35	8.05	26.27	4.53	5.80	17.71	4.62	3.83	11.38	4.68	43.85
	40	40.25	3.95	10.19	35.02	4.25	8.24	26.28	4.42	5.94	17.72	4.52	3.92	11.38	4.57	40.25
	45	27.85	3.75	7.43	27.85	3.75	7.43	20.90	3.90	5.36	14.09	3.98	3.54	9.05	4.03	27.85
48	15.69	3.65	4.30	15.69	3.65	4.30	11.78	3.80	3.10	7.94	3.88	2.05	5.10	3.92	15.69	

Abbreviations:

LWT: Leaving water temperature (°C)

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

CC: Total cooling capacity (kW)

PI: Power input (kW)

Note:

In cooling mode, the temperature difference between the inlet and leaving water of the unit is 5°C.

30 kW cooling capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
5	-15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	5	17.28	4.16	4.16	17.28	4.16	4.16	13.03	4.29	3.04	8.77	4.39	2.00	5.70	4.31	1.32
	10	17.71	4.09	4.33	17.71	4.09	4.33	13.35	4.23	3.16	8.99	4.33	2.08	5.85	4.25	1.38
	15	22.12	3.78	5.85	22.12	3.78	5.85	16.68	3.91	4.27	11.23	4.00	2.81	7.32	3.92	1.86
	20	23.82	3.48	6.84	23.82	3.48	6.84	17.96	3.60	5.00	12.09	3.68	3.29	7.88	3.61	2.18
	25	26.08	3.37	7.74	26.08	3.37	7.74	19.67	3.48	5.65	13.24	3.56	3.72	8.63	3.49	2.47
	30	27.52	3.16	8.71	27.52	3.16	8.71	20.75	3.26	6.36	13.97	3.34	4.18	9.10	3.28	2.78
	35	29.72	2.59	11.47	29.72	2.59	11.47	22.41	2.68	8.38	15.08	2.74	5.51	9.83	2.69	3.66
	40	23.92	2.53	9.46	23.92	2.53	9.46	18.04	2.61	6.91	12.14	2.67	4.54	7.91	2.62	3.02
	45	13.31	2.44	5.47	13.31	2.44	5.47	10.04	2.51	3.99	6.76	2.57	2.63	4.40	2.53	1.74
48	7.85	2.38	3.29	7.85	2.38	3.29	5.92	2.46	2.40	3.98	2.52	1.58	2.60	2.47	1.05	
7	-15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	0	17.12	4.28	4.00	17.12	4.28	4.00	12.91	4.42	2.92	8.69	4.52	1.92	5.65	4.44	1.27
	5	17.97	4.25	4.23	17.97	4.25	4.23	13.55	4.39	3.09	9.12	4.49	2.03	5.93	4.41	1.35
	10	19.21	4.22	4.56	19.21	4.22	4.56	14.49	4.35	3.33	9.75	4.45	2.19	6.34	4.37	1.45
	15	23.10	3.88	5.95	23.10	3.88	5.95	17.42	4.01	4.35	11.73	4.10	2.86	7.64	4.03	1.90
	20	24.66	3.68	6.70	24.66	3.68	6.70	18.59	3.80	4.89	12.52	3.89	3.22	8.16	3.82	2.14
	25	27.56	3.48	7.91	27.56	3.48	7.91	20.78	3.60	5.78	13.99	3.68	3.80	9.12	3.61	2.52
	30	28.50	3.24	8.79	28.50	3.24	8.79	21.49	3.35	6.42	14.47	3.43	4.22	9.43	3.37	2.80
	35	31.58	2.77	11.41	30.00	2.80	10.70	22.62	2.89	7.82	15.23	2.96	5.15	10.40	2.87	3.62
	40	24.89	2.60	9.57	24.89	2.60	9.57	18.76	2.69	6.99	12.63	2.75	4.59	8.23	2.70	3.05
	45	14.34	2.65	5.40	14.34	2.65	5.40	10.81	2.74	3.95	7.28	2.80	2.60	4.74	2.68	1.77
48	8.38	2.60	3.22	8.38	2.60	3.22	6.32	2.69	2.35	4.25	2.75	1.55	2.77	2.63	1.05	
10	-15	17.67	4.47	3.96	17.67	4.47	3.96	13.32	4.61	2.89	8.97	4.72	1.90	13.32	4.63	2.88
	-10	18.26	4.45	4.11	18.26	4.45	4.11	13.77	4.59	3.00	9.27	4.70	1.97	13.77	4.61	2.98
	-5	18.53	4.44	4.18	18.53	4.44	4.18	13.97	4.58	3.05	9.40	4.69	2.01	13.97	4.60	3.04
	0	18.95	4.40	4.30	18.95	4.40	4.30	14.29	4.55	3.14	9.62	4.65	2.07	14.29	4.57	3.13
	5	19.25	4.37	4.40	19.25	4.37	4.40	14.51	4.52	3.21	9.77	4.62	2.11	14.51	4.54	3.20
	10	20.23	4.30	4.70	20.23	4.30	4.70	15.25	4.44	3.44	10.27	4.55	2.26	15.25	4.46	3.42
	15	24.22	3.99	6.07	24.22	3.99	6.07	18.26	4.12	4.43	12.29	4.22	2.92	18.26	4.14	4.41
	20	26.54	3.88	6.85	26.54	3.88	6.85	20.01	4.00	5.00	13.47	4.10	3.29	20.01	4.02	4.98
	25	28.86	3.65	7.91	28.86	3.65	7.91	21.76	3.77	5.78	14.65	3.86	3.80	21.76	3.79	5.75
	30	31.62	3.33	9.50	30.02	3.45	8.70	22.64	3.56	6.35	15.24	3.65	4.18	22.64	3.45	6.56
	35	32.96	2.85	11.56	30.00	2.95	10.17	22.62	3.05	7.43	15.23	3.12	4.88	22.62	2.96	7.65
	40	25.53	2.71	9.44	25.53	2.71	9.44	19.25	2.79	6.89	12.96	2.86	4.53	19.25	2.81	6.86
	45	14.98	2.85	5.26	14.98	2.85	5.26	11.30	2.94	3.84	7.60	3.01	2.52	11.30	2.77	4.07
48	9.35	2.80	3.34	9.35	2.80	3.34	7.05	2.89	2.44	4.75	2.96	1.61	7.05	2.71	2.60	
15	-15	19.22	4.82	3.99	19.22	4.82	3.99	14.49	4.98	2.91	9.75	5.09	1.92	6.34	5.00	1.27
	-10	20.23	4.72	4.29	20.23	4.72	4.29	15.25	4.87	3.13	10.27	4.98	2.06	6.68	4.89	1.37
	-5	20.99	4.79	4.38	20.99	4.79	4.38	15.83	4.94	3.20	10.65	5.06	2.11	6.93	4.97	1.39
	0	21.76	4.77	4.56	21.76	4.77	4.56	16.41	4.92	3.33	11.04	5.04	2.19	7.18	4.95	1.45
	5	21.27	4.73	4.50	21.27	4.73	4.50	16.04	4.88	3.29	10.80	4.99	2.16	7.02	4.90	1.43
	10	21.99	4.64	4.74	21.99	4.64	4.74	16.58	4.79	3.46	11.16	4.91	2.28	7.26	4.82	1.51
	15	26.11	4.27	6.12	26.11	4.27	6.12	19.69	4.41	4.47	13.26	4.51	2.94	8.64	4.43	1.95
	20	29.89	4.20	7.12	29.89	4.20	7.12	22.54	4.33	5.20	15.17	4.44	3.42	9.89	4.35	2.27
	25	32.26	3.97	8.13	30.03	4.15	7.24	22.64	4.28	5.28	15.24	4.39	3.48	10.67	4.12	2.59
	30	35.08	3.48	10.07	30.01	4.01	7.48	22.63	4.14	5.47	15.23	4.24	3.59	11.38	3.61	3.15
	35	36.00	3.20	11.25	30.00	3.85	7.79	22.62	3.98	5.69	15.23	4.07	3.74	11.38	3.83	2.97
	40	31.26	3.21	9.73	30.03	3.21	9.36	22.64	3.31	6.83	15.24	3.39	4.49	10.34	3.49	2.96
	45	21.66	3.29	6.59	21.66	3.29	6.59	16.33	3.40	4.81	10.99	3.48	3.16	7.16	3.28	2.18
48	10.81	3.28	3.30	10.81	3.28	3.30	8.15	3.38	2.41	5.49	3.46	1.59	3.58	3.17	1.13	
18	-15	21.23	4.87	4.36	21.23	4.87	4.36	16.00	5.03	3.18	10.77	5.15	2.09	7.01	5.05	1.39
	-10	22.50	4.82	4.67	22.50	4.82	4.67	16.96	4.98	3.41	11.42	5.09	2.24	7.43	5.00	1.49
	-5	22.82	4.93	4.63	22.82	4.93	4.63	17.21	5.09	3.38	11.58	5.21	2.22	7.53	5.12	1.47
	0	23.51	4.99	4.72	23.51	4.99	4.72	17.73	5.15	3.44	11.93	5.27	2.27	7.76	5.17	1.50
	5	24.18	5.04	4.80	24.18	5.04	4.80	18.23	5.20	3.51	12.27	5.32	2.31	7.98	5.23	1.53
	10	25.78	5.06	5.10	25.78	5.06	5.10	19.44	5.22	3.72	13.09	5.34	2.45	8.51	5.25	1.62
	15	28.96	4.82	6.01	28.96	4.82	6.01	21.84	4.98	4.39	14.70	5.09	2.89	9.58	5.00	1.92
	20	32.25	4.47	7.22	30.03	4.65	6.46	22.64	4.80	4.72	15.24	4.91	3.10	10.67	4.63	2.30
	25	35.85	4.05	8.85	30.01	4.52	6.64	22.63	4.67	4.85	15.23	4.78	3.19	11.41	4.60	2.48
	30	37.87	3.59	10.56	30.01	4.49	6.68	22.63	4.64	4.88	15.23	4.75	3.21	11.41	4.57	2.50
	35	40.84	3.37	12.13	30.00	4.41	6.80	22.62	4.55	4.97	15.23	4.66	3.27	11.38	4.46	2.55
	40	37.01	3.35	11.05	30.02	4.25	7.06	22.64	4.39	5.16	15.24	4.49	3.39	11.39	4.14	2.75
	45	25.24	3.44	7.33	25.24	3.44	7.33	19.03	3.55	5.36	12.81	3.64	3.52	8.35	3.35	2.49
48	13.41	3.42	3.92	13.41	3.42	3.92	10.11	3.53	2.86	6.81	3.61	1.88	4.44	3.32	1.34	

