



WAMAK

Heat pump



BW 10

WAMAK BW 10

Product description

Compact heat pump for heating and domestic hot water with passive cooling control. Short closed refrigerant circuit with silent scroll compressor contributes to long-term stable operation.

Use for single-family houses and smaller buildings with a heat output requirement of up to 20 kW. The COMFORT range includes robust heat pump internal refrigerant circuit parts as well as all the measuring, distribution and control elements required by today's modern climate technology in single-family houses.

As a primary source, the thermal energy of the sun accumulated in the ground through a horizontal collector or geothermal energy through a deep borehole is used. In the collector or borehole, an antifreeze flows which takes the energy of the earth at a low temperature and the heat pump raises this temperature to a temperature usable for heating or hot water.

Product features

- Scroll compressor
- Electronic expansion valve
- Compressor soft starter
- High pressure switch
- Low pressure sensor - analogue
- Flow sensor consumer - analogue
- ECM speed circulator - condenser
- Mixed heating/cooling circuit control
- DHW switching control
- Outdoor temperature sensor
- Buffer temperature sensor
- Modbus connection - (with accessory)
- Sylomer pads under compressor unit
- Asymetric plate heat exchanger
- Phase and rotation control
- High pressure sensor - analogue
- Flow switch consumer - on/off - (with accessory)
- Flow switch source - on/off - (with accessory)
- ECM speed circulator - evaporator
- Direct heating/cooling circuit control
- DHW circulation control
- DHW temperature sensor
- Cascade control - (with accessory)
- Solid frame structure

Basic performance data - WAMAK BW 10

Heating - EN 14511		
Heating capacity [kW]	B0 / W35 (max)	10.1
	B0 / W35 (min)	10.1
	B0 / W34	10.2
Electrical power input [kW]	B0 / W35 (max)	2.3
	B0 / W35 (min)	2.3
	B0 / W34	2.2
Heating efficiency faktor [COP]	B0 / W35 (max)	4.40
	B0 / W35 (min)	4.40
	B0 / W34	4.52
Seasonal space heating energy efficiency - SCOP EN 14825		
Average Climate / Low Temperature [35 °C]	SCOP	5.08
	η [%]	203.3
	Label	A+++
	Qhe [kWh]	20866.6
	Pdesignh [kW]	10.1
	Tbivalent [°C]	-10
Cooling		
Cooling capacity - [kW]	A35 / W23-18	10.4
	A25 / W23-18	11.7
	A35 / W12-7	10.4
	A25 / W12-7	10.4
Seasonal space cooling energy efficiency - SEER EN 14825		
[W 23 / 18 °C]	SEER	5.62
	Qce [kWh]	4320.0
	η_c [%]	224.6
Sound EN 12102		
Acoustic power - Lw	dB(A)	44
Acoustic pressure - Lp	1 m dB(A)	36
	5 m dB(A)	22
	10 m dB(A)	16
Mechanical and operational information		
Compressor type (3~ 400/50)	SCROLL / 1 /	On/Off
Refrigerant	R410A (GWP - 2088)	1 kg
Operating limit temperatures heating - (min / max) [°C]	25 / 65	
Operating limit temperatures source - (min / max) [°C]	-10 (7) / 30	
Weight	115 kg	

Main technical data - WAMAK BW 10

Enclosure type				SK600		Heat energy rejection side data									
Basic dimensions		Height [mm]		730		Operating limit temperatures heating		MAX [°C]		65					
		Width [mm]		650				MIN [°C]		25					
		Length [mm]		630		for more see operating limits diagram									
Weight [kg]				115		Condenser		Port size		1 "					
Colour				Gray				Type		BPHE					
Enclosure IP Class				IP20				Count		1					
Refrigeration cycle								Material		AISI 316					
Compressor		Type		Scroll		Maximal operating pressure - refrigerant [bar]						45			
		Number of stages		1		Maximal operating pressure - Water [bar]						3			
		On/Off				Testing pressure [bar]						70			
		Power factor Cosφ		0.69		Heat transfer medium						Water			
		Winding resistance		3.30 Ohm		Volume flow - Water [m3/h]						1.75			
Refrigerant				R410A		Internal pressure drop - Water [kPa]						12			
		Volme		1 kg		ECM speed circulator - condenser						UPM3 25-75			
		GWP		2088		Flow sensor consumer - analogue						0..10V			
		Safety class		A1		Temperature difference		@ 35 °C (nom)		5 K					
Refrigeration oil type		POE RL32-3MAF		@ 55 °C				8 K							
		Oil volume		0.8 L				@ 65 °C		10 K					
Maximal pressure - refrigerant [bar]				45		Renewable energy extraction side data									
PED class				1		Operating limit temperatures source		MIN [°C]		-10 (7)					
								MAX [°C]		30					
EVI - vapour injection with economizer						for more see operating limits diagram									
Electrical connection data						Evaporator									
Line voltage [#~ V/Hz]				3~ 400/50				Port size		1.1/4 "					
Current		nominal [A]		4.08				Type		BPHE					
		maximal [A]		7.40				Count		1					
		starting [A]		11.02				Material		AISI 316					
Softstart				MCI 12		Maximal operating pressure - refrigerant [bar]						28			
Main safety				C16		Heat transfer medium						Ethylenglykol			
Control System						Brine proportion [%]						29			
Main controller		SIEMENS		RVS 21 AVS 55.199		Antifreeze to [°C]						-15			
Extension module		AVS75.391		AVS75.391		AVS75.3xx		Maximal operating pressure - Ethylenglykol [bar]						3	
Bus Clip-In		LPB OCI346		Modbus OCI352		Volume flow - Ethylenglykol [m3/h]						2.37			
Online connection		Web server OZW672		ToSyMo		Internal pressure drop - Ethylenglykol [kPa]						12			
						Temperature difference - Ethylenglykol						3 K			
						ECM speed circulator - evaporator						UPM3 25-75			

*** with accessory

WAMAK BW 10

ErP (EU) No 811/2013: Technical parameters for heat pump space heaters

Model	BW 10
Air-to-water heat pump	no
Brine-to-water heat pump	yes
Water-to-water heat pump	no
Low-temperature heat pump	no
Equipped with a supplementary heater	no
Heat pump combination heater	no
Temperature application	low (35 °C - 30 °C)
Climate conditions	average

