



## Heat pump



# TWW 28 EVI

# WAMAK TWW 28 EVI

## Product description

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Heat pump with two power stages for heating and domestic hot water with the possibility of passive cooling control. One short closed refrigerant circuit with a pair of quiet Scroll compressors and robust stainless steel plate heat exchangers. Through the connection kit, the circulation pumps can be easily and quickly connected while externally controlling their variable speed.

Use for multi-family dwellings, suburban mixed-use buildings or commercial operations. The Urban range is based on a robust construction quality steel for all parts. High quality, long proven heat pump circuit components extend the life of the heat pump.

As a primary source, thermal energy from underground water at a depth of between 12 and 30 metres is used. A submersible pump delivers the groundwater to the heat pump and, depending on the quality and chemical composition, the heat from the groundwater is extracted either directly in the heat pump or through a separating heat exchanger with an intermediate circuit and antifreeze. The heat pump then raises this temperature to a usable temperature for heating or hot water.

The EVI ( Enhanced Vapour Injection ) technology allows the heat pump to achieve higher header flow temperatures even at lower source temperatures. EVI also has a positive impact on the compressor lifespan and overall system stability because the discharge gas temperature from the compressor is lower.

The twin compressors give the system robustness and the ability to distribute the heat output according to the actual load.

## Product features

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

## Basic performance data - WAMAK TWW 28 EVI

Heating - EN 14511		
<b>Heating capacity [kW]</b>	W10 / W35 (max)	<b>29.4 ( 14.7 / 29.4 )</b>
	W10 / W35 (min)	<b>14.7 ( 14.7 / 29.4 )</b>
	W10 / W34	<b>29.4 ( 14.7 / 29.4 )</b>
<b>Electrical power input [kW]</b>	W10 / W35 (max)	<b>4.7 ( 2.3 / 4.7 )</b>
	W10 / W35 (min)	<b>2.3 ( 2.3 / 4.7 )</b>
	W10 / W34	<b>4.5 ( 3.6 / 7.3 )</b>
<b>Heating efficiency faktor [COP]</b>	W10 / W35 (max)	6.29
	W10 / W35 (min)	6.38
	W10 / W34	6.49
Seasonal space heating energy efficiency - SCOP EN 14825		
Average Climate / Low Temperature [35°C]	SCOP	7.53
	η [ % ]	301.3
	Label	A+++
	Qhe [ kWh ]	60740.4
	Pdesignh [ kW ]	29.4
	Tbivalent [ °C ]	-10
Cooling		
<b>Cooling capacity - [kW]</b>	A35 / W23-18	23.0
	A25 / W23-18	24.7
	A35 / W12-7	17.1
	A25 / W12-7	17.1
Seasonal space cooling energy efficiency - SEER EN 14825		
[ W 23 / 18°C ]	SEER	5.59
	Qce [ kWh ]	10260.0
	ηc [ % ]	223.6
Sound EN 12102		
<b>Acoustic power - Lw</b>	dB(A)	53
<b>Acoustic pressure - Lp</b>	1 m dB(A)	45
	5 m dB(A)	31
	10 m dB(A)	25
Mechanical and operational information		
<b>Compressor type (3~ 400/50)</b>	SCROLL / 2 /	On/Off
<b>Refrigerant</b>	R410A (GWP - 2088)	5.7 kg
<b>Operating limit temperatures heating - (min / max ) [ °C ]</b>	<b>25 / 65</b>	
<b>Operating limit temperatures source - (min / max ) [ °C ]</b>	<b>-10 (7) / 30</b>	
<b>Weight</b>	225 kg	

## Main technical data - WAMAK TWW 28 EVI

Enclosure type			VN800T			
Basic dimensions	Height [mm]	1270	Operating limit temperatures heating	MAX [°C]	65	
	Width [mm]	850		MIN [°C]	25	
	Length [mm]	630	for more see operating limits diagram			
Weight [kg]	225	Condenser	Port size	1.1/4 "		
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	2	Maximal operating pressure - Water [bar]	3		
	On/Off		Testing pressure [bar]	70		
	Power factor Cosφ	0.79	Heat transfer medium	Water		
	Winding resistance	3.20 Ohm	Volume flow - Water [m3/h]	2.55 ~ 5.09		
Refrigerant	R410A		Internal pressure drop - Water [kPa]	20		
	Volme	5.7 kg	Temperature difference @ 35°C (nom)	5 K		
	GWP	2088	@ 55°C	8 K		
	Safety class	A1	@ 65°C	10 K		
Refrigeration oil type	POE RL32-3MAF			Renewable energy extraction side data		
	Oil volume	2 x 1.25 L	Operating limit temperatures source	MIN [°C]	-10 (7)	
Maximal pressure - refrigerant [bar]	45			MAX [°C]	30	
	PED class	1	for more see operating limits diagram			
EVI - vapour injection with economizer			Evaporator	Port size	1.1/2 "	
Electrical connection data				Type	BPHE	
Line voltage [#~ V/Hz]				Count	1	
Current	nominal [A]	8.56		Material	AISI 316	
	maximal [A]	18.40		Maximal operating pressure - refrigerant [bar]	28	
	starting [A]	11.56		Heat transfer medium	Water	
Softstart				Maximal operating pressure - Water [bar]	3	
Main safety				Volume flow - Water [m3/h]	2.67 ~ 5.35	
Control System				Internal pressure drop - Water [kPa]	12	
Main controller	SIEMENS	RVS 61		Temperature difference - Water	4 K	
Extension module	AVS75.3xx	AVS75.3xx	AVS75.372			
Bus Clip-In			Modbus OCI352			
Online connection		Web server OZW672	ToSyMo			
Superheat controller			SEC61			
*** with accessory						

# WAMAK TWW 28 EVI

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

Model	TWW 28 EVI		
Air-to-water heat pump		no	
Brine-to-water heat pump		no	
Water-to-water heat pump		yes	
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	29.4	kW	Seasonal space heating energy efficiency	ηs	301.3	%
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	29.4	kW	Tj = -7 °C	COPd	6.49	-
Tj = +2 °C	Pdh	29.5	kW	Tj = +2 °C	COPd	7.4	-
Tj = +7 °C	Pdh	14.8	kW	Tj = +7 °C	COPd	8.3	-
Tj = +12 °C	Pdh	14.8	kW	Tj = +12 °C	COPd	9.2	-
Tj = bivalent temperature	Pdh	29.4	kW	Tj = bivalent temperature	COPd	6.3	-
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	4.4	kW
Standby mode	Psb	0.010	kW	Type of energy input		electricity	
Crankcase heater mode	Pck	0.000	kW	For air-to-water heat pumps: Rated air flow rate, outdoors	-	---	m3/h
Other items				For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2.67 ~ 5.35	m3/h
Capacity control		multi-stage		Annual energy consumption	QHE	60740.4	kWh
Sound power level							
indoors	Lwa	53	dB				
outdoors	Lwa	---	dB				