Part 2

30 kW cooling capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
20	-15	21.31	5.13	4.15	21.31	5.13	4.15	16.07	5.30	3.03	10.82	5.42	2.00	7.04	5.32	1.32
	-10	22.64	5.14	4.40	22.64	5.14	4.40	17.07	5.31	3.22	11.49	5.43	2.12	7.48	5.33	1.40
	-5	23.51	5.06	4.65	23.51	5.06	4.65	17.73	5.22	3.39	11.93	5.34	2.23	7.76	5.25	1.48
	0	24.17	5.20	4.65	24.17	5.20	4.65	18.22	5.37	3.39	12.27	5.50	2.23	7.98	5.40	1.48
	5	25.26	5.29	4.78	25.26	5.29	4.78	19.05	5.46	3.49	12.82	5.59	2.30	8.34	5.48	1.52
	10	27.12	5.21	5.20	27.12	5.21	5.20	20.45	5.38	3.80	13.77	5.51	2.50	8.95	5.41	1.66
	15	30.17	5.03	6.00	30.17	5.03	6.00	22.75	5.19	4.38	15.31	5.31	2.88	9.98	5.22	1.91
	20	35.40	4.82	7.34	30.02	4.86	6.18	22.64	5.02	4.51	15.24	5.14	2.97	11.41	5.11	2.23
	25	37.77	4.17	9.06	30.04	4.62	6.50	22.65	4.77	4.75	15.25	4.88	3.12	11.38	4.68	2.43
	30	38.58	3.66	10.55	30.04	4.57	6.57	22.65	4.72	4.80	15.25	4.83	3.16	11.41	4.68	2.44
	35	40.95	3.47	11.79	30.00	4.49	6.68	22.62	4.64	4.88	15.23	4.75	3.21	11.38	4.56	2.49
	40	38.54	3.68	10.48	30.02	4.30	6.98	22.64	4.44	5.10	15.24	4.54	3.35	11.38	4.25	2.68
	45	26.07	3.65	7.15	26.07	3.65	7.15	19.66	3.77	5.22	13.23	3.86	3.43	8.63	3.49	2.47
	48	14.25	3.54	4.02	14.25	3.54	4.02	10.75	3.66	2.94	7.24	3.75	1.93	4.72	3.44	1.37
LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
25	-15	22.20	5.40	4.11	22.20	5.40	4.11	16.74	5.58	3.00	11.27	5.71	1.97	7.33	5.60	1.31
	-10	23.29	5.41	4.31	23.29	5.41	4.31	17.56	5.59	3.14	11.82	5.72	2.07	7.69	5.61	1.37
	-5	24.27	5.40	4.49	24.27	5.40	4.49	18.30	5.58	3.28	12.32	5.71	2.16	8.01	5.60	1.43
	0	25.25	5.38	4.69	25.25	5.38	4.69	19.04	5.55	3.43	12.82	5.68	2.25	8.34	5.58	1.49
	5	26.34	5.34	4.93	26.34	5.34	4.93	19.86	5.51	3.60	13.37	5.64	2.37	8.69	5.54	1.57
	10	28.12	5.32	5.29	28.12	5.32	5.29	21.20	5.49	3.86	14.27	5.62	2.54	9.28	5.52	1.68
	15	31.98	5.29	6.05	30.00	5.25	5.71	22.62	5.42	4.17	15.23	5.55	2.74	10.58	5.48	1.93
	20	39.10	5.13	7.62	30.02	4.95	6.06	22.64	5.11	4.43	15.24	5.23	2.91	11.38	5.39	2.11
	25	42.11	4.59	9.17	30.03	4.75	6.32	22.64	4.90	4.62	15.24	5.02	3.04	11.39	4.87	2.34
	30	42.92	4.28	10.03	30.02	4.66	6.44	22.64	4.81	4.70	15.24	4.92	3.09	11.39	4.79	2.38
	35	41.52	4.18	9.94	30.00	4.56	6.58	22.62	4.71	4.80	15.23	4.82	3.16	11.38	4.68	2.43
	40	40.25	4.27	9.43	30.01	4.45	6.74	22.63	4.59	4.92	15.23	4.70	3.24	11.38	4.57	2.49
	45	27.36	3.89	7.04	27.36	3.89	7.04	20.63	4.01	5.14	13.89	4.11	3.38	9.05	4.03	2.24
	48	15.41	3.78	4.07	15.41	3.78	4.07	11.62	3.91	2.98	7.82	4.00	1.96	5.10	3.92	1.30

Abbreviations:

LWT: Leaving water temperature (°C)

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

CC: Total cooling capacity (kW)

PI: Power input (kW)

Note:

In cooling mode, the temperature difference between the inlet and leaving water of the unit is 5°C.