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output at Tdesignh	Prated	10.1	kW	Seasonal space heating energy efficiency	η_s	203.3	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	10.2	kW	Tj = -7 °C	COPd	4.52	-
Tj = +2 °C	Pdh	10.3	kW	Tj = +2 °C	COPd	5.0	-
Tj = +7 °C	Pdh	10.5	kW	Tj = +7 °C	COPd	5.5	-
Tj = +12 °C	Pdh	10.6	kW	Tj = +12 °C	COPd	6.0	-
Tj = bivalent temperature	Pdh	10.1	kW	Tj = bivalent temperature	COPd	4.4	-
Tj = operation limit temperature	Pdh	---	kW	Tj = operation limit temperature	COPd	---	-
Bivalent temperature	Tbiv	-10	°C	Tj = operation limit temperature	TOL	---	°C
Power consumption in modes other than active mode				Heating water operating limit temperature	WTOL	65	°C
Off mode	Poff	0.010	kW	Supplementary heater			
Thermostat-off mode	Pto	0.010	kW	Rated heat output	Psup	1.9	kW
Standby mode	Psb	0.010	kW	Type of energy input		electricity	
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control		fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	---	m ³ /h
Sound power level				For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2.37	m ³ /h
indoors	Lwa	44	dB				
outdoors	Lwa	---	dB				
Annual energy consumption	Q _{HE}	20866.6	kWh				

Contact details: WAMAK, s.r.o., Orovnica 252, 96652, Orovnica, Slovensko, info@wamak.sk

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Model	BW 10
Air-to-water heat pump	no
Brine-to-water heat pump	yes
Water-to-water heat pump	no
Low-temperature heat pump	no
Equipped with a supplementary heater	no
Heat pump combination heater	no
Temperature application	middle (55 °C - 47 °C)
Climate conditions	average

Item	Symbol	Value	Unit	Item	Symbol	Value	Unit
Rated heat output at Tdesignh	Prated	9.2	kW	Seasonal space heating energy efficiency	η_s	154.7	%
Declared capacity for heating for part load at indoor temperature 20 °C and outdoor temperature Tj				Declared coefficient of performance or primary energy ratio for part load at indoor temperature 20 °C and outdoor temperature Tj			
Tj = -7 °C	Pdh	9.5	kW	Tj = -7 °C	COPd	3.04	-
Tj = +2 °C	Pdh	10.2	kW	Tj = +2 °C	COPd	4.0	-
Tj = +7 °C	Pdh	10.3	kW	Tj = +7 °C	COPd	4.6	-
Tj = +12 °C	Pdh	10.5	kW	Tj = +12 °C	COPd	5.1	-
Tj = bivalent temperature	Pdh	9.2	kW	Tj = bivalent temperature	COPd	2.6	-
Tj = operation limit temperature	Pdh	---	kW	Tj = operation limit temperature	COPd	---	-
Bivalent temperature	Tbiv	-10	°C	Tj = operation limit temperature	TOL	---	°C
Power consumption in modes other than active mode				Heating water operating limit temperature	WTOL	65	°C
Off mode	Poff	0.010	kW	Supplementary heater			
Thermostat-off mode	Pto	0.010	kW	Rated heat output	Psup	1.9	kW
Standby mode	Psb	0.010	kW	Type of energy input		electricity	
Crankcase heater mode	Pck	0.000	kW				
Other items							
Capacity control		fixed		For air-to-water heat pumps: Rated air flow rate, outdoors	-	---	m ³ /h
Sound power level				For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2.37	m ³ /h
indoors	Lwa	44	dB				
outdoors	Lwa	---	dB				
Annual energy consumption	Q _{HE}	19007.2	kWh				

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ENERG

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WAMAK

BW 10



55 °C

35 °C

A+++

A+++

A+++

A++

A+

A

B

C

D



44 dB



--- dB

10
10
10
kW

11
11
10
kW



2019

811/2013

BW 10

ErP Data

55 °C

35 °C

Energy class

A+++

A+++

η [%]

154.7

203.3

P_{rated} [kW]

10

11

Q_{HE} [kWh/y]

19008

20867

SCOP [-]

3.87

5.08

$T_{bivalent}$ [°C]

-10

-10

CONTROLLER



+ QAA55/75

class VII

3.5% ↓

- QAA55/75

class III

1.5% ↓

Heating performance data

Version: v202223.006-BW-WW

Source - Brine [0°C] / Low Temperature [35°C]

ZH09K1P-TFM_R410A_1_BWW

	Operating conditions	Qh	P	COP
1	B0 / W30-35	10.1	2.3	4.40
2	B0 / W30-35 (MIN)	10.1	2.3	4.40
A	B0 / Wxx-34	10.2	2.2	4.52
B	B0 / Wxx-30	10.3	2.0	5.04
C	B0 / Wxx-27	10.5	1.9	5.47
D	B0 / Wxx-24	10.6	1.8	5.96
E	B0 / Wxx-35	10.1	2.3	4.40
F	B0 / Wxx-35	10.1	2.3	4.40

SCOP DATA EN 14825:2018	
Source - Brine [0°C] / Low Temperature [35°C]	
SCOPon	5.13
SCOPnet	5.13
SCOP	5.08
η [%]	203.29
Label	A+++
Qh [kWh]	20867
Pdesignh [kW]	10.1
Tbivalent [°C]	-10

Source - Brine [0°C] / Medium Temperature [55°C]

	Operating conditions	Qh	P	COP
1	B0 / W47-55	9.2	3.5	2.62
2	B0 / W47-55 (MIN)	9.2	3.4	2.62
A	B0 / Wxx-52	9.5	3.2	3.04
B	B0 / Wxx-42	10.2	2.6	4.02
C	B0 / Wxx-36	10.3	2.3	4.53
D	B0 / Wxx-30	10.5	2.0	5.12
E	B0 / Wxx-55	9.2	3.5	2.62
F	B0 / Wxx-54	9.4	3.3	2.86

SCOP DATA EN 14825:2018	
Source - Brine [0°C] / Medium Temperature [55°C]	
SCOPon	3.90
SCOPnet	3.90
SCOP	3.87
η [%]	154.75
Label	A+++
Qh [kWh]	19007
Pdesignh [kW]	9.2
Tbivalent [°C]	-10

Source - Water [10°C] / Low Temperature [35°C]

	Operating conditions	Qh	P	COP
1	W10 / W30-35	13.6	2.3	5.97
2	W10 / W30-35 (MIN)	13.6	2.3	5.97
A	W10 / Wxx-34	13.6	2.2	6.15
B	W10 / Wxx-30	14.0	2.0	6.93
C	W10 / Wxx-27	14.2	1.9	7.59
D	W10 / Wxx-24	14.4	1.7	8.32
E	W10 / Wxx-35	13.6	2.3	5.97
F	W10 / Wxx-35	13.6	2.3	5.97