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

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Model	TWW 28 EVI		
Air-to-water heat pump		no	
Brine-to-water heat pump		no	
Water-to-water heat pump		yes	
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	28.8	kW	Seasonal space heating energy efficiency	ηs	214.6	%
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	29.2	kW	Tj = -7 °C	COPd	4.00	-
Tj = +2 °C	Pdh	29.6	kW	Tj = +2 °C	COPd	5.5	-
Tj = +7 °C	Pdh	14.9	kW	Tj = +7 °C	COPd	6.6	-
Tj = +12 °C	Pdh	14.9	kW	Tj = +12 °C	COPd	7.6	-
Tj = bivalent temperature	Pdh	28.8	kW	Tj = bivalent temperature	COPd	3.5	-
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	4.4	kW
Standby mode	Psb	0.010	kW	Type of energy input		electricity	
Crankcase heater mode	Pck	0.000	kW	For air-to-water heat pumps: Rated air flow rate, outdoors	-	---	m3/h
Other items				For water- or brine-to-water heat pumps: Rated brine or water flow rate, outdoor heat exchanger	-	2.67 ~ 5.35	m3/h
Capacity control		multi-stage		Annual energy consumption	QHE	59500.8	kWh
Sound power level							
indoors	Lwa	53	dB				
outdoors	Lwa	---	dB				

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TWW 28 EVI



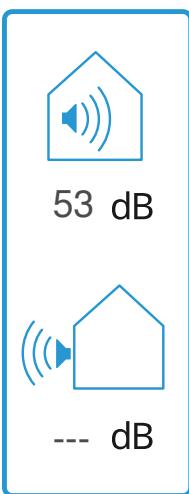
55 °C

35 °C

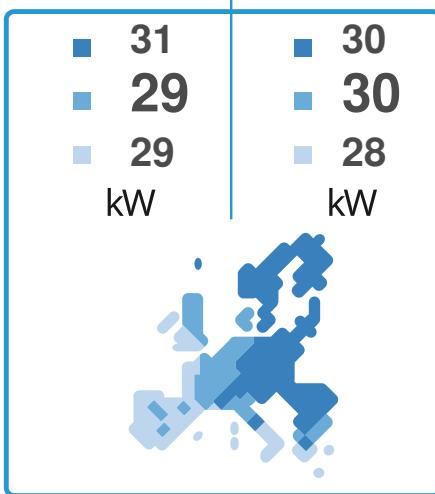


A+++

A+++



2019



811/2013

TWW 28 EVI

**ErP Data**

	55 °C	35 °C
Energy class	A+++	A+++
η [ % ]	214.6	301.3
P <sub>rated</sub> [ kW ]	29	30
Q <sub>HE</sub> [ kWh/y ]	59501	60741
SCOP [ - ]	5.36	7.53
T <sub>bivalent</sub> [ °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]**

ZHI11K1P-TFM\_R410A\_2\_BWW

Operating conditions		Qh	P	COP
1	B0 / W30-35	23.2	4.9	4.75
2	B0 / W30-35 ( MIN )	11.6	2.4	4.81
A	B0 / Wxx-34	23.2	4.8	4.87
B	B0 / Wxx-30	23.2	4.3	5.41
C	B0 / Wxx-27	11.6	1.9	5.95
D	B0 / Wxx-24	11.6	1.8	6.47
E	B0 / Wxx-35	23.2	4.9	4.75
F	B0 / Wxx-35	23.2	4.9	4.75

**SCOP DATA EN 14825:2018**

Source - Brine [0°C] / Low Temperature [35°C]	
SCOPon	5.54
SCOPnet	5.54
SCOP	5.51
η [ % ]	220.45
Label	A+++
Qh [ kWh ]	47931
Pdesignh [ kW ]	23.2
Tbivalent [ °C ]	-10

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

Operating conditions		Qh	P	COP
1	B0 / W47-55	23.4	8.2	2.86
2	B0 / W47-55 ( MIN )	11.7	4.0	2.90
A	B0 / Wxx-52	23.6	7.4	3.30
B	B0 / Wxx-42	23.8	5.6	4.33
C	B0 / Wxx-36	11.8	2.4	4.94
D	B0 / Wxx-30	11.7	2.1	5.57
E	B0 / Wxx-55	23.4	8.2	2.86
F	B0 / Wxx-54	23.6	7.6	3.12

**SCOP DATA EN 14825:2018**

Source - Brine [0°C] / Medium Temperature [55°C]	
SCOPon	4.22
SCOPnet	4.22
SCOP	4.20
η [ % ]	168.04
Label	A+++
Qh [ kWh ]	48344
Pdesignh [ kW ]	23.4
Tbivalent [ °C ]	-10

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

Operating conditions		Qh	P	COP
1	W10 / W30-35	29.4	4.7	6.29
2	W10 / W30-35 ( MIN )	14.7	2.3	6.38
A	W10 / Wxx-34	29.4	4.5	6.49
B	W10 / Wxx-30	29.5	4.0	7.37
C	W10 / Wxx-27	14.8	1.8	8.26
D	W10 / Wxx-24	14.8	1.6	9.19
E	W10 / Wxx-35	29.4	4.7	6.29
F	W10 / Wxx-35	29.4	4.7	6.29

**SCOP DATA EN 14825:2018**

Source - Water [10°C] / Low Temperature [35°C]	
SCOPon	7.57
SCOPnet	7.57
SCOP	7.53
η [ % ]	301.32
Label	A+++
Qh [ kWh ]	60740
Pdesignh [ kW ]	29.4
Tbivalent [ °C ]	-10.00

# WAMAK TWW 28 EVI

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

Operating conditions		Qh	P	COP	SCOP DATA EN 14825:2018	
1	W10 / W47-55	28.8	8.1	3.54	Source - Water [10°C] / Medium Temperature [55°C]	
2	W10 / W47-55 ( MIN )	14.4	4.0	3.59	SCOPon	5.38
A	W10 / Wxx-52	29.2	7.3	4.00	SCOPnet	5.38
B	W10 / Wxx-42	29.6	5.4	5.49	SCOP	5.36
C	W10 / Wxx-36	14.9	2.3	6.58	η [ % ]	214.56
D	W10 / Wxx-30	14.9	2.0	7.59	Label	A+++
E	W10 / Wxx-55	28.8	8.1	3.54	Qh [ kWh ]	59501
F	W10 / Wxx-55	28.8	8.1	3.54	Pdesignh [ kW ]	28.8
					Tbivalent [ °C ]	-10.00