26 kW cooling capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
5	-15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	0	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	5	16.16	4.52	3.58	16.16	4.52	3.58	12.15	4.72	2.57	8.34	4.80	1.74	5.70	4.31	1.32
	10	16.57	4.45	3.72	16.57	4.45	3.72	12.46	4.65	2.68	8.55	4.72	1.81	5.85	4.25	1.38
	15	20.74	4.11	5.04	20.74	4.11	5.04	15.60	4.30	3.63	10.70	4.36	2.45	7.32	3.92	1.86
	20	22.33	3.79	5.90	22.33	3.79	5.90	16.80	3.96	4.24	11.52	4.02	2.87	7.88	3.61	2.18
	25	24.45	3.66	6.68	24.45	3.66	6.68	18.39	3.83	4.80	12.62	3.89	3.25	8.63	3.49	2.47
	30	25.01	3.44	7.28	25.01	3.44	7.28	18.81	3.59	5.24	12.91	3.65	3.54	9.10	3.28	2.78
	35	25.57	2.82	9.08	25.57	2.82	9.08	19.23	2.94	6.53	13.19	2.99	4.41	9.83	2.69	3.66
	40	22.43	2.75	8.16	22.43	2.75	8.16	16.86	2.87	5.87	11.57	2.92	3.97	7.91	2.62	3.02
	45	12.48	2.65	4.71	12.48	2.65	4.71	9.38	2.77	3.39	6.44	2.81	2.29	4.40	2.53	1.74
48	7.36	2.59	2.84	7.36	2.59	2.84	5.53	2.71	2.04	3.80	2.75	1.38	2.60	2.47	1.05	
7	-15	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-10	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	-5	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
	0	16.01	4.65	3.44	16.01	4.65	3.44	12.04	4.86	2.48	8.26	4.94	1.67	5.65	4.44	1.27
	5	16.81	4.62	3.64	16.81	4.62	3.64	12.64	4.83	2.62	8.67	4.90	1.77	5.93	4.41	1.35
	10	17.98	4.58	3.92	17.98	4.58	3.92	13.52	4.79	2.82	9.28	4.86	1.91	6.34	4.37	1.45
	15	21.66	4.22	5.13	21.66	4.22	5.13	16.29	4.41	3.69	11.18	4.48	2.50	7.64	4.03	1.90
	20	23.12	4.00	5.78	23.12	4.00	5.78	17.38	4.18	4.16	11.93	4.25	2.81	8.16	3.82	2.14
	25	25.83	3.79	6.83	25.83	3.79	6.83	19.43	3.96	4.91	13.33	4.02	3.32	9.12	3.61	2.52
	30	26.72	3.53	7.58	26.01	3.62	7.19	19.56	3.79	5.17	13.42	3.84	3.49	9.43	3.37	2.80
	35	27.01	3.01	8.98	26.00	3.10	8.40	19.55	3.24	6.03	13.42	3.29	4.08	10.40	2.87	3.62
	40	23.33	2.83	8.25	23.33	2.83	8.25	17.54	2.96	5.93	12.04	3.00	4.01	8.23	2.70	3.05
	45	13.44	2.88	4.66	13.44	2.88	4.66	10.11	3.02	3.35	6.94	3.06	2.27	4.74	2.68	1.77
48	7.86	2.83	2.78	7.86	2.83	2.78	5.91	2.96	2.00	4.05	3.00	1.35	2.77	2.63	1.05	
10	-15	16.53	4.86	3.40	16.53	4.86	3.40	12.43	5.08	2.45	8.53	5.15	1.66	12.43	4.63	2.68
	-10	17.08	4.83	3.54	17.08	4.83	3.54	12.85	5.05	2.54	8.82	5.13	1.72	12.85	4.61	2.79
	-5	17.33	4.82	3.60	17.33	4.82	3.60	13.03	5.04	2.59	8.94	5.12	1.75	13.03	4.60	2.83
	0	17.73	4.79	3.70	17.73	4.79	3.70	13.33	5.01	2.66	9.15	5.08	1.80	13.33	4.57	2.92
	5	18.01	4.75	3.79	18.01	4.75	3.79	13.54	4.97	2.72	9.29	5.05	1.84	13.54	4.54	2.98
	10	18.93	4.67	4.05	18.93	4.67	4.05	14.23	4.89	2.91	9.77	4.96	1.97	14.23	4.46	3.19
	15	22.70	4.34	5.23	22.70	4.34	5.23	17.07	4.53	3.76	11.71	4.60	2.54	17.07	4.14	4.12
	20	24.88	4.21	5.91	24.88	4.21	5.91	18.71	4.41	4.25	12.84	4.47	2.87	18.71	4.02	4.65
	25	27.05	3.97	6.82	26.01	4.10	6.34	19.56	4.29	4.56	13.42	4.35	3.08	19.56	3.79	5.17
	30	27.85	3.62	7.70	26.02	3.72	6.99	19.57	3.89	5.03	13.43	3.95	3.40	19.57	3.45	5.67
	35	27.99	3.21	8.72	26.00	3.25	8.00	19.55	3.40	5.75	13.42	3.45	3.89	19.55	2.96	6.61
	40	23.93	2.94	8.14	23.93	2.94	8.14	18.00	3.07	5.85	12.35	3.12	3.96	18.00	2.81	6.41
	45	14.05	3.10	4.53	14.05	3.10	4.53	10.56	3.24	3.26	7.25	3.29	2.20	10.56	2.77	3.81
48	8.77	3.04	2.88	8.77	3.04	2.88	6.59	3.18	2.07	4.52	3.23	1.40	6.59	2.71	2.43	
15	-15	17.98	5.24	3.43	17.98	5.24	3.43	13.52	5.48	2.47	9.28	5.56	1.67	6.34	5.00	1.27
	-10	18.93	5.13	3.69	18.93	5.13	3.69	14.23	5.36	2.66	9.77	5.44	1.79	6.68	4.89	1.37
	-5	19.64	5.20	3.77	19.64	5.20	3.77	14.77	5.44	2.71	10.13	5.52	1.83	6.93	4.97	1.39
	0	20.35	5.18	3.93	20.35	5.18	3.93	15.31	5.42	2.82	10.50	5.50	1.91	7.18	4.95	1.45
	5	20.38	5.14	3.97	20.38	5.14	3.97	14.96	5.37	2.79	10.27	5.45	1.88	7.02	4.90	1.43
	10	21.59	5.05	4.28	21.59	5.05	4.28	15.47	5.28	2.93	10.62	5.36	1.98	7.26	4.82	1.51
	15	24.48	4.64	5.27	24.48	4.64	5.27	18.41	4.85	3.79	12.63	4.93	2.56	8.64	4.43	1.95
	20	28.02	4.56	6.14	26.01	4.61	5.64	19.56	4.82	4.06	13.42	4.89	2.74	9.89	4.35	2.27
	25	30.24	4.31	7.01	26.03	4.42	5.89	19.57	4.62	4.24	13.43	4.69	2.86	10.67	4.12	2.59
	30	32.89	3.79	8.69	26.03	4.35	5.98	19.57	4.55	4.30	13.43	4.62	2.91	11.38	3.61	3.15
	35	33.75	3.37	10.02	26.00	4.21	6.18	19.55	4.40	4.44	13.42	4.47	3.00	11.38	3.83	2.97
	40	29.30	3.49	8.40	26.02	3.99	6.52	19.57	4.17	4.69	13.43	4.24	3.17	10.34	3.49	2.96
	45	20.30	3.57	5.68	20.30	3.57	5.68	15.27	3.74	4.09	10.48	3.79	2.76	7.16	3.28	2.18
48	10.13	3.40	2.98	10.13	3.40	2.98	7.62	3.56	2.14	5.23	3.61	1.45	3.58	3.17	1.13	
18	-15	18.65	5.29	3.52	18.65	5.29	3.52	14.02	5.54	2.53	9.62	5.62	1.71	7.01	5.05	1.39
	-10	19.95	5.24	3.81	19.95	5.24	3.81	15.00	5.48	2.74	10.29	5.56	1.85	7.43	5.00	1.49
	-5	21.35	5.36	3.98	21.35	5.36	3.98	16.05	5.61	2.86	11.02	5.69	1.94	7.53	5.12	1.47
	0	21.99	5.42	4.06	21.99	5.42	4.06	16.54	5.67	2.92	11.35	5.75	1.97	7.76	5.17	1.50
	5	22.62	5.47	4.13	22.62	5.47	4.13	17.01	5.72	2.97	11.67	5.81	2.01	7.98	5.23	1.53
	10	24.12	5.50	4.39	24.12	5.50	4.39	18.14	5.75	3.16	12.45	5.84	2.13	8.51	5.25	1.62
	15	27.15	5.24	5.18	26.01	5.32	4.89	19.56	5.56	3.52	13.42	5.65	2.38	9.58	5.00	1.92
	20	30.24	4.86	6.23	26.04	4.99	5.22	19.58	5.22	3.75	13.44	5.30	2.54	10.67	4.63	2.30
	25	33.61	4.40	7.63	26.01	4.85	5.36	19.56	5.07	3.86	13.42	5.15	2.61	11.41	4.60	2.48
	30	35.50	3.90	9.10	26.05	4.52	5.76	19.59	4.73	4.14	13.44	4.80	2.80	11.41	4.57	2.50
	35	38.29	3.66	10.46	26.00	4.64	5.60	19.55	4.85	4.03	13.42	4.93	2.72	11.38	4.46	2.55
	40	34.70	3.62	9.60	26.03	4.25	6.12	19.57	4.44	4.40	13.43	4.51	2.98	11.39	4.14	2.75
	45	26.85	3.74	7.18	26.02	4.32	6.02	19.57	4.52	4.33	13.43	4.59	2.93	8.35	3.35	2.49
48	14.21	3.72	3.82	14.21	3.72	3.82	10.69	3.89	2.75	7.33	3.95	1.86	4.44	3.32	1.34	