SCOP DATA EN 14825:2018	
Source - Water [10°C] / Low Temperature [35°C]	
SCOPon	7.07
SCOPnet	7.07
SCOP	7.00
η [%]	279.93
Label	A+++
Qh [kWh]	28098
Pdesignh [kW]	13.6
Tbivalent [°C]	-10.00

Source - Water [10°C] / Medium Temperature [55°C]

Operating conditions		Qh	P	COP
1	W10 / W47-55	11.9	3.6	3.33
2	W10 / W47-55 (MIN)	11.9	3.6	3.33
A	W10 / Wxx-52	12.4	3.3	3.78
B	W10 / Wxx-42	13.4	2.6	5.22
C	W10 / Wxx-36	13.8	2.2	6.15
D	W10 / Wxx-30	14.2	2.0	7.04
E	W10 / Wxx-55	11.9	3.6	3.33
F	W10 / Wxx-55	11.9	3.6	3.33

SCOP DATA EN 14825:2018
Source - Water [10°C] / Medium Temperature [55°C]

SCOPon	5.05
SCOPnet	5.05
SCOP	5.01
η [%]	200.39
Label	A+++
Qh [kWh]	24585
Pdesignh [kW]	11.9
Tbivalent [°C]	-10.00

Low temperature cooling W 12 / 7°C

Operating conditions		Qc	P	EER
A	W30-35 / W12-7	7.7	2.5	3.13
B	W26-xx / W12-7	8.1	2.2	3.59
C	W22-xx / W12-7	8.4	2.0	4.11
D	W18-xx / W12-7	8.6	2.0	4.39

SEER DATA EN 14825:2018 [W 12 / 7°C]

SEERon	3.94
SEER	3.92
Qc [kWh]	4320
η [%]	156.82

Radiant cooling W 23 / 18°C

Operating conditions		Qc	P	EER
A	W50-xx / W23-18	8.1	3.7	2.17
B	W40-xx / W23-18	9.6	3.0	3.17
C	W30-35 / W23-18	11.1	2.5	4.50
D	W26-xx / W23-18	11.6	2.2	5.16

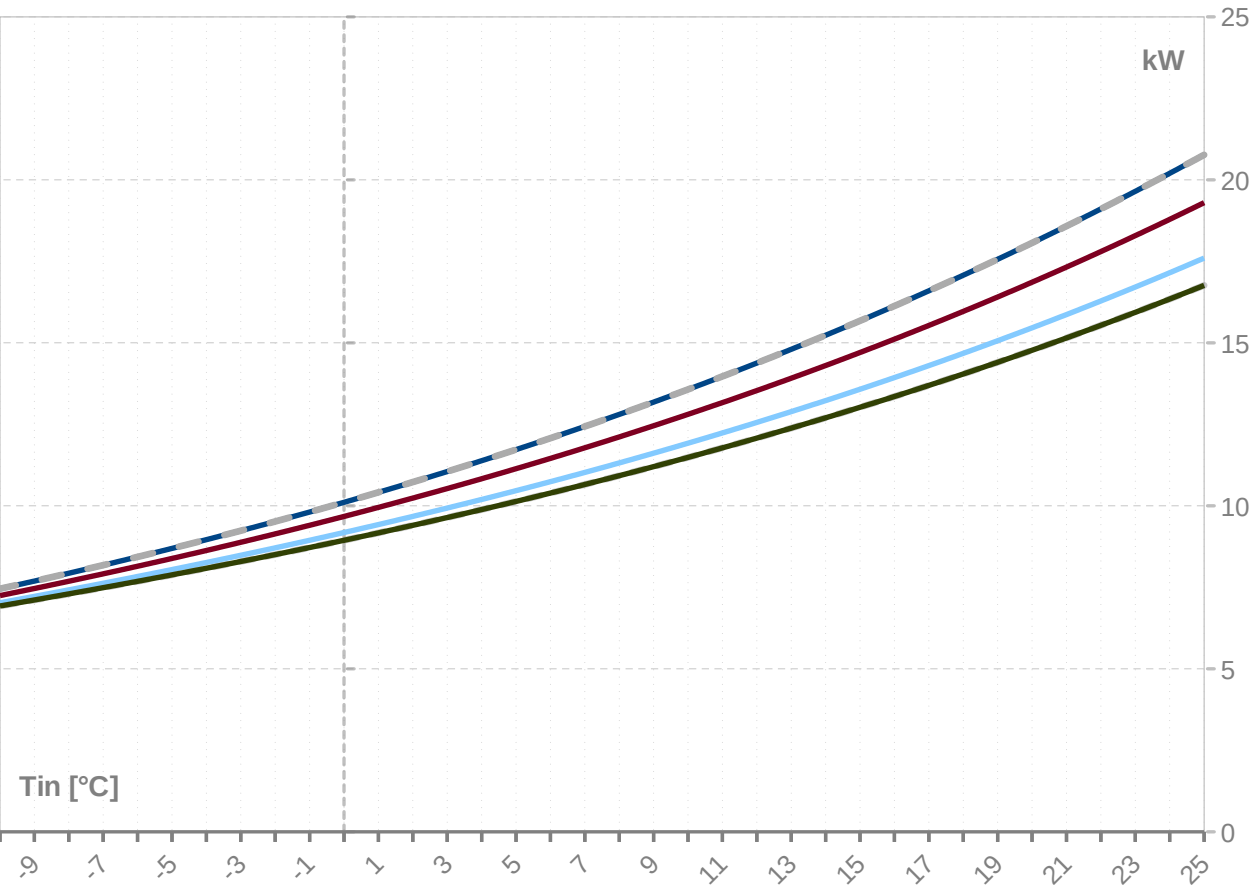
SEER DATA EN 14825:2018 [W 23 / 18°C]