## Low temperature cooling W 12 / 7°C

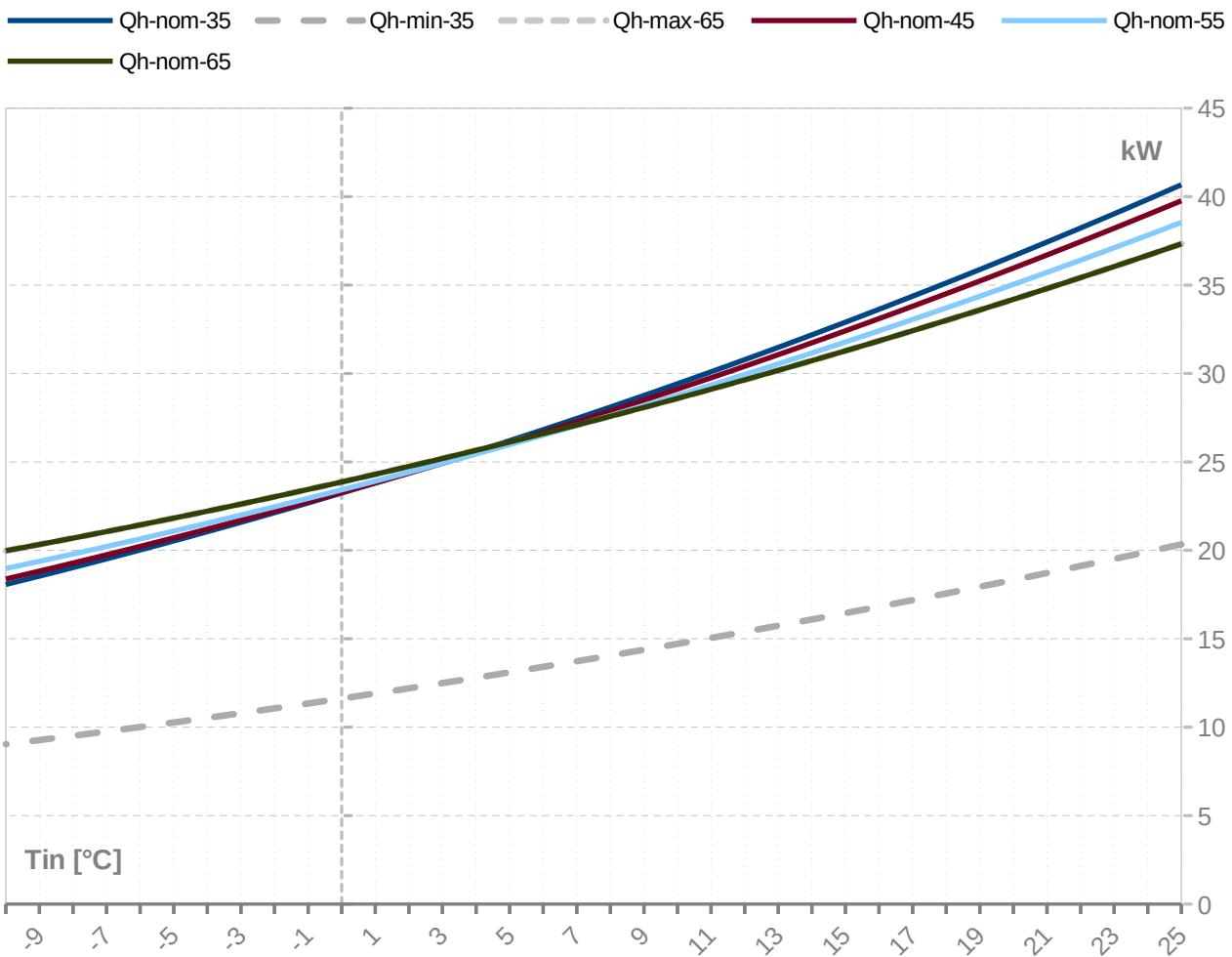
Operating conditions		Qc	P	EER	SEER DATA EN 14825:2018 [ W 12 / 7°C ]	
A	W30-35 / W12-7	17.7	5.3	3.35	SEERon	4.17
B	W26-xx / W12-7	18.2	4.8	3.81	SEER	4.16
C	W22-xx / W12-7	18.6	4.3	4.33	Qc [ kWh ]	10260
D	W18-xx / W12-7	18.8	4.1	4.61	η [ % ]	166.26

## Radiant cooling W 23 / 18°C

Operating conditions		Qc	P	EER	SEER DATA EN 14825:2018 [ W 23 / 18°C ]	
A	W50-xx / W23-18	19.9	8.8	2.25	SEERon	5.61
B	W40-xx / W23-18	22.1	6.8	3.23	SEER	5.59
C	W30-35 / W23-18	23.9	5.3	4.51	Qc [ kWh ]	10260
D	W26-xx / W23-18	24.5	4.8	5.13	η [ % ]	223.58