Part 2

26 kW cooling capacity

LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
20	-15	19.94	5.58	3.58	19.94	5.58	3.58	14.99	5.83	2.57	10.29	5.92	1.74	7.04	5.32	1.32
	-10	21.18	5.59	3.79	21.18	5.59	3.79	15.93	5.84	2.73	10.93	5.93	1.84	7.48	5.33	1.40
	-5	21.99	5.50	4.00	21.99	5.50	4.00	16.54	5.75	2.88	11.35	5.84	1.94	7.76	5.25	1.48
	0	22.61	5.66	4.00	22.61	5.66	4.00	17.00	5.91	2.88	11.67	6.00	1.94	7.98	5.40	1.48
	5	23.63	5.75	4.11	23.63	5.75	4.11	17.77	6.01	2.96	12.19	6.10	2.00	8.34	5.48	1.52
	10	25.37	5.67	4.48	25.37	5.67	4.48	19.08	5.92	3.22	13.09	6.01	2.18	8.95	5.41	1.66
	15	28.28	5.46	5.18	26.03	5.54	4.70	19.57	5.79	3.38	13.43	5.88	2.28	9.98	5.22	1.91
	20	33.18	5.24	6.33	26.01	5.46	4.76	19.56	5.71	3.43	13.42	5.80	2.32	11.41	5.11	2.23
	25	35.41	4.53	7.82	26.02	5.35	4.86	19.57	5.59	3.50	13.43	5.68	2.36	11.38	4.68	2.43
	30	37.55	3.98	9.44	26.01	5.02	5.18	19.56	5.25	3.73	13.42	5.33	2.52	11.41	4.68	2.44
	35	39.00	3.77	10.33	26.00	4.95	5.25	19.55	5.18	3.78	13.42	5.25	2.55	11.38	4.56	2.49
	40	36.52	4.00	9.13	26.01	4.62	5.63	19.56	4.83	4.05	13.42	4.90	2.74	11.38	4.25	2.68
45	27.55	3.97	6.95	26.03	4.53	5.75	19.57	4.74	4.13	13.43	4.81	2.79	8.63	3.49	2.47	
48	14.65	3.85	3.80	14.65	3.85	3.80	11.02	4.03	2.73	7.56	4.09	1.85	4.72	3.44	1.37	
LWT	DB	Maximum			100% (Normal)			75%			50%			Minimum		
		CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI	CC	EER	PI
25	-15	20.77	5.87	3.54	20.77	5.87	3.54	15.62	6.14	2.55	10.72	6.23	1.72	7.33	5.60	1.31
	-10	21.79	5.88	3.71	21.79	5.88	3.71	16.39	6.15	2.67	11.24	6.24	1.80	7.69	5.61	1.37
	-5	22.70	5.87	3.87	22.70	5.87	3.87	17.07	6.14	2.78	11.71	6.23	1.88	8.01	5.60	1.43
	0	23.62	5.85	4.04	23.62	5.85	4.04	17.76	6.11	2.91	12.19	6.21	1.96	8.34	5.58	1.49
	5	24.64	5.80	4.25	24.64	5.80	4.25	18.53	6.07	3.05	12.71	6.16	2.06	8.69	5.54	1.57
	10	26.30	5.78	4.55	26.01	5.85	4.45	19.56	6.12	3.20	13.42	6.21	2.16	9.28	5.52	1.68
	15	29.98	5.75	5.22	26.03	5.80	4.49	19.57	6.06	3.23	13.43	6.16	2.18	10.58	5.48	1.93
	20	36.66	5.58	6.57	26.03	5.75	4.53	19.57	6.01	3.26	13.43	6.10	2.20	11.38	5.39	2.11
	25	38.56	4.99	7.73	26.01	5.41	4.81	19.56	5.66	3.46	13.42	5.74	2.34	11.39	4.87	2.34
	30	39.75	4.65	8.54	26.01	5.38	4.83	19.56	5.63	3.48	13.42	5.71	2.35	11.39	4.79	2.38
	35	40.25	4.54	8.87	26.00	5.12	5.08	19.55	5.35	3.65	13.42	5.43	2.47	11.38	4.68	2.43
	40	38.51	4.64	8.30	26.02	4.85	5.36	19.57	5.07	3.86	13.43	5.15	2.61	11.38	4.57	2.49
45	28.95	4.22	6.85	26.01	4.65	5.59	19.56	4.86	4.02	13.42	4.94	2.72	9.05	4.03	2.24	
48	16.52	4.11	4.02	16.52	4.11	4.02	12.42	4.30	2.89	8.52	4.36	1.95	5.10	3.92	1.30	

Abbreviations:

LWT: Leaving water temperature (°C)

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

CC: Total cooling capacity (kW)

PI: Power input (kW)

Note:

In cooling mode, the temperature difference between the inlet and leaving water of the unit is 5°C.