SEERon	5.66
SEER	5.62
Qc [kWh]	4320
η [%]	224.61

Performance lines - heating

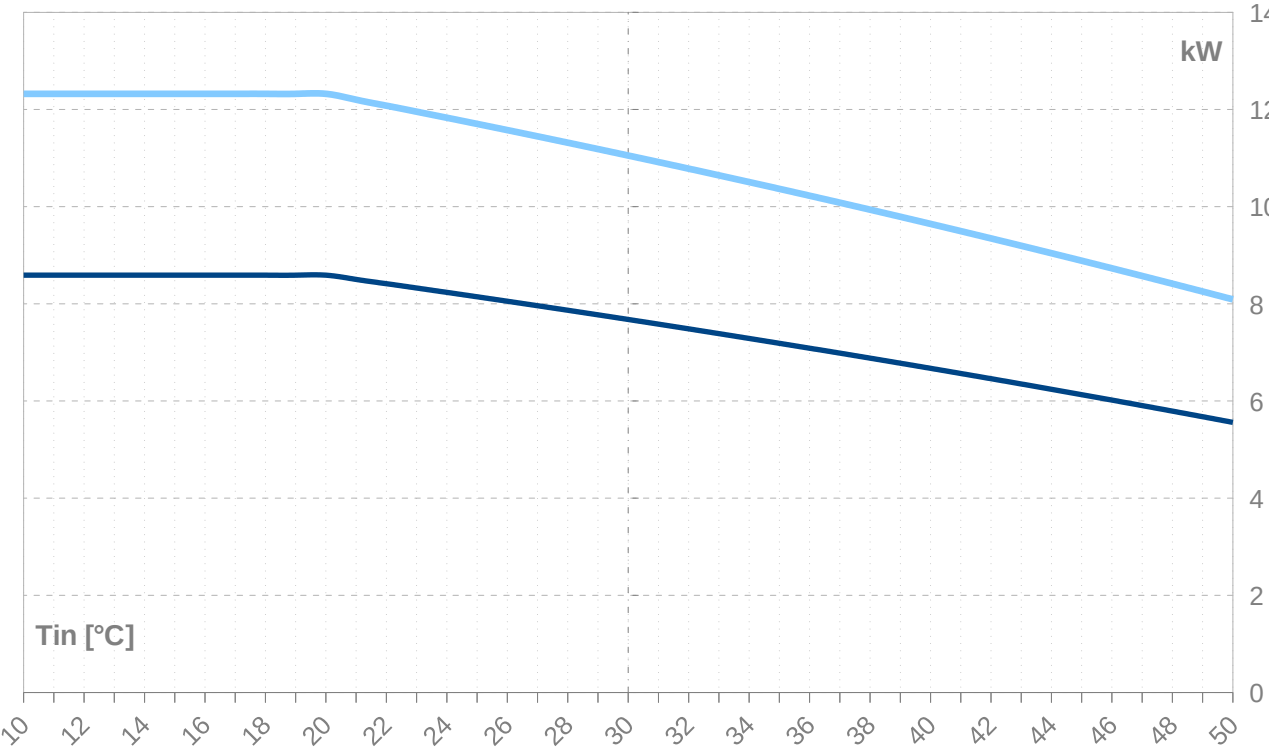
ZH09K1P-TFM_R410A_1_BWW

Qh-nom-35 Qh-min-35 Qh-max-60 Qh-nom-45 Qh-nom-55
Qh-nom-60



Performance lines - cooling

Qc-nom-12-7 Qc-nom-23-18



Th -OU	35										
Ts -IN	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	20.8	20.8	20.8	2.2	2.2	2.2	9.55	18.7	18.7	18.7	4.0
24	20.2	20.2	20.2	2.2	2.2	2.2	9.26	18.2	18.2	18.2	4.0
23	19.6	19.6	19.6	2.2	2.2	2.2	8.97	17.6	17.6	17.6	4.0
22	19.1	19.1	19.1	2.2	2.2	2.2	8.70	17.1	17.1	17.1	4.0
21	18.6	18.6	18.6	2.2	2.2	2.2	8.43	16.5	16.5	16.5	4.0
20	18.1	18.1	18.1	2.2	2.2	2.2	8.17	16.0	16.0	16.0	4.0
19	17.6	17.6	17.6	2.2	2.2	2.2	7.91	15.5	15.5	15.5	4.1
18	17.1	17.1	17.1	2.2	2.2	2.2	7.67	15.0	15.0	15.0	4.1
17	16.6	16.6	16.6	2.2	2.2	2.2	7.43	14.5	14.5	14.5	4.1
16	16.1	16.1	16.1	2.2	2.2	2.2	7.20	14.0	14.0	14.0	4.1
15	15.7	15.7	15.7	2.2	2.2	2.2	6.98	13.6	13.6	13.6	4.1
14	15.2	15.2	15.2	2.3	2.3	2.3	6.76	13.1	13.1	13.1	4.1
13	14.8	14.8	14.8	2.3	2.3	2.3	6.55	12.7	12.7	12.7	4.1
12	14.4	14.4	14.4	2.3	2.3	2.3	6.35	12.3	12.3	12.3	4.1
11	14.0	14.0	14.0	2.3	2.3	2.3	6.16	11.9	11.9	11.9	4.1
10	13.6	13.6	13.6	2.3	2.3	2.3	5.97	11.4	11.4	11.4	4.1
9	13.2	13.2	13.2	2.3	2.3	2.3	5.79	11.1	11.1	11.1	4.1
8	12.8	12.8	12.8	2.3	2.3	2.3	5.61	10.7	10.7	10.7	4.1
7	12.4	12.4	12.4	2.3	2.3	2.3	5.44	10.3	10.3	10.3	4.1
6	12.1	12.1	12.1	2.3	2.3	2.3	5.27	9.9	9.9	9.9	4.1
5	11.7	11.7	11.7	2.3	2.3	2.3	5.12	9.6	9.6	9.6	4.1
4	11.4	11.4	11.4	2.3	2.3	2.3	4.96	9.2	9.2	9.2	4.1
3	11.0	11.0	11.0	2.3	2.3	2.3	4.81	8.9	8.9	8.9	4.1
2	10.7	10.7	10.7	2.3	2.3	2.3	4.67	8.6	8.6	8.6	4.2
1	10.4	10.4	10.4	2.3	2.3	2.3	4.53	8.3	8.3	8.3	4.2
0	10.1	10.1	10.1	2.3	2.3	2.3	4.40	8.0	8.0	8.0	4.2
-1	9.8	9.8	9.8	2.3	2.3	2.3	4.27	7.7	7.7	7.7	4.2
-2	9.5	9.5	9.5	2.3	2.3	2.3	4.15	7.4	7.4	7.4	4.1
-3	9.2	9.2	9.2	2.3	2.3	2.3	4.03	7.1	7.1	7.1	4.1
-4	9.0	9.0	9.0	2.3	2.3	2.3	3.91	6.8	6.8	6.8	4.1
-5	8.7	8.7	8.7	2.3	2.3	2.3	3.80	6.6	6.6	6.6	4.1
-6	8.4	8.4	8.4	2.3	2.3	2.3	3.69	6.3	6.3	6.3	4.1
-7	8.2	8.2	8.2	2.3	2.3	2.3	3.59	6.1	6.1	6.1	4.1
-8	7.9	7.9	7.9	2.3	2.3	2.3	3.49	5.8	5.8	5.8	4.1
-9	7.7	7.7	7.7	2.3	2.3	2.3	3.39	5.6	5.6	5.6	4.1
-10	7.5	7.5	7.5	2.3	2.3	2.3	3.30	5.3	5.3	5.3	4.1
-11	7.2	7.2	7.2	2.3	2.3	2.3	3.21	5.1	5.1	5.1	4.1
-12	7.0	7.0	7.0	2.2	2.2	2.2	3.12	4.9	4.9	4.9	4.1
-13	6.8	6.8	6.8	2.2	2.2	2.2	3.04	4.7	4.7	4.7	4.1
-14	6.6	6.6	6.6	2.2	2.2	2.2	2.96	4.5	4.5	4.5	4.1
-15	6.4	6.4	6.4	2.2	2.2	2.2	2.88	4.3	4.3	4.3	4.0