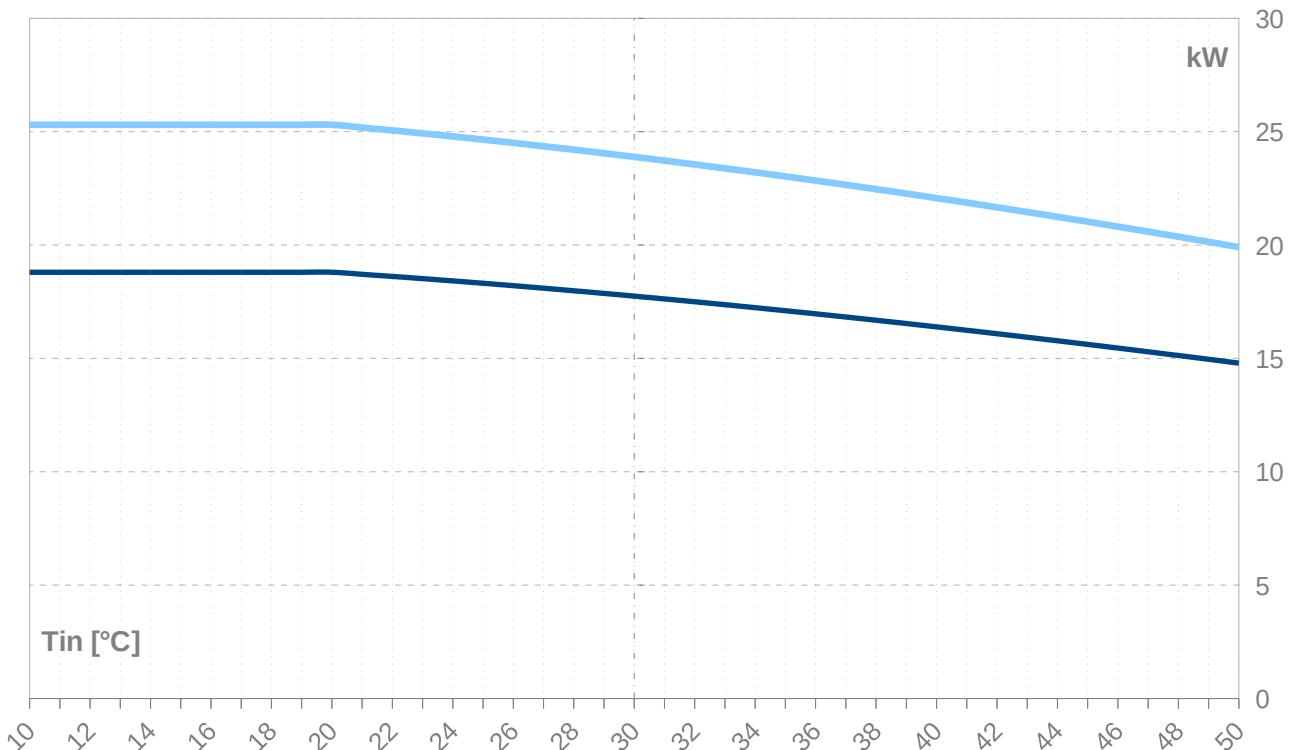
## Performance lines - heating

ZHI11K1P-TFM\_R410A\_2\_BWW



## Performance lines - cooling

Qc-nom-12-7    Qc-nom-23-18



Th -OU [°C]	35										
	Ts -IN [°C]	Qh nom [kW]	Qh min [kW]	Qh max [kW]	Pin nom [kW]	Pin min [kW]	Pin max [kW]	COP nom kw / kW	Qc nom [kW]	Qc min [kW]	Qc max [kW]
25	<b>40.7</b>	20.3	40.7	<b>3.8</b>	1.9	3.8	<b>10.71</b>	37.1	18.6	37.1	7.4
24	<b>39.8</b>	19.9	39.8	<b>3.9</b>	1.9	3.9	<b>10.27</b>	36.2	18.1	36.2	7.5
23	<b>39.0</b>	19.5	39.0	<b>4.0</b>	2.0	4.0	<b>9.85</b>	35.3	17.7	35.3	7.6
22	<b>38.2</b>	19.1	38.2	<b>4.0</b>	2.0	4.0	<b>9.47</b>	34.5	17.2	34.5	7.7
21	<b>37.4</b>	18.7	37.4	<b>4.1</b>	2.0	4.1	<b>9.11</b>	33.6	16.8	33.6	7.8
20	<b>36.7</b>	18.3	36.7	<b>4.2</b>	2.1	4.2	<b>8.77</b>	32.7	16.4	32.7	7.8
19	<b>35.9</b>	17.9	35.9	<b>4.2</b>	2.1	4.2	<b>8.45</b>	31.9	16.0	31.9	7.9
18	<b>35.1</b>	17.6	35.1	<b>4.3</b>	2.1	4.3	<b>8.16</b>	31.1	15.5	31.1	8.0
17	<b>34.4</b>	17.2	34.4	<b>4.4</b>	2.2	4.4	<b>7.88</b>	30.3	15.1	30.3	8.1
16	<b>33.6</b>	16.8	33.6	<b>4.4</b>	2.2	4.4	<b>7.61</b>	29.5	14.8	29.5	8.1
15	<b>32.9</b>	16.5	32.9	<b>4.5</b>	2.2	4.5	<b>7.36</b>	28.7	14.4	28.7	8.2
14	<b>32.2</b>	16.1	32.2	<b>4.5</b>	2.2	4.5	<b>7.13</b>	28.0	14.0	28.0	8.2
13	<b>31.5</b>	15.7	31.5	<b>4.6</b>	2.2	4.6	<b>6.90</b>	27.2	13.6	27.2	8.3
12	<b>30.8</b>	15.4	30.8	<b>4.6</b>	2.3	4.6	<b>6.69</b>	26.5	13.2	26.5	8.3
11	<b>30.1</b>	15.0	30.1	<b>4.6</b>	2.3	4.6	<b>6.48</b>	25.8	12.9	25.8	8.4
10	<b>29.4</b>	14.7	29.4	<b>4.7</b>	2.3	4.7	<b>6.29</b>	25.1	12.5	25.1	8.4
9	<b>28.8</b>	14.4	28.8	<b>4.7</b>	2.3	4.7	<b>6.11</b>	24.4	12.2	24.4	8.5
8	<b>28.1</b>	14.1	28.1	<b>4.7</b>	2.3	4.7	<b>5.93</b>	23.7	11.8	23.7	8.5
7	<b>27.5</b>	13.7	27.5	<b>4.8</b>	2.4	4.8	<b>5.76</b>	23.0	11.5	23.0	8.5
6	<b>26.8</b>	13.4	26.8	<b>4.8</b>	2.4	4.8	<b>5.60</b>	22.3	11.2	22.3	8.6
5	<b>26.2</b>	13.1	26.2	<b>4.8</b>	2.4	4.8	<b>5.44</b>	21.7	10.9	21.7	8.6
4	<b>25.6</b>	12.8	25.6	<b>4.8</b>	2.4	4.8	<b>5.29</b>	21.1	10.5	21.1	8.6
3	<b>25.0</b>	12.5	25.0	<b>4.9</b>	2.4	4.9	<b>5.15</b>	20.5	10.2	20.5	8.6
2	<b>24.4</b>	12.2	24.4	<b>4.9</b>	2.4	4.9	<b>5.01</b>	19.8	9.9	19.8	8.7
1	<b>23.8</b>	11.9	23.8	<b>4.9</b>	2.4	4.9	<b>4.88</b>	19.3	9.6	19.3	8.7
0	<b>23.2</b>	11.6	23.2	<b>4.9</b>	2.4	4.9	<b>4.75</b>	18.7	9.3	18.7	8.7
-1	<b>22.7</b>	11.3	22.7	<b>4.9</b>	2.4	4.9	<b>4.62</b>	18.1	9.0	18.1	8.7
-2	<b>22.1</b>	11.1	22.1	<b>4.9</b>	2.4	4.9	<b>4.50</b>	17.5	8.8	17.5	8.7
-3	<b>21.6</b>	10.8	21.6	<b>4.9</b>	2.4	4.9	<b>4.39</b>	17.0	8.5	17.0	8.7
-4	<b>21.1</b>	10.5	21.1	<b>4.9</b>	2.4	4.9	<b>4.27</b>	16.5	8.2	16.5	8.7
-5	<b>20.5</b>	10.3	20.5	<b>4.9</b>	2.4	4.9	<b>4.17</b>	15.9	8.0	15.9	8.7
-6	<b>20.0</b>	10.0	20.0	<b>4.9</b>	2.4	4.9	<b>4.06</b>	15.4	7.7	15.4	8.7
-7	<b>19.5</b>	9.8	19.5	<b>4.9</b>	2.4	4.9	<b>3.96</b>	14.9	7.5	14.9	8.7
-8	<b>19.0</b>	9.5	19.0	<b>4.9</b>	2.4	4.9	<b>3.86</b>	14.4	7.2	14.4	8.7
-9	<b>18.5</b>	9.3	18.5	<b>4.9</b>	2.4	4.9	<b>3.76</b>	13.9	7.0	13.9	8.7
-10	<b>18.1</b>	9.0	18.1	<b>4.9</b>	2.4	4.9	<b>3.67</b>	13.5	6.7	13.5	8.7
-11	<b>17.6</b>	8.8	17.6	<b>4.9</b>	2.4	4.9	<b>3.57</b>	13.0	6.5	13.0	8.7
-12	<b>17.2</b>	8.6	17.2	<b>4.9</b>	2.4	4.9	<b>3.49</b>	12.6	6.3	12.6	8.7
-13	<b>16.7</b>	8.4	16.7	<b>4.9</b>	2.4	4.9	<b>3.40</b>	12.1	6.1	12.1	8.7
-14	<b>16.3</b>	8.1	16.3	<b>4.9</b>	2.4	4.9	<b>3.31</b>	11.7	5.8	11.7	8.7
-15	<b>15.9</b>	7.9	15.9	<b>4.9</b>	2.4	4.9	<b>3.23</b>	11.3	5.6	11.3	8.7