7 Noise levels

7.1 Overall

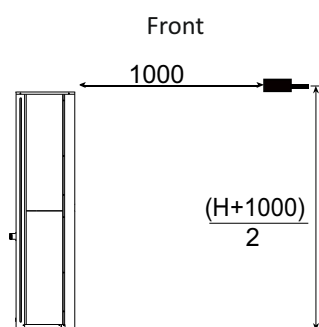
Sound pressure levels¹

Model	dB(A) ²
35 kW - 3ph	75.5
30 kW - 3ph	74.8
26 kW - 3ph	74.5

Notes:

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

Sound pressure level measurement (unit: mm)

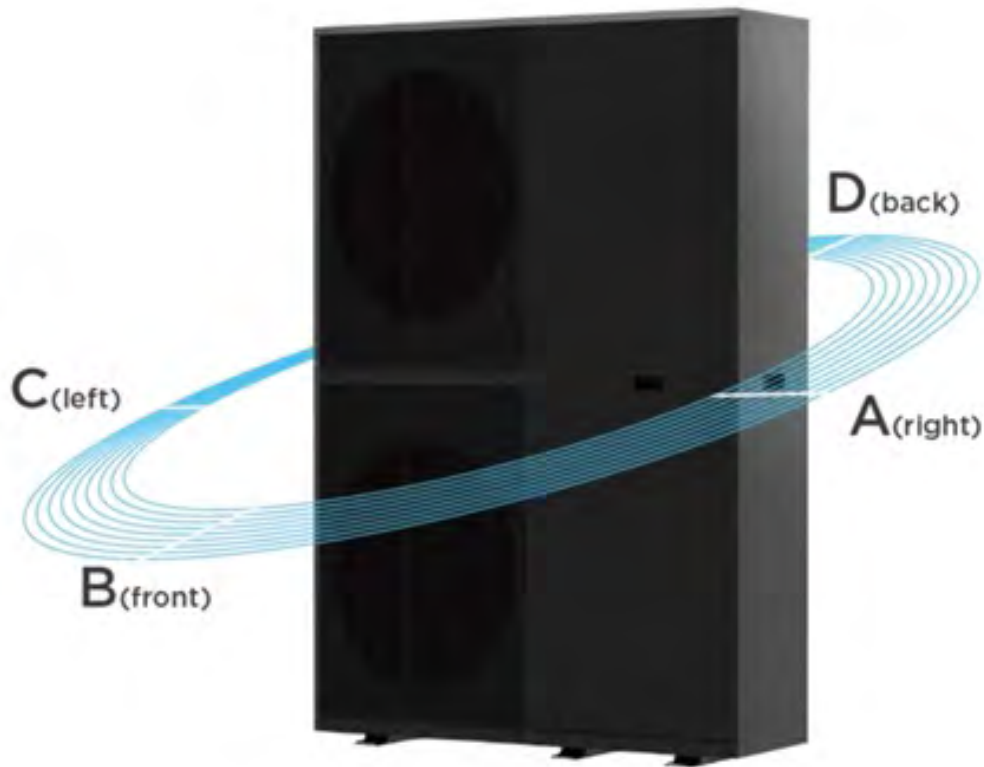


- dB(A) is the maximum value tested under the conditions below:

Outdoor air temperature 7°C DB, 85% R.H.; EWT 47°C, LWT 55°C. Free compressor frequency.

7.2 Octave band levels

We measure noise level of the unit from 4 sides as below, with a rated frequency at the distance of 1 m.