-- attention: operating limits not reflected in performance table

ZH09K1P-TFM_R410A_1_BWW

Th -OU	45										
°C]	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	19.3	19.3	19.3	2.8	2.8	2.8	6.99	16.7	16.7	16.7	4.8
24	18.8	18.8	18.8	2.8	2.8	2.8	6.79	16.2	16.2	16.2	4.8
23	18.3	18.3	18.3	2.8	2.8	2.8	6.59	15.7	15.7	15.7	4.8
22	17.8	17.8	17.8	2.8	2.8	2.8	6.40	15.2	15.2	15.2	4.8
21	17.3	17.3	17.3	2.8	2.8	2.8	6.21	14.7	14.7	14.7	4.8
20	16.9	16.9	16.9	2.8	2.8	2.8	6.03	14.2	14.2	14.2	4.8
19	16.4	16.4	16.4	2.8	2.8	2.8	5.85	13.8	13.8	13.8	4.8
18	16.0	16.0	16.0	2.8	2.8	2.8	5.69	13.3	13.3	13.3	4.8
17	15.5	15.5	15.5	2.8	2.8	2.8	5.52	12.9	12.9	12.9	4.8
16	15.1	15.1	15.1	2.8	2.8	2.8	5.36	12.5	12.5	12.5	4.8
15	14.7	14.7	14.7	2.8	2.8	2.8	5.21	12.1	12.1	12.1	4.8
14	14.3	14.3	14.3	2.8	2.8	2.8	5.06	11.7	11.7	11.7	4.8
13	13.9	13.9	13.9	2.8	2.8	2.8	4.92	11.3	11.3	11.3	4.8
12	13.5	13.5	13.5	2.8	2.8	2.8	4.78	10.9	10.9	10.9	4.8
11	13.2	13.2	13.2	2.8	2.8	2.8	4.64	10.5	10.5	10.5	4.8
10	12.8	12.8	12.8	2.8	2.8	2.8	4.51	10.2	10.2	10.2	4.8
9	12.5	12.5	12.5	2.8	2.8	2.8	4.38	9.8	9.8	9.8	4.8
8	12.1	12.1	12.1	2.8	2.8	2.8	4.26	9.5	9.5	9.5	4.8
7	11.8	11.8	11.8	2.8	2.8	2.8	4.15	9.1	9.1	9.1	4.8
6	11.5	11.5	11.5	2.8	2.8	2.8	4.03	8.8	8.8	8.8	4.8
5	11.1	11.1	11.1	2.8	2.8	2.8	3.92	8.5	8.5	8.5	4.8
4	10.8	10.8	10.8	2.8	2.8	2.8	3.82	8.2	8.2	8.2	4.8
3	10.5	10.5	10.5	2.8	2.8	2.8	3.71	7.9	7.9	7.9	4.8
2	10.2	10.2	10.2	2.8	2.8	2.8	3.61	7.6	7.6	7.6	4.8
1	10.0	10.0	10.0	2.8	2.8	2.8	3.52	7.3	7.3	7.3	4.8
0	9.7	9.7	9.7	2.8	2.8	2.8	3.43	7.0	7.0	7.0	4.8
-1	9.4	9.4	9.4	2.8	2.8	2.8	3.34	6.8	6.8	6.8	4.8
-2	9.1	9.1	9.1	2.8	2.8	2.8	3.25	6.5	6.5	6.5	4.8
-3	8.9	8.9	8.9	2.8	2.8	2.8	3.17	6.3	6.3	6.3	4.8
-4	8.6	8.6	8.6	2.8	2.8	2.8	3.09	6.0	6.0	6.0	4.8
-5	8.4	8.4	8.4	2.8	2.8	2.8	3.01	5.8	5.8	5.8	4.8
-6	8.1	8.1	8.1	2.8	2.8	2.8	2.93	5.6	5.6	5.6	4.8
-7	7.9	7.9	7.9	2.8	2.8	2.8	2.86	5.3	5.3	5.3	4.7
-8	7.7	7.7	7.7	2.8	2.8	2.8	2.79	5.1	5.1	5.1	4.7
-9	7.5	7.5	7.5	2.7	2.7	2.7	2.72	4.9	4.9	4.9	4.7
-10	7.2	7.2	7.2	2.7	2.7	2.7	2.65	4.7	4.7	4.7	4.7
-11	7.0	7.0	7.0	2.7	2.7	2.7	2.59	4.5	4.5	4.5	4.7
-12	6.8	6.8	6.8	2.7	2.7	2.7	2.53	4.3	4.3	4.3	4.7
-13	6.6	6.6	6.6	2.7	2.7	2.7	2.47	4.1	4.1	4.1	4.6
-14	6.4	6.4	6.4	2.7	2.7	2.7	2.41	3.9	3.9	3.9	4.6
-15	6.2	6.2	6.2	2.6	2.6	2.6	2.35	3.8	3.8	3.8	4.6