-- attention: operating limits not reflected in performance table

ZHI11K1P-TFM\_R410A\_2\_BWW

Th -OU	[°C]	45										
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	<b>39.8</b>	19.9	39.8	<b>5.5</b>	2.7	5.5	<b>7.27</b>	34.7	17.3	34.7	9.4	
24	<b>39.0</b>	19.5	39.0	<b>5.5</b>	2.7	5.5	<b>7.04</b>	33.8	16.9	33.8	9.5	
23	<b>38.2</b>	19.1	38.2	<b>5.6</b>	2.8	5.6	<b>6.82</b>	33.0	16.5	33.0	9.5	
22	<b>37.5</b>	18.7	37.5	<b>5.7</b>	2.8	5.7	<b>6.62</b>	32.2	16.1	32.2	9.6	
21	<b>36.7</b>	18.4	36.7	<b>5.7</b>	2.8	5.7	<b>6.42</b>	31.4	15.7	31.4	9.7	
20	<b>36.0</b>	18.0	36.0	<b>5.8</b>	2.8	5.8	<b>6.24</b>	30.6	15.3	30.6	9.7	
19	<b>35.2</b>	17.6	35.2	<b>5.8</b>	2.9	5.8	<b>6.06</b>	29.8	14.9	29.8	9.8	
18	<b>34.5</b>	17.3	34.5	<b>5.9</b>	2.9	5.9	<b>5.89</b>	29.0	14.5	29.0	9.9	
17	<b>33.8</b>	16.9	33.8	<b>5.9</b>	2.9	5.9	<b>5.72</b>	28.3	14.1	28.3	9.9	
16	<b>33.1</b>	16.6	33.1	<b>5.9</b>	2.9	5.9	<b>5.57</b>	27.6	13.8	27.6	10.0	
15	<b>32.4</b>	16.2	32.4	<b>6.0</b>	3.0	6.0	<b>5.42</b>	26.8	13.4	26.8	10.0	
14	<b>31.7</b>	15.9	31.7	<b>6.0</b>	3.0	6.0	<b>5.28</b>	26.1	13.1	26.1	10.1	
13	<b>31.1</b>	15.5	31.1	<b>6.0</b>	3.0	6.0	<b>5.14</b>	25.4	12.7	25.4	10.1	
12	<b>30.4</b>	15.2	30.4	<b>6.1</b>	3.0	6.1	<b>5.00</b>	24.7	12.4	24.7	10.1	
11	<b>29.8</b>	14.9	29.8	<b>6.1</b>	3.0	6.1	<b>4.88</b>	24.1	12.0	24.1	10.2	
10	<b>29.1</b>	14.6	29.1	<b>6.1</b>	3.0	6.1	<b>4.75</b>	23.4	11.7	23.4	10.2	
9	<b>28.5</b>	14.2	28.5	<b>6.1</b>	3.0	6.1	<b>4.63</b>	22.7	11.4	22.7	10.2	
8	<b>27.9</b>	13.9	27.9	<b>6.2</b>	3.0	6.2	<b>4.52</b>	22.1	11.1	22.1	10.2	
7	<b>27.3</b>	13.6	27.3	<b>6.2</b>	3.0	6.2	<b>4.41</b>	21.5	10.7	21.5	10.3	
6	<b>26.7</b>	13.3	26.7	<b>6.2</b>	3.1	6.2	<b>4.30</b>	20.9	10.4	20.9	10.3	
5	<b>26.1</b>	13.0	26.1	<b>6.2</b>	3.1	6.2	<b>4.20</b>	20.3	10.1	20.3	10.3	
4	<b>25.5</b>	12.7	25.5	<b>6.2</b>	3.1	6.2	<b>4.10</b>	19.7	9.8	19.7	10.3	
3	<b>24.9</b>	12.5	24.9	<b>6.2</b>	3.1	6.2	<b>4.00</b>	19.1	9.6	19.1	10.3	
2	<b>24.4</b>	12.2	24.4	<b>6.2</b>	3.1	6.2	<b>3.90</b>	18.5	9.3	18.5	10.3	
1	<b>23.8</b>	11.9	23.8	<b>6.2</b>	3.1	6.2	<b>3.81</b>	18.0	9.0	18.0	10.3	
0	<b>23.3</b>	11.6	23.3	<b>6.3</b>	3.1	6.3	<b>3.72</b>	17.4	8.7	17.4	10.4	
-1	<b>22.7</b>	11.4	22.7	<b>6.3</b>	3.1	6.3	<b>3.64</b>	16.9	8.4	16.9	10.4	
-2	<b>22.2</b>	11.1	22.2	<b>6.3</b>	3.1	6.3	<b>3.55</b>	16.4	8.2	16.4	10.4	
-3	<b>21.7</b>	10.9	21.7	<b>6.3</b>	3.1	6.3	<b>3.47</b>	15.9	7.9	15.9	10.4	
-4	<b>21.2</b>	10.6	21.2	<b>6.3</b>	3.1	6.3	<b>3.39</b>	15.4	7.7	15.4	10.4	
-5	<b>20.7</b>	10.4	20.7	<b>6.3</b>	3.1	6.3	<b>3.31</b>	14.9	7.4	14.9	10.4	
-6	<b>20.2</b>	10.1	20.2	<b>6.3</b>	3.1	6.3	<b>3.23</b>	14.4	7.2	14.4	10.4	
-7	<b>19.7</b>	9.9	19.7	<b>6.3</b>	3.1	6.3	<b>3.16</b>	13.9	7.0	13.9	10.4	
-8	<b>19.3</b>	9.6	19.3	<b>6.2</b>	3.1	6.2	<b>3.09</b>	13.4	6.7	13.4	10.4	
-9	<b>18.8</b>	9.4	18.8	<b>6.2</b>	3.1	6.2	<b>3.01</b>	13.0	6.5	13.0	10.4	
-10	<b>18.4</b>	9.2	18.4	<b>6.2</b>	3.1	6.2	<b>2.95</b>	12.6	6.3	12.6	10.3	
-11	<b>17.9</b>	9.0	17.9	<b>6.2</b>	3.1	6.2	<b>2.88</b>	12.1	6.1	12.1	10.3	
-12	<b>17.5</b>	8.8	17.5	<b>6.2</b>	3.1	6.2	<b>2.81</b>	11.7	5.8	11.7	10.3	
-13	<b>17.1</b>	8.5	17.1	<b>6.2</b>	3.1	6.2	<b>2.75</b>	11.3	5.6	11.3	10.3	
-14	<b>16.7</b>	8.3	16.7	<b>6.2</b>	3.1	6.2	<b>2.68</b>	10.9	5.4	10.9	10.3	
-15	<b>16.3</b>	8.1	16.3	<b>6.2</b>	3.1	6.2	<b>2.62</b>	10.5	5.2	10.5	10.3	