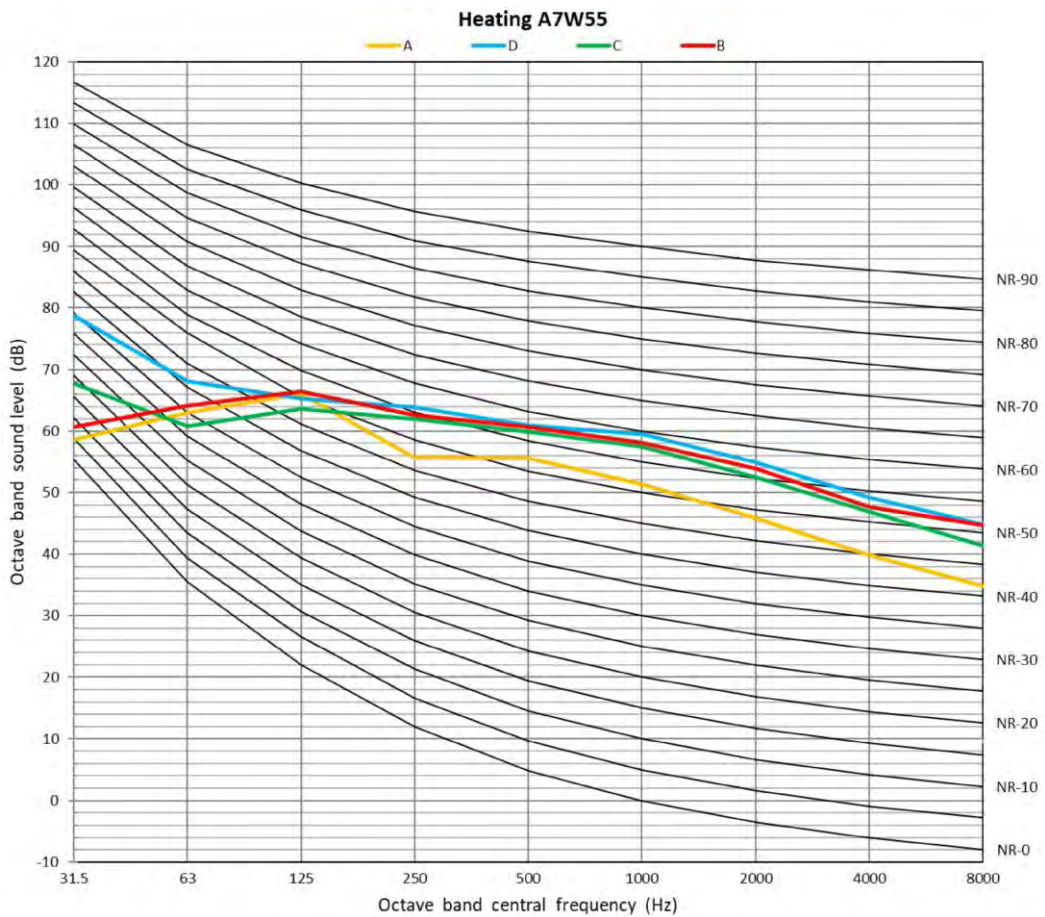
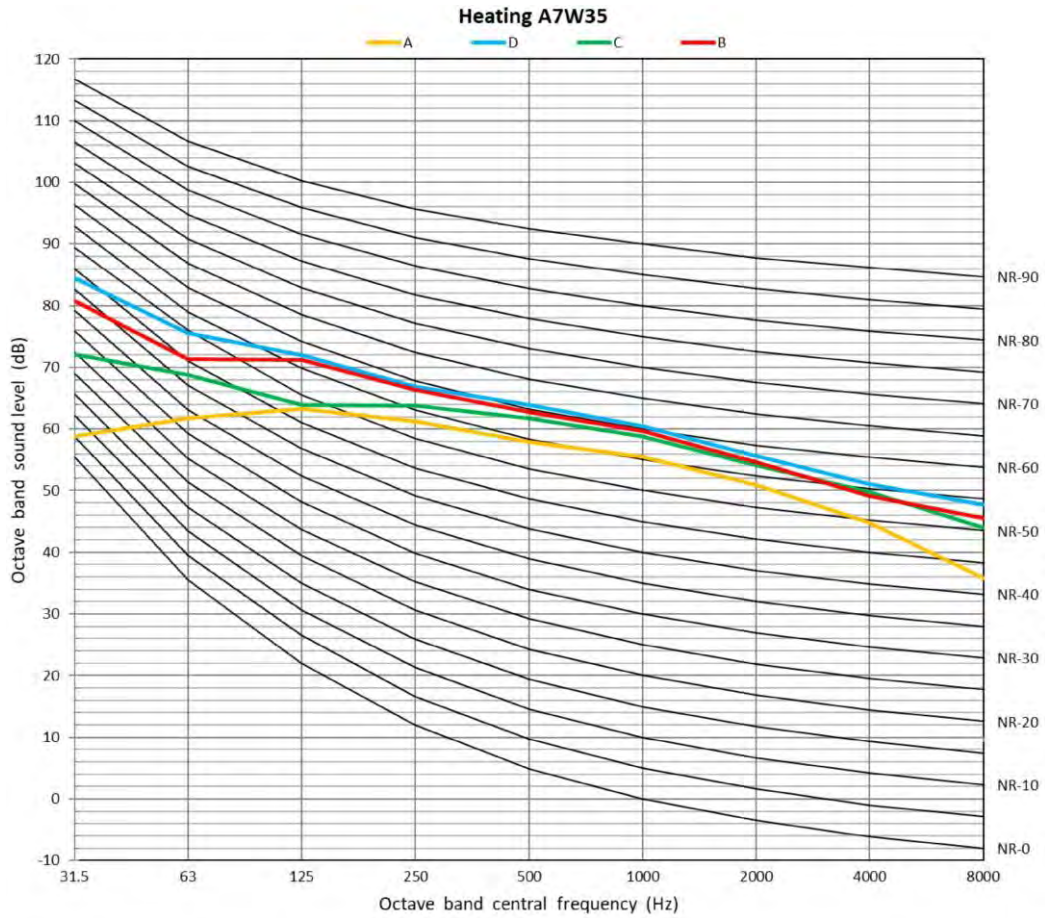
The conditions as follows:

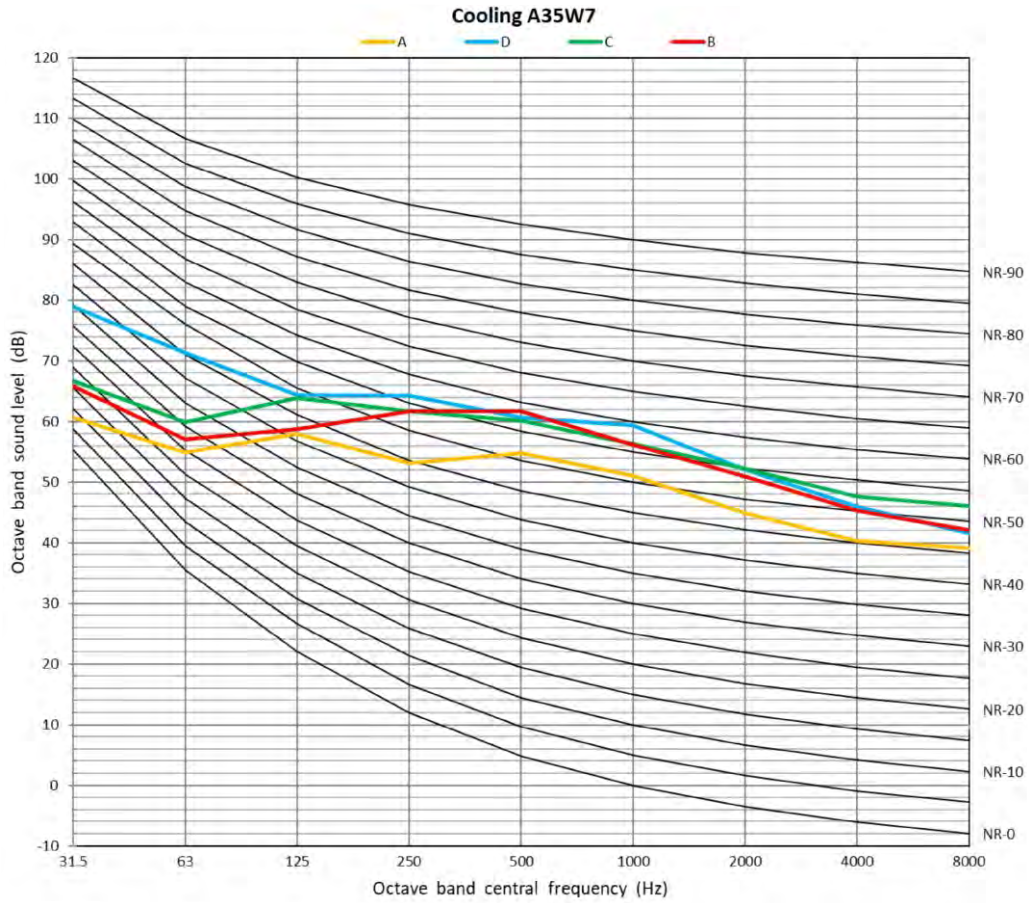
Heating A7W35: Evaporator air in 7°C, 85% R.H.; Condenser water in/out 30/35°C.

Heating A7W55: Evaporator air in 7°C, 85% R.H.; Condenser water in/out 47/55°C.