-- attention: operating limits not reflected in performance table

Th -OU	55										
Ts -IN	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	17.6	17.6	17.6	3.6	3.6	3.6	4.95	14.3	14.3	14.3	5.7
24	17.1	17.1	17.1	3.6	3.6	3.6	4.82	13.8	13.8	13.8	5.7
23	16.7	16.7	16.7	3.6	3.6	3.6	4.69	13.4	13.4	13.4	5.7
22	16.3	16.3	16.3	3.6	3.6	3.6	4.56	12.9	12.9	12.9	5.7
21	15.9	15.9	15.9	3.6	3.6	3.6	4.44	12.5	12.5	12.5	5.7
20	15.5	15.5	15.5	3.6	3.6	3.6	4.32	12.1	12.1	12.1	5.7
19	15.1	15.1	15.1	3.6	3.6	3.6	4.20	11.7	11.7	11.7	5.7
18	14.7	14.7	14.7	3.6	3.6	3.6	4.09	11.3	11.3	11.3	5.7
17	14.3	14.3	14.3	3.6	3.6	3.6	3.99	11.0	11.0	11.0	5.7
16	13.9	13.9	13.9	3.6	3.6	3.6	3.88	10.6	10.6	10.6	5.7
15	13.6	13.6	13.6	3.6	3.6	3.6	3.78	10.2	10.2	10.2	5.7
14	13.2	13.2	13.2	3.6	3.6	3.6	3.68	9.9	9.9	9.9	5.7
13	12.9	12.9	12.9	3.6	3.6	3.6	3.59	9.5	9.5	9.5	5.7
12	12.6	12.6	12.6	3.6	3.6	3.6	3.50	9.2	9.2	9.2	5.7
11	12.2	12.2	12.2	3.6	3.6	3.6	3.41	8.9	8.9	8.9	5.7
10	11.9	11.9	11.9	3.6	3.6	3.6	3.33	8.6	8.6	8.6	5.7
9	11.6	11.6	11.6	3.6	3.6	3.6	3.24	8.3	8.3	8.3	5.7
8	11.3	11.3	11.3	3.6	3.6	3.6	3.17	8.0	8.0	8.0	5.7
7	11.0	11.0	11.0	3.6	3.6	3.6	3.09	7.7	7.7	7.7	5.7
6	10.7	10.7	10.7	3.6	3.6	3.6	3.01	7.4	7.4	7.4	5.7
5	10.5	10.5	10.5	3.6	3.6	3.6	2.94	7.1	7.1	7.1	5.7
4	10.2	10.2	10.2	3.5	3.5	3.5	2.87	6.9	6.9	6.9	5.7
3	9.9	9.9	9.9	3.5	3.5	3.5	2.81	6.6	6.6	6.6	5.7
2	9.7	9.7	9.7	3.5	3.5	3.5	2.74	6.4	6.4	6.4	5.6
1	9.4	9.4	9.4	3.5	3.5	3.5	2.68	6.1	6.1	6.1	5.6
0	9.2	9.2	9.2	3.5	3.5	3.5	2.62	5.9	5.9	5.9	5.6
-1	8.9	8.9	8.9	3.5	3.5	3.5	2.56	5.7	5.7	5.7	5.6
-2	8.7	8.7	8.7	3.5	3.5	3.5	2.50	5.5	5.5	5.5	5.6
-3	8.5	8.5	8.5	3.5	3.5	3.5	2.45	5.2	5.2	5.2	5.6
-4	8.3	8.3	8.3	3.4	3.4	3.4	2.39	5.0	5.0	5.0	5.6
-5	8.0	8.0	8.0	3.4	3.4	3.4	2.34	4.8	4.8	4.8	5.5
-6	7.8	7.8	7.8	3.4	3.4	3.4	2.29	4.6	4.6	4.6	5.5
-7	7.6	7.6	7.6	3.4	3.4	3.4	2.25	4.5	4.5	4.5	5.5
-8	7.4	7.4	7.4	3.4	3.4	3.4	2.20	4.3	4.3	4.3	5.5
-9	7.2	7.2	7.2	3.4	3.4	3.4	2.15	4.1	4.1	4.1	5.4
-10	7.0	7.0	7.0	3.3	3.3	3.3	2.11	3.9	3.9	3.9	5.4
-11	6.8	6.8	6.8	3.3	3.3	3.3	2.07	3.7	3.7	3.7	5.4
-12	6.6	6.6	6.6	3.3	3.3	3.3	2.02	3.6	3.6	3.6	5.3
-13	6.5	6.5	6.5	3.3	3.3	3.3	1.98	3.4	3.4	3.4	5.3
-14	6.3	6.3	6.3	3.2	3.2	3.2	1.95	3.3	3.3	3.3	5.3
-15	6.1	6.1	6.1	3.2	3.2	3.2	1.91	3.1	3.1	3.1	5.2