-- attention: operating limits not reflected in performance table

Th -OU	[°C]		55									
	Ts -IN [°C]	Qh nom [kW]	Qh min [kW]	Qh max [kW]	Pin nom [kW]	Pin min [kW]	Pin max [kW]	COP nom kW / kW	Qc nom [kW]	Qc min [kW]	Qc max [kW]	I nom [A]
25	<b>38.5</b>	19.3	38.5	<b>7.7</b>	3.8	7.7	<b>5.03</b>	31.4	15.7	31.4	12.2	
24	<b>37.8</b>	18.9	37.8	<b>7.7</b>	3.8	7.7	<b>4.91</b>	30.6	15.3	30.6	12.3	
23	<b>37.1</b>	18.6	37.1	<b>7.8</b>	3.8	7.8	<b>4.79</b>	29.9	14.9	29.9	12.3	
22	<b>36.4</b>	18.2	36.4	<b>7.8</b>	3.8	7.8	<b>4.67</b>	29.1	14.6	29.1	12.4	
21	<b>35.7</b>	17.9	35.7	<b>7.8</b>	3.9	7.8	<b>4.56</b>	28.4	14.2	28.4	12.4	
20	<b>35.0</b>	17.5	35.0	<b>7.9</b>	3.9	7.9	<b>4.45</b>	27.7	13.8	27.7	12.5	
19	<b>34.4</b>	17.2	34.4	<b>7.9</b>	3.9	7.9	<b>4.34</b>	27.0	13.5	27.0	12.5	
18	<b>33.7</b>	16.9	33.7	<b>7.9</b>	3.9	7.9	<b>4.24</b>	26.3	13.1	26.3	12.6	
17	<b>33.1</b>	16.5	33.1	<b>8.0</b>	3.9	8.0	<b>4.15</b>	25.6	12.8	25.6	12.6	
16	<b>32.4</b>	16.2	32.4	<b>8.0</b>	3.9	8.0	<b>4.05</b>	24.9	12.5	24.9	12.6	
15	<b>31.8</b>	15.9	31.8	<b>8.0</b>	4.0	8.0	<b>3.96</b>	24.3	12.1	24.3	12.7	
14	<b>31.2</b>	15.6	31.2	<b>8.1</b>	4.0	8.1	<b>3.87</b>	23.6	11.8	23.6	12.7	
13	<b>30.5</b>	15.3	30.5	<b>8.1</b>	4.0	8.1	<b>3.78</b>	23.0	11.5	23.0	12.7	
12	<b>29.9</b>	15.0	29.9	<b>8.1</b>	4.0	8.1	<b>3.70</b>	22.4	11.2	22.4	12.8	
11	<b>29.3</b>	14.7	29.3	<b>8.1</b>	4.0	8.1	<b>3.62</b>	21.8	10.9	21.8	12.8	
10	<b>28.8</b>	14.4	28.8	<b>8.1</b>	4.0	8.1	<b>3.54</b>	21.2	10.6	21.2	12.8	
9	<b>28.2</b>	14.1	28.2	<b>8.1</b>	4.0	8.1	<b>3.47</b>	20.6	10.3	20.6	12.8	
8	<b>27.6</b>	13.8	27.6	<b>8.1</b>	4.0	8.1	<b>3.39</b>	20.0	10.0	20.0	12.8	
7	<b>27.1</b>	13.5	27.1	<b>8.2</b>	4.0	8.2	<b>3.32</b>	19.4	9.7	19.4	12.9	
6	<b>26.5</b>	13.3	26.5	<b>8.2</b>	4.0	8.2	<b>3.25</b>	18.9	9.4	18.9	12.9	
5	<b>26.0</b>	13.0	26.0	<b>8.2</b>	4.0	8.2	<b>3.18</b>	18.3	9.2	18.3	12.9	
4	<b>25.4</b>	12.7	25.4	<b>8.2</b>	4.0	8.2	<b>3.11</b>	17.8	8.9	17.8	12.9	
3	<b>24.9</b>	12.5	24.9	<b>8.2</b>	4.0	8.2	<b>3.05</b>	17.3	8.6	17.3	12.9	
2	<b>24.4</b>	12.2	24.4	<b>8.2</b>	4.0	8.2	<b>2.98</b>	16.8	8.4	16.8	12.9	
1	<b>23.9</b>	12.0	23.9	<b>8.2</b>	4.0	8.2	<b>2.92</b>	16.3	8.1	16.3	12.9	
0	<b>23.4</b>	11.7	23.4	<b>8.2</b>	4.0	8.2	<b>2.86</b>	15.8	7.9	15.8	12.9	
-1	<b>22.9</b>	11.5	22.9	<b>8.2</b>	4.0	8.2	<b>2.80</b>	15.3	7.6	15.3	12.9	
-2	<b>22.5</b>	11.2	22.5	<b>8.2</b>	4.0	8.2	<b>2.74</b>	14.8	7.4	14.8	12.9	
-3	<b>22.0</b>	11.0	22.0	<b>8.2</b>	4.0	8.2	<b>2.69</b>	14.4	7.2	14.4	12.9	
-4	<b>21.5</b>	10.8	21.5	<b>8.2</b>	4.0	8.2	<b>2.63</b>	13.9	6.9	13.9	12.9	
-5	<b>21.1</b>	10.5	21.1	<b>8.2</b>	4.0	8.2	<b>2.58</b>	13.5	6.7	13.5	12.9	
-6	<b>20.6</b>	10.3	20.6	<b>8.2</b>	4.0	8.2	<b>2.53</b>	13.0	6.5	13.0	12.9	
-7	<b>20.2</b>	10.1	20.2	<b>8.2</b>	4.0	8.2	<b>2.47</b>	12.6	6.3	12.6	12.9	
-8	<b>19.8</b>	9.9	19.8	<b>8.2</b>	4.0	8.2	<b>2.42</b>	12.2	6.1	12.2	12.9	
-9	<b>19.4</b>	9.7	19.4	<b>8.2</b>	4.0	8.2	<b>2.37</b>	11.8	5.9	11.8	12.9	
-10	<b>19.0</b>	9.5	19.0	<b>8.2</b>	4.0	8.2	<b>2.32</b>	11.4	5.7	11.4	12.9	
-11	<b>18.6</b>	9.3	18.6	<b>8.2</b>	4.0	8.2	<b>2.28</b>	11.0	5.5	11.0	12.9	
-12	<b>18.2</b>	9.1	18.2	<b>8.2</b>	4.0	8.2	<b>2.23</b>	10.6	5.3	10.6	12.9	
-13	<b>17.8</b>	8.9	17.8	<b>8.1</b>	4.0	8.1	<b>2.18</b>	10.2	5.1	10.2	12.9	
-14	<b>17.4</b>	8.7	17.4	<b>8.1</b>	4.0	8.1	<b>2.14</b>	9.8	4.9	9.8	12.9	
-15	<b>17.1</b>	8.5	17.1	<b>8.1</b>	4.0	8.1	<b>2.10</b>	9.5	4.7	9.5	12.8	