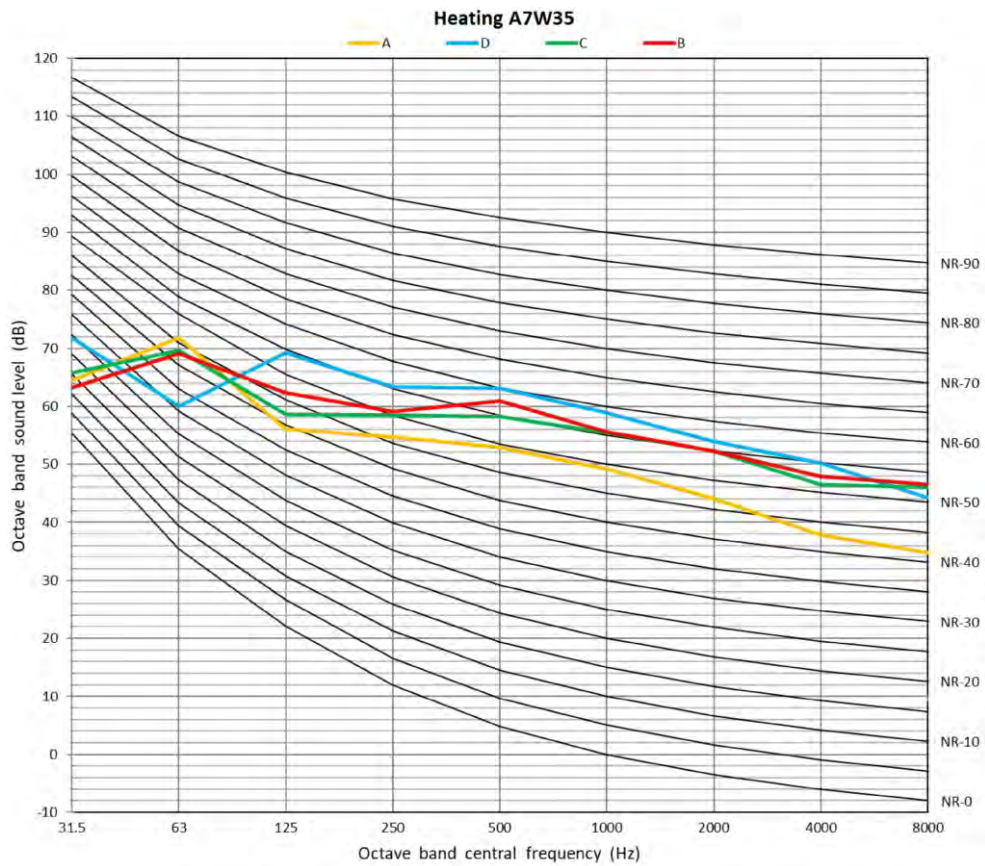
Cooling A35W18: Condenser air in 35°C; Evaporator water in/out 23/18°C.

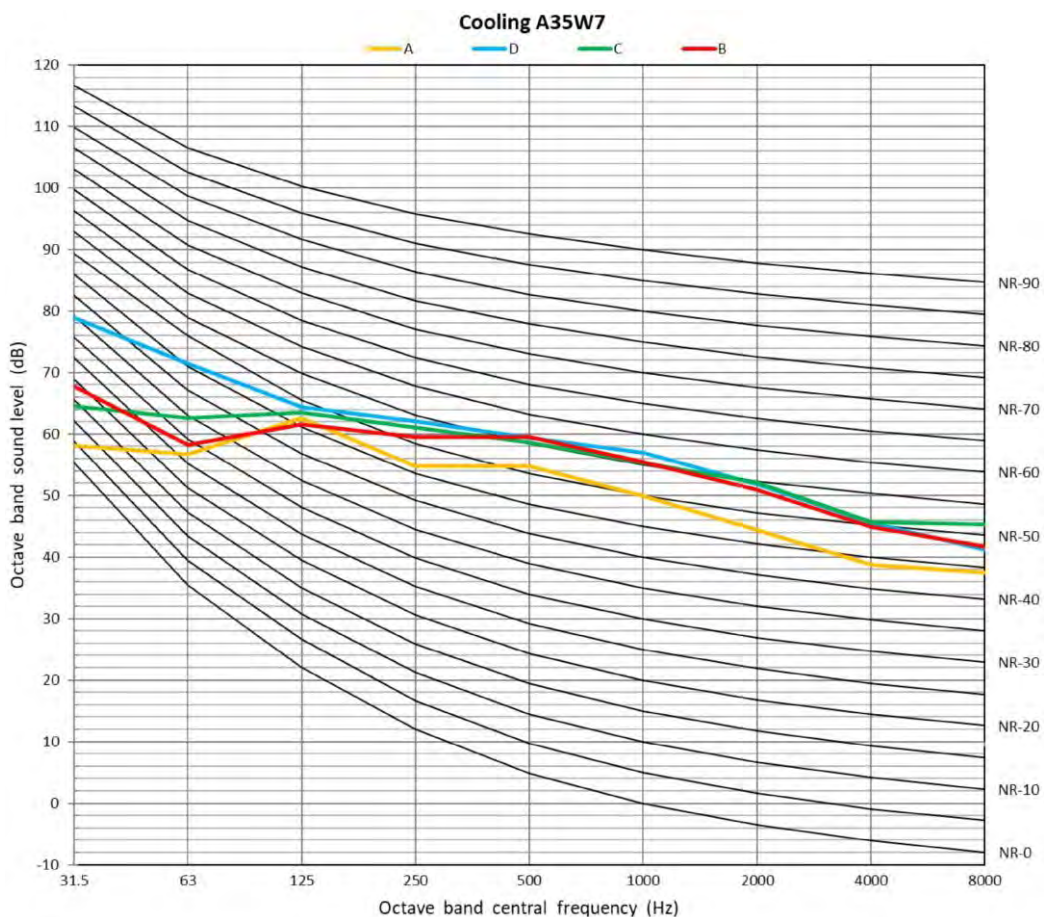
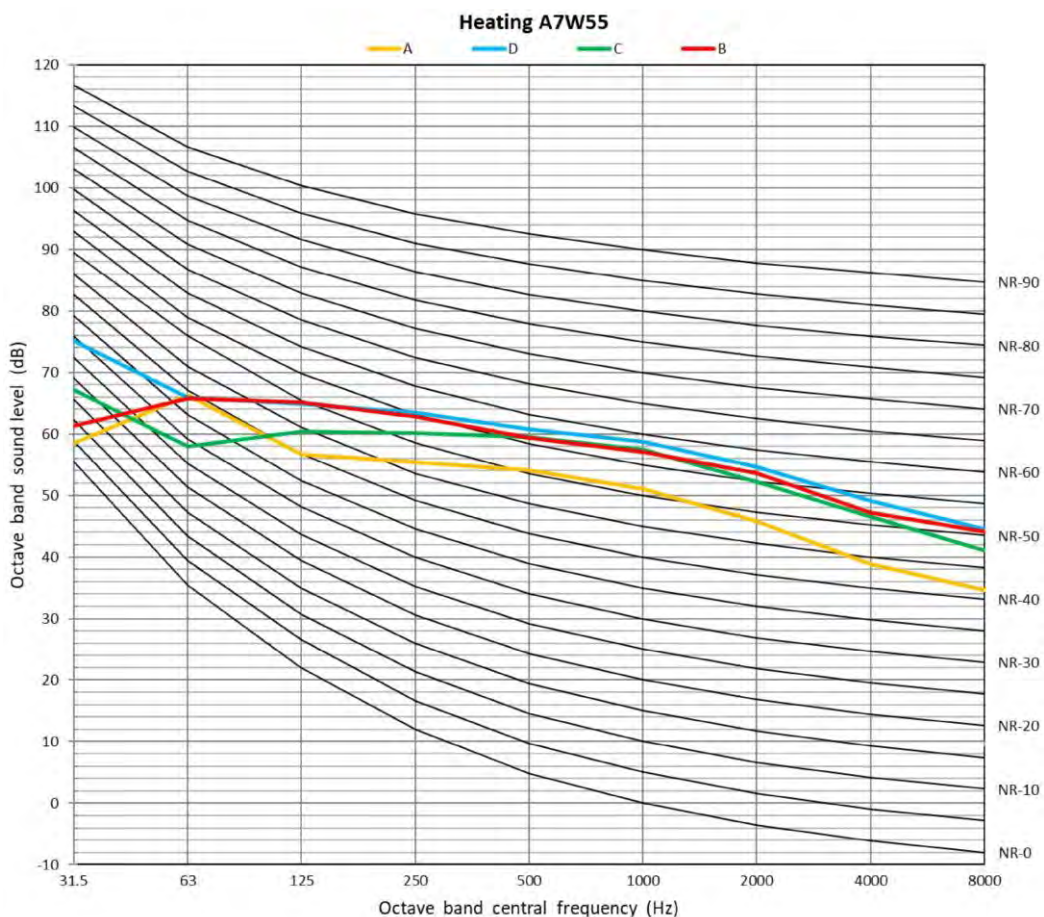
7.2.1 Octave band levels for 35 kW unit