-- attention: operating limits not reflected in performance table

Th -OU	60 (T-max)										
°C]	Qh nom	Qh min	Qh max	Pin nom	Pin min	Pin max	COP nom	Qc nom	Qc min	Qc max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
25	16.8	16.8	16.8	4.0	4.0	4.0	4.20	13.0	13.0	13.0	6.2
24	16.3	16.3	16.3	4.0	4.0	4.0	4.09	12.6	12.6	12.6	6.2
23	15.9	15.9	15.9	4.0	4.0	4.0	3.98	12.2	12.2	12.2	6.2
22	15.5	15.5	15.5	4.0	4.0	4.0	3.88	11.8	11.8	11.8	6.2
21	15.1	15.1	15.1	4.0	4.0	4.0	3.78	11.4	11.4	11.4	6.2
20	14.8	14.8	14.8	4.0	4.0	4.0	3.68	11.0	11.0	11.0	6.2
19	14.4	14.4	14.4	4.0	4.0	4.0	3.59	10.7	10.7	10.7	6.2
18	14.0	14.0	14.0	4.0	4.0	4.0	3.50	10.3	10.3	10.3	6.2
17	13.7	13.7	13.7	4.0	4.0	4.0	3.42	9.9	9.9	9.9	6.2
16	13.4	13.4	13.4	4.0	4.0	4.0	3.33	9.6	9.6	9.6	6.2
15	13.0	13.0	13.0	4.0	4.0	4.0	3.25	9.3	9.3	9.3	6.2
14	12.7	12.7	12.7	4.0	4.0	4.0	3.17	9.0	9.0	9.0	6.2
13	12.4	12.4	12.4	4.0	4.0	4.0	3.09	8.6	8.6	8.6	6.2
12	12.1	12.1	12.1	4.0	4.0	4.0	3.02	8.3	8.3	8.3	6.2
11	11.8	11.8	11.8	4.0	4.0	4.0	2.95	8.0	8.0	8.0	6.2
10	11.5	11.5	11.5	4.0	4.0	4.0	2.88	7.8	7.8	7.8	6.2
9	11.2	11.2	11.2	4.0	4.0	4.0	2.81	7.5	7.5	7.5	6.2
8	10.9	10.9	10.9	4.0	4.0	4.0	2.75	7.2	7.2	7.2	6.2
7	10.7	10.7	10.7	4.0	4.0	4.0	2.69	7.0	7.0	7.0	6.1
6	10.4	10.4	10.4	4.0	4.0	4.0	2.63	6.7	6.7	6.7	6.1
5	10.1	10.1	10.1	3.9	3.9	3.9	2.57	6.5	6.5	6.5	6.1
4	9.9	9.9	9.9	3.9	3.9	3.9	2.51	6.2	6.2	6.2	6.1
3	9.6	9.6	9.6	3.9	3.9	3.9	2.46	6.0	6.0	6.0	6.1
2	9.4	9.4	9.4	3.9	3.9	3.9	2.41	5.8	5.8	5.8	6.1
1	9.2	9.2	9.2	3.9	3.9	3.9	2.36	5.5	5.5	5.5	6.1
0	8.9	8.9	8.9	3.9	3.9	3.9	2.31	5.3	5.3	5.3	6.0
-1	8.7	8.7	8.7	3.9	3.9	3.9	2.26	5.1	5.1	5.1	6.0
-2	8.5	8.5	8.5	3.8	3.8	3.8	2.21	4.9	4.9	4.9	6.0
-3	8.3	8.3	8.3	3.8	3.8	3.8	2.17	4.7	4.7	4.7	6.0
-4	8.1	8.1	8.1	3.8	3.8	3.8	2.13	4.5	4.5	4.5	5.9
-5	7.9	7.9	7.9	3.8	3.8	3.8	2.09	4.4	4.4	4.4	5.9
-6	7.7	7.7	7.7	3.8	3.8	3.8	2.05	4.2	4.2	4.2	5.9
-7	7.5	7.5	7.5	3.7	3.7	3.7	2.01	4.0	4.0	4.0	5.9
-8	7.3	7.3	7.3	3.7	3.7	3.7	1.97	3.8	3.8	3.8	5.8
-9	7.1	7.1	7.1	3.7	3.7	3.7	1.93	3.7	3.7	3.7	5.8
-10	6.9	6.9	6.9	3.7	3.7	3.7	1.90	3.5	3.5	3.5	5.8
-11	6.7	6.7	6.7	3.6	3.6	3.6	1.86	3.4	3.4	3.4	5.7
-12	6.6	6.6	6.6	3.6	3.6	3.6	1.83	3.2	3.2	3.2	5.7
-13	6.4	6.4	6.4	3.6	3.6	3.6	1.80	3.1	3.1	3.1	5.7
-14	6.2	6.2	6.2	3.5	3.5	3.5	1.76	2.9	2.9	2.9	5.6
-15	6.0	6.0	6.0	3.5	3.5	3.5	1.73	2.8	2.8	2.8	5.6

-- attention: operating limits not reflected in performance table

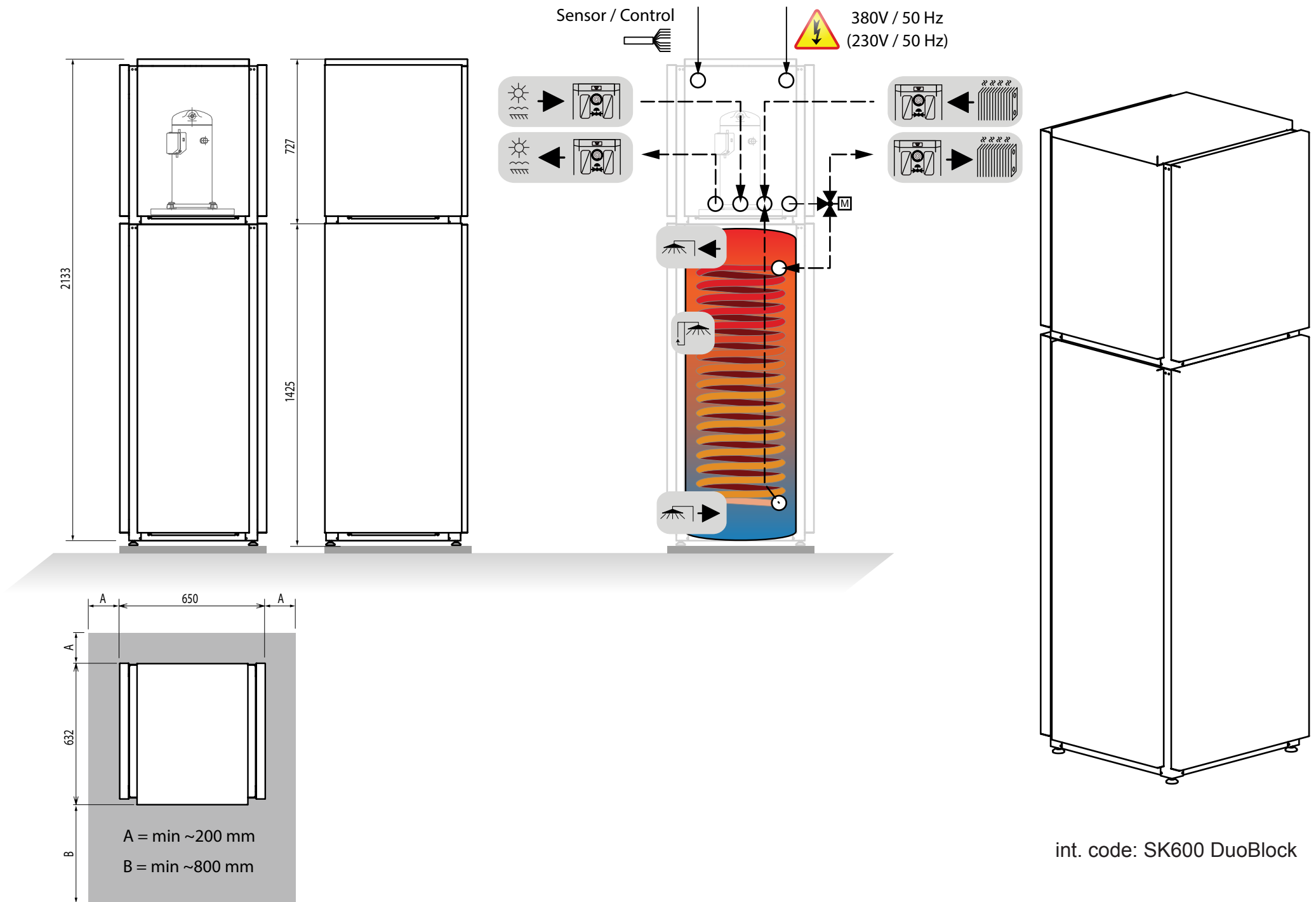
Tc -OU		W 12 / 7 °C									
Ts -IN	Qc nom	Qc min	Qc max	Pin nom	Pin min	Pin max	EER	Qh nom	Qh min	Qh max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
40	6.7	6.7	6.7	3.0	3.0	3.0	2.20	9.5	9.5	9.5	5.1
39	6.8	6.8	6.8	3.0	3.0	3.0	2.28	9.6	9.6	9.6	5.0
38	6.9	6.9	6.9	2.9	2.9	2.9	2.36	9.6	9.6	9.6	4.9
37	7.0	7.0	7.0	2.9	2.9	2.9	2.45	9.6	9.6	9.6	4.9
36	7.1	7.1	7.1	2.8	2.8	2.8	2.54	9.7	9.7	9.7	4.8
35	7.2	7.2	7.2	2.7	2.7	2.7	2.63	9.7	9.7	9.7	4.7
34	7.3	7.3	7.3	2.7	2.7	2.7	2.72	9.8	9.8	9.8	4.6
33	7.4	7.4	7.4	2.6	2.6	2.6	2.82	9.8	9.8	9.8	4.6
32	7.5	7.5	7.5	2.6	2.6	2.6	2.92	9.9	9.9	9.9	4.5
31	7.6	7.6	7.6	2.5	2.5	2.5	3.02	9.9	9.9	9.9	4.4
30	7.7	7.7	7.7	2.5	2.5	2.5	3.13	10.0	10.0	10.0	4.4
29	7.8	7.8	7.8	2.4	2.4	2.4	3.24	10.0	10.0	10.0	4.3
28	7.9	7.9	7.9	2.3	2.3	2.3	3.35	10.1	10.1	10.1	4.2
27	8.0	8.0	8.0	2.3	2.3	2.3	3.47	10.1	10.1	10.1	4.2
26	8.1	8.1	8.1	2.2	2.2	2.2	3.59	10.2	10.2	10.2	4.1
25	8.1	8.1	8.1	2.2	2.2	2.2	3.71	10.2	10.2	10.2	4.0
24	8.2	8.2	8.2	2.1	2.1	2.1	3.84	10.2	10.2	10.2	4.0
23	8.3	8.3	8.3	2.1	2.1	2.1	3.97	10.3	10.3	10.3	3.9
22	8.4	8.4	8.4	2.0	2.0	2.0	4.11	10.3	10.3	10.3	3.8
21	8.5	8.5	8.5	2.0	2.0	2.0	4.25	10.4	10.4	10.4	3.8
20	8.6	8.6	8.6	2.0	2.0	2.0	4.39	10.4	10.4	10.4	3.7