-- attention: operating limits not reflected in performance table

Th -OU [°C]	65 (T-max)											
	Ts -IN [°C]	Qh nom [kW]	Qh min [kW]	Qh max [kW]	Pin nom [kW]	Pin min [kW]	Pin max [kW]	COP nom kW / kW	Qc nom [kW]	Qc min [kW]	Qc max [kW]	I nom [A]
25	<b>37.3</b>	18.7	37.3	<b>10.2</b>	5.0	10.2	<b>3.66</b>	27.8	13.9	27.8	15.7	
24	<b>36.7</b>	18.3	36.7	<b>10.2</b>	5.1	10.2	<b>3.58</b>	27.1	13.6	27.1	15.8	
23	<b>36.0</b>	18.0	36.0	<b>10.3</b>	5.1	10.3	<b>3.51</b>	26.4	13.2	26.4	15.8	
22	<b>35.4</b>	17.7	35.4	<b>10.3</b>	5.1	10.3	<b>3.43</b>	25.8	12.9	25.8	15.9	
21	<b>34.8</b>	17.4	34.8	<b>10.3</b>	5.1	10.3	<b>3.36</b>	25.1	12.6	25.1	15.9	
20	<b>34.2</b>	17.1	34.2	<b>10.4</b>	5.1	10.4	<b>3.30</b>	24.5	12.3	24.5	16.0	
19	<b>33.6</b>	16.8	33.6	<b>10.4</b>	5.1	10.4	<b>3.23</b>	23.9	11.9	23.9	16.0	
18	<b>33.0</b>	16.5	33.0	<b>10.4</b>	5.1	10.4	<b>3.17</b>	23.3	11.6	23.3	16.0	
17	<b>32.4</b>	16.2	32.4	<b>10.4</b>	5.2	10.4	<b>3.10</b>	22.7	11.3	22.7	16.1	
16	<b>31.8</b>	15.9	31.8	<b>10.5</b>	5.2	10.5	<b>3.04</b>	22.1	11.0	22.1	16.1	
15	<b>31.3</b>	15.6	31.3	<b>10.5</b>	5.2	10.5	<b>2.98</b>	21.5	10.7	21.5	16.1	
14	<b>30.7</b>	15.4	30.7	<b>10.5</b>	5.2	10.5	<b>2.93</b>	20.9	10.5	20.9	16.1	
13	<b>30.2</b>	15.1	30.2	<b>10.5</b>	5.2	10.5	<b>2.87</b>	20.4	10.2	20.4	16.2	
12	<b>29.6</b>	14.8	29.6	<b>10.5</b>	5.2	10.5	<b>2.82</b>	19.8	9.9	19.8	16.2	
11	<b>29.1</b>	14.6	29.1	<b>10.5</b>	5.2	10.5	<b>2.76</b>	19.3	9.6	19.3	16.2	
10	<b>28.6</b>	14.3	28.6	<b>10.5</b>	5.2	10.5	<b>2.71</b>	18.7	9.4	18.7	16.2	
9	<b>28.1</b>	14.0	28.1	<b>10.6</b>	5.2	10.6	<b>2.66</b>	18.2	9.1	18.2	16.2	
8	<b>27.6</b>	13.8	27.6	<b>10.6</b>	5.2	10.6	<b>2.61</b>	17.7	8.9	17.7	16.2	
7	<b>27.1</b>	13.5	27.1	<b>10.6</b>	5.2	10.6	<b>2.56</b>	17.2	8.6	17.2	16.2	
6	<b>26.6</b>	13.3	26.6	<b>10.6</b>	5.2	10.6	<b>2.52</b>	16.7	8.4	16.7	16.3	
5	<b>26.1</b>	13.1	26.1	<b>10.6</b>	5.2	10.6	<b>2.47</b>	16.2	8.1	16.2	16.3	
4	<b>25.7</b>	12.8	25.7	<b>10.6</b>	5.2	10.6	<b>2.42</b>	15.8	7.9	15.8	16.3	
3	<b>25.2</b>	12.6	25.2	<b>10.6</b>	5.2	10.6	<b>2.38</b>	15.3	7.7	15.3	16.3	
2	<b>24.7</b>	12.4	24.7	<b>10.6</b>	5.2	10.6	<b>2.34</b>	14.9	7.4	14.9	16.3	
1	<b>24.3</b>	12.2	24.3	<b>10.6</b>	5.2	10.6	<b>2.29</b>	14.4	7.2	14.4	16.3	
0	<b>23.9</b>	11.9	23.9	<b>10.6</b>	5.2	10.6	<b>2.25</b>	14.0	7.0	14.0	16.3	
-1	<b>23.4</b>	11.7	23.4	<b>10.6</b>	5.2	10.6	<b>2.21</b>	13.6	6.8	13.6	16.3	
-2	<b>23.0</b>	11.5	23.0	<b>10.6</b>	5.2	10.6	<b>2.17</b>	13.1	6.6	13.1	16.3	
-3	<b>22.6</b>	11.3	22.6	<b>10.6</b>	5.2	10.6	<b>2.14</b>	12.7	6.4	12.7	16.3	
-4	<b>22.2</b>	11.1	22.2	<b>10.6</b>	5.2	10.6	<b>2.10</b>	12.3	6.2	12.3	16.3	
-5	<b>21.8</b>	10.9	21.8	<b>10.6</b>	5.2	10.6	<b>2.06</b>	11.9	6.0	11.9	16.3	
-6	<b>21.4</b>	10.7	21.4	<b>10.6</b>	5.2	10.6	<b>2.02</b>	11.5	5.8	11.5	16.3	
-7	<b>21.1</b>	10.5	21.1	<b>10.6</b>	5.2	10.6	<b>1.99</b>	11.2	5.6	11.2	16.3	
-8	<b>20.7</b>	10.3	20.7	<b>10.6</b>	5.2	10.6	<b>1.95</b>	10.8	5.4	10.8	16.3	
-9	<b>20.3</b>	10.2	20.3	<b>10.6</b>	5.2	10.6	<b>1.92</b>	10.4	5.2	10.4	16.3	
-10	<b>20.0</b>	10.0	20.0	<b>10.6</b>	5.2	10.6	<b>1.89</b>	10.1	5.0	10.1	16.3	
-11	<b>19.6</b>	9.8	19.6	<b>10.6</b>	5.2	10.6	<b>1.85</b>	9.7	4.9	9.7	16.3	
-12	<b>19.3</b>	9.6	19.3	<b>10.6</b>	5.2	10.6	<b>1.82</b>	9.4	4.7	9.4	16.3	
-13	<b>19.0</b>	9.5	19.0	<b>10.6</b>	5.2	10.6	<b>1.79</b>	9.1	4.5	9.1	16.3	
-14	<b>18.6</b>	9.3	18.6	<b>10.6</b>	5.2	10.6	<b>1.76</b>	8.7	4.4	8.7	16.3	
-15	<b>18.3</b>	9.2	18.3	<b>10.6</b>	5.2	10.6	<b>1.73</b>	8.4	4.2	8.4	16.3	