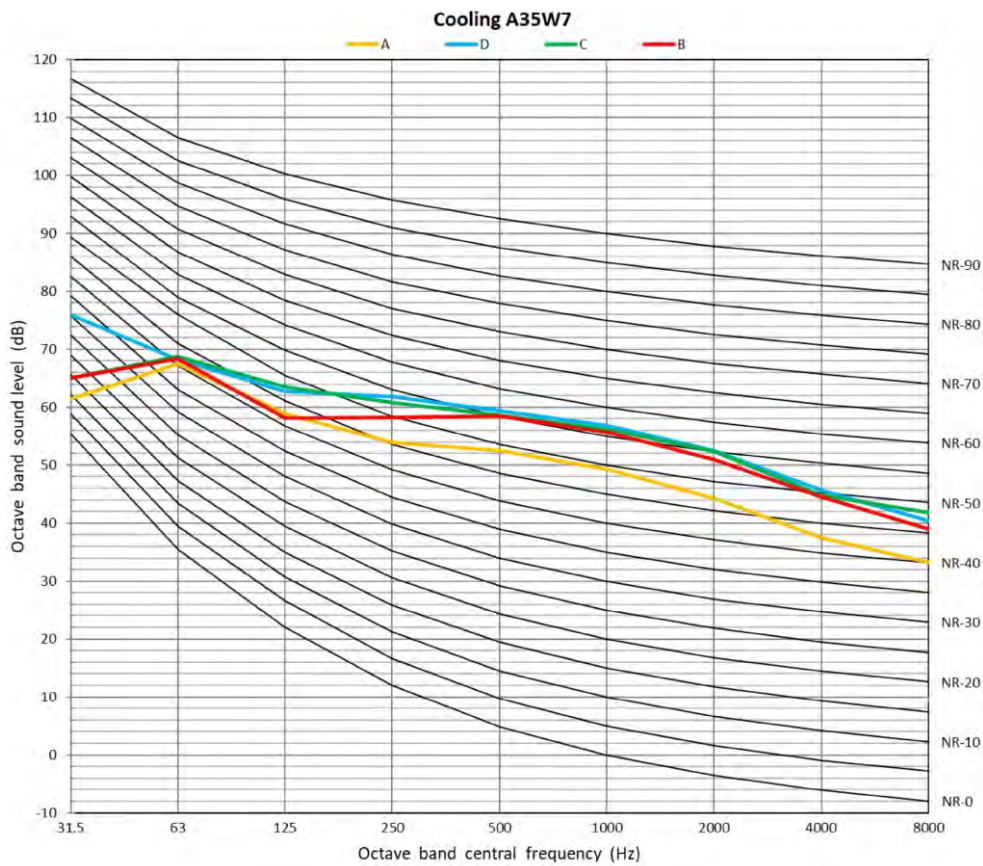
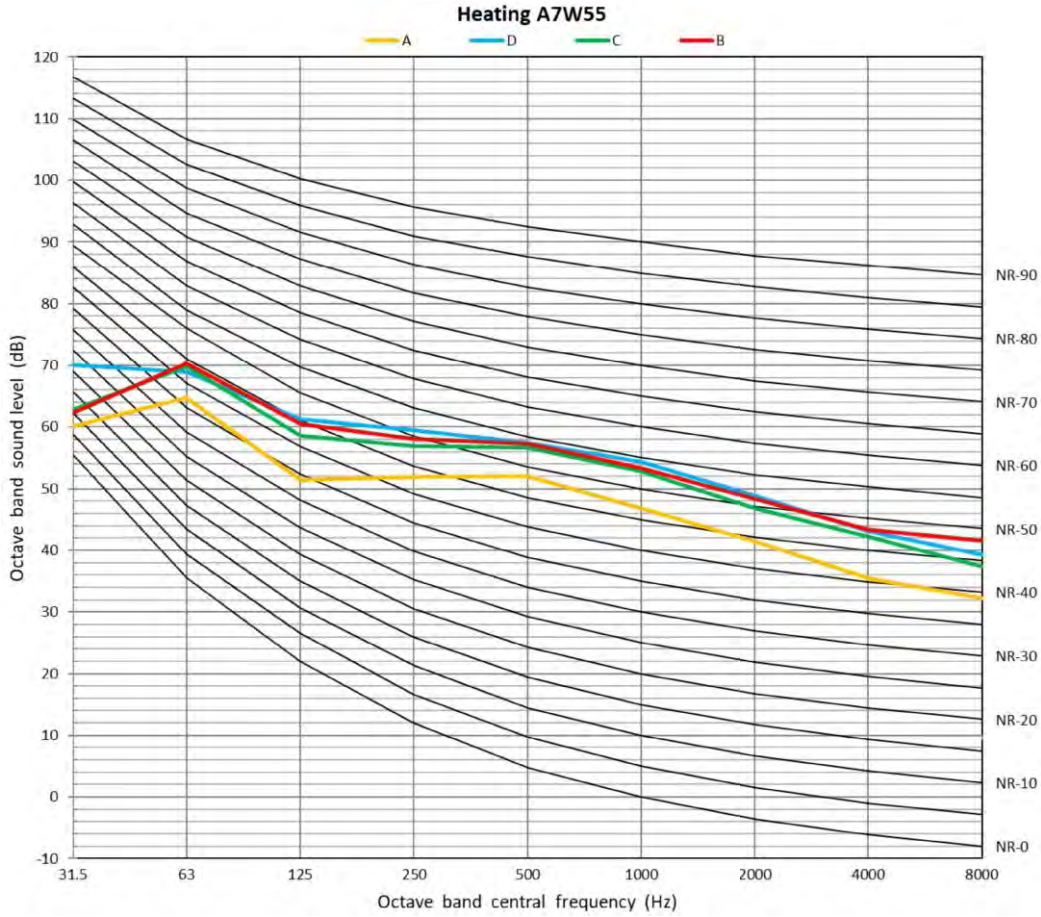


7.2.2 Octave band levels for 30 kW unit





7.2.3 Octave band levels for 26 kW unit



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Company assumes no responsibility for possible inaccuracies in this book originated typographical errors or rewriting, all figures 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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