Tc [°C]		W 23 / 18 °C									
0	Qc nom	Qc min	Qc max	Pin nom	Pin min	Pin max	EER	Qh nom	Qh min	Qh max	I nom
[°C]	[kW]	[kW]	[kW]	[kW]	[kW]	[kW]	kW / kW	[kW]	[kW]	[kW]	[A]
40	9.6	9.6	9.6	3.0	3.0	3.0	3.17	12.5	12.5	11.7	5.1
39	9.8	9.8	9.8	3.0	3.0	3.0	3.29	12.6	12.6	11.7	5.0
38	9.9	9.9	9.9	2.9	2.9	2.9	3.41	12.7	12.7	11.8	5.0
37	10.1	10.1	10.1	2.9	2.9	2.9	3.53	12.8	12.8	11.9	4.9
36	10.2	10.2	10.2	2.8	2.8	2.8	3.66	12.8	12.8	12.0	4.8
35	10.4	10.4	10.4	2.7	2.7	2.7	3.79	12.9	12.9	12.1	4.7
34	10.5	10.5	10.5	2.7	2.7	2.7	3.92	13.0	13.0	12.2	4.6
33	10.6	10.6	10.6	2.6	2.6	2.6	4.06	13.1	13.1	12.3	4.6
32	10.8	10.8	10.8	2.6	2.6	2.6	4.21	13.2	13.2	12.3	4.5
31	10.9	10.9	10.9	2.5	2.5	2.5	4.35	13.3	13.3	12.4	4.4
30	11.1	11.1	11.1	2.5	2.5	2.5	4.50	13.3	13.3	12.5	4.3
29	11.2	11.2	11.2	2.4	2.4	2.4	4.66	13.4	13.4	12.6	4.3
28	11.3	11.3	11.3	2.3	2.3	2.3	4.82	13.5	13.5	12.7	4.2
27	11.4	11.4	11.4	2.3	2.3	2.3	4.98	13.6	13.6	12.8	4.1
26	11.6	11.6	11.6	2.2	2.2	2.2	5.16	13.6	13.6	12.8	4.1
25	11.7	11.7	11.7	2.2	2.2	2.2	5.33	13.7	13.7	12.9	4.0
24	11.8	11.8	11.8	2.1	2.1	2.1	5.51	13.8	13.8	13.0	3.9
23	12.0	12.0	12.0	2.1	2.1	2.1	5.70	13.9	13.9	13.1	3.8
22	12.1	12.1	12.1	2.0	2.0	2.0	5.89	14.0	14.0	13.2	3.8
21	12.2	12.2	12.2	2.0	2.0	2.0	6.09	14.0	14.0	13.3	3.7
20	12.3	12.3	12.3	2.0	2.0	2.0	6.30	14.1	14.1	13.3	3.6

-- attention: operating limits not reflected in performance table

LEGEND:

Ts-IN: Temperature renewable source - inlet [°C]
Th-OU: Temperature heating - outlet (flow) [°C]
Tc-OU: Temperature cooling - outlet (flow) [°C]
Qh nom: Heating capacity nominal
Qh min: Heating capacity minimal
Qh max: Heating capacity maximal
Pin nom: Power input at nominal heating capacity
Pin min: Power input at minimal heating capacity
Pin max: Power input at maximal heating capacity
COP nom: coefficient of performance at nominal heating capacity
Qc nom: cooling / heat extraction capacity at nominal heating capacity
Qc min: cooling / heat extraction at minimal heating capacity
Qc max: cooling / heat extraction at maximal heating capacity
I nom: Current at nominal heating capacity
EER: energy efficiency ratio at nominal cooling capacity



int. code: SK600 DuoBlock