-- attention: operating limits not reflected in performance table

**WAMAK TWW 28 EVI**

Tc -OU [°C]		W 12 / 7 °C									
Ts -IN [°C]	Qc nom [kW]	Qc min [kW]	Qc max [kW]	Pin nom [kW]	Pin min [kW]	Pin max [kW]	EER kW / kW	Qh nom [kW]	Qh min [kW]	Qh max [kW]	I nom [A]
40	<b>16.4</b>	8.2	16.4	<b>6.8</b>	3.4	6.8	<b>2.40</b>	22.8	11.4	22.8	11.1
39	<b>16.5</b>	8.3	16.5	<b>6.7</b>	3.3	6.7	<b>2.48</b>	22.8	11.4	22.8	10.9
38	<b>16.7</b>	8.3	16.7	<b>6.5</b>	3.2	6.5	<b>2.57</b>	22.8	11.4	22.8	10.7
37	<b>16.8</b>	8.4	16.8	<b>6.3</b>	3.1	6.3	<b>2.66</b>	22.7	11.4	22.7	10.5
36	<b>17.0</b>	8.5	17.0	<b>6.2</b>	3.0	6.2	<b>2.75</b>	22.7	11.4	22.7	10.3
35	<b>17.1</b>	8.6	17.1	<b>6.0</b>	3.0	6.0	<b>2.84</b>	22.7	11.4	22.7	10.1
34	<b>17.2</b>	8.6	17.2	<b>5.9</b>	2.9	5.9	<b>2.94</b>	22.7	11.4	22.7	9.9
33	<b>17.4</b>	8.7	17.4	<b>5.7</b>	2.8	5.7	<b>3.04</b>	22.7	11.4	22.7	9.7
32	<b>17.5</b>	8.7	17.5	<b>5.6</b>	2.8	5.6	<b>3.14</b>	22.7	11.4	22.7	9.5
31	<b>17.6</b>	8.8	17.6	<b>5.4</b>	2.7	5.4	<b>3.24</b>	22.7	11.4	22.7	9.3
30	<b>17.7</b>	8.9	17.7	<b>5.3</b>	2.6	5.3	<b>3.35</b>	22.7	11.3	22.7	9.2
29	<b>17.9</b>	8.9	17.9	<b>5.2</b>	2.5	5.2	<b>3.46</b>	22.7	11.3	22.7	9.0
28	<b>18.0</b>	9.0	18.0	<b>5.0</b>	2.5	5.0	<b>3.57</b>	22.7	11.3	22.7	8.9
27	<b>18.1</b>	9.0	18.1	<b>4.9</b>	2.4	4.9	<b>3.69</b>	22.7	11.3	22.7	8.7
26	<b>18.2</b>	9.1	18.2	<b>4.8</b>	2.4	4.8	<b>3.81</b>	22.7	11.3	22.7	8.5
25	<b>18.3</b>	9.2	18.3	<b>4.7</b>	2.3	4.7	<b>3.93</b>	22.7	11.3	22.7	8.4
24	<b>18.4</b>	9.2	18.4	<b>4.5</b>	2.2	4.5	<b>4.06</b>	22.7	11.3	22.7	8.3
23	<b>18.5</b>	9.3	18.5	<b>4.4</b>	2.2	4.4	<b>4.19</b>	22.6	11.3	22.6	8.1
22	<b>18.6</b>	9.3	18.6	<b>4.3</b>	2.1	4.3	<b>4.33</b>	22.6	11.3	22.6	8.0
21	<b>18.7</b>	9.4	18.7	<b>4.2</b>	2.1	4.2	<b>4.47</b>	22.6	11.3	22.6	7.9
20	<b>18.8</b>	9.4	18.8	<b>4.1</b>	2.0	4.1	<b>4.61</b>	22.6	11.3	22.6	7.7

Tc [°C]		W 23 / 18 °C									
0 [°C]	Qc nom [kW]	Qc min [kW]	Qc max [kW]	Pin nom [kW]	Pin min [kW]	Pin max [kW]	EER kW / kW	Qh nom [kW]	Qh min [kW]	Qh max [kW]	I nom [A]
40	<b>22.1</b>	11.0	22.1	<b>6.8</b>	3.4	6.8	<b>3.23</b>	28.4	14.2	28.1	11.0
39	<b>22.3</b>	11.1	22.3	<b>6.7</b>	3.3	6.7	<b>3.34</b>	28.4	14.2	28.1	10.8
38	<b>22.5</b>	11.2	22.5	<b>6.5</b>	3.2	6.5	<b>3.46</b>	28.4	14.2	28.2	10.5
37	<b>22.7</b>	11.3	22.7	<b>6.3</b>	3.1	6.3	<b>3.58</b>	28.5	14.2	28.2	10.3
36	<b>22.8</b>	11.4	22.8	<b>6.2</b>	3.0	6.2	<b>3.70</b>	28.5	14.3	28.2	10.1
35	<b>23.0</b>	11.5	23.0	<b>6.0</b>	3.0	6.0	<b>3.82</b>	28.5	14.3	28.2	9.9
34	<b>23.2</b>	11.6	23.2	<b>5.9</b>	2.9	5.9	<b>3.95</b>	28.6	14.3	28.3	9.7
33	<b>23.4</b>	11.7	23.4	<b>5.7</b>	2.8	5.7	<b>4.09</b>	28.6	14.3	28.3	9.5
32	<b>23.6</b>	11.8	23.6	<b>5.6</b>	2.8	5.6	<b>4.22</b>	28.6	14.3	28.3	9.3
31	<b>23.7</b>	11.9	23.7	<b>5.4</b>	2.7	5.4	<b>4.36</b>	28.7	14.3	28.4	9.1
30	<b>23.9</b>	11.9	23.9	<b>5.3</b>	2.6	5.3	<b>4.51</b>	28.7	14.3	28.4	9.0
29	<b>24.0</b>	12.0	24.0	<b>5.2</b>	2.5	5.2	<b>4.66</b>	28.7	14.4	28.4	8.8
28	<b>24.2</b>	12.1	24.2	<b>5.0</b>	2.5	5.0	<b>4.81</b>	28.7	14.4	28.4	8.6
27	<b>24.4</b>	12.2	24.4	<b>4.9</b>	2.4	4.9	<b>4.97</b>	28.8	14.4	28.5	8.5
26	<b>24.5</b>	12.3	24.5	<b>4.8</b>	2.4	4.8	<b>5.13</b>	28.8	14.4	28.5	8.3
25	<b>24.7</b>	12.3	24.7	<b>4.7</b>	2.3	4.7	<b>5.29</b>	28.8	14.4	28.5	8.2
24	<b>24.8</b>	12.4	24.8	<b>4.5</b>	2.2	4.5	<b>5.47</b>	28.8	14.4	28.6	8.0
23	<b>24.9</b>	12.5	24.9	<b>4.4</b>	2.2	4.4	<b>5.64</b>	28.8	14.4	28.6	7.8
22	<b>25.1</b>	12.5	25.1	<b>4.3</b>	2.1	4.3	<b>5.82</b>	28.8	14.4	28.6	7.7
21	<b>25.2</b>	12.6	25.2	<b>4.2</b>	2.1	4.2	<b>6.01</b>	28.8	14.4	28.7	7.6
20	<b>25.3</b>	12.7	25.3	<b>4.1</b>	2.0	4.1	<b>6.21</b>	28.8	14.4	28.7	7.4

-- 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

